



Spring 2007

The Politics of Cap and Trade Policies

B. Timothy Heinmiller

Recommended Citation

B. T. Heinmiller, *The Politics of Cap and Trade Policies*, 47 NAT. RES. J. 445 (2007).
Available at: <https://digitalrepository.unm.edu/nrj/vol47/iss2/6>

This Article is brought to you for free and open access by the Law Journals at UNM Digital Repository. It has been accepted for inclusion in Natural Resources Journal by an authorized editor of UNM Digital Repository. For more information, please contact disc@unm.edu.

B. TIMOTHY HEINMILLER*

The Politics of “Cap and Trade” Policies

ABSTRACT

This article explores the fundamentally political nature of cap and trade resource management policies. It disaggregates these policies into their three main processes (capping, allocation, and trading) and outlines the distinctive distributive conflicts characteristic of each. The Murray-Darling Cap on Diversions in southeastern Australia serves as a detailed case study used to highlight these conflicts, and evidence drawn from other cap and trade programs around the world supports these observations. Recognizing the politics of cap and trade policies helps to explain why these programs do not always follow economic models and clarifies the roles of governments and stakeholders in program design and operation.

INTRODUCTION

In recent decades, cap and trade programs have emerged as a common policy strategy for the sustainable management of scarce resources. These programs establish an aggregate cap on resource extraction, allocate private access and use rights to resource users, and make these rights tradable so that, over time, these rights will tend to gravitate toward their highest valued uses. Most analyses of cap and trade programs have focused on ideal policy designs for achieving sustainability and efficiency under a variety of circumstances while relatively little attention has been paid to the actual design and implementation of these policies in practice. Some recent work has recognized the operation of cap and trade programs as fundamentally political in nature but has gone little beyond this.¹ This article explores and deconstructs the politics of cap and trade policies by disaggregating these policies into their three main processes—capping, allocation, and trading—and analyzing the distinctive distributive conflicts involved in each. Recognizing the political nature of these processes goes a long way toward explaining why many cap and

* The author is an Assistant Professor in the Department of Political Science, Brock University, St. Catharines, Ontario, Canada. He would like to acknowledge the Economic Policy Research Institute and the Canada Research Chair in Multi-Level Governance at the University of Western Ontario for their financial support of this research. He would also like to acknowledge the editorial support of Iris Augusten in the preparation of this article.

1. See, e.g., RÖGNVALDUR HANNESSON, *THE PRIVATIZATION OF THE OCEANS* 2 (2006).

trade programs do not accord exactly with economic models and sheds additional light on the roles of governments and stakeholders in the operation of these programs. This knowledge is important given the widespread proliferation of these programs and their adoption for managing some of the most important environmental challenges, including global climate change under the Kyoto Protocol.

CAP AND TRADE POLICIES

Cap and trade policies belong to a family of resource management policies that are variously referred to as "market-based" or "privatized" and can be distinguished from a second family of resource management policies that are generally referred to as "community-based" or "bottom-up."² The descriptors "market-based" and "privatized" obscure the fact that these policies actually combine a significant degree of state involvement with the establishment of private resource rights; in fact, in most instances these private rights are created and perpetuated by the state in what was previously a publicly or commonly held resource.³ This approach contrasts significantly with "community-based" management, most closely associated with the work of Elinor Ostrom, in which the state is peripheral and common property resource rights are established locally through collective action by resource users.⁴ Despite the obvious differences between these two approaches, Carol Rose points out that both are fundamentally based on the establishment of clear and recognized property rights, and that real-life hybrids between the two are widely found.⁵ The resource management literature also suggests that both of these general approaches have the potential to result in effective and robust resource management, though the circumstances favoring each approach are still not entirely clear.⁶

Within the family of market-based or privatized resource management policies, the basic commonality is the creation of private resource rights that limit access to the resource and are tradable amongst resource users. Among market based approaches, Tom Tietenberg makes a useful distinction between credit policies and cap and trade policies:

2. Carol M. Rose, *Common Property, Regulatory Property, and Environmental Protection: Comparing Community-Based Management to Tradable Environmental Allowances*, in *THE DRAMA OF THE COMMONS* 233, 233 (Elinor Ostrom et al. eds., 2002).

3. *Id.* at 235–36; LEIGH RAYMOND, *PRIVATE RIGHTS IN PUBLIC RESOURCES: EQUITY AND PROPERTY ALLOCATION IN MARKET-BASED ENVIRONMENTAL POLICY* (2003).

4. ELINOR OSTROM, *GOVERNING THE COMMONS* (1990).

5. Rose, *supra* note 2, at 236–37.

6. See, e.g., Rose, *supra* note 2.

With a credit program, an individual access baseline is established for each resource user. The user who exceeds legal requirements (say by harvesting fewer fish than allowed or emitting less pollution than allowed) can have the difference certified as a tradable credit.

The cap-and-trade program involves an absolute baseline and trades allowances rather than credits. In this case a total resource access limit is defined and then allocated among users.⁷

For resource management, the key difference between credit policies and cap and trade policies is the manner in which each limits resource access and use. In credit programs, the limitations are individually based and open ended in the aggregate, while cap and trade policies establish an aggregate limit bounding the collective use of individual rights holders.⁸ This means that if the number of users in a credit program increases, aggregate resource use will also increase (in the absence of any extraneous regulatory constraints); however, a similar increase in the number of users in a cap and trade program will result in the same aggregate use with some or all users getting a smaller slice of the resource pie.⁹ Socially, this difference is significant because it means that relations between users are inherently zero sum in cap and trade policies but not in credit policies, creating different challenges and conflicts in the formation and implementation of these distinctive policies. To keep the research task manageable, this article focuses on the conflicts that shape cap and trade policies, setting credit policies aside.

In their ideal conception, cap and trade policies combine the policy goals of sustainability and economic efficiency and offer the potential to achieve both simultaneously. The achievement of sustainability is most closely linked with the "cap" part of cap and trade policies while the achievement of efficiency is most closely linked with the "trade" part. By implementing a cap, stakeholders and regulators are afforded an opportunity to limit aggregate resource use to a level within the bounds of sustainability, allowing the resource to be preserved and used far into the future. In the case of pollution control regimes, such as cap and trade policies to control carbon dioxide, nitrogen oxide, and sulfur dioxide, the resource in question is the environment's assimilative capacity, its finite

7. Tom Tietenberg, *The Tradable Permits Approach to Protecting the Commons: What Have We Learned?*, in *THE DRAMA OF THE COMMONS*, *supra* note 2, at 197, 204.

