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A Green Fist in a Velvet Glove: The Ecological State and Sustainable Development

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ABSTRACT

Suggestions for transforming ecological sustainability into operative social choice mechanisms can be viewed through the bifocal lens of limits on, and opportunities for, the ecological state. Using lines of reasoning brought in from the comparative study of environmental policy, this article tries to stake out how far the ecological state can go in pursuing objectives of sustainable development without intruding on values and objectives fundamental to democracy. The article discusses social choice mechanisms in terms of the ecological state's authority, management capacities, effectiveness, and legitimacy, drawing up the image of the ecological state as a 'green fist in a velvet glove' with the ultimate objective of integrating 'ecological' evaluations into the public mind so that they become as 'natural' as those 'economic' criteria presently applied. Concluding that such 'ecological' consciousness involves a great leap in ecological information processing and dissemination within and throughout societies, the article invokes the sustainability and success of democratic social welfare states which base authoritative command on enlightened debate and deliberation as evidence that such a leap can be successfully made through processes of informed consensus.

KEY WORDS

Ecological state, sustainable development, democracy, legitimacy, effectiveness, knowledge, authority, management

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THE QUEST FOR SUSTAINABLE DEVELOPMENT: PROBLEM OR PROSPECT FOR THE STATE?

The quest for sustainable development is said to challenge the appropriateness and effectiveness of political government in turning societal structures and processes towards sustainability. The *growth-oriented* state utilises resources beyond the limits of sustainability. The *territorial* borders and national cultural notions of present states do not often coincide with the boundaries of the eco-systems that provide their sustenance. Also the *democratic* state is challenged. Some conclude that democratic governance and traditional environmental policies are mutually enhancing (Jänicke 1997: 12 f.; Crepaz 1995; Jahn 1998). Others contend that democracies may have difficulties in adopting effective and integrated policies to attain sustainable development (Eckerberg and Lafferty 1997; O'Riordan and Voisey 1997). Furthermore, the globalisation of markets and of the supranational rules governing operations in those markets affects the power of national states (Jansen et al. 1998: 300 ff.).

Sustainable development puts the *administrative* state's capacity for decision-making and learning to a tough test (cf. Jänicke and Weidner 1997). The classic 'command and control' strategies of environmental regulation show diminishing marginal returns of ecological improvement (Dente 1995: 15). The present, sectorally fragmented state struggles to find binding definitions for 'maximum sustainable yield' amidst rapid technological progress and comprehensive cultural changes that alter views on 'available' stock as well as 'proper' levels of consumption (Pritchard et al 1998).

Not surprisingly, green political discourse abounds with prescriptions for how to reach sustainable development despite the perceived weaknesses of the state, or even *without* the state. There have been arguments for more of 'market' or less of 'state' (cf. Eckersley 1995). Calls have been made for 'global' (Caldwell 1990), but also for more 'local' government (cf. Dobson 1990: 145 ff.). Some have even argued for 'ecocracy', i.e., rule by scientific expertise (Ophuls and Boyan 1992). Still others have suggested taking state and politics out by decentralising power to networks of 'genuinely representative' communities of interest (Burnheim 1995). Further down that road away from the state and back to nature we find recommendations for a communitarian ethics literally tying human choice down to some overarching objective of animal wellbeing (cf. Taylor 1986).

Whether seeming or real, such dismissals of the state are often built on the premise that ecological sustainability should be the overarching social and political objective. They oftentimes also build on a pessimistic view of the present democratic state as not strong enough to meet the challenges of sustainable development. Admittedly, liberal democratic states are built on the idea that they cannot legitimately prescribe some single objective for their citizens, which means that policies and decisions are most often the result of

competition and compromise. On the other hand, the state holds a unique position in the constitutive hierarchy from individuals through villages, regions and nations all the way to global organisations. The state is *inclusive* of lower political and administrative levels, and *exclusive* in speaking for its whole territory and population in relation to the outside world (cf. Gibson et al. 1998: 13, 47; see also Marshall 1998). It has the power to collect and redistribute a large part of a country's GDP, and is sovereign to impose new rules and regulations considered legitimate and binding by the citizenry.

