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Conclusion

Smart Mixes in Relation to Transboundary Environmental Harm

Judith van Erp, Michael Faure, André Nollkaemper and Niels Philipsen

15.1 INTRODUCTION

An important part of the quest for an effective global environmental governance system consists of finding 'smart mixes' of regulatory instruments. The idea is that a combination of regulatory instruments and actors can be more effective than a single instrument. Combining instruments and regulatory actors into a mix allows taking advantage of their strengths while compensating for their weaknesses. Neil Gunningham, one of the contributors to this volume, introduced the related concept of smart regulation twenty years ago. He explains that the smart mix concept originated from the growing realisation that neither traditional command-and-control regulation nor the free market provided satisfactory answers to increasingly complex environmental problems – especially those of a transboundary nature. The smart mix concept takes into account the growing role of nonstate actors and informal regulatory strategies in policy theory, and expands the regulatory toolkit with a broader range of policy tools such as economic instruments, self-regulation and information-based strategies.

The fourteen chapters collected in this volume seek to contribute to our understanding of what makes a mix 'smart', and under which conditions smart mixes emerge. The chapters bring together theoretical analyses of instrument mixes (Part I) as well as empirical case-studies of instrument mixes in the areas of fishery, forestry, climate change and oil pollution (Parts II and III). The mixes discussed in these chapters consist of different combinations of international and domestic law and different combinations of public and private or hybrid regulation, involving a wide variety of actors.

This chapter will present our conclusions based on the theoretical and empirical contributions to this volume. We will start in Section 15.2 by elaborating on the instruments that are used in environmental governance, the actors involved in these regulatory mixes, and the interactions between actors and instruments. Section 15.3

discusses how instrument mixes develop from the dynamics in transnational environmental governance. The question of what is 'smart' about a particular regulatory mix is addressed in Section 15.4. Finally, we provide our overall conclusions as well as some conceptual reflections in Section 15.5.

15.2 ELEMENTS OF SMART MIXES

The contributions to this volume confirm that in all areas covered, the 'smart mix' toolbox consists both of instruments that can be classified as *public* regulation and of *private and/or hybrid* regulation. Within these broad categories, the chapters provide examples of substantive instruments of command-and-control regulation (e.g. private standards), economic instruments (e.g. emission trading) and suasive instruments (e.g. certification) on the one hand, and procedural instruments on the other. Such combinations were noted in several chapters. For instance, in relation to the compensation of victims of marine oil pollution, the mix of instruments consists of liability rules, public regulation and private compensation arrangements (Faure and Wang, Chapter 13). In relation to fisheries, state regulation has been supplemented by rights-based instruments and market-based controls, drawing the private sector into the mix, as well as a range of soft law and policy instruments (Karavias, Chapter 6).

The wide variety of instruments is directly linked to the wide variety of actors that are engaged in developing, applying and monitoring instruments. All chapters in this volume demonstrate that many different actors are involved in the design of (and participation in) instrument mixes, ranging from international organizations and states to various private and civil society actors. In fisheries management, the large number of actors involved, all with their own interests and regulatory agendas, results in a complex regulatory framework that encompasses international, regional and local levels of legal control (Barnes, Chapter 5; Karavias, Chapter 6). For example, Regional Fisheries Management Organisations (RFMOs, with responsibility for governing certain regional fisheries) operate next to NGOs (who play a minor role in fisheries, but often provide advice, data or subject states to pressure through the media) and the Marine Stewardship Council (MSC, with its role in certifying fisheries). Likewise, in relation to offshore oil production, different governance arrangements co-exist; each of these is characterised by a specific interplay of state, market (oil companies) and civil society (NGOs and Indigenous communities). For example, in the creation of the social licence to operate in the Arctic, the Nordic Council and the Arctic Council play an important role (Van Tatenhove, Chapter 14). This diversity of actors is obviously directly related to the diversity of instruments. In transnational private regulatory regimes, the interaction between private actors and public regulators results in regimes that are often of a hybrid public-private nature (Senden, Chapter 2).

