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The "Rio Model" of Environmental Governance – A general Evaluation

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1 Introduction

Evaluation – both ex post and ex ante – is part of the Rio model of governance, which emerged from the UN Earth Summit of 1992. This chapter provides a general overview of the Rio governance model that stands behind the strategic concept of Sustainable Development. This model of environmental governance has been remarkably successful as a knowledge-based model of steering – not based on power and legal obligation. However, we urgently need further improvements. The chapter therefore makes a number of suggestions as to how to strengthen the Rio model of governance. It also looks at whether evaluation should use only a top-down perspective - the implementation of Agenda 21 or of national SD strategies – or should also adopt a bottom-up perspective focusing on forces that are independent from but supportive to the strategy of SD (e.g. high energy prices or changes in WTO rules).

2 The Explosion of Complexity

The Agenda 21 (or Rio) model of multi-level, multi-sectoral and multi-stakeholder governance is important because it is the only governance model that takes into account the extremely high complexity of the environmental field. There has been an "explosion" of complexity in the configuration of actors of environmental governance since the early 1970s. Originally, the actor constellation of environmental policy was rather simple (Figure 1): Government regulated (or at least tried to regulate) the environmental behaviour of polluters through one-sided action (command and control). While there may have occasionally been some pressure from NGOs or the media or bilateral forms of co-operation between government and the target group, the actor constellation remained fairly simple compared with today. Now there is a new policy approach: Instead of restricting state intervention to "top-down" regulatory measures that are often limited to end-of-pipe treatment, modern environmental policy increasingly aims to internalise the solution of environmental problems into the polluting sectors. This is the core idea of "ecological modernisation" (Jänicke 1985, Mol 2001). The polluting sectors have the best information about both the problems they cause and the innovation potential they have. But they are themselves part of highly complex actor constellation that is being influenced at different levels - whether national, local or global. Also, civil society actors – NGOs, science organisations, the media – have increased the complexity of the actor constellation. They are not only local players but also influential at different levels. In addition, they do not only interact with government actors but often establish a direct relationship with the business community that takes the form of both criticism and cooperation (Figure 2).

Fig. 1: Original Actor Constellation of Environmental Policy

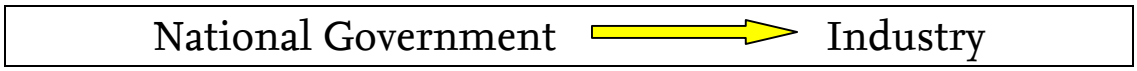
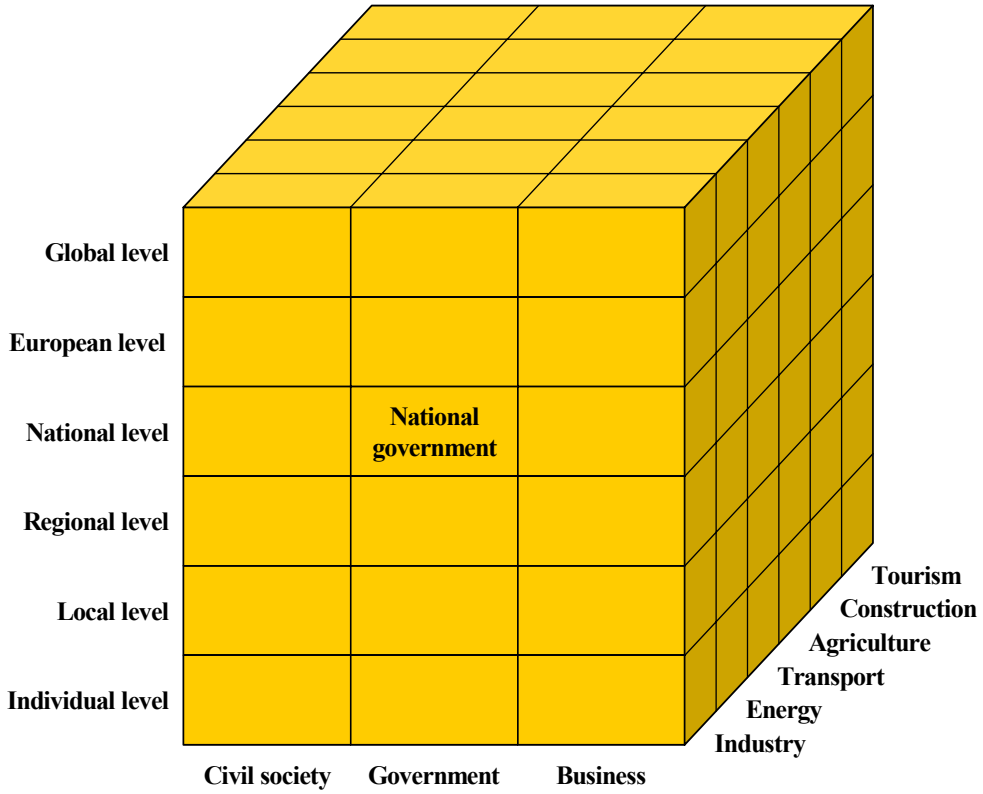


