

## Final Draft Dated 16 May 2002

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### Chapter 4

#### *Values and conflicts: where different values meet*

**This chapter analyses types of conflicts, how such conflicts arise in relation to mires and peatlands.**

#### 4.1 Introduction

The concept of “Wise Use”<sup>1</sup> incorporates complex environmental, economic and social concerns that require integrated decision-making. Different values may be intertwined in a complicated way. Values may be mutually incompatible, and - when compatible - the distribution of the benefits can be a matter of dispute. To make sound decisions, incompatible values have to be identified, conflicting claims have to be weighed against each other, and norms have to be established for assigning priority to one over another<sup>2</sup>.

There are serious limitations to the extent to which values and claims can be compared. Many values can be compared only if we take fairly extreme cases (one value at stake in a small way, another in a big way). Alternatively values may lack attributes that allow addition and subtraction. But in general<sup>3</sup>, competing claims can be weighed to such extent (“this is more valuable than that”) that sensible judgements can be made or workable solutions can be found, at least between those who share the same “world-view”<sup>4</sup>.

Under democratic conditions, accepted norms take the character of “mutual coercion set by mutual agreement”<sup>5</sup>: guidelines, conventions, and laws. This presupposes a setting in which people - in an open debate based on all the information and reasoning available - agree freely to restrictions on the realisation of individual preferences. Such agreements are made from the perspective of citizens who take a moral interest in public affairs while the coercion itself (norms, laws) restricts the behaviour of private persons and interest groups who try to satisfy their preferences and economic interests.

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<sup>1</sup> Cf. § 1.2.

<sup>2</sup> “The assignment of weights is an essential and not a minor part of a concept of justice. If we cannot explain how these weights are to be determined by reasonable ethical criteria, the means of rational discussion have come to an end. An intuitionist conception of justice is, one might say, but half of a conception. We should do what we can to formulate explicit principles for the priority problem, even though the dependence of intuition cannot be eliminated entirely.” Rawls 1971.

<sup>3</sup> See Brennan 1992, and below.

<sup>4</sup> Cf. Rawls 1971, Taylor 1986, Attfield & Dell 1996. See also § 3.2

<sup>5</sup> Hardin 1968.

In the rest of this chapter these general statements are analysed in more detail, starting from a position that considers human beings as the prime focus of concern<sup>6</sup>.

## 4.2 Needs and wants and rights

As a preamble to a discussion of conflicts, it is important to discuss the difference between needs and wants.

(i) *Needs*: According to John Maynard Keynes, absolute needs (necessities/primary goods/basic interests) are those that can be fully met: there is a physical maximum to what a person can consume of drink, food, sex, company, information, etc.

(ii) *Wants*: The satisfaction of wants (amenities/commodities/peripheral interests) is a comparative concept<sup>7</sup>: it is largely based on what others in the social surrounding possess<sup>8</sup>. “Keeping up with the Joneses”<sup>9</sup> is to some extent obligatory, as it co-determines social acceptance and respect<sup>10</sup>: a social being cannot behave altogether differently from others<sup>11</sup>. This “mimetical desire”<sup>12</sup>, however, has no material upper limits<sup>13</sup>. The distinction between needs and wants is complicated by the fact that the same product may satisfy both needs and wants<sup>14</sup>.

In the Universal Declaration on Human Rights, the global community has identified the needs that human beings can rightfully claim (Table 4/3). These claims are defined as an individual’s *rights* and are “boundary conditions” that may not be violated, even if that would result in a greater good of the same category for others<sup>15</sup>.

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<sup>6</sup> Following the Universal Declaration of Human Rights (UN General Assembly 1948) and the concept of sustainable development (World Commission on Environment and Development 1987), cf. § 3.2. While the framework in this document is based on an anthropocentric position, it nonetheless recognises (§§ 3.2, 4.10 and 5.8) that many people believe in the moral right of animals, plants, ecosystems and landscapes to exist, i.e. that these entities have intrinsic value.

<sup>7</sup> Frank 1985, 1999

<sup>8</sup> Satisfaction of needs is the removal of shortage, satisfaction of wants is the removal of dissatisfaction.

<sup>9</sup> Science Action Coalition & Fritsch 1980. Human beings share this characteristic with many other animal species. The display of affluence functions as an indication of good prospects for the successful raising of offspring, and attracts potential reproduction partners. Once this mechanism functions, competition for mating rapidly results in the evolution of exaggerated forms, as is shown by peacock tails, large antlers, fat bellies, even to the extent that the initial advantage changes into a disadvantage (e.g. giant deer).

<sup>10</sup> Cf. the “trickle-down-effect” of Simmel 1905. This inclination is actively exploited by commerce by creating trends and ridiculing people who do not follow them (Mishan 1967).

<sup>11</sup> At relatively high levels of income, personal happiness depends on one’s income or expenditure relative to the mean income or expenditure of some reference group. At really low levels of income happiness is not associated with income (Gupta 1999).

<sup>12</sup> Achterhuis 1988.

<sup>13</sup> Increased information exchange in the “global village” has on the one hand enormously enlarged the circle of reference for mimetical desire (everyone in the world can know what everyone else possesses). On the other hand it has removed the spatial obstacles for group formation, making possible - more than in the past - the free choice of social surroundings.

<sup>14</sup> A villa, for example, satisfies the basic need for shelter, but additionally satisfies many “wants”. The same applies to food, drink, clothing, health care, social contacts etc.

<sup>15</sup> Rawls 1971. If, for example, the only way to save the life of five patients is to kill an innocent person and divide his/her organs among them by transplantation, the killing is wrong even though, by saving five lives at the expense of one, it has overall “better” consequences. Saving life is not “equivalent” to killing (Harris 1975, Hurka 1993, Prior 1998).

The Universal Declaration implies that needs have to be satisfied. Permissible<sup>16</sup> wants and value systems do not have to be actively satisfied or supported, but their pursuit may not be hindered or violated<sup>17</sup>.

As between needs and wants, the satisfaction of needs prevails over that of wants<sup>18</sup>.

### 4.3 Different types of conflicts

Conflicts can be subdivided into **conflicts dealing with “facts”** (true / not true), and **conflicts dealing with “choices”** (agree / not agree) (Table 4/1). Conflicts of the first kind are relatively easy to solve. Conflicts of the second kind are more complicated because they are based on different weightings which different persons place on particular values and they concern options for actions that are mutually exclusive.

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<sup>16</sup> I.e. that do not violate the rights of others.

<sup>17</sup> It should be noted that the concept of Human Rights is essentially an individualistic approach. In other societies more “holistic” approaches (see § 3.2) may prevail, that pay more attention to the societal “whole” and less to the individuals constituting that whole. The caste system in ancient Hindu society, for example, ecologically stabilised society by reducing competition among various people for limited natural resources (Dwivedi 1990). [China Hier heeft Hampicke nog wat wijs over geschreven](#)

<sup>18</sup> Cf. Crocker 1990, "Live simply that others may simply live", Salleh 1990.

**Table 4/1:** Overview of the causes of conflicts between human beings.

		<b>Conflict cause</b>	<b>Examples</b>
Conflicts dealing with facts	1	<b>Different understanding</b> of terms and concepts (miscommunication, insufficient information exchange)	* one person using the term “mire” meaning the Finnish “suo” versus another meaning the German “Moor” * agreeing on “sustainability”, but attributing different meanings to that concept (cf. § 4.7)
	2	<b>Different judgements</b> as to the means most suited to achieving a particular end.	* disagreeing on the best management option for peatlands to reduce the greenhouse effect * conflicts on how to maximise monetary profits
Conflicts dealing with choices	3	<b>Different preferences</b> as between different instrumental values	* preference for cultivated orchids in a vase versus wild orchids in a mire * preference for cloudberry <sup>19</sup> liquor versus a winter living room temperature of 22° C.
	4	<b>Attaching different precedences</b> <sup>20</sup> to different instrumental or intrinsic values	* conservation of a medically important globally threatened species versus mire drainage to prevent disease in an adjacent village * vital local versus vital global human interests
	5	<b>Different priorities</b> <sup>21</sup> with respect to instrumental or intrinsic values	* reducing malnutrition among contemporary human beings versus long-term environmental impacts on human beings
	6	<b>Different positions</b> with respect to which entities have intrinsic moral value	* nature conservation (oriented on species) versus animal protection (oriented on individual organisms) * anthropocentric versus non-anthropocentric position: “But the pine is no more lumber than man is, and to be made into boards and houses is no more its true and highest use than the truest use of a man is to be cut down and made into manure” <sup>22</sup> .