A dominant feature that has emerged from the chapters is that the role of private or hybrid instruments is intimately linked to the limits of the power of public law in

transitional situations. Often, private regulation emerged as a result of the absence of public standards (Senden, Chapter 2). Gunningham (Chapter 11) notes that the transnational level is often characterized by an absence of the possibility to exercise formal state coercion in the form of sanctions. His contribution about the fossil fuel divestment movement points to the strength of informal sanctions, such as naming and shaming and consumer boycotts, that may be equally or perhaps even more powerful. A similar finding was made in relation to forestry (Liu, Chapter 8). While treaties constitute one element of the instrument mix, due to the apparent inability of existing international law and organisations to provide satisfactory solutions for forestry problems, private and hybrid regimes like the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC) started to develop during the 1990s to fill this gap. According to Liu (Chapter 8), public regulation (including international and domestic law) and private regulation often interact with each other in attempts to overcome the failures of the government and market. Another example of an instrument mix is discussed by Peeters and Müller (Chapter 12) in their contribution on greenhouse gas emission reductions: the involvement of private actors in the reporting and transparency obligations as well as the civil society control by environmental NGOs.

Similarly, nonstate actors fill gaps left open by states and international organisations. In relation to compensation for damages resulting from oil pollution, the work of states and the International Maritime Organization (IMO) has been supplemented by the oil industry, which participated in the creation of the International Oil Pollution Compensation Fund. In addition to the relevant conventions (Civil Liability Convention and IOPC Fund Convention) private arrangements have been worked out by the shipping and oil industry to provide additional compensation (Faure and Wang, Chapter 13).

Another notable example is the success of the fossil fuel divestment movement, which involves financial institutions such as banks, institutional investors and credit rating agencies (Gunningham, Chapter 11). This demonstrates that the increased globalisation and financialisation of production processes offer huge possibilities for the involvement of financial actors in environmental governance.

However, it appears from the case studies that it would be too simple to see private instruments such as certification only as compensation for inadequate public governance systems, which would be disconnected from such public governance. In relation to both forestry and fisheries regulation, certification has emerged as a supplement to public regulation that in many countries has been actively promoted by governments, as noted by Gulbrandsen in Chapter 10; he concludes that states, sometimes despite initial resistance, have in several cases actively supported the MSC, especially in exporting countries. He found a similar positive result for the interaction between the certification by FSC and states in relation to forestry. Likewise, in relation to climate change, the EU and UN interact with actors at the local level and with private actors. The EU-FLEGT Action Plan and

UN-REDD+ inter-governmental agreements are accompanied by a wide range of multi-lateral and bi-lateral regulatory, financing and support arrangements, national and subnational government policies and private market initiatives such as forest carbon certification schemes (McDermott, Chapter 9). Similarly, in relation to offshore oil production, the use of licences to operate in the Arctic was combined with an institutionalization of market-based and voluntary instruments with respect to Dutch offshore oil platforms (Van Tatenhove, Chapter 14). Likewise, EU Directives rely on technical specifications set by private European Standards Organisations (ESOs) (Senden, Chapter 2). And in the civil aviation area, the International Civil Aviation Organisation (ICAO) recognises the private International Air Transport Association's Dangerous Goods Regulation as the field guide to be applied.

It is important to note that not all forms of private instruments and actors can be directly explained by their relation to public authorities (either because they compensate for their weakness, or because public authorities rely on them). The idea that private actors would intentionally seek to fill gaps would be too simple. As Senden notes in Chapter 2, transnational private regulation is a heterogeneous phenomenon that is very context-dependent and can thus feature numerous international, regional and national, both public and private regimes, and can have different drivers such as risk management, harmonisation of technical standards and regulating market entry.

The toolbox of instruments (public and private, formal and informal, international and national and so on) is not constant and changes over time as a result of the invention of new tools, national and international developments and the interactions of the supranational institutions. Illustrative of this is that many European countries have adopted an increasingly wide range of so-called New Environmental Policy Instruments without abandoning traditional regulatory tools (Wurzel et al., Chapter 4). This has produced complex mixes of new and old instruments; in some cases these instruments exist side by side, while in other cases they have mutated into hybrid instruments.

