

Rationing the Use of Common Resources: Problems of Design and Constitutionality

*Gerd Winter*¹

Traditional regulation is conceived as limiting the individual use of a natural resource in order to preserve its minimum quality; for instance, the emission of pollutants is free if certain air quality thresholds are observed. The appropriate constitutional test is whether the implied encroachment on basic rights of enterprise and property is in the public interest and proportional to it. With the further decline and growing scarcity of natural resources new regulatory instruments have been tried among which the capping of resource use and possibly making tradable use of rights is a particularly innovative instrument.² Such rationing of resources reverses the traditional conception: the use of resources now becomes a privilege. The resource is no longer basically free but redefined as being a public resource the use of which is apportioned.

In its first section this chapter exemplifies the core characteristics of quota systems in four policy fields, climate protection, fisheries, air pollution, and ozone layer protection, looking both on international and national levels. Distinguishing between a strong and a weak version of quota systems it then discusses questions of best design, asking how the common resource could be legally conceived, how overall quotas should be identified, what criteria should be used for the allocation of individual quotas, and whether trade in quotas should be made possible. The third section raises constitutional questions about socio-economic failures quota systems may run into. Two opposite versions of failures may come about: authoritarian abuse and indolent underuse. Thus rationing resources is an ambivalent instrument: if skilfully shaped it can be a perfect solution in situations of scarcity. But it can also be frightening if abused for either ecological authoritarianism or the greenwashing of inaction. The constitutional questions posed are whether rights to property and equal treatment can shield against overrestrictive

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² See for a more elaborate discussion of this shift of policies Knoepfel (2007) 429–54.

practices, and, contrastingly, whether rights and obligations demanding state environmental protection can safeguard from inaction.

The quota concept

The world population's use of natural resources continually grows, producing scarcity. Traditional environmental policies have not halted the alarming trend. Fundamentally new ways of cutting back uses will therefore be needed if the livability of the biosphere is to be preserved. Maybe—and hopefully—the grass-roots will learn faster than the institutional layer so that no stark intervention is necessary. However, it is highly probable that institutional means will have to provide a firm framework in order to support bottom-up initiatives or replace them where they do not emerge. A major instrument is the setting, allocation, and—possibly—tradability of quotas of resource use.

There are five elements characterizing an elaborate quota concept:³

- (1) A resource—a natural resource in our context—which is scarce, i.e. which does not suffice to satisfy the demand and is not easily reproduced.
- (2) The (natural) resource that hitherto was a free good is redefined as a public good and thus handed over to the management by government. Alternatively, a community of users may mutually agree on certain quotas rather than these being instructed by a superior authority.
- (3) The rate of sustained uses of the resource is determined and broken down into a currency of individual use quotas.
- (4) Such quotas are allocated to individual users. Different allocation systems may be used: allocation free of charge or payment-based, and allocation by grandfathering, by the rule 'first come first served', or by benchmarking (such as referring to best available technology).
- (5) The individual quotas may be designed to stay with the first recipient or be tradable.

The institution operating the quota system is most often the state, one that is concerned about its national natural resources becoming scarce. The concept can however also be applied by a community of states. National and international quota systems can also be combined. They can even form a hierarchy where the global quota and the quotas of states are fixed at the international level, and the individual quotas are allocated and managed at the national level.

A few examples can be studied showing how quota systems work, and what their risks and benefits are: fisheries management, climate protection, the reduction of noxious gas emissions, and the protection of the ozone layer. All of them have an international and national dimension.

³ There can be less developed ones. For instance, users may on their own initiative engage in a certain quota.

Fisheries policy

Overfishing of most edible species has now spread over the territorial seas and exclusive economic zones (EEZs) of almost every state on earth. It is gradually also becoming a common phenomenon in many parts of the high seas. Thus, the resource has largely become scarce. The resource can also not be produced artificially.⁴

In the UN Convention on the Law of the Seas (UNCLOS) the determination of allowable catch is mentioned as a means the states should use when regulating fisheries in the high seas.⁵ However, no mechanism is provided by the Convention to set quota at the international level. Some progress can nonetheless be noticed, because for almost all regions of the high seas (sometimes also including EEZs), commissions for fisheries management have been established on the basis of regional conventions that are entitled to adopt catch quota for some species in their area (Applebaum/ Donohue 1999).⁶ Still, the quota-setting powers of the fisheries commissions are subject to approval or opting out rights of the contracting parties,⁷ which means that one cannot already speak of a transformation of the free good into a common good managed by the commissions.

While in the high seas all states have a right to fish, fish resources in the territorial seas and EEZs belong to the sovereign rights of coastal states. In their EEZ they are nonetheless obliged to determine total allowable catch.⁸ Still, they are not bound to operate elaborate quota allocation systems. They may as well use other instruments of limiting fisheries (such as restrictions of gear, vessel numbers, or days at sea) as long as the overall catch quota are met. But they can also break total quota down into individual ones and allocate them to the individual fishers. Many states have introduced such quota systems.⁹

In the EU, the sovereign rights of member states over fish stocks have been transferred to the EU level. The Council of Fisheries Ministers was entrusted to establish total allowable catch quotas and break them down into state quotas allocated to each fishing member state.¹⁰ The member states receive a certain percentage, which was originally agreed upon by political compromise and is carried forward year by year. Member states are however allowed to transfer quotas

⁴ Aquaculture is here left aside because it does not produce wild fish. Incidentally, it is even putting a further stress on wild resources because it consumes wild fish as feed.

⁵ Art. 119(1)(a) UNCLOS.

⁶ See, for instance, Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries of 1978 (NAFO Convention).

⁷ See, for instance, the quota setting powers of the NAFO Commission and the opting out procedure of Arts. XI and XII NAFO convention (<http://www.nafo.int/about/frames/about.html>, accessed 4 January 2010).

⁸ Art. 61 UNCLOS. For further explanation see Markowski (2010).

⁹ See, for instance, for Indonesia, Kenya, Mexico, and Namibia the country reports by Laode Syarif, Evanson Chege Kamau et al., Germán Ponce et al. and Raymond Rukoro in Winter 2009.

¹⁰ Art. 20(1) and (2) Council Regulation (EC) No. 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy, OJ L 358 of 31 December 2002, p. 59.

to other member states subject to notification of the Commission.¹¹ Hence, on the level of EU states a system of 'cap, allocate and trade' is operated. The states allot their shares to the individual fishermen in the form of individual fish quotas, mostly according to a percentage of the share each fisherman had received in the first allocation round. This percentage was originally allocated according to the actual quantity fished at a certain date. It has remained stable over the years, thus largely excluding newcomers. In more general terms, the allocation concept follows the so-called grandfathering principle. Only a few member states, such as the Netherlands, allow the trading of the individual quotas, while in the others a fisherman who does not use his/her quota cannot sell it and will lose it at its date of expiry.¹²

Climate policy

It has become accepted opinion that the ongoing climate change is at least partly caused by human emissions of greenhouse gases. The absorption potential for climate gases of the biosphere is being overstrained by human impact. In other words, this natural resource has become scarce. The resource can to a certain extent be artificially produced, for instance by reforestation and afforestation, but this does not by a long way make good for the surplus input. A club of industrialized states—those listed in Annex I of the Framework Convention on Climate Change (minus the US and Turkey)—have through the Kyoto Protocol agreed to reduce their emissions to an overall percentage (namely 95 per cent) and to certain individual percentages of their emissions in 1990. The individual percentages are translated into maximum quantities of emissions (the so-called assigned amounts) allowed in the target period 2008–12.¹³ This agreement is an example of a multilateral undertaking with legally binding force on the international level. It declares that the protected good—the climate—is one of common concern.¹⁴ The concept of assigned amounts on the one hand commits the holder of the emission right to reduce emissions, but on the other hand they also convey the right to make full use of them. If a state wishes to transfer this 'property' to another state belonging to the club it may do so according to rules which have been specified by separate multilateral agreements.¹⁵

The participating states are responsible for ensuring domestically that their shares are not exceeded. According to the Kyoto Protocol they can do this by using traditional regulatory means, but they can also operate a system of allocating and possibly trading of emission quotas.

