Part 5. Policy implications and final conclusions

As was argued in the core research, the concept of ecological debt is an example of what in social sciences is called 'cognitive praxis': through the use of the concept of ecological debt, social movements (from the South) are opening up a new context for interpretation – and in fact re-interpretation – of knowledge. The new perspectives, the new frame for looking at the world, open up a possibility – and when recognized a need – for rethinking of policies at different levels. These different characteristics of the concept (bringing a historical perspective to the sustainability debate; bringing a new perspective on debtors-creditors to international politics; uniting comparable experiences of Southern peoples) turn ecological debt into a potentially powerful concept, but at the same time, due to the 'operational' weaknesses (e.g. on the level of definition and methodology), the usefulness of ecological debt in international policy and negotiations seems at the moment rather limited.

Despite this, the following paragraph 5.1. will try to sketch a broad picture of political implications for some domains. In 5.1.1., possibilities for taking account of historical aspects of ecological debt will be discussed, using the examples of climate negotiations and of external debt. In 5.1.2., some possibilities for avoiding daily accumulation will be discussed, using examples out of development cooperation, national plans for sustainable development and trade. In 5.1.3., we will dwell one last time on the problem of recognition of ecological debt as such. Finally, in paragraph 5.2. some general conclusions for the research as a whole will be drawn.

5.1. The meaning of ecological debt: rethinking national and international policies?

As has been mentioned in the core research, as of yet discussions on what should be done politically with ecological debt are limited, but circle essentially around two themes :

- A form of compensation for historically accumulated ecological debts: industrialised countries should take the historical responsibility for the ecological damage they have caused outside their territories and for their overuse of ecosystem goods and services. A form of restitution in the sense of Barkan – including the entire spectrum of attempts to rectify historical injustices and thus not limited to the traditional legal meaning of the term as the return of the specific actual belongings that were confiscated or stolen[1] - will then be necessary.
- Avoiding daily accumulation of ecological debt: ecological debt is not only relevant from a historical perspective, since each day current industrial production and consumption patterns are causing ecological damage in developing countries and are responsible for the overuse of ecosystem goods and services by industrialised countries

This means that the two aspects of ecological debt – 'ecological damage' and 'use at the expense of equitable rights' – can be targeted through two kind of policy interventions, i.e.

[1] See 2.3.1. modular research on MEA's and 1.5.4.

accounting for historical responsibility and avoiding daily accumulation (see the figure). Historical responsibility will be treated in 5.1.1., daily accumulation in 5.1.2.

		Aspects of ecological debt	
		Ecological damage	Use at the expense of equitable rights
Aspects of policy	Accounting for historical responsibility (restitution)		
	Avoiding daily accumulation		

5.1.1. Recognition of ecological debt: accounting for historical responsibility

The implications of taking account for historically built up ecological debt will be illustrated with climate policy and external debt policy.

5.1.1.1. The example of climate policy

Negotiations on the second commitment period of the UNFCCC are meant to start in 2005. These negotiations should lead to a successor agreement for the Kyoto Protocol, after 2012. If the IPCC reports and the threat of climate change are taken seriously, this will require an international strategy and agreement with far stronger mitigation of emissions than provided for under Kyoto. One of the crucial points in reaching such an agreement will undoubtedly be its equity or fairness: who will be the parties with obligations to mitigate? What will their obligations be? Will they perceive them as equitable? What will be done for vulnerable regions and countries who suffer from the consequences of climate change? Although negotiations have not started yet, there has already been some headwork on the topic of equity in the next commitment period. What is clear from these studies, papers and discussions is that "the success of the negotiations will hinge in large measure on the ability of Parties to come to terms with the equity dilemmas they will face" (Ashton and Wang 2003, 2). And what is more, again in the words of Ashton and Wang, there is probably no "unitary approach to equity, based on a single, objective yardstick" which can serve as a foundation for a new climate agreement (ibid., 2). We will take two papers as a starting point for a discussion of the role of ecological debt in a future agreement.