Fig. 2: Dimensions of Modern Environmental Governance



Source: Jänicke (2003)

The "*Rio Model" of Environmental Governance* can be seen as an answer to this increasingly complex constellation of actors. It is explicitly characterised by:

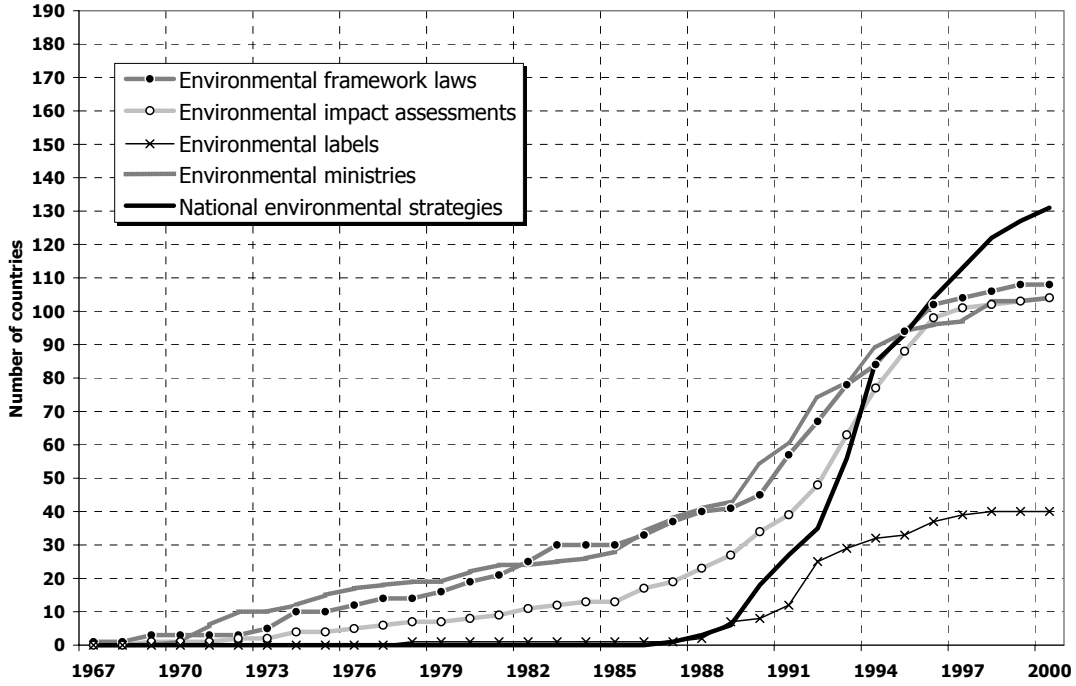
- Long-term goals, timeframes, monitoring and assessment (management by objectives)
- Integration / sectoral strategies
- Participation of stakeholders
- Co-operation, activated self-regulation
- Multi-level co-ordination.

The "Agenda 21" (UNCED 1992) is the basic official document and describes not only the main objectives of sustainable development but also the main steering principles. The "Rio process" of implementing Agenda 21 forms a body of rich experience that is a valuable resource for further strategic learning on how to change the behaviour of actors under the described conditions of complexity.

