Naturschutz und Biologische Vielfalt 93

Socio-economic Monitoring for the Ecosystem Approach

Heiko Garrelts and Michael Flitner

2010 International Year of Biodiversity

BfN Federal Agency for Nature Conservation

Naturschutz und Biologische Vielfalt
Heft 93

Socio-economic Monitoring for the Ecosystem Approach

Results of the Research and Development (F+E)-Project
(FKZ 806 84 010)
of the Federal Agency for Nature Conservation

Heiko Garrelts
Michael Flitner

Federal Agency for Nature Conservation
Bonn 2010

Cover photo: Montain-bike trail in Crans (VS, Switzerland); Photo: M. Flitner

Authors' address:
Dr. Heiko Garrelts
Dr. Michael Flitner

Research Centre for Sustainable Studies (artec)
University of Bremen
Enrique-Schmidt-Str. 7
28359 Bremen, Germany

Supported by the Federal Agency for Nature Conservation with funds of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Scientific Supervison at BfN:
Dr. Anke Höltermann — Departement II 3.1: Agriculture and Forestry

This publication is included in the literature database *"DNL-online"* (www.dnl-online.de).

Publisher: Federal Agency for Nature Conservation (BfN)
Konstantinstr. 110, 53179 Bonn, Germany
www.bfn.de

Printed by: LV Druck GmbH & Co. KG, Münster

Available at: BfN-Schriftenvertrieb im Landwirtschaftsverlag
48084 Münster, Germany
Tel.: +49 2501/801-632, Fax: +49 2501/801-203
Price: 12,-- €

or via Internet:
www.lv-h.de/bfn

ISBN 978-3-7843-3993-1

Printed on FSC®-Paper

Bonn, Germany 2010

Table of Contents

List of Figures

List of Tables

Please reference and quote after the published version (different pagination): Garrelts, Heiko & Michael Flitner. 2010. Socio-economic Monitoring for the Ecosystem Approach. Bonn: Bundesamt für Naturschutz. (=Naturschutz und Biologische Vielfalt 93).

Socio-economic Monitoring for the Ecosystem Approach

Heiko Garrelts
Michael Flitner

Final report to the Federal Agency for Nature Conservation
(Bundesamt für Naturschutz)
FKZ 806 84 010

Bremen 2010

Please reference and quote after the published version (different pagination): Garrelts, Heiko & Michael Flitner. 2010. Socio-economic Monitoring for the Ecosystem Approach. Bonn: Bundesamt für Naturschutz. (=Naturschutz und Biologische Vielfalt 93).

Table of Contents

Please reference and quote after the published version (different pagination): Garrelts, Heiko & Michael Flitner. 2010. Socio-economic Monitoring for the Ecosystem Approach. Bonn: Bundesamt für Naturschutz. (=Naturschutz und Biologische Vielfalt 93).

List of figures

List of tables

Acronyms

ABS	Access and Benefit Sharing
AHTEG	Ad Hoc Technical Expert Group
BCI	Basic Capabilities Index
BfN	Bundesamt für Naturschutz (German Federal Agency for Nature Conservation, Bonn)
CBD	Convention on Biological Diversity
CCFM	Canadian Council of Forest Ministers
CHM	Clearing-House Mechanism
CIFOR	Center for International Forestry Research
COP	Conference of the Parties
CPI	Corruption Perception Index
CPRN	Canadian Policy Research Networks
CSD	Commission on Sustainable Development
DPSIR	Driving forces, Pressure, State, Impacts and Responses (approach)
DSD	Division of Sustainable Development
DSR	Driving Force – State – Response
EA	Ecosystem Approach
EDEP	Equally Distributed Equivalent Percentage
EEA	European Environmental Agency
EIA	Environmental Impact Assessment
ES	Environmental Services
EU	European Union
FMA	Forest Management Area
FSC	Forest Stewardship Council
GA	General Assembly
GDP	Gross Domestic Product
GDI	Gender-related Development Index
GEM	Gender Empowerment Measure
GNP	Gross National Product
GPI	Genuine Progress Indicator
HDI	Human Development Index
HPI	Human Poverty Index
IA	Impact Assessment
IG	Implementation Guideline
ILO	International Labor Organisation
IMF	International Monetary Fund
ISOE	Institut für sozialökologische Forschung (Institute for Social Ecological Research, Frankfurt)
ITTO	International Tropical Timber Organization
IUCN	World Conservation Union
JPOI	Johannesburg Plan of Implementation

Please reference and quote after the published version (different pagination): Garrelts, Heiko & Michael Flitner. 2010. Socio-economic Monitoring for the Ecosystem Approach. Bonn: Bundesamt für Naturschutz. (=Naturschutz und Biologische Vielfalt 93).

MA	Millennium Ecosystem Assessment
MAB	Man and Biosphere Programme
MDG	Millennium Development Goal
MSC	Marine Stewardship Council
NEF	New Economics Foundation
NBSAP	National Biodiversity Strategie and Action Plan
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
OECD	Organisation of Economic, Cooperation and Development
PEFC	Program for the Endorsement of Forest Certification
PES	Payments for Environmental Services
PIC	Prior Informed Consent
PISA	Programme of International Student Assessment
PPP	Purchasing Power Parity
PRSP	Poverty Reduction Strategy Plan
PSR	Pressure-State-Response framework
SBSTTA	Subsidiary Body of Scientific, Technical and Technological Advice
SCOPE	Scientific Committee on Problems of the Environment
SFM	Sustainable Forest Management
SIA	Social Impact Assessment
TI	Transparency International
TRC	Town Resource Cluster
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Education and Science Organisation
US	United States
WI	Well-being Index
WWF	World Wide Fund for Nature
ZUMA	Zentrum für Umfragen, Methoden und Analysen (Centre for Survey Research and Methodology, Mannheim)

Preface

The Ecosystem Approach (EA) has been accorded an important role in implementing the Convention on Biological Diversity (CBD) which is certainly one of the most influential pieces of international environmental law over the last decades. With its emphasis on the sustainable use of biological diversity, its focus on benefit sharing and, implicitly, on integrated land use planning, the CBD links comprehensive environmental objectives to fundamental social and economic processes and goals.

After nearly 17 years now since its entry into force, the question of what has been achieved by this instrument so far is getting ever more pressing. Given the multi-layered aims, related national and transnational activities and the highly diverse work programmes, a clear-cut, all-encompassing answer to this general question is hardly possible. It seems fair to say, however, that few observers are entirely satisfied with the results. The 2010 biodiversity target, to name just one prominent, topical example from the set of objectives, has not been achieved to an acceptable degree in the view of most observers. Yet for many aspects, it would be hard to tell the outcome, as we are still lacking clear operational criteria and indicators. This is particularly true when it comes to the explicit and implicit socio-economic objectives of the CBD. Do societies really make progress with regard to the complex environmental-cum-social tasks that are associated with ecosystem management in general, and with the implementation of the EA, in particular?

This question is the starting point for the study at hand. The booklet results from a research project on issues related to socio-economic monitoring and indicator development, conducted at the University of Bremen's Research Center for Sustainability Studies, artec, and largely carried out by the first author, Heiko Garrelts. As part of our research, an international workshop was convened in Bremen to address these issues (Teerhof Bremen, November 26-28, 2007). The workshop brought together a carefully selected group of participants with a broad range of expertise from different scientific disciplines as well as from think-tanks and decision-making, spanning from human-rights-oriented NGOs to the CBD secretariat. With the help of these experts, we refined the proposal and probed the first conclusions we had drawn by then.

The research presented in this study has been funded by a research and development grant of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) through its Federal Agency for Nature Conservation (Bundesamt für Naturschutz, BfN, F&E-Projekt 'Ökosystemarer Ansatz der CBD und sozioökonomisches Monitoring', FKZ 806 84 010). We are grateful to the participants in the mentioned workshop, to our partners at the Federal Agency for Nature Conservation and to our colleagues at artec for their valuable comments and feedback regarding our research findings. We thank Anke Höltermann for her patient support and encouraging comments.

With regard to the final version of the report, we are particularly indebted to two members of a project-accompanying working group, Joachim Spangenberg and Christoph Görg who have both provided extensive and substantial comments on an earlier version of the paper. The usual disclaimers apply; all weaknesses, errors and omissions in the report remain our responsibility.

1 Introduction: New contexts for socio-economic monitoring

The concept of biodiversity as enshrined in the Convention on Biological Diversity (CBD) brought about a number of conceptual innovations for international nature conservation policies. First, our understanding of nature conservation has been broadened by including aspects from the level of genetic erosion to the loss of entire ecosystems. Second, there is or at least there should be far more comprehensive involvement of different 'new' actors (such as non-governmental organisations, women's groups, indigenous groups, and local communities). Third, there is a new emphasis on the sustainable use of biological diversity and on the sharing of the benefits derived therefrom. A fourth change is the modification of the protected area approach: the conservation and sustainable use of biological diversity can and should not be restricted to special protected areas – it has to happen basically everywhere. Thus, the CBD links environmental and nature protection objectives to much broader social and economic processes and goals. The interdependent nature of global problems is underlined, the different development needs as well as the great discrepancies between the rich and the poor countries (LASS/REUSSWIG 2001: 9). This implies a general shift towards planning for different types of integrated land use (ARTS 2000: 123; HARTJE et al. 2003: 12; BENNETT 2004, FLITNER/GARRELTS 2008).

All these modifications have to be seen in the context of a broader trend towards greater integration of societal concerns in natural resources management approaches. The need to manage large complex natural systems in an integrated manner was already acknowledged in the UNESCO-sponsored Man and Biosphere Programme (MAB) initiated in 1970. Yet it took many years for such integration to materialize in more than a few projects and specifically designated areas. For many years now, related debates have taken place in particular with regard to forest ecosystems, but also in relation to almost all other terrestrial and marine ecosystems.

1.1 The example of forestry and forest ecosystems

The realm of forestry and forest ecosystems is a case in point and an illustrative example of the deep conceptual and practical changes that have occurred over recent decades. Throughout the world, there has been a re-examination of who makes decisions about forests and how these decisions are made. The related changes can be grouped into five different (and sometimes conflicting) trends and issues: (1) the broadening of forest management objectives at all levels; (2) the increasing influence of international and global processes; (3) the pervasive trends of decentralisation and devolution; (4) the growing acknowledgement of the importance of institutional capacities; (5) issues of poverty and poverty reduction; and, last but not least, (6) an increasing role for market-related instruments, in particular certification of forestry products. It is worthwhile

looking somewhat deeper into these issues in the given context, as this sets the stage for our topic and we will come back to examples from forestry and forest ecosystems throughout our study.

(1) Today, from communities to global enterprises, forest owners and managers are being urged to deal with a much *broader range of social and environmental objectives* than in the past. Forest ecosystems provide many benefits to society beyond the basic needs for food, water and employment: values such as cultural diversity and identity, community recreation opportunities and so on. Moreover it is widely acknowledged that forestry has manifold influences on social conditions, such as workers' safety, visitors' perception and behaviour, residents' safety in areas prone to flooding or slope instability and so on (HARSHAW et al. 2007: 18). Forests also have a global value for biodiversity and carbon storage. However, these benefits often do not correspond to those perceived by, or attributed to, local people, and other stakeholders.

In general, society is now making more explicit demands for longer temporal scales and larger spatial scales to be addressed in forest management. Thus the range of goods and services for which sustainability is sought has been greatly increased and forests are seen as integral parts of dynamic multi-functional landscapes (SAYER/MAGINNIS 2005b: 2). Trees, both inside and outside forests, provide a range of ecosystem services of all kinds while many threats to them originate from outside the forest sector. A sound forest policy therefore requires cross-sectoral harmonisation at the national, regional and global levels (PATOSAARI 2004).

(2) As in other areas of natural resource management, the *internationalisation and globalisation of forestry issues* leads to quite diverse and sometimes contradictory effects. In contrast to former periods of forestry, there is definitely a strong global concern over the fate of forests today, in particular tropical forests. However, the international variables that affect forest ecosystem management provide grounds for conflict. On the one hand, the number of international meetings at which forest conservation is discussed is proliferating and forest issues are the subject of inter-governmental processes. Transnational payments for environmental services may become increasingly influential. National governments have to justify changes in domestic economic, social and environmental policies in the light of changes in the global norms of human rights and social justice – norms often at stake in tropical forests where many indigenous people remain highly dependent on natural resources. Institutions such as the World Bank and the International Monetary Fund (IMF) have repeatedly intervened in national forestry policy by including specific policy elements in their conditionality packages associated to credits. These trends notwithstanding, there is still no binding international agreement or Forest Convention on the horizon. In simple terms, negotiations are deadlocked by North-South interest struggles that are often camouflaged in different discourses. While

industrial nations still argue for "global responsibility" or even a "common heritage of mankind", many developing countries use the language of "national sovereignty" and focus strongly on financial compensation and comprehensive coverage, including temperate and boreal forests (DINGWERTH 2007).

From a political science perspective, however, the lack of a binding Forest Convention does not imply that there is no political or legal regulation of forests (FUCHS 2006). On

the contrary, following Krasner's regime definition that a regime is a set of "implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area" (KRASNER 1983: 2), one can maintain that a global forest regime does already exist (cf. also HASENCLEVER et al. 1997; ZANGL 2006). In addition to the various layers of relevant hard and soft institutions, scholars have also identified a substantial normative consensus on core elements of a global forest regime. Among the common normative elements in international forest agreements is an ecosystem approach stressing *in situ* conservation, an emphasis on local knowledge and indigenous practices, and an emphasis on the principle of participation (see FUCHS 2006).

At the same time, economic globalisation has led to a few major players having an increasing role. A limited number of multinational corporations now dominate the pulp and paper sectors and thus exert direct or indirect control over vast areas of forest plantations. These globalising trends are all the more relevant as international norms tend to prioritise free trade and economic growth over environmental and social sustainability issues while local influence remains very limited (SCHERR et al. 2001; SAYER/MAGINNIS 2005B; FUCHS 2006). Hence, the globalised world of forest ecosystems can be largely understood in terms of influence and interaction between regulatory frameworks shaped by powerful actors, their economic decisions, and the popularity of certain images and ideas associated with tropical forests (FUCHS 2006).

(3) While the locus of decision-making on some forest issues is moving away from the national to the inter- and supranational levels, many governments are *decentralising control* over forests and doing away with their forest assets. In many situations, local management has proven more successful in achieving biodiversity benefits, and so the responsibility for forests is being placed in the hands of regional, municipal and local governments and communities. However, experience from different sectors and regions shows that insufficient budget allocations to local authorities or excessive power of local elites can lead to a negative net outcome for the poor. The success of decentralisation and devolution depends on a number of conditions, which include their planned and negotiated character (ANGELSEN/WUNDER 2003: 45; SAYER/MAGINNIS 2005c: 185).

(4) Severe restrictions for ecosystem conservation are often the result of a lack of capacities and *adequate institutions*. A big challenge at national and sub-national levels is to

create mechanisms for effectively verifying the legality of wood production and denying market access to illegally harvested wood and derived products. However, in developing countries and in some countries with economies in transition, institutions are weak and have difficulties taking over the new tasks of conserving and regulating forests. Even governments aiming to foster sustainable forestry practices in their countries face severe limits in resources vis-à-vis highly mobile logging firms, with intricate layers and webs of firms allowing the concealment of illegal logging and smuggling. In other countries, efforts at the international level are undermined by corruption, political clientelism, and an acceptance of the failure to comply (FUCHS 2006). According to PATOSAARI (2004), forests are only well managed when formal institutions are effective and civil society is mobilised to defend the interests of diverse stakeholders.

(5) Running through all these topics are different aspects of *poverty reduction and alleviation* as they are addressed in the Millennium Development Goals and in many earlier texts and international agreements. Poverty by and large results from the uneven distribution of wealth, from the lack of access to resources, in particular land (PATOSAARI 2004), and from the lack of alternatives to a livelihood based on marginal agriculture. Thus, the equitable sharing of the benefits from economic growth in general, and the benefits from the management of forests in this case, represent "both a functional as well an ethical link" (POSCHEN 2000: 5) between issues of conservation and sustainable use on the one hand, and socio-economic issues on the other.

(6) Across regions and issue areas, *certification and labelling initiatives* have gained growing attention, driven in part by the weaknesses and failures of traditional forms of inter-governmental regulation. From a functionalist perspective, they are seen as promising market-based steering initiatives which harness globalisation's own mechanisms to deal with problems such as environmental degradation and social injustice (cf. TAYLOR 2005a). In contrast to the political debate in many countries that has revolved around economic efficiency *versus* social values in regulatory affairs, multi-stakeholder-initiatives are being hailed as innovative *win-win responses* to apparently intractable economic and environmental problems. A variety of values are included: social, environmental and commercial ones. Justifications are often couched in the discourse of science, objectivity, independent certification, transparency, and systems management (PONTE 2008: 160). Scholars of political science discuss these approaches as examples of "new spheres of authority beyond the nation state" (PATTBERG 2005a) or initiatives that address the "mis-match of regulatory scope and actual economic structures" (MURRAY 1998: 60).

There are several civil society-led schemes that focus on the area of forest certification, among them the Forest Stewardship Council (FSC) which has been dubbed the prime "laboratory" thanks to its multiple sites of decision-making. The FSC was founded in 1993

by the World Wide Fund for Nature (WWF), other environmental groups, indigenous peoples' groups, forest worker organisations, community forestry organisations, and various companies, including IKEA, Home Depot and B&Q. Apart from hopes of enhancing control over the industrial exploitation of forests, participants noted the need to adequately represent the interests of the South and ensure a strong role for indigenous people. Advocates of social forestry expected that FSC would provide market access and other benefits to small-scale, low-impact, community-run 'eco-timber' projects (KRUEDENER 2000: 12; see DINGWERTH 2007: 147). Sustainable forest practices were supposed to be *rewarded*. Hence the original target regions for certification were the tropics and subtropics (BURGER et al. 2005: 3). An eco-labelling approach was supposed to be developed and pursued in an own transnational forum by private actors, independently of the international framework (KLOOSTER 2005: 406; PATTBERG 2005b: 360).

NGO engagement in favor of certification also reflected the evaluation of timber boycott campaigns which had assumedly accelerated the conversion of forests into agricultural land in some places (KLOOSTER 2005: 403). At the same time, international corporations and companies had become much more sensitive to public criticism and NGO activism, fearing consumer boycotts or broader reputational risks which would be difficult to manage or overcome (ibid.; DILLER 1999; GARRELTS/FLITNER 2010).

1.2 The Ecosystem Approach of the CBD as a new context for socio-economic monitoring

The CBD's Ecosystem Approach (EA) with its twelve principles has to be seen as a complex and crucial part of the multi-sited governance system which tries to address the above-mentioned changes. These changes, of course, are occurring far beyond the realm of forestry. And despite a number of obvious similarities, the EA differs substantially from earlier versions of ecosystem management as they have existed in forestry over several years. First and foremost, there is a much stronger focus on different forms of participation as a precondition and expression of "societal choice" throughout the EA's principles and implementation guidelines (IGs). Moreover, the EA does not concentrate on management in the traditional sense. There are also a number of outspoken statements on the broader frame of governance. To structure the different components, FLITNER et al. (2006: 7f) have grouped the EA principles into four sections:

1. The *central tenets* of the approach*,* reflecting the major shift in nature protection as sketched out above;

2. The *design directive,* defining the criteria for planning procedures that concern the appropriate consideration of the characteristics of the management object;

3. The *governance directive,* giving normative guidance on how the achievement of aims and their management are to be integrated into society at large;

4. The *management directive,* describing how the objectives of management are to be conceived and adapted to the demands of natural – and social – changes.

Taken as a management philosophy, the EA thus links biological, ecological and broader environmental questions to the sphere of social actors with differing interests and worldviews. Implicitly, conflicting forms of land and ecosystem use are taken into account. In the context of the EA, any management intervention can be seen as an institutional arrangement, located in a wider, dynamic economic, social, political, cultural and of course ecological environment. The setting includes structures and processes at the regional, national and global levels, and the key notion of adaptive management takes ongoing external influences such as species invasion or climate change into account.

The EA has been accorded a crucial role in implementing the CBD. Yet many political actors and scholars question whether societies are really making progress on the complex environmental and social problems that are associated with ecosystem management in general, and with the implementation of the EA itself. In principle, there is little doubt that some instruments of measurement and observation will be needed to judge the success (or failure) of the EA in implementing the CBD.

Right from the outset, the signatories of the CBD were concerned with issues of monitoring and indicator development. In accordance with Art. 7 of the Convention, the focus was first put on ecological, natural-sciences and technology-oriented indicators (Dec. II/8, III/10, IV1A, IV/15, V/7, VI/7 Section B, later also VII/8, VII/30, VIII/15). The necessity to identify the links of social and cultural factors and drivers of ecosystem change, and to enable their systematic evaluation was referred to already at an early stage, as well (Dec. II/8, para 2, III/10, para 6). COP V urged to further develop the available and potential indicators on all levels "under consideration of the Ecosystem Approach" (Dec. V/7, para 1b).

The different, partly overlapping processes with regard to the developing of monitoring and indicators under the CBD can be briefly summarised in three points:

First, the efforts referring to *global headline indicators*, which are supposed to assess the progress with regard to the *2010 Biodiversity Target.* These headline indicators include health and well-being of communities who depend directly on local ecosystem goods and services, the proportion of products derived from sustainable sources; the ecological footprint and related concepts; the status and trends of linguistic diversity and numbers of speakers of indigenous languages, other indicators of the status of indigenous and traditional knowledge, indicator of access and benefit sharing, official development assistance provided in support of the Convention, and indicator of technology transfer (Dec VIII/15 [Annex]). At the occasion of COP VII a range of *trial indicators* has been defined. Further procedures with regard to the development of indicators have been established,

with participation of SBSTTA, ad-hoc working groups on Access and Benefit Sharing (ABS) and Article 8(j) as well as of an own expert group (AHTEG) (UNEP/CBD/SBSTTA/10/INF7, cf. also Dec. VIII/4 E, VIII/5-G, Dec. VIII/15; UNEP CBD/COP/9/7).

Second, the development of indicators for assessing the progress with regard to goals and sub-targets of the *Strategic Plan* for the purpose of the implementation of the CBD (Dec. VI/26, VII/30, VIII/15). Special attention has been directed here to outcome-oriented indicators that are narrowly linked to the UN Millennium Development Goals (MDGs). They resemble goals from other UN contexts (CSD, BC-Index, Human Development Issues, basic needs, etc.), including: eradicating extreme poverty and hunger, achieving universal primary education; promoting gender equality and empowering women etc. In this context, Goal 8.2 of the Strategic Plan is explicitly mentioned ("biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained".) A range of targets and indicators were composed by the working group for the assessment of the implementation of the Convention (Annex 1 for WGRI i/8, para 1[a][ii]; also COP/8/4/Rev.1, 46f.). With the strategic plan to be reviewed (Dec. IX/9) these indicators are to be evaluated as well (WGRI-3, building on SBSTTA-14's possible adjustment of targets and indicators contained in the annex to decision VIII/15).

Third, the development of indicators with regard to different *thematic work programmes* of the Convention, such as for agricultural biodiversity, inland waters, mountains, islands biodiversity etc. (s. also UNEP/CBD/SBSTTA/11/10, ~/INF/3). In this context, further work has been claimed to be necessary (SBSTTA XI, para 3, 4, 7) and, in the context of forestry, the formation of a specific Liaison Group to other fora was urged for.

All three lines with regard to the development of indicators within the CDB can be understood as components of a comprehensive orientation (*guidance*) concerning the development of national (as well as sub-regional and sub-national) indicators and indicator systems. These components are, in the end, of high relevance for the implementation and the reporting (UNEP/CBD/COP/8/INF/17, Annex II). For this purpose, different recommendations have been elaborated (above all UNEP/ CBD/SBSTTA 9/10); Decision VII/30 places these efforts in the context of the strategic plan as well thematic programmes of work (Dec VII/30, para 11-22).

In addition, the *principles and implementation guidelines (IG)* of the EA contain a number of both, explicit and implicit references to socio-economic monitoring and indicators. Several procedural aspects are mentioned there, as well. Finally reference is made to political initiatives at different levels (see Appendix to this document).

Yet, despite substantial guidance on different political levels, and despite numerous attempts to specify its requirements, the EA still leaves considerable room for

interpretation. The development of indicators raises significant problems, above all in respect to methodological issues (cf. UNEP/CBD/COP/8/INF/33, see also UNEP/CBD/-AHTEG-2010-Ind/1/3). Clear measures of 'success' are therefore largely missing or keenly contested. This has been highlighted in the context of achieving the 2010 biodiversity target, for the status of indigenous and traditional knowledge, for issues of access and benefit sharing with regard to commercial and other utilisation of genetic resources, for the transfer of technology to developing countries, and for issues of "health and well-being of communities dependent on biodiversity" (UNEP 2007a: 212f. and 2007b, see also UNEP 2005).

Developing socio-economic indicators and related monitoring systems for the EA is therefore a huge and *largely unresolved task*, and it can be added, a task that is also not likely to be resolved in the near future in a comprehensive manner. However, although a broad political consensus in these matters seems difficult and the obstacles at different levels are rather obvious, the need for integrated approaches and the related need for widely acceptable foundations for decision-making will certainly grow in the near future, further enhanced by the repercussions of global environmental change. Any endeavour to lay such foundations is confronted with the sheer size of the undertaking and the manifold theoretical and methodological difficulties involved. But there is a scattered body of work on these issues available, and some larger attempts to draw them together in a synthetic manner (e.g. EMPACHER/WEHLING 1999, 2001).

One of our starting points is the assumption that any approach to socio-economic monitoring under the EA should *include the broader debates on welfare and quality of life*. These debates can enrich the question of how to concretise the EA and, just as important, help us in deciding what to measure or construct indicators for. Second, whereas the general picture with regard to many ecosystems is indeed characterised by an absence of socio-economic monitoring and related indicators, we can draw a lot from indicator-building processes in certain sectors, and in particular from attempts aiming at sustainable forest management. Extended, fruitful debates have taken place both at the international level (above all, Montreal, Helsinki, and the International Tropical Timber Organisation)(RAMETSTEINER 2007) and at the national/regional level (for example, the framework for British Columbia, Canada) (HICKEY/INNES 2005, 2008; GOUGH et al. 2008).