Ashton and Wang use the image of an "equity space"[2] (ibid., 3): equity has different dimensions and during negotiations competing parties/governments will champion different dimensions of equity or combinations of dimensions, (partly) depending on their self-perceived interests. "Any proposition in the negotiation locates uniquely in this space according to its projection in each dimension" (ibid.). Ashton and Wang identify five dimensions of equity. A fair climate agreement will have to take these dimensions into account in the different areas of decision-making, such as the mitigation of emissions and adaptation to climate change. The dimensions of equity according to Ashton and Wang are:

- Historical responsibility: who is to blame for the problem?
- Equal entitlements: all humans have equal rights or entitlements to certain goods or benefits

[2] Which sounds as a nice counterpart to environmental space.

- Capacity to act: the most able should contribute the most
- Basic needs: the strong and well endowed should help the weak and less endowed at least in meeting their most basic needs
- Comparable effort: the effort demanded of a party not only has to seem fair as an absolute expression of its record and circumstances but also in the light of the deals secured by others

A comparable exercise at defining the contours of a future agreement is reflected in a discussion paper of Climate Action Network (CAN), which was presented during COP-9 in Milan, Italy (2003). CAN proposes three parallel, inter-linked tracks along which negotiations should develop: a Kyoto track with legally binding tradable emission obligations, a Green (decarbonisation) track for the introduction of clean technologies in developing countries, and an Adaptation track to provide resources to vulnerable regions to deal with unavoidable climate change. The core principles on which this framework should be built are (CAN 2003, 2-3):

- The equity principle, which requires amongst other things that all have equal access to the atmospheric commons, implying that those that have already contributed most to the climate change problem substantially need to create space for others to emit more in the future
- The principle of historical responsibility, which is an important element in determining who should act and when
- The ability to pay and the capacity to act

Important for the discussion on ecological debt is that "historical responsibility" seems to become a not to be ignored part of future negotiations, and that it can be used in the double meaning described in the figure above: historical responsibility for over-emissions of greenhouse gases and for damage due to climate change. A crucial question will be in which way historical responsibility will be addressed. One possibility is through further development of the Brazilian proposal, where the responsibility for temperature increase is the central axis.

Another possibility is counting the responsibility for past emissions, which brings us to the concept of carbon debt, such as it was developed in the modular research on energy/climate in part 3. Using IPCC research, it was shown that it is possible to calculate carbon debt for countries and that it is equally possible to divide this debt, under different assumptions, between countries (intragenerational debt, or Historical carbon debt) and generations (intergenerational debt, or Generational carbon debt). It was also shown that the intragenerational debt can form the basis for a discussion of mitigation of emissions; intergenerational debt could be used to finance funds – comparable to the purposes of the Adaptation Fund – for redressing damage caused by climate change.

The Belgian carbon debt has been calculated at, depending on the model, 4234 to 5787 million tons of CO_2 between 1900 and 2000, which is 30 to 50 times the Belgian emissions in 2000. Since the equity issue will most probably be a topic of negotiations for the second commitment period, the question of historical responsibility will also surface. With its important carbon debt Belgium should prepare itself for discussions on what it perceives as a fair agreement, and more in particular:

- What can/should be the influence of historical responsibility on (Belgian) mitigation commitments?
- What can/should be the influence of historical responsibility on measures for adaptation and what should be Belgium's contribution?

- How will Belgium translate its responsibilities in policies and measures to compensate for its carbon debt and to stop its further accumulation?

5.1.1.2. The example of external debt relief

As has been shown in the core research, the idea of ecological debt was coined in reaction to the burden of external debt, weighing on developing countries. The question "who owes whom?" eloquently expresses the central idea in the argumentation of ecological versus external debt: developing countries may owe an important external debt to the North, but these figures pale when compared with figures of the ecological debt the North owes to the South. Ecological debt is used as a counterargument to external debt; the magnitude of ecological debt justifies a complete cancellation of external debt.

Ecological debt is sometimes used as the ultimate argument for the cancellation of external debt, but in fact it is one more additional argument for cancellation. The other arguments which have been formulated in the past years remain valid. Furthermore, there is an inherent link between the way the debt crisis has been managed internationally and the daily built-up of ecological debt.

As is well known, the debt crisis 'officially' began in August 1982 when Mexico announced that is was no longer able to repay it debts[3]. The crisis had several roots. Between 1960 and 1980, the external debt of developing countries multiplied by 12, going from 50 billion dollars to 600 billion dollars. Northern banks and states lent money on favourable terms to finance Southern countries' development and draw them into the world market as exporters of primarily raw materials and agricultural products and as importers of Northern goods. "until the end of the 1970s, indebtedness remained sustainable for countries of the south because interest rates were low and the loans enabled them to produce more, to export more, and thus to earn hard currency to repay the debt and to invest" (Millet and Toussaint 2003, 17).