3 Achievements of the "Rio Model"

The governance model of Agenda 21 and the subsequent "Rio process" have achieved a certain degree of success. While National Strategies for Sustainable Development (NSSDs) now exist in most of the world's countries, a total of 113 countries had initiated at least 6,400 local Agenda 21 processes as of 2002 (OECD / UNDP 2002). There has also been a rapid diffusion of environmental policy innovations throughout the world since 1992 (see figure 3). More than 100 environmental ministries have been established. Environmental NGOs have been strengthened at all policy levels. Some "greening" of sectoral policies (e.g. energy) has taken place. In the European Union, institutional innovations have integrated environmental considerations into the general policy process. Broad environmental policy learning can be observed in companies, institutions and organisations. Some 90,500 companies worldwide have certified according to the ISO 14001 scheme, with an increase of 37% in 2004 (Environment Daily, 27.Oct./2005). The knowledge base and the motivation of decentral actors have been strengthened. Multi-level environmental governance has been significantly improved, especially within the EU.

Fig. 3: The Global Diffusion of Environmental Policy Innovations: The example of five policy innovations



Source: Busch and Jörgens (2005)

4 Weaknesses of the "Rio Model" of Governance

Despite undeniable achievements, one should not overlook that the "Rio Model" of governance also exhibits a number of shortcomings that need to be taken into account. The weaknesses become visible if we turn in the policy cycle from agenda setting and general policy formulation to implementation within and between countries.

(a) As the Rio Model is essentially knowledge-based, the challenge is how to deal with power-based resistance

The "Rio Model" of governance has been successful not as power-based mode of steering but as knowledge-based strategy focusing on innovation and policy learning. The Rio model of governance is therefore essentially a *voluntary* process of policy innovation, lesson-drawing and policy diffusion (Busch et al 2005). The most important implication was that small innovative countries like the Netherlands, Sweden or Denmark, rather than powerful countries like the US, have dominated the process. Never before have small countries played such an important role in the development of global policy (Jänicke 2005).

However, a purely knowledge-based approach has also a number of shortcomings. Lack of clear responsibilities, for example, is a problem of an essentially voluntary mode of governance. Similarly, knowledge-based approaches often lack the institutional strength to guarantee successful implementation (see below). The main challenge, however, is to effectively deal with powerful resistance of highly organised interests.

The knowledge-based mode of governance has often been able to successfully compete with the power-based approach. Nonetheless, it has also been restricted by power constellations: National governments and powerful industries have often resisted knowledge-induced change, especially in cases where vested sectoral interests were affected. Power has always the privilege to ignore and *not* to learn (Deutsch 1963). Powerful actors *can* be highly innovative and ready to learn. But the pressure to do so is lower compared with actors that do not have much power at their disposal. Here, the lesson for evaluation may be to consider possible options of overcoming resistance not only through soft modes of sectoral "transitions management" but also through countervailing *pressure* for environmental innovation and sustainable policy objectives (Table 1).

Multi-level governance can provide several opportunities to exert pressure (to learn) against resistant polluters. The Brent Spar conflict has been a prominent example for a certain kind of pressure. But there are many other possibilities. Powerful actors may act as veto-players but they are also subject to different pressures for innovation. The pressure for environment-friendly innovation can be

caused by a large variety of different factors that include price explosions, new technologies or news headlines. Given the highly complex actor constellation of global environmental governance, this pressure can be exerted from below, or from above, or from different sides. It can originate from competitors as well as from pioneer countries that set regulatory trends (see figure 2). Horizontal *pressure through political* and/or *technological competition* is especially interesting in this context. This is the mechanism where even powerful veto-players like the US government are in a relatively weak position.

