1. Introduction

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Governing the environment, like governing any area of activity, poses questions relating to who should take on – or be assigned – the responsibility to execute particular tasks and with the use of which instruments. Are central governments better equipped than more local bodies to carry out certain tasks and vice versa? What circumstances must prevail and what conditions obtain to require the transfer of a competence to a supranational authority? When are private bodies capable of performing certain tasks or functions more efficiently than public agencies? More than other areas of policy interventions, however, environmental policy-making requires a systemic approach: most ecosystems are highly interrelated, have complex spatial and temporal dimensions and respond to protracted stress in nonlinear and therefore unpredictable ways. In addition, some environmental changes may turn out to have extremely far-reaching and irreversible consequences. This makes the design of environmental governance a particularly complex exercise.

By and large, propositions pertaining to the assignment of environmental powers (functions, fields, areas of responsibility) have been formulated within the framework of fiscal federalism and ascribed to a special niche identified as environmental federalism. The classical arguments for decentralization of public sector responsibilities when applied to the environment led to the conclusion that environmental powers should be decentralized when problems are in the nature of local public goods, when environmental protection does not exhibit important economies of scale and when it is possible to tailor the supply of environmental policies to fit those preferences of citizens that are heterogeneous across jurisdictions. Regulators can thus avoid the inefficiency of imposing uniform standards when provision displays locally different marginal costs and benefits.

That research provides an important foundation on which to build a comprehensive and adaptive approach to a subject that continues to evolve. The traditional view of environmental policy as control of pollution and of over-exploitation is no longer adequately representative of the more and more extensive range of interconnections between economic activities and natural
systems. Expanding it requires filling the gap between the results of the conventional environmental federalism literature and the advances in environmental and ecological economics that have been made over the last two decades. Research ought also to be extended by looking at a number of issues still understudied within the theory of the assignment of powers over the environment and the design of environmental institutions.

Our research project is aimed at contributing to those objectives – at, as it were, adding a few stones to the needed and desired construction. This required, it seemed to us from the beginning, a thorough understanding of the way environmental problems are actually addressed – the current de jure and de facto assignment and use of powers over the environment by various governance levels and agencies in different countries. The first step of our research programme therefore consisted in securing a set of case studies describing and analysing environmental governance in 16 countries in all of the world’s continents, and in the European Union.1

The following step, of which this volume is the outcome, brings together analyses of a set of topics that emerged as particularly interesting from the country-level investigations. These analyses can be conceptually divided into two parts: a first one dealing with alternative solutions to the problem of assigning powers over the environment (‘ways of doing things’ or the institutional setup); and a second one discussing some important issues in environmental governance – discounting, dealing with risk and environmental accounting – from the perspective of the comparative advantage of governments at different jurisdictional levels in addressing them.

The first chapter of Part I, Chapter 2 by Anthony Scott, examines the place of contracts in the assignment and re-assignment of environmental powers among jurisdictional levels – national or federal, regional, state or provincial and local or municipal. Scott recognizes that many factors help determine the assignment of powers, but his concern is to provide a theoretical rationale for the existence of contracts. He notes that, typically, an assignment is initially written into a constitution. Powers not originally written into the constitution are often appropriated by various governments. The process of appropriation is governed by vertical competition over powers among governments located at different jurisdictional tiers. Why will governments behave competitively? Because they seek to provide goods and services at the lowest possible organizational costs: that is, the administrative and the coordination costs (separate from the costs of production) of public provision.

Instead of competing to appropriate powers, governments may choose to contract with each other. Whereas the competitive route can bring about a change in the constitutional assignment of powers, the contractual path will often be adopted because it avoids changing the constitutional allocation. But more importantly, the contractual path will be chosen above the competitive
route when that alternative reduces organizational costs. In this way Scott provides a rationale for the existence of intergovernmental contracts that is not built ad hoc for the environment, but is integrated in a general theory of the workings of decentralized governmental structures – a theory, developed with Breton, published in 1978.

Environmental policies provide wide scope for intergovernmental contracting. A main reason advanced by Scott is the general lack, in constitutions, of a clear assignment of responsibilities over the environment, with reference to both the right to legislate and the responsibility to implement and enforce legislation. Let us suppose that a vacuum of powers is filled by federal legislation. A context favourable to contracting is created: first, the right to legislate by the federal government could be challenged on constitutional grounds by subnational governments. Second, the federal government could be faced with excessive implementation costs if it had to set up its own administrative machinery. Third, in those cases when subnational governments consider federal regulation to be either too strict or too lax, taking upon themselves the task of its implementation allows them to modulate its character without engaging in a burdensome challenge to the federal level. The way is thus open to intergovernmental contracts, with which the federal government agrees to relax or tighten federal standards in a province, while the latter takes upon itself the costs of implementation.