Valuable insights, we believe, can be gained above all from an analysis of the experiences made in and around the development of FSC's certification scheme. The FSC and the EA do have lot in common. According to SAYER and MAGINNIS (2005b: 11), certification is "another reflection of the same underlying trends that led to the emergences of ecosystem approaches and current concepts of sustainable forest management". In the CBD context, the potential of certification programmes to further the objectives of the EA was discussed in the groundbreaking Decision VII/11 which highlighted the need to

further explore this question with a focus on the lessons learned from these approaches (COP 2004, Ann. II: A, 20). Such an attempt seems particularly promising because of the big difference in elaboration and implementation of the two approaches when it comes to actual management today. While hardly any tangible measures could be directly attributed to the EA's implementation so far, the FSC, as the case under consideration here, can be seen as a highly successful initiative in terms of material outcome (KERN 2004), with more than 100 million hectares of forests in 81 countries certified according to its standard as of 2010 (FSC 2010a).

Lessons can be learned in several respect: certification programmes address some key concerns in the context of the EA, such as "societal choice", "decentralisation", "appropriate spatial scales", "economic and social incentives" (IG 4.4) and "equitable sharing of costs" (IG 4.8). From an analytical perspective, conducting research on the FSC is of special interest because processes of standard setting and indicator building, broadly including the social realm, are at the core of this scheme. One can even argue that the FSC represents a partial *ersatz* solution for the failure in establishing an international convention on forests in the context of the Rio conference (cf. PATTBERG 2005a,b; SAYER/MAGINNIS 2005b). So indeed, FSC's experiences – both in terms of strengths and weaknesses – in setting and implementing particular standards can be seen as a promising starting point to gain insight for the further concretization and implementation of the EA in the realm of forestry, and beyond (cf. GARRELTS/FLITNER 2010).

1.3 Structure of the report

The following, second chapter takes the history of social indicator development as its starting point. For several decades, researchers from a wide range of disciplines have monitored the trends and conditions that characterise and support human societies. We will summarise and discuss the major lines of this debate and come up with a range of *characteristics that are specific* for social indicators. The following section deals with different assumptions about the relationship between assessment procedures and policies. From it, we draw three basic lines of thought regarding the process of indicator building.

The third chapter focuses on a number of fundamental socio-economic concerns and related *social scientific concepts* the EA explicitly and implicitly refers to. Accordingly we find clear references to concepts such as basic needs, collective concerns and social resources (including social inclusion), and different governance concepts such as decentralisation, policy integration and coherence. Important aspects of our discussion, such as the debates around social inclusion and decentralisation, will be illustrated by research findings from the FSC context.

The fourth chapter refers to approaches that aim at *measuring* these issues. We introduce widely accepted indices at the international level, such as the Human Development

Index (HDI). At present, the Millennium Development Goals (and related indicators) represent a very influential approach promising substantial synergies. Therefore, we discuss this initiative in more detail, with its weaknesses and strengths. Apart from these approaches which are mainly relevant on the intergovernmental level, we will also refer to some of the NGO-driven approaches. Finally, we introduce decentral approaches which are applicable on the regional or even on the project level.

The fifth and final chapter draws the *conclusions* from the previous parts and sketches a coherent approach for socio-economic monitoring in the EA context. We will not add another long list of potential indicators as this has been done often enough. Instead we propose a set of generic issues any approach would have to deal with and, as a second tier, a few considerations and potential pathways regarding procedural rules that could be established to facilitate the elaboration of nationally and regionally adapted indicators in a participatory manner.

2 Assessing socio-economic dimensions: basic considerations

2.1 Features and requirements of indicators

Within assessment procedures, indicators are a tool of central importance. They can be understood as communication tools that help to establish whether a state called for by some given standard or criterion is actually being realised. From a functionalist perspective, indicators guide political decision-making towards the implementation of a project or programme. They should reduce complexity, be easily understandable and communicate a broader picture than what mere numbers suggest. The purpose of selecting one or more indicators to describe a larger subject is reducing information overload on data users (POSCHEN 2000: 6; BARTHELMUS 2007). For example, the average life expectancy of an infant is usually taken to indicate the public health of a population. Likewise, the transport intensity may serve as an indicator for the general economic direction in which a given society is developing (SPANGENBERG/BONNIOT 1998: 13).

In a general perspective, several categories of indicators can be differentiated (for details, see GEHRLEIN 2004). Differences include their

- reference to valuation (analytical, descriptive, or normative);
- aggregation level (simple, composite, or system-oriented); and their
- analytical scope (process-, input or outcome oriented; quantitative or qualitative).

In general, to apply indicators in a meaningful way, it must be clear which value of the indicator is more or less desirable than another. This requires a gradient from good to bad results, with different possible scales (SPANGENBERG et al. 2002: 64f.): nominal scales (a certain characteristic is given or not), ordinal scales (based on a hierarchy of qualitatively defined states), and cardinal scales (giving quantitative information).

More specifically, according to SPANGENBERG (2002: 105) and HARSHAW et al. (2007: 20), indicators should have the following characteristics. They should be

- measurable, that is, clearly defined and specific, at an appropriate scale, and with available data;
- indicative, that is, credibly representative of the phenomenon they are intended to characterise;
- sensitive, that is, they have to react early and sensibly to changes in what they are intended to monitor;:
- cost-effective, that is, justify their cost by the value of the information they provide;

- comprehensive, that is, include both procedural issues (for example, related to governance issues such as stakeholder and community involvement) and outcomes
- (what social conditions are expected or desired); and
- connected to ecosystem characteristics, that is, be responsive to management actions and practices.

On many of these issues, there is broad consensus in the scientific literature. However, there are differing views on issues such as generalisability. SPANGENBERG (2002: 105), for example, requires indicators to be independent of a specific situation, culture or society. In contrast, HARSHAW et al. (2007: 20) highlight that indicators have to be credible, that is they have to be seen as valid by the involved actors and thus must be somehow grounded in their specific cultural worldviews. We will come back to the issue whether this represents a trade-off or whether these perspectives complement each other later in this chapter.

As indicators are used at different levels of decision-making and for different purposes of evaluation, there must also be different levels of classification and detail (SPANGENBERG 2002). Thus a balance must be sought between generic considerations to address *common* concerns *across* local, regional, provincial and national scales, and *site-specific* considerations. In the course of "top-down/bottom-up approaches" (CHAMARET/O'CONNOR/RÉCOCHÉ 2007) we follow scholars who assume that *categories* are needed in order to be able to compare situations or projects (e.g. O'CONNOR/SPANGENBERG 2008). Categories are a synonym for constitutive elements or dimensions of a normative framework, such as 'knowledge', a 'healthy life', or 'social inclusion'. The next level of hierarchy could consist of rules or criteria which concretise the categories. Only then, indicators come in and provide detailed information (cf. HARTMUTH 2004; HARTMUTH et al. 2006).

With regard to such a conceptual hierarchy, much can be learnt from the FSC's normative framework which consists of ten principles and 56 criteria. A principle (coming close to the 'categories' above) is defined as an "essential rule or element ... of forest stewardship" (FSC 1996: 12). Principles which are of explicit interest in the given socio-economic context are Pr. 2 (Tenure and Use Rights), Pr. 3 (Indigenous Peoples Rights), Pr. 4 (Community Relations and Workers Rights), and Pr. 5 (Benefits from the Forest). In addition, Pr. 1 requires compliance with laws, among them the ILO Conventions. In comparison to these principles, *criteria* are more specific, constituting a "means of judging whether or not a principle has been fulfilled" (ibid.: 11). As the FSC criteria still leave some room for interpretation and need to be adapted to local conditions, they are given further meaning within the process of the development of *standards*. These standards are to be developed in each country or region involved (ibid.: 3). Standards then are highly specific and contain measurable elements. They include *indicators* (locally

applicable and measurable parameters in relation to a criterion) and according norms (the threshold or reference value given to an indicator). The overall aim remains to ensure consistency within the framework. On the one hand, standards are derived from the 'Principles and Criteria'. On the other hand, any standards must be approved by the formal governing bodies of the FSC.

This mechanism can be illustrated with principle 3 and its four criteria. While this principle may be less important in Germany, it proves to be highly relevant, for example, in the U.S.A.. (see figure 1). It requires that American Indian groups, for example, and their legal or customary rights, have to be taken into account.

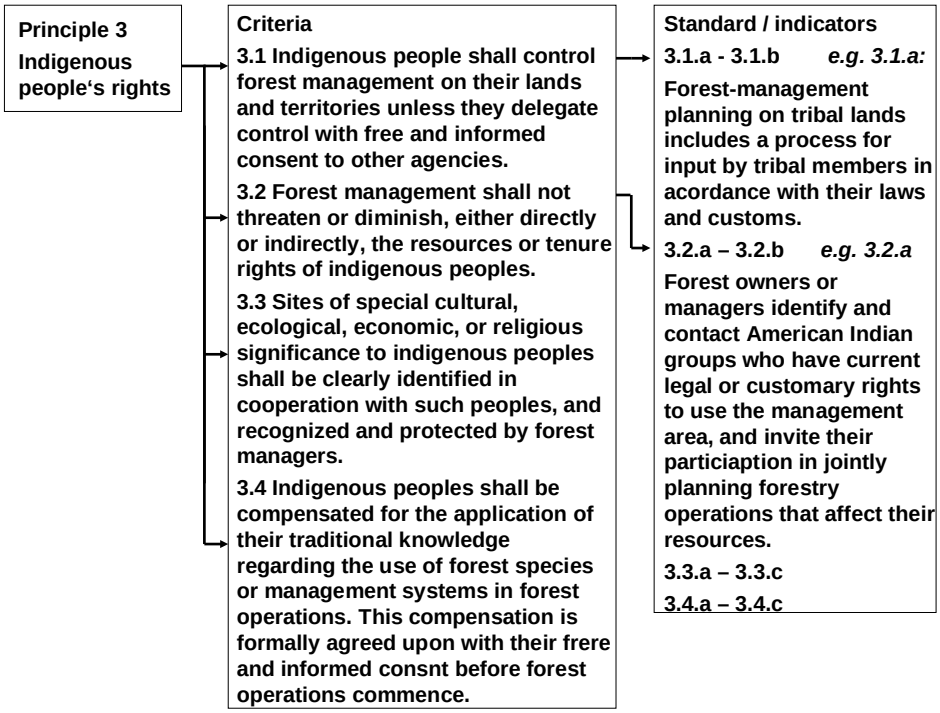

Figure 1: Regional Forest Stewardship Standard for the Lake States-Central Hardwoods Region (USA) (FSC – Lake States Working Group of the FSC - US, 2005: 11ff)

2.2 Social indicators: why and how they are different

Today's prevailing assumptions about the protection of ecosystems suggest that this objective is intimately linked to what were long considered 'internal' problems of the social domain, such as social justice, gender equality or political participation. The consequences of this new view are far-reaching: nature conservation policies have to address a large part of the processes by which societies manage the material and symbolic conditions of their reproduction, including social, economic, political and cultural principles

that guide the distribution of environmental resources (BECKER et al. 1999, quoted in LITTIG/GRIEßLER 2001: 70). This certainly implies, in turn, that indicators are also needed that help us to observe, characterise and communicate changes in the social realm.

Concern with the development of more sophisticated instruments for social reporting already emerged in the late 1960s, when measures of material wealth alone no longer seemed satisfactory to describe societal development. Social scientists, mostly from sociology (see FERRISS 2006), philosophy (see MICHALOS 2006), economics (see HICKS/STREETEN 1979) and social psychology (see PAVOT 2006), began to work on a broader set of social indicators that would better be able to represent the welfare of a country over time than the classical GNP per capita measure. As a result, social indicators today focus strongly on the *non-monetary dimensions of social well-being*. They can be related to the quality of the health system, educational institutions, or welfare arrangements, or connected to discourses of social exclusion and distributive justice (FRØNES 2007: 5; see below in more detail).

In the broadest sense, these social or socio-economic indicators are regarded as instruments for the regular observation and analysis of social change (SHELDON/MOORE 1968). Numerous definitions of social indicators exist (see NOLL 2004b; SHARPE/SMITH 2005; SIRGY et al. 2006). FRØNES (2007: 6), for example, regards social indicators as a tool "to meet the need for planning and social reporting in the presence of complexity and change".

Before going into the key concepts that we deem essential for the development of such indicators, however, it should be highlighted that there are a number of important differences between the realm of the social and the realm of the natural sciences, and that a number of specific characteristics and problems in developing indicators directly result therefrom. These differences have hardly been taken into account in the international environmental debate so far. We want to underline and briefly discuss therefore the following seven aspects:

(1) Constructedness and reflexivity

It may seem a truism that the social realm is socially constructed, yet this statement can lead and has led to a lot of misunderstandings, particularly (but not only) on the side of natural scientists. Suffice it to say, in this context, that all social phenomena, such as structures, institutions or processes originate in socially embedded human action at some point, and this implies that they are not only open, but also inextricably bound to interpretation and negotiation. A key consequence is the reflexivity of social phenomena. In simple words, humans constantly interpret and re-interpret their own and other humans' actions, and these interpretations influence their later actions, behaviour and worldviews. This obviously creates an own class of difficulties when it comes to the

measurement of social phenomena. All the following aspects are somehow specifications that emanate from this basic 'nature' of the social.

(2) Normativity

Social action always has normative foundations and implications. This is certainly true for social or socio-economic indicators that are related to welfare or social well-being. The choice of which indicators to employ has immediate consequences for what social conditions are analysed, and what policy action could be recommended. Behind these definitional choices are important and often long-running theoretical and political debates about what generates well-being, innovation, what is wealth, poverty and so on. General consensus on these issues is highly unlikely, and thus social indicator building will always be a negotiation process that involves much controversy (see COBB 2000: 2; EMPACHER/WEHLING 2001: 57; BEAUVAIS/JENSON 2002: 4; NOLL 2005).

Furthermore, social phenomena have a value of their own, values that are legitimate in themselves, and not because of their positive effect on sustainability or with regard to their societal functions (EMPACHER/WEHLING 1999: 5 ff.; LITTIG/GRIEßLER 2001: 70).

(3) Objectivity and subjectivity

Social phenomena can be viewed as part of objective constellations and resources which are defined in terms of, for instance, money, property, shelter, knowledge, and health. Such issues are covered by the 'basic needs' concept which will be discussed below. However, take employment statistics for forest dependent communities: they may say little about the quality of work in terms of long-term stability, safety, advancement opportunities and training (HARSHAW et al. 2007: 19). This leads us to the issue of subjectivity of social concerns, and the experience of individuals in terms of life satisfaction, pleasure, happiness, and achievement that also have to be addressed (VEENHOVEN 1996; 2002; see NOLL 2005: 194). Historically, the American Quality of Life Approach (CAMPBELL 1972; CAMPBELL et al. 1975; ANDREWS/WITHEY 1976) is the reference point of contemporary subjective indicators. Here, the individual is considered to be the expert for measuring the quality of life – "The quality of life must be in the eye of the beholder" (CAMPBELL 1972: 442). The subjective perception of risks and opportunities inherent to social policies is a relevant factor with regard to the public acceptance of institutional change, i.e. new policies such as those suggested for sustainable development. This poses a serious challenge to all new policies, as people tend to be risk-averse, often preferring the current bad to a potential good as long as they have not experienced it (SPANGENBERG/OMANN 2006: 328).

In recent years, the necessity of subjective measures has also been discussed in natural resource management. According to PRESCOTT-ALLEN (2001), the economic valuation of life may distort and trivialise those things that people value, such as clean air, traditional

practices, or freedom. ANGELSEN and WUNDER (2003: 3), elaborating on the forest-poverty link, highlight that the welfare status alone of people living in and near forests tends to say little about their interaction with forest assets. However, there are also clear limitations to subjective measures. First, different filters and strategic behaviours often make people conceal their true situations to outsiders. Second, perceptions may differ dramatically, even between neighbouring villages (ANGELSEN/WUNDER 2003: 12). Valuation itself is influenced by historical, cultural and political circumstances. And third, subjective indicators have still not been tested sufficiently in developing countries (ibid.: 9).

With the acknowledged strengths and weaknesses of both, objective and subjective measures, there is quite a broad consensus today that both dimensions should be taken into account (NOLL/ZAPF 1994; EMPACHER/WEHLING 2001; SPANGENBERG/OMANN 2006).

(4) Ambivalence

A direct consequence of the characteristics mentioned above is that issues and aspects in the social realm are not seldomly characterised by ambivalence. This means that indicators for related phenomena are difficult to 'calibrate' and broadly infused with cultural and socio-political judgments. A good illustration for this can be found in the attempts to build indicators for 'social cohesion' (see below for more details about this concept). On the one hand, positive associations between social cohesion and quality of life have been identified, in terms of individual well-being (BERGER-SCHMITT/NOLL 2000) and even macroeconomic performance (PUTNAM 1993). On the other hand, several researchers have argued that strong ties within a community can also be accompanied by the tendency to discriminate and exclude those who do *not* belong to the community (EMPACHER/WEHLING 2001: 41). Strong social cohesion within a community which is itself exclusive towards non-members leads to the question whether social cohesion itself can be a threat to social cohesion on a larger scale (JENSON 1998: 4). In addition, if social cohesion is defined as an "absence of general conflict within society and of any serious challenge to the existing order and system" (see BEAUVAIS/JENSON 2002: 3), this may potentially lead to a denial of the legitimacy and necessity of conflict in pluralist societies.

(5) Necessary openness to change

Both ecological and social systems have a history of ongoing change. For the latter, this is valid for individuals as well as for social groups, both actively reacting on changes in their environment. Such normal change asks for dynamic indicators and a critical eye on any absolute thresholds or fixed standards. Just as importantly, it stands in a certain tension to claims of sustaining given social structures or their function for future generations ('social resilience'). Hence, there is an inherent danger of structural or functional conservatism in any approach aiming to normalise certain societal states or developmental stages. It is now widely accepted that ecosystemic changes cause manifold changes in

human well-being (MA 2005a: V). In that context, sustainability can no longer be seen as a permanent continuation of the present situation, but "embraces the concept of the ability to adapt to changing needs" (SAYER/MAGINNIS 2005b: 5)..

(6) Spatiality and scale

Contrary to widespread interpretations, the "appropriate scales" as conceived under the EA clearly recognise that scale in this context is not primarily about natural ecosystem boundaries. Environmental problems and their social correlates do not exist as such, but are defined by human agents, often by scientists (JAX 2005, quoted in GÖRG/RAUSCHMEYER 2009). These definitions, including the choice of appropriate indicators, are mediated through culture, economy and politics and they are constructed and re-constituted through conflict. Interestingly, the variation across sites among proposed social criteria and indicators often proves to be greater than the variation among ecological criteria, reflecting both social diversity and methodological difficulty in making assessments of human well-being (CIFOR 1999: 4). Thus, in social terms, the delimitation of the objects to look at and to act upon remains far from trivial. In general, communities, rules, and institutions are often linked, more or less loosely, to specific geographic entities. Still, decision-making is rarely confined to one such entity. And redefining problems may not only shift the configuration of relevant scales, but outright constitute the political dimension of an environmental issue (RANGAN/KULL 2008). Consequently, it can be extremely difficult in the social dimension to agree on the relevant geographic extent of the phenomena to be monitored (MA 2003: 110ff.; GÖRG 2007 a,b,c; FLITNER/GÖRG 2008) and on the relevant political levels (see also below).

(7) Involvement and consent

The collection of socio-economic data by and large depends on an involvement of social actors; on some kind of active participation. This creates new social relations, namely between the subjects of research and the researchers as subjects themselves. Such relationships become particularly important in the light of the growing role of subjective indicators over the last decades (see 3, above). On a more practical level, social monitoring efforts and the collection of related data often prove to be a complex matter. This is the case, for example, in Aboriginal communities, where census information "is blurred at best and both the intricacies and cultural context of traditional ecological knowledge can be lost in standardised data mining techniques focused on quantitative indicators" (GOUGH et al. 2008: 428). In international legal instruments such as the CBD, there is clear recognition of the need to obtain the prior informed consent (PIC) of the communities concerned in matters related to them.

2.3 Conceptualising impact assessments

Since the late 1960s, when many states enacted legislation for an Environmental Impact Assessment (EIA) of projects, there has been a growing level of interest in the procedures for different kinds of assessments (HERTIN et al. 2007; JACOB et al. 2007). Social Impact Assessments (SIAs) represent an important part of these procedures (EGRÉ/SENÉCAL 2003; SCOTT/OELOFSE 1998, 2005; VANCLAY 1999, 2002, 2006). Recent years have seen a significant evolution in practices at the supranational, national and sub-national levels, and the focus has been widened from specific projects to the plans, programmes and policies from which they are derived. In addition, there have been efforts to "upstream" assessment into earlier stages of decision-making and to link it more strongly with central-level policy-making (OWENS et al. 2004).

Broadly speaking, impact assessments (notwithstanding their differences, see RADAELLI 2005) aim to identify the major impacts, also the unintended ones, a project or a policy has or may have. They are carried out either before the final decision is taken ("predicting impacts") or after the policy has been set into motion ("evaluating impacts") (BARTLETT/KURIAN 1999). The basic objectives of impact assessment are to broaden and strengthen the role of foresight and integration in decision-making, thus "rationalising the policy mess" (HERTIN et al. 2007), and to reinforce administrative accountability through disclosure of the considerations that have played a part in public decisions.

Of particular interest in the theoretical discussion on impact assessments are their 'nature' and their logic of functioning, in what concerns, for example, the role of science. In that context, the (contested) question is what role impact assessments play in decision-making processes, in so far as, for example, they enhance learning opportunities.

In the following sub-sections, we roughly trace the lines of differentiation in a largely polarised debate (see CASHMORE 2004; OWENS et al. 2004, HERTIN et al. 2007). On the one hand, the debate is marked by traditional conceptions of impact assessments, pervasive in the literature of the 1970s and 1980s. These approaches are rooted in a positivist view of public policy-making, and procedures are designed in a way that they correspond with the rationalist model of problem solving. On the other hand, the concept of a neutral, objective device is rejected and inclusive, deliberative and participative models are advocated. Recently, a third approach has emerged that stresses the need to carefully select and combine the different approaches.

2.3.1 The traditional rationalist model

The design and undertaking of an impact assessment is seen in terms of a research problem. Generally, the process should be based on accepted scientific principles and procedures if it is to be perceived as credible. Thus, scientific objectives must be defined, modelling undertaken, and recommendations by external experts sought.

All conceptions of impact assessment (in their ideal types) are at least implicitly based on a number of assumptions about the policy process and the role of knowledge within it (BARTLETT/KURIAN 1999). The traditional view assumes the following.

Impact assessments are understood as applied science, with strict demarcations between facts and values; a separation of powers is deemed to exist between neutral, authoritative experts and the decision-makers whom they advise. In this sense, assessment is understood as an objective practice, valued for its scientific authority (HOUSE 1993: 30).

The policy process is thought to be linear. Corresponding handbooks and guidelines set out a sequence of analytical steps that policy assessments should follow. The process normally starts with the identification of a policy problem or objective, runs through an analysis of options and their impacts and leads to a weighing up of alternatives that points to the best policy choice. Findings of assessments are translated in a straightforward manner into the substance of policy (see HERTIN et al. 2007).

The existence of a central decision-maker who selects a policy option on the basis of expected net benefits. Further, it is expected, that better information necessarily leads to more rational policies, which are designed to address identified problems or objectives. Finally, it is hoped that by undertaking preliminary assessments, impacts can be anticipated with a certain degree of accuracy.

The emphasis placed on scientific methods reflects, according to CASHMORE (2004: 409), the "esteem scientific endeavour is afforded, the zealous faith of many policy makers, technocracy and of scientists of their craft, and the dominance of systems theory at their time".

Although rooted in the literature of the 1970s and 1980s, the principles of this paradigm are evident in more recent literature. Though not always present in such a pure form, the technical-rationalist model can be seen reflected in policy rhetoric and in legislative texts. Thus, this view has been influential and a set of institutions have been built around it (INNES 1998; INNES/BOOHER 2000; OWENS et al. 2004).

Scholars of policy science and the sociology of knowledge have questioned the rationale of such impact assessments (overview: OWENS et al. 2004; HERTIN et al. 2007).

The above-mentioned policy cycle under certain circumstances may be a useful heuristic device. Generally, however, a rationalist, linear conception of the policy process is not seen as representing an empirically robust model. Rather, political decision-making is characterised by discontinuities, dynamic change and a loose coupling of problems and policies (KINGDON 1984; SABATIER/JENKINS-SMITH 1993, 1999).

In addition, the existence of unitary decision-makers or central steering mechanisms cannot be assumed. Rather, as has been highlighted by the broader debate on governance (overview, for example, BRUNNENGRÄBER et al. 2004), policy decisions are the outcome of complex actor and interest constellations in which the boundaries between public and private sectors become blurred (STOKER 1998: 17).

The role of knowledge to determine political processes is often overestimated, large quantities of knowledge produced for the benefit of policy are never used in policy-making (IN'T VELD 2000: 154). The "little effect" of knowledge on decision-making might be explained by the finding that dominant interests can afford to not learn from assessment exercises; to put it differently, "the greater the power, the less the rationality" (FLYVBERG 1998).

Apart from these interpretations of broader political processes, a post-positivist critique rejects the idea of neutral, objective advice and sees greater complexity at the interface between science and policy (MAJONE 1989; FISCHER/FORESTER 1993). Knowledge is not simply given, but chosen, interpreted, and constructed in accordance with and dependent on general beliefs, interests, and social conditions (JASANOFF et al. 1995). Different actors use their knowledge strategically to gain influence. These processes have also been called "boundary work" (GIERYN 1983, 1995). The assertion is that the boundary of what can be considered scientific is neither self-evident nor stable over time. The boundary between scientific and non-scientific is instead contested and continuously shifting.

2.3.2 The deliberation model

Against the background of the shortcomings of rationalist and positivist approaches, many authors have called for new "participatory" or "critical" forms of impact assessment (DRYZEK 1990; DE LEON 1992; SCOTT/OELOFSE 2005). Here, impact assessment is not viewed as a tool employed by a technical elite for a political elite (see CASHMORE 2004: 414). Rather, impact assessment is used in environmental governance to empower stakeholders and to promote an egalitarian society. Impact assessment must be characterised by all things encapsulated in the notion of civic science: inclusive, deliberative and participatory (ibid: 413). SCOTT/OELOFSE (2005: 449) hold that SIAs and EIAs are to be conducted from a broader perspective of sustainable development, and that SIAs are to be combined with the concepts of social and environmental justice. Like all political processes, impact assessment becomes a framework for negotiation and compromise.

