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Methodological and Ideological Options

Who gets what in environmental policy?

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ABSTRACT

This paper shows how anticipated impacts of environmental projects and policies can be valued in terms of money as a common denominator, and costs and benefits assigned in an acceptable distribution. To that effect, a new mechanism design of situational contracting is introduced that generates information on willingness and ability to pay or to cooperate, in a realization-focused capability approach to fairness. The situational contract reveals preferences and merit considerations of the relevant stakeholders and deals with market failure in a structured combination of political guidance, expert opinions and co-production.

1. Introduction

Acceptability of the ways in which costs and benefits are valued and distributed helps to gain legitimacy for interventions in the environment. Acceptability, not in the sense of an optimal result in ideal theory, but as a (second) best achievable and accepted outcome in trading rival criteria of good governance, and given the fragile state of public support on both sides of the Atlantic. The notion of trading criteria of good governance- including freedom to choose, efficiency, distributional concerns and sustainability — will be further developed in Section 4. Furthermore, this paper holds that policies should be result-oriented, since capabilities to actually transform the distribution of burdens and gains from environmental projects or policies into individual satisfaction or welfare may be unevenly distributed. Note, however, that implementing fairness in valuation and distribution gets complicated in situations where, as generally in the case of defense or general governance, environmental protection is provided in a non-excludable format as a public good in open access.

Against this background, it is shown how challenges of identifying capabilities, preferences and results may be met by introducing a new mechanism design of situational contracting as a way of finding acceptable tradeoffs between criteria of good governance as mentioned above. In short, the paper goes beyond GDP as a metric of economic performance, to incorporate environmental and social factors, and endeavors to give people a voice in a participatory and deliberative style of policymaking (Hajer and Wagenaar, 2003).

Section 2 sets the stage, presenting a brief expose of the conditions under which markets and cost–benefit analysis reveal information on scarcities and preferences, and facilitate a socially *efficient* use of resources. Next, it qualifies the traditional assumptions underlying welfare economics, such as excludability, competitiveness, consumer sovereignty and rational choice, and its focus on efficiency in problem solving.

Section 3 summarizes the traditional ways of valuation, and shows how solutions may be ordered as a gradual transition from reliance on consumer sovereignty on the demand side to room for public authority on the supply side. Furthermore, it argues that all options to intervene should be valued in terms of money as a common denominator to make alternative solutions comparable.

Section 4 presents the core of the argument. It deals with the distribution of the costs and benefits of environmental facilities, in networks structured by a capability theory of justice and a social exchange conception of principal–agent theory. A new institutional design of interactive, collaborative and properly incentivized situational contracting is introduced in which politicians shape the stance of policy, but are open to feed-back from below in controlling the mission of professionals in delivery. In this approach, civil servants are cast in the classical role of "impartial spectators", as introduced by Adam Smith in his *Theory of Moral Sentiments* (1759) and revived by Sen (1985, 1999, 2009) in his capability theory. It is shown how the situational design specifies roles, rights and responsibilities in networks of politicians, professionals in delivery, stakeholder representatives, advocacy coalitions and individual citizens. The section brings together strands of political philosophy, welfare economics, behavioral economics and public administration. It recognizes that acceptability of normative judgments regarding fairness requires a deliberative style of democracy, and closes with applications and a critical discussion.

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Section 5 concludes that when interventions in the environment have a non-excludable public goods character, appraising individual preference and satisfaction within sectors or social groups gets particularly difficult. More generally, the focus of welfare economics on consumer's sovereignty may need to be qualified to deal with the behavioral aspects of public policy, in a setting of deliberative democracy. A new balance is needed between individual choice on the demand side, and professional expertise, civil service motivation, merit considerations and political leadership on the supply side. Neither a purely demand-driven democracy nor a domineering top-down approach will be able to cope with the complexities of valuation, distribution and legitimacy in environmental policy and management.

2. Social Efficiency Revisited: Limitations of Received Doctrine

Traditional welfare economics offers a basic benchmark of ideal market coordination in which all scarcities are excludable (no pay, no deal) and covered (no external effects), with the sanction of exclusion disciplining demand and revealing individual preference (Shleifer, 1998). In case of non-excludability, people are supposed to have equal access to and derive equal utility or welfare from public goods provided. Supply of inputs, furthermore, is modeled as competitive and driven by consumer's sovereignty, distributions of income, wealth and political power are disregarded or presumed acceptable, and actors in coordination seen as self-interested, properly informed, and rational. If all those conditions were fulfilled, a combination of perfect markets and representative democracy would provide an efficient use of resources (Just et al., 2004).

In practice, of course, it is realized that political systems compromise the welfare of present and future generations when ecological and environmental values are disregarded as external effects. Moreover, behavioral assumptions of self-interest and rationality need qualification, preference and willingness to pay for environmental protection may be hard to establish, and fairness in distribution may be a matter of concern.