8. *Id.* at 204.

9. *Id.*

ability to absorb pollutants without causing damage.¹⁰ In economic theory, the allocation and trading of resource rights—within the bounds of a cap—should ensure that resource rights continuously “flow to their highest valued uses,” thereby resulting in the most efficient aggregate use of the resource.¹¹ Much of the existing literature on cap and trade policies, which is dominated by resource economists, has focused on these twin goals of sustainability and efficiency, hypothesizing and testing various policy designs in terms of how well they achieve these goals.¹² Other sociological studies have shifted the focus by analyzing cap and trade policies in terms of their social equity implications but are similar in treating cap and trade policies as a given rather than a phenomenon that itself requires explanation.¹³

POLITICAL UNDERPINNINGS OF CAP AND TRADE POLICIES

A number of studies have recognized the political underpinnings of cap and trade policies, but these politics are usually derided rather than systematically studied and incorporated into our understanding of cap and trade programs. Illustrative, in this regard, is Hannesson’s statement in the *Privatization of the Oceans*:

even if a new institution such as property rights to fish would bring an overall gain to society it does not necessary [sic] benefit all and harm no one. While those who expect to gain will promote and support the new institution, those who expect to lose will fight it with equal or greater vigor.

10. Alexander E. Farrell & M. Granger Morgan, *Multilateral Emission Trading: Heterogeneity in Domestic and International Common-Pool Resource Management*, in *THE COMMONS IN THE NEW MILLENNIUM: CHALLENGES AND ADAPTATIONS* 169, 183–84 (Nives Dolšak & Elinor Ostrom eds., 2003).

11. Tietenberg, *supra* note 7, at 200.

12. See, e.g., Evy Crals & Lode Vereeck, *Taxes, Tradable Rights and Transaction Costs*, 20 EUR. J.L. & ECON. 199 (2005); Diane P. Dupont et al., *Profit and Price Effects of Multi-Species Individual Transferable Quotas*, 56 J. AGRIC. ECON. 31 (2005); Don Fullerton & Gilbert E. Metcalf, *Cap and Trade Policies in the Presence of Monopoly and Distortionary Taxation*, 24 RESOURCE & ENERGY ECON. 327 (2002); Richard G. Newell et al., *Fishing Quota Markets*, 49 J. ENVTL. ECON. & MGMT. 437 (2005).

13. See, e.g., RICHARD APOSTLE ET AL., *ENCLOSING THE COMMONS: INDIVIDUAL TRANSFERABLE QUOTAS IN THE NOVA SCOTIA FISHERY* (2002); Matt Bradshaw, *A Combination of State and Market Through ITQs in the Tasmanian Commercial Rock Lobster Fishery: The Tail Wagging the Dog?*, 67 FISHERIES RES. 99 (2004); Einar Eythorsson, *Stakeholders, Courts, and Communities: Individual Transferable Quotas in Icelandic Fisheries, 1991–2001*, in *THE COMMONS IN THE NEW MILLENNIUM*, *supra* note 10, at 129.

Sometimes the gainers prevail, but at other times the losers do.¹⁴

While this is a clear recognition of the political conflicts inherent in cap and trade programs, Hannesson's suggestion is to try to avoid such conflicts either by "defining stakeholder groups narrowly and in such a way that their interests are well aligned" or by developing policies in "greenfield" situations where vested interests have had little chance to develop.¹⁵ Neither suggestion holds much promise because cap and trade policies are most needed and most likely to be introduced in situations of resource scarcity and overexploitation where vested interests are already well established and cannot be ignored. Much more realistic is Colby's observation that "[p]ublic agencies and other stakeholders legitimately demand a voice in the process of defining and allocating rights" and this needs to be recognized even though it results in "delays, ambiguities, and transaction costs."¹⁶ In short, the politics of cap and trade policies are a reality that needs to be recognized and understood rather than lamented by social scientists.

Despite the dearth of systematic analyses of the political underpinnings of cap and trade policies, many economic and sociological studies have observed and commented on various political conflicts shaping the operation of many real-world cap and trade policies. From these observations, it is already possible to discern some of the politics at work in the three distinct but inseparable processes that characterize the design and operation of cap and trade policies: capping, allocation, and trading.

- Capping—The process through which an aggregate limit on resource use is established is known as capping. Ideally, this limit should be set at a level so that rights holders can access and use resource flows to support their livelihoods and communities in the short-term without damaging the resource stock in the long-term. In fisheries this aggregate limit is expressed as a "total allowable catch" (TAC), in watersheds it is defined as a total diversion or extraction limit, and in pollution control regimes it is labelled as a total pollution load.¹⁷ Some caps are established and then modified very little, while others are adjusted from year to year or season to season in response to changing stock conditions.¹⁸ In establishing

14. HANNESSON, *supra* note 1, at 2.

15. *Id.* at 108, 173.

16. Bonnie G. Colby, *Cap-and-Trade Policy Challenges: A Tale of Three Markets*, 76 LAND ECON. 638, 655 (2000).

17. Tietenberg, *supra* note 7, at 205–07.

18. *Id.*

caps, there is often a considerable degree of uncertainty about what exactly is a sustainable level of aggregate use for the resource in question, leaving it open to manipulation from interests who, for various reasons, may desire a higher or lower cap level. Moreover, caps are usually established by politicians, government administrators, resource users, or some combination of these actors, so they are more likely to be the result of political accommodation than objective scientific assessment. The perennial adjustment of caps also means that they are subject to recurring political challenge and are unlikely to be permanently settled.

Allocation—The allocation process involves the assignment of resource access and use rights to individuals within the boundaries of the established cap. These rights, typically, are defined as percentage shares of the total cap rather than absolute volumetric entitlements; as the cap rises and falls, so do the allocations of rights holders.¹⁹ From the perspective of economic efficiency, the process of distributing cap shares—or the initial allocation of private resource rights—does not matter very much. The Coase Theorem holds that any initial allocation of rights will eventually result in an economically efficient distribution of rights, provided the rights are clearly specified and there are no undue restrictions on entitlement trading (which, as we will see below, is a big assumption).²⁰ From the perspective of the stakeholders in a shared resource, however, the initial allocation of rights is critical. The allocation process provides stakeholders with a scarce and valuable asset that can potentially provide them with windfall financial gains if traded. For those with no intention of trading for profit, such as environmentalists, the initial allocation process offers a one-time opportunity to gain a stake in the resource that will continue long into the future. Among all of the stakeholders jockeying for position in the initial allocation, their relations are zero sum (given the finite nature of the capped resource) and high stakes (given the intended permanence of the assigned rights) in nature. Given these intensive rivalries and efforts by various stakeholders to influence the politicians and administrators responsible for the initial allocation, this process is quite clearly political.