The situation changed dramatically in the beginning of the 1980s, due to a huge increase in US interest rates – a consequence of a switch to monetarist policies –, multiplying the sums countries of the South had to pay back. In the same period, the prices of raw materials and agricultural products exported by the South continued to fall, with constantly worsening terms of trade. From 1981 onwards, Mexico, Brazil, Argentina and other countries announced that they were no longer able to repay their debts. Since then, the indebtedness of developing countries has only worsened. Total external debt of developing countries amounted to 2400 billion dollars in 2002, of which around 1600 billion dollars is external public debt, owed or guaranteed by governments, and around 850 billion dollars is external private debt, owed by private financial institutions (CADTM 2003).

The policy through which creditors have tried to manage the debt crisis has not worked. This policy is commonly known under the name of "the Washington consensus". From the 1980s onwards, IMF and World Bank were entrusted with imposing strict financial discipline on the indebted countries. Before developing countries could get new loans, a rescheduling of debts or partial cancellation, they had to impose a particular set of policies aimed at restructuring their economies. This set of policies, known as Structural Adjustment Programs (SAP; and since 1999 also Poverty Reduction Strategy Papers) is essentially always the same:

[3] This paragraph is largely based on *The Debt Scam. IMF, World Bank and Third World Debt*, an excellent book on the debt crisis by Damien Millet and Eric Toussaint (Millet and Toussaint 2003).

development of an export oriented economy to procure currency to repay debts, opening up of economies for further integration in the world economy through the elimination of custom barriers and the abolition of control over capital movements, privatisation and disengagement of the state from competitive sectors of production, cuts in the government budget in non-productive sectors such as health and education, devaluation of local currency.

As said, these kind of policies have not been able to relieve the external debt. Even worse, they are severely criticised for having aggravated the economic, social and environmental situation in a lot of developing countries. There is e.g. a clear link between adjustment policies and the historical and daily accumulation of ecological debt. Since colonial times, the economies of developing countries have been oriented towards the needs of industrialised countries. The debt crisis and the accompanying structural adjustment policies have reinforced the export orientation of Southern economies. To earn currencies and repay debts, countries in the South have thrown their minerals, agricultural products, oil and gas or fish on the world market. Numerous reports describe how these policies have caused ecological damage and overexploitation of resources (i.e. the components of ecological debt).

Although in 1988 already, the indebtedness of developing countries had been recognised as a structural problem by the G7 Summit in Toronto, all initiatives taken by creditors – such as the HIPC initiative – have merely focused on reducing or restructuring debts to such a level that the debt service is bearable and that developing countries can continue or resume paying. This situation has led to a demand from civil society and NGOs for a policy of systematic debt cancellation. It led during the Jubilee 2000 Campaign between 1996 and 2000 to the biggest petition in history, with 24 million signatures (ibid., 132). The argumentations for debt cancellation are plural and include (based on Millet and Toussaint 2003, 96-111):

- Moral arguments: debt repayments draw essential resources from poor countries at the expense of satisfying basic needs (access to food, water, education, healthcare); debts were frequently contracted by undemocratic regimes who did not use the money in the interest of their populations
- Political arguments: debt enables the creditors, through the imposition of policies such as structural adjustment programmes, to exercise exorbitant power over indebted countries, which affects their sovereignty
- Economic arguments: the amount of dollars owed at the beginning of the crisis has been paid many times over; cancellation would enable southern countries to diversify their economies and not solely focus on exports to procure currency
- Legal arguments: the notion of ‘odious debt’ (debt which does not benefit the people and is incurred without consent of the people, examples being the former Zaire, south Africa, Nicaragua, Philippines, Nigeria, Croatia, Iraq etcetera – see also footnote 17 in the core research, 1.2.4.), the case of ‘force majeure’ (a government finds itself unable to fulfil its international obligations due to external circumstances beyond its control; the circumstances being e.g. the rise of interest rate in 1979 and the fall of prices of raw materials) or the ‘state of necessity’ (a situation where the existence of the state is endangered, in this case since it is no longer able to fulfil the basic human needs of its population)
- Environmental arguments: the overexploitation of natural resources, encouragement of deforestation, endangering of biodiversity etcetera, due to adjustment policies and export orientation; the huge ecological debt caused through past and current exploitation
- Religious arguments: important world religions have a notion of debt forgiveness or cancellation