Adam Smith (1776), who introduced the notion of self-interest in his *Wealth of Nations*, already mentioned 'sympathy' as an alternative motivation and a condition for solidarity in his *Theory of Moral Sentiments* (1759). Meanwhile, behavioral economics offers a rich empirical literature on a broad range of motivations and incentives (Bottom et al., 2006; Cartwright, 2011; Fehr and Falk, 2002; Frey and Jegen, 2001; Le Grand, 2003; Tummers, 2011). This paper, furthermore, treats rationality as a realization-focused concept (Section 4.2): if actions appear appropriate in the light of one's goals, actions are rational; if not, irrational. Hence, rationality refers to the quality of method, rather than outcome: owing to chance, good method may not always lead to good result (Hirschleifer, 1985: 59; Simon, 1976). External effects and their valuation are dealt with in the next section.

3. Valuation

This section summarizes cost–benefit analysis, multi-criteria analysis and standardized proxy valuations as appraisal techniques when markets fail to cover ecological and environmental impacts.

3.1. Cost–Benefit Analysis

In cost–benefit analysis, value V is defined as the product of a price p and the quantity and quality q of the dosage–effect relationship under consideration. In other words, $V = p \times q$, in which p is generated by demand and supply in market transactions or – when markets fail – imputed or adjusted by political decision as a shadow price, and q represents the envisaged impact. Defining value as $p \times q$ recognizes that p and q each may develop their own dynamics. Once complete sets of benefits $p_b \times q_b$ and costs $p_c \times q_c$, are identified, and a discount rate for future benefits is chosen, the feasibility F of a project under consideration is expressed as the relation between costs and benefits as shown below, in which the p's represent the market prices or shadow prices of outputs or outcomes q_b generated and inputs q_c required, showing how interventions are feasible if $F > 1$, and not feasible if $F < 1$.

$$F = \frac{\sum_{m} p_b \times q_b}{\sum_{n} p_c \times q_c}.$$

In markets, transactions are individualized; q's are defined entities, p's are prices and sanctions of exclusion, and sets of p's times q's reveal market value on the supply side and guide individual preference on the demand side, so that it *looks*, at least, as if actors in supply and demand know what specific item they are dealing with: one pound of prime quality beef q, e.g., has a price p, yielding an endogenous determination of its traded value $p \times q$. Yet, in this example, ecological values are overlooked: cattle produce methane, an unwanted externality that remains unaccounted for. When market coverage is incomplete, sustainable development requires that policymakers assess and add-in non-priced impacts and introduce shadow prices to reveal environmental scarcities, or resort to regulation. Valuations of such externalities should comprise direct as well as indirect effects, such as the impact of infrastructural projects on subsurface water levels on flora and fauna in the surrounding area.

A complete ordering of costs and benefits requires that (1) production functions describing the technical relations between inputs and outputs of remedial actions are known, (2) markets throughout the economy are sufficiently competitive to yield factor prices indicating relative scarcities of inputs used in intervention, and (3) proxy valuations (shadow prices) for externalities are expressed in terms of money. The monetizing condition is a difficult one, but essential for making choices comparable when alternative solutions are available.

A realization-focused approach as introduced in Section 2 and elaborated upon in Section 4.2 gets more complicated if an impact q is not self-evident but needs further deliberation and specification. Suppose a tract of land becomes available for development into a national park. Then, the analysis proceeds in four steps: (1) what are the physical options for biodiversity in the design of habitats and landscapes at this particular location?; (2) how could these options be measured in terms of *ecosystem services* or '*ecopoints*' q, as units of account for comparison?; (3) which set of ecopoints would add the highest net added value and/or the best distribution compared to the similar ecosystem services we have already?; and (4) is that solution worth the money, in relation to other desiderata?[1] Answers to these questions will have to be prepared by expert opinion, in a preliminary ranking of all costs and benefits for ultimate political judgment. The exercise is complicated, but establishing consistently defined units of account on the basis of expert opinions and stakeholder representation that are open to continuous scrutiny is a major step forward in clarifying the ins and outs of ecological policies (Bateman et al., 2011; Boyd and Banzhaft, 2007; Meinard and Grill, 2011; PBL, 2009; Sagoff, 2011).

Expressing shadow prices p for the various impacts q in terms of money is a daunting task. In a seminal contribution, Coase (1960) argued that introducing markets for pricing hitherto non-priced environmental scarcities not just increases social efficiency, but also highlights the reciprocal nature of the problem. Speaking about the social cost of pollution, he noted that the aim should not be "to eliminate smoke pollution but rather to secure the *optimal amount* […], this being the amount that will maximize the value of production" (p. 42). Note, however, that his solution and the ensuing practice of emissions

[1] The 3rd step acknowledges the empirical evidence that the marginal utility of a particular (ecosystem) service tends to decline if more of it becomes available, and the 4th step the assumption that people try to equalize the marginal utilities derived from the various items on which they want to see their resources spent; two basic planks of welfare economics known as Gossen's First and Second Law (Blaug, 1978: 315–322).