In the EU the competence of allocating quotas to the member states was shifted to the European level. The Council decides on the quotas of the member states.¹⁶

¹¹ Art. 20(5) Reg. 3271/02.

¹² The system is explained in more detail by Markus 2009.

¹³ Art. 3(1) Kyoto Protocol.

¹⁴ First consideration of the preamble of the Kyoto Protocol.

¹⁵ See Art. 17 Kyoto Protocol and the conclusions of the Accords of Marrakesh of 2001.

¹⁶ Council Decision (EC) 2002/358 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the UNFCCC and the joint fulfilment of commitments thereunder [2002] OJ L 130/1–3.

This resembles the *modus operandi* of the fisheries regime, except for the fact the Council does not act on a yearly basis but fixes the quotas for a longer period. The quotas the EU member states agreed on while acting as Kyoto parties are by the Council decision merged in an overall EU total amount (namely 92 per cent of the 1990 emissions), out of which the individual member states receive a share. The amount of the shares takes the different economic situations of member states into account and hence differs among member states.

The member states are basically free to decide by what measures to reach their goal. However, for the energy and industrial sectors (which make up for about 50 per cent of the entire emissions within a state) they must operate a system allocating individual emission allowances to the individual emitters and allowing trade in them.¹⁷ Operators of installations are not allowed to emit any quantity of CO₂,¹⁸ if they do not surrender for cancellation by the competent authority a number of emission allowances which is equal to the actual emissions.¹⁹

Most of the member states have, in addition to emissions trading, introduced the possibility of obtaining emission allowances through projects that lead to a reduction of CO₂ emissions in other Annex I countries ('joint implementation'—JI) or in Non-Annex I countries ('clean development mechanism'—CDM).

Clean air policy

While clean air policy is traditionally organized using traditional national regulatory instruments, especially by setting EQOs and emission thresholds, international regulatory schemes have involved quota setting and allocation (not trading, though) on the international level. In the 1970s, knowledge emerged and spread that emissions of sulphur dioxide and other noxious gases from the combustion of fossil fuels not only caused lung disease in humans in hot spot areas of industrialized cities but also led to acidification of waters and soils and, as a result, to the dying of forests. Because noxious gases released into the air are blown over long distances, thus crossing national borders, on the international level steps were taken to reduce emissions. The framework of action was the UN Economic Commission for Europe (ECE), which comprises eastern, central, and western Europe. Overall targets were set for the reduction of emissions and broken down into shares for the individual states. In terms of 'cap and allocate' this can be understood to mean that the community of states regarded the absorption capacity of the atmosphere for noxious gases as being a resource of common concern, which had become scarce. There was no possibility of artificially enlarging the resource. Hence, its utilization had to be capped, and it was decided to implement this by allocating quotas to the participating states.

¹⁷ Art. 12 Directive 2003/87 (EC) of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC [2003] OJ L 275/32–46.

¹⁸ The system concerning the energy and industrial sectors only includes CO₂ leaving aside the other climate gases. See Directive 2003/87 Annex I.

¹⁹ Art. 12(3) Directive 2003/87.

The key stages in the development of the international regime were as follows. The ECE Convention on Long-Range Transboundary Air Pollution (LRTAP) of 1979 established general obligations to reduce emissions of noxious gases. The 1985 Helsinki Protocol fixed an overall reduction target of 30 per cent of emissions in the baseline year of 1980 that was to be reached by 1993, i.e. within seven years (compare this with the modest 5 per cent reduction goal of the Kyoto Protocol). The target was tightened further by the 1994 Oslo Protocol: while the quotas were differentiated according to the technological and economic capacity of the participating states, the average reduction target for 2010 was set at a level as high as 62 per cent of the 1980 emissions. The latest step was taken by the 1997 Protocol of Gothenburg, which aims at a reduction of 75 per cent by 2010, taking 1990 as a baseline, a year when much of the Helsinki target was already achieved. In annexes to the Protocols of 1994 and 1997 the targets were calculated as maximum emission quantities per contracting state.

The targets were transformed into EC law by Directives that applied three regulatory strategies: one of technology forcing, phasing in best available technologies (BAT) (EC Directives 84/830, 96/61, 2000/76 and 2001/80); the second setting environmental quality objectives (EQOs) (Directive 96/62 and daughter directives); and the third establishing overall national emission quantities for each member state. Thus, no trading of emission rights was introduced.²⁰

Ozone-depleting substances

The ozone layer of the stratosphere has been damaged by human emissions of chlorofluorocarbons and halons, which over many years have mounted through the troposphere without being degraded. The huge emerging holes in the ozone layer reduce the protection of humans and ecosystems from ultraviolet sun radiation. This was noticed in the 1970s and 80s and led to worldwide negotiations in the UNEP framework. In 1985 the Vienna Convention on the Protection of the Ozone Layer was signed, followed by the more specific Montreal Protocol on Substances that Deplete the Ozone Layer of 1987. The Montreal Protocol limits the production and consumption of a number of ozone-depleting substances. It was designed successively and sophisticatedly to increase the pressure on the contracting states to reduce emissions. The Protocol was four times amended (the London, Copenhagen, Vienna, and Montreal adjustments) to include more substances in its scope and to successively reduce the quotas.²¹

The increase in the scope and speed of phasing out was facilitated by a supranational element of decision-making: the Montreal Protocol provided the competence for binding decisions by a two-thirds majority of contracting states (including simple majorities of the industrialized and the developing countries) without a possibility of opting out.²² While the quotas are applicable to the industrialized

²⁰ By contrast, the US has operated a 'cap and trade' system for acidifying gases since 1995.

²¹ Yoshida (2001) 117.

²² Art. 2 (9) (c) and (d) Montreal Protocol.

countries (Non-Article 5 countries in the terminology of the Protocol) a slower pace of phasing out, assisted by financial aid, was conceded to the developing countries (the so-called Article 5 countries).²³ The overall reduction quotas for the different substances were transformed into partial and individual production and consumption quotas of the individual states, calculated taking into account their economic situation. The Montreal Protocol allows for a transfer of quotas among states subject to a duty of notification to the Convention secretariat.²⁴

In the EU and its member states the international quota system was implemented by quota systems involving the individual producers and economic consumers of ozone-depleting substances. The overall and individual quotas were incrementally reduced to near to zero.²⁵ Trading of individual quotas was allowed subject to notification to the Commission.²⁶ The de facto success of the phasing out is remarkable. Although the holes in the ozone layer are still huge, there are some small signs of recovery and some evidence that they are not spreading further.²⁷

Problems of design

The following discussion of designing 'cap and allocate' policies will show that two versions of quota systems are conceivable as ideal types and have in fact appeared to some extent. They may be named the strong and the weak type of quota system. Obviously, the strong version is the more effective one and will be of major interest in this chapter.

The problems to be discussed are the following:

- how to conceive the common resource in general;
- how to determine the overall quota;
- what criteria to use for the allocation of individual quotas;
- whether to allow trade in individual quotas.

Two regulatory areas should be distinguished, the international, and the domestic. The problems appear and are treated in both of them, but in somewhat different ways. They will therefore be discussed separately. Beforehand however, a terminological clarification is necessary.

²³ Art. 5 Montreal Protocol.

²⁴ See Arts. 2A–2F Montreal Protocol.

²⁵ The most recent version of the regulation prohibits any production and consumption allowing only for some specified exemptions. See Regulation (EC) No. 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer, OJ L 286 of 31 October 2009, p. 1.

²⁶ Art. 14 Regulation 1005/2009.

²⁷ UNEP, Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, Twenty-seventh meeting Nairobi, 4–7 June 2007, Presentation of the synthesis report of the 2006 assessments of the Scientific Assessment Panel, the Environmental Effects Assessment Panel; and the Technology and Economic Assessment Panel, Synthesis Report (http://ozone.unep.org/Meeting_Documents/oewg/27oewg/OEWG-27-3E.pdf, accessed 1 January 2010).