All of these forms of co-existence and interactions between instruments and actors may be captured by what Pattberg and Widerberg (Chapter 3) call the 'complexity' of mixes. They explain that some global governance systems (taking as an example the global climate governance architecture) are complex systems that consist of diverse entities that interact; and in which the behaviour of the entities in the system is interdependent, in that they influence each other. Following from the insight that the whole is greater than the sum of its parts, studying individual governance arrangements and ideal types is insufficient for understanding the actual behaviour of the evolving regime complex. Instead, according to Pattberg and Widerberg, studying the actors and actions must take into account their broader environment, context, and position within an interaction network. The structural position of institutions is important when thinking of global governance in terms of complex systems and networks.

A good example of such complexity is international fisheries regulation, which Barnes (Chapter 5) ascribes partly to the complexity of the physical resource system, its location and interaction with other ocean activities. Instruments (international, regional and local levels of legal control) interact with multiple actors with asymmetrical power. These actors possess and seek to advance a range of regulatory agendas and interests, sometimes compatible, sometimes conflicting.

15.3 THE EVOLUTION OF INSTRUMENT MIXES INTO SMART MIXES

Characteristic of transboundary environmental problems is that they stretch beyond the authority of nation-states. International agreements are created to solve these problems, but within these agreements states have considerable discretion to fill in international norms. The complexity of transboundary environmental problems requires a certain degree of coordination and collaboration, but international law often does not fulfil this need as it is primarily concerned with setting broad goals and objectives and allocating authority. Within the broad frameworks of international conventions, states, international organizations, private actors and civil society actors often operate in uncoordinated ways. It has been noted by several authors in this volume that the structure of international law as a horizontal system of law governing states constrains its capacity to harness good regulatory design principles.

This may explain why the instrument mixes that have been studied in this volume have mostly not been created 'by design' but iteratively, in dynamic processes, by adding instruments, actors and layers in response to local and urgent problems. Often initiatives develop in parallel, and complement – but also compete with – each other. Nevertheless, we have seen that 'smart' mixes have emerged out of these more or less spontaneous or incremental processes. What pathways of development can be seen to emerge from the cases studied in this volume?

In some mixes that have been studied in this volume, the initiative for a mix that eventually could be qualified as a smart mix emerged at the international level through the creation of international conventions governed by international organisations. In the prevention of oil pollution, for example, we have seen the International Maritime Organization play an important initial role in coordinating the establishment of the International Convention on Civil Liability for Oil Pollution Damage (CLC 1969), which forms the basis for the multiple compensation arrangements in the oil spill compensation regime that we know today. The UN Food and Agriculture Organization (FAO) was mandated by fishery states to develop guidelines for fisheries certification in an attempt to regain control after the emergence of MSC. As Gulbrandsen describes in Chapter 10, the effect of the FAO guidelines was that MSC's position as the leading global certification programme for fisheries was strengthened – an outcome that was unintended by states, and that speaks to the important coordinating role that international organisations can play in the development of instrument mixes for sustainability.

States are also seen to play a leading role in the development of smart mixes. The US, although not ratifying the international conventions on compensation of oil pollution, has created a parallel regime by adopting the US Oil Pollution Act, which, as Faure and Wang (Chapter 13) conclude, provides better incentives for prevention and thus presents a 'smarter' mix of liability rules and safety regulation than the international regime. In the area of oil pollution, the EU also took an 'activist' position by threatening to adopt more stringent liability regulations, which triggered changes on the international plane. The Supplementary Fund of 2003 was stimulated by a European Commission initiative to set up a European fund outside of the IMO regime. In the areas of forestry and fishery, states have designed policies and regulations in reaction to the emergence of MSC certification, to either support or compete with certification. A successful example is formed by the state of the Maldives, which, after MSC certification of the private tuna fisheries, created an Action Plan to implement the points of improvement that MSC had demanded in the five years after granting the certificate. As some of these points demanded supranational coordination between the Maldives and other member states of the Indian Ocean Tuna Commission Agreement, the Maldives government successfully influenced decision-making at the supranational level to adopt the precautionary principle, one of the core conditions of MSC Certification (Yeeting and Bush, Chapter 7). Last, states are also buyers, and forest certification creates a basis for tailoring more sustainable public procurement policies by timber-consuming states, thus strengthening the position of FSC.