It is clear from this list that ecological debt is not the ultimate argument for debt cancellation, but an additional one which strengthens the case. Even when only looking at the historically accumulated carbon debt of Belgium and comparing it to the external debt owed to Belgium, it becomes clear how important the ecological debt is. The total external debt owed by developing countries to Belgium was around 16 billion Euros in 2000. The debt of HIPC to Belgium was around 2,3 billion Euros. We calculated the carbon debt of Belgium, depending on the model, at 4234 (model 1) to 5787 (model 2) million tons of CO2 since 1900, with an intragenerational debt (Historical Carbon Debt) of 3389 million tons of CO_2. When using the monetary valuation method proposed in 1.4.5. and 3.4.3.2./3.4.4.3. – essentially a market price of 10 € per ton CO_2 – the intragenerational carbon debt of Belgium amounts to almost 34 billion Euros. Or in other words, Belgium owes 34 billion Euros to developing countries.

Consequently, recognising ecological debt implies, at the minimum, a re-evaluation of the external debt owed to Belgium, and should in fact lead to a debate on debt cancellation. This clearly goes far beyond the current initiatives on external debt and fundamentally questions the forms of conditionality which are currently attached to debt initiatives. With regard to its bilateral debts, Belgium should be able to play a pioneering role. With regard to multilateral debts, Belgium is member of the Executive Board of IMF and of World Bank. It can and should play an active role in reshaping IMF and World Bank policies.

5.1.2. Recognition of ecological debt: avoiding daily accumulation

It has been stressed several times in this report that ecological debt is not just relevant from a historical perspective, but that ecological debt is daily accumulated through its two components identified in the core research: causing ecological damage elsewhere and using ecological goods and services at the expense of equitable rights of others. In particular, the consumption and production patterns of industrialised countries are day after day responsible for the accumulation of ecological debt. How can this daily accumulation be stopped?

One way of tackling the problem is through the working out of national and international strategies for sustainable development which systematically pay attention to the accumulation of ecological debt. Complementary, such general strategies have to be translated in a systematic integration of the concern of ecological debt in different policy domains. The fundamental reasoning behind such integration should be that in the past too scant attention has gone to the negative impacts of industrialised countries' policies abroad and on global ecosystems. Henceforth, a serious policy for sustainable development cannot but pay attention to it.

National plans for sustainable development are already mentioned in Agenda 21, chapter 8.7. "Governments, in cooperation, where appropriate, with international organizations, should adopt a national strategy for sustainable development based on, inter alia, the implementation of decisions taken at the Conference, particularly in respect of Agenda 21. This strategy should build upon and harmonize the various sectoral economic, social and environmental policies and plans that are operating in the country. (…) Its goals should be to ensure socially responsible economic development while protecting the resource base and the environment for the benefit of future generations. It should be developed through the widest possible participation. It should be based on a thorough assessment of the current situation and initiatives." Since 1997, Belgium has a law for coordinating the policy of sustainable development. It installs amongst others a 4-year federal plan for sustainable development,

based on a 2-year report on sustainable development, and an advisory Federal Council for Sustainable Development. The first federal plan 2000-2004 was approved in July 2000. At the time of writing this research report, a public consultation on a pre-draft for a new federal plan has been held. The new federal plan 2004-2008 should be approved by the Belgian government in autumn 2004. As has been said in the introduction of this research report, the concept of ecological debt is mentioned in §582 of the plan 2000-2004, but the issue as such – the impact of Belgium's production and consumption patterns in particular on developing countries – is a minor theme. It is even less a theme in the pre-draft of the new federal plan. Ignoring the impact issue and exclusively focusing on sustainability issues in Belgium and Europe, will create the illusion that "all is well", while the negative externalities of our production and consumption patterns are passed on to other countries and future generations.