#### 4.4 Conflicts dealing with facts

Conflicts arising from **different understanding** are common, but also the simplest to solve: their solution only requires effective communication<sup>23</sup> and sufficient information exchange to create a common base of knowledge. It will then become clear that there is no real conflict, rather there is misunderstanding and talking at cross-purposes<sup>24</sup>.

<sup>19</sup> *Rubus chamaemorus*

<sup>20</sup> A precedence is a measure of importance in space within the same value category (e.g. finding “me” more important than “you”, finding a person here more important than a person somewhere else, finding two human beings more important than one human being).

<sup>21</sup> A priority is a measure of importance in time (e.g. short term versus long term).

<sup>22</sup> Thoreau 1864 (in: Homan 1991).

<sup>23</sup> Being reliant on both sender and receiver.

<sup>24</sup> A consensus can, for example, easily be reached on questions like “peatland forestry leads to increased peat accumulation” (cf. Crill et al. 2000, Joosten 2000) or “peatland biodiversity leads to peatland stability” when

- all parties involved really want to know the right answer,
- agreement exists on the content of the terms (“peat”, “biodiversity”, “stability”, etc.) and the period of time and location and area under consideration, and
- all available information on the subject is exchanged.

Conflicts arising from **different judgements** of mean-end relationships (the means most suited to achieving a particular end) should take into account the principles of rational choice (Table 4/2). They can in principle also be solved factually. Which alternative is to be chosen is again a matter of optimal information exchange and best professional judgement. The correctness of the decision can be tested. When more than one “means” are tested, a quantitative solution can be reached: “this means is better than that”. When only one alternative is tested, a qualitative answer can be given: “this means does / does not achieve the aim”.

**Table 4/2:** The principles of rational choice<sup>25</sup>.

The principle of effective means:	That alternative should be adopted which achieves the end in the best way.
The principle of the greater likelihood:	Preference should be given to the alternative which is more likely to give the desired outcome.
The principle of inclusiveness:	Preference should be given to the alternative which achieves all of the direct aims and one or more further aims in addition.

#### 4.5 Conflicts dealing with preferences

In this subsection the relationships between different *preferences* are surveyed (Table 4/1). *Preferences* pertain to things that can be replaced by something else<sup>26</sup>.

Conflicts between preferences relate to balancing what one party gains against what the other loses. A central question therefore is: is there a way to rank or value different preferences, do some types of *wants* prevail over others?

Both ethics and economics try to address this question by reducing the complexities concerning value to a single measure, for example by trying to extend monetarised cost-benefit-analysis to all aspects of impact assessment. By using one weighting factor to express each individual’s change in utility, it is intended to reflect the overall benefits for society. In principle<sup>27</sup>, *instrumental* values and preferences can indeed be monetarised<sup>28</sup>. The instrumental value of human beings is, for example, expressed in the wages for labour, the price of tickets for a piano concert, or the cost of safety provisions in a truck that guarantee the future productivity of the driver.

<sup>25</sup> Rawls 1971.

<sup>26</sup> I.e. things that have a “price” and can be exchanged for a set of alternatives; Cf. Kant 1785: “In the realm of aims, everything has either a price or a dignity. For what has a price, something can be put as an equivalent at its place; what on the contrary is above all price, and therefore allows no equivalent, has a dignity.” The equivalency may be based on the accomplishment of the same aims (e.g. peat or wood for energy generation) or on indifference in utility (e.g. a bottle of whisky versus an orchid in a vase). Preferences apply to both *needs* and *wants*. The Universal Declaration of Human Rights recognises the right to pursue *wants* so long as this does not violate the rights of others (see Table 4/3). This means that the *wants* of one party can never prevail over the *needs* and basic liberties of others. See § 4.6.

<sup>27</sup> Apart from unsolvable practical problems, see below.

<sup>28</sup> For an in-depth discussion on possibilities, methods and restrictions of monetarisation, see Grönemann & Hampicke 1997, on which much of the following is based.

This partial monetarisation of instrumental value should, however, not be mistaken for a full determination of total (comparative) value<sup>29</sup>. A gothic cathedral may bring \$xxx a year to a city from visitors, but may at the same time have an inestimable artistic value. A wetland can be said to have a value of \$yyy for the purification of sewage, because it makes technical provisions with the same effect unnecessary, but its total value can not be estimated. Many issues can not be monetarised completely (see § 4.8). Monetarisation is useful to get *a* minimum value, not for getting *the* value. Furthermore, the weighting of preferences does not solve the central question of how such weightings would be allocated<sup>30</sup>.

If there is no single set of concepts or principles by which to value every situation, it is sensible to view cases in different ways<sup>31</sup>. Different perspectives can reveal things which are overlooked when only a single perspective is used. As well as comparing the costs and benefits of specific actions, for example, we may also take more explicitly into consideration the costs and the renounced benefits of the status quo<sup>32</sup>. By adopting such a pluralist stance, we not only do justice to the complexity of real situations, but we can also seek ways in which different modes of valuing and ways of responding can be linked together to provide a more comprehensive solution to a situation.

In the absence of other premises, no preference can be considered better or worse than others<sup>33</sup>. In making choices, other premises<sup>34</sup> may give rise to the following considerations:

1. All means of meeting *wants* should be distributed equally unless an unequal distribution of any or all of these goods and services is to the advantage of the least favoured<sup>35</sup>.
2. In the grey area between clear *needs* and clear *wants*, those preferences more related to *needs* (i.e. things that are more essential) prevail over those more related to *wants*.

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<sup>29</sup> Somebody can be equally happy *with* the existence of a close relative and *without* a million dollars as *without* the existence of that relative and *with* a million dollars. For that person, the existence of the relative only has an instrumental value and a price, however no intrinsic value, i.e. no “dignity”. It is impossible to monetarise intrinsic value.

<sup>30</sup> Attfield & Dell 1996

<sup>31</sup> Although the fulfilment of an individual's wants is not necessarily beneficial for him or her, the right to liberty (see § 4.6) requires that we respect these choices as long as no rights of others are violated. The choices may only be influenced by information and education: these may transform preferences.

<sup>32</sup> including the aspects of reversibility, cf. Joosten 1997.

<sup>33</sup> See § 3.1.

<sup>34</sup> See the *needs* and *wants* discussion, and the General Conception of the Principles of Justice of Rawls (1971) in § 4.6.

<sup>35</sup> In order to provide genuine equality of opportunity, society must give more attention to those with fewer native assets and to those born into less favourable social positions (Rawls 1971). The policy of positively weighing the gains and losses of those at a low level of wellbeing is consistent with most notions of social justice, and may also be justified in that acting thus makes a greater beneficial difference, and satisfies desires which are more crucial and more pervasive.

The weights to be attached to the utility of different parties at different levels of wellbeing must be settled by politicians; but decision-making can only claim to be rational where it is based on the foreseeable consequences for all affected parties, and where the same weights are used consistently throughout (Attfield & Dell 1996).