In addition to substantive policy-making, states can also influence the development of smart mixes through changes in the processes of regulation, by adopting more market-based forms of regulation that open up the regulatory process to private actors. Würzel et al. (Chapter 4) describe the adoption of New Environmental Policy Instruments in various European countries, such as information-based instruments, voluntary agreements, and market-based instruments such as emissions trading rights and ecotaxes. By adopting such policy instruments, states invite businesses, NGOs and citizen-consumers to enter the regulatory space, and thus create the conditions for regulatory mixes to develop.

Furthermore, we have witnessed cases in which private actors take the lead in developing regulation that supplements public regulation, thus creating a mix. In aviation, Senden's Chapter 2 describes the private organisation IATA as a frontrunner in the development of certain standards (transport of dangerous goods and of life animals). The IATA developed private regulation to fill the gap that emerged as the (public) ICAO did not take any action. In the fossil fuel divestment movement, Gunningham (Chapter 11) describes how an ad hoc coalition of private actors, primarily NGOs, created loose alliances with financial institutions, without any involvement of state actors, to influence investment decisions of institutional investors on a global level.

Although in these cases we can point to an actor taking the initiative or establishing a course of action to which other actors react, it would overstate the degree of

steering if we were to describe the process of formation of instrument mixes as a process of orchestration, let alone coordination. Rather, the process is incremental, iterative and experimental, with actors reacting to each other as incentives and opportunities change or new problems arise. New instruments are added in response to shortcomings of the previous ones, and new actors enter networks, changing the power balance and forcing others to react. Sometimes, the layering of instruments creates a perceived need for coordination, but the outcomes of this coordination are not always as intended. For example, the collective adoption of private compensation schemes for oil pollution by the oil shipping industry (TOVALOP) was intended to prevent the establishment of a strict liability regime for the shipping industry, but failed to do so, as a series of very damaging oil spills induced consensus within the IMO to adopt higher liability limits. Likewise, the coordination of fishery certification by the FAO was initiated by fishery states, but resulted in the strengthening of MSC rather than the development of alternatives. Thus, more often than not, processes of adaptation are incremental and unpredictable, and attempts of actors to coordinate and steer trigger others to react in unexpected ways.

For smart mix theory, this has important implications. Most importantly, we should question the possibility of designing smart instrument mixes purposively. Policy networks with regard to transboundary environmental problems more often resemble complex webs of loosely coupled actors with different interests and powers, than close-knit groups with a coordinating party. Interactions cannot be predicted or coordinated, precisely because the networks are lacking a coordinator or common interest binding parties together. The ability of actors to influence the system in a linear-causal way is therefore limited, as feed-backs and unintended consequences (both positive and negative) undermine the linear-consequential ontology of orchestration. This does not mean that attempts to coordinate or orchestrate are entirely fruitless, but this process should be conceived of as experimentalism and 'piecemeal social engineering' rather than 'steering' or 'designing'. The emergence and development of smart mixes should not be studied as a process of straightforward institutional design, but as a dynamic process of institutions enabling parties to interact and develop binding obligations towards each other, and to coordinate problems that arise out of interactions. In other words, institutions create platforms for interaction in which actors have opportunities to influence each other and to develop common ground that may result in smart mixes. Political and economic interests play important roles, as well as processes of organizational learning, policy advocacy and coalition building. For the study of smart mixes, this entails that research should be multidisciplinary, combining political, economic and sociological perspectives with legal analysis.

The case of MSC certification of fisheries, described from various angles in this volume, forms a suitable illustration of the dynamic and interactive process of emergence of smart mixes. The fact that fisheries certification is a long-term process creates continuous and sequenced interactions between actors, which helps to

engage and bind actors and develop a common framework. In Chapter 7 on MSC certification, Yeeting and Bush demonstrate that, in particular, the MSC pre-assessment phase creates an open and experimental environment that helps in creating the ambition to establish international agreements on fishing. Earlier, participating states had not managed to overcome the vested interests of their home fishing industries. By applying for MSC certification collectively, they entered a framework and process to gradually develop consensus over harvest control rules. Thus, certification works as a process of experimental rule-setting, shaping and coordinating preferences of actors, and thus changing conditions within actor networks. Because certification is a process with recurrent interactions, the incentives, interests, and strategies of network members change at different stages of the certification process. This chapter also shows how processes can be adaptive to local context, as the comparison of the MSC certification process in Regional Fisheries Management Organisations in the Indian, Pacific and Atlantic Ocean, shows that MSC influences decision making through different pathways in these three areas. Even unsuccessful attempts at certification contribute to change, because participating in the certification process creates public engagement and transparency.