Tab. 1: Pressure for Environmental Innovation - the Complexity of Economic Risks for Polluters

Economic Factors:
• Volatile energy prices • Volatile prices of certain raw materials • "Green" demand from retailers • "Green" demand within the supply chain • Competing new technologies (pressure for substitution) • Insurances • Benchmarking systems • EMS Certification of competitors (EMAS, ISO 14.001)
Political Factors:
• Activities of pioneer countries • Strict regulation of important markets (e. g. EU) • Regulatory trends • International environmental regimes • Public procurement.
Societal Factors:
• Attacks from green NGOs (e.g. Brent Spar) • Media campaigns against polluters • Alarming media reports • Internet campaigns against polluters • Alarming scientific studies • "Green" consumerism of the growing global middle class.

Source: Own compilation

(b) There is a need to reinvent government in the context of governance for sustainable development.

Co-operative and self-regulatory approaches are indispensable, especially if the solution of problems is to be internalised into the responsible sectors. But this co-operative mode of steering often needs the final responsibility and capacity of governments:

1. Elected governments have a higher institutional responsibility. Unlike private actors, they are not free to ignore a given problem.
2. Regulatory and legal approaches are still the dominant form of policy-making, at least in environmental policy (RIVM 2004). And so far they have proven comparatively effective. Regulatory and legal approaches need however more flexibility and goal orientation and should therefore be complemented by economic instruments.
3. There is currently a great degree of innovation in government intervention – innovation that consists mainly of new instruments combining regulation with high flexibility: While emission trading combines hard administrative caps with flexible responses, the Japanese "top-runner" programme makes energy efficiency of the "top runner" (the one that achieves the highest energy efficiency out of a total of 18 products) the basis of the standard. Obligatory feed-in tariffs for power from renewable energy are another example of this kind of flexible regulation.

(c) There is a need to re-invent the nation state in the context of multi-level governance.

Compared with other actors, the nation state (at least the OECD-type) is best equipped to take the *final responsibility* within the complex structure of global multi-level governance:

1. The nation state has the highest political visibility and, as a rule, it is the first redress in case of crises.
2. The media and public opinion are most developed at the level of the nation state. It is therefore at the national level where the pressure for political legitimation is highest.
3. The manpower of the nation state is high compared with the staff of international regimes: While the US Environmental Protection Agency has about 18,000 employees, the staff of international environmental regimes usually does not exceed a few hundred employees.
4. The professional competence of the national administrations being comparably high, government administrations play an important role in international expert networks.

5. The national monopoly of violence is still a very important political resource.
6. National regulatory innovation and its diffusion is an important determinant of global markets: policy-dependent national lead markets play an important role in the ecological modernisation of global markets and international competition, not least the competition in markets for eco-efficient technologies (Jacob et al. 2005).
7. Finally, globalisation has created a policy arena for pioneer countries (Jänicke 2005). Germany, UK, Japan, Finland and Sweden claim to be "pioneers" in environmental policy. This type of political competition and "benchmarking" is a by-product of the Rio process.

(d) Capacity needs assessment: Ambitious strategies need adequate capacities

"Capacity" can be defined by the limits of possible action within a given political, economic and informational opportunity structure. A general lack of institutional authority and manpower as well as of knowledge or economic and technological resources has been the norm in the Rio process. There seems to be a contradiction between the ambitious objectives of sustainability and the generally acknowledged objective of 'lean' government. However, capacity-building (more manpower, larger institutions, more knowledge) is not the only possible answer to this challenge. There are also the possible options of:

- Demand reduction: This strategy involves prioritisation and focus on the main unsolved problems rather than holistic mega strategies,
- Capacity saving strategies, e.g. through Internet consultations instead of real (physical) participation, or negotiation under the threat of regulation ("in the shadow of hierarchy"),
- Policy termination (to the extent possible): Where problems have been solved permanently, policies should be terminated in order to save scarce capacities.

A capacity needs assessment should therefore be the first step of any strategy.

(e) The environmental dimension of Sustainable Development should not be restricted by the three-pillar-approach.

