
*NAFO map, Northwest Atlantic Fisheries Organization
(NAFO)*

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Abstract

While the “Turbot War” between Canada and Spain is an instance of violent conflict over an increasingly scarce resource, it represents a departure from traditional environmental conflict scenarios. Economic interests did not drive the dispute, since the resource in question was of marginal economic importance to both parties, but by broader national interest considerations, namely “environmental nationalism.” Moreover, the conflict took place despite the existence of a multi-lateral environmental agreement that governed the management and harvesting of the resource in question. The failure of this agreement in addressing disputes over fishing rights and quotas led Canada to take enforcement measures into its own hands. The resulting crisis ultimately led to a greater protection of the resource by forcing parties to remedy institutional weaknesses. Conservation organizations can assist in preventing similar environmental resource disputes by providing a forum in which to air grievances and find solutions, by monitoring and identifying international agreements that are in trouble, and by building and disseminating information on the types of environmental degradation that lead to security issues.

Introduction

Canada and Spain, allies who had never fought each other, found themselves in a diplomatic conflict in the spring of 1995 that ultimately resulted in the firing of shots. Nationals of both states were engaged in fishing in the Grand Banks, off Newfoundland, for Greenland halibut. Stocks of this fish species, more commonly known as turbot, had recently been in decline. Canada claimed that Spanish fishers were taking more fish than the fishery could sustain. After an escalation of diplomatic actions over the course of nearly a month and a chase that lasted four hours, a Canadian fisheries patrol vessel fired shots over the bow of a Spanish fishing trawler on the high seas just outside of Canada’s Exclusive Economic Zone (EEZ). The boat, which had previously cut its nets, was boarded and seized.

The “turbot war” between Canada and Spain is certainly an instance of violent conflict between two states resulting from the scarcity of a resource that both countries valued. Without this scarcity the two countries would not have been concerned with the equitability of the distribution of catches, and would not ultimately have come to diplomatic blows and military threats. Three elements of this case are notable in terms of the environment and security framework. First, the resulting conflict took place through broader national interest considerations; states were engaged for a variety of reasons, none of which involved simple subsistence or dependence on the resource in question. Second, the conflict took place despite the existence of a multilateral organization engaged in trying to manage the resource. Third, the conflict led to what might be considered a useful resolution for protection of the stock and international management of fisheries more generally; such a resolution might not have happened without the conflict. While the resource may be better protected after the conflict than before, that was by no means an inevitable outcome. It is important to figure out how to resolve—or prevent—such crises without resorting to violence. It is also important to become aware of the conditions under which such common pool resource-based conflicts can be harnessed to improve environmental management and mutual security.

Turbot Timeline

1977	Canada declares its Exclusive Economic Zone
1979	NAFO formed
1994	UNCLOS enters into force (without ratifications from either Canada or Spain) Canada declares moratorium on fishing within its EEZ Canadian Parliament passes law authorizing extraterritorial enforcement of fishing quotas

Turbot and Tempers in the North Atlantic

1995	Feb.	Canadian government begins actively publicizing the turbot issue
	March 3	Tobin (Canadian fisheries minister) calls for a moratorium on turbot fishing
	March 6	Canadian cabinet authorizes capture of fishing vessels outside Canada's EEZ
	March 9	<i>Cape Roger</i> captures <i>Estai</i>
	March 16	Canadian fisheries officials cut nets of <i>Pescamero Uno</i>
	March 28	Spanish bring the turbot case before the International Court of Justice
	April	Tentative deal reached between Canada and the EU UNCLOS straddling stocks conference convenes
	August	Straddling stocks agreement signed

The Context

Fisheries have provided important aspects of people's livelihoods for centuries. They are a source of both employment and food, critical to the well-being and culture of the populations of traditional maritime countries. Fishing, however, has increasingly been done unsustainably, particularly on the open ocean. Fish stocks are available to anyone with sufficient technology to get to where they are, and fishing easily falls into what Garrett Hardin (1968) deemed the "tragedy of the commons." With a resource that can be depleted and that anyone can gain access to, each state, or even individual fisher, knows that any other may be able to fish in the area. If one actor restricts fishing for the good of the fishery but others do not, the conservation-minded actor both pays the cost of foregoing the benefits of fishing and fails to protect the resource if the other actors do not restrict their actions.

Any agreement to restrict ocean fishing needs to be undertaken internationally, and states can decide not to participate. And when states do participate in international fishery agreements, they often negotiate clauses that allow them to "opt out" of specific regulations undertaken by the constituent conservation organization. Even when states have every intention of following the mandates of the management organization, individual fishers may find a way around the rules. Non-compliance can be difficult to monitor on the open ocean, and fishers can easily re-flag their vessels in states that refuse to join regulatory agreements.

Moreover, the level of uncertainty about the condition of a given fish stock is often high. Natural (but irregular) fluctuations in fish stocks make it dif-

difficult to determine whether a bad fishing season is due to over-exploitation of the resource or some factor outside human control. Gathering information about the health of a fishery almost always involves relying on catch reports from fishers, who may face incentives to give false information.³³⁰ Scientific uncertainty about how great a yield a fishery can sustain over the long term may make cooperative regulatory outcomes less likely, as fishers are unwilling to pay a certain present cost for a possible (but uncertain) future benefit.

Adding to the problem of inadequate or contradictory information is uncertainty about whether all fishers will follow the same rules of conduct. The cost-benefit analysis of individual fishers is distorted from accounting for the true costs of depleting a stock towards seeking rapid payoffs. This is because countries often subsidize their fishing fleets, spurring an international race for dwindling stocks. Moreover, financing the debt on fishing vessels requires a steady stream of payments in the present deepening the need for quick profits by individual fishers.