Chapter 3 is devoted to the role of privatization of environmental assets and functions in environmental governance. Associated with the diffusion of ideological neo-liberalism – the so-called Washington Consensus (Williamson, 1989) formally articulated by the World Bank and the International Monetary Fund – privatization has been seen, over the last quarter-century, as the solution to a whole range of problems. Different degrees of privatization (ranging from complete divestiture of assets to contracting out of service provision) have taken place on a worldwide basis and across many sectors including education, welfare, social services, health care, prisons, security, transportation and many aspects of the environment including, among others, water supply, waste water treatment, garbage collection and disposal and energy supply and transmission. Yet, possibly as a response to this trend, resistance to the Consensus and to privatization and contracting-out is strong and possibly growing, resulting in deep tensions.

In a perspective aimed at going beyond criteria of economic performance and embracing social and environmental impacts, Marcia Valiante provides an in-depth analysis of two cases: the contracting out of water services and the development of private certification schemes for sustainable forestry (interpreted as a form of privatization of the typically public function of standard setting). The first relates to the provision of a good (water) and a service (its control and distribution) and illustrates the process by which privatization and
market valuation permeate public policy and the delivery of an essential good/public service. Decentralization emerges as a key component in water sector reforms; on the one hand it may allow local preferences to be taken into account and local expertise to be developed, on the other it may force trends towards privatization where local authorities lack the appropriate capacity. In addition, the discussion in the chapter suggests that the introduction of private motives into the provision of a public service that serves a multiplicity of policy objectives has the potential to create a mismatch between means and socially desirable ends.

Valiante provides a review of three of the most important examples of water privatization. Namely, those of the UK, of the city of Buenos Aires and of South Africa. There are plenty of indications from them. Privatization of water is not a sure recipe with universal validity. It requires for its success a strong public sector; it cannot be implemented in a context of poverty and low individual capacity to pay; it has to be preceded by huge institutional strengthening and capacity building. In other words, it can hardly be a solution for the poorest countries, despite the suggestions of the Washington Consensus.

The second of Valiante’s case studies concerns private certification schemes for sustainable forestry. Whether operated by NGOs or by industry associations, forest certification schemes imply the undertaking by a private agent of a number of typically public functions: standard setting, inspection and verification of compliance. This, however, is not the result of the government delegating such authority, but of spontaneous initiatives by NGOs in response to the failure of government policies in promoting sustainable forestry practices. As industry associations reacted by developing their own certification programmes, different schemes now coexist. While competition between them can be beneficial in that it contributes to generate high standards, it could also result in confusion on the part of consumers. As private schemes operate in parallel with government policies, they may interact with the latter in different ways, either reducing their role or being incorporated into governmental regulation.

The contribution of community institutions to environmental problem-solving is the topic of Chapter 4. Elinor Ostrom argues, on the basis of wide-ranging empirical work articulated on rigorous theoretical modelling, that, while general design principles are sometimes available, no magic formula for solving collective-action problems exists. The basic reason is that these problems come in a wide diversity of sizes and shapes. What Ostrom does in the chapter is to formulate core principles – rather than blueprints – for how best to govern environmental matters, especially in federal and other decentralized systems of governance. Applying these core principles to small- and medium-size resource systems is challenging, but less so, Ostrom argues, than designing institutions for global resource governance. The chapter discusses
extensive research that highlights the capabilities of people to design imaginative and effective ways of producing public goods and managing common-pool resources. The evidence presented suggests that successful systems tend to be polycentric with small units nested in larger ones.

Environmental legislation is predominantly a response to diffused interests and is likely to be more successfully opposed by concentrated interests. Those potentially advantaged outnumber those potentially disadvantaged, but are thought to have a much smaller influence on legislatures and on governments. Divided government and bicameralism may thus represent further obstacles to passing of environmental legislation, since they increase the number of institutional veto players – the number of actors that have to agree for a policy to become law and to be implemented. Put differently, divided government and bicameralism introduce a bias in favour of the status quo. In Chapter 5, Giorgio Brosio first reconciles the arguments advanced to explain the power of a bicameral legislature to stall and/or stop legislation with the observation that substantial environmental legislation has been introduced in all industrialized countries. This has happened whether legislatures were unicameral or bicameral and despite the fact that the laws satisfied diffused as against concentrated interests, because, he conjectures, bicameralism can lead to better, more carefully crafted legislation.