#### 4.6 Conflicts dealing with precedences

In contrast to conflicts between preferences, conflicts dealing with *precedences* can not be solved by balancing pros and cons. Conflicts between different precedences (Table 4/1) deal with conflicting *rights* (see § 4.2) of beings with an intrinsic value, i.e. with beings that fall in the same value category<sup>36</sup>. They involve the precedence to be accorded to one right over another and include conflicts between “me” and “you”, “those here” and “them there”, and “some few” and “those many”<sup>37</sup>. Even though we accept the equality of all people we continuously hesitate between the extremes of a “charity begins at home” and a St. Martin who showed - by giving half his cloak to a poor stranger - that the stranger’s well-being was as important to him as his own<sup>38</sup>.

The human character resists altruism which is entirely disinterested<sup>39</sup>. People give more weight to their own interests than to those of others. In doing so they must respect the rights of others, as illustrated in Table 4/3:

**Table 4/3:** Overview of the most important human rights and duties<sup>40</sup>.

Right to	Valid claim	Duty of others
Subsistence	<ul style="list-style-type: none"> <li>not to be violently harmed</li> <li>to the physical <b>needs</b> of survival: food, water, shelter, clothing, basic health care</li> <li>to protection from those who might do physical harm</li> </ul>	<ul style="list-style-type: none"> <li>not to violently harm</li> <li>not to actively deprive others from these needs</li> <li>not to expose others to unacceptable risks</li> </ul>
		<ul style="list-style-type: none"> <li>to protect against such harm</li> <li>to provide these needs</li> </ul>
Liberty	<ul style="list-style-type: none"> <li>to freedom from positive external constraints upon the pursuit of permissible<sup>41</sup> <b>wants</b></li> <li>to protection against deprivation of this freedom</li> </ul>	<ul style="list-style-type: none"> <li>not to restrict this freedom</li> </ul>
		<ul style="list-style-type: none"> <li>to secure this freedom</li> </ul>
Autonomy	<ul style="list-style-type: none"> <li>to a self-directed life according to one’s own <b>value system</b> (moral position)<sup>42</sup></li> </ul>	<ul style="list-style-type: none"> <li>not to impair (the development of) self-determination</li> </ul>
		<ul style="list-style-type: none"> <li>to help the development, strengthening, and preservation of this autonomy</li> </ul>

Veto duties are stronger than prescription duties

 veto duty  prescription duty

<sup>36</sup> Intrinsic value is an absolute concept: something either has (+) or lacks (0) it. Instrumental values are generally comparative, i.e. more or less suited (+1, +2, +3, ...) for a specific purpose.

<sup>37</sup> Possible obligations to future generations are dealt with in § 4.7.

<sup>38</sup> Cf. Hampicke 2000. This problem results from the dilemmas of being a rational social being. All animals distinguish between “group members” and “non-group members” and must treat these differently (otherwise all predators would eat their offspring). Social beings have an extended sympathy that includes other beings than the direct offspring, i.e. that exceeds direct egoism. Rational beings are aware of the existence of this boundary between “in” and “outside” the circle, and - driven by the (social) tendency towards extended sympathy - question the rationale of the boundary (Midgley 1983). This has in history led to extending moral circles, as, for example, is apparent in the development of U.S.A. legislation that subsequently extended rights to American colonists (Declaration of Independence 1776), slaves (Emancipation Proclamation 1863), women (Nineteenth Amendment 1920), native Americans (Indian Citizenship Act 1924), Labourers (Fair Labor Standards Act 1938), and blacks (Civil Rights Act 1957), cf. Nash 1989.

<sup>39</sup> “We have no choice but to be especially interested in ourselves and those close to us.” (Midgley 1996).

<sup>40</sup> UN General Assembly 1948, modified after Taylor 1986.

<sup>41</sup> I.e. that do not violate the rights of others.

<sup>42</sup> In so far as it does not compromise other people’s rights.

“The greatest good of the greatest number”<sup>43</sup> furthermore implies that people have a duty to sacrifice their interests for the sake of larger benefits to others<sup>44</sup>. They do not, however, need to accept great losses to secure a small increase in the aggregate good<sup>45</sup>.

As a help in resolving conflicts between the rights of different persons or different groups, John Rawls has formulated a set of principles and priority rules<sup>46</sup>:

*The principle of liberty.* Each person has an equal right to the most extensive system of equal basic liberties<sup>47</sup> compatible with a similar system of liberty for all.

*The principle of just inequality.* Social and economic inequalities are to be arranged so that they are both:

- (a) to the greatest benefit of the least advantaged<sup>48</sup>, and
- (b) attached to offices and positions open to all under conditions of equality of opportunity.

*The priority of liberty.* Liberty can be restricted only for the sake of liberty:

- (a) a less extensive liberty must strengthen the total system of liberty shared by all;
- (b) a less than equal liberty must be acceptable to those with lesser liberty.

*The priority of justice over efficiency and welfare:*

- (a) an inequality of opportunity must enhance the opportunities of those with the lesser opportunity;
- (b) an excessive rate of saving must on balance mitigate the burden of those bearing this hardship.

*General conception:*

All social primary goods - liberty and opportunity, income and wealth, and the bases of self-respect - are to be distributed equally unless an unequal distribution of any or all of these goods is to the advantage of the least favoured.

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<sup>43</sup> Cf. W J McGee: "Conservation is the use of natural resources for the greatest good of the greatest number for the longest time." (Herfindahl 1961).

<sup>44</sup> Cf. Crocker 1990, "Live simply that others may simply live", Salleh 1990

<sup>45</sup> Hurka 1993.

<sup>46</sup> Rawls (1971) argues that the correct principles of justice are those that would be agreed to by free and rational persons, placed in the "original position" behind a veil of ignorance: not knowing their place in society; their class, race, or sex; their abilities, intelligence, or strengths; or even their conception of good. In contrast to the Universal Declaration on Human Rights, that is largely founded on a western metaphysical concept of rights, Rawls' principles follow the Kantian approach of rationality and universalisation (the "categorical imperative"): Act only on a rule that you wish to see generally followed by everyone. Accordingly, he derives two principles of justice to regulate the distribution of liberties, and of social and economic goods.

<sup>47</sup> Basic liberties include: political liberty (the right to vote and to be eligible for public office) together with freedom of speech and assembly; liberty of conscience and freedom of thought; freedom of the person along with the right to hold (personal) property; and freedom from arbitrary arrest and seizure as defined by the concept of the rule of law (Rawls 1971).

<sup>48</sup> To deal with intergenerational relations, Rawls introduced the concept of "just savings", implying what is reasonable for members of succeeding generations to expect from one another by balancing how much they would be willing to save for their immediate descendants against what they would feel entitled to claim of their immediate predecessors.

#### 4.7 Conflicts dealing with priorities<sup>49</sup>

**Intergenerational justice:** Since the Brundlandt Report<sup>50</sup>, intergenerational justice, i.e. a balance between the wellbeing of present-day and future generations, is a central point of concern to the global community. Sustainability is based on two premises:

- the present generation is morally obliged to abstain from exploiting the Earth's resources to the detriment of future generations. Rather, it must share resources with future human beings so that they are allowed to have a standard of life not substantially lower than that enjoyed today;
- it is possible to define the needs of future generations in order to take practical steps for the achievement of sustainability. Duties towards these future generations must not only be expressed in principle, but also in concrete terms. What are we obliged to do, from what else are we obliged to abstain?<sup>51</sup>

The first point is not seriously contested. Some may believe that it is *unnecessary* to care for future needs, either because the Earth's resources are sufficiently abundant or because science, technology, and the market will automatically provide for future resource availability<sup>52</sup>. But almost nobody will argue that it is morally permitted to seriously damage the prospects of future generations<sup>53</sup>. The second point is more controversial. Agnostics hold that nobody knows the needs of the future<sup>54</sup>. They substantiate this by pointing to the past, where many economic decisions "for the sake of future generations" have been proven wrong. Others argue that the fundamental physical and social needs of the human species will not change. "Of course, we don't know what the precise tastes of our remote descendants will be, but they are unlikely to include a desire for skin cancer, soil erosion, or the inundation of low-lying areas as a result of the melting of the ice-caps"<sup>55</sup>. Again others state that the concerns of the present generation should not be for the physical preconditions<sup>56</sup> for the well-being of future generations, but the well-being itself<sup>57</sup>. Even when some resources are irreversibly lost, cannot the life of future generations be fully satisfactory without them?