The emphasis on empowerment does not exclude elements of more conventional models of impact assessment. The predictive capabilities of natural and social sciences have to be harnessed to identify the likely consequences of socially defined alternatives. However, the diverse social interpretations of resource values, in addition to interactions that can be identified between stakeholders and multi-layered institutions, are focused on

(CASHMORE 2004: 414). With regard to the former, the meaning of natural resources cannot be reduced to something as crude as a direct use value. "Rather, meaning and value are locally and historically embedded and socially constructed" (ibid.).

The underlying assumptions are

- The possibility of theory-neutral observation is rejected; what has been labelled objective scientific fact is viewed as an artificial construct. Rather, natural and social phenomena and their meaning are accomplished by social actors, and are spatially and temporally defined (ibid.).
- Subjectivity is not an intrusion to be minimised but an essential constituent of practical rationality, in which intuition and appreciation of context are seen as intellectual virtues (OWENS et al. 2004: 1948).
- Assessment procedures should not depoliticise social and policy-related controversies but should improve opportunities for deliberation in which open dialogue about difficult choices should take place.
- Inclusive participation is regarded to be constitutive for democracy itself, and cooperation among a range of interdependent groups might ensure successful implementation.
- Institutions can learn from experience that the process of assessment can be at least as important as the content, and might, in some cases, improve aspects of social cohesion.

2.3.3 A third way of conceptualising impact assessments

Deliberation models have not been without critics either.

- It is observed that despite some significant traces of the deliberative model in a number of West European countries, the criticism of the technical-rationalist model has had little impact on conceptions or practices of assessment. One reason for this might be that critics of technical rationality have failed to provide a coherent alternative paradigm (OWENS et al. 2004).
- It cannot be taken for granted that deliberative approaches avoid the problem of "little effect". This is due to the often only vaguely defined "link" between participatory practices and the formal institutions of representative democracy (VAN EETEN 2001). In addition, when conducted, deliberative approaches turn out to be difficult, expensive and time consuming, and often end in "workshop-fatigue" and loss of interest (OWENS et al 2004). At times, assessment processes become largely irrelevant in the face of intense political controversy (HERTIN et al. 2007: 20). Thus, the

assumption that deliberative approaches will lead to clear recommendations for decision-makers is "heroic" (OWENS et al 2004).

On these and other grounds, it seems reasonable to reject the polarisation between the technical-rationalist and the deliberation model. First, it seems difficult to generalise the findings. HERTIN et al. (2007: 20) found cases where learning occurred despite, rather than because of, instrumental conception of the procedure. This case has also been made by OWENS et al., who argue that "even quite technical procedures have, as an *unintended* effect, provided important apertures for deliberation and learning" (2004: 1950, emphasis added). Learning effects can also occur in the long run. Besides, one can find cases where the production and use of assessment knowledge served to signal a political response to a perceived problem in the absence of actual policy measures (HERTIN et al. 2007: 29) (what might represent examples for symbolic knowledge uses).

Finally, both empirically and conceptionally, technical and deliberative processes need not be mutually exclusive. Especially in case of complex and non-consensual issues, deliberation can be regarded not as an alternative to technical analysis but as a requirement for the framing of such analysis (OWENS et al. 2004: 1951).

The crucial determinant of which approach or combination of approaches to adopt and which outcomes can be derived from these processes proves to be, according to BARTLETT and OLDGARD (2003), the wider *political context* in which assessments are *embedded*. With regard to this, recent research on sustainability indicators at the local level has shown that debates on how to choose and build these tools of assessment can enhance relationships of trust and networks built over time – as a result of debates on indicators of sustainable development. Such indicators can act as portals that help to open up avenues of dialogue. This creates opportunities for exchange and debate between stakeholders who will learn about what matters to the others, and why (ASTLEITHNER et al. 2004; RYDIN et al. 2003; RYDIN/HOLMAN 2004; HOLMAN 2007). Thus, the deliberative process can potentially be important for partnership building and for the perceived legitimacy (O'CONNOR/SPANGENBERG 2008: 1405). These findings are confirmed by research on standard and indicator-building within different contexts of Sustainable Forest Management, for example, the FSC and assessments in British Columbia temperate rainforests. According to researchers, in these cases communities felt empowered by their participation in the deliberations, and disenfranchised residents were able to access policymakers and voice their concerns (SAYER/MAGINNIS 2005a; FRASER et al. 2006; GOUGH et al. 2008).

2.4 Summary

The term indicator literally means pointer or 'signifier'. On the basis of this 'signifier', an issue of special interest is pointed at and described. Consequently, the issue is itself

transformed and the large quantity of phenomena and data is reduced to a manageable amount of information. Although this may seem a convenient task at first, the description of social issues proves to be a complex challenge. This refers to the choice, conceptualization and usage of the indicators. We determined different characteristics – such as normativity, ambivalence and contextuality – which lead to certain features and dividing lines. Many of these features span over a large, and sometimes polar range, e.g., from objective to subjective, material to non-material, individual to collective, et cetera. They are not necessarily mutually exclusive. Rather, for instance, combinations assessing both, the objective characteristics of a given situation as well as the subjective perceptions and attitudes, are needed in order to do justice to complex social situations.

These conceptual aspects have certain methodical implications, particularly with regard to the possibility of generalisation. In our report, we assume that due to the diversity of the levels and situations, it is not possible to define generic indicators. For purposes of comparison, as they are implicit to all measurements, it seems appropriate rather to begin with defining categories or dimensions of the large social issues at stake.

In the following section, we will focus on internationally discussed theoretical approaches to socio-economic concerns and related concepts.

3 Key socio-economic concepts and concerns

In this chapter, different theoretical key concepts which underlie the debates on socially sustainable development and related monitoring approaches, especially on the international level, are presented. The concept that is most often referred to when socio-economic monitoring has to be given a concrete form is that of basic needs. Another debate that has drawn attention recently is that of collective concerns and social resources. Finally, we will discuss the governance-related concepts of decentralisation, policy integration and coherence. In that context, we will also consider the question of incentives.

3.1 The concept of basic needs

The basic needs concept is of special interest because it represents an (early) attempt to define minimum conditions of a socially sustainable development not purely along economic criteria such as average growth rate or average income (e.g. STREETEN/BURKI 1978; HICKS/STREETEN 1979; BRINKERHOFF et al. 1997; EMPACHER/WEHLING 1999, 2001; ANGELSEN/WUNDER 2003; NUSCHELER 2005; RAUCH 2007). Many social policies on the international level such as the Millennium Development Goals (MDGs, see below) explicitly draw on the basic needs concept.

3.1.1 Origins and goals of the concept

At the core of the debate on basic needs have been critics with regard to predominant growth oriented modernisation and development strategies which the dominant descriptions of neoclassical economics had laid down. The social costs of such growth, where public poverty was the other side of the coin of private affluence, raised awareness of the workings of social policy among the general public. Findings especially in third world countries revealed that redistribution from even high growth rates yielded “very meagre results” (HICKS/STREETEN 1979: 569); even worse, in many cases economic growth lead to a deterioration of the situation. Thus, a claim came up for development strategies that focussed on an improvement of the social and economic circumstances of the poor. The concern shifted to eradication of absolute poverty, by concentrating on the satisfaction of basic needs, instead of growth strategies which aimed at building up an export oriented industry and/or agriculture. The basic needs concept’s underlying assumption doubted the assumed trickle-down-effects of a growth oriented development policy; these effects did not emerge or not in the necessary amount. Societal development, rather than being a *result* of economic stability, increasingly was seen as a *precondition* (cf. EMPACHER/WEHLING 2001: 23). Opposition against the belief that economic growth automatically takes care of all humans needs also came from the environmentalist corner, notably with works such as “Limits to Growth” (MEADOWS et al. 1972). This had, in particular, implications for poverty concepts. During the 1970s and 1980s, emphasis

gradually shifted from physical, man-made to human and natural assets as the foundation for welfare improvements. This paved the way for an integration of natural resource management in general and forests in particular into the discussion about basic needs and poverty alleviation (ANGELSEN/WUNDER 2003: 4).

In general, the basic needs concept bears several highly political implications (EMPACHER/WEHLING 2001: 24), such as priority setting for production, distribution as well as public goods and services. First priority is directed towards the production of goods which are necessary to satisfy the needs of the poor. This implies a renouncement of prestige objects such as national airlines, because of trade-offs between those objects and the fulfilment of basic needs. Because basic needs strategies also imply distributional effects "to the bottom", they might touch the interests of privileged social groups, above all but not solely in developing countries. This leads to the most significant issue in considering a basic needs strategy, the political framework within which it can successfully be implemented. It is obvious, that "a major restructuration in political and economic power relationships within a society is a prerequisite for a genuine pursuit of a development strategy aimed at basic needs" (STREETEN/BURKI 1978: 415ff.).

A decisive question is that of objective criteria for defining the contents of a basic needs bundle. While certain minimum physical conditions are necessary to sustain life, basic needs vary between geographical regions, climates, cultures and periods (STREETEN/BURKI 1978: 413). This applies not only to the *quality* of requirements but also for its *quantity* (e.g. scope) (EMPACHER/WEHLING 2001: 25). However, based on general thoughts on evidence and plausibility, a certain consensus with regard to a *core* of essential and pressing needs has emerged. But lists which go beyond this core needs will always be shaped by historical, cultural or ethical premises and perceptions, and in the consequence, will be contested.

There have been many different attempts to determining basic needs. For example, GRANT (1997, quoted in Brinkerhoff et al. 1997: 246) defines basic needs as the minimum standard of living which a society should set for the poorest groups of people". These minimum standards usually include nutrition, health, shelter, clean water, transport, and schooling. EMPACHER and WEHLING (2001: 26f.) add cultural facilities, public means of transport, recreation facilities and social security. Also of relevance are "adequately remunerated work", "satisfying environment", "popular participation in the making of decisions that affect the lives and livelihood of the people" and "individual freedom", "equal economic basic conditions", "safeguarding basic human rights", "national and cultural identity", "individual self reliance" and perception of a sense of live and work (ibid.).

In defining the package of basic needs one faces another difficulty, that is the problem that arises in *ranking* basic goods and services, like Abraham Maslow has argued.

EMPACHER and WEHLING (2001: 26), on the other hand, turn against an interpretation of a "sequence" of need satisfaction. They highlight that immaterial needs such as education, participation or integration of individuals in social and cultural contexts, are as essential as e.g. adequate housing, and their satisfaction must not be delayed. In this context, STREETEN and BURKI (1978: 413) distinguish different *levels*, that of levels for "bare survival", "continued survival", "continued productive survival". With regard to the latter level, they (also) highlight: "certain nonmaterial needs may be added, like participation in making decisions affecting one's life and work, and the relative component of poverty" (ibid.). In the consequence, strategies of sustainable development can not focus on the level of a "bare surviving" or the level "continued survival". Rather, they have to focus upon a "productive survival", meaning "to provide all human beings with the opportunities to develop their full potential" (ibid.: 412). Accordingly, the basic needs concept has not to be received as a "minimum satisfaction on the lowest possible level", but as a strategy aiming to ensure a decent existence (EMPACHER/WEHLING 2001: 27).

3.1.2 Further development

In the 1980s the concept of basic needs has been further developed, and has got new accentuations. Important conceptual extensions resulted from the concept of *human development*, as conceptualised by UN Development Programme (UNDP), or the *capability* concept (cf. GRASSO/CANOVA 2008, 4, ANGELSEN/WUNDER 2003: 4). This concept goes beyond the pure *provision* of material goods and services and aims at active *participation* of the disadvantaged groups, which are not regarded as passive recipients (cf. UNDP 1995: 14) Amartya Sen, the main author of this approach, emphasises a

> "view of living as a combination of various 'doings and beings', with quality of life to be assessed in terms of the capability to achieve valuable functionings" [the latter] "represent parts of the state of a person – in particular the various things that he or she manages to do or be in leading a life … Some functionings are very elementary, such as being adequately nourished, being in good health etc., others may be more complex, but still widely valued, such as achieving self-respect or being socially integrated" (SEN 1993: 31).

The Human Development Index (HDI) which will be described below is in large parts based on these ideas. With regard to forest dwelling people, the HDI adds some valuable dimensions, compared to a pure income measure. People living in remote areas with abundant forest resources sometimes have good access to food consumption or even relatively high cash incomes. However, low government service levels at the forest frontier mean that they lag behind in terms of health and education indicators (ANGELSEN/WUNDER 2003: 4).

A close and also influential approach that has to be mentioned in this regard is the Scandinavian level-of-living approach (JOHANSSON 1973; ERIKSON 1974; ERIKSON, R./ÅBERG 1987; ERIKSON/UUSITALO 1987; ERIKSON 1993; UUSITALO 1994), which bases welfare

measurement exclusively on *resources*. This derives from the assumption that living conditions can be judged to be favourable or unfavourable by comparing real conditions with normative criteria like values, goals or objectives. Thus welfare is understood as "the individual's command over, under given determinants, mobilisable resources, with whose help he or she can control and consciously direct his or her living conditions" (ERIKSON 1974: 275, see also ERIKSON 1993: 72 ff.). This notion of welfare assumes an individual citizen as an active, creative being, and the autonomous definer of his own ends. The resources are mere means to the latter (TÅHLIN 1990: 166). Resources are defined in terms of money, property, knowledge, psychic and physical energy, social relations (see below), security etc. (ERISKON/UUSITALO 1987: 189). At the centre of this approach are objective living conditions, life chances and their determinants.

EMPACHER and WEHLING (2001: 28) summarise: The aim of development strategies can not (alone) consist of a social policy motivated redistribution of resources and services. Rather, development strategies should consist in measures which *enable* the poor and disadvantaged groups to satisfy their needs *actively*, in parts based on own activities. Only such a path would ensure a long-lasting existence. This implies, e.g., improving the access to capital, technology and/or markets. This, again, is one element of crucial importance in the basic needs concept: "The purpose of development is to raise the sustainable level of living of the masses of poor people as rapidly as is feasible and to provide all human beings with the opportunity to develop their full potential" (STREETEN/BURKI 1978: 421).

So far, the concept of basic needs and the satisfaction of basic needs has primarily discussed with regard to poverty reduction in developing countries. For three reasons, however, the concept is also of global relevance, including both industrialised countries and countries in transition (cf. EMPACHER/WEHLING 2001: 28):

- First, the basic needs approach does not aim at an absolute physical minimum level which is universally applicable. It rather aims at basic material and immaterial conditions of a decent human existence, under *different* societal and cultural conditions.
- Second, regarding the economic and social development in recent years, in particular ongoing unemployment rates, industrialised countries also show deficits with regard to the satisfaction of basic needs. Above all, this applies for the realm of occupation and the provision with appropriate and affordable housing, but also with regard to education and provision with health services (e.g. in the US). The satisfaction of basic needs represents an important benchmark for industrialised countries for assessing the commitment to social sustainability and social justice (or the opposite).
- Third, the concept of basic needs has deeply influenced the debate on so called fields of needs, an important discourse within the broader debate on sustainability. This

perspective highlights the issue of consumption of resources and causation of environmental pollution in the context of needs satisfaction (nutrition, mobility, spare time, recreation) in different societies. The potential of the approach consists, according to EMPACHER and WEHLING (2001: 29) in the following perspective: Rather than optimising *given products* (for example, hybrid engines replacing engines that run by fossil fuels) the issue is how societal needs such as mobility can be satisfied in a more environmentally and socially sound manner. Thus, the contribution of the basic needs concept could consists in a societal debate on social minimum objectives or in priority settings with regard to different fields of needs.

- Fourth, with reference to the claim of intragenerational justice, there is the need for *equal opportunity* of access to basic societal resources and institutions (education, medical care, mobility, capital etc.). This applies to income distribution, participation issues, and to a large degree to gender issues.

3.1.3 Recent debates on ecosystem services and basic needs

Recent debates focus on the linkages between so called ecosystems services (and their change) and the fulfilment of basic needs in terms of nutrition, shelter, health and social security (MA 2003; MA 2005a,b,c). The MA conducts integrated assessments not only at a global scale, but at multiple scales (understood in physical terms). The relevance of sub-global dimensions of ecosystem change and biodiversity loss is emphasised (MA 2005c: 31). The understanding and the impacts of, as well as the policy responses to global environmental problems such as biodiversity loss differ to a relevant degree at regional or local scales. Particularly, this applies to ecosystem services for human well-being.

Ecosystem services are the benefits people obtain from ecosystems. These include

- provisioning services such as food, water, timber, and fiber;
- regulating services that affect climate, floods, disease, wastes, and water quality;
- cultural services that provide recreational, aesthetic, and spiritual benefits; and
- supporting services such as soil formation, photosynthesis, and nutrient cycling (MA 2005a: V).

In the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history. This was largely due to the growing demands for food, fresh water, timber, and fuel. This transformation of the planet has contributed to substantial net gains in human well-being and economic. However, many critical points are raised:

- First, this has resulted in substantial and largely irreversible ecosystem degradation, and some ecosystem services have been exploited at the expense of others, above all, the regulating ones (GÖRG 2007b: 87).
- Second, not all regions and groups of people have benefited from this process (MA 2005a: 12ff. and ch. 3); changes in ecosystems typically yield benefits for some people and exact costs on others who may either lose access to resources or livelihoods or be affected by externalities associated with the change.[1]
- Third, for several reasons, groups such as the poor, women, and indigenous communities have tended to be negatively affected (MA 2005a: 62).

GÖRG and RAUSCHMEYER (2009) call these effects 'misplacement of environmental degradation'. The aim of the term is to address the impacts on ecosystem services in other parts of the world while providing human well-being for a particular society in a specific region or nation state. Consequently, the degradation of ecosystems represents a significant barrier to achieving the Millennium Development Goals (MA 2005a: 61ff., see above). One example is the goal of hunger eradication. Notwithstanding economic and social factors which are often the primary determinants of hunger, food production remains an important factor, particularly among the rural poor. Ecosystem conditions, such as climate, soil degradation, and water availability influence progress towards the goal of eradicating extreme poverty and hunger (Goal 1), halving, between 1990 and 2015, the proportion of people who suffer from hunger (Target 2) (MA 2005a: 61).

The issue of profits and gains – and identifying winners and losers – is linked to many challenges:

- First, the reliance of the rural poor on different ecosystems (such as forest ones) is rarely measured and this typically overlooked in national statistics and poverty

[1] RANGANATHAN et al. (2008: 5-7) describe this pattern on the hand of mangrove conversion. From the perspective of a shrimp farmer, converting mangroves to aquaculture makes financial sense, at least for given time frame when a commercial shrimp farm is productive. However, from a fuller cost accounting perspective the economics for shrimp aquaculture are rather negative. Intact mangroves provide a number of important services that are not captured in the marketplace, e.g. supporting offshore fisheries through the provision of nursery habitat for marine life as well as storm protection for coastal communities. At the same time shrimp aquaculture has a number of environmental and social costs not typically borne by the farmer. This includes water pollution and land degradation, and particularly applies when the site is abandoned for another location, due to declined yields. Often a wasteland is left behind that is unfit for further productive use. In addition, aquaculture enjoys a number of input subsidies including nominal land rent and taxes. Taking these additional factors into account, a fuller comparison of the economic value of intact mangroves and shrimps farms reveals the net present value of intact mangroves. A second example is impact of the purchase of fishing rights by the European Union on regional fisheries on the West-African coast (see MA 2005b: 13; MA 2005c: 490-492).

assessments. This can result in inappropriate strategies that do not take the role of the environment in poverty reduction into account. For example, a relevant part of household income for rural communities in forested regions is derived from sources typically not included in national statistics. This includes harvesting wild food, fodder, medicinal plants, and timber. These activities generate a much higher proportion of poorer families' total income than of wealthy families' and this income was of particular significance in periods of shortcomings in other livelihoods (predicted or unpredicted) (MA 2005a: 62f.).

- Second, ecosystem changes affect different social groups differently. For example, the indicators for monitoring the MDGs contain the proportion of land area covered by forest, in order to indicate the importance of a forest in a country and in order to take the variety of functions which are fulfilled by forests into account (e.g. provision of goods such as timber and non-timber products as well as services such as protection against flooding). At the same time, there is ample evidence that these forest areas may mean and imply entirely different things e.g. for men and women in a certain region (UN 2003: 56ff.).
- Third, with the MA (2003: 107ff. and 2005b: 61ff.) one can state that outcomes at a given level are often decisively influenced by interactions of ecological, socioeconomic, and political factors from other levels. Focusing solely on a single level is likely to miss such interactions, and there is seldom one ideal level at which to conduct an ecosystem assessment that will suit several purposes. Social, political and economic processes can be more easily observed at some levels than others, and these may vary widely in terms of duration and extent. A multilevel approach which simultaneously uses larger and smaller level assessments can help identify dynamics of the system that otherwise would be overlooked. Trends that occur at much larger levels may go unnoticed in purely local scale assessments. However, as the MA notes, the choice of scale and boundaries of an assessment is "not politically neutral. It can implicitly favour certain groups, systems of knowledge, types of information, and modes of expression." Focusing solely on a single scale can miss these interactions. Looking at a particular issue top-down, from the perspective of larger scales or higher institutional levels, can lead to different conclusions than looking at the same issue bottom-up, from the perspective of smaller scales or lower levels (BERKES 2002; LOVELL et al. 2002).

3.1.4 Relevance for the EA

The debate on basic needs is less visible in the EA. To be sure, "economic, cultural, and societal needs" are mentioned in the first principle and the implementation guidelines refer to "human needs" and "critical needs" here and there. But there is no clear

reference made to material minimum standards or categories of human needs as it is typical for the basic needs concept. However, for two reasons we argue to bring in just these material minimum standards. First, in the broader CBD context, reference is made to the Millennium Development Goals (MDGs) which are largely based on basic needs concepts. Above all, this applies to the 2010 Biodiversity Target (COP 6 Decision VI/26) and the global headline indicators (see Appendix) respectively, and it applies also to documents such as the Global Biodiversity Outlook 2 (cf. SECRETARIAT OF THE CBD 2006: 29ff.). Second, and this argument is equally important: FSC-related research findings reveal that procedural mechanisms alone are not sufficient in order to improve the material situation on the local level (to implement and to measure). Here, there is a strong need just for minimum standards (see below for more detail).

3.2 Collective concerns and social resources

When it comes to measurements of social issues, many approaches focus either explicitly or implicitly on individuals. Today, there is a growing recognition of the *embeddedness* of individuals and households. Increasing evidence shows that societal integration of individuals is critical for societal development to be sustainable and there is widespread consensus that social qualities like equality, equity, and freedom and solidarity matter. These issues are raised in integrative frameworks of *social cohesion* and *inclusion.* With regard to a third concept, that of *social capital* (cf. COLEMAN 1988; PUTNAM 1993; 2000), we are rather sceptical, mainly because of its economistic and functionalist slant (cf. SPANGENBERG/OMANN 2006: 322).However these concepts are closely related to each other, in parts they clearly overlap, and actors like the World Bank have used social cohesion and social capital synonymously. Some authors maintain that social capital is the weakest concept in terms of policy prescriptions (BEAUVAIS/JENSON 2002: v). In the following paragraph, we will briefly draw on the two former concepts which address collective concerns.

3.2.1 Social cohesion

According to KEARNS and FORREST (2000, quoted in BEAUVAIS/JENSON 2002, 2) "a socially cohesive society is one in which the members share common values which enable them to identify common aims and objectives and share a common set of moral principles and codes of behaviour through which to conduct their relations with one another."

Since the end of the last century, the concept of social cohesion has received great attention in policy circles at the national and supranational level (surveys in BEAUVAIS/JENSON 2002; BERGER-SCHMITT 2002; CHIESI 2005). The OECD, the European Commission and others have concerned themselves with issues of social cohesion (cf. ATKINSON et al. 2002). According to CHIESI (2005), the risks and uncertainties of ongoing transformations

seem to demand efforts to foster social cohesion at the global level, while at the same time the valorisation of the local solidarities and traditional identities is endangered by globalisation processes. In Europe, for instance, social cohesion of societies is widely seen as being threatened by income inequality, poverty, unemployment, crime, but also by new technologies (cf. JENSON 1998; BEAUVAIS/JENSON 2002). In the consequence, there is a return to concerns for distributional matters since well-being considers both distributional and economic security.

In other words, social cohesion is considered to be a characteristic of a society dealing with the relations among members of that society and the *bonding effect* of these relations. Aspects often mentioned in describing social cohesion are shared values such as "realising justice between people" (SPANGENBERG 2004: 75), feelings of a common identity, a sense of belonging to the same community, trust among members, and the reduction of disparities.[2] There have been various efforts to determine the characteristics of the concept, and the following five stand out:

- Belonging / isolation, meaning shared values, identity, feelings of commitment;
- Inclusion / exclusion, concerning equal opportunities of access (see below);
- Participation / non-involvement;
- Recognition / rejection, which address the issue of respecting and tolerating differences in a pluralist society;
- Legitimacy, with respect to institutions acting as a mediator in conflicts within a pluralist society.

To sum up, two aspects of policies which pursue the goal of "social cohesion" can generally be distinguished (BERGER-SCHMITT/NOLL 2000: 13). The first aims to reduce inequalities, fragmentations and disparities. When measured, researchers are interested in (e.g.) indicators for social mobility, access to education, income distribution, and gender-related issues (EMPACHER/WEHLING 2001: 75).

The second aims to strengthen social relations, ties and commitments to and within communities. In order to operationalise features of social cohesion, it could be referred to Putnams three main areas important to building social ties (what he calls social capital): civic engagement, informal social engagement, and tolerance combined with trust (see Table 1, following page). Civic engagement is exemplified through voting, political knowledge, trust and the simple act of joining and being regularly involved in organised groups. This membership action has a very significant impact on individual health and

[2] The sociologist Durkheim was the first to use the concept of social cohesion, considering it as an ordering feature of a society and defining it as the interdependence between the members of a society, shared loyalties and solidarity (cf. JENSON 1998).

well-being, because joining a group expands the individual's social consciousness and reduces the distance from family, friends and communities. According to him, social capital is a networking process that translates into an individual's effectiveness in the community and workplace, and a resource that ties communities together. The latter is assumed to directly contribute to an improved quality of life; and EMPACHER and WEHLING (2001: 70) concede that persons that do not participate in societal organisations at all prove to be unsatisfied with their life.