The "environmental dimension" – together with economic development – has originally been the most important dimension of SD. The triple bottom-line has been invented after the Rio summit. The environmental dimension has its own goals, problems and interests, alongside those of the economic and social pillars. Also, it has its own specific support structure (NGOs etc.). The "three pillar approach" as such has no societal support base. The environmental dimension as well as its economic counterpart need their own expertise and specialisation

since holistic approaches that are too general create the danger of amateurism. It is weakest if there is conditionality between the three dimensions. The antagonisms between the three pillars are a reality and need pro-active, open conflict resolution by competent proponents in an inclusive network. The tendency of "negative coordination" inherent in the three-pillar approach (environment policy introduced only if economic or social interests are not negatively affected) should be overcome. Only positive coordination makes sense (win-win, search for synergies). Therefore, a minimum of autonomy and specialisation of the environmental dimension is necessary.

(f) National SD Strategies should be both, problem-orientated and innovation-oriented

The Rio Model of Governance incorporates National Strategies for Sustainable Development (NSSD) as a key requirement of Agenda 21. However, it is necessary to note the main weaknesses and strengths of existing NSSDs. Only 12% of a total of 191 countries have strategies that are now being implemented. Another 24% have strategy documents that have been approved by governments (OECD 2005). There is a consensus among experts that lack of political leadership as well as insufficient institutionalisation, capacity-building, policy integration, target setting and monitoring are generally observed weaknesses of national SD strategies (Swanson et al. 2004, OECD / UNDP 2002). These factors help explain the low degree of effective implementation. The above mentioned restrictive and often confusing understanding of the "three pillar approach" of SD may be added as a further explanation.

One further weakness of NSSDs, which has so far not been addressed, can be added. There is often a lack of problem-orientation on the one hand, and innovation-orientation on the other hand. Many NSSDs give too many answers without asking the right questions. And the answers often underestimate the market potential of innovative solutions. The environmental dimension is generally discussed with a focus on measures, i.e. on instruments, projects, and best practice. The most urgent environmental problems, which should be at the core of such strategies, are often forgotten or substituted by "visions" of all kinds. The initial step, therefore, should be a diagnosis of the most important unsolved problems. For example, if higher energy taxes or other additional costs are proposed, the underlying problems should be communicated to and accepted by those who are due to pay. In terms of the "multiple-stream" theory (Zahariadis 1999), the *policy stream* of NSSD proposals should converge not only with the *political stream* (of political opportunities) but also with the *problem stream,* which has its own expertise and actor constellation.

The counter argument is that too much focus on problems ("alarmism") will deter the public. This, indeed, may also be true, even if we concede that political mobilisation is an essentially problem-oriented process. The solution may be to "balance" the bad news by good news about possible options and best practice. For instance, the general public must be familiar with the prognosis of climate change and the probable damage effects. But it will tend to suppress the bad news if there is no positive perspective of innovation (new markets for renewables, reduced costs by higher energy efficiency etc.). The problem-oriented approach, therefore, should be systematically connected with an innovation-oriented perspective of eco-efficiency and ecological modernisation (Jänicke 1985, Mol 2001).

This is a normative proposal but it is based on comparative evaluation. The most successful NSSDs are those that rely strongly on innovation. This is exactly the kind of solution that has been adopted by countries claiming to be pioneers in environmental policy – Sweden, Finland, Germany, UK, the Netherlands, Japan, and South Korea. The first steps to integrate the concept of eco-efficiency into the EU Lisbon strategy may also be mentioned in this context. The EU spring summit has explicitly declared that „the development of eco-innovation and eco-technology as well as the sustainable management of natural resources" should be part of the EU strategy for growth and employment (Council of the European Union: Presidency Conclusions, 23 March 2005, 5).

Marketable environmental innovations are characterised by two facts. They relate to global environmental needs and consequently to potential global markets. And they can lead to economic advantages such as reduced costs (including the costs of environmental protection) through more sustainable low-impact technologies. This may be the most important explanation for the fact that national environmental policy (contrary to other policies) has not suffered so much from a regulatory downward competition ("race to the bottom"). On the contrary, the environmental issue has to a certain degree become a dimension of the competition for innovation between the highly developed countries. There is a high correlation between a stricter environmental policy and the competitiveness of a country (Jänicke 2005).