Similarly, in the area of forestry, the negotiation of Voluntary Partnership Agreements (VPAs) between the EU and developing countries within the framework of FLEGT, and EU actions within the framework of REDD+ both have created new platforms for previously marginalized actors to participate in forest-related decision-making (McDermott, Chapter 9). Local participation in these platforms contribute to the safeguarding of local welfare, but McDermott warns that it is unclear how much priority VPAs or REDD+ will continue to place on local participation. She points to the risk that large firms with sufficient influence in the industry will dominate the negotiation platform and join forces with environmentalists to exclude producers who do not meet the higher standards that insiders already comply with. Thus, the organic and iterative process in which instrument mixes are developed could result in major inequalities between developed and less developed countries and between large industrial actors and smaller local producers. This brings us to a next important topic: the definition of an instrument mix as 'smart', and in particular, the potential conflict between environmental outcome and legitimacy, equality and fairness.

15.4 THE QUESTION OF 'SMARTNESS': WHAT IS SMART ABOUT SMART MIXES?

The starting point for the concept of smart mixes is that, as was explained in Chapter 1, a combination of regulatory instruments and actors is often more effective than a single instrument. Often there is no single instrument that can be considered as the silver bullet that will solve all environmental problems. The various contributions to this volume confirm the emergence of a large variety of mixes that seek to overcome the limitations of single instruments.

Yet an important question – whether it is possible to substantiate the initial assumption that creating a mix might be smarter than using a single instrument – remains. That leads to the important question on how to evaluate the smartness of instrument mixes. The chapters show some illustrations of the two approaches to effectiveness introduced in Chapter 1: the problem-solving effectiveness (the contribution of the mix to solving the environmental problem; see e.g. Senden (Chapter 2) and the behavioural effectiveness (the ability of the mix to induce actors to a behavioural change; see e.g. van Tatenhove (Chapter 14).

While several chapters do point at the usefulness of effectiveness as a criterion to determine the smartness of the mix, many also point at certain limits of the effectiveness criterion or point to the importance of a combination with other criteria. One problem with measuring the effectiveness (and efficiency) of instrument mixes in the governance of common pool resources is, as indicated by Liu in Chapter 8, that this is empirically an extremely complicated issue. She shows, in relation to the mix of public regulation and private governance and the interactions between the systems in protecting common pool resources, that there may be examples of smart (and in some cases not-so-smart) mixes of public regulation, private governance and property rights. But it remains quite difficult to pinpoint exactly which aspects of a particular mix contribute to its effectiveness.

In particular cases authors have specified the criterion of effectiveness, depending upon the particular area. For example, in the area of marine oil pollution, providing adequate compensation to victims and creating incentives for the prevention of oil pollution could be considered as specific criteria to judge the effectiveness of the mix (Faure and Wang, Chapter 13). In relation to the mix between international law and private regulation in the area of airline safety, the decreasing accident rate in air traffic could be a proxy for effectiveness (Senden, Chapter 2). Those examples show that the smartness of a mix needs to be filled in in a more detailed manner, taking into account the particular goals of the specific regime (like adequate compensation of victims in the case of marine oil pollution and reducing accident rates in the case of air traffic).

However, specification of a criterion may not always be an easy solution. McDermott (Chapter 9) stresses, like Liu in Chapter 8, that in practice policy mixes (like FLEGT or REDD+ in the area of forestry) may have such a degree of complexity that it becomes very difficult to provide an accurate evaluation of the effectiveness or smartness of the particular policy mix.