So, even if the state does not conform to ecologically adequate boundaries the way 'ideal' environmental communities would, it can display more resources than smaller governmental units, communities or networks when it comes to forming institutions that monitor ecosystem change, create practicable ecological knowledge and solve ecological conflict. Within the limits drawn by democratic norms, the *state* is thus still the key political unit for arriving at legitimate, collectively binding decisions within multi-level efforts to promote sustainable development.

CLAIMS AND LIMITS ON THE 'ECOLOGICAL' STATE

This paper is not out to present *the* model ecological state. The purpose is rather to stake out the prospects for an ecological state by developing certain arguments about the state and sustainable development. This I do by viewing different suggestions and arguments brought in from the comparative study of environmental policy in industrialised countries through the bifocal lens of limits on, and opportunities for an ecological state. How far could the ecological state go in pursuing sustainable development without trespassing on the core values and objectives of democracy? What opportunities are there to allow the ecological state to be more effective than the present state in the pursuit of sustainable development?

The foremost claim on the ecological state is that it remains *democratic*. Truly, juxtaposing sustainability demands with present democratic norms and procedures poses a social dilemma: what if a majority of voters do not want sustainability because it limits their democratically guaranteed rights and freedoms (cf. O'Riordan and Voisey 1997: 1)? It is argued that the ecological state can obtain *legitimacy* for its procedural and institutional adaptations to sustainability if they are 'created by negotiated consent' or at least by 'understanding and tolerance' (O'Riordan and Voisey 1997: 10). Legitimising mechanisms include specific participatory and consensus features, such as voluntary agreements among affected parties, widespread use of locality- and issue-specific hearings, and refined systems of compensation for the redistribution of risks and responsibilities (Lafferty and Meadowcroft 2000: 424 ff.). There are suggestions to make those representing the polity *accountable* not just to present

citizens, but also to future generations, to (poor) people in other parts of the world subjected to our ecological footprints, and even to non-human species. Suggestions have been made for creating an 'ecological citizenship', appointing 'eco'-ombudsmen, or arranging representation by 'proxy' (cf. Christoff 1996: 158 ff.).

A second claim on the ecological state is that it should be *effective*. One aspect concerns the *scope* of institutional change. Adaptations to sustainability provide for more integration of governmental organisation as well as the legal and economic instruments for governing. There is more long-term, truly cross-sectoral planning, based on democratically governed research, and directly linked to policy implementation. Another aspect concerns the *measurability* of adaptations to sustainability. When the state goes 'ecological', such adaptations are 'set in parameters that have ecological and social references, and linked to agreed norms and targets' (O'Riordan and Voisey 1997: 10). This is reflected in the already ongoing efforts to create standards for sustainability indicators, to introduce 'green taxation', and to introduce and customise 'green accounting' (cf. Smeets and Weterings 1999).

However, these claims of the ecological state must be seen in view of the limits on that state. *Institutional* limits prescribe appropriate and legitimate political conduct. Property rights, contract law and civil rights legislation delineate the legitimate use of state power. Only under very pressing circumstances can the state transcend or change these limits to reach such policy objectives as sustainable development. *Instrumental* limits affect the economic, scientific and technological, organisational and strategic capabilities of the state to achieve an ecologically sustainable development (Jänicke 1997: 1 ff.). When such capabilities are not fully developed, are poorly co-ordinated, or are not properly implemented there are limits to state's ecological capacity. Particularly crucial is the state's *cognitive-informational* capacity. Insufficient integration of science and technology with public planning and decision-making may defeat efforts to internalise ecological knowledge and adherence to norms of sustainability into societal activities and into the public mind (Jänicke 1997, Cohen 1998).

This set of limits guides the following discussion of different social choice mechanisms recommended for the ecological state. At issue is whether or not these mechanisms provide the ecological state with the competence and capacities to *effectively* uphold the capability of ecosystems to provide the services needed for human life support within ecologically defensible scales (cf. Pritchard et al. 1998: 10 f.). At issue is furthermore whether this is achieved within the limits of representative and accountable *democratic* government. And do they provide the state with the *cognitive-informational* capacities necessary to make enlightened decisions on the distribution of possibilities for life support over generations (cf. Shrader-Frechette 1993: 191 f.)?