Trading—Within the bounds of the established cap and given the prevailing distribution of resource rights, the trading process is

19. One exception to this was the initial introduction of a cap and trade program in New Zealand fisheries. Initially, resource rights in this program were allocated on a volumetric basis, but this was subsequently changed to a share basis. HANNESSON, *supra* note 1, at 89.

20. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 15 (1960).

meant to continuously reallocate resource rights to their highest valued uses.²¹ The built-in assumption, however, is the willingness of lower-valued users to trade their rights for profit and exit production. In reality, the livelihoods of many lower-valued users are valued for cultural and social reasons, and many of them are closely tied with local communities that have little reason for existence if the fish or water rights of local fishers or irrigators are traded away. Rather than quietly exiting production, some lower valued users resist trading their rights, often through political action seeking to preserve or erect barriers to free entitlement trading. This also reinforces the relevance of the initial rights allocation process, because an allocation favouring lower valued uses is likely to create more political objections to entitlement trading.

Quite clearly, political conflicts are prevalent in the capping, allocation, and trading processes of cap and trade policies. As Colby suggests, these conflicts are crucial in explaining why the operation of most cap and trade policies has deviated from economic models: "Actual transactions have been fewer, markets less competitive and efficiency gains less impressive than predicted."²² While most observers still agree that cap and trade policies have great potential for achieving sustainability and efficiency in the use of scarce resources, policy designs are significantly dependent on the outcomes of political conflicts.²³ This article argues that distinctive distributive conflicts are evident in each of the inter-related processes of cap and trade policies, providing a framework for understanding how cap and trade policies operate in real-world situations. In the capping process, distributive conflicts between resource users and environmentalists are prevalent; in the allocation process, distributive conflicts between various classes of resource users are prevalent; and in the trading process, distributive conflicts between potential buyers and sellers are prevalent. These contentions are supported through an in-depth analysis of the cap and trade policy recently introduced to govern water diversions in the Murray-Darling Basin of southeastern Australia, along with supplemental evidence from existing studies of other cap and trade

21. Tietenberg, *supra* note 7, at 209.

22. Colby, *supra* note 16, at 640.

23. Reimund Schwarze & Peter Zapfel, *Sulfur Allowance Trading and the Regional Clean Air Incentives Market: A Comparative Design Analysis of Two Major Cap-and-Trade Permit Programs*, 17 ENVTL. & RESOURCE ECON. 279 (2000).

policies around the world.²⁴ Each of the capping, allocation, and trading processes is analyzed in separate sections below, and some concluding observations are offered in the final section.

THE CAPPING PROCESS

The capping process involves the establishment of an aggregate limit on resource use, which is subsequently divided and traded amongst rights holders. Caps are often established in a "top-down" manner by governmental regulators, but they may also be established collectively by stakeholders or through government-stakeholder comanagement. In most instances, though, an established cap is upheld by the coercive power of the state, though cap enforcement has many challenges of its own.²⁵ Finding the appropriate cap level for a resource is crucial because missing the mark can have deleterious environmental and economics consequences: a cap that is too high can impair a resource's stock and produce irreversible environmental damage, while a cap that is too low can result in needless socio-economic stagnation and decline. An optimal cap level seeks long-term sustainable use, but even if this is accepted as a policy objective, considerable uncertainty can remain. Particularly in resources whose supplies are migratory (fish) or variable (water), it can be quite difficult to determine technically or scientifically the precise level of aggregate use a resource can sustain. Consequently, the capping process usually involves a significant degree of debate, even among regulators and stakeholders who may share the fundamental policy objective of sustainable use.

Given the basic objective of the capping process and the range of stakeholders that is usually involved, most capping processes are characterized by a distributive conflict between opposing interests that may be labeled "green" and "brown." While green interests generally push for a lower cap level (allocating more to the environment) and brown interests push for a higher cap level (allocating more to extractive uses), this is not simply a contest between environmentalists and extractive resource users. For example, some green interests may be green only by circumstance — such as high priority extractive users whose entitlements would become more secure with the establishment of a stringent cap — but are green in effect. The balance of opposing green and brown interests varies in different resource situations, but the struggle between the opposing camps and the

24. Unless otherwise noted, the research sources for the Murray-Darling Cap come from interviews conducted with regulators and stakeholders in early 2005. Interviewees requested that they remain anonymous.

25. Tietenberg, *supra* note 7, at 215.

extent to which they can each influence governmental regulators is determinative in the capping process.

In the cap and trade policy introduced for water diversions in the Murray-Darling Basin, the capping process took place during the negotiation of the Murray-Darling Cap on Diversions, introduced in 1995. The Cap on Diversions was introduced through the institutions of the Murray-Darling Basin Initiative (MDBI), consisting of a Ministerial Council comprised of land, water, and environment ministers from the Commonwealth and Murray-Darling state governments; a Commission comprised of senior administrators from the same governments; and a Commission Office mandated to provide research and logistical support to both the Ministerial Council and the Commission.²⁶ The MDBI was created in the context of growing water scarcity and declining water quality as governments began to confront the over-allocation problem stemming from almost a century of state-sponsored irrigation development.²⁷ Pressure to cap water diversions in the basin had been building for some time, and quickly became a high agenda item for the Ministerial Council after the MDBI was formed in 1992.²⁸

Although a consensus on the need to cap diversions began to emerge in the Ministerial Council as early as 1993, it was not until 1995 that green and brown interests were able to find a cap definition that was acceptable to both camps.²⁹ In the capping process, environmentalists, South Australia, and the Commission Office took up green positions, while some irrigators, New South Wales and Queensland, took up brown positions. While the characterization of environmentalists as green is obvious, South Australia was green primarily because of its position as the downstream state in the basin: growing water scarcity had the potential to harm them the most.³⁰ In the Ministerial Council it was a South Australian minister, John Klunder, who first suggested the need for a cap in a report he presented in June 1993.³¹ For its part, the Commission Office was an important green actor primarily on scientific grounds. In 1993, it also presented a study to the Ministerial Council clearly outlining the extent of over-allocation threatening the basin.³² Amongst the browns, New South Wales objected to a stringent cap limit because it had the most severe over-

26. B. Timothy Heinmiller, *Partners and Competitors: Intergovernmental Relations and the Governance of Transboundary Common Pools* 171-73 (Jan. 2004) (unpublished Ph.D. dissertation, McMaster University) (on file with author).