5 Ex-ante and Ex-post Evaluation

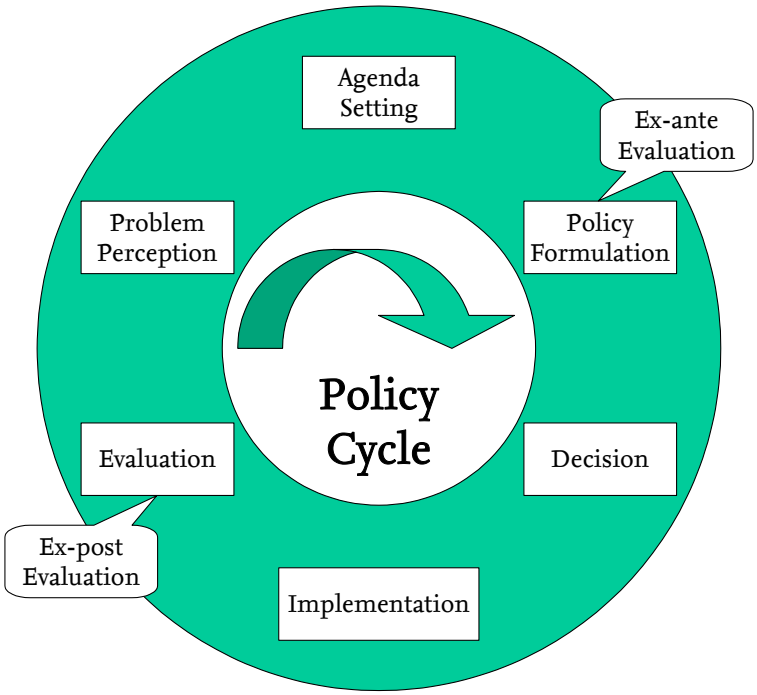
Evaluation is an essential part of the Rio model of governance. It follows the soft, knowledge-based mode of steering. Evaluation can take place ex post and ex-ante (see Figure 4).

The *ex-ante evaluation* and assessment of the legal and constitutional implications of proposed laws, for instance, is a routine procedure in many countries across the world. In addition, there has always been a general public debate and

quasi-evaluation of legal proposals. Also, the assessment of budgetary requirements and cost-benefit analyses of proposed policies are already well-known tools (Howlett / Ramesh 2003). Environmental impact assessment of policies, plans and projects is a more recent approach. Following the logic of the Rio model of governance, it is a soft ex-ante steering mechanism of policy learning within the process of policy formulation. Integrated impact assessment is the most ambitious but also the most difficult policy innovation in this field.

Environmental impact assessment should, indeed, be (and often already is) part of the routine of ex-ante assessment. But it should not be overestimated. Its impact depends on certain conditions which may lead either to mainstreaming or "sidelining" of environmental considerations. Again, some autonomy of the environmental dimension must be secured and the conflict between the three different perspectives of SD evaluation must be solved in open, transparent and pluralistic discussions. Check lists of relevant environmental risks must be well known and easy to handle if environmental impact assessment is to become an effective tool of governance.

Fig. 4: Ex-post and Ex-ante Evaluation



Source: Jänicke 2005

Ex-post evaluation, following the implementation phase of the "policy cycle", has a long tradition (Howlett / Ramesh 2003). Here, a distinction has to be made between "top-down" and "bottom up" approaches to evaluation. In the first case, the evaluation takes a given programme and its objectives as a starting point, e.g. a

national SD strategy and its targets. Here, the main question is in how far and at what cost the objectives have been achieved. The b*ottom-up* approach, on the other hand, takes real changes as a starting point, regardless of whether the SD policy or other influencing factors were the main causes of the observed change. Oil prices, for instance, may sometimes be a more important influencing factor than the existing clean air or climate policy. Similarly, an environmental improvement can be primarily due to a structural change in the economy. The greening of agriculture, for example, may not primarily be the result of an environmental sector strategy or the EU Cardiff process but rather the outcome of new WTO rules on subsidies.