Terminology

The term *resource* may be used to denote the natural good at stake: for instance, fish stocks, the climate, the atmosphere, the waters, and the soil. Apart from natural resources there can be scarce produced goods, such as food or dwelling space in times of emergency. A managed good can also be made scarce by pure administrative definition, such as in the EU milk quota scheme, which caps the allowable quantity of milk production and allocates quotas according to certain criteria. Although many aspects crosscut the variety of goods for which quota schemes have been introduced there are possibly differences as well that restrict the present chapter to quota systems concerning natural resources.

In rationing systems the core instrument of management is of course the quota (or cap, share, portion, contingent, etc.). It appears as *overall quota*, which determines the accumulated utilizations by a collective of the resource services. The overall and collective quota is then divided into *partial quotas* and allocated to states as *individual state quotas*. For any given state the partial and state quota will, if seen from its inside, be framed as an overall and collective quota, which will be further parcelled and allocated to individuals as *individual quotas*.

The recipients of the quotas may be called *resource users* (or, more precisely, users of services). In addition, and very importantly, there are 'third parties'—the population at large, less industrialized countries, etc. These do not make significant use of the service (for instance, because they do not emit large amounts of climate gases) but substantially benefit from the resource (for instance, as farmers from climate stability). They may be called *resource beneficiaries*.

Quotas rationing the use of resources should be distinguished from *quotas encouraging uses*, for instance if states or actors are asked to cover certain percentages of their energy consumption from renewable sources. In the first context the available natural services are scarce and their overuse must be reduced; in the second certain benign uses that are underdeveloped are furthered. The present chapter is only concerned with the first concept, because the second raises rather different problems of effectiveness and constitutionality.

Rationing in the international sphere

a) *Legal concepts of the common resource*

Quota systems presuppose that the resource is by its nature common to a number of countries, in other words that the services are commonly utilized by them. The outstanding example is the climate. It is de facto common for all states. More differentiated are fish stocks. Some fish stocks stay local but others straddle the territorial seas and exclusive economic zones (EEZs) of neighbouring states, wander as 'katadromous' or 'anadromous' species between inner waters, coastal states, and the high seas, or migrate over large distances within the seas (such as tuna and whales). Some diversity of occurrence is also known with regard to waters and the

air: overuse of local water services, governed by local bodies of law, have local effects. But evidently, waters and the air are interconnected such that overuses have cross-country effects. The same is even true for the soil which, although being local, is an element of larger ecosystems for its capacity to bear life-forms and supply physical and chemical assets.

In contrast to the commonality of many or—from a systemic viewpoint—even all natural resources, the current use has often been characterized by 'wild' appropriation: 'wild' meaning that stakeholders have usually made use of the resource *de facto* without the legal framework taking notice of this fact. This implies that the more ancient and the more powerful users have often won priority over newcomers or less powerful ones. In the climate realm, the industrialized north has for a long time claimed nature's absorption capacity of greenhouse gases for itself. In the fisheries sector, many states (notably the EU states), having exhausted their own stocks, are now taking fish stocks in the high seas and exploit them until extinction—the larger the vessel the more effectively they do so. In relation to the ozone layer, the same can be observed: industrialized countries are primary producers and users of ozone-depleting substances, and thus also the main user of the recovery potential of the ozone layer.

As long as the common resource is a free good under international law—such as the high seas, the climate, and the atmosphere—uses and overuse must be regarded as legal. International customary law has not kept pace with the *de facto* exploitation of many *de facto* common resources. At least, there is a customary rule prohibiting the causation of serious damage ('*neminem laedere*'), but it is applicable only between states (Birnie/Boyle Redgwell 2009). Only recently has international treaty-making worked on upgrading the protection status of *de facto* common resources.

There are various concepts of common resources that such treaty-making could pick up. 'Common concern' is one, belonging to the weak type of resource management. It implies that the participating states must accept restrictions of use in the common interest. The strong version would be to make scarce resources a 'common good' in the legal sense (Bothe 2006). But this concept has seldom won the consent of states because of vested interests of historical and powerful users. Only very few examples of common goods or common heritage of mankind exist, examples which rather point in the direction of joint exploitation rather than conservation of a resource: the common good of minerals in the 'area' of the high seas, the moon, and outer space. A possible example of a more protective direction is Antarctica. If the concept of common good was more widely applied to scarce common resources this would facilitate the common management of the resource and perfectly carry the idea of rationing.

The middle position between common concern and common good is held by a trust concept: the resource is perceived neither strongly as a common good nor weakly as a mere common concern but as a trust the sovereign states accept to bear for the world community (Sands 2006). Other than the common concern and common good, the trust concept appeals rather to self-restriction by states than to a system of 'assigned' amounts. For instance, after the failure of the 2009 Copenhagen conference to conclude a binding 'Kyoto II' agreement, states may be willing to

accept that they are trustees for the world climate and enact their own climate protection policy. This is, for instance, the way the EU will take in the near future.

b) Criteria for the determination of quotas

i) Overall quota

The level of resource protection the community of states is willing to concede is mirrored in the overall quota. Due to the principle of sovereign equality, it is difficult to reach consensus on bold steps towards resource protection. However, the example of climate change policy where the club of Annex I states has by the FCCC and the Kyoto Protocol committed itself to a common reduction quota shows that some achievements are possible if the major users assuming joint but differentiated responsibility are willing to pioneer. Still, weak and strong levels of protection are possible in the club. The Kyoto Protocol certainly represents the weak version because of its target of only 5 per cent below the 1990 level, to be reached in as many as 15 years (1997–2012). Compare this with the ECE approach on noxious gases and the UN approach on ozone-depleting substances, which went for much more ambitious targets (Winter 2010).

By contrast, the fishing of high seas resources is still far away from a concept of joint but differentiated responsibility. Although also here there are preponderant states that control the largest fishing fleets (for instance Japan and Spain), they have not come up with any working quota system at all.²⁸

Even if consensus is in principle established by the participating states, it will in most cases not reflect what is needed in ecological terms. Ecological necessity is normally relativized by economic, social, and political reasons. The EU practice of setting total allowable fish catch quotas is an example to this effect, as is the 2°C target in the current negotiations on the mitigation of climate change.²⁹ In pure ecological terms, no temperature rise at all would be the safest way to go. However, two degrees of temperature rise was accepted for economic, social, and political reasons. A more severe target would realistically probably not be achieved. The impact of economical and political concerns on reduction targets must be kept in mind when designing implementing instruments. If the goal is not ambitious enough, these instruments should aim at exceeding reduction goals if technologically and economically possible.³⁰

ii) Partial and individual state quotas

Once states have managed to agree on an overall quota the next question is its distribution: who should receive what share (or bear what amount of the burden). In a rational system the overall quota would be devoid of any non-ecological concern, while economic, social, and political considerations would only be taken into account at the second stage, the allocation of quotas to individual states.

²⁸ See however above for the regional fisheries commissions.

²⁹ See above.

³⁰ See below.

In any case, disputes about legitimate criteria of differentiation are likely to emerge. In a weak version of the rationing concept, almost any excuse to be treated favourably would be accepted. The Kyoto Protocol must be counted as an example for such weak variant because, among other drawbacks, it allowed the non-EU former socialist countries to reserve large quantities of what is called 'hot air' for themselves: they were assigned amounts of climate gas emissions beyond their own requirements, enabling them to sell the surplus to other states³¹ and thus perverting the very idea of conservation of the common resource. This is also true if the allocation criterion is part of a political 'log-rolling' where compromising on a different matter is traded for a particularly large share of use of the resource. An example is Spain, which reached its outstanding fishing quotas in exchange for agreeing to membership in the EEC.

Contrastingly, a strong variant of allocation schemes will insist on sound reasons for unequal distribution: historical uses, technological development, economic prosperity, political priorities, etc. would appear to be justifiable criteria. Absent precise international customary law on equal treatment and justifiable differentiation, a compromise will have to be reached by political negotiation. One version on redistribution of radical equality would be to assign the same amount to each inhabitant of the earth. This would imply that the wealthy people must drastically cut back their consumption or buy emission allowances from inhabitants of poorer regions (WBGU 2009).