27. *Id.* at 105-06.

28. *Id.* at 171-72.

29. *Id.* at 172.

30. Interview with anonymous participant (Mar. 2005).

31. Heinmiller, *supra* note 26, at 171.

32. *Id.* at 171-72.

allocation problem amongst all of the Murray-Darling states and feared that it would have to introduce substantial rollbacks in water use to comply with a strict cap.³³ Many irrigators, particularly those with low priority entitlements, also objected for fear of rollbacks.³⁴ Queensland, in contrast, was a relative latecomer to irrigation development and objected to a low cap because it would stall future irrigation development.³⁵ Ultimately, the cap definition that was settled on and enacted was an explicit compromise between these two sets of green and brown interests.

As in many capping processes, the settlement that was eventually reached was to freeze resource use at roughly its current level. At a Ministerial Council meeting in June 1995, unanimous agreement was reached on the creation of a temporary Cap on Diversions defined as those diversions correspondent with 1993/1994 levels of development.³⁶ Thus, in any given year, the prevailing Cap is calculated as "the volume of water that would have been used with the infrastructure (pumps, dams, channels, areas developed for irrigation, etc.) and management rules that existed in 1993/1994, assuming similar climatic and hydrologic conditions to those experienced in the year in question."³⁷ By freezing diversions at the status quo, notwithstanding climatic variations, the greens could be satisfied that an aggregate use limit had been imposed, while the browns could be comforted that there would be no major, immediate rollbacks. In other words, capping at the status quo was politically expedient and ensured at least grudging acceptance of the Cap by all major stakeholders. Since the Cap on Diversions is designed to be mostly self-adjusting from year to year, as climatic conditions change, recurring conflicts over the Cap definition have not been as evident as in some cap and trade fisheries where yearly TACs are perennially contested. Nevertheless, as many regulators and stakeholders in the basin readily admit, the current Cap definition is not based on a hard-nosed assessment of the basin's sustainable carrying capacity and will likely face renegotiation in the future.

33. New South Wales' over-allocation problem was primarily attributable to the existence of substantial amounts of "sleepers" and "dozer" licenses. A sleeper license is an entitlement that is held but not used, while a dozer license is an entitlement that is held and only partially used. The issue of sleepers and dozers was problematic because they constituted additional water development that was permitted by government but not reflected in 1993/1994 development levels (the eventual cap level). This meant that the take-up of any sleeper and dozer license would require the rollback of some existing water use, creating considerable controversy.

34. Interview with anonymous participant (Mar. 2005).

35. Heinmiller, *supra* note 26, at 177-78 (2004).

36. *Id.* at 172.

37. MURRAY-DARLING BASIN MINISTERIAL COUNCIL, REVIEW OF THE OPERATION OF THE CAP: OVERVIEW REPORT OF THE MURRAY-DARLING BASIN COMMISSION 9 (2000).

The contest between greens and browns in the capping process is not unique to the Murray-Darling Cap on Diversions; other studies of cap and trade programs also reveal the outlines of this conflict in their capping processes. In the cap and trade programs for New Zealand's fisheries, governmental regulators are legally required to set yearly TACs at the maximum sustainable yield for each fishery, but both environmentalist and fishers' groups are actively involved in consulting and lobbying regulators regarding TAC levels.³⁸ In the past, Greenpeace has sued the Ministry of Fisheries for setting TACs that it believes are too high, while fishers continue to hire their own stock assessment experts to monitor and influence the work of government administrators.³⁹ Similarly, in the cap and trade program for the Edwards Aquifer, established by the Texas legislature in 1993, the cap for groundwater extractions established by the Edwards Aquifer Authority has been challenged in the courts by both agricultural interests seeking the removal of the cap and environmentalists seeking a more stringent cap to protect threatened species.⁴⁰ In addition, the cap on greenhouse gas emissions for developed countries established by the 1997 Kyoto Protocol (five percent below 1990 levels) was the product of five years of negotiations between brown interests seeking a higher cap and green interests seeking a lower cap⁴¹ and is really only a politically expedient starting point for emissions control rather than a scientific assessment of the atmosphere's assimilative capacity.⁴² Clearly, whether it is played out in intergovernmental, legislative, administrative, or judicial forums, the basic distributive conflict between greens and browns seems to be a common feature of capping processes in cap and trade programs.

Understanding the capping process in this way also provides a clearer understanding of the nature of caps themselves. Rather than simply a technical exercise aimed at establishing a sustainable level of resource use, cap levels are the subject of intense political struggle and negotiation by opposing interests. This is the case even if there is basic agreement on the fundamental need for a cap. Relatively little attention has been paid in the literature, thus far, to the capping process, but the outcomes from this process can significantly shape events in the related allocation and trading processes. A relatively low cap, for instance, may require rollbacks in resource use, which can make the allocation process quite onerous. Similarly, yearly and seasonal cap fluctuations are a significant determinant of resource rights trading, with low caps usually stimulating more intensive

38. HANNESSON, *supra* note 1, at 91-92.

39. *Id.*

40. Colby, *supra* note 16, at 644.

41. MICHAEL GRUBB ET AL., *THE KYOTO PROTOCOL: A GUIDE AND ASSESSMENT* 78 (1999).

42. *Id.*

trading. For all of these reasons, the capping process is important and the political conflicts between green and brown interests that characterize the formation of caps must be given greater consideration.

THE ALLOCATION PROCESS

Once a cap has been established, shares of the cap must be distributed among resource users and potential resource users in the allocation process. For a long time, the politics of the allocation process received relatively little attention because the Coase Theorem demonstrates that any initial distribution of resource rights can eventually be efficient if the rights are fully specified and tradable. From the perspective of resource use efficiency, then, the trading process is far more important than the initial allocation. This overlooks the fact, though, that the basic purpose of the allocation process is to distribute scarce and valuable assets—resource rights—among competing actors locked in a zero-sum relationship. Experience has shown that the actors involved are well aware of this and expend considerable effort to lay claim to these rights.⁴³ Experience has also shown that full specificity and tradability of resource rights are rarely found in empirical practice,⁴⁴ and, in this light, the allocation process becomes critically important because the outcomes from this process can exert influence far into the future. Viewed in this way, the allocation process becomes a very high stakes game for the resource users involved.