THE ECOLOGICAL STATE AND *AUTHORITY*: COMBINING CENTRAL CO-ORDINATION WITH INTERACTIVE INTELLIGENCE AND INDIVIDUAL CHOICE

Efforts to design appropriate institutions for sustainable development link two ostensibly incompatible qualities. The governors want mechanisms that are authoritative and effective in promoting desired behaviours, while those governed would like them to be flexible, self-adjusting and reflexive, allowing individual citizens to have influence and choice. Command-and-control approaches to the protection of environmental values have developed into increasingly fine-tuned and often incompatible regulations (cf. Dente 1995). The diminishing return from such approaches points to the need for various techniques to involve stakeholders and use bottom-up social initiatives, whether in the form of local debates over Agenda 21 plans, or through the build-up of institutions for resource use run by the principal users. On the other hand, discursive governance risks becoming hegemonised by certain actors (cf. Hajer 1995), and corporate governance schemes may end in regulatory capture (cf. below, p. 464).

To achieve sustainable resource management, the ecological state must thus be structured as an intelligent mix of central co-ordination and interactive learning. Not only must such a state avoid the pitfall of regulating too much, thus stifling development, but it must also avoid abdicating too much of its authority and thus jeopardising sustainability. The ecological state is not just another actor in the game of resource 'governance': it is the umpire in that game, with a unique authority resting on regulations and enforceable sanctions, something that much of the present work on 'governance', 'networks' and other metaphors for present-day governing processes seems only too eager to overlook (Lundqvist 2001).

Nevertheless, it is argued that the complexities of sustainable development require a *negotiating, contractual* state. A major challenge to the ecological state's authority would thus be to develop instruments of 'guidance' or 'steering' rather than traditional 'command-and-control' strategies with detailed substantive prescriptions. The latter are increasingly inefficient when the ecological state moves from traditional environmental policy towards sustainable management of natural resources. Enforceability is low; compliance with detailed regulations is difficult to uphold and expensive to control. Social acceptance is low: traditional 'command-and-control' is confrontational towards the immediate self-interest of economic actors, leaving little room for individual choice. Incidence is low: while traditional 'command-and-control' regulations deal mainly with emissions or polluting effects of resource use, sustainable development concerns the whole chain of resource use from production through consumption of goods to their transformation into waste.

One way to for the ecological state to retain legitimacy and still be effective is to establish a blend of *direct* regulation towards *ends*, i.e., towards the scale and total amounts of resource use, and *indirect* regulation with regard to *means*. The latter calls for instruments that change the context of choice for individual decisions on resource use rather than prescribing their actual content. Indirect instruments – economic incentives/disincentives, self-regulatory implementation, and means-creating reflexive awareness – leave market forces in place and allow for interplay between (manipulated) market and societal signals and individual self-interest.

Such indirect use of state regulation for sustainable resource management holds the promise of dynamic effectiveness, particularly if regulatory measures contain mechanisms for drawing of lessons by all involved. Behavioural changes can be fine-tuned insofar as observable individual reactions are directly attributable to the measure taken. By using economic, self-regulatory and reflexive instruments, the ecological state can promote autonomous, autopoietic responses. Experiences from recent trends in public administration, in particular the idea of organisational interdependency, could be used in developing and enhancing the capacity of the ecological state. The central themes here are exchange of crucial resources, and influence over other organisations' resources. Voluntary agreements and performance contracts are seen as major means to define the contracting parties' responsibilities, as well as performance standards and indicators. They furthermore prescribe monitoring of performance and provide links from results to performance judgements. The contractual linkages between mutually dependent actors regarding exchange of resources force the actors to develop channels of information, persuasion and negotiation. As with indirect regulation, agreements and contracts presuppose strong cognitive capacities within the ecological state, not only to clarify and assess the policy objectives, but also to establish goal-directed, yet realistic performance indicator systems.