For distribution, a first allocation round has to be distinguished from subsequent allocations (Rehbinder 2007, 243). The criteria applied in the first round are (not at all necessarily but) often determinative for subsequent rounds, especially if these follow the grandfathering principle, as for the EU fisheries scheme. The yearly quotas build on the allocation of quotas at the time of inception of the scheme, or at the time of accession of a state to the scheme.

c) Trade by states

A pure concept of 'cap and trade' suggests that for the sake of efficiency the quotas assigned to the participating actors should be tradable. The overall quota would then be reached at the lowest costs because use rights would only be utilized by those whose costs of investment for use avoidance are higher than the price of a use right, while those who can avoid resource use at lower costs than the price of a use right would sell their rights. However, this pure logic does not translate into reality: overall quotas constitute a political compromise; they do not reflect the ecological necessity.

Rationing regimes vary depending on the tradability of quotas. The traditional schemes such as the noxious gases protocols entirely exclude trade among states in emission quotas. In the EU fisheries scheme, national catch quotas are transferable among member states but in fact this hardly ever happens. The ozone layer regime

³¹ In 1990 many old and highly polluting factories were still operating but went out of use shortly afterwards.

also foresees tradable quotas. Most outstanding is the tradability of quotas among Annex I states in the climate regime.³² According to a Reuters information 430 million tonnes CO₂ have been traded in this way since 2002.³³ In addition, states can acquire emission allowances (called certified emission rights—CER) from CDM projects.³⁴ Until 2012 2,9 billion tonnes will be acquired from CDM projects.³⁵ Furthermore, states can obtain emission allowances (called emission reduction units—ERU) from JI projects.³⁶

It is submitted that states should be allowed to do this only to the extent they own enterprises and these enterprises need emission allowances. But they should not be allowed trading in their quality as regulators. Otherwise they would be diverted from their primary task to ensure emission reductions by political means. If a state agrees to a certain amount of emission rights it is called to use its regulatory powers to implement the scheme. Should it fail to fulfil this regulatory task and need more emission facility it should not be allowed to buy more emission rights; rather a decision of the community of states should be taken based on an investigation of the reasons for failure, asking for improvement and possibly linked with a sanction. The non-compliance procedure envisaged by the Kyoto Protocol³⁷ and set up the Marrakesh Accords is the appropriate means to deal with the matter. Should a state not need its individual quotas it should not be entitled to sell the surplus units. In general, the understanding should be that states are not competitors in regulated markets, but rather members of a community struggling to reach a common goal. As a side effect, the exclusion of trade in emission rights between states would lower the risk of hot air; in other words it would remove an incentive to ask in the allocation round for higher quotas than actually needed.

Rationing at national or regional level

International quota systems do not have to be implemented by domestic quota systems, but can as well be implemented by traditional regulatory tools. This was done, for instance, in the EU noxious substances regime. However, if a quota system is chosen, its specific problems have to be addressed in order to make the system effective.

a) Legal concepts of the (de facto) common resource

A weak version of legally conceiving the scarce resource is to define its conservation a public interest of the state. This would legitimate measures restricting freedoms of property and enterprise, and possibly justify differential treatment of different

³² Art. 17 Kyoto Protocol.

³³ <http://www.alertnet.org/thenews/newsdesk/LDE63R1MU.htm>

³⁴ Art. 12(9) Kyoto Protocol.

³⁵ <http://cdm.unfccc.int/Statistics/index.html> (accessed 8 July 2010). The sum includes CDM projects by states as well as by private actors.

³⁶ Art. 6(3) Kyoto Protocol.

³⁷ Art. 18 Kyoto Protocol.

actors. This is the approach taken by the EU and member states in all of the regimes discussed in this chapter. However, public interest is a vague term that does not reflect the gravity of the situation.

A stronger version of a quota system would be expressed in the language of (public) good. Conceiving the resource as a public good whose services are overused and must therefore be rationed appears to be a more suitable basis on which a quota system can be built. Thus, for instance, in Mexico fish resources in the territorial sea are in the ownership of the (federal) state; in Brazil they are the patrimony of the (federal) state.³⁸ Some US courts, encouraged by influential scholars (Sax 1970, Araiza 2003), have used the trust concept for upgrading the legal status of natural resources. The legal obligation of the state carried by the concept of public ownership, patrimony, or trust may be rather vague, but it has a symbolic value which can increase the public acceptance of strong management tools and guide the courts and administrative bodies in interpreting and applying the law.

b) Criteria for the determination of quotas

i) Overall quota

Where an international system exists, domestic quotas will usually reflect the quota agreed upon internationally, even though more severe targets can be foreseen. Within the EU total amount of climate gas reduction, some member states have agreed to more stringent targets than the EU average, allowing other, less advanced member states a larger share for industrial development. Still, what appears as solidarity and distributional justice at first sight is not necessarily economically disadvantageous to more industrialized states. A policy of strict reduction of fossil fuel emissions can promote alternative technology and secure a favourable starting position on the relevant markets (Knoepfel 2002).

ii) Individual quotas

The core difference between traditional threshold-setting and rationing schemes is the increased attention given to the criteria of allocation of opportunities. In the threshold scheme there is one threshold for all, be they orientated towards environmental quality or best available technology. The logic is that all addressees are required actively to engage in reaching the threshold. In the rationing scheme privileges—use rights—are handed out. Everyone will now claim that for various reasons he or she should either be entirely excluded from the obligation to acquire use rights, or be given more use rights than others. In more abstract terms, in traditional regulatory law the law is general and differences remain in the societal domain; if someone is different from others and therefore has difficulties to cope with the legal standards, it is his or her own misfortune. In allocative law, which distributes privileges, differences become more visible and thus tend to be seen as a construct and intended effect of the regulator; if someone is different from others

³⁸ Art. 27(4) of the Mexican and Art. 225 § 4 of the Brazilian constitutions. See Winter (2009) 323–4.

and therefore fails to keep up with them, this is more easily attributed to the regulator. It is therefore a particularly difficult task of allocative law how criteria for differentiation can be found that are specific enough to reflect significant differences but also general enough so that the goal of the measure is not jeopardized.

The extent of potential conflict materialized in the drafting of allocation plans for climate gas emission allowances in the EU member states in 2004–05 and again in 2007–08. The distributional jumble was tackled in two steps:

As a first step, it was decided which economic sector should be subjected to the individual quota scheme, and what overall quantity of emission allowances this sector should receive. The other part of the overall quota was reserved for the other sectors such as transport and households, which were to be treated by other regulatory tools. At this stage whole groups of enterprises, especially those using fossil fuel not for power production but for industrial processes, argued that they should be excluded from the scheme. But if pricing of resources is used as an instrument, no differentiation should be made between different uses. It is true that industry needing process heat cannot easily switch from fossil fuels to non-fossil sources, but climate gases are nevertheless emitted and should make the polluter pay, be it the industry itself or the end consumer.

In a second step, the emission allowance of each individual plant has to be determined. Once again, arguments were brought forward claiming special circumstances, such as recent technological improvements of the plant, the use of combined heat and power, competition from countries with lower climate protection standards, etc.

Besides the question of differential treatment, the regulatory scheme has to make a choice of whether use rights should be allocated free or for remuneration (fixed or by auction). If emitters pay for each quantity of emission, the resource is no longer free, contrary to a threshold-setting system where an activity is basically free but limited by thresholds or where exceeding certain thresholds is sanctioned by a fee.³⁹ The rationing system can be used ambivalently: as a weak measure if many emission rights are brought to the 'market' thus lowering the price to near zero, or as a strong measure that narrows the distributable emission allowances thus driving participants rather to invest in emission avoidance than purchasing emission rights. In the EU climate regime, the first allocation period (2005–07) relied completely on grandfathering while the second period (2008–12) and third period (from 2013) have seen and will see a gradual increase in auctioning.⁴⁰

Free allocation should be made dependent on the fulfilment of certain benchmarks, most importantly the realization of the best technology available for the minimization of resource use. While such a requirement is missing from the EU fisheries policy, it has been adopted in the climate regime. New industrial

³⁹ For instance, the German water pollution charge is fully due only for waste loads exceeding the level permitted in the discharge permit. The permitted loads are charged at the reduced rate of 50 per cent only. See § 9(5) *Abwasserabgabengesetz* (Act on Water Charges).