Empirical evidence suggests that a wide range of initial allocations is possible in cap and trade policies.⁴⁵ Tietenberg outlines four different principles that have been used for the allocation of capped resources, including lotteries, historic use, auctions, government-established eligibility criteria, or some combination of these.⁴⁶ Raymond similarly argues that the allocation process can be largely explained by stakeholders' contending ideas about equity and the balancing of these ideas.⁴⁷ However, while principles and ideas are useful descriptors, it seems more likely that allocation processes are driven by the underlying interests of the actors involved.⁴⁸ Principles and ideas can be used and manipulated to justify a

43. HANNESSON, *supra* note 1, at 76–77.

44. See Colby, *supra* note 16, at 640.

45. Tietenberg, *supra* note 7, at 208–09.

46. *Id.*

47. RAYMOND, *supra* note 3, at 1.

48. For the sake of analytical consistency, it is also important to assume that actors are fundamentally rational and self-interested. Cap and trade policies are designed as an incentive system to allow users to pursue their self-interest in resource use without destroying the resource. We cannot assume that actors are rational and self-interested in the economic realm but not in the political realm. At the same time, though, rationality is bounded and self interest

variety of different allocations, providing principled support for the positions of many different contending interests. Considering the high stakes nature of the allocation process, users and potential users are strongly motivated to protect their essential self-interests, so the allocation process is best understood as a distributive conflict between rival user groups presided over by governmental regulators. Unlike the capping process, though, rival users in the allocation process do not gravitate toward two recognizable camps (like the greens and the browns), but are typically multiple and highly fragmented.

In the Murray-Darling Cap on Diversions, a single allocation process was undertaken at the highest governance level, between the states, while many simultaneous allocation processes subsequently took place within the states, at the lowest governance levels. The latter processes featured various forms of stakeholder consultation and comanagement at the sub-basin level, providing ample opportunity for actors seeking to lay claim to resource shares. Since an account of all these lower level allocation processes is impossible, the allocation process in the Murrumbidgee sub-basin in New South Wales is used as an illustrative example. Regardless of governance level, however, the allocation processes were all characterized by distributive conflicts among multiple potential users.

At the basin level, the rival actors were the Murray-Darling states. In the wake of the Cap agreement in 1995, each tried to capture as large a share of the basin's water resources as possible, recognizing it as possibly their last chance to stake such a claim. Although each state had agreed in principle to cap its water diversions at 1993/1994 levels of development, each of them also made various appeals for exceptions to this common standard, seeking a greater share of the basin's water.⁴⁹ In an effort to resolve these contending claims, the Ministerial Council created the Independent Audit Group (IAG) in 1996, mandating it to investigate and recommend solutions.⁵⁰ Comprised of Paul Baxter and Dr. Wally Cox, two well-respected experts in the water management field, the IAG undertook an investigation of the various states' claims for exemptions under the Cap, accepting some but trying to adhere as closely as possible to the basin-wide standard.⁵¹ In the end, New South Wales, Victoria, and South Australia each agreed to slightly modified Cap shares, while Queensland and the Australian Capital Territory (ACT) have yet to agree to a formal Cap share but still participate in the program.⁵² As in the capping process, Queensland

is personally subjective. FRITZ W. SCHARPF, *GAMES REAL ACTORS PLAY: ACTOR-CENTERED INSTITUTIONALISM IN POLICY RESEARCH* 19-22 (1997).

49. Heinmiller, *supra* note 26, at 172 -73.

50. *Id.* at 174.

51. *Id.*

52. *Id.*

argued that it got a later start in irrigation development compared to its southern neighbors and should be left room in its Cap share to allow for future growth, while the ACT argued that it needed room in its Cap definition to allow for the growth of Canberra.⁵³ Thus, the interstate allocation of Cap shares was the product of competing claims between rival state governments and, in the case of Queensland and the ACT, still remains somewhat unsettled.

When Cap allocation processes were eventually initiated within each state, distributive conflicts between multiple user groups also quickly emerged, the rivalries varying according to the unique circumstances of each area. In the Murrumbidgee sub-basin of New South Wales, the distributive conflicts in the allocation process were particularly heated because of a required rollback in water use: a total of 2,998 GL of water entitlements existed in this sub-basin, but the projected long-term cap was only 1,925 GL.⁵⁴ Beyond these figures, other factors were also important. Past practices by government regulators had routinely allowed "off-allocations" of surplus water to irrigators without entitlement, creating even more reliance on Murrumbidgee water than the 2,998 GL figure indicates. Furthermore, among the 2,998 GL of existing entitlements, an unspecified number were "sleepers and dozers," meaning that the entitlements were recognized by the state but were unused or partially used by their holders. This set the stage for a conflict between those relying on "off-allocations" (using the resource but not having a formal entitlement) and those holding "sleepers and dozers" (having a formal entitlement but not using the resource).⁵⁵ Another conflict also quickly emerged between high security entitlement holders (generally horticulturalists and viticulturalists) and general security entitlement holders (generally wheat, hay, and rice farmers), the former enjoying priority in allocation over the latter.⁵⁶ Given this arrangement, any rollbacks would threaten the reliability of general security allocations while having little effect on the reliability of high security allocations, creating an obvious source of contention.⁵⁷ Neither did the general security irrigators welcome the introduction of a new user group in the sub-basin—the environment—which under the New South

53. *Id.* at 174–75.

54. NAT'L COMPETITION COUNCIL, NEW SOUTH WALES: ALLOCATION OF WATER TO THE ENVIRONMENT, NATIONAL COMPETITION POLICY DEFERRED 2003 WATER REFORM ASSESSMENT 51 (2004) [hereinafter 2003 WATER REFORM ASSESSMENT].

55. Paul Taylor et al., *The Influence of Privatisation on Irrigation Water Rights in NSW* (Sept. 13, 2001) (presented at Pac. Reg'l Conf. of the Int'l Ass'n for the Study of Prop.), <http://dlc.dlib.indiana.edu/archive/00000700/00/taylor.pdf>; see also *supra* note 33.