Although different chapters point out these theoretical and practical difficulties in their evaluation of effectiveness as a criterion for smartness, they nevertheless also provide some examples of instrument mixes that are considered as smart in terms of problem-solving effectiveness. Faure and Wang (Chapter 13) argue that the international regime to compensate victims of oil pollution damage can be considered as a smart mix based on the criterion of providing adequate compensation to victims. This case concerns a mix of different international conventions, providing various

layers of compensation that lead to adequate victim compensation. Senden (Chapter 2) observes that the mix in the air traffic safety area between the public international law organisation (ICAO) and private regulation (IATA) fulfilled the criterion of creating a higher level of safety in civil aviation, as there was a substantial decrease in the accident rate. Other authors do not explicitly declare the mix discussed in their chapter as 'smart' (in the sense of effective) but provide criteria that may affect the smartness. Van Tatenhove (Chapter 14), discussing policy mixes in the offshore oil exploitation, provides the example of the Dutch offshore exploitation case and argues that the smartness of the policy mix will depend on the self-governance responsibilities of companies and the capacity of the Dutch national government to monitor the outcome and the impact of the regulations laid down in the particular covenant. Discussing the social licence to operate arrangement in the Arctic, he argues that an important criterion to realize the smartness of the mix relates to the authorities empowering communities to strengthen their position in the interaction with the oil companies. That example shows that the evaluation of the smartness of a mix does not just depend on the instrument as such, but that it is rather possible to identify criteria which may affect the smartness of that particular instrument. This points to a more general issue: the effectiveness of a mix cannot be evaluated in the short term. Assessing the sustainability and resilience, and more particularly the behavioural effectiveness, of a mix requires a longer-term approach towards the evaluation of the effectiveness of the mix.

Many chapters also point to the fact that [the various meanings of] effectiveness are just one way of assessing the smartness of a mix. In Chapter 1 it was indicated that other criteria, such as coherence, unintended effects, legitimacy and adaptability may be equally important in evaluating the smartness of a mix. McDermott (Chapter 9) shows that smart mixes are not per se smart in the sense of being more effective, but they can still be smarter if they provide more legitimacy with greater fairness and fewer negative side-effects. The example provided by McDermott relates to the ratcheting up of global environmental standards. It can be a means by which large influential firms gain an advantage over others, or it could even reinforce global inequities and therefore lead to environmental degradation in poor countries. In Chapter 6, Karavias argues that effectiveness may appear to be a desirable goal for fisheries management in theory, but that it is difficult to ascertain when it applies within complex natural and social systems like international fisheries. He therefore argues that it is more helpful to base an assessment of the smartness of a mix on principles of good regulatory design. To the extent that legal frameworks are consistent with those principles, they provide more measurable indices of effective regulatory outcomes. The importance of key regulatory design principles is equally stressed by Barnes in Chapter 5, which refers (in the context of international fisheries law) to criteria such as coherence, complementarity, efficiency and scalability.

Flexibility and adaptability are also stressed in several chapters as important criteria to judge the smartness. In Chapter 7, Yeeting and Bush highlight the

importance of the flexibility of the certification process over time because it keeps providing incentives for improvement at different stages of the rule development in response to the strategies and interests of the RFMO members. They argue that to increase the likelihood of achieving any predefined outcome, a smart mix should therefore be able to adapt to the actors involved and the nature of their involvement. Although adaptability and flexibility are undoubtedly important, they may constitute a trade-off with predictability and robustness in a given mix. The more flexible, dynamic and adaptable the mix becomes, the greater the risk that it will also become more diffuse and less predictable, which could negatively affect its capacity to provide a behavioural change. In private certification, for example, the predictability of specific features and characteristics of a product or service are crucial in order to convince consumers to pay a premium price for ecologically sound products or services.

The various examples show that even though effectiveness may be the dominant criterion for smartness, it certainly is not the only criterion and must be complemented with other criteria such as legitimacy or (distributional) fairness.

Many chapters also note that complementarities between public regulation and private governance systems can contribute to the 'smartness' of a mix. In Chapter 2, Senden argues that a smart mix (in the sense of problem-solving effectiveness) may emerge if private interests align with public policy goals. In airline safety, for example, the huge common interest of both the private sector and the public authorities in promoting safety in civil aviation was an important driver for creating the 'smart' public-private partnership in that area.