Several options are available for integrating the attention for the components of ecological debt (ecological damage, use at the expense of), and thus making a start with avoiding daily accumulation of ecological debt. These options are already mentioned in the first federal plan, but they should be broadened in order to integrate ecological debt issues; these options should also form an integral part of the second federal plan.

Some of these possible options are on the level of *instruments*:

- Development of indicators for decision-making (§628-641 and §783 in the first federal plan): indicators have become an important topic in the sustainability debate. Since 1997, Belgium has been experimenting with the development of a set of indicators, but this has not yet yielded a lot of results, neither in the selection of a set, nor in its integration in decision-making. Anyway, recognising the issue of ecological debt implies that the set of indicators to be selected should comprise indicators which can inform decision makers and the general public on the impact of Belgian production and consumption patterns. Examples are indicators such as the ones that have been developed in this report (e.g. carbon debt, use of arable land abroad) or existing indicators (e.g. ecological footprint, indicators for aspects of environmental space, indicators out of material flow analysis)
- Sustainability impact assessment (SIA) (§643-665 in the first federal plan): SIA is a new technique which is in full development and which is defined as "a systematic and iterative process for the ex-ante assessment of the likely economic, social and environmental impacts of policies, plans, programmes and strategic projects, which is undertaken during the preparation of them and where the stakeholders concerned participate pro-actively. The main aim is to improve the performance of the strategies (…)" (Arbter, 2003). Research has been done at EU level on amongst others the application of SIA to WTO negotiations. In Belgium, a research project has started with the goal of developing a form of SIA by February 2006[4]. SIA's should take care to incorporate the possible accumulation of ecological debt in its evaluation of policy plans, programmes or projects.
- Scientific research (§591-603): research traditionally gets quite some attention in the sustainability discourse. As has become clear from this report, the knowledge on ecological debt and its underlying mechanisms is very limited. If we do not want to create illusionary "islands of sustainability" (the OECD countries) in a sea of unsustainability, research on issues related to ecological debt should be stimulated.
- Awareness raising. A mental and behavioural change is an essential factor in the transition to sustainable development and in the avoidance of future accumulation of ecological debt. Awareness raising with the general public for the global (towards southern countries)

[4] This is, by the way, a project which is done by a research group coordinated by CDO (Ghent University) in collaboration with CEL (UGent), IGEAT (ULB), AURAP (UCL) and IDD.

and long term (towards future generations) impacts of consumption and production patterns is an important first step in this shift. A better integration of sustainability issues in the formal education curricula and support for governmental and non-governmental awareness raising campaigns are complementary tracks to achieve this objective.

While the options discussed so far are on the level of instruments, the actual accumulation (or avoidance) will be on the level of *policies* such as[5]:

- Energy and climate policies: avoiding new carbon debt and other energy-related forms of ecological debt clearly implies a reduction of energy use in Belgium. Demand side management with rational use of energy and a simultaneous development of renewable energies on the supply side are the most important axes for such a strategy. The least one can expect is a fast realisation of the Kyoto goals.
- Agricultural policy: sustainable agriculture is slowly becoming an important theme in European agricultural policy, but what is hardly ever explicitly discussed is the dependency of European agriculture and food supply on inputs and land area outside the EU. It is clear from the analysis in the modular research that this topic should no longer be overlooked in the debate on what sustainable agriculture for the EU and Belgium might mean. Sustainable agriculture within the EU can only be achieved if the link between EU livestock production and land requirement outside the continent is taken into account. Internalisation of external costs will be necessary as well.
- Trade policy: unequal exchange and in particular ecologically unequal exchange have been identified as one of the important mechanisms underneath ecological debt (see core research 1.5.2.). There are no simple measures for reorienting this tendency in international trade relations. A start can be SIA's of WTO measures, such as are now being developed within the EU, provided of course that these SIA's pays attention to ecological debt related issues. Other directions of thought are measures for stabilisation of prices of raw materials and agricultural products. On Belgian level, it should be considered whether the policies of the Export Credit Agency (Delcredere / Ducroire) can be adjusted. The nature of the contracts insured and their social and environmental consequences should become an element of discussion. Investments and activities abroad benefiting from these contracts at the very minimum be in line with international conventions signed by Belgium. The indicators used to assess contracts could be broadened with ecological debt related indicators.
- Development cooperation: the first federal plan for sustainable development states in §582[6] that Belgium will introduce forms of SIA in its international cooperation and that it will support similar initiatives in partner countries. An important task for development cooperation could be (1) to identify cases of ecological debt accumulation in partner countries and (2) to stimulate and start projects which can stop this accumulation. For (1) one could think of screening existing projects and programmes on sustainable development criteria. Another possibility is performing material flow analysis for partner countries in order to get a view on the ecological impact of different sectors and the (hidden) flows towards other countries. This could serve as a basis for (2), setting up new projects or programmes which are capable of avoiding or lowering ecological debt accumulation. Obvious examples are in the sectors of sustainable mining and sustainable agriculture.