The effectiveness of ecological state governance through negotiations and performance contracts with market-based actors is, however, not automatically forthcoming. When state non-intervention in implementation is made conditional on actors' performance, it functions as a trigger of self-regulatory behaviour and commitment among resource users. A similar pressure is brought to bear through the use of information measures, aimed at creating awareness of the resource consequences of individual behaviour. To prove their credible commitment and to avoid detailed regulation, firms adopting environmental management systems must make their self-regulation of resource-related behaviour visible to the ecological state and other actors.

While contract-based authority may reduce the asymmetry in public/private relationships, the increasing number of subcontracts gives rise to problems of control, of defining liability, etc. This shifts the focus from organisational to inter-organisational management. Network complexity and the use of contracts

– always subject to differing interpretations – increases uncertainty, and thus poses a challenge to the ecological state's capacity to effectively implement the objective of sustainable development.

The classic way to decrease such uncertainty is to use regulatory power to create authoritative and reliable rules of the game (cf. North 1990). Trust lessens the need for detailed and costly control and monitoring, and lowers the costs for incentives applied to make natural resource users accept the objective of ecologically sustainable development. The rules of the game established through the regulatory capacity of the ecological state – be they contract clauses, economic incentives, or mechanisms inducing self-regulatory action – must convey stability and transparency. As North argues, a wise choice of stable and transparent institutions at historically formative moments holds the potential for starting a process of mutual exchange, whereby choices of individual actors over time lead to an advantageous development for the society as a whole.

THE ECOLOGICAL STATE AND *MANAGEMENT*: DETERMINING THE SCALE OF APPROPRIATION AND USE OF 'SCARCE' RESOURCES

What is implied for sustainable resource *management* by the argument that the ability of the ecological state to achieve sustainable development requires a balance between state authority, interactive learning and individual choice? Following the metaphor of the ecological state as the final arbiter in the resource game, one could argue that it should have the authority to establish the overarching scale and objectives for natural resource use. This, however, presupposes that the ecological state has the cognitive/informational capacity to define which resources or states of environmental quality are actually crucial to sustainable development, and also to determine the 'maximum sustainable yield' or 'contamination' of such resources. It also presupposes a capacity to monitor resource use to prevent irretrievable losses. The success in developing this capacity, and the legitimacy of using it in a democratically acceptable way, presuppose incentive structures that make it attractive and favourable for individuals to provide, use and adjust to information. Two proposed social choice mechanisms are particularly challenging in this respect, viz: *comprehensive planning* and systems of allocating *natural resource quotas*.

A commonly heard argument is that traditional land use and resource planning is insufficient for sustainable development. Goals are not set in ecologically relevant spatial or temporal scales; materials or energy balances are lacking; there is a lack of regulatory support and provisions for monitoring and control; and plans do not integrate activities among sectors, and often lack incentive mechanisms that enhance successful implementation (Jänicke and Jörgens 1998: 47 f.; cf. Meadowcroft 1997a: 431 ff.).

In contrast, comprehensive ecological planning (CEP) is seen as concerned not only with ordinary pollution and risk problems, but also with problems and restrictive factors of materials and resource use and management. Initiated at central levels of government, CEP starts by integrating all existing environmental protection plans and voluntary agreements. The knowledge relevant for an effective CEP stems from an independent infrastructure of 'eco-institutes' producing ecological and socio-economic data and developing scenarios for different policy options, as well as from the continuous involvement of target groups in this learning process. The core of the CEP process is the build-up of support through strategic alliances with key actors and interests (Jänicke and Jörgens 1998: 30 ff.). It is more like an ongoing process of 'institutional design' than a 'bureaucratic routine'. Through consensus talks and voluntary agreements on decentralised implementation, the ecological state can bring about what some have called 'co-operative management regimes' with relevant actors (cf. Meadowcroft 1997b: 179, 182). However, its success also depends on supportive governance mechanisms such as taxes, regulations, and means for allocating and monitoring resources.

Jänicke and Jörgens contend that CEP is a vehicle for 'ecological modernisation' (cf. Lundqvist 2000). Such planning will stimulate the development of innovative, resource-efficient technologies, increase competitiveness, and create market advantages for the economic actors integrated in the planning process. On the other hand, the potential scale and pervasiveness of the CEP for sustainable development might lead some sectoral interests to challenge the legitimacy of the ecological state. And what with liberty and autonomy if such planning is construed as central governmental rationing of certain resources on the basis of scientific expert judgement on scarcity and 'maximum sustainable yields'?