To buttress this argument, Brosio points to the fact that environmental legislation has often been a response by legislators to deeply felt demands on the part of citizens. These strong claims (heightened preferences) on the part of the public have often been the product, and that is Brosio’s second point, of large environmental disasters that get emphasized by the media and are thus strongly perceived by the citizenry. In such circumstances, all legislators – whatever their political affiliation – become fervent supporters of environmental causes and of environmental legislation. (In bicameral legislatures, the access of citizens to legislators is structurally greater than in unicameral systems, a feature that helps overcome the tendency to the status quo.)

The judicial power is another crucial institutional player whose structure and functioning can play an important role in a country’s environmental governance. Jason Scott Johnston and Michael G. Faure offer, in Chapter 6, a comparative analysis of the role of the judiciary in environmental centralization in the US and in Europe. Despite the important differences stemming from the fact that the EU does not have the prerogatives of a state, a comparison of the historical shift from local entitlements to centralized standards in the two contexts makes it possible to highlight the role that can be played by the judiciary in shaping the development of environmental law. In both the US and Europe there are indications that courts tried to consider both the negative externalities from the location of polluting activities and the potential benefits they could generate. These efforts of the courts may in some cases have
provided incentives for bargaining, but, particularly in industrial areas, in both Europe and the US, the available evidence is that there was little bargaining over what was a de facto right to pollute.

With the expansion of industrialization a regime relying upon localized entitlements was bound to have severe limits, which led to the emergence, by the end of the nineteenth century, of the first environmental statutes, both in Europe and in the US. Powers began to shift to higher regulatory levels when externalities crossed state borders – with a federal common law of interstate pollution entitlements shaped by the Supreme Court in the US, and the application of national law to interstate pollution in Europe until the advent of EU directives. Now in both Europe and the US, centralized environmental laws go far beyond regulating transboundary pollution problems and also directly regulate localized air, water and groundwater pollution. In the US, the federal courts, by ratifying the preemption of state and local environmental laws by federal environmental authorities, have undermined the incentive of state and local governments to step in when federal regulations are not adequately enforced. In the EU, on the contrary, the absence of an Environmental Protection Agency with enforcement powers makes European law dependent upon Member States for its implementation and enforcement. The danger therefore is not so much that Europe would ‘preempt’ national law, but rather that Member States would not fully implement or enforce European law.

These and other different institutional structures and roles of the courts may also explain differing institutional features of environmental law and policy, such as, for example, the role of public participation or the role of the criminal law. The tendency towards the criminalization of environmental law, for instance, is likely to be stronger the more centralized are the governance systems.

At the outset of Chapter 7, Albert Breton and Pierre Salmon note that it is a fact that in the real world, enactment powers regarding the environment – the making of laws, regulations and so on – and the powers to ensure that individuals and organizations comply with what has been enacted are often assigned to governments inhabiting different jurisdictional levels. They concentrate their attention on the division of two sets of compliance powers: those used to monitor compliance to regulations and those employed to induce or compel compliance to those regulations. Monitoring is effected through direct supervision and through alarms (the instruments or means through which information related to the implementation of enactments is received and utilized). The inducement to comply is achieved through different instrumentailities depending on whether non-compliance is deliberate or not. In the first instance, compliance will be enforced; in the second, various modes of assistance and facilitation will be used.
Breton and Salmon then ask two questions: (1) toward which jurisdictional level will the instruments used to monitor and induce compliance gravitate? and (2) how will the instruments combine with each other in their habitat of choice? To address these unusual questions, Breton and Salmon use the notion of Edgeworth complementarity, which has been used to explain why some instruments ‘fit together’ while others do not. Clusters appear because an increase in the use of one instrument increases the productivity of the other instruments in the cluster. Four modes of seeking compliance through particular combinations of the main instruments (supervision and alarms, enforcement and assistance) are examined, modes that derive in part from technocratic features of the institutional setup such as economies of scale and of scope.

The role and the modes of operation of the various forms of intergovernmental competition, namely horizontal yardstick competition, mobility-based competition, and vertical competition are examined with special attention paid to the way they are intertwined and act to determine the division of tasks related to compliance among the different levels of government.