[5] An interesting document which can be consulted in addition to what is suggested here, is the *"Memorandum n.a.v. de wereldtop duurzame ontwikkeling in Johannesburg (Zuid-Afrika) 2002: Duurzame ontwikkeling door afbouw van de ecologische schuld"* (in Dutch only, *Memorandum 'sustainable development through reduction of ecological debt'*), published in May 2002 by VODO, the NGO partner in this research project.

[6] The same paragraph where the need for research on ecological debt is mentioned.

5.1.3. The last remaining problem: the actual recognition of ecological debt

All these policy suggestions can be reinforced by referring to a (broader) interpretation of principles such as 'common but differentiated responsibilities' or to a (slowly) growing state practice of restitution for historical injustices. But in fact, it is not even necessary to mention 'ecological debt' as such, in order to reorient policies towards avoidance of negative impacts abroad. The insights revealed by the debate on ecological debt and the methodologies to map ecological debt are relevant, even if the term is not explicitly used (or replaced by others; see the discussion of scientific articles in part 1 with terms such as 'environmental debt' and 'natural debt'; other terms encountered during the research project are 'environmental liabilities' and even 'national negative and positive externalities profile').

This brings us once more to the problem of recognition of ecological debt. It is undoubtedly necessary to integrate the concerns of the ecological debt debate in the sustainability debate, but should this happen through an explicit recognition of ecological debt or is an implicit recognition possible as well?

With 'explicit recognition' we refer to some form of insertion of the words 'ecological debt', e.g. in international treaties or declarations, on EU level in Communications or Directives or in a revised EU plan for sustainable development, or on national level as a goal in e.g. plans for sustainable development. On world or EU level, one can imagine that such a development would lead to a commission or control organism with the task of furthering the understanding of ecological debt, its components and its underlying mechanisms, with agreeing on a methodology for measuring ecological debt, and with investigating the policy implications of ecological debt. But it is clear that with the current state of the debate, this is not a development which can be expected very soon. Such a development will certainly need intensive campaigning and lobbying from civil society organisations in debtor and creditor countries, at different policy levels, and supported by scientific research and awareness raising. An example can be found in the international campaign for the Tobin tax, which has succeeded in world wide awareness raising, formulating a scientifically sound proposal and linking with sympathising politicians. In Belgium this has led to legislation introducing the Spahn-variant of the Tobin tax, which can serve as an example for debates in other countries. In the case of ecological debt, a government (e.g. the Belgian) could reinforce the process by e.g. asking advice from advisory councils, by supporting awareness raising campaigns or by supporting further scientific research. The difference between the Tobin tax and ecological debt is that – at first sight – the Tobin tax can also be in the interest of the North (stabilisation of capital markets and avoidance of speculation), while ecological debt is perceived as contrary to the interests of the North. So, without pressure from Southern policy makers and without networking between North and South, it is unlikely that ecological debt will be put on the agenda. However, Belgium can adopt a constructive attitude in those cases where representatives of southern countries and/or civil society organisations bring the concept of ecological debt into the debate on multilateral fora (e.g. climate negotiations, WSSD process,…)

A complementary strategy is to promote an 'implicit recognition' of ecological debt, by which we mean that the words 'ecological debt' are not used, but either historical responsibility is recognised for environmental problems such as climate change, or policies are introduced to avoid ecological damage abroad or overuse of ecosystem goods and services. The best chance

for bringing historical responsibility to the agenda is probably to be found in the climate negotiations, and more specifically the negotiations for the second commitment period on mitigation and adaptation (see 5.1.1.). Avoiding damage and overuse – without explicitly calling it accumulation of ecological debt – could be introduced in industrialised countries' policies as a general principle. As said before, it should in fact be a normal ingredient of sound sustainability policies, but is equally clear that this goal has so far not been achieved. It can be brought to the agenda and the attention of policy-makers through awareness raising by civil society, through policy advice from advisory councils; through integration in instruments such as indicators, SIA, research. Possible consequences for policies were already formulated above.