Under the aspect of social ties, socio-demographic trends such as divorcement or marriage rates are often referred to (cf. COLEMAN 1988). However, these trends are contested. They do not allow any conclusions for the increase or decline of societal progress, last but not least because new patterns of living together are neglected (EMPACHER/WEHLING 2001: 70). A more general critic refers to the lack of covering the potential for further development in the sense of tolerance, open-mindedness to innovation and willingness to integrate other forms of life. There are approaches available to measure related attitudes, such as agreement to the statement that "non residents should have the same rights as residents have" (cf. EMPACHER/WEHLING 2001: 71). A further approach is the attempt to focus on the absence of discrimination.

Measures of community organisational life
Served on a committee of local organisation in last year (percent)
Served as officer of some club or organisation in last year (percent)
Civic and social organisation per 1000 population
Mean number of club meetings attended in last year
Mean number of group memberships
Measures of engagement in public affairs
Turnout in presidential elections, 1988 and 1992
Attended pubic meeting on town or school affairs in last year (percent)
Measures of community volunteerism
Number of non-profit organisations per 1000 population
Mean number of times worked on community project in the last year
Mean number of times did volunteer work in last year
Measures of informal sociability
Agree that "I spend a lot of time visiting friends"
Mean number of times entertained at home last year
Measures of social trust
Agree that "most people can be trusted"
Agree that "most people are honest"

Table 1: The fourteen indicators comprising Putnam's social capital index

In general, social ties and bonds can be positive (e.g. the potential of forest certification to build social capital, i.e. help develop institutions of conflict resolution, see below) as well as negative ones (e.g. networks of organised criminals). It is a matter of the normative definition to distinguish both. In addition, local trust and connectedness bear much ambivalence. A society may be well-organised and may have strong institutions and embedded reciprocal mechanisms but still not be based on trust but on fear and power, examples including feudal or racist societies. Formal rules can also trap people within harmful social arrangements. Some associations may encourage conformity, perpetuate adversity and inequity, and allow certain individuals to get to others to act in ways that suit only themselves. Thus, social cohesion can also have its dark side (PRETTY/SMITH 2004: 633).

3.2.2 Social inclusion/exclusion

Social inclusion and its opposite, social exclusion are among the most widely used concepts in scientific and political debates on social issues and have inspired a large body of writing (surveys in BERGER-SCHMITT/NOLL 2000; KRONAUER 2002).

The origin of the concept 'exclusion' can be traced to France, where the term was used in the context of debates on "new poverty" and defined as a rupture of the relationship between individuals and society. It was recognised that the term was more appropriate to analyse the multitude of current social problems such as unemployment, instability of families, shortage of welfare benefits, and international migration in a common framework. In contrast to 'poverty', 'social exclusion' focuses more on *processes* and *causes* and thus represents a more analytical concept, whereas poverty is an outcome or a state. Differences in conceptualisation are seen in Anglo-Saxon countries in comparison to approaches in the French context. The former addresses the lack of resources at the disposal of individuals or households, whereas the latter focuses on *relational* issues. That is to say on inadequate social participation and integration due to the denial or non-realisation of access to social rights conferred by citizenship, which results in a rupture of social bonds between individuals and society. In other words, poverty is related to individuals and households, whereas social exclusion is related to society and the individual's relations to society (BERGER-SCHMITT/NOLL 2000: 16).

With regard to these considerations, it is necessary to distinguish between the causes of poor living circumstances and their consequences. The causes of such circumstances can be traced to social institutions and, using the concept of social exclusion, can be described as the poverty of societies. The impact of social exclusion on people is seen in poor living conditions at the level of individuals, and as poverty in a multidimensional

context (ibid.: 17). In general, different types can be identified within social exclusion (ibid.):

- From the perspective of solidarity, the term is used to denote a disruption of the social tie between society and the individual due to the failure of institutions to integrate individuals into society.
- It can also be a result of differentiation and specialisation; of the diversity of interests and capabilities of individuals. Contrary to the solidarity paradigm, social exclusion can be caused by the behaviour of individuals; individuals may be excluded from some domains due to their voluntary choices.
- Third, social exclusion can be seen in a society that is ordered hierarchically with different groups controlling access to goods and services and protecting resources from outsiders. In this sense, social exclusion is the result of social closure by which better-off groups protect their privileged position.

It makes a decisive difference whether one chooses the perspective of social exclusion as an individual characteristic or the perspective of social exclusion as a process rooted in the characteristics of social institutions. Social exclusion in the first sense describes the life situation of an individual that is unfavourable in one respect or another. From the second point of view, social exclusion refers to a social characteristic which is found to have an impact on the individual quality of life, or alternatively, like social cohesion, it is as a component of an individual's life situation.

So to speak, the opposite concept, social inclusion, is broadly defined as "active participation in society and broad equality of access to opportunities to develop individual talents, capacities and capabilities" (GOUGH et al. 2008: 429), or as "access to and participation in various networks of emotional, social and material support…as well as the types of support which are assessed "(GAUTHIER/WEISS 2005: 319).

3.2.3 Lessons from the FSC experiences

There are several reports from the FSC context that demonstrate how the development and application of indicators offers opportunities for strengthening communities' rights and knowledge bases (KRUEDENER 2000, BURGER et al. 2005; HESS 2005; FRASER et al. 2006 ELLIS/KEANE 2008).

Moreover, the FSC also provides valuable insights for issues of social inclusion that are directly related to its governance structure and mechanisms. Like the EA, the FSC is grounded in norms of inclusiveness and aims at participation and a balanced representation of its various stakeholders and constituencies. In short, FSC intends to take the whole range of forest stakeholders into account (FSC 2003a: 9). These include forest owners, forest managers and stewards of the forest, resident forest-dependent people,

local communities (rural or otherwise), indigenous peoples, and forest workers. The integration of various stakes shall be ensured by a number of mechanisms: generally open membership to individuals and organisations, participation in the General Assembly and participation in the national FSC initiatives (cf. DINGWERTH 2007: 161). The FSC also seeks to recognize both, the interest-based stakes that different members have, and different geopolitical considerations affecting those stakes between rich and poor, developed and developing countries (GALE 2005: 20). In order to do so, a three-chamber structure has been built. And distinctive from other global decision-making processes, FSC is characterised by its intent to base governance on an explicit North-South parity, in other words, to ensure a balance between 'Northern' and 'Southern' interests. Hence, the FSC's economic, environmental, and social chambers each have a Northern and a Southern sub-chamber. FSC's governance structure consists of splitting the total available equally between the three chambers (one third each); and then splitting each chamber vote evenly between Northern and Southern members (one sixth for each sub-group). Thus, regardless of their actual membership, all six sub-chambers have equal voting power in the organisation's general assembly (GA)(for more detail, see DINGWERTH 2007). With its division of voting powers, the FSC stands in clear contrast to other international initiatives or intergovernmental organisations such as the International Tropical Timber Organisation (ITTO) or the Program for the Endorsement of Forest Certification (PEFC) which attribute voting power according to the economic importance of different players. Further participatory elements, and, according to GALE (2005: 28f.), signs for *devolution*, include regional consultations and roundtables held around the globe.

While these general features can certainly be seen as an expression of the EA philosophy *avant la lettre*, there are also some limitations in FSC's attempt to institutionalise the representation of different stakes in its governance mechanisms (DINGWERTH 2007: 162ff.). Three of them shall be discussed here (cf. GARRELTS/FLITNER 2010):

First, the boundaries between chambers are rather imprecise and, more importantly, the chambers themselves are highly heterogeneous. Grouping forest owners, forest managers, wood traders, retailers, and certifiers into a single 'economic chamber' has caused much concern, in particular with landowners and forest managers (CASHORE et al. 2004: 202, quoted in DINGWERTH 2007: 167). Participation in the social chamber is equally broad, and indigenous groups as well as labour unions, two of the major constituencies of FSC's social chamber, do not necessarily share similar interests in forest management. Second, there are doubts about the international balance of interest, as well. FSC's split into 'North' and 'South' seems a somewhat arbitrary delimitation being based on income criteria (instead e.g. on a representation of the world's population or a mix of different criteria) (ibid.: 168).

With regard to the explicitly intended parity of Northern and Southern stakeholders it has turned out that affirmative procedures alone are insufficient to strengthen the position of neglected Southern interests. Significant disparities in the representation of stakeholders from various geographical regions are persisting, e.g. stakeholders from African and Asian developing countries continue to play a weak role in the governance of the FSC. This shortcoming is exacerbated by the imbalance with regard to the crosscutting divide between individual and organisational members. While organisations account for almost three-quarters of Northern membership, they are clearly outnumbered by individual members in the Southern sub-chambers. This implies that Northern interest representation is significantly more organised, and therefore likely more effective than Southern representation (DINGWERTH 2008: 62f.).

The third limitation relates to the difficult relationship of FSC with state and governmental actors. Certification schemes consciously move policy making away from governmental and intergovernmental organisations towards non-governmental ones. Actors justify this shift by pointing to glaring state failures with regard to environmental problem solving. Activists and NGO members claim democratic legitimacy based on a combination of principles, commitment to widely accepted but poorly defined principles, and participation processes in which they select the participants (MEIDINGER 1999: 130). In addition, they tend to internationalise policy making. In general, this implies challenges to conventional definitions on democratic governance ("societal choice"), the more so because public authorities are formally excluded as participants in FSC decision making. This creates tensions in cases where certification standards differ substantially from state laws, rules and practice. Such tensions may be necessary and well justified in more than a few cases. The exclusion of public authorities has nevertheless been questioned, largely for reasons of effectiveness. Tropical country governments are often big forest owners and a greater participation in the rule-making process may hence appear appropriate. In practice, interestingly, some governments have developed domestic regulations that support FSC certification, either by adopting national legislation in line with FSC, or by requiring FSC certification in exchange for granting long-term forest concessions (examples from Latin America and South Africa in DINGWERTH 2007 and DINGWERTH/PATTBERG 2007).

To make a short interim conclusion: the well-crafted structure of FSC governance with its multilevel character does not solve all problems of "societal choice" and "social inclusion", that is democratic legitimacy and the problem of low participation of stakeholders from specific geographical regions. Yet we agree with GALE and HARVARD's (2004) view that it is still one of the most ambitious and far-reaching attempts to build an inclusive and democratic governance structure beyond the classical international regimes. And at the same time, we would add here, it is an approach that is largely in line with the

groundlying first principle of the CBD's ecosystem approach, and thus highly relevant when it comes to EA implementation.

3.3 Broader governance issues

In our introduction, we already referred to many recent changes in forest governance. Among them are two tendencies which we want to discuss here more in detail, that is, the issues of decentralisation and that of policy integration and coherence. In addition, we will reflect on the issue of incentives.

3.3.1 Decentralisation

In recent years, many governments are decentralising control over forests (in detail: SAYER/MAGINNIS 2005c: 183ff.). In history, the management and conservation of natural resources has often been a source of tensions between powerful, centralised state authorities (the ruling elite) and less powerful local communities. Especially, this applies for forest governance that has been a reflection of the underlying tension between the centre and the local. In theory, centralised forest institutions were established as the "guarantors of the public goods and intergenerational values of forests" (ibid.), with the underlying belief that local forest users would be more concerned with immediate and private benefits. Many struggles for land and valuable timber and wildlife resources between different sectors of society were the consequence. In parts, the way in which rights and assets have traditionally been distributed mirrors the power structures existing in the societies concerned. And a model for forestry which evolved in Central Europe in the 18th century subsequently formed the basis of much forest law in the Asian and African tropics, giving the ownership of relevant resources such as land and timber to the aristocracy or the state while leaving lower value products to the peasantry (mushrooms, pasture, etc.). Thus, the widespread assumption that forest departments are "politically neutral bodies simply applying objective science and expertise", has to be questioned (FORSYTH 2005: 165).

This distribution model, consciously or unconsciously, became strengthened by the nature conservation movement. Protected areas such as national parks targeted at outstanding natural features, and in many cases the control was shifted from the local to the state level. Till today, the number and extent of such protected areas is among the major indicators for the success of conservation programmes, and they are expected to have clearly defined boundaries, management plans etc. Set against this tendency to centralise "steering" has been a tradition for the development of local rules and institutions to conserve and ensure equitable access to forests. According to SAYER and MAGINNIS (2005c: 184), arrangements for conserving forests, water and other natural resources are even said to have been amongst the forces that drove the emergence of local

governments and democratic processes. And these traditional local forest stewardship arrangements have functioned successfully for centuries (ibid.); they have, however, been ignored by modern foresters and conservationists.

In the past few decades, a reversal of this tendency towards centralisation has emerged. Numerous initiatives have been taken to devolve more management responsibility to local communities. The underlying argument is that local institutions have better knowledge of local needs. When endowed with powers, local institutions are more likely to respond to local aspirations. The belief in greater responsiveness is based on the assumption that local authorities have better access to information about their constituents, and are more easily held accountable by local populations RIBOT et al. 2006: 2). Decentralisation advocates also believe that the greater efficiency and equity goes along with local people's "ownership" of local decisions. Thus, related projects are hold to result in more effective investments and management and ultimately in more socially and environmentally sustainable development (ibid.). Especially, decentralisation is believed to provide incentives for local populations to maintain and protect local resources (ibid.: 3). An finally, community natural resource management is linked to the belief in the desirability of including traditional values and ecological knowledge in modern resource management (KELLERT et al. 2000: 705).

Significant moves in this sense have emerged e.g. in India and Central America (RIBOT/AGRAWAL/LARSON 2006: 3), and in many cases, the experience with this re-shifting of control has proved successful in achieving the maintenance or even the extension of areas of species-rich indigenous forests (SAYER et al 2004). However, according to many reports (cf. ANGELSEN/WUNDER 2003; RIBOT 2004; RIBOT et al. 2006) many problems have occurred, often caused by the *way* in which decentralisation was handled. Among the obstacles are insufficient budget provisions to local authorities, too rapid decentralisation, central authorities' retained control of valuable assets, local elites coming to monopolise power, or general weakness of both central and local institutions. Then, the net outcome of decentralisation in terms of *equity* (the distribution and allocation of socio-economic benefits and resources), *empowerment* (the distribution of power and status, particularly among local peoples, including authority devolved from central and state governments to local peoples and institutions, as well as participation in decision making, sharing of control, and/or democratisation), *conflict resolution* (the handling and resolving conflicts and disputes over resources among local peoples and among local,. State, and national entities and interests), *knowledge and awareness* (the consideration, incorporation, and production of traditional and modern ecological knowledge in managing natural resources), *biodiversity protection* (the conservation and protection of biodiversity and associated habitats), and *sustainable utilisation* (the consumptive and nonconsumptive utilisation of natural resources in ways intended to maintain the long-term availability of these resources in nondiminished manner) (cf. KELLERT et al. 2000:

707) will be negative. RIBOT et al. (2006: 18) note that, with regard to decentralisation, the state is not a monolithic actor: while some elements within the state pursue decentralisation policies, others find their interests better served by resistance to decentralisation. This also applies to the different levels. Actors at the same level – central, regional, or local – are not necessarily united at a common set of interests. The authors also note that resistance to decentralisation in many cases comes from outside the government as well. NGOs and donors, by emphasising private and "civil society" institutions, can encourage institutional choices that compromise the establishment of the local democratic institutions that are the basis of effective decentralisation (ibid.).

In other words, there are *conditions* under which decentralisation supports ecosystem approaches to management. Among these conditions is the necessity of negotiated processes – decentralisation in response to economic crises risks leaves an institutional vacuum and may result in rapid resource depletion (SAYER/MAGINNIS 2005c: 185f.). Also of crucial importance is an effective regulatory and incentive framework in place to encourage local users to forego many of their prior entitlements. In particular, this applies when the benefits of protected areas accrue mainly art a broad public or global level (ibid.). Finally, local managers must have the legitimacy and be representative of local resource users, and assets, rights to invest in developing and retaining resource must be transferred to local managers, not just responsibility and doing away with their forest assets. A domain of local autonomy is needed-over significant local matters.

The relevance of further *basic* conditions is confirmed by FSC experience as well. Scholars as well as political actors have to take into account where the FSC devolutionary mechanisms have been successfully implemented – and where not. The paucity of good examples from large parts of Africa and Asia raises some doubts about the value of this approach under unfavourable conditions in terms of political decentralisation and commitment to democratic decision-making in general, and of minority rights in particular. Where the broader requirements of 'good governance' are largely unfulfilled, and where government agencies also tend to be weak (BERKES 2004: 621) or even corrupt, certification is hardly an instrument to replace them, or just to thrive without such conditions. Thus the "non-state market-driven approach" (e.g. CASHORE et al. 2004) is much less self-reliant in terms of national policies than is sometimes suggested. In other words: the political-economic context of decentralisation has to be taken into account (RIBOT et al. 2006: 18).

3.3.2 Policy integration and coherence

Within different contexts, policy integration and coherence have become important concepts in scientific and political debates. Chapter 21, the "core" institutional chapter of Agenda 21 (SPANGENBERG et al. 2002: 75) draws on these issues.

Actors and scholars are increasingly aware of the need to find ways to govern *interlinkages* (cf. SPANGENBERG/BONNIOT 1998) of different policy areas and sectors and the need of considering important societal goals such as sustainable development not only in one policy area but to integrate these into other policy areas as well. Administrative fragmentation, departmentalism and coordination problems are increasingly recognised as reasons for inefficacy and inefficiency of policies. Departmentalisation for example leads to a competition between sector departments regarding resources thus hindering policy integration and coordination. Besides sectoral fragmentation also federal, i.e. vertical division of functions may impede better policy coherence. This finding has become popular under the concept 'joint-decision trap' (cf. SCHARPF 1997). According to SHANNON and SCHMIDT (2002: 17), policy integration is "an activity that links policy actors, organisations, and networks across sector boundaries. Facilitating, supporting, and rewarding processes (incentives, see below) that cross, expand, or otherwise link policy sector boundaries is necessary characteristic for inter-sectoral policy integration." Coordination and cooperation are often seen as an additional burden as they imply an increase in complexity and additional uncertainty by many actors. On the one side more information has to be processed and on the other side coordination is not free from hidden strategic motivations of the actors involved and can thus lead to the loss of ground.

Several mechanisms which enhance policy integration are distinguished in the theoretical literature (cf. JACOB/VOLKERY 2004; PERSSON 2004; JACOB/VOLKERY 2008; BAUER/RAMETSTEINER 2006a). PERSSON (2004) groups the explanatory factors for the success of policy integration into three broad categories, which are normative, organisational, and procedural.

- Normative factors refer to values, norms and policy-making and administrative culture that set the general parameters of policy-making (PERSSON 2004: 28). These factors include high-level policy commitment and strong and clear leadership. Policy integration needs high-level political commitment including strong political leadership to be successful. The lack of political will is often identified as a main barrier for better policy integration, after the lack of financial resources (PERSSON 2004; BAUER/RAMETSTEINER 2006b). Besides support from the top political level, policy integration also needs support from the bottom, i.e. societal backing.
- Organisational factors for policy integration include the general government architecture, interaction of actors within and outside government, power structures, resource allocation and budgeting, and capacity (PERSSON 2004: 29). Strategies to overcome impediments due to organisational arrangements include different institutional reforms, such as the integration of departments and functions. The establishment of new institutions (e.g. establishment of national councils; national sustainable development strategies) is a possible strategy. The assignment of existing

institutions with a new mandate, responsibility and accountability. Other mechanisms to increase coordination and communication include inter-ministerial committees, network schemes (PERSSON 2004; JACOB/VOLKERY 2004; TILS 2007; VOLKERY/JACOB 2008).

- Procedural factors aim at the integration of policy objectives of one policy into other policy areas. They include action plans, inter-agency co-operation agreements and working groups, veto rights, and use of planning processes and procedures that require co-operation. Further, evaluation and assessment procedures have become important tools (e.g. social impact assessment). The rules of decision-making may also be adapted to increase coordination among different actors, including the right to set formal agendas, the right to develop policy proposals and the timing of participation by different departments and agencies (PERSSON 2004).

3.3.3 Incentives

Incentives and especially payments for environmental services (PES) have attracted increasing interest as a mechanism to translate external, non-market values of the environment into real financial incentives for local actors to provide environmental services (ENGEL et al. 2008). Often, there are side objectives such as poverty alleviation or regional governance (cf. BÖCHER 2008).

In general, PES works by paying providers for specific land uses that are thought to generate the desired environmental services (ES). PES is often used to conserve forests, however, PES in principle can promote any land use that generates external benefits, including many agricultural land uses (ENGEL et al. 2008). Ideally, payments would be made directly on the basis of the ES provided (as, e.g. payments for wildlife offspring). However, such 'output-based payments' are often not possible, as the level of provision of many ES cannot observed by land users; this might prevent them from managing their land appropriately. As a consequence, most PES programs thus base payments on adoption of particular land uses. In these input-based PES programs, payments are often made on a per-hectare basis (referred to also as area-based PES, e.g. payment per hectare of forest conserved). Other approaches measure inputs (e.g. number of trees planted, or working hours spent for clearing exotic species).

As a policy instrument, PES acts like an environmental subsidy: a payment aims at inducing increases in environmentally beneficial activities. According to theory, environmental subsidies can, like environmental taxes, help to internalise the value of environmental services into private land-use decisions. Unlike environmental taxes, however, environmental subsidies suffer from several potential problems (PRETTY/SMITH 2004: 636; ENGEL et al. 2008: 668f.):

- Additionality: Subsidies are being paid for activities that would have been conducted anyway;
- Leakage: Subsidies may contribute to shifting environmentally-damaging land uses practices elsewhere in space;
- Counter-productivity**:** Some people may become organised precisely to strip land of its assets more effectively and putting a monetary value on wild biodiversity services may simply cause these resources to be diminished more rapidly. Subsidy programs can even create perverse incentives, that is inducing an expansion of environmentally destructive activities to obtain higher subsidies later on
- Unfair distribution: Income from (e.g.) ecotourism may be captured by only a few members of communities, leaving the majority with no particular reason to engage in sustainable management.

3.3.4 Lessons from the FSC experiences

Again, many lessons can be learnt in this context from FSC implementation (CF. GARRELTS/FLITNER 2010). Our starting point is that incentive mechanisms are not developed in a vacuum, by landscape planners or economic theorists. Rather, they develop in particular environmental, economic, social and political contexts. Thus, they are subject to activities of many stakeholders who try to influence the mechanisms. Whether the initiative comes from the buyers of environmental services, from the sellers, or from third parties (e.g. NGOs) is likely to have a relevant impact on the shape of the program. This has been a main result from research on FSC-certification. The core idea of eco-labelling (as a specific type of PES) has been and still is to devise incentive schemes that will generate a premium on sustainably produced goods and services. Accordingly, the establishment of FSC was strongly linked to the hope to create opportunities and benefits for sustainable forest operations, small-scale forest operations run by local people in particular, and extending into (if not focussing on) tropical countries where deforestation had become a globally perceived problem by the late 1980s. Having these original aims in mind, it has to be asked whether they have been reached after a decade and a half, or more precisely: what are the recognizable economic steering effects of the FSC scheme so far?

There is considerable evidence today that rather than enhancing market access for social forestry enterprises, certification works in favour of classical industrial forest management (KRUEDENER 2000; KLOOSTER 2005; TAYLOR 2005 a; b). As of April 2008, more than 80 per cent of the FSC-certified forest area was situated in North America and Europe (ELLIS/KEANE 2008: 43ff.). Just for comparison: three years after FSC's founding, 70 percent of all certified forests were still found in developing countries (TAYLOR 2005a: 136). This has led to the conclusion that FSC has primarily allowed well-managed forests in the

North to become certified while having little impact on forest management in the South. FSC-certification seems mainly attractive to Northern forest owners for whom costs are relatively low, partly as a result of high domestic regulatory standards. In turn, where domestic forest standards are less demanding, less enforced and often fraught with fragmented and disputed land tenure, the prospects of a spread of certification beyond small and clearly delimited 'enclaves' are severely diminished (EBELING 2005; EBELING/YASUÉ 2009). One of the restrictions for this impasse are the costs of certification which are often prohibitive, in particular since the promise of a green premium has hardly materialised so far (e.g. EBELING 2005: 103-104). Another restriction is described by KRUEDENER (2000: 14-15). FSC Principles and Criteria require an enterprise not only to meet (and maintain) the performance requirements in the field. In addition, organisational procedures for planning, implementation and monitoring with clearly defined and distributed responsibilities (e.g. a formalised management system) are necessary. Particularly in developing countries and for small-scale enterprises, this associated level of required documentation can be problematic. The requirements of written management plans can be inappropriate in certain environments, e.g. for indigenous communities involved in forest management that may largely rely on oral transmission of knowledge. In the case of small-scale community operations in the South, the fulfilment of the usual requirements may often be impossible without outside support (KRUEDENER 2000: 14). In addition, there are considerable indirect costs such as investment in infrastructure, or higher wages due to compliance with statutory wage and social security regulations (HESS 2005: 199f.).

However, these are not the only factors and might not even be the most important ones. According to more recent and in parts very critical literature on certification schemes (for example, TAYLOR 2005a, b; KLOOSTER 2005; PONTE 2008), it is now largely the interests of involved powerful market actors that shape the operational environment and contribute to the unsatisfying course of forest certification. Today, global retailers like IKEA and Home Depot are the key actors in the business. It is precisely in this sector which can be characterised by simple supply chains and aggressive buyer pressure (BASS et al. 2001), that the largest success in placing certified wood is reported. Here, retailers control markets that are, according to TAYLOR (2005a: 135), not readily accessible to small-scale or community-based forest producers in the South. These large buyers do not only demand certification from their suppliers, but also high volumes, uniform characteristics and a competitive price. In addition, third party certification shifts the costs of audits, certification fees, and management improvements away from retailers and onto suppliers. KLOOSTER (2005: 404) raises the decisive argument: "These commercial values condition the ability of other actors to fully realize the social and environmental values of environmental certification of forests." These shortcoming and unintended consequences have certainly not gone unnoticed (cf. STEWART 2003). Forest certification actors have

recognized many of these problems over the last years, and they are taking steps to ameliorate a retailer-focused mainstreaming strategy by opening niches for small and community forest producers. Increasing reference is being made in this context to another certification scheme, that is the Fair Trade movement. This would imply an explicit commitment to modify trade relations in the conventional wood market, e.g. minimum prices, broader support for certification costs, and the development of new markets (in detail: TAYLOR 2005b; cf. KLOOSTER 2005).