⁴⁰ Art. 10 Directive 2003/87.

investments are only allocated emission rights if they comply with the best available technology.⁴¹

The combination of the pricing of allocated emission allowances with BAT benchmarking could be regarded as an unfair doubling of instruments. If the goal is to force industry to invest in energy efficiency and renewables this can arguably be reached by either pricing emission rights or requesting BAT, and giving the rights for free. But as BAT standards must generalize, potentialities of individual firms to go further can be triggered by pricing.⁴² Moreover, the combination of instruments could be justified if the aim is to educate both producers and consumers: the benchmarking would trigger producer action while the pricing would, by making the product more expensive, cause the consumer to abstain from climate-unfriendly products.

c) Trade by individuals

The more traditional quota systems, such as the EU fisheries regime with the exception of the Netherlands, and the noxious gases systems, do not make quotas tradable. By contrast, tradability of quotas is a core element of the EU climate regime. It aims to ensure that the overall quota is implemented at least cost, inducing emission avoidance where costs are the lowest. It was modelled on the US 'cap and trade' scheme, which was introduced as a core tool of the Environmental Protection Agency's Acid Rain Program of 1995.⁴³

However, the overall quotas, as political compromises, fall short of what is ecologically necessary, casting doubt on the rationality of emissions trading.⁴⁴ The system of emissions trading assumes the ecological soundness of its target; if it did not do so, it would introduce mechanisms encouraging subsequent adjustments. This drawback distinguishes 'cap and trade' from quantified limit standards based on the rationale of regulatory law. Such standards provide a 'maximum' threshold. They are not meant to be exhausted but to be undercut for precautionary reasons, because it is understood that they are normally based on incomplete knowledge and might therefore erroneously be too liberal.⁴⁵

Instead, emissions trading redefines maximum ceilings as exploitable rights. The stock of emission allowances turns into an economic value, which is not meant to

⁴¹ See § 9 of the German Zuteilungsgesetz (Allocation Act).

⁴² A system of this kind is operated in German water law. A charge is levied on waste units in sewage discharged into public waters. This charge is also due for polluters who realize BAT, albeit reduced by 50 per cent. See § 3, § 9 (5) Abwasserabgabengesetz (Waste Charge Act).

⁴³ For a comprehensive account of the scheme see Napolitano/Schreifels/Stevens/Witt/LaCount/Forte/Smith (2007).

⁴⁴ See further Winter (2010).

⁴⁵ This was aptly expressed in a landmark judgment of the German Federal Administrative Court of 17 February 1984, BVerwGE 69, 37, at 43: 'The emission standards in force entail residual risks, which are, on the one hand, caused by the used measuring methods and, on the other hand, by the still incomplete knowledge of the harmfulness of certain emissions, their long-term effects as well as potential synergetic effects. Precaution [...] is then necessary when sufficient reason exists to assume that emissions possibly harm the environment and thence the suspicion of danger is given even if the respective causal links have not yet been established in detail.' (Emphasis in the original.)

lie fallow: it is legitimately exhausted, at the level of states and individual actors alike. An entrepreneur who does not use her allowances or does not sell her excess would appear as economically irrational.⁴⁶ This may be the reason for the fact that concerning acidifying substances the US 'cap and trade' was less successful than the European 'direct and supervise' approach: from 1990 to 2006 emissions of SO₂ by the US power industry was reduced by only 40 per cent, while the percentage was as much as minus 72 per cent from 1990 to 2007 in the EU countries.⁴⁷

Therefore, measures for an additional reduction of emissions should be introduced into the trading of quotas, adding an element of the traditional regulatory style. As an overall goal, states should withhold larger amounts of emission allowances until they expire, for instance by shifting the allocation of emission allowances from grandfathering to BAT-benchmarking using an ambitious definition of BAT, and by auctioning emission rights. In addition, the collection of non-used emission allowances should be readjusted. Grandfathered emission allowances exceeding the actual emissions should be returned to the public reserve. This would exclude the perverse effect in the present system where firms are permitted to make windfall profits through the calculation as cost of emission allowances they do not need but have received for free. Likewise, a company reducing its production capacity cannot keep the emission allowances originally allocated.⁴⁸ Of course, such allocation of unneeded emission allowances must be distinguished from the legitimate case where a company invests in improved efficiency, saves emission allowances and should thus be entitled to keep these for sale or as stock.

Constitutional problems

Today's rationing systems are a reminder of former provisioning policies that tackled supply shortages of raw materials. For instance, Germany introduced quota systems for food and housing at the end of and after the Second World War, as well as quota systems for the supply of coal, iron, and steel during and after the Korean war.⁴⁹ Provisioning has always raised objections from market enthusiasts who argue that the market would overcome shortages. However, regulation by offer and demand through prices will only be effective if production can be increased, as the example of natural resources shows.

A quota system carries the risk of abuse because of its inherent authoritarianism. A strong approach may restrict uses more than necessary to protect the resource and

⁴⁶ This aspect is somewhat overlooked by Wemaere/Streck (2007) in their theoretical analysis of emission allowances.

⁴⁷ Napolitano et al. 2007, 49; EEA 2009, 34.

⁴⁸ See European Court of First Instance Case T-374/04 *Germany v Commission* [2007] (CFI 7 November 2007) ECR II-4431 which quashed a decision of the Commission requesting the member states to allow companies to keep emission allowances in case of a production cut.

⁴⁹ See for details Huber (1954) §§ 85 and 86. Art. 59 Treaty on the Foundation of the European Community for Coal and Steel of 1951 endowed the Community organs with powers to introduce quota systems in situations of shortage. But these powers were never used.

allocate use rights arbitrarily. A weak approach also has its downsides, accepting resource (over)exploitation to the detriment of third beneficiaries. These gateways for abuse of quota systems lead to problems of constitutional law which are addressed in the following focussing on constitutional safeguards against abuse and fundamental rights individuals could bring forward against the state. The first possible abuse—excessive restrictions and arbitrary allocation—invokes the principles of property and of equal treatment, and the second—inaction—the principle of rights and duties to protection of public goods. Both aspects will be discussed in turn, focussing on existing case law. The case law presented will be of EU courts and—to the extent member state jurisprudence is consulted—largely of German courts.

Property and freedom of enterprise

The guarantee of private property is challenged by quota systems because vested rights in resource uses are fundamentally reversed. In this regard, Germany's Bundesverwaltungsgericht (BVerwG, Federal Administrative Court) has decided a case involving the climate protection regime.⁵⁰ The plaintiff, a company operating cement factories, argued that the Treibhausgas- und Emissionshandels-gesetz (TEHG, Greenhouse Gas and Emissions Trading Act) constitutes an expropriation without compensation of its property by making emissions of CO₂ gases dependent on a permit and the surrender of emission allowances.

The court first determined that the relevant decision to require permits for CO₂ emissions was originally taken by an EC legal act—the Directive 2003/87⁵¹—leaving the German legislator no margin for autonomy. Therefore, the Court had to investigate as a preliminary question whether Directive 2003/87 breached the property guarantee and, more precisely, that of EC law. The matter was nonetheless not submitted to the European Court of Justice (ECJ), as the BVerwG considered the answer to be sufficiently clear cut. In determining whether the emission of CO₂ could be the object of a constitutionally protected property right the court considered two variants: a separate right to emission conveyed by the authorization for the installation, and a right to emission as part of the property in the installation. The Court held that the authorization does not extend to a right of emission but considered the emission of CO₂ as part of the property in the installation. The prohibition of infinite emissions, according to the Court, does not expropriate property but only restricts its use. Asking further whether this restriction is in the public interest and proportionate, the Court found that climate protection does pursue the public interest, and the restriction is proportionate taking into account that the emission allowances were allocated for free.