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<sup>49</sup> This section draws substantially on the ideas of Hampicke (2000).

<sup>50</sup> World Commission on Environment and Development 1987

<sup>51</sup> Howarth 2000.

<sup>52</sup> Some technological optimists, for example, expect that the science of ecology will eventually provide sufficient understanding of ecological processes and relationships to enable an effective control of ecosystems and natural resources. This belief disregards the fundamental scientific limitations to ecological knowledge: the enormous complexity of ecosystems, the unpredictability of their dynamics due to chaos and contingency, their uniqueness which precludes far-reaching generalisations, and the limited possibilities of quantifying their qualities (Gorke 1999).

<sup>53</sup> Hampicke 2000

<sup>54</sup> Cf. Alexander Solzhenitsyn (1968): "Happiness is a mirage – as for the so-called "happiness of future generations" it is even more of a mirage. Who knows anything about it? Who has spoken with these future generations? Who knows which idols they will worship? Ideas of what happiness is have changed too much through the ages. No one should have the effrontery to try and plan it in advance."

<sup>55</sup> Barry 1977

<sup>56</sup> I.e. the material life support functions

<sup>57</sup> Dasgupta, 1995.

***Different concepts of sustainability***<sup>58</sup>: These deliberations reflect two different concepts of sustainability<sup>59</sup>:

- **weak sustainability** permits the depletion of natural resources if natural or artificial substitutes can be found and if the profits are invested rationally. If, for example, the economic benefits of peat extraction are invested in infrastructure, human knowledge, technologies, and other capital, the well-being of future generations may be greater even if this should include the global extinction of some mire species;
- **strong sustainability** casts doubts on these substitutability premises and argues for keeping the stock of different types of resources intact separately. Natural and artificial capital are seen as complementary.<sup>60</sup>

The position of strong sustainability cannot be held indiscriminately for every type of resource. The present generation cannot take care of every detail that may be relevant to future generations. It is not realistic for the present generation to concern itself with the whole range of problems its descendants may come across during their lifetimes. What can be done is to ensure that options are kept open and that they have available to them opportunities, chances which they can seize. The present generation should also do everything possible to avert serious evil in which its actions might result.

***Discounting***<sup>61</sup>: In a world with perpetual economic growth in which present-day and future values are weighted equally, the aim of “the greatest good of the greatest number”<sup>62</sup> would force early generations to excessive saving to allow later generations to live a luxurious life. Intergenerational justice favours a more egalitarian development<sup>63</sup> which requires the discounting of future values<sup>64</sup>. This can be done by way of

- *discounting of wellbeing (utility discounting)*, in which future well-being is given less weight than present well-being, or
- *financial discounting*, in which not the well-being itself, but the monetary costs and benefits which determine future wellbeing, are discounted<sup>65</sup>.

The discounting of well-being solely because it lies in the future (“myopic behaviour”) is a widespread phenomenon: people generally prefer enjoying something

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<sup>58</sup> “Almost every article, paper or book on sustainability bemoans the fact that the concept is broad and lacks a broad consensus; this is usually followed by the authors' own preferred definitions which in turn add to the lack of consensus!” (Bell & Morse 1999)

<sup>59</sup> Neumayer 1999

<sup>60</sup> The distinction between weak and strong sustainability is similar to that of the distinction between the “sustainability of the means to an end” and the “sustainability of the end” (Bell & Morse 1999). E.g. “sustainable peatland forestry” generally refers to the sustainability of forestry on that spot, not to the sustainability of peatland, as the peat may eventually disappear as a result of drainage (cf. Päiväinen 1997, 2000).

<sup>61</sup> See also § 5.4.4 (2) below.

<sup>62</sup> I.e. the maximisation of the well-being of all present and future humankind

<sup>63</sup> This is also expressed in the Ramsar definition of sustainable utilisation: “the greatest continuous benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations”.

<sup>64</sup> Cf. Dasgupta 1995.

<sup>65</sup> See § 5.4.4 (2) below. If, for example, society in 100 years will need a specific sum of money to mitigate the consequences of climatic change, a much lower sum can be invested today and this sum will increase to its final size 100 years from now, according to the laws of compound interest.

now to enjoying it later; we prefer to go to the dentist tomorrow instead of today. Similarly, problems for future generations are considered as less important than problems right now. Our “defective telescopic faculty”<sup>66</sup> makes us believe that even very important things become unimportant once the distance to them in time is long enough. Important things, however, do not become unimportant in time: they remain important for those affected by them. No smoker will consider lung cancer in 20 years equally important to a cold tomorrow. Myopic behaviour is contrary to the concept of sustainable use, because it treats the interests of future generations as being of less value than similar interests of the present generations. If a civilised society is characterised by its respect for the weak, it should respect the interests of future generations even more than those of the present, because - unlike contemporaries - future generations are powerless against the harmful actions of the present<sup>67</sup>.

The importance attached to some things does, however, change with time. A boy of eight years, for whom a ditch is too difficult to cross, can be confident that after ten years he will have grown and will be able to jump across it easily. Similarly, economic, technological, scientific, and moral growth can be acceptable justifications for discounting future costs and pains. If future generations are better-off than the present generation, it will be easier for them to cope with the problems being caused by the latter. This approach is not universally applicable: people in the 19th century would have been correct in discounting the future pain involved in a visit to the dentist, because the pain involved in dentistry has been reduced substantially since. But they would have been much less justified in discounting the pain caused by cancer, as this disease has lost none of its malignity. Thus, it is essential for any sensible resource planning to develop sound expectations as to what will become easier tasks in the future and what will not. Future generations cannot blame the present generation if it errs in such decisions after due reflection but they can attach blame if the present generation does not reflect to the best of its ability<sup>68</sup>.

***Normal and vital functions:*** Taking the future into account therefore requires that we:

- identify *vital functions* (= essential and non-substitutable) which, to the best of present knowledge, will remain equally important and regarding which it cannot be prudently assumed that progress will solve the problems associated with their decrease or disappearance<sup>69</sup>. Their effect in the future must therefore receive the same attention from us as their present effect. For these issues no form of discounting is applicable.
- apply some routine valuation procedure for all other *normal functions* (non-essential or substitutable), allowing for flexibility, adaptation, substitution, progress, and growth. This valuation can imply an element of discounting, based on the expectation (which must be well-founded) that the provision of these concrete services or resources will be of a lower importance to future generations due to advances in problem-solving capacities. Often, these will be problems that can be handled by “money” and investment (see § 4.8).

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<sup>66</sup> Pigou 1978.

<sup>67</sup> Hampicke 2000.

<sup>68</sup> Hampicke 2000.

<sup>69</sup> This does not exclude the possibility that advances towards solving these problems or substituting the concrete services and resources might be made at some time in the future.

***Uncertainty and risks:*** Any consideration regarding the future involves uncertainty. The question “what decision to take?” is, however, not only a matter of assessing probabilities but also an ethical question<sup>70</sup>. Imposing risks on others, even future others, has as a direct consequence that they are exposed to a potential danger, i.e. a direct change for the worse<sup>71</sup>. A good reason is required to permit the creation of situations which involve risks to others, and to discount these risks in order to increase our own net present value.

The simplest way to avoid risks would be not to interfere at all. But in practice we prefer to take a small chance of a great disaster in return for the high probability of a modest benefit<sup>72</sup>: e.g. we fly in order to save some time. If an act involves a risk of negative consequences this is a reason to avoid it. If the consequences are extremely negative, even a small risk of producing them is a reason to avoid the act and to accept some costs in doing so.

***Vital functions of mires and peatlands:*** Vital functions are resources and services that are *essential* to human life and reproduction, and that are prudently expected to be *non-substitutable* within any reasonable human timeframe<sup>73</sup>.