56. Interview with anonymous participant (Mar. 2005).

57. PRODUCTIVITY COMM'N, WATER RIGHTS ARRANGEMENTS IN AUSTRALIA AND OVERSEAS ANNEX B, NSW 6 (2003).

Wales Water Management Act was recognized as a legitimate user of water and given an even higher allocation priority than the high security irrigators.⁵⁸

Under the terms of the Water Management Act, comanagement arrangements were used to allocate Cap shares in each of the sub-basins in New South Wales, with the final water sharing plans requiring Cabinet approval.⁵⁹ In the Murrumbidgee, the Murrumbidgee River Management Committee (MRMC) was created in 2000, comprised of representatives from irrigators' groups, local governments, national environmentalist groups, local conservation groups, and four New South Wales government departments, as well as an independent chair.⁶⁰ The Water Management Act purposely prioritized some user groups over others, and the water sharing plan that eventually emerged was the product of heated negotiations within the MRMC on this somewhat uneven playing field, as well as some last ditch government intervention.⁶¹ At the outset, the government chose to recognize all sleeper and dozer licenses in the Act, virtually extinguishing the practice of off-allocations. Domestic users, municipal users, the environment, and high security entitlement holders, respectively, were also recognized as having top priority in water allocations,⁶² so general security irrigators were caught in a desperate struggle to secure adequate water rights to maintain their livelihoods. Consensus among the MRMC members proved impossible and the struggle became so acrimonious that the New South Wales Cabinet ultimately had to intervene.⁶³ A water sharing plan was imposed that was designed to comply with the long-term Cap, but tied some environmental allocations to general security allocations, effectively elevating the priority of the latter over that envisioned in the Water Management Act.⁶⁴ This was clearly a government-engineered political compromise among contending user groups, a common feature of allocation processes in capped resources.

Allocation processes in other cap and trade programs have also been characterized by intensive user rivalries settled through negotiation and government intervention. In Nova Scotia, for example, cap and trade

58. 2003 WATER REFORM ASSESSMENT, *supra* note 54, at 52.

59. PRODUCTIVITY COMM'N, *supra* note 57, at 13.

60. Kathleen H. Bowmer, *Agriculture for the Australian Environment – Learning from Existing Practice: Reflections on Developing a Water Sharing Plan*, in AGRICULTURE FOR THE AUSTRALIAN ENVIRONMENT: PROCEEDINGS OF THE 2002 FENNER CONFERENCE ON THE ENVIRONMENT 201, 207 (B.P. Wilson & A. Curtis eds., 2002), available at <http://www.csu.edu.au/special/fenner/papers/ref/TOC.html>.

61. Interview with anonymous participant (Mar. 2005).

62. 2003 WATER REFORM ASSESSMENT, *supra* note 54, at 52.

63. Interview with anonymous participant (Mar. 2005)

64. *Id.*

policies were introduced to govern declining groundfish stocks, and the allocation process was conducted through comanagement arrangements that combined committees of local fishers with government oversight.⁶⁵ The committee meetings were highly contentious affairs as users jockeyed for position to stake their claims to a part of the capped resource. In the words of one participant:

there were meetings where, if you had 10 sitting around the table negotiating, "you knew six of these guys were negotiating a deal that would put [the other four] out of business. We had some tough, tough meetings. We didn't have fistfights, but we went 3 or 4 days where guys never spoke to each other."⁶⁶

In another case, the Alaskan pollock fishery, the allocation process for the yearly TAC has been dominated by both competition between the inshore and offshore fishing fleets and a legislative requirement that at least a small portion of the TAC be allocated to remote coastal communities in western Alaska for the purposes of economic development.⁶⁷ In the Kyoto Protocol, distributive conflicts in the allocation process were also quite prevalent. One example was the effort of well-forested countries, such as Russia, Canada, and Australia, who successfully lobbied to receive credits for their "carbon sinks" effectively reducing their shares of greenhouse gas reductions. Another was the struggle amongst European Union countries over the sub-division of their collective Kyoto share.⁶⁸

As all of these cases suggest, the allocation process is best characterized as a high stakes distributive conflict between multiple resource users, often in the shadow of governmental regulators. Consequently, rights allocations are usually produced through a balancing of competing interests as well as the implementation of government priorities for resource use. The balancing of competing user interests is not only reflected in the cases described above, but in the fact that historic use is the most common method for allocating resource rights to capped resources.⁶⁹ Relying on historic use is an explicit recognition of existing vested interests in a resource, and the continuation of these interests under a cap and trade policy. The importance of government resource use priorities in the allocation process was particularly evident in the Murray-Darling case but is also reflected in the fact that historic use is not *always* the allocation method of choice. Governments usually have the authority to

65. APOSTLE ET AL., *supra* note 13, at 39–44.

66. *Id.* at 42–43.

67. HANNESSON, *supra* note 1, at 148–49.

68. Farrell & Morgan, *supra* note 10, at 174.

69. Tietenberg, *supra* note 7, at 208.

disrupt historic resource use patterns, and, particularly in resources where rollbacks are required, they can face some difficult choices in allocating resource use. While the relative significance of competing users and government priorities varies across different resources, both have a formative role to play in the allocation process.

THE TRADING PROCESS

One of the purported benefits of cap and trade policies is their dynamism; the trading of resource rights allows for continuous adaptation to changing social, economic, and environmental conditions by allowing for the reallocation of rights between existing users and from existing users to new users. For economists, this trading process is regarded as beneficial because it has the potential to encourage resource use efficiency, provided that the trading of entitlements is free and open.⁷⁰ Under these conditions, resource rights tend to flow to their highest valued uses, ensuring that a scarce resource is used in the most economically beneficial way. More recently, some environmentalists have also lauded the benefits of resource rights trading for environmental protection.⁷¹ In some jurisdictions, governments have been persuaded to recognize environmentalists as legitimate rights holders and environmentalist groups have purchased resource rights and retired them, effectively leaving more of the resource in the environment for ecological purposes.⁷² Despite these economic and environmental benefits, however, the potential dynamism of cap and trade programs is not usually welcomed by all users.