A system of rationing the use of resources deemed particularly crucial to sustainable development can be applied where there is competition among rivals for such resources, and where it is technically feasible to define exclusive user rights in the form of natural resource quotas (NRQs). A combination of central authority and decentralised market transactions might be functional here. The total available amount of resources would be determined by the ecological state on the basis of resource inventories made by independent 'eco-institutes' in the CEP process. The allocation of resource quotas for individual appropriation and use would result from competitive bidding in a market established for that purpose. Individual NRQ holders would be subjected to management conditions set by environmental and resource-related regulations. Prices would reflect variations according to the resource's degree of biodiversity, scarcity and substitutability (cf. Knoepfel 2001).

A system of CEP and NRQs would seem to imply the emergence of a 'green' Leviathan. However limited the group of resources deemed so crucial for sustainable development as to be subjected to NRQ allocation, individual

property and user rights would be substantially curtailed compared with under present regulations. To legitimise regulatory measures of such significance to individual rights, the democratic ecological state should provide generous opportunities for information, debate and individual choice. Quotas would have to build on scientific evidence provided by independent expert bureaux or agencies, which would then be openly reported and debated. Regulations should not be used to stifle competition. They should be used primarily to allow NRQ market prices to reflect the internalisation of such externalities of resource use that, if unaccounted for, might jeopardise sustainable development. Historical models of the internalisation of social welfare costs could be of guidance here. Such a combination of state authority and competitive market mechanisms holds the promise of effective, self-adjusting sustainable use of resources deemed scarce or crucial to sustainable development.

Admittedly, CEP and NRQ mechanisms used by the ecological state do involve central governmental authority to bring about sustainable resource management. On the other hand, production based on crucial resources would be disjointed even within an integrated system of planning and quotas. Within the framework of individual choice in competitive markets, strategic impulses and interventions from the ecological state would be indispensable to stimulate interaction among resource users. Through a system of 'resource management-as-institutional-design' with a carefully adjusted mix of central authority, interactive learning and individual choice, the ecological state might subsequently need 'little more "planning as strategic decision making" or "planning as bureaucratic routine" than that which we are accustomed to in industrial societies today…. [only] the profile of these interventions would have to be different' (Meadowcroft 1997b: 179).

THE ECOLOGICAL STATE AND *EFFECTIVENESS*: CONTRACTING OUT FOR SUSTAINABLE PRODUCTION

So far, I have reasoned as if the scarcity criterion on which to determine quotas were easily defined. Of course, it is not. The ultimate criterion – sustainability – is notoriously dim. History tells us that 'scarcity' varies over time with technological development. Free trade makes natural resources travel across state borders and across space with resulting differences in relative pressure. Adequate and reliable measurements of the state of resources and of the efficiency of resource use are thus at the heart of eco-state effectiveness. This necessitates systems of 'green' accounting to monitor the flows of 'scarce' natural resources as well as the resource-related behaviour of different target groups.

Now, this again may evoke impressions of a 'Green Big Brother', commanding and controlling every individual's resource use from cradle to grave. But

there are ways to establish a more equal relation between eco-state authority and individual choice among key groups of natural resource users. One would be to develop the present system of voluntary environmental agreements into a system of ecological performance contracts (EPCs). Such a system would establish a more symmetric exchange between public and private agents negotiating over limits or reductions in different uses of resources deemed particularly crucial for sustainable development. The possibilities for the ecological state to monitor resource users' performance increase with the degree of performance specifications in the EPCs. Experiences from earlier contracts feed back into the cognitive capacities of the ecological state, thus strengthening the accuracy and implementability of the conditions for resource use specified in future contracts. Most importantly, contracts would make the ecological state *liable*; it cannot unilaterally introduce new restrictions during the contract period without in some way compensating the other party. Prospective resource users would thus know that access to the resource is secured as long as they observe agreed-upon contract stipulations.