Essential functions relate to

- the physical needs of survival (food, water, shelter, clothing, basic health care)
- the liberty to pursue permissible wants, and
- the autonomy to live according one's own moral position (see Table 4/1).

With respect to mires and peatlands such vital issues may include:

- the maintenance of general problem-solving capacities (cf. conservation of global biodiversity for maintaining production, regulation, existence, indication, and cognition options, see Table 3/22)<sup>74</sup>,

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<sup>70</sup> Ott 2000.

<sup>71</sup> Rehmann-Sutter 1998.

<sup>72</sup> Sober 1985.

<sup>73</sup> Those who consider their loss acceptable should indicate how they are substitutable. There can also be discussion regarding whether a particular function is essential or substitutable.

<sup>74</sup> In considering which part of biodiversity is vital, it can be asked from the anthropocentric point of view on which this document is based, whether we have to preserve all mires, all mire species and all peat? To what extent is their maintenance necessary for maximising human happiness (or minimising human suffering)? To what extent is their abundance redundant and useless?

The probability of an unknown property of a species being directly useful for humankind in future is low, because it is the product of two low probabilities: (i) that the species indeed is useful, and (ii) that its use will be discovered (Norton 1987). In a world with tens of millions of species, the loss of a currently useless species may therefore be of negligible importance. It is, furthermore, irrational to defer some real and known benefit in favour of a theoretically possible but still unknown use of certain species (“a bird in the hand is worth two in the bush”).

Contrary to what ecologists thought in the 1970s, species diversity is no longer regarded as a guarantee for stability. Many species, particularly rare ones, are probably even “useless” for ecosystem functioning (cf. review in Gorke 1999). The loss of others will in general not ruin an ecosystem, because ecosystems are, contrary to what is often suggested, not “wheel-works” but “networks”. They do not collapse, they simply adjust (During & Joosten 1992, Hargrove 1987), because they normally contain a complex of mutually substitutable negative-feed-back mechanisms (cf. Ivanov 1981, Joosten 1993). There is, however, insufficient knowledge of interdependence to judge which concrete species are and will be redundant in this respect (Lovejoy 1988, cf. Naeem 1998). Furthermore, “useless” species play a role in shaping the evolutionary template of other species (cf. Brown et al. 2001).

- global climate regulation (cf. UN Framework Convention on Climate Change) especially with respect to carbon storage (see § 3.4.3),
- the maintenance of food production capacity (e.g. preventing soil erosion),
- the availability of drinking water (related to climate change, large-scale drainage, and pollution),
- the availability of habitable land (e.g. preventing climate change and the associated sea level rise),
- health conditions (e.g. preventing damage to the ozone layer and spread of diseases resulting from climate change),
- all developments that severely affect peoples' value systems (e.g. preventing decrease in biodiversity).

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Therefore it is wise to preserve the whole taxonomic and ecosystem biodiversity pool (see also Naeem 1998).

In terms of the global biosphere, western civilisation and the functioning of regional landscapes some mires were and are inessential. Because there are so many mires, the likelihood that the destruction of the next mire will produce a disaster is low. Each destruction, however, will increase the chance that a positive feed-back mechanism which ultimately disastrous consequences is initiated (cf. Joosten 1993, Couwenberg & Joosten 1999). That this probability is initially low and the effects are initially limited encourages the notion that the absence of disaster so far is evidence that disaster will never come (Norton 1987, cf. Ehrlich & Ehrlich 1981: "The Rivet Poppers"). The limited direct effect may lead to a destruction of the majority of mires and peatlands, especially in areas where a seeming abundance leads to the false conception that an endless resource is available (Joosten 1997, 1999).

If we accept the central assumption that every species and ecosystem *may* have great but non-quantifiable value, species and ecosystems should be saved as long as the costs of doing so are tolerably low. In the face of high costs society might choose a small risk of serious negative consequences (Norton 1987).

Because there is much we do not know, and much more that we do not understand, we should not irreversibly destroy extensive areas of the world's remaining mires and peatlands. At the same time we can not exclude mankind from all the benefits of developing mires and peatlands.

#### 4.8 The monetarisation<sup>75</sup> of peatland values

Making wise decisions depends on adequately valuing all the aspects involved. The easiest way to resolve conflicts would be to set out what one party gains against what the other loses. As there are many types of values (cf. Chapter 3), such balancing would require a single and one-dimensional measure by which all values could be equally expressed. The measure most used in normal life is the “market price”, the amount of money one has to pay for a product or service. The market price makes it possible to compare and exchange such divergent products and assets as sugar, shoes, land, and knowledge.

The market does not assign monetary value to everything<sup>76</sup>. Some experiences and services have no price as a matter of tradition. We do not pay for a friendly greeting on the street (although artificial friendliness is effectively used in commerce). Traditions, however, change with time. In many countries it has become normal to pay for the care of the elderly, a practice unthinkable in former times. Other experiences and phenomena have no price, because they are neither produced nor have a clearly defined ownership. Most of the regulation and non-material-life-support functions (see Tables 3/3 and 3/4) are such “collective goods”. The techniques for monetarising these functions are generally underdeveloped<sup>77</sup>. Some ecosystem functions can not be valued, because their precise contribution is not known and indeed unknowable until they cease to function<sup>78</sup>. Other functions cannot be monetarised because there is nothing equivalent to be put at their place: intrinsic values are by definition without price<sup>79</sup>. Consequently, any weighting can only be partial and whole ranges of values, benefits or disadvantages escape monetary evaluation (i.e. they are regarded as “free goods”)<sup>80</sup>.

Freely functioning markets are based on narrow self-interest. The upstream polluter has no incentive to account for the cost he imposes on a downstream user of the river. The non-consideration of such “externalities” – the third party costs – may lead to decisions that are “wise” for the individual now, but “unwise” for society as a whole<sup>81</sup> (and that may eventually also be harmful to the individual)<sup>82</sup>. This is a *market failure*.

Similarly government interventions in the market, for example to serve some social purpose, may be accompanied by an under-appreciation of

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<sup>75</sup> The attribution of monetary value to entities or services which are not normally seen to have a financial or commercial value.

<sup>76</sup> Grönemann & Hampicke 1997.

<sup>77</sup> This is not only a problem in the valuation of regulation functions of nature, but also in valuing similar indirect “means” such as infrastructure, time-saving in traffic, security against floods etc. (Grönemann & Hampicke 1997).

<sup>78</sup> Vatn & Bromley 1993.

<sup>79</sup> See footnote 29 and § 3.1. Also, transformation values can not be valued because their impact on people's preferences is unpredictable and varies from person to person (Brennan 1992).

<sup>80</sup> Brennan 1992.

<sup>81</sup> cf. Goetz 1997, who shows that from a private economic perspective a farmer should use his agricultural peatland intensively, which would lead to rapid and complete loss of the peat soil. See also Van Vuuren & Roy 1993.

<sup>82</sup> Hardin 1968.

environmental benefits. Examples include financial incentives for deforestation or peatland drainage, the underpricing of water resources, and many agricultural subventions<sup>83</sup>. This is an *intervention failure*.

Some regulation and information functions exceed national boundaries, e.g. the maintenance of global biodiversity or the peatland carbon store<sup>84</sup>. But if the country in question receives no financial or other resources to pay for these global external benefits, it will have no incentive to look after these resources<sup>85</sup>. This is a *global appropriation failure*<sup>86</sup>.

Correction of these failures is necessary to better reflect the value of ecosystem services and natural capital in national accounting. Various methods have been and are being developed for that purpose<sup>87</sup>, including methods applicable to wetlands<sup>88</sup>. Such methods attribute monetary value either by directly asking people to state their strength of preference for a proposed change (e.g. “willingness-to pay” for enjoyment of a nature reserve) or by indirect comparison with actual, observed market-based information (e.g. by assessing the costs of travel to a nature reserve, or the costs of substituting the natural water purification function by sewage treatment plants). In this way, Constanza et al. (1997) estimated the services that nature provides at between \$16 and \$54 trillion per year<sup>89</sup>. Such attributed monetary values can then be fed into a comprehensive cost-benefit analysis (CBA)<sup>90</sup>. Table 4/4 presents some figures related to wetlands and peatlands that were assessed in this way.