3.4 Summary

One of the striking, if not counterintuitive features of the EA principles is that they do not begin with a reference to natural objects or ecosystemic considerations and their intrinsic logic. Instead, the first principle categorically states that the "objectives of management of land, water and living resources are a matter of societal choice". The further text and the related implementation guidelines specify this statement and make a strong case for participation and social inclusiveness in natural resource management, including the need for redressing power imbalances, ensuring accountability and supporting capacity building as a precondition for participation where needed. In addition, the claim for (e.g.) a compensation of fragmented decision making responsibilities and the cooperation between sectors, at various levels of and among governments aims at improved decision making structures in terms of policy integration and coherence. Another important and crosscutting principle of the EA focuses on the need to manage ecosystems in an economic context. The reduction of 'market distortions', the 'internalization of costs' and the 'aligning of incentives' to promote conservation and sustainable use of ecosystems are named as decisive elements of a strategy in this regard. Land use change and the conversion of certain lands to less diverse systems are named as cases of particular importance to this principle (CBD 2000, Dec. V/6).

Various social science concepts and approaches deal with these issues raised. It can be assumed that they also influenced and shaped the Ecosystem Approach within different international fora and debates. As has been demonstrated, some of these concepts refer to the 'objective' improvements of the material situation of different social groups. Other concepts rather correspond to procedural features of decision-making structures. Requirements for these decision-making structures are aiming at the encouragement of participation, a reduction of inconsistency particularly in state policies as well as the providing of incentives for the protection of biodiversity. Most of these objectives and instruments are contested and they encounter manifold limitations and restrictions while being implemented. We illustrated this with findings of research on the implementation of the Forest Stewardship Council (FSC). It can be concluded, at this stage, that socio-economic monitoring approaches should be legitimized and acknowledged. We recall further requirements from chapter 2 above: Sets of indicators should also be

- measurable, that is, clearly defined and specific, at an appropriate scale, and with available data,
- indicative, that is, credibly representative of the phenomenon they are intended to characterise,
- sensitive, that is, they have to react early and sensibly to changes in what they are intended to monitor,
- cost-effective, that is, justify their cost by the value of the information they provide,
- comprehensive, that is, include both procedural issues and outcomes, and
- connected to ecosystem characteristics, that is, be responsive to management actions and practices.

Bearing these requirements in mind, the next section will review some established and some more recent approaches largely approved on an international level.

4 Established and new approaches to socio-economic monitoring

4.1 Human Development Index

The well-known HDI is used to determine and indicate whether a country can be classified as developed, developing or underdeveloped. It measures three basic criteria of human development – life expectancy, literacy, education – and the standard of living of countries worldwide. Thus the HDI focuses attention on wider aspects of development than the per capita income measure it supplanted, and opens the way for researchers to delve into the wide variety of more detailed measures contained in the United Nations' Human Development Reports. Each year, UN member states are listed and ranked according to these measures. The HDI measures the average achievements in a country by calculating the distance between the level of attainment in each country and the target level:

- A long and healthy life, as measured by life expectancy at birth (25 years and 85 years).
- Knowledge, as measured by the adult literacy rate (with two-thirds weighting) and the combined primary, secondary, and tertiary gross enrolment ratio (with one-third weighting): 0% to 100%.
- Combined gross enrolment ratio (0% to 100%).
- A decent standard of living, as measured by the log of gross domestic product (GDP) per capita: $100 to $40,000 (US dollars in purchasing power parity [PPP] terms).

In addition to enabling comparisons across nations, the HDI can also be used to compare regions or groups within a single nation. The *distribution* of income within a society often reveals more than a simple average; the disaggregation of the HDI into different population groups creates an image of existing inequalities. The Human Development Approach recommends that one judge a society better off than another only if its institutions add to the capacity of its members to lead a better life. Thus, it represents the first tentative step towards measuring "capabilities" or positive freedoms (COBB 2000: 11; SHARPE/SMITH 2005: 56-58). It aims mainly at developing countries, although the HDI has been informative (and in the consequence disturbing) for OECD countries as well. Unlike the World Bank it does not attempt to monetarise all aspects of sustainability (SPANGENBERG/BONNIOT 1998: 8). On an analytical level, the HDI can serve as an example for interlinkage indicators, encompassing both the social and the economic dimension of sustainability (ibid.: 14).

Dimension	A long and healthy life	Knowledge		A decent standard of living
Indicator	Life expectancy at birth	Adult literacy rate Adult literacy index	Gross enrolment ratio (GER) GER index	GDP per capita (PPP US$)
Dimension Index	Life expectancy index	Education index		GDP index
Human Development Index (HDI)				

Figure 2: Construction of the HDI (UNDP 2009: 208)

4.2 Human Poverty Index

UNDP has also developed a Human Poverty Index (HPI). For developing countries, the HPI-1 concentrates on deprivations in three essential dimensions of human life already reflected in the HDI (longevity, knowledge and a decent standard of living):

- The first deprivation relates to survival (the vulnerability to death at a relatively early age) and is represented by the proportion of the population not expected to survive to age 40.
- The second relates to knowledge of being excluded from the world of reading and communication and is represented by the proportion of the population that is illiterate.
- The third relates to a decent standard of living in terms of overall economic provisioning. This dimension is represented by three variables: the proportion of the population without access to safe water, the proportion without access to health services, and the proportion of moderately and severely underweight children under five.

For OECD industrial countries, the HPI-2 concentrates in four dimensions of human life similar to those in HDI – longevity, knowledge, a decent standard of living and in addition, social inclusion. The deprivation in longevity is represented by the proportion of the population not expected to survive to age 60, the deprivation of knowledge by the proportion of the people that is not functionally literate as defined by the OECD, the deprivation in a decent standard of living is represented by the proportion of the population living below the poverty line set at 50 per cent of median disposable personal income, and the deprivation of social inclusion is measured by the long-term (12 months or more) unemployment rate.

4.3 NGO-driven approach: Basic Capabilities Index (BCI)

In 2004, the NGO Social Watch has developed the Basic Capabilities Index (BCI) which is similar to the Human Development Index (see above). Compared to the HDI, the BCI is easier to build and is feasible to implement it at sub-national and municipal level, without requiring expensive household surveys as income-based indexes do[3] (SOCIAL WATCH 2005; 2007 a and b; KERKOW 2007). By not using income, Social Watch with its BCI claims to be consistent with the definitions of poverty based on capabilities and (denial of) human rights (SOCIAL WATCH 2005). BCI is said to be comparatively easy to build the index at sub-national and municipal level, without requiring expensive household surveys as income-based indexes do (ibid.).

The BCI is based on three indicators:

- percentage of children who reach fifth grade,
- mortality among children under five, and
- percentage of deliveries attended by skilled health personnel.

These indicators by themselves express different dimensions addressed by internationally agreed development goals (education, children's health and reproductive health). According to SOCIAL WATCH (2007b), research has indicated that as a summary index, the BCI provides a consistent general overview of the health status and basic educational performance of a population. It has also proven to be highly correlated with measures of other human capabilities related to the social development of countries. The BCI-indicators particularly emphasize capabilities that contribute to the welfare of the youngest members of society and thereby foster the future development of nations. The index allows to assign a score to each country and thereby to compare with other countries or to assess its evolution over time.

4.4 Gender-related Development Index (GDI) and Gender Empowerment Measure (GEM)

The Human Development Report 1995 introduced two new measures of human development that focus on the status of women. The first, Gender-related Development Index (GDI), measures achievement in the same basic capabilities as the HDI does, but takes note of inequality in achievement between women and men. The methodology used

[3] The BCI for 2007 was calculated for 161 countries, which were then grouped into categories for the purpose of analysis (Social Watch 2007b, 81-84). The highest possible BCI score is reached when all women are assisted when they give birth, no child leaves school before successfully completing the fifth grade and infant mortality is reduced to its lowest possible of less than five death for every thousand children born. These indicators are said to be "closely associated with capabilities that all members of a society should have and which mutually interact to make it possible to achieve higher levels of individual and collective development."

imposes a penalty for inequality, such that the GDI falls when the achievement levels of both women and men in a country go down or when the disparity between their achievements increases. The greater the gender disparity in basic capabilities, the lower a country's GDI compared with its HDI. The GDI is simply the HDI discounted, or adjusted downwards, for gender inequality.

The second measure used by UNDP in its annual Human development report is the Gender Empowerment Measure (GEM). GEM aims at measuring inequalities between men's and women's opportunities in a country. It combines inequalities in three areas:

- political participation and decision making,
- economic participation and decision making, and
- power over economic resources.

The methodology of the GEM involves several steps:

- First, percentages for females and males are calculated in each area. The first area refers to the number of parliamentary seats held. The second area is measured by two sub-components: a) legislators, senior officials, and managers, and b) professional and technical positions. The third area is measured by the estimated earned income (at PPP US$).
- Second, for each area, the pair of gender percentages is combined into an Equally Distributed Equivalent Percentage (EDEP) that rewards gender equality and penalizes inequality. It is calculated as the harmonic mean of the two components. The EDEP for economic participation is the unweighted average of the EDEP for each of its sub-components. The EDEP for income is computed from gender sub-values that are indexed to a scale from 100 to 40,000 (PPP US$).
- Finally, the GEM is the unweighted average of the three Equally Distributed Equivalent Percentages.

However, one weakness of this indicator consists of taking only *paid* work into account. Unpaid work, such as children care which is mainly conducted by women, is neglected. Thus, information has to be added on this issue. It is available, also for developing countries, within UNDP Human Development Reports (EMPACHER/WEHLING 2001: 74).

4.5 CSD Indicators

The consensus-building approach adopted by the CSD which aims to developing a framework, and a *core set of indicators* and related methodology sheets, consists of three essential elements (LUXEM/BRYLD 1997; UN DESA 2007):

- Firstly, from the very beginning, efforts were focused on the development, use and test of indicators at the national level;
- Secondly, there was the need to build on the existing national and international indicator work being carried out by several organizations and countries;
- Thirdly, there was a high degree of cooperation and collaboration among more than 30 organizations of the UN system, other international organizations, intergovernmental and non-governmental organizations and major group partners acting as lead agencies for particular indicators and with additional input from approximately fifty experts from national governments.

The work programme on indicators, which was adopted by the Commission for Sustainable Development (CSD) in 1995, focused on a set of 134 indicators, organized along *four* "pillars" (social, economic, environmental and institutional). The indicators in the core set have been presented in a Driving Force - State - Response (DSR) framework. The DSR framework is adopted from the above introduced framework for environmental indicators, the Pressure - State - Response framework (PSR, later DPSIR), developed by the OECD Environmental Directorate (OECD 1993). The concept of "pressure" has been replaced by that of "Driving Forces", in order to accommodate more accurately the addition of economic, social and institutional indicators. "Driving force" indicators indicate human activities, processes and patterns that impact on sustainable development. Human activities exert pressures on the environment and affect its quality and quantity of natural resources (state). The society responds to these changes through policies and changes in awareness and behaviour (response).

Within the later phase of testing and revision (1999-2001) most countries found that the initial CSD indicator set was too large to be manageable and that the underlying DSR framework was not always suited to emphasizing policy issues and linkages (UN/ECE 2006). Consequently, a revised CSD-SDI set was developed and presented to the CSD in 2001. It consisted of 58 indicators organized in a theme/sub-theme framework, along the four dimensions of sustainable development. These were published in the second of the "Blue Books."

After two editions of the CSD indicators had been published (1996 and 2001), only recently, a third, revised set of indicators has been released (UN DESA 2007). The reason for the Division for Sustainable Development (DSD) to review the CSD indicators in 2005 was, among other things, the wish to exploit synergies with the MDG indicators and other major sectoral indicator initiatives. Thus, in recent years, a new set of 50 core indicators has been created. The core indicators are part of larger set of 96 indicators of sustainable development. This set is supposed to allow for a more comprehensive and

differentiated assessment of sustainable development by countries. Due to the creation of a core set, CSD indicators remain manageable (DSD 2007: 1).

According to DSD (ibid.) core indicators fulfil three criteria:

- They cover issues that are relevant for sustainable development in most countries.
- They provide critical information not available from other core indicators.
- They can be calculated by most countries with data that is readily available or could be made available within reasonable time and costs.

In general, CSD indicators continue to be placed in a framework of themes and sub-themes. The framework contains 14 themes, which are slightly modified from the previous edition:

- Poverty
- Governance
- Health
- Education
- Demographics
- Natural hazards
- Atmosphere
- Land
- Oceans, seas, coasts
- Freshwater
- Biodiversity
- Economic development
- Global economic partnership
- Consumption and production patterns

Table 2: The previous categorisation into four pillars of sustainable development has been abandoned (DSD 2007: 2).

4.6 Millennium Development Goals (and indicators)

At present, one of the most relevant activities with regard to general development policies stand in the context of the Millennium Development goals. Because of their significance, we will discuss this approach more in detail, taking into account both the observable strengths and weaknesses.

In September 2000, 189 independent states adopted the Millennium Declaration within the context of the 55th General Assembly (GA). Subsequent to the Millennium Summit a team consisting of representatives of the United Nations, the World Bank, the OECD and other international organisations extracted several measurable objectives from the Millennium Declaration. This resulted in a list of eight so-called Millennium Development Goals (MDGs), which are essentially based on two chapters of the Millennium Declaration: chapter 3, "Development and poverty eradication" as well as chapter 4, "Protecting our common environment". The MDGs were registered by the 56th GA in September 2001 and substantiated in the closing communiqué of the Millenium+5 Summit in September 2005 within the context of the 60th GA of the United Nations (LOEWE 2005; MARTENS 2005). They were also confirmed at the World Summit on Sustainable Development in 2002.

The eight development goals are as follows: (1) eradicate extreme poverty and hunger; (2) achieve universal primary education; (3) promote gender equality and empower women; (4) reduce child mortality; (5) improve maternal health; (6) combat HIV/AIDS, malaria, and other diseases; (7) ensure environmental sustainability; and (8) develop a global partnership for development. Each of these goals is accompanied by a set of targets (in sum 18) that need to be met, and each target is measured using one or more indicators chosen based on specific criteria. These criteria ensure that the indicators not only measure progress towards the attainment of targets but also that countries and regions can compare their progress. They also allow for the identification of best cases so that policy advice can be formulated (UN 2003; see Appendix).

These goals are to be achieved in the individual nation states (MDG 1-7) as well as on a global level (MDG 8). In a participative process the developing countries are intended to determine their development priorities and -approaches themselves as well as to enunciate those in Poverty Reduction Strategy Papers (PRSPs) or national development plans. The donors are supposed to support the implementation of these plans (cf. LOEWE 2005: 14). The Millennium Process provides for a follow-up process. This envisages – among others – a yearly report of the principal secretary of the United Nations about the implementation of the MDGs, furthermore so-called country reports on the national level (ideal case: yearly). The national reports are supposed to (among others) develop an awareness of the MDGs, reach a national consensus on commensurable indicators to measure progress as well as to ensure commitment and ownership for the MDGs.[4]

MDGs have both strengths and weaknesses. The general strength consists of the fact that the international community possesses a *common* goal system. The goal system is widely supported by a so far not achieved consensus (MARTENS 2005: 44; LOEWE 2005: 5). The MDGs are classified as "the most comprehensive and most concrete guidelines for the reduction of poverty that have ever been established by the world" (JEFFREY SACHS 2005, quoted in NUSCHELER/ROTH 2006: 17). The MDGs are able to build on agreements which were reached in a series of world conferences during the 1990s with an international consensus (ibid.: 20); all goals and demands, which are summarised by the MDGs, are already mentioned in various UN-documents and declarations of intent of the world conferences – "but none of these demand-catalogues obtained the pressure that the representatives of the community of states, which had gathered in New York, bestowed

[4] In order to give some guidance for data collection and interpretation, an official handbook has been developed (UN 2003). For each indicator used to measure progress towards the targets and goals, the handbook provides all or some of the following information: a simple operational definition, the goal and target it addresses, the rationale for use of the indicator, the method of computation, sources of data, references, periodicity of measurement, gender and disaggregation issues, limitations of the indicator and national and international agencies involved in collection and dissemination.

upon the Millennium Declaration and the MDGs which have been deduced from it (ibid.: 21), In addition, MDGs are regarded as "an act of liberation for development politics, which could lead through the orientation- and legitimisation problems which the international development policy (…) got into" (ibid.). "Hitherto there has never been such wide consensus in development politics and no comparable momentum to transfer ceremonial declarations of intent into quick actions; this purpose is also answered by the aggregation of the Millennium Declaration into concrete and via indicators verifiable goals" (ibid.: 23; cf. LOEWE 2005: 19). With the help of quantitative and therefore verifiable objective and time parameters for the realisation, six of the eight MGDs were "hardened". Furthermore, the MDGs are plain to understand, plausible and modelled very closely to reality, therefore they are suitable to call the attention of the population of the donor countries to the problems of the developing countries (which in fact are global problems) (LOEWE 2005: 20). Particularly the focus on results is new and puts the decision makers under considerable accountability. Never before have both developing countries as well as industrial countries been urged so insistently to develop strategies for the struggle against poverty. The MDGs themselves do not contain an important innovation, but an instrument in order to implement the debt cancellations which are demanded in MDG 8; namely the in the PRSPs fixed requirement of social participation for their structuring (ibid.: 22).

However, some weaknesses and problems have to be stated as well. Above all, some relevant issues are not addressed. Firstly, the problem of 'bad governance', particularly in form of all areas of life and political decision levels penetrating corruption, is concealed – for diplomatic reasons (NUSCHELER/ROTH 2006: 25). The MDGs fall back behind the Millennium Declaration and many conference decisions in favour of democracy and human rights. Secondly, the MDGs do not tackle the issues of internal and international inequalities, nor the inequities in the allocation of resources (ibid.: 28). Thirdly, MDG 7 (table 3) bears some ambivalence. On the one hand, relevant issues are explicitly and implicitly addressed in their different facets, for example within the targets 7A-/C, and within the related indicators (e.g. CO_2 emissions, total, per capita and per US$, GDP (7.1), consumption of ozone-depleting substances (7.2.), or proportion of water resources used (7.3).

Goal 7	
Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	7.1 Proportion of land covered by forest 7.2 CO2 emissions, total, per capita and per $1 GDP (PPP) 7.3 Consumption of ozone-depleting substances 7.4 Proportion of fish stocks within safe biological limits
Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	7.5 Proportion of total water resources used 7.6 Proportion of terrestrial and marine areas protected

	7.7 Proportion of species threatened with extinction
Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	7.8 Proportion of population using an improved drinking water source 7.9 Proportion of population using an improved sanitation facility
Target 7.D: By 2020, to have achieved a significant improvement in the lives of a least 100 million slum dwellers	7.10 Proportion of urban population living in slums

Table 3: MDG Goal 7: Ensure environmental sustainability

It has to be mentioned, that Target 7B represents a (rare) example for an (ex post, December 2006) *integration* of two very relevant international regimes, CBD and Millennium Development Declaration. On the other hand, the goal of environmental sustainability appears to be – in contrast to the Millennium Declaration – insufficiently articulated. For example, problems like fuel poverty and the utilisation of renewable energies are ignored; it is discussed whether the reduction of CO_2-emissions should be added as the ninth MDG (CHRISTIAN AID 2006, quoted in NUSCHELER/ROTH 2006: 30; also LOEWE 2005: 17). And more generally, the wider role of ecosystem services in supporting livelihoods and human well-being (in terms of the MA) reveals biodiversity to be the foundation for all development, and hence for meeting each of the Millennium Development Goals (SECRETARIAT OF THE CBD 2006: 19).

Finally, it has been criticized that the issue of *Gender Equality* should rather be understood as a crosscutting issue; and verifiable target quotas should be provided, like e.g. a 30 percent share of women in parliaments. Social Watch demands reasonable goals and indicators, also in the context of MDG 8 (SOCIAL WATCH 2005: 57); partly this problem was recognised and concluded via the closing communiqué of the Millennium+5 Summit. It contains the request to grant women equal rights in inheritance and property law, in the access to the employment markets, arable land, credits and technologies, possibilities of social coverage as well as at the workplace (cf. LOEWE 2005: 16).

In our given context, it has also to be considered a malfunction that the international development debate – partly because of the MDGs – currently focuses to a great extent on inputs, and that research projects deal with the question how much the official development assistance (ODA) of the donors has to rise in order to accomplish the MDGs until 2015 (cf. LOEWE 2005: 16). Finally, there may be an inbuilt contradiction with the envisioned extensive liberalisation of global trade which may just as well come at the expense of developing countries (FORUM UMWELT UND ENTWICKLUNG 2007).

To sum up, despite a multitude of substantial weaknesses in regard to the political key problems of successful poverty reduction – from crisis prevention to good governance, the political empowerment of poverty-prone groups, the overcoming of social exclusion, large-scale business development, the commitment of governments to individual

responsibility and aid for their poor populations, up to the point of structural economic reforms – a reference to the Millennium Declaration and MDGs appears to be necessary. As we have seen, this is only partly due to substantial grounds, and to a much larger extent for reasons of political and procedural legitimacy, as well as efficiency.

4.7 NGO-driven approach: Corruption Perception Index (CPI)

Corruption – indicating weak institutions and a severe lack of accountability on the hand of decision makers – admittedly is best assessed by the Corruption Perception Index (CPI), developed by the international NGO Transparency International (TI). This organisation is devoted to combating corruption through coalitions among civil society, business, and governments. TI collects, analyses and disseminates information on the impact of corruption around the world.

The CPI ranks 91 countries in terms of the degree to which corruption is perceived to exist among public officials and politicians. Scores range between 10 (highly clean) and 0 (highly corrupt). CPI focuses on corruption in the public sector, defining corruption as the abuse of public office for private gain. It is a composite index, derived from 14 different polls and surveys carried out among business people and country analysts, including surveys of residents, both local and expatriate. In order to rank a country there have to be at least three sources available. CPI is based solely on perceptions instead of hard empirical data such as cross country comparisons of prosecutions or media coverage of corruption. The reason for this is that such data does not reflect actual levels of corruption, but highlights the extent to which it is effectively investigated and exposed by prosecutors, courts and the media.

Since each of the sources uses a different scaling system, standardisation is carried out via a matching percentiles technique, followed by a beta-transformation. A country's score is determined by the average of these standardised values. Additional to the CPI score and rank the number of sources, high-low range, standard deviation and confidence range for each country are provided. TI claims to draw the reliability of the CPI from the high correlation between the sources. It's advantages lie in the fact hat the combination of data sources in a single index secures that a non-performance of one source can be balanced by the inclusion of at least two other sources and therefore lower the possibility of misrepresenting a country.

In 2007 the CPI's system was changed in order to reveal global trends when comparing different nations if they related to the functional form of the CPI (like increasing or deteriorating scores of certain country groups which do not lead to a change in ranks) (LAMBSDORFF 2007).

In general, the CPI (if correctly used) can be seen as an instrument to raise awareness about corruption in the single countries and therefore help understand the levels of real corruption. But it is not suitable for evaluating the development of corruption in an individual country (positive and negative) in the course of time and can therefore only be seen as a snap-shot of the current situation.

4.8 Other decentral approaches

Apart from the number of measurement approaches on the international level, many approaches in different fora have been developed and many of them refer more to national and regional. For example, indicator frameworks in natural resource management which are close to the aims of the EA rather refer to regional levels, such as the sustainable forest management in British Columbia (Canada)(MONTRÉAL PROCESS WORKING GROUP 2007; cf. RAMETSTEINER/SIMULA 2003; HICKEY/INNES 2005). This framework takes the socio-economic relevance of ecosystems in to account. Within the criterion 'economic benefits', in parts quantitative and in parts procedural indicators are under debate (HICKEY/INNES 2005: 26ff.) (Table 4).

CCFM Criterion 5: Economic and Social Benefits
CCFM Element 5.1: Economic benefits
Contribution of timber products to the Gross Domestic Product (GDP)
Production, consumption, imports, and exports of timber products
Contribution of forest-based services to the gross domestic product
Distribution of benefits (CCFM Element 5.2)
Distribution of financial benefits from the timber products industry
Sustainability of Benefits (CCFM Element 5.3)
Aboriginal employment in the forest sector
Area of forest land managed primarily for the protection of domestic water supply
Water consumption (potential indicator)
Number and type of facilities available for general recreation and tourism, in relation to population and forest areas (potential indicator)
Road density index within recreation zone (potential indicator)
Area and percentage of forest land managed in relation to the total area of forest land to protect the range of cultural, social, and spiritual needs and values (potential indicator)
Sites and feature of cultural significance are identifies, mapped, discussed with interested local people and authorities, and efforts made to protect them (potential indicator)

Table 4: Selected indicators within the British Columbia Sustainable Forest Management Framework (cf. HICKEY/INNES 2005: 26ff.)

The framework also draws on issues of 'social inclusion' and 'participation' in the context of special social groups (here referred to as First Nations Groups, and/or Aboriginals

(HICKEY/INNES 2005: 26ff.) (Table _4). Conceptually, the framework contains elements of objective and quantitative numbers (e.g. area of forest land owned by Aboriginal people), but also points to ways to take perceptions into account (e.g. degree of satisfaction with contract development processes). Other scholars also have highlighted the need for subjective indicators in the context of basic needs satisfaction (BRINKERHOFF et al. 1997; EMPACHER/WEHLING 2001: 48; ANGELSEN/WUNDER 2003: 8ff.).