While it has generally been assumed that trading of resource rights in a cap and trade program is a positive sum relationship between buyers and sellers, experience shows that the relationship between buyers and sellers can be quite antagonistic, prompting significant regulation by governments. Potential sellers of resource rights—usually low valued users—may resist selling their rights despite anticipated windfalls because these rights form the fundamental basis of livelihoods, communities, and cultures that are valued beyond economic calculus. In these cases, sellers may appeal to governments for regulatory protections that obstruct resource trading and protect the current rights allocation. Potential buyers can be equally frustrated in the buyer-seller relationship if sellers refuse to sell or have succeeded in erecting regulatory barriers to trade. They may also take their cases to governmental regulators applying pressure for

70. *Id.* at 209.

71. Colby, *supra* note 16, at 654.

72. Clay Landry, *Market Transfers of Water for Environmental Protection in the Western United States*, 1 WATER POL'Y 457, 459 (1998).

increased trade liberalization. In this light, the trading process is not simply about market transactions, but is often a political struggle between potential sellers and potential buyers, each of whom exerts pressure on governmental regulators in an attempt to establish market regulations that suit their respective interests.

In the Murray-Darling Basin, the water rights trading process was not undertaken through the basin-level MDBI, but through the national-level Council of Australian Governments (COAG) and its water reform framework. The COAG is an intergovernmental council comprised of the Commonwealth and all the state governments. Water rights reform came on its agenda in the early 1990s as part of a Commonwealth-led effort toward economic deregulation in the states. The water reform framework was signed in 1994 and committed the state governments to a schedule of measures that would ultimately result in water trading.⁷³ Among the most important of these measures is the formal specification of water entitlements, the separation of water entitlements from land ownership, the gradual liberalization of market trading in water entitlements, and the incremental introduction of full-cost pricing for water deliveries.⁷⁴ The framework also recognizes the environment "as a legitimate user of water" and calls for allocations to be made to protect the environment in areas that are "over-allocated" or "stressed."⁷⁵ In 1995, the framework was rolled into the broader National Competition Policy (NCP) making the state governments eligible for generous "tranche payments" from the Commonwealth for implementing its provisions.⁷⁶ Consequently, substantial water rights reforms were undertaken by the state governments and the movement toward water rights trading has accelerated even further under the NCP's successor, the 2003 National Water Initiative.⁷⁷

Although the development of the water reform framework paralleled the Murray-Darling Cap on Diversions, the provisions of the Cap firmly recognize and support the introduction of water trading at both the interstate and intrastate levels. At the interstate level, a water trading program between the states has been introduced, but conflicts between buying states and selling states have impeded its development. The

73. John Tisdell et al., *The Development of Water Reform in Australia* 27 (Coop. Res. Ctr. for Catchment Hydrology, Technical Rep. 02/5, 2002), www.catchment.crc.org.au/pdfs/technical200205.pdf.

74. Austl. Gov't, Dep't of the Env't & Water Resources, Council of Australian Governments Water Reform Framework, <http://www.environment.gov.au/water/policy/coag.html> (last visited Feb. 8, 2007).

75. *Id.* at 105.

76. Tisdell et al., *supra* note 73, at 27.

77. NEW S. WALES DEP'T OF INFRASTRUCTURE, PLANNING & NAT. RESOURCES, NSW WATER REFORMS: A SECURE AND SUSTAINABLE FUTURE (Ministerial Statement, Aug. 2004).

archetypal conflict here is between New South Wales and South Australia, with the bulk of their interstate water trade moving, thus far, from low value wheat and rice irrigators in New South Wales to high value viticulturalists in South Australia.⁷⁸ Given the one-way tendency of this trade, the New South Wales government has viewed this as a threat to its irrigation sector, in which it invested heavily for almost a century, and it has done its best to stonewall any further growth in interstate trade, despite its intergovernmental commitments to the contrary.⁷⁹ Continued resistance will be more difficult under the National Water Initiative, which pledges even further liberalization of interstate water trading in the Murray-Darling, and further conflict is likely.⁸⁰

In the Murrumbidgee sub-basin, conflicts between potential buyers and sellers have also dominated the trading process. Under the New South Wales Water Management Act, water trading within the state is encouraged, but any trade must occur between areas that are hydrologically linked and must comply with the relevant water sharing plan(s) in the trading area(s).⁸¹ Because the introduction of the Cap has made water rights a scarcer commodity, demand from potential buyers has grown, but so has resistance from reluctant potential sellers. For example, the two main irrigation cooperatives in the Murrumbidgee, Murrumbidgee Irrigation and Coleambally Irrigation, developed internal rules that allowed water entitlements to be traded into them but not out. They fear that the export of even a small proportion of their members' water rights, and their retirement from irrigated production, could leave the remaining members of the cooperatives with an untenable burden in supporting the existing canal and storage infrastructure.⁸² Furthermore, the exit of local producers puts the viability of local economies and local communities at risk, just for the sake of a quick and easy windfall for a select few. In late 2004, New South Wales regulators and Murrumbidgee Irrigation concluded an agreement that would allow up to four percent of its members' entitlements to be traded out in each of the next five years, but the removal of such trading barriers has proven to be much more onerous than originally envisioned in the Strategic Water Reform Framework.⁸³

The Murray-Darling case shows how the division between buyers and sellers in the trading process can be territorially based, between states, and between communities, but other cap and trade examples suggest further divisions as well. In the U.S. surf clam fishery, the trading process

78. Interview with anonymous participant (Mar. 2005).

79. *Id.*

80. NEW SOUTH WALES DEP'T OF INFRASTRUCTURE, *supra* note 77, at 17.

81. PRODUCTIVITY COMM'N, *supra* note 57, at 45.

82. Interview with anonymous participant (Mar. 2005).

83. *Id.*

features a conflict between older generation rights holders, who rent their entitlements on a yearly basis rather than sell them permanently, and younger generation fishers who are forced to rent these entitlements but would prefer to buy them. This has created a considerable degree of "absentee ownership of quotas," frustrating young fishers with ambitions of ownership and prompting them to pressure the government for changes to the trading rules.⁸⁴ Another conflict that has been noted in the trading processes of many cap and trade fisheries is between small businesses and large, vertically integrated corporations, the latter tending to use their purchasing power to acquire the fishing rights of the former, creating problems of concentrated rights ownership. In Nova Scotia, Iceland, and elsewhere, restrictions on concentrated ownership have been introduced by governments to combat this problem and protect small business owners in the trading process.⁸⁵ All of these examples reinforce the notion that the dynamic between buyers and sellers in the trading process is not always one of mutual benefit, and that diverging interests may seek to manipulate the process for their own ends.