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<sup>83</sup> Hanley et al. 1998, Hodge & McNally 2000.

<sup>84</sup> A hectare of Malaysian tropical forest may be “worth” US\$ 3000 on the basis of its soil-protecting, gene maintaining, and possible medicinal properties (Pearce 1993). But that cash is “virtual” because these services are not owned by anyone in particular. The same Malaysian hectare is worth US\$ 300–500 “cash in the bank” when the timber is felled and sold on the Japanese market. The two sets of dollar values are simply not the same (O’Riordan & Voisey 1998).

<sup>85</sup> This failure does not arise from the functioning of markets, but from the fact that the markets are not there at all. They are “missing markets” (Pearce & Moran 1994).

<sup>86</sup> Note that all these failures can occur simultaneously: they are not mutually exclusive (Pearce & Moran 1994).

<sup>87</sup> See for reviews Pearce & Moran 1994, Georgiou et al. 1997, O’Neill 1997, Pimentel et al. 1997, Hampicke 2000b, and <http://management.canberra.edu.au/~gkb/benefit.html>.

<sup>88</sup> Cf. Barbier, 1994, Gren et al. 1995, Söderqvist et al. 2000 and the special issue of Ecological Economics 35 : “The values of wetlands: landscape and institutional perspectives.”

<sup>89</sup> Cf. the global gross national product being US\$ 18 trillion per year (Constanza et al. 1997).

<sup>90</sup> See, however, Pearce 1998.

**Table 4/4:** Monetary values (in 1000 US\$ km<sup>-2</sup> yr<sup>-1</sup>) of some peatland (and related wetland) functions for the year 2000<sup>91</sup>.

	in 1000 US\$ km <sup>-2</sup> yr <sup>-1</sup>
<b>Production functions</b>	
water supply from a marsh and swamp area in Massachusetts (1978) <sup>92</sup>	3,943
water supply of global swamps and floodplains (1994) <sup>93</sup>	882
water supply of global wetlands (1994) <sup>94</sup>	441
habitat for harvested species of global swamps and floodplains (1994) <sup>95</sup>	51
wood, fish, and animal fodder from Danube floodplains (1994) <sup>96</sup>	10
food production of global swamps and floodplains (1994) <sup>97</sup>	5
renewable raw materials from global swamps and floodplains (1994) <sup>98</sup>	6
<b>Regulation functions</b>	
service value of coastal Louisiana wetlands <sup>99</sup>	2,000 – 3,700
ecological value of mangroves in China <sup>100</sup>	21
gas regulation of global swamps and floodplains (1994) <sup>101</sup>	31
disturbance regulation of global swamps and floodplains (1994) <sup>102</sup>	840
flood control in a marsh and swamp area in Massachusetts (1978) <sup>103</sup>	1305
water regulation of global swamps and floodplains (1994) <sup>104</sup>	3
waste treatment of global swamps and floodplains (1994) <sup>105</sup>	192
nutrient removal in a marsh and swamp area in Massachusetts (1978) <sup>106</sup>	962
nitrogen and phosphorous removal by Danube floodplains (1994) <sup>107</sup>	21
<b>Information functions</b>	
recreational value of coastal wetlands in Louisiana (1983) <sup>108</sup>	1 – 2
recreational value of wetlands in Louisiana (1986) <sup>109</sup>	11
recreational value in the North York Moors National Park UK <sup>110</sup>	35
recreational value of Danube floodplains (1994) <sup>111</sup>	18

<sup>91</sup> Original data recalculated to year 2000 US\$ using the US consumer price index:

<http://stats.bls.gov/cpihome.htm>. Other currencies are recalculated in US\$ using the exchange rates of July 2001. Attention: The data may contain some impermissible doubling counting in the aggregate values (cf. Turner et al. 1998).

<sup>92</sup> Thibodeau & Ostro 1981.

<sup>93</sup> Constanza et al. 1997.

<sup>94</sup> Constanza et al. 1997.

<sup>95</sup> Constanza et al. 1997.

<sup>96</sup> Gren et al. 1995.

<sup>97</sup> Constanza et al. 1997.

<sup>98</sup> Constanza et al. 1997.

<sup>99</sup> Farber 1996.

<sup>100</sup> Han et al. 2000.

<sup>101</sup> Constanza et al. 1997.

<sup>102</sup> Constanza et al. 1997.

<sup>103</sup> Thibodeau & Ostro 1981.

<sup>104</sup> Constanza et al. 1997.

<sup>105</sup> Constanza et al. 1997.

<sup>106</sup> Thibodeau & Ostro 1981.

<sup>107</sup> Gren et al. 1995.

<sup>108</sup> Constanza et al. 1989.

<sup>109</sup> Bergstrom et al. 1990.

<sup>110</sup> 77 visitor days ha<sup>-1</sup> y<sup>-1</sup> (<http://www.pantm.co.uk/reports/purbeck/CombinedChapters.pdf>) at § 4,50 person<sup>-1</sup> yr<sup>-1</sup> (White & Lovett 1999).

<sup>111</sup> Gren et al. 1995.

<b>Information functions</b> (continued)	
recreational value of global swamps and floodplains (1994) <sup>112</sup>	57
recreational value of a marsh and swamp area in Massachusetts (1978) <sup>113</sup>	122 – 2196
increased privacy for those whose property is bordered by a marsh and swamp area in Massachusetts (1978) <sup>114</sup>	6 – 19
existence and recreational value of a German floodplain forest <sup>115</sup>	52
informational/cultural value of global swamps and floodplains (1994) <sup>116</sup>	204
<b>Aggregate values</b>	
total value of global swamps and floodplains	2,271
total value of global wetlands(1994) <sup>117</sup>	1,715
total value of global tropical forests(1994) <sup>118</sup>	233
total value of global temperate/boreal forests(1994) <sup>119</sup>	35
<b>Environmental costs of peatland drainage</b>	
N emissions from drained fens to water in Sweden <sup>120</sup>	15 – 1,736
greenhouse gas emissions from drained fens in NE Germany <sup>121</sup>	1.5 – 26
<b>Restoration costs</b> <sup>122</sup>	
general wetland restoration <sup>123</sup>	120 – 420
replanting mangroves in Thailand <sup>124</sup>	6
restoring shrimp ponds to mangroves <sup>125</sup>	83

<sup>112</sup> Constanza et al. 1997.

<sup>113</sup> Thibodeau & Ostro 1981.

<sup>114</sup> Thibodeau & Ostro 1981.

<sup>115</sup> Hampicke & Schäfer 1997.

<sup>116</sup> Constanza et al. 1997.

<sup>117</sup> Constanza et al. 1997.

<sup>118</sup> Constanza et al. 1997.

<sup>119</sup> Constanza et al. 1997.

<sup>120</sup> Using \$ 2 – 35 kg<sup>-1</sup> N (Gren 1995, Byström 1998) and emission rates of 7,540 – 49,600 kg N km<sup>-2</sup> y<sup>-1</sup> (Gelbrecht et al. 2001).

<sup>121</sup> Using \$ 5 - 25 t<sup>-1</sup> C (Tol 1999a) (with ratios between the marginal costs of CO<sub>2</sub> and those of CH<sub>4</sub> and N<sub>2</sub>O equal to the global warming potentials of these gases, cf. Tol 1999b) and a cumulative radiative forcing of 2,928 – 10,334 CO<sub>2</sub>-C-kg-equivalents ha<sup>-1</sup> y<sup>-1</sup> (Augustin 2001).