Notwithstanding the examples provided of smart mixes, several chapters equally point at mixes that can be considered as less smart. In the discussion of international fisheries laws in Chapter 5, for example, Barnes points at important restrictions in the creation of smart mixes caused by the range of actors engaged in international regulatory activities, the limited tools available to regulators and the absence of strong reflective and adaptive governance structures. In Chapter 2 Senden, providing the example of private security companies, shows that the mix created in that particular area was only affected to a limited extent as some private actors could escape the application of the private regime and could thus free-ride. She equally argues that that was precisely the reason why free-riding was not an issue in the area of airline safety (as private and public interests were aligned), thus contributing to the success of the regime. In Chapter 12, Peeters and Müller suggest that competition between verifying actors may undermine the quality of the verification, and suggest that it would be better if administrative authorities carry out this task, as is the case in the EU Industrial Emissions Directive. The private nature of the verification reports also limits the ability of the public, journalists and NGOs to access them, which hollows out the principle of transparency and access to information that form important elements of the instrument mix in EU environmental regulation.

One conclusion of the chapters as far as evaluating the smartness of the mixes is concerned is that there is no one absolute criterion by which to judge the smartness of a mix. Rather, several criteria could be found; to a great extent, this depends on the specific policy area. Not only is there not just one criterion, there is also not just one single optimal mix of policy instruments. A smart mix of new environmental policy instruments (NEPIs and traditional regulation) is strongly context-dependent and may therefore be different for different jurisdictions (Wurzel et al., Chapter 4). This context specificity of the smartness of the mix is also stressed by Liu in Chapter 8: there is not just one 'smart mix' of instruments that may work well in all circumstances; there are only particular interactions that, under the specific conditions and depending upon the country context, may work better than others. What constitutes the most appropriate policy instrument mix is, as is also argued by Wurzel et al. in Chapter 4, therefore likely to vary, not only from jurisdiction to jurisdiction, but also over time. Different organisational structures, policy styles and policy goals explain why different mixes emerge in different contributions.

That leads to a more general point: some chapters may have pointed at 'smart' mixes, depending upon the various criteria of smartness we discussed. However, that does not necessarily imply that the particular mix identified is necessarily the best one and that other mixes (that could potentially have had similar or even better results) could not have emerged as well. There is, as was stressed in Section 15.3, no possibility to point at direct causal relationships between a particular input (for example, a mix of policy instruments) and an output (for example, improvement of environmental quality). When we refer here to the 'smartness' of a mix, this is at best meant to imply that the particular mix of instruments has likely contributed to particular policy goals, but not that there is a linear causal relationship, nor that other mixes would not have led to similar (or in some cases even better) results.

15.5 MOVING FORWARD

Building on the insights offered by the chapters in this volume, we offer four thoughts on how to move forward with the research on instrument mixes in global environmental governance. These relate respectively to the concept of smart mixes, to the collapse of traditional distinctions and to the nature of the methodological inquiry, to follow-up research, and to the limitations of smart mixes research.

First, notwithstanding the above limitations pertaining to the standard of effectiveness, the chapters in this volume do suggest that evaluating particular policy mixes in terms of their 'smartness' have an added value, for example compared to other concepts, such as transnational private regulation (TPR), discussed by Senden in Chapter 2. The concept of smart mixes is one that has both analytical and normative power.

The analytical power lies in the fact that the concept leads the focus of inquiry into a particular category (a mix) of instruments that has the ability to contribute to

problem-solving or behavioural change. It thus focusses on a unit of analysis that may be complex, but that is much more relevant in describing, explaining and understanding environmental governance in all the areas discussed in this volume, than a focus on individual instruments.

The normative power lies in the fact that evaluating policy mixes in terms of their smartness adds, as is shown in Chapter 11 by Gunningham, an element of normativity to the debate. The concept of smart mixes (and, more particularly, the evaluation of the smartness of a mix) allows us not only to observe particular combinations of policy instruments in practice, but also to have a critical discussion of whether a specific mix of policy instruments is able to effectively reach specific policy goals in terms of reducing environmental degradation or improving environmental quality. The combination of the analytical and the normative perspective undoubtedly is an important contribution of smart mixes theory to environmental governance.

The second point that emerges from this volume, and that can be the starting point for further inquiries, is that thinking in terms of smart mixes involves collapsing traditional distinctions that have characterized much of environmental governance; the distinction between international and national, between public and private and between formal and informal. Obviously, we do not argue that these distinctions cannot be made or that, for particular purposes, they should not be made. Rather, we argue that if the question is one of whether a particular combination of instruments can help to solve a problem or cause a change in behaviour, these distinctions usually are not very relevant.