In terms of procedure, BVerwG should have submitted the preliminary question to the ECJ, given its importance for the entire EU climate protection regime and the opacity of the property guarantee. As to the substance of the case, the definition

⁵⁰ BVerwG Case 7 C 26.04, judgment of v. 30. Juni 2005, BVerwGE 124, 47–69.

⁵¹ See Art. 4 of Directive 2003/87.

of the scope of the property guarantee by the Court is essential. Obviously, the emission, an activity, does not constitute property. Understandably, the Court did not even mention the point.

There are three options for construing emission rights as property. One is emission as part of landownership. However, although some core uses (such as the growing of plants, the taking of fruits, the sojourn on the land, etc.) are embedded in the constitutional notion of landownership, the emission of gases is certainly not.⁵² The BVerwG did not address this construction, apparently finding it beside the point. As a second option, emissions could be considered as part of the authorization of an installation, implying that rights awarded by administrative law are embraced by the property guarantee—a fact accepted by German law if the authorized activity involves the investment of labour or capital.⁵³ The BVerwG nevertheless rejected this concept, postulating that the authorization does not cover the emission of CO₂. However this is unconvincing: after all, the permit does authorize the construction and operation of the installation. If the operation of the authorized facility involves CO₂-emissions, these emissions are covered by the authorization. In this case, the emissions trading scheme leads to a partial revocation of the operation authorization, amounting to an expropriation.

The BVerwG avoided this result by advocating a third option: emissions as part of the property in the production installation. The BVerwG distinguished between the substance of the installation (the buildings, machinery, etc.) on the one hand and the making use of it on the other and found that excluding certain uses is not the taking but only a restriction of property. Having denied an expropriation, the Court could proceed to the usual test of public interest and proportionality.—However, this argument is equally unconvincing. If we assume that the installation is a coal power plant, it must be counted as part of the substance of the plant that it emits CO₂.⁵⁴

In conclusion, the prohibition on emitting CO₂ appears as an expropriation, either of the property in the authorization or of the property in the installation, or of both of them. Of course, the consequence—compensation of CO₂ emitters—would be very counterproductive in ecological terms making climate protection financially unachievable. The issue is of general importance as more cases of scarcity of natural resources and thus the need to introduce quota systems will arise in the future. The introduction of new quota systems would be severely hampered by compensation requirements.

⁵² The German Bundesverfassungsgericht (BVerfG, Federal Constitutional Court) in its judgment of 15 July 1981 held that the exploitation of gravel was not part of landownership due to the social function of property rights so that the land is to remain unexploited if the gravel layer is necessary to protect the groundwater against contamination. See BVerfG Case 1 BvL 77/78, BVerfGE 58, 300–53 (338–44).

⁵³ For a similar construction based on Art. 1 of Protocol No. 1 CHR see ECHR in *Pine Valley Development Ltd e. a.*, ECHR A 222, § 51.

⁵⁴ Carbon capture and storage (CCS) is not taken into account here for doubts on technical feasibility, energy efficiency, and financial proportionality.

The discourse on fundamental rights and emission allowances may have to be redirected towards a third construct between expropriation and use restriction for situations where important common resources have become scarce and must be reallocated. Such a construct could allow for the removal of property rights without compensation in situations of high general importance, such as the transition from a resource exploiting to an ecologically sustainable society.

Changes in the scope of property rights or their interpretation have occurred previously and have been met with similar solutions. For instance, in Germany, the abolition of *corvée* for dependent peasants in the nineteenth century also led to a debate whether it constitutes a compensation requiring expropriation of the feudal landlord or a legitimate, compensation free, 'Entwährung' (remodelling of his property).⁵⁵ Similar questions arose in the Weimar Republic when the co-determination for workers in large joint stock companies was discussed: was this expropriation of the shareholders or a historical transition from capitalist to social statehood?⁵⁶ Once more, the question arose when the German Democratic Republic acceded to the Federal Republic: was the non-compensated nationalization of the large estates of noblemen (which was based on the allegation of collaboration with the Nazi regime) an expropriation requiring compensation or was it an historical *fait accompli*? Finally, and closer to the area of natural resources, in the above-mentioned case on the exploitation of gravel the BVerfG did recognize that the removal of vested rights is not always an expropriation. Distinguishing between the new moulding of property for future users and the removal of old vested rights of existing users, the Court held that for future uses, the legislator has a wide margin of determination, especially where the property has a social function, while in the latter case the legislator must grant transition time, but can nevertheless remove vested rights without compensation if a whole field of law is to be restructured.⁵⁷

The BVerfG has repeatedly decided that the legislator, when restructuring an area of law, is not confined to the mere alternatives of either conserving vested rights or to expropriating them against compensation. In the framework of Art. 14 para 1 sentence 2 Grundgesetz, individual rights can be restructured by granting appropriate and tolerable transition rules if there are reasons of public welfare that take priority over the confidence in the perseverance of a vested right which is ensured by a guarantee of continuance.

This statement appears to be a somewhat domesticated version of the sweeping category of 'Entwährung' in the old terminology.⁵⁸

⁵⁵ In this historical debate Ferdinand Lassalle was against and Lorenz von Stein in favour of an obligation to pay compensation. See Lassalle (1861) §§ 7 and 8, and von Stein (1868) 67 et seq., 191 et seq.

⁵⁶ See on this question Kirchheimer (1930/1972). When in Germany in 1976 the workers' codetermination was introduced, the concept of *Entwährung* was not employed by the BVerfG: the court took care to show that the workers were not able to outvote shareholders in the important questions of enterprise policy. See BVerfG Case 1 BvR 532, 533/77, 419/78 and 1 BvR 21/78, judgment of 1 March 1979, BVerfG 50, 290–381 (322–31).

⁵⁷ BVerfG 58, 300 (351).

⁵⁸ On the full debate see Winter (1987).

To sum up, the constitutional guarantee can seemingly be interpreted to legitimize the introduction of quota systems in view of the property guarantee on the one hand and on the other erect safeguards against abuse (such as requiring appropriate and tolerable transition rules).

However, it has to be stressed that the current design of the climate regime has still a long way to go to achieve the strong version that is urgently needed. On the whole, hardly any reduction of CO₂ emissions has been achieved through the quota system (Winter, 2010). Instead, the regime has caused high transaction costs. If they consider this to be 'much ado about nothing', operators could even challenge the system not for its restriction of emissions but rather for its high transaction costs. They could argue that they had to bear excessive costs for almost no measurable climate change mitigation. Hopefully, this turns out to be a transitory phenomenon: after some readjustments, the EU emissions trading scheme will possibly produce a better ratio of environmental gains and transaction costs.

Equal treatment

In a legal concept that transforms an environmental medium into a common resource and allocates use quota, questions of distributional justice will become crucial. This means in constitutional terms that those who feel disadvantaged in comparison with others will invoke the equality principle. Questions of distributional justice arise both in the international and the domestic spheres.

a) International sphere

International law does not know any higher authority that could fix and allocate quotas, which could trigger the principle of equal treatment. States as sovereign bodies agree on their quota, if any; thus, they cannot complain about discrimination by a higher authority. Nonetheless, equality could be raised as an issue on the horizontal fora where international treaties are negotiated. In that perspective, the principle of joint but differentiated responsibility appears as a version of equality, equality in the sense that different situations must be treated in different ways.⁵⁹ For this principle to work outside international agreements as a means to push polluters to accept radically reduced quota, it would have to have the status of international customary law or a general principle of law. This question would require more detailed research, which cannot be undertaken in this chapter.