However, environmental performance contracts pose strong challenges to the ecological state's capacity for effective implementation. One such challenge concerns how to strike a balance between the need for comprehensive information and overall control of the quantity and quality of 'scarce' resources, and the need for decentralised, multi-level decision-making on actual resource use. To get accurate accounts of the resources subjected to quotas and available for EPCs seems to imply a comprehensive national ecological agency in charge of monitoring resources as well as determining the scale of resource use. Such centralisation may effectively boost cognitive-informational capacity for strategic decision-making. It could, however, severely hamper the efficiency of the contracting process, where flexible market-based mechanisms and disjointed decisions are needed. To secure overall effectiveness, the ecological state must thus refrain from excessively detailed 'steering', instead providing agencies with a wider competence when signing EPCs with resource providers and users.

Another problem concerns how to effectively reach all potential contracting parties without transcending the limits set by other claims on the ecological state. Individual contracts, based on centrally determined scales and levels of resource use, are more easily concluded and monitored when the number of resource users is limited, as in industrial sectors dominated by a few large companies. They may also be more easily implemented in 'corporatist' settings, where strong branch organisations speak for their members and have the capacity to 'deliver' expected behavioural changes from individual member firms. On the other hand, corporatism breeds exclusivity and may end in a sub-optimally functioning contract market, subjected to regulatory capture (cf. Laffont & Tirole 1991).

THE ECOLOGICAL STATE AND *LEGITIMACY*: REACHING AND DIRECTING INDIVIDUAL BEHAVIOUR

An even greater challenge to the ecological state is presented by the massive numbers of individuals who consume resources and products but are not as accessible for direct state intervention as the firms and enterprises competing for resource quotas to produce marketable goods and services. Individual contracts or covenants are not feasible. Neither are collective agreements. We may assume that just like the citizens of the present welfare state, the citizens of the ecological state are not well organised as *consumers*. The ecological state can thus not rely on agreements with consumer federations to effectively change individual resource consumption behaviour. Furthermore, procedures to issue resource consumption permits to individual citizens would be unthinkable in terms of efficiency (cf. Ligteringen 1999: 48 ff.). Regulating every last aspect of individual consumption behaviour would mean intrusions by a 'Green Leviathan' into the privacy of individual citizens way beyond what could be legitimised in a democracy.

But can the ecological state really back off from the objective of sustainable development because of the inaccessibility of citizens as individual consumers? It is, after all, argued that household consumption in developed industrial countries exceeds the 'ecological space' compatible with sustainable development (cf. Moffat 1996). There is, however, a solution to this dilemma. The ecological state can apply social choice mechanisms of *indirect* 'steering'. It can affect *product properties* through EPC's with producers, through performance standards for products and production processes, as well as by promoting different programmes of product eco-labelling and performance benchmarking. There is evidence that the record of eco-labelling is quite favourable in some of the highly developed democracies (Yang 1998). The ecological state can also affect *product prices* through green taxation and charges on externalities caused by the production and use of such products, as well as through incentives for co-operative consumption (cf. Ligteringen 1999: 58 ff.). Individual *conduct* is amenable to influences through governmental information campaigns, as well as through physical measures. Local governments are key actors: decisions on local infrastructure can be used to create conditions that make the purchase and disposal stages of consumption less resource- and labour-demanding for individuals. The state and its different agencies are large-scale consumers, and can thus provide examples of ecologically sound consumption through comprehensive programmes of green tenders and green procurement.

Most of these instruments have been tried already, but there are no examples of integrated and orchestrated efforts to affect consumption behaviour. Admittedly, comprehensive policies toward individual resource consumption would

involve political risks. Individuals are not just consumers in the market; they are first and foremost citizens and thus voters. Politicians in the ecological state thus have strategic incentives to put much weight on the *political* feasibility and legitimacy of measures. They know all too well from recent history that there are strong outbursts of public opinion whenever governments 'sound out' drastic price hikes on (e.g., on petrol) as necessary for sustainable development.

Still, there are strong arguments in favour of indirect regulation of the context of individual choice rather than direct regulation of its content. Indirect regulation leaves market forces intact, but allows for the interplay between (manipulated) market signals and individual self-interest. This triggers off learning processes with great potential impact on future resource-related individual consumption behaviour. Regulating the context of choice can thus go a long way to effectively change behaviour without being accompanied by an intrusive control apparatus.