Influencing factors that are not directly related to a given NSSD area of high (environmental) importance. They originate within the *mainstream* of the process of political and economic development and often go far beyond any environmental strategy. There are more causal factors than the NSSD itself and many positive outcomes cannot be explained with strategy alone, which plays only a rather marginal role as long as it is not integrated into the policy mainstream. One may feel more comfortable with bottom-up evaluation approach because the results tend to be more positive. Taking the Kyoto Protocol as an example, a top down perspective will show slow implementation and heavy resistance of several countries, whereas a bottom up perspective will reveal the booming market of renewables, the crisis of the sport utility vehicle (SUV) market, and the rapid diffusion of energy-efficiency policies etc. (Tews / Jänicke 2005). At the same time, however, a top-down evaluation of target outcomes may reveal that - despite these achievements - the concentration of greenhouse gases in the atmosphere continues to rise. Therefore, both perspectives are necessary and complementary.

Top-down analysis is indispensable because we want to know what the outcomes of a specific policy are. But the causal factors that produce improvements "free of charge" should not be ignored. This is important for a number of reasons. First of all, the fact that environmental problems have their proper dynamics and can create special policy windows has not only stimulated the Rio process and its agenda of SD but also continues to shape its implementation. The case of climate protection, for example, shows that the dynamics underlying the market success of technological innovation can have a stronger impact than the existing NSSDs themselves. Secondly. the actor constellation influencing environmental improvements is much more complex than the actor constellation underlying a SD strategy, which is too often the sole activity of a specifically designated and institutionalised "epistemic community". Here, we first have to consider the effects of knowledge-based policy *learning* under the conditions of exploding complexity (as mentioned above). Also, we need to take into account the effects of potential *pressure* for environmental innovation. which has become similarly complex and creates insecurity for polluters since it arises at different levels and is exercised by

different actors ranging from governments and competitors to societal actors (see table 1).

These are fundamental issues in strategic level evaluation, which is rarely sufficiently precise to be able to measure the extent to which each of many possible causes can be ascribed to an observed effect. In such circumstances, the ex-post and top-down evaluation of any particular strategic intervention may not be sufficient for a full understanding of policy learning. We may instead require broader research into the validity of the theoretical foundations on which the full set of policies is based. The main aim of ex-post evaluation remains to identify whether the desired outcomes are being achieved, and if not, whatever the specific causes, to identify appropriate corrective actions.

6 Summary and Conclusions

Global environmental governance is necessarily multi-actor, multi-sectoral and multi-level. The Rio model of governance has so far provided an adequate answer. It is the only model that takes into account the highly complex actor configuration. A reform could therefore remain essentially "path-dependent". However, a general evaluation of this ambitious strategic concept and its weaknesses leads to the following policy recommendations:

- The role of government in the context of cooperative governance should be recognized and strengthened.
- The nation state is indispensable and has regained importance in the context of multi-level governance.
- The restrictive understanding of the "three pillar approach" to SD tends to dwarf the environmental dimension and should be overcome: A certain autonomy of the environmental dimension seems indispensable.
- The design of ambitious NSSDs as well as their implementation and evaluation generally need to solve capacity problems. There are, however, more options than the increase of capacity – an ambition that is often in contradiction with policies in favour of lean government. Alternatives to capacity-building include demand-reduction through prioritisation and sequencing and capacity-saving strategies (e.g. Internet consultations).
- NSSDs should be problem-oriented, but not "alarmist". Instead, the long-term problems should be related to the existing potential of innovation and ecological modernisation.
- The tool of bottom-up evaluation draws our attention to the fact that there are more possible causes of environmental improvements than the NSSD itself.
- The actor constellation that exercises influence on the progress towards SD is by no means confined to the actors responsible for implementation of the

NSSD. Also, the pressure for environment-related innovation has many sources that go far beyond the existing NSSD strategy: In the highly complex actor constellation of global environmental governance, this pressure can be exerted from below or from above, or – horizontally – from different sides. It can originate from competitors as well as from trendsetters of environmental regulation. NSSDs should therefore target as much as possible the relevant polluters and anchor the policy interventions in "their" field of action.

The last point shows that there is a high potential for progress towards global environmental governance if these challenges and opportunities are taken up and lead to better-designed policy solutions.

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