In contrast to international law, the EU knows a higher authority in the form of the Council, which does have the power to determine and assign quotas to member states. This implies that individual states may allege discriminatory treatment. The ECJ addressed the issue of discrimination, among others, in cases on fisheries law. In the first case Spain argued that its allocated fishing quotas were discriminatory in

⁵⁹ Further variants of equal treatment in international law are found in international trade law, such as in the most-favoured nation clause in Art. I GATT requiring that favourable treatment granted to one state must be applied to all.

comparison to other states. The reference year, although being equally applicable for all member states, was different for Spain due to fisheries restrictions during the transitional period after its accession to the Community. The Court defined the equality principle as demanding that comparable situations may not be treated differently and different situations not be treated in the same way unless such treatment is objectively justified. It found that Spain was indeed in a different position to other member states, but that the equal application of the reference year was objectively justified. First, allocating Spain more fishing rights would jeopardize the fish stock; second, a general reshuffling of quotas among member states would breach the traditional principle of relative stability of the yearly allocation of quotas.⁶⁰ While this case concerned the access of Spain to the Irish Sea, in another case Spain claimed to be discriminated against by not receiving fish quotas for fishing in the North Sea and the Baltic. In that case, the ECJ found that Spain was—again—in a different position than other member states because it did not have traditional fishing rights in that area.

We see from these cases that in the fisheries area, the grandfathering principle plays a major role and is accepted as a justification for equal treatment of different situations as well as for different treatment of equal situations. One wonders, however, why no other criteria are discussed by the ECJ or the relevant literature. For instance, newcomers could be given a chance to step in, or benchmarking could be introduced designed in a way which favours the most sustainable practices.

b) Domestic sphere

In the domestic sphere, it is particularly noticeable that quota systems trigger distributional questions more than traditional regulation. The wealth of criteria and the bitter disputes on their adoption have already been discussed. No wonder that those who lost the argument resorted to the constitutional dimension, and more particularly the principle of equal treatment. Two cases shall be studied for illustration.

The German Land Sachsen-Anhalt filed a complaint at the BVerfG concerning the allocation of quotas to its many installations that had been modernized after accession of the German Democratic Republic (GDR) to the Federal Republic of Germany (FRG) and before the quota system had come into force.⁶¹ The emission trading scheme provides that all existing installations receive a quantity of emission allowances corresponding to their de facto emissions in certain reference years. A reduction of 3 per cent per year applies to the non-modernized existing installations, but not to the modernized installations (for 12 years) with the intention of rewarding them for their recent investment in climate protection. However, if an existing installation is replaced by a new one after the quota system came into force, the new installation can keep the emission allowances attributed to the old installation for four years and it is exempt from the 3 per cent reduction target

⁶⁰ ECJ Case C-442/04 (*Spain v Council*), judgment of 15 May 2008 No. 40–42.

⁶¹ BVerfG Case 1 BvF 1/05, judgment of 13 March 2007, BVerfGE 118, 79–111.

for 14 years. Thus, new modernized facilities are treated favourably in comparison to the old modernized installations, which the Land Sachsen-Anhalt considered to be unjustified discrimination. The BVerfG rejected the complaint: In distributing advantages, the legislator enjoys a particularly broad margin of discretion. A stricter control applies if the legislator takes burdensome measures.⁶² However, even if advantages are allocated, additional allowances granted to one facility automatically result in a lower number of allowances available to other participants of the emission trading scheme.⁶³ The Court acknowledged that old modernized installations were in a comparable position to the new installations replacing an old one but that sound reasons existed to treat the two categories differently. The favourable treatment of the new installations was meant as an incentive for old installations to invest in new ones, an incentive which obviously does not work on already modernized installations.

In the second case, the ECJ issued a preliminary ruling on discrimination in relation to certain industry branches by their inclusion in the emission trading scheme.⁶⁴ A steel factory had filed a complaint to a French court alleging that it was discriminated against by being included in the quota system while the chemical sector and the non-ferrous metal sector were not. In this case, the ECJ assumed without deeper analysis that the different sectors—steel industry on the one hand and chemical/non-ferrous metal industry on the other—were in a comparable situation but treated differently. The court then focuses on the justification of this differential treatment. It acknowledges that 'in the exercise of the powers conferred on it, the Community legislature has a broad discretion where its action involves political, economic, and social choices and where it is called on to undertake complex assessments and evaluations. In addition, where it is called on to restructure or to establish a complex system, it is entitled to have recourse to a step-by-step approach.'⁶⁵ Based on this principle, the court was satisfied that the two other sectors could be exempt because their emissions were far lower than those of the steel sector, and because the number of individual installations was so large that, at least in the initial phase, the management of the system would have been overstrained. The Community legislature was thus entitled to phase other sectors into the system step-by-step.

It appears that both courts are well aware of the challenge for the principle of equal treatment by the quota system. Both concede broad discretion to the legislator, committing themselves to judicial self-restraint, although for somewhat different reasons. The BVerfG regards the allocation of quotas as a distribution of advantages, which justifies more governmental discretion than in the case of burdensome encroachments on individual rights. This perception is somewhat misleading because the affected operators are fundamentally dependent on receiving quotas. Emission allowances are a precondition of the operators' ability to run

⁶² BVerfGE 118, 100–102.

⁶³ BVerfGE 118, 102.

⁶⁴ ECJ Case C-127/07 (*Société Arcelor v Premier Ministre etc.*), judgment of 16 December 2008.

⁶⁵ ECJ Case C-127/07 No. 57.

their business, exercising their constitutional rights to property and entrepreneurial freedom. The BVerfG at least recognizes that in the closed quota system any allocation of additional allowance to one party is detrimental to other parties' allowances. In practical effect, however, the BVerfG seems to exercise a rather dense standard of review of distributive decisions, in spite of its declared acceptance of discretion. By contrast, the ECJ points to the political character and the complexity of the new quota system and practical aspects of implementation, such as a gradual introduction into different sectors. In principle, this is certainly a sound reason for judicial self-restraint, but the court does not provide any criteria for the judicial review of the limits of this discretion, other than a criterion of blunt arbitrariness. It appears that almost any reason for differentiation of allocation would be accepted as legitimate. In the case discussed, the Court paid only limited regard to the fact that such important sectors as the chemical industry and the non-ferrous metal industry were completely left out of the quota system - and thus indirectly massively subsidized.

The lack of specific criteria is also revealed by the judgment of the French Conseil Constitutionnel on the French carbon tax of €17 per tonne CO₂ emission.⁶⁶ As in the case of the ECJ in the preliminary decision, the Conseil had to decide on the question whether the exemption of whole branches of emitters breached the principle of equality. It came to the opposite conclusion to the ECJ and found the exemption unconstitutional, relying on a yardstick of obvious arbitrariness. Though such a limited standard of review was sufficient for the decision on the carbon tax, where no less than 93 per cent of the relevant industry were exempt, a complex field like the allocation of quotas would require criteria of middle range specificity, based on the zero-sum-character of a quota allocation system.

In conclusion, it seems fair to say that the courts appreciate the challenge for the principle of equal treatment, that they rightfully concede a discretionary margin limiting judicial review, but that more specific contours for the control of the discretionary practice are still to be developed. Minimally, an overall concept has to be designed that helps avoiding ad hoc decisions based on the relative weight of political pressure. In addition, more intricate questions will have to be answered, such as whether the allocation of quotas should only be orientated towards the relative quantities of resource uses. Arguably, the reasons for allocation privileges could be expanded, including the use value of the product manufactured by an industry, its positive effect on employment, its importance for the general economy, etc.

Rights of third party beneficiaries

Legal analysis tends to discuss quota systems exclusively in relation to the economic freedoms of resource users,⁶⁷ mirroring the fact that usually only resource users seek

⁶⁶ Conseil Constitutionnel Case n° 2009-599 DC, judgment of 29 décembre 2009, No. 82.

⁶⁷ In Germany, for instance, the new quota system was immediately reviewed by scholars as to its constitutionality, but almost exclusively in relation to the fundamental rights of carbon emitters. See, e.g. Diehr (2006), Mühlbauer (2008), Erk (2008). Including questions of sufficiency of the level of protection: Frenz (2009).

legal remedies in court. Therefore, courts are most often confronted with allegations that the quota system is too burdensome, and seldom, that it is not strict enough. However, some beneficiaries of scarce resources are concerned that exploitation be as severely restricted as possible. Or, from another perspective, others may use a natural resource for purposes not managed by a given quota system. In relation to the climate regime, for instance, while the absorption capacity of nature for climate gases is the service included in the quota system, other services must also be considered such as the provision of light, sun, rain, heat, cold, wind, clean air, etc. These are not apportioned, but they are used, and, as a matter of fact, their use may be much more essential for human life than the exploitation of the absorption capacity for climate gases.