The aggregated monetarised damage due to climate change has been estimated at 1.5 to 2.0 percent of World GNP; the OECD would lose 1.0 to 1.5 percent of GDP; the developing countries 2.0 to 9.0 percent. These figures are not comprehensive and are highly uncertain. Recent studies increasingly emphasise adaptation, variability, the rate of change, extreme events, other (non-climate change) stress factors, and the need for integrated assessment of damages. As a result, differences in estimated impacts between regions and sectors have increased, the market impacts in developed countries have tended to fall, and non-market impacts have become increasingly important.

Whether it is fast or slow, climate change is likely to have greater economic impacts on poor countries than on rich countries. On the whole, market impacts fall relative to economic growth while non-market impacts rise relative to growth (<http://www.gcric.org/gwcc/toc.html>).

<sup>122</sup> Capital investment costs recalculated to annual costs using an interest rate of 6%.

<sup>123</sup> IPCC 1996.

<sup>124</sup> Primavera 2000.

<sup>125</sup> Primavera 2000.

Even though economic value can only relate to preferences, there are several reasons why a complete monetarisation and cost-benefit analysis may be difficult or impossible<sup>126</sup>:

- Every determination of monetary value is marginal, i.e. only refers to small parts of a larger available total<sup>127</sup>.
- The order of peoples' preferences is not constant but changes with environmental conditions<sup>128</sup>, income levels and budget availability<sup>129</sup>, knowledge and technologies, availability of substitutes and alternatives, personal circumstances<sup>130</sup> and public policies<sup>131</sup>. It is subject to hysteresis-effects<sup>132</sup>, and dependent on a person's role at a specific moment<sup>133</sup>. Even within a single role a person's order of preferences may rapidly change with their state of mind – for example, a preference for a type of landscape.
- Non-egocentric anthropocentrism<sup>134</sup> requires that the value of specific functions for future generations be taken into account. Such determination might be possible with respect to fundamental needs which are not expected to change<sup>135</sup>, but not with respect to the more subtle wants and preferences<sup>136</sup>. The same accounts for long-term effects, such as climate change, that will affect future generations more than the present ones and should therefore - to get a complete view - also be evaluated by those future generations, which is impossible.

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<sup>126</sup> See also discussions in Constanza et al. 1998.

<sup>127</sup> Cf. the exclamation “my kingdom for a horse” in Shakespeare's King Richard III, V, iv, 7. The answer to the question: “How can you monetarise ‘nature’, ‘biodiversity’, or ‘the environment’ ” is simply: “you cannot”. The same answer, however, also applies to everyday necessities such as food, drinking water, or shelter. To ask the question how much poorer the world would be without any food or without biodiversity is absurd (cf. Constanza et al 1997). In daily practice, however, *a* loaf of bread, *a* litre of water, and *a* house is replaceable and hence does have a price. Similarly *a* peatland can have a monetarised value for tourism, for education, for energy generation, etc., a price that is dependent on demand and scarcity (Mitsch & Gosselink 2000).

<sup>128</sup> Cf. the recent discussions of the role of peatlands in climate change (Gorham 1991, Franzén 1994, Crill et al. 2000).

<sup>129</sup> Cf. MacGillivray 1998, who shows that even in depressed areas there is a strong appreciation that there is more to happiness, welfare or quality of life than cash income. This appreciation includes a recognition of the value of such qualities as health, security, standard of living, education, and environment.

<sup>130</sup> For example, one might accept the killing of farmed rabbits for eating while not accepting the killing of a child's pet rabbit. Cf. Brennan 1992.

<sup>131</sup> Norton 1987.

<sup>132</sup> I.e. in general, people dislike losing a benefit more than they like gaining the same benefit.

<sup>133</sup> Brennan 1992. There may, for example be large differences between the perspective of a person as a *consumer* and of the same person as a *citizen*, for example in her attitude towards rules and regulations. The decision to have or not to have peat extracted in a country concerns the political question of what limits should be placed on the satisfaction of consumer preferences. The decision to buy a bag of compost containing peat, when it is available on the market, concerns merely the satisfaction of individual preferences within these limits (Cf. Norton 1987). A person in her role as palaeoecologist may prefer the view of a bog while it is being exploited, because the exposure of peat profiles allows optimal access to stratigraphical information (cf. Casparie 1972, Barber 1981). The same person in her role as conservationist may prefer to see pristine bogs.

<sup>134</sup> See § 3.2.

<sup>135</sup> Cf. § 4.7.

<sup>136</sup> Cf. the large sums currently spent on mire restoration in West and Central European countries which clearly show that present day society values things different from society only 30 years ago.

### Should we monetarise ecosystem services at all?<sup>137</sup>

The idea that “we should not price the environment” keeps coming up<sup>138</sup>. While the many sides of this line of reasoning can be appreciated, ultimately the argument denies the reality that we already do, always have, and cannot avoid doing so in the future.

Even people are constantly monetarised. When the European Union introduced a drinking water norm of a maximum of 50 mg nitrate per litre, it compromised between the increased costs of a lower maximum norm and the extra death of some (anonymous, statistical) bottle-fed babies and elderly people, thereby implicitly pricing human lives.

Similarly, we (both as individuals and as a society) make choices and trade-offs about ecosystems every day. When we preserve a natural area and this limits its economic use, this decision is generally made on the basis of values other than market prices. But the decision will result in a different set of prices for many things, and consequently to an implicit economic value for the natural area. We do not have to know the implied price in advance, but it is still interesting to know what prices are implied by our choices. They may be higher or lower than we would have guessed, and can serve as a cross-check on the reasonableness and consistency of our political decisions.

The exercise of monetary valuation does not preclude or supercede other ways of approaching the problem or other forms of valuation. But one has to communicate with people in the language they understand (while also perhaps teaching them a new language), and utilise the tools at hand (while at the same time developing new, more appropriate tools). If we are to avoid uneconomic growth we must be sure that the value of the natural services sacrificed is not greater than the value of the man-made services gained. Even a crude “total economic value” approach has significant potential to change decisions in nature’s favour.

“Normal” problems of the future are likely to be soluble through investment. With an economic growth rate of some 1.6% per year, a technical solution that would cost 100 million in 100 years requires an investment of 20 million now, if the rate of technological change remains constant. If technological progress were to increase by a similar rate, the cost of a similar future solution would be only 4 million now.<sup>139</sup> “Normal problems” are those that can be solved by progress. The question is how to measure this progress, i.e. which discount rate<sup>140</sup> should be applied, as nothing influences long-term assessments and cost-benefit-analyses more than the discount rate.<sup>141</sup> Discounting can make the non-sustainable use preferable to the sustainable

<sup>137</sup> Based on Constanza et al. 1998 and Hampicke 2000b.

<sup>138</sup> Cf. Rees (1998): “...at this critical stage of world development, we must regard many of nature’s services as we would an expensive yacht. If we have to ask the price, we probably can’t afford it.”

<sup>139</sup> Fear that “intermediate” generations might “hijack” the funds is no reason to refrain from providing them, because

- our duty to mitigate the consequences of our actions exists, independent of what future generations may do. If they abuse the funds, *they* are responsible for the ensuing suffering. If we do not start to invest, *we* are;

- instead of in bank accounts, we may as well invest in technical progress. This might improve the capacity to solve problems more efficiently and is less reversible than the stockpiling of money (Hampicke 2000).

<sup>140</sup> cf. Tol 1999b. See § 5.6.5 (2).

<sup>141</sup> The decision on the correct method of discounting is independent of whether the present generation is actually going to pay for future damages or not. If it appears after thorough calculation that the present costs are relatively small compared to the wealth of future generations, we may well feel that they themselves should pay for the problems *we* have caused, a situation that *we* face with respect to problems that former generations have left to us. Calculating the results of a hypothetical transfer helps estimate what can be expected from future generations without being unjust (Hampicke 2000).

use. If the rate of interest on monetary capital is higher than the rate of reproduction of a renewable resource, this could push the use of that resource to the point of extinction<sup>142</sup>.