CCFM Criterion 6: Society's Responsibility
Provision for Duly established Aboriginal and Treaty Rights (CCFM Element 6.1)
Extent of Aboriginal peoples involved in the development of policies, legislation, and agreements related to forest management in British Columbia
Local representative in provincial or federal government (potential indicator)
First Nations information sharing and referrals program (potential indicator)
Level of First Nations satisfaction with involvement in development policies, legislation, and agreements related to forest management (potential indicator)
Extent to which forest planning and management processes consider and meet legal obligations with respect to duly establish Aboriginal and treaty rights
Areas where treaty or Aboriginal rights are being practised (areas available for subsistence purposes, for continued cultural use, for continued resource use) (potential indicator)
Area of Forest land owned by Aboriginal people
Absence of unsolved disputes on legal, tenure, or use rights (potential indicator)
Aboriginal Traditional Land Use and Forest Based Ecological Knowledge (CCFM Element 6.2)
Number of traditional land use studies and the extent to which they are incorporated in forest management plans
Area of First Nations traditional use sites by type (potential indicator)
Number of Aboriginal communities that have a significant forestry component (potential indicator)
Degree of satisfaction with contract development process (potential indicator)
Education and training programs (potential indicator)
Forest Community Well-being and Resilience (CCFM Element 6.3)
Economic diversity index of forest based communities (distribution of expenditures locally, size of labour pool)
Civic participation (potential indicator)
Annual harvest compared to local log consumption that is provided (potential indicator)
Migration history, likelihood of future migration (potential indicator)
Social capital infrastructure (financial services, communication services, bureaucratic services, community organisations, community integration events), e.g. personal identification with community, infant mortality rate, life expectancy (potential indicator)
Absence of unsolved disputes on legal, tenure, or use rights (potential indicator)

Table 5: Selected indicators within the British Columbia Sustainable Forest Management Framework (cf. HICKEY/INNES 2005: 29ff.)

With regard to an interesting combination of objective and subjective measures, the same applies to the indicator framework under the name "Basic Assessment Guide for Human Wellbeing" that has been developed by the Center for International Forest Research (CIFOR 1999: 10). It contains three main principles: Forest Management maintains or enhances fair intergenerational access to resources and economic benefits (P1); concerned stakeholders have acknowledged rights and means to manage forests cooperatively and equitably (P2); the health of forest actors, cultures and the forest is acceptable to all stakeholders (P3). Here, we also find important elements that aim at assessing the circumstances of decentralisation as we have discussed this topic above: equity, empowerment, conflict resolution, knowledge and awareness, biodiversity protection, and sustainable utilisation (cf. KELLERT et al. 2000: 707). In addition, with the reference to international agreed upon standards we (again) find an interesting mechanism of norm transfer. With its Principle 1.3 the FSC also draws on ILO conventions.

Principle 1: Forest Management maintains or enhances fair intergenerational access to resources and economic benefits
Criterion 1.1: Local management is effective in controlling maintenance of and access to the resources
Indicator (I) 1.1.1 Ownership and use rights to resources (inter- and intragenerational) are clear and respect pre-existing claims.
I 1.1.2 Rules and norms of resource use are monitored and enforced.
I 1.1.3 Means of conflict resolution function without violence.
I 1.1.4 Access to forest resources is perceived locally to be fair.
I 1.1.5 Local people feel secure about access to resources.
Criterion 1.2 Forest actors have a reasonable share in the economic benefits derived from forest use
I 1.2.1 Mechanisms of benefit sharing are seen as fair by local communities.
I 1.2.2 Opportunities exist for local and forest-dependent people to receive employment and training from forest companies.
I 1.2.3 Wages and other benefits conform to national and/or international Labour Organisation (ILO) standards.
I 1.2.4 Damages are compensated in a fair manner.
I 1.2.5 The various forest products are used in an optimal equitable way.

Table 6: Selected indicators within the Basic Assessment Guide for Human Wellbeing (CIFOR 1999: 10)

The Guide's Principle 2 (Table 8) draws on fundamental conditions of 'social inclusion' and successful decentralisation, such as language skills. Requiring the consideration of plans or maps which show the interaction of uses by different stakeholders aims at issues of policy integration and coherence.

Principle 2: Concerned stakeholders have acknowledged rights and means to manage forests cooperatively and equitably
Criterion 2.1 Effective mechanisms exist for two-way communication related to forest management among stakeholders.
I 2.1.1 > 50% of timber company personnel and forestry officials speak one or more local language, or > 50% of local women speak the national language.
I 2.2.2 Local stakeholders meet with satisfactory frequency, representation of local diversity, and quality of interaction.
I 2.3.3 Contributions made by all stakeholders are mutually respected and valued at a generally satisfactory level.
Criterion 2.2 Local stakeholders have a reasonable share in the economic benefits derived from forest use
I 2.2.1 Plans/maps showing interaction of uses by different stakeholders exist.
I 2.2.2 Updated plans, baseline studies and maps are widely available, outlining logging details like cutting areas and road construction, and include temporal aspects.
I 2.2.3 Baseline studies of local human systems are available and consulted.
I 2.2.4 Management staff recognises the legitimate interests and rights of other stakeholders.
I 2.2.5 Management of NTFT reflects the interests and rights of local stakeholders.
Criterion 2.3 Agreement exists on rights and responsibilities of relevant stakeholders.
I 2.3.1 Level of conflict is acceptable to stakeholders.

Table 7: Selected indicators within the Basic Assessment Guide for Human Wellbeing (CIFOR 1999: 10)

Elements in the introduced examples which refer to perceptions lead us now to newer approaches of *participatory self-evaluation.* Current innovative political programmes, such as the EU programme LEADER + and the German programme for integrated rural development 'Active regions' offer valuable – both theoretically and practically – insights for EA-issues such as the 'societal choice of objectives', 'decentralisation', and 'appropriate scales'. Both mentioned programmes are grounded in and reflecting current scientific debates on *regional governance* (see e.g. BENZ/FÜRST 2003 and FÜRST 2004). The emphasis here lies on an (assumed) increased relevance of the region as political coordination level, an inter-sectoral cooperation through weakly institutionalised regional networks and partnerships, and hierarchical steering of incentives through various instruments and forms. In order to stimulate such rural development processes, financial funds in combination with elements of competition are organised by higher state levels. Conditions for getting funds are concepts that are developed bottom-up and take the following criteria into account: sustainability, gender mainstreaming, and transparency. The scale of regional governance is no longer solely defined by administrative levels and borders. Rather, the region is conceptualised by a dynamic area of cooperation. This area is formed, in manageable spatial contexts, by the density and proximity of social

relations between regional actors (BÖCHER 2003). To put it in different words: Regional actors themselves take the decision about the criteria pertaining to the boundaries of a region and to the fulfilment of different tasks, e.g. whether to be an economic, tourist or nature protection region (LÖWIS et al. 2005: 16).

The evaluation deliberately integrates the regional actors, as they are able to provide the rural area with detailed knowledge. In comparison to other evaluation methods, the checklist based (see table8) evaluation in the context of LEADER+ and 'Active regions' not only focuses on outcomes. Rather, the focus is on qualitative, so called success factors such as manageable structures of the project, the identification of policy entrepreneurs, and the identification of problem pressure and willingness to find solutions.

		Does not apply				Strongly applies
1	Pressure of Problems	1 (0%)	2 (25%)	3 (50%)	4 (75%)	5 (100%)
1.1	There are publicly acknowledged pressing problems in the region					
Helping question	What is the central problem in the region (for example high unemployment rate, decline of agriculture?)					
1.2	There are actors in the region that are affected by the problem and want to find a solution					
Helping question	Which persons or groups are affected? Which actor is affected so as to be willing to work for its solution?					
1.3	There are real possibilities of solving the problem.					
Helping question	Which solutions are available? How realistic are they? Are they accepted as a common way?					
1.4	There is a strong regional identification that motivates regional actors to cooperate.					
Helping question	Do the citizens of the region identify themselves with the region or the regional nature?					

	Does identification affect the willingness to act together for regional development?					

Table 8: One section of the checklist (BÖCHER 2006: 58)

5 Devising socio-economic indicators for the purposes of the Ecosystem Approach: core issues and principles

In this concluding chapter we want to draw concise lessons from the theoretical concepts and practical experiences that have been discussed so far. It is clear from the outset, that any such endeavour is limited and we cannot give but a few suggestions that go beyond what has been discussed in the different fora of the CBD and the many international bodies that are dealing with related matters. We deliberately refrain from adding another list of potential indicators to the many lists that have been and are being proposed and reconsidered by organisations like the Commission on Sustainable Development. The value of such indicator lists is rooted to a large extent in their procedural and political legitimacy which is intrinsically low in any academic approach.

Instead we want to focus on a number of dimensions and related generic *issues* that we see emerging from the debates as outlined in this study. Firstly, we propose to define a set of core issues that all EA-related attempts of socio-economic monitoring should address (1). In addition to that, we propose a set of procedural rules the application of which would allow for the development of indicators that are adapted to regional and other specificities (2).

With this two-tiered approach we are adopting a fundamental structure that has also been chosen by other authors at different occasions, e.g. at the Rome Workshop on 'Social Monitoring of Biosphere Reserves' (cf. LASS/REUSSWIG 2001) or in the development of locally contextualized sustainability monitoring by the German Helmholtz Center for Environmental Research (HARTMUTH 2004; HARTMUTH et al. 2006). In contrast to the outcome of the Rome Workshop, however, we do not focus on a set of core *indicators* and a second, optional set of indicators on top of them. Instead, we propose to determine certain generic *issues* and then some procedural *rules* how to further elaborate the standards concerning these issues. While the generic dimensions themselves, like 'health' or 'poverty', are fixed and have to be dealt with under all circumstances, their translation into operational indicators thus remains flexible to a certain extent. In particular, there is room for regional specification and elaboration of standards according to defined procedural principles.

As a consequence of such an approach, we maintain, agreement (and disagreement) on the substantial, generic relevance of the issues will be more easily achieved. This is well illustrated by the FSC's experience which at the same time gives hope that it may be possible to work with a global set of social standards also for the purposes of the EA.

5.1 Generic issues

The generic issues that have to be addressed can only be derived from existing interna-

tional agreements, recommendations, standards, and widely accepted 'best practices'. An important part thereby has to be played by the influential indices developed by UNDP (such as the Human Development Index, the Human Poverty Index-1 and 2) and other processes in the wider context of the UN, in particular the Agenda 21, the CSD, the Millenium Development Goals (MDGs), the Johannesburg Plan of Implementation (JPOI, adopted in 2002 at the World Summit of Sustainable Development), and the norms of the International Labour Organization (ILO). In addition, privately coordinated or NGO-driven programmes of certification like the FSC's scheme can be taken as a source of inspiration.

We see four decisive advantages in taking recourse to such international programmes and processes to the maximum degree possible:

- Legitimacy: There is already a broad political consensus on the importance of the related issues in wide and diverse circles of decision-making;
- Expertise: An array of scientific, administrative and other experts from different cultural and political backgrounds have already given their input and agreed on these issues in substantial terms;
- Coherence and comparability: The substantial processing of topics in the mentioned fora has led to at least a minimum level of conceptual connectedness and standardization;
- Efficiency: Many countries seem overburdened already by the multitude of requirements in terms of monitoring and reporting (see below). A large part of the redundancy and repetition in substantial and procedural terms can be avoided to the benefit of coherence and clear priorities.

When following such an approach, a key role in conceptual terms will be accorded to the basic needs approach as it has been discussed above (chapter 3.1). To be sure, the EA should not be understood as an instrument to improve socio-economic situations and parameters as such, in their own right. Yet at the same time there can be little doubt that *the objectives of the EA cannot be achieved in cases where this would imply a deterioration in terms of basic needs satisfaction*. Thus the basic needs approach can be used to establish a very useful 'bottom line' for a number of socio-economic issues of global relevance. It comprises the following four dimensions: income/poverty, health including life expectancy, decent work/labour, and educational level (HICKS/STREETEN 1979; EMPACHER/WEHLING 1999, 2001). Because of the EA's strong emphasis on issues of decision making, we deem it necessary to additionally take issues of social inclusion and governance into account.

To break these six broad dimensions down, we see no acceptable alternative to seeking guidance from the above mentioned processes in the wider context of the UN.

With regard to the first dimension, *income/poverty*, we can then find two related 'generic issues' that are widely represented and well defined:

1. Occurrence of poverty
   (e.g. as the share of the population below the national poverty line, contained in the MDG database; CSD; Agenda 21, ch. 3 [3.4a]; JPOI ch. II [7a]; see also current debates concerning the revision of the CBD's strategic plan, e.g. Responses to notification: 'Updating or Revision of the Convention after 2010' [SCBD/ITS/DC/LC/64383]);
2. Fairness of income distribution
   (e.g. as ratio of share in national income highest to lowest quintile, CSD; Agenda 21, ch. 3; JPOI, ch. V [47]).

In the second dimension of *health and life expectancy*, we can find three related generic issues that are already accepted on a global level:

3. Child mortality
   (MDG 4; CSD; Agenda 21, ch. 6 [6.24]; JPOI, ch. VI [54f]);
4. Maternal health
   (MDG 5; Agenda 21, ch. 6 [6.24]; JPOI, ch. VI [54f]);
5. Occurrence of (and fight against) HIV/AIDS, malaria, and other diseases
   (MDG 6; CSD; Agenda 21, ch. 6 [6.12], JPOI, ch. VI [55]).

With regard to the third dimension of *decent work/labour*, there is one generic issue present throughout many of the relevant international texts, recently elaborated as part of the the MDGs:

6. Compliance with decent work standards
   (including respect of the provisions of all binding international agreements, especially ILO Conventions; cf. MDG 1 and New Target 1B; Agenda 21, ch. 29; JPOI, ch. I [10]; FSC).

For the dimension of *education*, there is also just one widely accepted generic issue:

7. Achievement of higher levels of education
   (MDG 2; CSD; Agenda 21, ch. 36; JPOI, ch. II [7g], X [116]; HDI, HPI1 and HPI2)

The fifth dimension of *social inclusion* has been elaborated in particular with regard to gender-related questions, so far. The widely accepted generic issue can be formulated as:

8. Gender equality and women's empowerment
   (MDG 3; Agenda 21, ch. 24; JPOI, ch. I; HPI2, GEM).

In the light of our theoretical considerations and, more particularly, in the context of the EA, the single focus on gender equality and empowerment as derived from the mentioned instruments seems insufficient to cover social inclusion. Given the particular role of indigenous and local communities in the CBD, an additional issue focussing on the rights of indigenous peoples and minority communities has to be introduced:

9. Recognition and empowerment of indigenous people and local communities embodying lifestyles relevant for the conservation and sustainable use of

biological diversity
(CBD Art. 8j, 10c; Agenda 21, ch. 26; JPOI).

Finally, the dimension of governance is taken up as the last generic issue which clearly points also towards the second, procedural tier of our approach:

10. Transparency and accountability of governance
(CSD; Agenda 21, ch. 8; JPOI, ch. XI [140, 160]; TI).

These ten generic issues could be used as a common frame of reference for all socio-economic monitoring in the context of the EA. They cover all the issues dealt with in the Millenium Development Goals, with two exceptions that can be well justified in our understanding: the aim "to ensure environmental sustainability" (MDG 7) is an inherent objective in the EA context and is therefore not required as a generic issue here; the need "to develop a global partnership for development" (MDG 8) can be seen as specified in the given context through the access and benefit sharing provisions of the CBD. With regard to the contentious role of indigenous people(s), it may be difficult to see how the EA could effectively promote higher standards than those which can be achieved in the broader context of the CBD and its related working groups. And it seems likewise clear that the EA as a key mechanism for the implementation of the CBD's objectives can not fall behind the standards achieved and codified by the COP of the CBD. (This argument also applies, *mutatis mutandis*, to the respect of internationally proclaimed human rights.) In line with this reasoning, we don't see a point in reintroducing in this particular context and at this general level any of the more specific debates around indicators for the conservation of indigenous knowledge and related issues that already have their place in the different CBD fora.

One great advantage of the proposed approach is that there are many related indicators for the generic issues available already, and supplementary materials for data collection, measurement, interpretation, etc. (cf. UN 2003). On the one hand, these specifications are quite helpful, as they show considerable more detail and sophistication then the rather dry generic issues suggest. E.g. the indicators related to poverty include the poverty gap ratio and the share of the poorest quintile in national consumption. On the other hand, not all of these specifications seem satisfactory and sufficient for all the manifold national and regional situations that are relevant for EA implementation. Moreover, some indicators are still being debated and will most likely continue to be contentious on national and international levels for some time to come. This is one important reason why we propose the adoption of *mechanisms* that would devolve the development and adaptation of concrete indicators from the international level to regional or national levels, wherever useful and possible.

5.2 Procedural principles and governance

The second tier of the proposed approach refers to a specific feature of social processes, namely that they are 'reflexive' as set out above (cf. ch. 2). The subjects 'reinvent themselves', their views and actions in the light of their knowledge about themselves. This basic property creates specific challenges (and opportunities) in social monitoring that are highly visible in current academic debates. At the same time, this property is in itself a very strong hint that, at some point, the social subjects to be monitored will be, and have to be systematically involved in the definition of monitoring aims and processes, including the definition of suitable indicators. We refer here to indicators not in the sense of a tool for third party certification. Rather we should see them as part of a pluralistic, negotiated approach to decision making about ecosystems. Instead of being a 'hard' instrument imposed by a strong state they can be seen as an emergent, 'soft' approach developed and applied by civil society actors, primarily. As shown in many instances, such an approach can make concepts of ecosystem approaches operational and also address broader social and environmental issues (cf. SAYER/MAGINNIS 2005b: 9). Thus, the often mentioned need for participation, as it pervades the EA language, is here more than a (widely accepted) political statement. It is a methodological prerequisite that can be deduced from theoretical insight.

The problem then is to establish a proper balance between the social forces active with regard to given scales, areas, conflicts or issues, and the overarching concerns as they are enshrined e.g. in the different global objectives of the CBD/EA, and the socio-economic core objectives, as they have been deduced above.

This can be achieved by way of procedural rules that show the way how to arrive at such a balance, including the framework of a governance structure. The generic issues and objectives that have been defined above can be elaborated and translated into meaningful and applicable indicators on a national and/or regional level. There may e.g. be indicators where the underlying issue is closely related but not identical to a national issue. Thus, countries with a strategic commitment to regional trade integration may want to monitor the share of trade with regional partners rather than the share of trade with developing countries (cf. UN 2007: 33). Moreover, in this process also the choice between objective and subjective measures (or a combination of the two) becomes relevant. For example, our set of generic issues above contains several health related items. Only one of them, the issue of child mortality, will intrinsically lead to an objective indicator. As the experience with CSD indicators shows, with regard to the other issues many countries will also use subjective health indicators referring to people's satisfaction with health status, based on survey data (cf. ibid.).

It goes without saying that the procedures how to elaborate these indicators should themselves conform to the principles laid down in the EA. In particular, the requirements

for societal choice and participation (involvement of stakeholders), and the call for decentralisation to the lowest appropriate level must be taken into account. Yet the concrete levels of participation and decentralisation are not only dependent on the substantial matters in question. Two additional considerations should be taken into account in this process, once more, namely the legitimacy and efficiency of the proposed procedures. It should be noted, first of all, that there are already certain modes and institutions for decision-making accepted with regard to CBD implementation.

In particular, the obligation to develop *national strategies*, plans or programmes for the conservation and sustainable use of biological diversity (Art. 6, CBD) can and should be made use of. Developing national strategies implies objectives of policy integration and coherence, as discussed in chapter 3.3.2. Action plans and strategies aim at the integration of different policy areas. They usually include inter-agency co-operation, evaluation and assessment procedures. According to the CBD COP's Guidance on Developing National Biodiversity Strategies and Action Plans (NBSAPs), these processes should be characterised by broad stakeholder participation ("support processes", COP Decision IX/8) and should also take issues of monitoring and review into account. In particular, parties are requested to

- "(t) Establish national mechanisms including indicators, as appropriate, and promote regional cooperation to monitor implementation of national biodiversity strategies and action plans and progress towards national targets, (…) and provide regular reports on progress, including outcome-oriented information, to the Secretariat of the Convention on Biological Diversity;
- (u) Review national biodiversity strategies and action plans to identify successes, constraints and impediments to implementation, and identify ways and means of addressing such constraints and impediments, including revision of the strategies where necessary;
- (v) Make available through the Convention's clearing-house mechanism national biodiversity strategies and action plans, including periodic revisions, and where applicable, reports on implementation, case studies of good practice, and lessons learned."

These different elements and stages of policy development provide for several "windows of opportunity" to bring social-economic issues in and to monitor them, as foreseen under the EA. An important additional factor, or incentive, can be found in the potentially far-reaching overlaps and synergies with regard to other obligations UN member states are expected to fulfil. To name just three important arenas where substantial overlap could be expected:

- Chapter 8 of Agenda 21 requests all nations to prepare, with wide participation of stakeholders, a strategy for sustainable development that integrates and

harmonises economic, social and environmental policies; here again, the need for monitoring is mentioned (cf. CHERP et al. 2004: 914-916, TILS 2007: 165).

- The Millennium+5 Summit has urged countries to "adopt ... and implement comprehensive national development strategies to achieve the internationally agreed development goals and objectives, including the Millennium Development Goals." (UN/GENERAL ASSEMBLY 2005b, § 22). In this national context, the MDG *country reports* are seen as the key to (1) creating awareness for the MDGs; (2) monitoring the national Millennium process; (3) establishing consensus on (i) appropriate indicators to measure progress in implementing the MDGs and (ii) action-guiding principles for aligning national policies and projects to the MDG agenda; (3) creating crosslinks to other conceptual strategy papers like e.g. Poverty Reduction Strategy Papers (PRSPs) (VANDEMOORTELE 2004; LOEWE 2008: 19f.). In addition, countries should deliver data to the annual Human Development Reports.
- Third, many countries used and tested the indicators proposed by the Commission on Sustainable Development (CSD, see chapter 4.5) in order to track progress toward nationally defined goals in particular and sustainable development in general (UN 2007: 21).

Thus, with regard to most of the generic issues as developed above, there is a need for information gathering and some kind of measurement, indicator use or even indicator development due to other political commitments or highly legitimate multilateral requirements already. The question is then mainly how to efficiently organise these complimentary and partly overlapping tasks and obligations.

In the CBD context, an important part could be played by the Clearing House Mechanism (CHM). So far, the CHM acts mainly as an information platform and as a largely passive provider of information (cf. PAULSCH et al. 2005: 43ff.). Currently, there is a debate on an improvement and an extension of functions that the CHM could cover. COP Decision IX/30 shows ways to improve the relevance and effectiveness of the CHM. In general terms, parties are encouraged to "develop links between the national clearing-house mechanism and existing networks, to develop information exchange mechanisms with relevant national databases, making use, whenever applicable and appropriate, of well-established open standards"(2d). More specifically, parties are encouraged to develop their national CHM as a component, if not a "key mechanism for the implementation and review of their national biodiversity strategies and action plans" (2 b, c). Such an approach is currently pursued by UNDP Romania in order to overcome observed weaknesses of the existing Biodiversity Strategy and Action Plan in terms of broader consultation and stakeholders' involvement (UNDP Romania 2009). One of the main issues at stake in that context is the strengthening of Romania's CHM, including the improvement of existing databases.

Moreover, parties to the CBD have been encouraged to further the "use of the national clearing-house mechanism as a tool to dialog with the civil society, major groups and stakeholders" (2i). This would imply that the CHM develops into a more interactive information platform, possibly fulfilling a moderating function for national networks of all kinds of biodiversity-related knowledge and competences (cf. PAULSCH et al. 2005: 43ff). Past activities have heavily focussed on biodiversity issues in a rather narrow ecological sense, but there is no reason why it should not deal with socio-economic issues, as well. Whether in the broader context of national biodiversity strategies or in the narrower context of CHM development, we see a major potential for FSC-like arrangements for standard development on the national or regional level. The construction of adequate decision structures and the question of resources may pose difficulties, but the positive effects could still prevail, including the strengthening of networks and ties that facilitate an exchange of ideas, learning effects, and the building of trust which are basic features of such an approach (cf. chapter 3.2.1).

5.3 Conclusion

On the basis of these arguments, we envisage a two-tiered governance structure. On the first level, the CBD's governing body (COP) has to define the generic issues to be dealt with, and it sets the basic objectives and standards in line with global socio-economic priorities - as it does with regard e.g. to protected areas. We have to assume, and can only endorse the concept, that this should happen along the lines of the different UN programmes we have referred to above, in particular the Millennium Development Goals, the work of the Commission on Sustainable Development, and the Johannesburg Plan of Implementation. Our second tier would then define the national (and regional) processes to develop adequate and more detailed standards and indicators on a lower level, with a much higher degree of involvement of stakeholders that could be organised in different chambers, like in FSC, or not.

As the FSC experience shows, such an approach is perfectly feasible and functional, even under difficult economic and political circumstances. Few observers would deny today that it has grossly contributed to the promulgation of minimum social standards in international forestry. Such minimum standards can even 'trickle down' to regions and settings where they were not envisaged or planned to be implemented. These effects are well-known in the debate around sustainability indicators. As a result, criteria and indicators that were originally just intended to measure social or political progress have the potential to turn into drivers of social change themselves, furthering processes of learning and capacity building on local and regional levels (ASTLEITHNER et al. 2004; RYDIN/HOLMAN 2004; HOLMAN 2009).

With the current scepticism prevailing regarding the definition of new indicators for the purposes of the EA in general, our restricted approach to socio-economic monitoring as laid out above seems adequate in political terms. We believe it will be more useful than a reopening of the debates around socio-economic indicators which have been led with varying success over the last two decades in different UN fora. For the first time, such an approach could lead to some common ground with regard to the questions how to integrate socio-economic issues into the implementation of the EA, what are the core generic issues to be dealt with, and how to 'measure' these issues in a participatory manner, and with a minimum of additional resources and structures.

Sources

ANDREWS, F. & WITHEY, S. (1976): Social Indicators of Wellbeing: American Perceptions of Quality of Life. – New York (Plenum Press): 583 pp.

ANGELSEN, A. & WUNDER, S. (2003): Exploring the Forest-Poverty Link: Key concepts, Issues and Research implications. – Jakarta (CIFOR Occasional paper 40): 70 pp.

ARTS, B. (2000): Global environmental policies: Between 'interstatist' and 'transnational' arrangements. - In: TATENHOVE, J., ARTS, B. & LEROY, P. (eds.): Political Modernisation and the Environment. The Renewal of Environmental Policy Arrangements. – Dordrecht (Kluwer Academic Publishers): 117-144.

ASTLEITHNER, F., HAMEDINGER, A., HOLMAN, N. & RYDIN, Y. (2004): Institutions and indicators: The discourse about indicators in the context of sustainability. – Journal of Housing and the Built Environment 19(1): 7-24

ASTLEITHNER, F., DANGSCHAT, J., HAMEDINGER, A. et al. (2002): Indicators into Action: Local Sustainability Indicator Sets in Their Context. Final Report. – London (London School of Economics): 98 pp.