Interests of third party beneficiaries in the natural resource can also be introduced into the constitutional discourse. Once again, both the international and the domestic sphere have to be discussed.

a) International sphere

In international law, it is very controversial whether countries suffering from climate change have a claim against polluter states in order to reduce their emissions and gain compensation for detrimental effects of climate change. The island state, Tuvalu, which may disappear with the rising sea level, has often been cited as an example. Traditional customary law only recognizes the rule of *neminem laedere* which presupposes that the causation chain from a detrimental activity to the damage can be proven. However, this is difficult to establish, not only for climate change, but also for other scarce natural resources (Birnie/ Boyle Redgwell 2009).

Alternatively, the principle of joint but differentiated responsibility may serve as a more modern basis for third party rights. We have discussed the principle already in the context of the distribution of quotas for climate gas absorption services: industrialized countries have to reduce their use more radically than developing countries. Staying with the example of Tuvalu, industrialized states have higher responsibilities in insuring a stable sea level. The principle would then be conceived as calling on industrialized states to take responsibility for the conservation of these further and indeed more fundamental activities. However, assessing the legal character of the new principle and the obligations attached to it by the FCCC exceeds the scope of this chapter.

b) Domestic sphere

Some constitutions contain rights of beneficiaries to the preservation of natural resources. For instance, the French Environmental Charter, which is a law with constitutional status, provides that anyone has the right to live in an environment that is balanced and respects human health ('un environnement équilibré et respectueux de la santé'). The content of this provision has not yet been specified by case law. In Germany, citizens' rights to environmental protection are recog-

nized only in so far as human health is concerned.⁶⁸ In the quota systems above—climate, fisheries, noxious gases, ozone-depleting gases—the decline of resources has so far hardly affected human health in a sufficiently specific way, based on a provable link of causation. Moreover, the BVerfG has adopted a weak standard of judicial review, conceding public authorities a broad margin of discretion. Accordingly, it has not yet found a government to infringe fundamental rights.⁶⁹ In the same way, the EU's Charter of Fundamental Rights and the Council of Europe's European Convention of Human Rights foresee rights to environmental protection only in relation to human health, both adopting weak standards of judicial review, making enforcement nearly impossible.⁷⁰

Apart from subjective rights, constitutions sometimes contain objective obligations on the state to protect the environment. Even though these can usually not be invoked by individuals, court proceedings may be initiated by collective entities that do bring such principles into play. For instance, according to the French Charter on the Environment, any individual must participate in the preservation of the environment and, according to the conditions defined by law, prevent any damage to the environment, limit its consequences, and contribute to its reparation. These principles must be respected by the legislator.⁷¹ Admittedly, the wording is very broad and also somewhat circular: the precise content of the principle depends on legislation while legislation must respect the content of the principle. However, the Conseil Constitutionnel in the case mentioned above returned to the principle of environmental protection to declare the law on the carbon tax null and void for exempting most of the carbon-emitting industry.⁷²

Objective obligations concerning the EU organs are much more rich and specific. They include the protection of the environment as such, demand a high and precautionary level of protection and extend to all policy areas pertaining to the EU competences.⁷³ It could be argued, for instance, that Council Decision 2002/358, which sets up a total for the EU and breaks it down into differentiated member state shares, does not attain the high level of protection prescribed by primary law. Such reliance on duties to protect does not depend on proof of individual and direct detrimental effects, as would be the case for individual fundamental rights, making legal recourse more promising. However, such arguments do not seem to have been presented to the European courts.

⁶⁸ Some authors like Kloepfer (2004) 130 *et seq.* postulate a right to a minimum of environmental conditions ('ökologisches Existenzminimum') which however would help only in extreme situations.

⁶⁹ See BVerfG Case 1 BvR 612/72, judgment of 14 January 1981, BVerfGE 56, 54–86 (at 80 f.); BVerfG Case 1 BvR 1301/84, judgment of 30 November 1988, BVerfGE 79, 174–202 (at 202).

⁷⁰ For the EU see Art. 3 read in connection with Art. 37 of the Charter of Human Rights. For the granting of discretion see the case law of the court discussed above at fn 62. For the European Convention on Human Rights see Art. 8 and the jurisprudence of the European Court of Human Rights in ECHR Case 16798/90, judgment of 9 December 1994 (No 51) *López Ostra v Spain*; EGMR (GC) Case 36022/97, judgment of 8 July 2003, (No 119) *Hatton et al v United Kingdom*.

⁷¹ Arts 2, 3, and 4 Charter of the Environment of 2005.

⁷² Conseil Constitutionnel Case n° 2009–599 DC, judgment of 29 décembre 2009, Nos 79–82.

⁷³ Art. 191 TFEU (formerly Art. 174 ECT), Art. 11 TFEU (Art. 6 ECT). See also the somewhat less specific obligation in Art. 37 Charter of Fundamental Rights.

In conclusion, it appears that constitutional law providing the legal framework for quota systems is unbalanced: it is more concerned with the interests of resource users than those of third party beneficiaries of resources. But at least there are principles establishing objective duties to protect, and even subjective rights, for those beneficiaries. These gateways for judicial review could be clarified further. The legal literature tends to discuss quota systems exclusively in relation to the economic freedoms of resource users. This mirrors the fact that normally only resource users seek legal protection at courts. Therefore the courts are most often confronted with allegations that the quota system is too burdensome, and rarely that it is not strict enough. However, there are beneficiaries of scarce resources who are concerned that exploitation is as seriously restricted as possible. Or, from another perspective, there are persons who are users of services relying on the resource other than the one that is managed by a given quota system. In relation to the climate regime, for instance, while the absorption capacity of nature for climate gases is the activity allocated in the quota system, other activities must also be considered such as the provision of light, sun, rain, heat, cold, wind, clean air etc. These are not apportioned, but they are used, and their use may even be more essential for humanity.

Conclusion

'Cap and trade' has been introduced as an economic instrument replacing or complementing traditional regulation of the 'command and control' style. While many scholars have concentrated on the 'trade'-side of the tool, this chapter focuses on the problem of capping or, in other words, the determination and allocation of quotas. The capping is a crucial problem, because the effective protective level of 'cap and trade' exclusively depends on the quality of quota setting. Inadequate quotas fail to protect the resource. 'Trade' only works to reduce the costs of keeping the quotas, it does not add an incentive to go further.

Quota setting is in this chapter conceived as a means of rationing resource uses in times of scarcity. This perspective helps us to understand that while rationing has in the past emerged in times of critical shortage of essential products, it has now reappeared in relation to natural resources, and that it will more often be used the more seriously natural resources become scarce. There are two ways in which the concept can be framed: strong and weak. A strong version has been probed in the noxious gases and ozone layer regimes. Weak versions have been realized in the fisheries and climate protection regimes.

The experience with rationing schemes in practice proves that, if wisely designed, quota setting and allocation (but less so trade) can be an effective tool of ensuring sustained resource use. There is, however, the risk of regulatory failure in the two forms of sluggish underuse and, on the contrary, authoritarian overuse. In the environmental policy realm underuse is the more probable risk given the opposition of vested interests. But overuse may become a risk once the scarcity of resources becomes so catastrophic that drastic measures must be taken.

Constitutional law could provide a bulwark against arbitrary under- and overuse of quota systems. Bringing property protection and equal treatment to the fore, most scholars take a view opposing strong variants of quota systems, thus stressing the possibility of arbitrary overuse. In fact, however, given the practice of weak design, there is more need to develop constitutional requirements in cases of underuse. While principles establishing objective duties and even subjective rights to resource preservation do exist, these could further be specified and, in appropriate shape, made actionable in court.

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