Most important, however, is to bring about a match between incentives and disincentives in the context of individual choice and behaviour on the one hand, and the scale of totally allowable resource use on the other. The system of resource planning and allocation of NRQs to producers through market competition provides for just such a match, while regulations directed towards the context of choice provides incentives for individually wise resource-related behaviour without telling people how much to buy, use and dispose of what, when and how. To reiterate, systems of rationing individual consumption could never achieve legitimacy among citizens in liberal democratic states except in situations of extreme scarcity. Furthermore, there are international trade agreements, and regional 'commons' (built on the principle of subsidiarity, cf. Backhaus 1997) with free flows of goods and services that put limits on an ecological state trying to bring individual consumption down to allegedly sustainable levels of resource use.

Thus, the political feasibility and legitimacy of indirect, context-directed instruments are highly dependent on *how* they are introduced and implemented. Present citizens may be reluctant to accept limitations on what they have come to view as an indispensable individual freedom of choice, particularly since sustainable development is not something they will actually experience within their lifetime. This puts strong demands on the ecological state's cognitive-informational capacity to enable individuals to connect their own resource-related behaviour to the possibilities of achieving sustainable development. The crux of the matter is that since the scale and level of sustainable resource use cannot be precisely defined, the political credibility of arguments and measures aimed at changing consumption behaviours may not look too convincing to individual citizens. We are thus moving towards some very visible limits of the ecological state.

STRETCHING THE ECOLOGICAL STATE TO ITS LIMITS: *DEMOCRACY* AND EFFECTIVENESS IN A MULTI-LEVEL SETTING

Some readers will no doubt see the above discussion as conjuring up the vision of an ecological state with a *green fist in a velvet glove.* The green fist represents the strong authority for the ecological state. It regulates the appropriation and allocation of resources deemed particularly crucial to sustainable development, as well as the production of goods and services, through an integrated system of comprehesive ecological planning, natural resource quotas and ecological performance contracts concluded with successful bidders, who are subject to state sanctions if contract conditions are not observed. The velvet glove represents the ecological state's conscious use whenever possible of *indirect* regulation to change the context of individual choice. As consumers of marketed products, citizens of the ecological state are still free to observe or ignore such signals. However, the ecological state seeks to trigger a process of self-regulation and self-commitment leading to conscious choices that enhance the possibilities of sustainable development. This it does by engaging in a continuous information exchange with groups and individuals at all levels in society.

What remains here is to stretch the analysis of the ecological state to its limits in order to assess whether this blend of coercion and consent really suffices to achieve sustainable resource management. First of all, *will an integrated system of CEP, NRQs and EPCs bring socio-economic practices within the territorial and temporal scales of ecosystems without fettering initiatives conducive to efficient resource use*? This assembly of authority and competence does enable the ecological state to get a grip on the maximum sustainable yields of resources deemed particularly crucial to sustainable development. The institutionalisation of a market for resource quotas, where successful bidders must sign ecological performance contracts, provides strong incentives to internalise earlier 'externalities', thereby fostering more efficient resource use. Regulatory interventions by government provide strong and important drivers of business environmental decisions (cf. Andrews 1998). However, territorially sovereign states operate in a multi-level institutional setting. Political agreements and the logic of global markets bind and limit state authority. Unilateral efforts to go further than other nations in regulating and controlling resource use could be construed as violations of agreed-upon principles of free trade (cf. Jansen et al. 1998). Regional and local governments may have far-reaching constitutional rights to govern their own affairs, thus circumscribing state power. The effectiveness and legitimacy of a stringent planning-quota-performance contract system thus hinge on whatever resources and capacities an ecological state can bring to bear on actors at other levels in the international system to get acceptance for its policies.

This leads to a second question: *will the proposals discussed here provide for an ecological state with enough cognitive-informational capacity to make its*

decisions and actions politically legitimate and socially accepted? This depends a great deal on the extent to which science can deliver findings on 'maximum sustainable yields' of resources crucial to sustainable development that could function as a unequivocal standards for planning, quota allocations and performance contracts. But however well the ecological state succeeds in building up a cognitive-informational capacity to make sure resource decisions are founded on the best possible scientific opinion, these decisions will surely continue to invoke socio-economic and political debate.