ATKINSON, T., CANTILLON, B. & MARLIER, N. (2002): Social Indicators: The EU and Social Inclusion. – Oxford (Oxford University Press): 240 pp.

BARTELMUS, P. (2007): Indicators of sustainable development. – In: Cutler, J (ed.): Encyclopaedia of Earth. – Cleveland, Washington, D.C. (Environmental Information Coalition, National Council for Science and the Environment). URL: http://www.eoearth.org/article/Indicators_of_sustainable_development (January 31, 2010).

BARTLETT R. & KURIAN P. (1999): The theory of environmental impact assessment: Implicit models of policy making. – Policy and Politics 27: 415-433.

BASS, S., THORNBER, K., MARKOPOULOS, M., ROBERTS, S. & GRIEG-GRAN, M. (2001): Certifications's Impacts on Forests, Stakeholders and Supply Chains. – London (IIED): 134 pp.

BAUER, A. & RAMETSTEINER, E. (2006): Policy Integration and Co-ordination. Theoretical, Methodical and Conceptual Aspects. – In: RAMETSTEINER, E. (ed.): Proceedings of the 1st COST Action E51 Joint MC and WG Meeting, 12-14 October 2006, Grosspetersdorf, Austria, University of Natural Resources and Applied Life Sciences, Vienna; Department of Economic and Social Sciences, 1st COST Action E51 Joint MC and WG Meeting, 12-14 October 2006. – Grosspetersdorf: 31-48.

BAUER, R.A. (ed.) (1966): Social Indicators. – Cambridge, Mass., London (The MIT Press): 379 pp.

BAULER, T. (2007): Indicators for Sustainable development: a Discussion of their Usability (unpublished). – Brussels (Université Libre de Bruxelles, Faculté des Sciences – Dissertation): 189 pp.

BEAUVAIS, C. & J. JENSON (2002): Social Cohesion: Updating the State of Research. – Canadian Policy Research Networks (CPRN) Discussion Paper No. F/22 (May 2002). – Ottawa (http://www.cpm.org): 62 pp.

BECK, S., BORN, W., DZIOCK, S., GÖRG. C., HANSJÜRGENS, B., HENLE, K., JAX, K., KÖCK, W., NEßHÖVER, C., RAUSCHMEYER, F., RING, I., SCHMIDT-LOSKE, K., UNNERSTALL, H. & WITTMER, H. (2006): Das Millenium Ecosystem Assessment und seine Relevanz für Deutschland. UFZ-Report 02/2006. – Leipzig (Helmholtz Centre for Environmental Research, UFZ): 106 pp.

BENNETT, G. (2004): Integrating Biodiversity Conservation and Sustainable Use: Lessons Learned from Ecological Networks. – Switzerland & Cambridge (Gland): 55 pp.

BENZ, A. & FÜRST, D. (2003): Region – Regional Governance – Regionalentwicklung. – In: ADAMASCHEK, B. & PRÖHL, M. (eds.): Regionen erfolgreich steuern. – Gütersloh (Bertelsmann Stiftung): 11-66.

BERGER-SCHMITT, R. (2002): Considering Social Cohesion in Quality of Life Assessments: Concept and Measurement. – Social Indicator Research 58: 403-428.

BERGER-SCHMITT, R. & NOLL, H.-H. (2000): Conceptual Framework and Structure of a European System of Social Indicators. – EU Reporting Working Paper No. 9. – Mannheim (ZUMA): 73 pp.

BERKES, F. (2002): Cross-scale institutional linkages: Perspectives from the bottom-up. In: OSTROM, E., DIETZ, T., DOLSAK, N., STERN, P.C., STONICH & WEBER, E.U. (eds.): The drama of the commons. National Academy Press. – Washington, DC: 293-321.

BERKES, F. (2004): Rethinking Community-Based Conservation. In. Conservation Biology 18(3): 621-630.

BERNER, E. (2005): Nützlichkeits-Fetischismus: „Sozialkapital“ und die Ökonomisierung des Sozialen. – Peripherie 99: 286-305.

BÖCHER, M. (2003): Die politische Steuerung nachhaltiger Regionalentwicklung. Das Beispiel der EU-Gemeinschaftsinitiative LEADER+. – In: GRANDE, E. & PRÄTORIUS, R. (eds.): Politische Steuerung und neue Staatlichkeit – Baden-Baden (Nomos) – Staatslehre und politische Verwaltung 8: 235-258.

BÖCHER, M. (2006a): The Concept of “Regional Governance” and the Promotion of Sustainable Rural Development Processes in Germany. – In: RAMETSTEINER, E. (ed.): Proceedings of the 1st COST Action E 51 Joint MC and WG Meeting 12-14 October 2006 Großpetersdorf, Austria. – Vienna (University of Natural Resources and Applied Life Sciences, Department of Economic and Social Sciences): 49-66.

BÖCHER, M. (2006b): Participatory policy evaluation as an innovative method to improve processes of sustainable rural development. – Agricultural Economics Review 17 (1): 49-62.

BÖCHER, M. (2008): Regional Governance and rural development in Germany – the implementation of LEADER+ – Sociologia Ruralis 48 (4): 372-388.

BRINKERHOFF, M. B., FREDELL, K. A. & FRIDERES, J. S. (1997): Basic Minimum Needs, Quality of Life and Selected Correlates: Explorations in Villages in Northern India. – Social Indicator Research 42: 245-281.

BRUNNENGRÄBER, A., DIETZ, K., HIRSCHL, B. & WALK, H. (2004): Interdisziplinarität in der Governance-Forschung. – Diskussionspapier des IÖW (Berlin) 64 (04): 38 pp.

BURGER, D., LANG B. & HESS, J. (2005): Forest certification: taking stock from a development policy perspective – In: BURGER, D., HESS, J. & LANG, B. (eds.): Forest certification: An innovative instrument in the service of sustainable development? – Eschborn (Gesellschaft für Technische Zusammenarbeit, GTZ): 3-21.

BURGER, D., HESS, J. & LANG, B. (2005): Forest Certification: An Innovative Instrument in the Service of Sustainable Development? – Eschborn (Gesellschaft für Technische Zusammenarbeit, GTZ): 32 pp.

CAMPBELL, A. (1972): Aspiration, satisfaction and fulfilment. – In: CAMPBELL, A. & CONVERSE, P. (eds.): The Human Meaning of Social Change. – New York (Russell Sage Foundation): 441-446.

CAMPBELL, A., CONVERSE, P.E. & RODGERS, W.L. (1975): The Quality of American Life. – Ann Arbor (Institute for Social Research): 583 pp.

CASHMORE, M. (2004): The role of science in environmental impact assessment: process and procedure versus purpose in the development of theory. – Environmental Impact Assessment Review 24: 403-426.

CASHORE, B., AULD, G. & NEWSOM, D. (2004): Governing through Markets: Forest Certification and the Emergence of Non-State Authority. – New Haven, Conn [u.a.] (Yale University Press): ix + 327 pp.

CHAMARET, A., O'CONNOR, M. & RÉCOCHÉ, G. (2007): Top-down/bottom-up approach for developing sustainable development indicators for mining: Application to the Arlit uranium mines (Niger) – International Journal of Sustainable Development, 10 (1): 161-174.

CHIESI, A.M. (2005): Soziale Kohäsion und verwandte Konzepte. – In: GENOV, N. (ed.): Die Entwicklung des soziologischen Wissens. Ergebnisse eines halben Jahrhunderts. – Wiesbaden (Verlag für Sozialwissenschaften): 239-256.

CLEMMER, R.O. (2004): The Legal Effect of the Judgement: Indian Land Claims, Ecological Anthropology, Social Impact Assessment and the Public Domain. – Human Organization 63 (3): 334-345.

COBB, C.W. (2000): Measurement Tools and the Quality of Life. - San Francisco (Redefining Progress): 38 S. URL: http://www.rprogress.org/publications/ 2000/measure_qol.pdf (January 31, 2010).

COLEMAN 1988: Social capital in creation of human capital. – American Journal of Sociology 94: 95-120

COLFER, C.J.P. et al (1999): The BAG Basic Assessment Guide for Human Well-Being. – Jakarta (CIFOR): 77 pp.

COUNCIL OF EUROPE (2004): Revised Strategy for Social Cohesion. – Brussels (European Committee for Social Cohesion, CDCS): 28 pp.

DELEON, P. (1992): The democratization of the policy sciences. – Public Administration Review 52: 125-129.

DILLER, J. (1999): A social conscience in the global market place? Labour dimensions of codes of conduct, social labelling and investor initiatives. – International Labour Review 138 (2): 100-129.

DINGWERTH, K. (2007): The New Transnationalism. Transnational Governance and Democratic Legitimacy. – Basingstoke (Palgrave Macmillan): 260 pp.

DINGWERTH, K. (2008): North-South Parity in Global Governance: The Affirmative Procedures of the Forest Stewardship Council. – Global Governance 14: 53-71.

DINGWERTH, K. & PATTBERG, P. (2007): Wirkungen transnationaler Umweltregime. – In: JACOB, K., BIERMANN, F., BUSCH, P.O., FEINDT P.H. (eds.): Politik und Umwelt. – Wiesbaden (VS Verlag) – PVS Sonderheft 39: 133-156.

DRYZEK, J.S. (1990): Discursive Democracy: Politcs, Policy, and Political Science. Cambridge: (Cambridge University Press): 254 pp.

DOMASK, J. (2003): From Boycotts to Global Partnership. NGOs, the Private Sector and the Struggle to Protect the World's Forests. – In: DOH, J.P. & TEEGEN, H. (eds.): Globalisation and NGOs. Transforming Business, Government, and Society. – Westport (Praeger): 157-185.

EBELING, J. (2005): Market-based Conservation and Global Governance. Can Forest Certification Compensate for Poor Environmental Law Enforcement? Insights from Ecuador and Bolivia. Freiburg im Breisgau (Albert-Ludwigs-Universität – M.A. Thesis).

EBELING, J. & YASUÉ, M. (2009): The effectiveness of market-based conservation in the tropics: Forest certification in Ecuador and Bolivia. – Journal of Environmental Management 90: 1145-1153.

ÉGRÉ, D. & SENÉCAL, P. (2003): Social impact assessment of large dams throughout the world: lessons learned over two decades. – Impact Assessment and Project Appraisal 21 (3): 215-224.

ELLIOTT, C. & SCHLAEPFER, R. (2001): The advocacy coalition framework: application to the policy process fort he development of forest certification in Sweden. – Journal of European Public Policy 8 (4): 642-661.

ELLIS, K. & KEANE, J. (2008): A review of ethical standards and labels: Is there a gap in the market for a new 'Good for Development' label? – ODI Working Paper 297 – London (Overseas Development Institute): 74 pp.

EMPACHER, C. & WEHLING, P. (1999): Indikatoren sozialer Nachhaltigkeit. Grundlagen und Konkretisierungen. – ISOE-Diskussionspapiere (Frankfurt a.M.) 13: 90 pp.

EMPACHER, C. & WEHLING, P. (2001): Soziale Dimensionen der Nachhaltigkeit. Theoretische Grundlagen und Indikatoren. – ISOE-Studientexte (Frankfurt a.M) 11: 40 pp.

ENGEL, S., PAGIOLA, S. & WUNDER, S. (2008): Designing Payments for environmental services in theory and practice: An overview of the issues. – Ecological Economics 65: 663-674.

ERIKSON, R. (1974): Welfare as a planning goal. – Acta Sociologica 17: 273-288.

ERIKSON, R. (1993): Descriptions of Inequality: The Swedish Approach to Welfare Research. – In: NUSSBAUM, M.C. & SEN, A. (eds.): The Quality of Life. A study prepared for the World Institute for Development Economics Research of the United Nations University. – Oxford (Clarendon Press): 67-84.

ERIKSON, R. & ÅBERG, R. (Hrsg.) (1987): Welfare in Transition: A survey of living conditions in Sweden, 1968-1981. – Oxford (Clarendon Press): 297 pp.

ERIKSON, R. & UUSITALO, H. (1987): Scandinavian Approach to welfare research. -In: R. ERIKSON; E.J. HANSEN. S. RINGEN & UUSITALO, H. (eds.) The Scandinavian Model: Welfare and States and Welfare Research. – Armonck, N.Y. (M.E. Sharpe): 177-193.

FERRISS, A. L. (2006): History of Quality-of-Life Studies from an economics perspective. – In: SIRGY, J. M. et al.: The Quality-of-life (QOL) Research Movement: Past, Present, and Future. – Social Indicators Research 76: 343-466.

FISCHER, F. & FORESTER, F. (eds.) (1993): The Argumentative Turn in Policy Analysis and Planning. – London (UCL Press): 327 pp.

FLITNER, M., MATTHES, U., OESTEN, G. & ROEDER, A. (eds.) (2006): The ecosystem approach in forest biosphere reserves: results from three case studies. – BfN Skripten (Bonn) 168: 111 pp.

FLITNER, M. & GARRELTS, H. (2008): Die Bedeutung des ökosystemaren Ansatzes der CBD für den Schutz der Biodiversität in Wäldern. – Natur und Landschaft, 83(4): 150-153.

FLYVBJERG, B. (1998): Rationality and Power: Democracy in Practice. – Chicago, IL (University of Chicago Press): 290 pp.

FORSYTH, T. (2005): The Political Ecology of the Ecosystem Approach for Forests. – In: SAYER, J.A. & MAGINNIS, S. (eds.): Forests in landscapes: ecosystem approaches to sustainability. – London (Earthscan): 165-175.

FRANKENHAUSER, D. & FLITNER, M. (2006): The ecosystem approach in forest areas – starting points. In: FLITNER, M. et al. (eds.): The ecosystem approach in forest biosphere reserves: results from three case studies. – Bonn (Bundesamt für Naturschutz): 3-17.

FRASER, E.D.G., DOUGILL, A.J., MABEE, W.E., REED, M. & MCALPINE, P. (2006): Bottom up and top down: analysis of participatory processes for sustainability indicator identification as a pathway to community empowerment and sustainable environmental management. – Journal for Environmental Management 78: 114-127.

FRØNES, I. (2007): Theorizing Indicators. On Indicators, Signs and Trends. – Social Indicator Research 83: 5-23

FSC – Lake States Working Group of the FSC - US (2005): Revised Final Regional Forest Stewardship Standard for the Lake States-Central Hardwoods Region (USA). Version LS V3.0 February 10, 2005. URL: http://www.forestrycenter.org/library.cfm?refID=74101 (January 31, 2010)

FSC (1996): FSC International Standard. FSC Principles and Criteria for Forest Stewardship. – Bonn (Forest Stewardship Council).

FSC (2003): FSC Social Strategy. Building and Implementing a Social Agenda. Version 2.1 (February 17, 2003). – Bonn (Forest Stewardship Council).

FSC (2010a): Facts and figures. – Bonn (Forest Stewardship Council) – URL: http://www.fsc.org/facts-figures.html (January 31, 2010)

FSC (2010b): FSC around the world. – Bonn (Forest Stewardship Council) - URL: http://www.fsc.org/fsc-locations.html (January 31, 2010)

FSC (2010c): FSC Accreditation documents. – Bonn (Forest Stewardship Council) - URL: http://www.fsc.org/ (August 31, 2009)

FSC (2010d): Forest Stewardship Council A.C: by-laws. Forest Stewardship Council, Bonn.

FUCHS, D. (2006): Global Governance – an International Relations Perspective on Tropical Forests. – In: Spray, S. & Moran, M. (eds.): Understanding Environmental Challenges – A Multi-Disciplinary Approach. Tropical Deforestation. New York (Rowman & Littlefield): 129-154.

FÜRST, D. (2004): Rahmenbedingungen des Einsatzes von Planungsverfahren im öffentlichen Sektor. – In: FISCH, R. & BECK, D. (eds.): Komplexitätsmanagement. – Opladen (Verlag für Sozialwissenschaften): 119-136.

GALE, F. (2005): Global Democratic Governance. Learning from the Forest Stewardship Council. – Paper presented to the 46th Annual ISA Convention Honolulu, Hawaii March 1-5, 2005.

GALE, F. & HAWARD, M. (2004): Public Accountability in private regulation: contrasting models of the Forest Stewardship Council (FSC) and the Marine Stewardship Council (MSC). – Adelaide (University of Adelaide – Refereed paper presented to the Australian Political Studies Association Conference 29 September – 1 October 2004).

GALVIS, N. CASTRO (2001): Monitoring ecological and socioeconomic indicators for coral reef management in Colombia. – Bulletin of Marin Science 69 (2): 847-859.

GARRELTS, H. & FLITNER, M. (2010): Governance Issues in the Ecosystem Approach: What Lessons from the Forest Stewardship Council? – European Journal of Forest Research: DOI: 10.1007/s10342-009-0350-y.

GAUTHIER, D.A. & WEISS, S. (2005): Assessing Performance: Indicators, Social Cohesion and Community Sustainability. – Prairie Forum 30(2): 313-328.

GEHRLEIN, U. (2004): Nachhaltigkeitsindikatoren zur Steuerung kommunaler Entwicklung. – Wiesbaden (VS): 322 pp.

GÖRG, C. (2007a): Landscape Governance. The 'politics of scale' and the natural conditions of places. – Geoforum 38 (5): 954-966.

GÖRG, C. (2007b): Multi-Level Environmental Governance. Transformation von Staatlichkeit – Transformation der Naturverhältnisse. – In: BRUNNENGRÄBER, A. & WALK, H. (eds.): Multi-Level Governance. Klima-, Umwelt- und Sozialpolitik in einer interdependenten Welt. – Baden-Baden: (Nomos): 75-98.

GÖRG, C. (2007c): Räume der Ungleichheit. Die Rolle gesellschaftlicher Naturverhältnisse in der Produktion globaler Ungleichheiten am Beispiel des Millenium Ecosystem

Assessments – In: KLINGER, C., KNAPP, G.-A. & SAUER, B. (eds.): Achsen der Ungleichheit. – Frankfurt a.M./ New York (Campus): 131-150

GÖRG, C. & RAUSCHMEYER, F. (2009): Multi-level-governance and the politics of scale – the challenge of the Millenium Ecosystem Assessment – In: KÜTTING, G. & LIPSCHUTZ, R. (eds.): Environmental governance, power and knowledge in a local-global world. – London (Routledge): 81-99.

GOUGH, A.D., INNES, J.L. & ALLEN, D. (2008): Development of common indicators of sustainable forest management – Ecological Indicators 8: 425-430.

GRASSO, M. & CANOVA, L. (2008): An Assessment of the Quality of Life in the European Union Based on the Social Indicators Approach. – Social Indicator Research 87: 1-25.

HARSHAW, H.W., SHEPPARD, S.R.J. & LEWIS, J.L. (2007): A review and synthesis of social indicators for sustainable forest management. – Journal of Ecosystems and Management 8 (2): 17-36.

HARTJE, V., KLAPHAKE, A. & SCHLIEP, R. (2003): The International Debate on the Ecosystem Approach. Critical Review International Actors Obstacles and Challenges. BfN-Skripten 80. – Bonn (Federal Agency for Nature Conservation).

HARTMUTH, G. (2004): Nachhaltige Entwicklung im lokalen Kontext. Schritte zur Entwicklung eines kommunalen Nachhaltigkeits-Indikatorensystems. – UFZ-Diskussionspapiere 6/2004. – Leipzig (UFZ): 37 pp. – URL: http://www.ufz.de/data/Disk_Papiere_2004-061643.pdf (January 31, 2010)

HARTMUTH, G., HUBER, K. & RINK, D. (2006): Downscaling von Nachhaltigkeit. Das integrative Nachhaltigkeitskonzept als Bauplan für kommunale Indikatorensysteme. – In: KOPFMÜLLER, J. (ed.): Das Konzept auf dem Prüfstand. Das integrative Nachhaltigkeitskonzept in der Forschungspraxis. – Berlin (edition sigma): 99-114.

HASENCLEVER, A., MAYER, P. & RITTBERGER, V. (1997): Theories of international regimes. – Cambridge (University Press): 248 pp.

HERTIN, J., TURNPENNY, J., JORDAN, A., NILSSON, M., RUSSEL, D. & NYKVIST, B. (2007): Rationalising the policy mess? Ex ante policy assessment and the utilisation of knowledge in the policy process. – Environment and Planning A 41(5): 1185-1200.

HESS, J. (2005): Impacts, obstacles to and risks of forest certification. In: D. BURGER, HESS, J., LANG, B. (eds.): Forest certification: An innovative instrument in the service of sustainable development? – Eschborn (Gesellschaft für Technische Zusammenarbeit (GTZ)): 195-206.

HICKEY, G.M. & INNES, J.L. (2005): Scientific Review and Gap Analysis of Sustainable Forest Management and Criteria and Indicators Initiatives. – Kamloops (FORREX Forest Research Extension Partnership) – FORREX Series 17: 64 pp.

HICKEY, G.M. & INNES, J.L. (2008): Indicators for demonstrating sustainable forest management in British Columbia, Canada: An international review. – Ecological Indicators 8: 131-140.

HICKS, N. & STREETEN, P. (1979): Indicators for development: The search for a Basic Needs Yardstick. – World Development 7: 567-580.

HOLMAN, N. 2007: Following the signs: applying urban regime analysis to a UK case study. – Journal of Urban Affairs 29 (5): 435-453.

HOLMAN, N. (2009): Incorporating local sustainability indicators into the structures of local governance: a review of the literature – Local Environment 14(4): 365-375.

HOUSE E. (1993): Professional Evaluation – Social Impact and Political Consequences. – Newbury Park, CA (Sage Publication Inc.): 215 pp.

INNES, J.E. (1998): Information in communicative planning. – Journal of the American Planning Association, 64(1): 52-63.

INNES, J.E. & BOOHER, D.E. (2000): Indicators for Sustainable Communities: A Strategy Building on Complexity Theory and Distributed Intelligence. – Planning Theory and Practice 1 (2): 173-186.

IN'T VELD, R. (ed.) (2000): Willingly and Knowingly: The Roles of Knowledge about Nature and the Environment in Policy Processes. – Utrecht (Lemma Publishers): pp 147-157.

JACOB, K. & VOLKERY, A. (2004): Institutions and Instruments for Governmental Self-Regulation: Environmental Policy Integration in a Cross-Country Perspective. – Journal of Comparative Policy Analysis 6 (3): 291-309.

JACOB, K., VOLKERY, A. & LENSCHOW, A. (2008): Instruments for Environmental Policy Integration in 30 OECD Countries. Cheltenham, Chemberly, Northampton (Edward Elgar Publishing): 384 pp.

JACOB, K., HERTIN, J. & VOLKERY, A. (2007): Considering environmental aspects in integrated impact assessment: lessons learned and challenges ahead. – In: GEORGE, C. & KIRKPATRICK, C. (eds.): Impact Assessment and Sustainable Development. European Practice and Experience. – Cheltenham (Edward Elgar Publishing): pp. 90-105.

JASANOFF, S. et al. (eds.) (1995): Handbook of Science and Technology Studies. – Thousand Oaks, CA [u.a.] (Sage Publishers): 1080 pp.

JENSON, J. (1998): Mapping social cohesion: The state of Canadian research. – Ottawa (Canadian Policy Research Networks – CPRN Study No. F|03): 60 pp.

JOHANSSON, S. (1973): The Level of Living Survey: A Presentation. – Acta Sociologica 16: 211-219

KAMPS, K. (2007): Politisches Kommunikationsmanagement. Grundlagen und Professionalisierung moderner Politikvermittlung. Wiesbaden (Verlag für Sozialwissenschaften): 293-344.

KELLERT, S.R., MEHTA, J.N., SYMA, A.E. & LICHTENFELD, L.L. (2000): Community Natural Resource Management. Promise, Rhetoric and Reality. – Society and Natural resources 13(8): 705-715.

KERKOW, U. (2007): Experiences with the application of the Basic Capabilities Index. Paper presented at the international workshop "The Ecosystem Approach under the CBD and socio-economic monitoring", November 26-28, 2007, University of Bremen.

KERN, K. (2004): Globale Governance durch transnationale Netzwerkorganisation. Möglichkeiten und Grenzen zivilgesellschaftlicher Selbstorganisation. – In: GOSEWINKEL, D.

RUCHT, D. VAN DEN DAELE, W. & KOCKA, J. (eds.): Zivilgesellschaft – national und transnational. WZB-Jahrbuch 2003. – Berlin (edition sigma): 285-308.

KINGDON, J.W. 1984: Agendas, alternatives, and public policies. - Boston [u.a.] (Little, Brown and Co.): 280 pp.

KLOOSTER, D. (2005): Environmental certification of forests: The evolution of environmental governance in a commodity network. – Journal of Rural Studies 21: 403-417.

KOPFMÜLLER, J., BRANDL, V., JÖRISSEN, J., PAETAU, M., BANSE, G., COENEN, R. & GRUNWALD, A. (2001): Nachhaltige Entwicklung integrativ betrachtet. Konstitutive Elemente, Regeln, Indikatoren. – Berlin (edition sigma): 432 pp.

KRASNER, S. (1983) International Regimes. – Ithaca (Cornell University Press): 372 pp.

KRONAUER, M. (2002): Exklusion: Die Gefährdung des Sozialen im hoch entwickelten Kapitalismus. – Frankfurt a.M. (Campus): 252 pp.

KRUEDENER, B. v. (2000): FSC forest certification – Enhancing social forestry developments? – Forests, Trees and People Newsletter No. 43: 12-18.

LAMBSDORFF, J. (2007): The Institutional Economics of Corruption and Reform: Theory, Evidence and Policy – Public Choice 138 (3): 257-258.

LAND, K. (1983): Social Indicators. – Annual Review of Sociology 9: 1-26.

LASS, W. & REUSSWIG, F. (eds.) (2001): Social Monitoring. Meaning and Methods for an Integrated Management in Biosphere Reserves. – Rome (Report of an International Workshop, September 2-3, 2001).

LITTIG, B. & GRIEßLER, E. (2005): Social sustainability: a catchword between political pragmatism and social theory. – International Journal of Sustainable Development 8 (1/2): 65-79.

LOEWE, M. (2005): Die Millennium Development Goals: Hintergrund, Bedeutung und Bewertung aus Sicht der deutschen Entwicklungszusammenarbeit. Diskussionspapier. – Bonn (Deutsches Institut für Entwicklungspolitik).