In cap and trade policies, the trading process is fundamentally political in nature. Those who hold resource rights not only hold a valuable asset, they also hold the basis upon which livelihoods, communities, and cultures may be constructed. This gives rights holders a considerable amount of power and makes the trading process crucially important for a wide range of actors associated with potential buyers and sellers. In this way, the trading of resource rights is not simply a market transaction but a socio-economic reshaping of resource dependent industries and communities. With so much at stake, it is not surprising that potential buyers and sellers seek to influence governmental regulators to design trading rules in their favour. Regulators may also have their own priorities for the reallocation of resource rights, and when these are balanced with pressures from contending interests, politically derived trading rules result. Ultimately, potential buyers and sellers know that, if the prevailing trading rules are not advantageous to them, they can always seek new trading regimes that are.

ANALYSIS AND CONCLUSIONS

As shown above, cap and trade policies are shaped by distributive political conflicts in their capping, allocation, and trading processes, causing them to deviate—sometimes quite considerably—from the ideal cap and trade models put forward by economists. This does not mean that these

84. HANNESSON, *supra* note 1, at 140.

85. APOSTLE ET AL., *supra* note 13, at 91; Eythorsson, *supra* note 13, at 148.

ideal economic models lack value; it simply means that the introduction and implementation of cap and trade policies is explicitly political and should be recognized and analyzed as such. In Hannesson's words:

The political authorities that finally decide whether or not to put in place property rights in fisheries, and how these rights are to be defined, are therefore subject to a multitude of forces pulling in different directions, and there are many possibilities with regard to what the final outcome will be. The outcome is more often than not a compromise deviating from the blueprint an economic-institutional analysis might come up with.⁸⁶

This suggests that economic models can be used as a starting point for understanding cap and trade policies, but that the distributive conflicts shaping the actual design and operation of these policies must be given more consideration than they have been given thus far.

One partial exception involves the implementation of cap and trade policies in "greenfield" situations in which a resource has been largely unexploited and vested interests in the resource have had little chance to develop. In these situations, there are few actors fighting for a specific cap level, for a larger allocation of the cap, or for favourable trading rules, so the potential for faithful implementation of ideal economic models is much greater, particularly if there is commitment to the model by governmental regulators. These "greenfield" situations, however, are relatively rare. Generally, cap and trade policies are most needed and most often implemented in resources that are overexploited and rife with vested interests, precisely the opposite of "greenfield" situations.⁸⁷ As a result, limiting cap and trade programs to "greenfield" situations to avoid distributive conflicts is not a viable option, and the politics involved in their design and implementation must be analyzed rather than avoided.

In this regard, three concluding observations about the politics of cap and trade policies are appropriate. First, and most obvious from the discussion above, each of the three processes comprising cap and trade programs features a different type of distributive political conflict that can significantly influence the design and operation of these programs. Second, each of the three processes operates on a different temporal cycle, meaning that some of these conflicts are persistent or recurring while others are not. Finally, government has a crucial role to play in each of the processes, but the widespread adoption of comanagement mechanisms also suggests the

86. HANNESSON, *supra* note 1, at 2.

87. *Id.* at 173.

importance of stakeholder participation. Each of these observations is elaborated briefly below.

Evidence from the Murray-Darling Cap on Diversions and other cap and trade programs around the world suggests that the capping, allocation, and trading processes are characterized by a variety of distributive political conflicts. In the capping process, this conflict is between two loosely united groups, the "greens" and the "browns," the former pushing for a lower cap level to leave more of the resource for the environment and the latter pushing for a higher cap to allocate more of the resource to its extractive users. This can be contrasted with the allocation process in which a large number of current and potential users jockey with each other to claim a share of the capped resource in an effort to secure a valuable asset and/or to ensure the continued viability of their respective livelihoods. In the trading process, a further conflict is evident between "buyers" and "sellers" of resource shares, each trying to tilt the trading rules in their favour either so that their resource rights are protected from trade or their ability to buy resource rights is facilitated by regulatory rules. The recognition of these conflicts is also a recognition that resource users do more than simply buy and sell resource rights in cap and trade programs; they may also seek advantage in political processes, creating considerable political conflict when actors with diverging interests pursue this strategy simultaneously.

What remains to be considered, however, is how these capping, allocation, and trading processes fit together and what implications this has for the various political conflicts inherent in these processes. While each of the three processes is a necessary part of cap and trade policies, it is important to recognize that each operates on a somewhat different temporal cycle. For instance, consider the difference between the capping and allocation processes: the establishment of caps is a relatively rare event, with caps often being established on a seasonal or annual basis; in contrast, the allocation process is usually just a one-shot process with the rights allocation remaining constant over time (notwithstanding trades) as cap levels fluctuate.⁸⁸ The trading process is different again, as it is a relatively continuous process with the potential for trading to occur on an almost daily basis. These differences in temporal scale are important because they reveal that allocation conflicts are likely to be acute but short-term, capping conflicts are likely to be recurring and predictable, and trading conflicts are likely to be persistent and continuous. Thus, the conflicts between "greens"

88. One notable exception is the allocation process for capped fisheries in Estonia in which the government recovers ten percent of entitlements each year and distributes them at auction. Marcus Vetemaa et al., *The Estonian Fisheries: From the Soviet System to ITQs and Quota Auctions*, 26 MARINE POL'Y 98 (2002).

and “browns” and “buyers” and “sellers” are a permanent fixture of cap and trade policies and can be expected to dominate the operation and reform of these policies once the initial allocation of resource shares has been made.

Finally, governments have a crucial role in all three cap and trade program processes. The undertaking of caps, the allocation of resource rights, and the establishment of resource trading rules all fundamentally depend on the sovereign authority of governments. Even in the midst of strong pressures from powerful stakeholders, legislators and administrators exercise an important degree of autonomy and their priorities and discretion are formative, and sometimes decisive, in the design and operation of cap and trade policies. Ultimately, rule changes in any of the three processes must have the support, or at least complicity, of government in order to take effect. Comanagement arrangements are a common element of cap and trade policies, and they are one of the means through which contending stakeholders express their divergent interests to governmental actors. Almost without exception, though, these comanagement arrangements reserve the final decision on cap levels, resource allocations, and trading restrictions to governmental regulators, maintaining their decisive role. In the end, the decisions of legislators and administrators can make or break the success of cap and trade policies, regardless of other circumstances.