5.2. Final conclusions

The picture which emerges out of this research project is complex. The concept of ecological debt has characteristics which turn it into a potentially powerful tool for re-discussing relations between North and South or for re-thinking sustainable development policies. Characteristics mentioned in the core research are the historical perspective added to sustainable development, the reversed debtor-creditor perspective and the uniting of comparable experiences. Despite these interesting characteristics, the concept shows several weaknesses on the level of operationalisation. It has been shown that it should be possible to strengthen definitions and methodology and to elaborate the underlying scientific frame of reference. Simultaneously, it was clear that at this stage of development of the concept, introduction in international negotiations and application in policy is not self-evident.

The research on MEA's illustrated the complexity with a discussion of possible leads such as the principle of common but differentiated responsibility, the principle of intra- and intergenerational equity or jurisdiction concerning state responsibility. Ideas related to ecological debt are to some extent translated in existing MEA's and case-law, but important obstacles such as the sovereign right of states and the orientation towards the future of MEA's remain. Still, possible starting points for introduction of ecological debt in international law were also identified, such as the human rights discourse or a growing state practice to provide restitution for some historical injustices.

The research on energy/climate and agriculture/food applied the developed methodology and showed that it is in principle possible to quantify the physical relationship between countries for the different components of ecological debt, i.e. ecological damage caused elsewhere and use of ecosystem goods and services at the expense of equitable rights of others. But the applications also showed that important choices are involved regarding the point at which ecological debt begins to build up and that the basis on which these choices should be made are not always easy to define. In the quantification of carbon debt, we could rely on IPCC research to define a 'sustainable level' of CO_2 emissions; emissions above this level are intergenerational or inter-country debt. The choices made by IPCC – which have become widely accepted over the years – were taken as point of departure for when carbon debt begins to build up[7]. The same kind of reference cannot be found for space-related aspects of fodder crop production. The research has shown that it is possible to calculate the area needed abroad for fodder crops for the Belgian livestock, but there are almost no references for

[7] But the dividing line between inter-country and intergenerational debt is itself subject of choices.

translating this area to ecological debt. In this case, the question 'how much is too much?' cannot simply be answered by referring to a 'neutral' source such as IPCC.

We want to stress that even when it is not possible to strictly identify and calculate ecological debt such as it has been defined in this research project, it remains nevertheless essential to identify the impacts of industrial countries' policies abroad and on global ecosystems, and then to diminish these impacts. This point of view should become an integral part of sound sustainable development policies, even if it is not explicitly called ecological debt. Ignoring these issues and exclusively focusing on sustainability issues in Belgium and Europe will create the illusion that "all is well", while the negative externalities of production and consumption patterns are passed on to other countries and future generations. In this sense, we also claim that the insights and methodology which have been developed during the project are more widely relevant than the strict debate on ecological debt. They can become tools for broadening the view on what sustainability means, and more in particular on what the impacts are of physical-ecological relations between nations, now, in the past and in the future, under business-as-usual policies or under revised policies.

Due to the mixed and complex picture, it is not straightforward to give detailed policy advice for a wide range of policy domains. Still, we think it is possible to sketch at least a broad picture of which direction policies should take. The two aspects of ecological debt – 'ecological damage' and 'use at the expense of equitable rights' – can be targeted through two kind of policy interventions, i.e. accounting for historical responsibility and avoiding daily accumulation. For some domains implications are clearer than for others, with climate and energy policies possibly being the best point of departure for introducing some notion of ecological debt. In the debate on external debt, debt cancellations are long overdue and here ecological debt can be an additional argument. Development cooperation policy can play a role in identifying cases of ecological debt accumulation in partner countries and in stimulating and starting projects which can stop this accumulation.

All in all, furthering the debate will probably need different forms of 'capacity building': awareness raising with the general public but also with politicians and civil society, intense lobbying at different policy levels and forging links with sympathizing politicians, more profound scientific research, networking between South and North at the level of civil society, politics and research.

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