The combination of chapters in this volume does not yield a set of concrete suggestions as to what mixes do work and do not work. Much is context-specific, and the factors that were identified in Section 15.3 as being relevant for effectiveness, may work in one situation but not in the other. This is not to say that no generalizations are possible, but before doing so, much more systematic and in particular empirical research will have to be conducted.

However, at some level of abstraction, it can be suggested that the smart mixes in all cases reviewed in this volume, smart mixes involved a combination of the international and the national, of public and private, and of formal and informal. This is captured in part by Gulbrandsen's use in Chapter 10 of the concept of co-regulation; he notes that policy changes in the forestry and fisheries sectors are not indicative of less government involvement, but 'rather of the ambition to develop a "smart mix" of private and public policy instruments at multiple governance levels'. From the perspective of the state, rather than seeing international regulation as a threat to state sovereignty, private regulation as a challenge to government authority and informal instruments as a threat to rule of law-based governance, states have generally accepted all of these dimensions as useful, and indeed necessary, parts of governance aimed at public goals.

The third point we take forward from this volume is that studying the role of smart mixes in global environmental governance inherently calls for interdisciplinary

analysis. To be sure, one can ask discrete questions of law, as several chapters in this volume have done (such as, for example, of how much legal weight is carried by a private instrument that has been endorsed by states in the interpretation of a treaty). Likewise, one can study aspects of smart mixes from the perspective of political science (e.g. how do private actors exercise power by filling gaps in public regulation?), law and economics (what type of instrument mixes are likely to create incentives for changes in behaviour?) or normative theory (on what grounds can mixes contribute to the legitimacy of environmental governance?). But to understand when, how and why particular mixes lead or do not lead to changes in outcomes or changes in behaviour, all of these types of questions need to be considered.

Of course, this is not unique for smart mixes – any proper study of environmental governance calls for interdisciplinary exercises. But we would suggest that the very complexity of smart mixes makes such interdisciplinarity all the more important. For instance, if one asks the question of how two instruments are legally connected, one should understand why actors have developed these instruments and whether or not they have done so with a view to achieving similar goals. The wide variety of relationships between instruments that emerges from complexity studies sets the agenda for legal analysis, but it is difficult to engage in the latter without having done the former. The fact that the concept straddles the analytical, the descriptive, the normative and the empirical dimensions of environmental governance, means that the question of whether a particular combination of instruments is a mix that can be qualified as smart calls for interdisciplinarity.

Our fourth point relates to the limitations of smart mixes research. The concept of smart mixes embodies a paradox. If we assume that there is not one single 'silver bullet' that helps to realize objectives of environmental governance, but that we have to explore combinations of instruments and actors, there is no logical limit to what type of instruments will be relevant to the mix. Climate change, depletion of fish stocks, or deforestation result from a wide variety of causes, and reversal of the trends likewise results from multiple causes. It may be tempting to limit the inquiry to those instruments (and their interrelationship) that intentionally are designed to combat these problems. But this limitation may neglect other factors that may be equally relevant.

Gunningham's contribution to this volume (Chapter 11) indeed observes that the smart mixes concept is perhaps disproportionately focused on collaboration, cooperation and partnership, and may neglect, for instance, the counterweight of industrial powers. Gunningham raises the question of whether the instruments that are commonly treated as part of smart mixes are 'disruptive enough' to substantially transform the industrial practices that cause massive and sometimes irreversible environmental harm. If this is true, fundamental transformation may require a change of norms, perceptions, and discourses that requires actors to act as moral entrepreneurs in more powerful ways than the smart mix metaphor seems to suggest.

The paradox is that such deeper processes are either left out (in effect somewhat limiting the power of the smart mixes concept) or taken on board (what is more smart than a mix that includes all relevant causes?), but then the concept would be so overbroad as to defeat its purposes – there then would be little to distinguish smart mixes from wider political and social processes.

Studying smart mixes inevitably will have to find a pragmatic middle way: identifying particular combinations of instruments that can be separated and, to some degree, isolated from wider processes and background factors, and at the same time recognizing that the relative contributions of smart mixes to the solution of environmental problems, and their effect on behavioural change, cannot be understood apart from this background.