LÖWIS, S. VON, WIECHMANN T. & MÜLLER, B. (2005): Regionale Agenden in Deutschland – Akteure, Institutionen und Strategien nachhaltiger Regionalentwicklung am Beispiel der 'Regionen der Zukunft'. – In: WIECHMANN, T., LÖWIS, S. VON & KAETHER, J. (eds.), Das Modellvorhaben 'Regionen der Zukunft'. Dresden: IÖR-Schriften 45: pp. 13-78.

LOVELL, C. et al. (2002): The Question of Scale in Integrated Natural Resource Management. – Conversation Ecology 5 (2). – URL http://www.consecol.org/vol5/iss2/art25/ (January 31, 2010)

LUXEM, M. & BRYLD, B. (1997): The CSD Work Programme on Indicators of Sustainable Development. – In: Moldan, B. & Billharz, S. (eds.) Sustainability Indicators. Report of the project on indicators of sustainable development. – Chichester & New York (John Wiley and Sons): 1-6

MA (2003): Ecosystems and Well-Being: A Framework for Assessment. – Washington D.C. (Island Press): 64 pp.

MA (2005a): Millenium Ecosystem Assessment Synthesis Report. – Washington D.C. (Island Press): 155 pp.

MA (2005b): Ecosystems and Well-Being: Multiscale Assessments. Findings of the Subglobal Assessments Working Group of the Millenium Ecosystem Assessment. – Washington D.C. (Island Press) - Millenium Ecosystem Assessment Series 4: 388 pp.

MA (2005c): Biodiversity Synthesis Report. – Washington D.C. (Island Press): 100 pp.

MAJONE, G. (1989): Evidence, Argument, and Persuasion in the Policy Process. – New Haven & London (Yale University Press): 203 pp.

MARTENS, J. (2005): Millenium-Entwicklungsziele (MDGs) – das neue Mantra der Entwicklungspolitik. – In: Social Watch (ed.): Handeln statt Versprechen. Soziale Gerechtigkeit und Armutsbekämpfung (Social Watch Deutschland Report 2005 / Nr. 5). – Heidelberg: 44-45.

MEADOWS, D.H. et al. (1972): The limits to growth. – New York (Universe Books): 205 pp.

MEIDINGER, E. (1999): Private Environmental Regulation, Human rights and Community. – Buffalo Environmental Law Journal 7: 123-237.

MEIDINGER, E, ELLIOTT, C., & OESTEN, G. (Hrsg.) (2003): Social and Political Dimensions of Forest Certicication. – Remagen-Königswinter (Kessel): 354 pp.

MICHALOS, A. (2006): Conceptual and Philosophical Foundations. – In: SIRGY, J. M. et al.: The Quality-of-life (QOL) Research Movement: Past, Present, and Future. – Social Indicators Research 76: 343-466.

MONTRÉAL PROCESS WORKING GROUP (2007): Annex F. Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests, Third Edition. – 12 pp.

MURRAY, J. (1998): Corporate codes of conduct and labour standards. – In: KYLOH; R. (ed.): Mastering the challenge of globalisation. Towards a trade union agenda. ILO Bureau for Workers' Activities. Working Paper produced under Project INT/97/MO1/ITA ("Information, technology, workers' participation and social dialogue") – Geneva (ILO): 45-104.

NOLL, H.-H. (2004): Social Indicators and Quality of Life Research: Background, Achievements and Current Trends. – In: GENOV, N. (ed.): Advances in Sociological Knowledge. Over half a Century. – Wiesbaden (Verlag für Sozialwissenschaften): 151-182.

NOLL, H.-H. (2005): Sozialindikatorenforschung und Sozialberichterstattung: Ansätze zur Messung und Analyse der Lebensqualität. – In: GENOV, N. (ed.): Die Entwicklung des soziologischen Wissens. Ergebnisse eines halben Jahrhunderts. – Wiesbaden (Verlag für Sozialwissenschaften): 185-212.

NOLL, H.-H. & ZAPF, W. (1994): Social Indicators Research: Societal Monitoring and Social Reporting. – In: BORG, I. & MOHLER, P. (eds.): Trends and Perspectives in Empirical Social Research. – Berlin & New York (Walter de Gruyter): 1-16.

NUSCHELER, F. (2005): Lern- und Arbeitsbuch Entwicklungspolitik: Eine grundlegende Einführung in die zentralen entwicklungspolitischen Themenfelder Globalisierung,

Staatsversagen, Hunger, Bevölkerung, Wirtschaft und Umwelt. – Bonn (Dietz): 656 pp.

NUSCHELER, F. & ROTH, M. (eds.) (2006a): Die Millennium-Entwicklungsziele. Entwicklungspolitischer Königsweg oder ein Irrweg? – Bonn (Dietz): 251 pp.

NUSCHELER, F. & ROTH, M. (2006b): Die Millenium-Entwicklungsziele: ihr Potenzial und ihre Schwachstellen. Eine kritische Zusammenfassung. In: NUSCHELER, F. & ROTH, M. (eds.): Die Millenium-Entwicklungsziele. Entwicklungspolitischer Königsweg oder ein Irrweg? – Bonn (Dietz): 15-43.

OECD (1993): OECD Core Set of Indicators for Environmental Performance Reviews. – Paris (OECD): 39 pp.

O'CONNOR, M. & SPANGENBERG, J.H. (2008): A methodology for CSR reporting: assuring a representative diversity of indicators across stakeholders, scales, sites and performance issues. – Journal of Clean Production 16 (13): 1399-1415.

OMANN I. & SPANGENBERG, J.H. (2002): Assessing Social Sustainability. The Social Dimension of Sustainability in a Socio-Economic Scenario. Paper presented at the 7th Biennial Conference of the International Society for Ecological Economics in Sousse (Tunisia), March 6-9, 2002.

OWENS, S., RAYNER, T. & BINA, O. (2004): New agendas for appraisal: reflections on theory, practice and research. – Environment and Planning A 36: 1943-1959.

PATOSAARI, P. (2004): Sustainable forest Management, Forest Certification and MDGs. Paper, presented at the symposium "Forest Certification in developing and Transitionning Societies". June 10, Yale University, New Haven, Connecticut, USA.

PATTBERG, P. H. (2005): What role for Private Rule-Making in Global Environmental Governance? Analysing the Forest Stewardship Council (FSC). – International Environmental Agreements 5 (2): 175-189.

PATTBERG, P.H. (2005): The Forest Stewardship Council: Risk and Potential of Private Forest Governance. – The Journal of Environment and Development 14 (3): 356-374.

PAULSCH, A., KAMP, T., BÄURLE, G. & PLÄN, T. (eds.) (2005): Technology Transfer via the Clearing-House Mechanism (CHM). A national study on actors, instruments, possible concepts and perspectives for the German CHM to facilitate technology transfer and cooperation in support to the Convention on Biological Diversity. – Bonn (Federal Agency for Nature Conservation): 55pp.

PAVOT, W. (2006): History of QOL Studies from a psychological perspective. - In: SIRGY, J.M. et al.: The Quality-of-life (QOL) Research Movement: Past, Present, and Future. – Social Indicators Research 76: 343-466.

PERSSON, A. (2004): Environmental Policy Integration: An Introduction. Stockholm (Environment Institute).

PONTE, S. (2008): Greener than Thou: The Political Economy of Fish Ecolabeling and Its Local Manifestations in South Africa. – World Development 36(1): 159-175.

POSCHEN, P. (2000): Social Criteria and Indicators for Sustainable Forest Development. A Guide to ILO texts. – Forest certification Working Paper No.3 – Eschborn: 33 pp.

POSCHEN, P. (2003): Economic and Social Justice in Sustainable forest Management: an ILO Perspective on Forest certification. – In: MEIDINGER et al. (eds.): Social and Political Dimensions of Forest Certification. – Remagen-Oberwinter (Kessel Verlag): 83-101.

PRESCOTT-ALLEN, R. (2001): The Well-being of Nations. – Washington D.C. [u.a.] (Island Press.): 219 pp.

PRETTY, J. & SMITH, D. (2004): Social Capital in Biodiversity Conservation and Management. – Conservation Biology 18 (3): 631-638.

PUTNAM, R. (1993): Making Democracy Work: Civic Traditions in Modern Italy. – Princeton (Princeton University Press): 280 pp.

PUTNAM, R. (2000): Bowling Alone: The Collapse and Revival of American Community. – New York (Simon & Schuster): 544 pp.

RADAELLI, C. M. (2005): Diffusion without convergence: How political context shapes the adoption of regulatory impact assessment. – Journal of European Public Policy 12: 924-943.

RAMETSTEINER, E. (2007): Opportunities to Create Synergy Among the C&I Processes Specific to the Topic of Harmonisation. – In: MCPFE (Hrsg.): Inter-Criteria and Indicators (C&I) Process Collaboration Workshop, 8-10 June, 2006, in Bialowieza, Poland.

RAMETSTEINER, E. & SIMULA, M. (2003): Forest certification – an instrument to promote sustainable forest management? – Journal of Environmental Management 67: 87-98.

RANGAN, H. & KULL, C.A. (2008): What makes ecology 'political'? Rethinking 'scale' in political ecology. – Progress in Human Geography: 1-18.

RANGANATHAN, J., MUNASINGHE, M. & IRWIN, F. (eds.) (2008): Policies for Sustainable Governance of Global Ecosystem Services – Cheltenham (Edward Elgar): 400 pp.

RAUCH, T. (2007): Von Basic Needs zu MDGs. Vier Jahrzehnte Armutsbekämpfung in Wissenschaft und Praxis und kein bisschen weiter. – Peripherie 107: 216-245.

RIBOT, J.C. (2004): Waiting for Democracy: The Politics of Choice in Natural Resource Decentralizations. – Washington (World Resources Institute): 154 pp.

RIBOT, J.C., AGRAWAL, A. & LARSON, A.M. (2006): Recentralizing While Decentralizing: How National Governments Reappropriate Forest Resources. – World Development 34, (11): 1864-86.

RYDIN, Y. & HOLMAN, N. (2004): Re-evaluating the contribution of social capital in achieving sustainable development. – Local Environment 9(2): 117-133.

RYDIN, Y., HOLMAN, N. & WOLF, E. (2003): Local Sustainability Indicators. – Local Environment 8 (6): 581-589.

SABATIER, P. A. & JENKINS-SMITH, H. C. (1993): Policy Change and Learning: An Advocacy Coalition Approach. – Boulder, CO (Westview Press): 304 pp.

SABATIER, P. A. & JENKINS-SMITH, H. C. (1999): The advocacy-coalition framework: An assessment. - In SABATIER, P. A. (eds.): Theories of the Policy Process. – Boulder, CO (Westview Press): 117-166.

SAYER, J.A., ELLIOT, C., BARROW, E., GRETZINGER, S., MAGINNIS, S., MCSHANE, T. & SHEPHERD, G. (2004): The Implications for Biodiversity Conservation of Decentralised Forest Resources Management. – In: PIERCE COLFER, C.J. & CAPISTRANO, D. (eds.): The politics of decentralization: forests, people and power. – London (Earthscan): 121-138.

SAYER, J.A. & MAGINNIS, S. (2005a): Forests in Landscapes. Ecosystem Approach to Sustainablity. – London (Earthcan): 257 pp.

SAYER, J.A. & MAGINNIS, S. (2005b): New Challenges for Forest Management. – In: SAYER, J.A. & MAGINNIS, S. (eds.): Forests in Landscapes. Ecosystem Approaches to Sustainability. – London (Earthcan): 1-16.

SAYER, J.A. & MAGINNIS, S. (2005c): Forests in Landscapes. Expanding Horizons for Ecosystem Forestry. – In: SAYER, J.A. & MAGINNIS, S. 2005a (eds.): Forests in Landscapes. Ecosystem Approach to Sustainablity. – London (Earthcan): 177-191.

SCHARPF, F. W. (1997): Games real Actors Play. Actor-Centered Institutionalism in Policy Research. – Boulder, CO (Perseus): 318 pp.

SCHERR, S.J., WHITE, A. & KAIMOWITZ, D. (2001): Strategies to improve rural livelihoods through markets for products and services. – Washington D.C. (Forest Trends).

SCHMIDT, D. (2007): Decent Employment and the Millenium Development Goals: Description and analysis of a new target, Key Indicators of the Labor Market (KILM), Fifth Edition. – Genf (ILO). URL: http://www.ilo.org/public/english/employment/strat/kilm/index.htm (22. Februar 2010)

SCOTT, D. & OELOFSE, C. (2005): Social and Environmental Justice in South African Cities: Including 'Invisible Stakeholders' in Environmental Assessment Procedures. – Journal of Environmental Planning and Management 48 (3): 445-467.

SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY (2006): Global Biodiversity Outlook 2. – Montreal (CBD):82 pp.

SEN, A. (1993): Capability and Well-being. - In: NUSSBAUM, M.C. & SEN, A. (eds.): The Quality of Life. – Oxford (Clarendon Press): 30-53.

SETBOONSARNG, S. (2008): Can Ethical Trade Certification contribute to the Attainment of the Millenium Development Goals? A review of Organic and Fair-trade Certification. – Asian Development Bank Institution Discussion paper 115 – Tokyo: 23 pp.

SHANNON, M. & SCHMIDT, C.-H. (2002): Theoretical Approaches to Understanding Intersectoral Policy Integration. Cross-Sectoral Policy Impacts on Forests. – Joensuu (European Foretry Institute): 15-26.

SHARPE, A. & SMITH, J. (2005): Measuring the Impact of Research on Well-Being. A Survey of Indicators of Well-Being. Report prepared by the Centre for the Study of Living Standards for the Prime Minister's advisory Council on Science and Technology. CSLS Research Report Number 2005-02.

SHELDON, E. B. & MOORE, W. E. (1968): Indicators of Social Change: Concepts and Measurement. - New York (Russell Sage Foundation): 822 pp.

SIRGY, M. J., MICHALOS, J.A., FERRISS, A., EASTERLIN, R. , PATRICK, D. & PAVOR, W. (2006): The Quality-of-Life (QOL) Research Movement: Past, Present, and Future. – Social Indicators Research 76: 343-466.

SOCIAL WATCH (2005): Basic Capabilities Index. Poverty dimensions: Responsibilities to be undertaken by governments. - URL: http://www.sarpn.org.za/documents/d0002129/Basic_capabilities_ index_Aug2005.pdf (August 31, 2009)

SOCIAL WATCH (2007a): The Basic Capabilities Index. Far from where we should be. - Montevideo - URL: http://www.socialwatch.org/en/avancesyRetrocesos/ICB/index.htm (August 31, 2009)

SOCIAL WATCH (2007b): Social Watch Report 2007. In dignity and rights. Making the universal right to social security a reality. A citizens' Global Progress Report on Poverty eradication and gender equity. – Montevideo.

SPANGENBERG, J.H. (2002): Institutional sustainability indicators: An analysis of the institutions in Agenda 21 and a draft set of indicators for monitoring their effective-ty. – Sustainable Development 10: 103-115.

SPANGENBERG, J.H. (2004): Reconciling Sustainability and Growth: Criteria, Indicators, Policies. – Sustainable Development 12: 74-86.

SPANGENBERG, J.H. (2007): The institutional dimension of Sustainable Development. – In: HÁK et al. (eds.): Sustainability Indicators. A scientific Assessment. – Washington, Covelo, London (Island Press): 107-126.

SPANGENBERG, J.H. & BONNIOT, O. (1998): Sustainability Indicators – A compass on the road towards Sustainability. – Wuppertal Paper 81: 34 pp.

SPANGENBERG, J.H. & LOREK, S. (2002): The changing contribution of unpaid work to the total standard of living in sustainable development scenarios. – International Journal for Sustainable Development 5 (4): 461-475.

SPANGENBERG, J.H. / OMANN, I. (2006): Assessing social sustainability: social sustainability and its multicriteria assessment in a sustainability scenario for Germany". – International Journal for Innovation and Sustainable Development. 1(4): 318-348.

SPANGENBERG, J.H., PFAHL, S. & DELLER, K. (2002): Towards indicators for institutional sustainability: lessons from an analysis of Agenda 21. – Ecological Indicators 2: 61-77.

STAPLETON, L.M. & GARROD, G. D. (2007): Keeping things simple: Why the Human Development Index should not diverge from its equal weights. – Social Indicator Research 84: 179-188.

STEWART, J., HIGMAN, S., BROWN, L., ROBINSON, D. & PEACHEY, V. (2003): Increasing the contribution of forest certification to sustainable rural livelihoods. Paper presented at The International Conference on Rural Livelihoods, Forests and Biodiversity. 19-23 May 2003, Bonn, Germany.

STOKER, G. (1998): Governance as a theory: five propositions. – International Social Science Journal 155: 17-28.

STREETEN, P. & BURKI, S.J. (1978): Basic Needs. Some Issues. – World Development 6(3): 411-421

TÅHLIN, M. (1990): Politics, Dynamics and Individualism – the Swedish Approach to Level of Living Research. – Social Indicators Research 22: 155-180.

TAYLOR, P. L. (2005a): In the Market But Not of It: Fair Trade Coffee and Forest Stewardship Council Certification as Market-Based Social Change'. – World Development 33(1): 129-147.

TAYLOR, P. L. (2005b): A Fair Trade approach to community forest certification? A framework for discussion. – Journal of Rural Studies 21: 433-447.

TILS, R. (2007): The German Sustainability Strategy: Facing Policy, Management and Political Assessments. – European Environment 17(3): 164-176.

UN (2003): Indicators for Monitoring the Millennium Development Goals. Definitions, Rationale, Concepts, and Sources. – New York (United Nations Development Group): 115 pp.

UN DSD (2006): Revising indicators of Sustainable Development – Status and Options. Background paper. Expert Group Meeting on Indicators of Sustainable Development. – New York, 3-4 October 2006. [anpassen im Text 4.5, DSD 2007)

UNDP (1995): Bericht über die menschliche Entwicklung. – Bonn (DGVN): 263 pp.

UNDP (2008): Human Development Report. Fighting climate change: Human solidarity in a divided world. – New York (Palgrave MacMillan): 399pp.

UNDP (2009): Human Development Report. Overcoming Barriers: Human Mobility and Development. – New York (Palgrave MacMillan): 229 pp.

UNDP Romania 2009: Support to alignment of National Biodiversity Strategy and Action Plan (NBSAP) with the Convention on Biological Diversity (CBD) and development of Clearing House Mechanism (CHM). URL: http://www.undp.ro/projects.php?project_id=55

UNECE (2006): Indicators of Sustainable Development: Experiences and Goals of the United Nations Division for Sustainable Development. Working Paper No. 8. – Luxembourg: 3 S. URL: http://www.unece.org/stats/documents/2006/04/sustdev/wp.8.e.pdf (January 31, 2010)

UNEP (2005): Strategic Plan. Future evaluation of progress. Ad hoc open ended working group on access and benefit sharing. Third meeting Bangkok, 14-18 February 2005. – Bangkok (CBD): 8 pp.

UNEP (2007a): Achieving the 2010 Biodiversity Target. Decisions from the Eighth meeting of the Conference of the Parties to the Convention on Biological Diversity and Report of the High-Level Segment. Curitiba, Brazil

UNEP (2007b): Indicators for Assessment – an overview of the landscape. Vision 2020. February 2007

UUSITALO, H. (1994): Social Statistics and Social Reporting in the Nordic Countries. – In: FLORA, P., KRAUS, F., NOLL, H.H. & ROTHENBACHER, F. (eds.): Social statistics and social reporting in and for Europe. – Bonn (Informationszentrum Sozialwissenschaften): 90-120.

VAN EETEN, M. (2001): The challenge ahead for deliberative democracy: In reply to Weale. – Science and Public Policy 28: 423-426.

VANCLAY, F. (1999): Social impact assessment. – In: PETTS, J. (ed.), Handbook of environmental impact assessment. Vol. 1 – Oxford (Blackwell): 301-326.

VANCLAY, F. (2002): Conceptualising social impacts. – Environmental Impact Assessment Review 22: 183-211.

VANCLAY, F. (2006): Principles for social impact assessment: A critical comparison between the international and US documents. – Environmental Impact Assessment Review 26: 3-14.

VEENHOVEN, R. (1996): Happy life expectancy: a comprehensive measure of quality-of-life in nations. – Social Indicators Research 39: 1-58.

VEENHOVEN, R. (2002): Why Policy Needs Subjective Indicators. – Social Indicators Research 58: 33-45.

ZANGL, B. 2006: Regimetheorie. – In: SCHIEDER, S. & SPINDLER, M. (eds.): Theorie der internationalen Beziehungen. – Opladen & Farmington Hills(Verlag Barbara Budrich): 121-144.

Appendix: Socio-economic issues in the EA

The principles and implementation guidelines (IG) of the EA contain a number of both explicit (a) and implicit (b) references to socio-economic monitoring and indicators. In addition, a number of procedural aspects are mentioned (c). Finally, reference is made to political initiatives at different levels (d).

(a) Explicit references to socio-economic monitoring are made in the context of ecosystem management (principle [Pr.] 3). According to IG 3.3, *social impact assessment* is seen as an optional part of environmental impact assessment (EIA) and strategic environmental assessment. An explicit reference is also made in IG 9.4: "*Monitoring systems*, both *socio-economic* and ecological, are an integral part of adaptive management ...".

(b) Implicitly, there is a whole range of references that point to the necessity of different kinds of socio-economic monitoring. Pr. 1 – different views of societal sectors in terms of their own economic, cultural and societal needs, Pr. 3 – consideration of effects of management activities on other ecosystems, Pr. 4 – economic context of ecosystems; IGs 1.6 – determination of decision makers for each decision, 1.7 – incorporating known stakeholder views into future decisions, 1.8 – determination of desired societal conditions, 1.12 – effects on society, 2.1 – identification of multiple communities of interest, 2.5 - identification and choosing of appropriate bodies, 2.5 – effects on marginalised members of society, 3.4 – monitoring the effects of management practices across ecosystems, 4.1 - understanding the social and economic contexts, 4.2 - practical economic valuation methodologies for ecosystem goods and services (direct, indirect and intrinsic values), 4.6 – evaluating the direct as well as indirect economic benefits associated with good ecosystem management, 4.8 – incorporation of social and economic values, 5.1 – human needs and values, 5.2 – determination of social and economic objectives, 5.3 – ecosystem contribution to social and economic outcomes, 6.4 – effects of human use, 7.6 – intergenerational equity, 8.1 – taking into account immediate and critical needs, 9.1 – changing social (…) conditions, 9.9 – use of traditional knowledge and practice, 10.5 – human requirements.

(c) A number of procedural aspects point in the same direction: Pr. 2 – decentralisation to the lowest appropriate level, Pr. 7 – undertaking of the EA at the appropriate spatial and temporal scales (…) definition of boundaries by users, managers, scientist and indigenous and local peoples; IGs 1.4 – capacity of stakeholders, 1.9 – accountability, 1.10 – manage conflicts among relevant stakeholder groups, 1.11 – control structures to ensure implementation of decisions over the long term, 2.2 - compensation of fragmented decision making responsibilities, 2.3 - good governance arrangements, 2.6 - institutional arrangements, 4.4 – economic and social incentives, 4.8 equitable sharing of costs and

benefits, 7.2 – readjusting the scale of the institutional response, 7.4 engaging stakeholders across administrative borders, 7.7 - intergenerational equity, 10.3 – participatory integrated planning, 10.3 – full range of values and options, 11.1 – sharing relevant information, 12. 1 cooperation between sectors, at various levels of government, among governments, civil society and private sector, 12.3 – effective participation

(d) IG 12.2, in particular, underlines the incorporation of the EA as an integral part of planning in other natural resources management sectors which also deal with social issues, for example, the *Code of Conduct for Responsible Fisheries* and *Sustainable Forest Management*.

Concrete formulations are contained within the mentioned COP 7/11 Decisions. Paragraph [Par.] 7 and 11 refer to a framework for sustainable forest management (as a means of applying the EA to forests), also with regard to the application of tools such as the criteria and indicators as an outcome-oriented application of the EA, Par. 7 mentions *integrated river-basin management, integrated marine and coastal area management* and *responsible fisheries approach* as tools to support the implementation in various sectors. Par. 11 regards different certification programmes to be relevant, especially with regard to the development of criteria and indicators (related to decision VI/22 on forest biodiversity).

Annex I, termed "*Refinement and elaboration of the ecosystem approach, based on assessment of experience of parties in implementation,*" refers to the World Summit on Sustainable Development that has recognised the EA as an *important instrument for enhancing sustainable development and poverty alleviation*. *Humans*, in Par. 2 of annex I, are regarded as an *integral part of many ecosystems*. Par. 5 requires that the work of Convention bodies focus on *supporting local and regional efforts as a contribution to achieving the Millennium Development Goals*.

Par. 16 mentions issues of socio-economic monitoring (also, see above) explicitly, estimating the *collection of* (…) *social and economic information* to be *important to the successful completion of the ecosystem approach.* According to Par. 17 (headline: *monitoring and review*)*, monitoring and review are crucial components in implementing the ecosystem approach. They allow a responsive and adaptive management capability to be developed. Monitoring and review are also useful in reporting performance and the resultant outcomes of the approach. Indicators of performance should be defined, developed and implemented.*

Annex II, termed "*Consideration of the relationship between sustainable management and Ecosystem Approach, and review of, and development strategies for, the integration of the Ecosystem Approach into the programmes of work of the Convention,"* refers to ways for sustainable development of forests. Part A of the annex focuses mainly on the

relationship between the concept of sustainable forest management (SFM) and the EA (in detail: Flitner et al. 2006, 7f.). More activities are required to ensure their integration (Annex II, Par. 5.) In addition, an explicit task is formulated to develop criteria and indicators for SFM (ibid, 3), to enhance implementation and monitoring: *Criteria and indicators can be used for setting goals, assessing management outcomes and policy effectiveness, orienting forest certification systems, and for communicating progress to policy makers (Par. 10)*. Special reference in the context of monitoring systems is made to local-level indicators (Par. 11). Further parts deal with the appropriate spatial scale of monitoring systems, with regard to recent efforts of the World Conservation Union (IUCN) and of the International Tropical Timber Organization (ITTO). The former, in particular, focuses on the landscape level (Par. 12). Thus, protected areas, being excluded so far, also by forest certification schemes, can and have to be integrated in the relevant categories. (Par. 14). Finally, in Par. 17, an explicit reference is made to procedural and institutional mechanisms to ensure cross-sectoral integration.