In Part II, Klaas van ’t Veld and Jason F. Shogren (Chapter 8) tackle the issue of how regional governments perform in dealing with accidental pollution. The topic is new insofar as the literature on environmental federalism has focused on pollution as a deliberate, continuous release of effluents into the environment, while little work has been done on accidental risks, such as oil spills, chemical explosions or leaks from hazardous-waste disposal sites. Control of accidental pollution relies mostly on ex post corporate liability, since ex ante monitoring and prevention tend to be difficult and expensive. Van ’t Veld and Shogren ask whether regional authorities face the correct incentives when choosing between strict liability and negligence and when setting the standard of adequate care under negligence. The chapter concludes that, when regional governments choose negligence, the standards of adequate care tend to be too strict, thus leading to excessive environmental protection. The reason is that in a regional setting, where owners of firms are residents of other regions, part of the rents of expected pollution do not accrue to local residents. When the regional authorities choose strict liability, the results depend on the equity value of firms relative to the size of accident damages. Strict liability leads to socially optimal care levels only if all firms are large enough to pay the full damages from accidents. But if the firms are too small to pay full damages (that is, are bankrupted by accidents), some regional authorities may choose negligence, with the others choosing strict liability. Care levels are then suboptimally high in negligence regions, and suboptimally low in regions with strict liability. One has to remark, however, that suboptimality from strict liability would also occur under central government responsibility, since the size of firms is not related to the assignment of responsibilities.
concerning the environment. In any case, in the last paragraph the authors show that, if firms are not ‘very’ small – in a sense made precise in the model – the distortion under negligence can be corrected by combining the standard with a Pigovian tax equal to expected accident damages. They also show that the distortion arising from strict liability can be corrected by asking small firms to post a bond (equal to the maximum damage level), which will be used to pay damages in case of accidents.

Among all the pressing conceptual and policy problems begging for attention in the matter of environmental governance, that of the time frame of decisions stands out. The problem of selecting the ‘appropriate’ discount rate is a very difficult one, and even more difficult when the decentralized nature of governmental systems is acknowledged because it is then necessary to ask whether governments located at different jurisdictional levels do or should use different discount rates. To be specific, it becomes necessary to ask, which of the national, provincial or state, or local governments have a comparative advantage in dealing with environmental issues whose time frame is very long? Sarah Lumley, in Chapter 9, investigates this issue, paying particular attention to the implications of discounting for sustainable development programmes, and examines the prospects of using differential discount rates to protect environmental resources and intergenerational equity.

There is, at present, no definitive adoption of formal guidelines on this matter. Though it is recognized that governments have ultimate responsibility for their present and future constituency’s welfare and for environmental resources, issues such as the time-scale implications of royalty revenues, discounting when evaluating project options in competitive markets, and the effects of competition policies on resource consumption and depletion continue to lack the attention – both theoretical and applied on a case by case basis – they deserve. The time scale and conservation implications of resource depletion are worth much more public attention and debate than they currently receive.

The last chapter deals with environmental accounting. It is during the Rio de Janeiro’s Earth Summit in 1992 that environmental accounting officially enters the general international debate on sustainable development taking place among government representatives. Experimental applications had, however, independently started in several countries, involving central institutes of statistics responsible for national accounting, international organizations and independent researchers. Natural resource accounts in physical terms tend to be a prerogative of national statistical institutes, whereas academic research, often backed by international organizations, has tended to concentrate on tentative corrections of macroeconomic aggregates. United Nations and Eurostat, in particular, have put a serious effort into the development of
common standards and integrated systems to be adopted by individual countries. While environmental accounting systems have been developed at the national level in a number of countries, their articulation at the subnational levels is still at the beginning. Only a limited number of local governments around the world regularly keep environmental accounts, and virtually no country has yet solved the problem of integrating them into a consistent national system. Silvana Dalmazzone and Alessandra La Notte, in Chapter 10, illustrate the state of the art at the international level and investigate the issues raised by the diffusion and coordination of environmental accounting at different levels of government.

The topics considered in this volume do not, by far, exhaust the list of issues that a thorough study of environmental governance in an intergovernmental perspective should address. We mention a few additional problems that could usefully be investigated.

One of these stems from the fact that regulating one kind of pollution affects more than one ecological component, with impacts that are often dispersed, lagged and difficult to predict: spatial and temporal interconnections among environmental components may act as a binding constraint on the level of decentralization in environmental decision-making that would be efficient.

Another important issue in need of research has its origin in the fact that environmental powers, unlike many powers over non-environmental domains, relate to economic activity and to economic growth in idiosyncratic ways. The division of authority over defence, banking and finance, weights and measures and marriage and divorce, is virtually invariant as economies grow. Control over tax bases, trade and commerce, roads and transport may require adjustments but these are likely to be small. The interconnection between economic growth and environmental impact may instead require large revisions in the allocation of powers over the environment, and the adaptive development of new forms of coordination among levels of government.

Further unanswered questions pertain to the worldwide diffusion of environmental protection agencies as models of institutional arrangement for environmental governance, to the diffusion of voluntary agreements between governments and private firms as policy instruments, and to the role of supranational organizations in coordinating policies aimed at global environmental issues.

NOTE

1. That research resulted in the volume Breton et al. (2007).
REFERENCES