It is unlikely that the current rate of exponential economic growth can continue indefinitely<sup>143</sup>. In the case that contemporary economic growth is replaced by biophysical equilibrium, the market rate of interest will give fundamentally misleading signals to any current generation.<sup>144</sup> The rate of technical progress, if it can be measured in an unbiased way, would provide a more appropriate discount rate.

Future generations will probably be better off only in some respects, so we are permitted to discount with regard to these respects alone. Complex patterns of increasing scarcity and growing abundance will be more likely to occur than an overwhelming pattern of diminishing scarcity in all respects<sup>145</sup>. It is therefore misleading to treat goods whose scarcity will probably increase irreversibly in the same way as goods whose scarcity will probably diminish<sup>146</sup>.

#### 4.9 Conflicts dealing with moral positions

Conflicts arising from **different positions** concern which entities have intrinsic moral value and to which moral obligations exist. Any moral obligation can only be overridden by another moral obligation of higher importance (for example we may hurt a person in order to save his or her life), not by a non-moral consideration, such as a preference.

Conflicts with respect to intrinsic value cannot be solved through compromise, as they deal with the fundamentals of people's value systems<sup>147</sup>. Whereas other world-views may represent a position fundamentally different from the prevailing anthropocentric view, they are held by many people in the world<sup>148</sup> and may be fully consistent<sup>149</sup>.

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<sup>142</sup> Cf. Clark 1973.

<sup>143</sup> Cf. Hubbert 1976. Cf. Daly 1990: "When something grows it gets bigger. When something develops it gets different. The earth ecosystem develops (evolves), but does not grow. Its subsystem, the economy, must eventually stop growing, but can continue to develop. The term "sustainable development" therefore makes sense for the economy, but only if it is understood as "development without growth" – i.e. qualitative improvement of a physical economic base that is maintained in a steady state by a throughput of matter-energy, that is within the regenerative and assimilative capacities of the ecosystem. Currently the term "sustainable development" is used as a synonym for the oxymoronic "sustainable growth". It must be saved from this perdition. ... Even "green growth" is not sustainable. There is a limit to the population of trees the earth can support, just as there is a limit to the population of humans and of automobiles. To delude ourselves into believing that growth is still possible and desirable if only we label it "sustainable" or colour it "green" will just delay the inevitable transition and make it more painful."

<sup>144</sup> As long as there is general growth, there are no losers: the investor who borrows money does not become poorer by paying interest if she invests the loan in such a way that, allowing for the interest, she is richer than before. In a society which is not physically growing it is impossible for everyone to gain by saving at compound interest. In those circumstances interest only functions as a mechanism of redistribution: the money-lender is getting richer, but not society at large (Hampicke 2000).

<sup>145</sup> Ott 2000.

<sup>146</sup> Price 1994.

<sup>147</sup> See § 3.2.

<sup>148</sup> Even the United Nations General Assembly adopted a non-anthropocentric approach when affirming that "Every form of life is unique, warranting respect regardless of its worth to man" (World Charter on Nature 1982).

There are many ways of being objective and rational and it is neither necessary nor possible to have reduced all competing claims to a common measure<sup>150</sup>, or to see them as falling under a single hierarchy of principles.

Conflicts between different world-views can only be mitigated by acknowledging and respecting the other's position, - so long as the positions do not fundamentally clash. An atheist or agnostic without any religious conviction can nevertheless accept the sanctity of a church or other place of worship to avoid the suffering of religious believers should the place of worship be violated.

Moral pluralism allows that living decently involves many kinds of principles and various sorts of responsibilities. It recognises that feelings and responses to situations are drawn from many sources and cannot be simplified without distortion. "It remains true that a pluralist perspective will not be easy to use. If many different sets of values are in play when environmental issues are being discussed, the role of the policy-maker becomes much more complicated. But life is complicated, and we will not make progress in tackling the grave difficulties we face unless we learn to avoid shallow thinking and simple solutions<sup>151</sup>."

#### 4.10 Non-anthropocentric approaches

The non-anthropocentric approaches referred to in the previous section are worth exploring further. They allow the investigation of alternative views in moral philosophy and more extended value systems. These may add additional sophistication to the discussion in this document. The difficulty of motivating people for sustainability, in the light of complex and unknown relations and discounting over time, may favour the use of non-anthropocentric positions, as an easy approach<sup>152</sup>. Furthermore, the right to live according to one's own value system (Table 4/1) implies that such positions have to be considered when brought forward in specific conflicts.

Non-anthropocentric positions do not exclude human beings, but treat them as part of the elements under consideration. As an example we present the moral philosophy of Martin Gorke<sup>153</sup>, one of the most extreme and most consistent forms of ecocentrism and holism<sup>154</sup>.

Any moral position must be founded on a world-view of certain basic, empirically-derived assumptions, e.g. on our knowledge of the position of human beings in the universe. Astronomy, evolutionary biology, and ecology show that humanity is neither the pivotal point nor the final end of the world. Nature, including inanimate nature, does not exist solely for human beings. If humanity can no longer be seen as the centre of the world, then ethical anthropocentrism must be questioned: ethics can no longer be regarded *a priori* as something that is restricted to relationships between human beings.

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<sup>149</sup> Cf. § 3.2.

<sup>150</sup> See also § 4.5.

<sup>151</sup> Brennan 1992.

<sup>152</sup> Gorke 1999.

<sup>153</sup> Gorke 1999, 2000

<sup>154</sup> see also § 3.2.

While the intrinsic value of non-human entities is usually demonstrated by selecting a particular “decisive” quality (e.g. the condition of having consciousness or that of being alive, cf. Table 3/1), Gorke starts from a different point of view. In his view we are forced, as a fundamental of morality, to make an “original decision” between two basic options: “egoism” and “a moral (i.e. non-egoist) standpoint”. If one opts for the latter, any selection of entities not worthy of moral consideration is an act of egoism, because *I* determine whom I will respect, when and under what circumstances. If having a moral standpoint is taken seriously, moral consideration has to be extended to all other entities.

Advocates of more restricted concepts of morality will object that it is by no means egoism to exclude certain entities of nature from the moral community but simply a rational and objective assessment of circumstances. In Gorke’s analysis of the concept of morality, however, *they* carry the burden of proof. They must convincingly demonstrate that the lack of certain qualities makes exclusion necessary. Anthropocentrism, pathocentrism, and biocentrism<sup>155</sup> do not achieve that. Wherever a logical relationship between a moral consideration and some empirical quality has been claimed, a naturalistic fallacy<sup>156</sup> is always involved. And wherever the claim is based solely on plausibility, the evidence appears to be arbitrary. An ecocentric, holistic position appears to be the only logical conclusion.

In practice, the differences with a (non-egoistic) anthropocentric position appear to be not so much in the fundamentally different types of conflicts, but rather in the much larger number of conflicts to which such holistic ethic leads. Regarding the way human beings have to deal with nature in general, Gorke advocates with Albert Schweitzer that harming other entities always involves a smaller or larger quantity of *guilt*, depending on how necessary the intervention is. This means that for evaluating environmental conflicts, an ethical “black/white” approach (allowed/forbidden) should be replaced by a graduated concept (the less harm the better)<sup>157</sup>.

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<sup>155</sup> See Table 3/1 in § 3.2.

<sup>156</sup> A “naturalistic fallacy” means deriving a moral conclusion from a factual premise, i.e. deriving an “ought” statement from what is no more than an “is” statement. Naturalistic fallacies are common in environmental argumentation. Some examples:

- “For 5000 years there was much more forest and much less mires. Therefore we have to change mires into forests again.” This conclusion would only be valid when combined with a value premise, e.g. “in former times everything was better”.
- “This mire contains the only population of Aquatic Warbler in the region and should therefore be protected”. This conclusion is only valid when combined with a value premise like “we must protect all species diversity in this region”.

<sup>157</sup> Such an approach could be made operational in daily practice by adapting the (originally biocentric) principles of Paul Taylor’s *Respect for Nature*. See also §5.8.