It has been argued that the 'ecological modernisation' school's major assumption (resource problems can be solved through consensual decisions with positive-sum outcomes) has no explicit, logical link to the specific ecological scale at which such win-win solutions are to be reached. Some interests and some levels in society are surely to become short-term 'losers' in the efforts to achieve sustainable solutions (Langhelle 2000: 303 ff.). The necessity to make resource decisions deemed crucial to sustainable development compatible with norms of socio-economic justice and equity puts clear limits on the *democratic* ecological state. It must build institutions that not only secure long-term sustainability objectives, but also legitimise actual resource decisions among its citizens.

How could this dilemma be overcome? Models presently found in the judicial and – to an increasing extent – financial spheres could be useful here. In these sectors, we find structures of autonomous or semi-autonomous institutions making judgments, gathering, assessing and disseminating information, and taking decisions that achieve a high degree of legitimacy. Similar structures related to sustainable resource management could provide an independent, well-founded basis for socio-economic and political debate over future resource decisions. The limits placed by norms of democracy and justice mean that there should also be institutions where resource-related decisions and the information underlying them could be challenged. Such institutions, be they judicial boards of appeal, or different devices for citizen participation, must be easily accessible for all actors and interests wanting to influence or challenge resource-related decisions. The losses this may cause in terms of effectiveness are a necessary sacrifice if the ecological state is to remain democratically legitimate.

It is argued that highly developed liberal democracies show a relatively good environmental policy record. But it is also argued that since these countries use natural resources beyond the scale indicated by their geographic and demographic size, sustainable development implies far-reaching changes in the outlooks, habits and lifestyles of their citizens beyond behavioural modification compatible with current quality-of-life priorities (cf. Baker 1998: 104). As noted at the outset, it is also argued that developed democracies experience limits in their capacity to affect behavioural change through direct command and control strategies.

This leads to a third question: *will the mix proposed here of direct regulation and indirect interventions through changes in the context of individual choice be enough to provide for effective, and wherever possible, self-adjusting implementation of decisions leading to lower, more efficient and sustainable resource use?* The ecological state uses its authority to directly regulate the appropriation of 'scarce' resources, and to specify the performance conditions for resources and users. Indirect instruments manipulate short- and long-term ecological costs and benefits for producers or consumers related to the management and use of these 'scarce' resources. But the choice – whether and how to use resources and to produce or consume goods and services based on 'scarce' resources – is still left with individuals reacting to such signals. The ultimate criterion of the ecological state's success is when such *ecological* evaluations are so internalised and integrated that they become as 'natural' as more conventional *economic* terms actors presently apply whenever they make decisions as producers or consumers. Compared to the steps towards 'environmental' consciousness taken so far, this involves a leap in ecological information processing and dissemination within societies and among individuals. Such societal leaps are sometimes forced through political command. But they are non-sustainable: the fates of twentieth century 'revolutions' bear convincing evidence. Neither may political deliberation alone be sufficient to make citizens abstain from habits considered detrimental to sustainable development (cf. Rydin 1999).

So, could a *democratic* ecological state achieve such a leap in public consciousness and subsequent behavioural changes? Comparative environmental policy research does indicate that particular features of democracy promote progress towards sustainable development, i.e., openness, decentralisation, numerous access points for interests and actors, and widespread external integration of non-public interests and actors into network management structures. A political culture of consensus and co-operation to anchor and legitimise resource use decisions seems to provide a strategically favourable position when it comes to policy implementation and goal achievement (Lafferty and Meadowcroft 2000).

The relative success of democratic social welfare states that base authoritative command on enlightened debate and deliberation implies that the leap can be successfully made through processes of informed consensus among the state, producers and consumers. The history of welfare state development furthermore implies that such a route to sustainable development will take time. However, the political and ecological implications of not entering that path are simply too forbidding to let the idea of a democratic ecological state remain just a 'green print'.

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