The fishery off of the Atlantic Coast of Canada has traditionally been one of the world's most productive. The Grand Banks is a shallow ocean area on the continental shelf where the warm Gulf stream intersects with the cool Labrador current, providing a varied and nutrient-rich environment for many types of marine species (Kurlansky, 1997). In the first half of the 1900s, local fishers caught more than a quarter of a million tonnes of fish per year, and by the 1960s both Canadian and foreign fishers caught more than 1.4 million tonnes in the groundfish fishery off of Canada's Atlantic Coast alone (Felt and Locke, 1995). Although the fish in this area had once seemed impossible to deplete, improved technological capabilities, particularly the use of trawlers, increased the efficiency with which fish could be caught and began to threaten groundfish stocks off the Grand Banks.

Canada declared a 200-mile Fisheries Zone (later an Exclusive Economic Zone) in 1977 in an effort to deal with fisheries management issues in the region. Most of the Grand Banks falls within this zone, although the areas referred to as the "nose" and the "tail" of the Banks do not, and remain in international waters. This declaration was largely in response to overfishing by the fleet of factory trawlers, many of them European, that had grown dramatically over the course of the previous decade and a half. As a result of this growth, catches of the major fish stock in the region, cod, declined from 730,000 tonnes in 1968 to 126,000 tonnes per year a decade later. Estimates of the total biomass available in the fishery declined 82 per cent between 1962 and 1977 (Hutchings and Myers, 1995). Coincident with the declaration of the extended fisheries zone, Canada, which has a long history of subsidizing the fishing industry, undertook to support its small-vessel fishery at the expense of larger vessels. These measures were an

effort to remedy unemployment and poverty in the region, where fishing had always been the traditional source of income. The combination of actions led to some signs of recovery in fish stocks, but these signs were to prove short-lived, and soon signs of decline were once again clear. The Canadian government, however, focused on the short-term employment benefits of an active small-boat fishery rather than the long-term costs of overfishing (Hall-Arber and Finlayson, 1997). It failed to take significant action to protect the cod stock until it was too late, and finally had to declare a fishing moratorium in 1994. More than 50,000 Canadian workers in the fishery industry, primarily in Newfoundland, lost their jobs in the wake of the decline in fish stocks as well as the new conservation decision (Darnton, 1995). Faced with a decline and eventual ban on fishing their traditional stock, Canadian fishers sought other groundfish, such as turbot. The bulk of Canada's fishing fleet is capable only of fishing within—or just barely outside—its national waters (Beaudry and Fulsom, 1993), and thus was especially concerned about the health of the groundfish stocks in this region.

The fishing industry in Spain, particularly in the Basque area and Galicia in the North which accounts for half of the national fishing fleet, has also been central to that region's economic well-being and cultural identity. Basques have been fishing as long as recorded history, and may have fished in the area of the Grand Banks for more than a millennium (Kurlansky, 1997). The fishing industry employs more than 50,000 people in the region, and fishing alone accounts for more than 4 per cent of the region's jobs (White, 1995b); in the major port cities, fishing accounts for 35 per cent of all employment (White, 1995a). Because of poor fishery resources close to home, the Spanish have developed a distant-water fishing fleet. And, as they fish mostly in foreign and international waters, Spanish fishers have a particular history of being involved in international fishery disputes. The Spanish and Portuguese fishing fleets have been heavily subsidized by their respective governments and by the European Union (Springer, 1997).

Fishing had been regulated internationally in the area in question since 1950 under the terms of the International Convention for the Northwest Atlantic Fisheries (ICNAF). With the general acceptance of EEZs the regulatory function of this organization had to change dramatically, as much previously international area became domestic. Eight of the previous ICNAF members, including Canada and the then European Economic Community, negotiated the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, creating a new institution: The Northwest Atlantic Fisheries Organization (NAFO). This organization began operating in 1979 (NAFO "From ICNAF to NAFO," n.d.).

NAFO operates as do many fisheries organizations. A Scientific Council conducts and gathers research on the state of the fishery generally and performs assessments on specific stocks. It can make recommendations for overall catch limits (NAFO, "The NAFO Model," n.d.). Ultimately, the Fisheries Commission, in which all parties to the agreement have one vote, decides on a total allowable catch (TAC). It is interesting to note in this context that the EU is a single member, so that even though it represented 12 countries at the time, it only gets one vote. The TAC is then divided into individual quotas for each contracting party. The acceptance of the TAC as well as national (or in the case of the European Union, regional) quotas is by majority vote. Decisions made by the Commission apply to all members. Like other international agreements that call for binding decisions to be taken by less than unanimous voting, however, the agreement has a provision that allows parties to lodge an objection to a measure within sixty days of its adoption and thus not be bound by it (Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries 1978, Articles 6, 14(2), 11(7), 12(1)).

Because cod was the most important groundfish in NAFO waters and turbot had not been widely fished until the decline of the cod stocks, NAFO had not concerned itself with turbot until the mid-1990s. The turbot fishery had originally developed in the mid-1960s, increasing from commercially negligible amounts in the early 1960s to the 30,000–40,000 tonne range by the late 1960s. Catches gradually declined to the 20,000-tonne range by the late 1980s. Most of this catch was in the area that later came to be within the Canadian EEZ. In 1990, Spanish and Portuguese vessels began fishing for turbot in deeper waters outside of Canada's EEZ, sending total catch figures into the 60,000-tonne range in the early 1990s (NAFO, 2000). The resulting decline in the stock of mature fish put the issue on NAFO's agenda in 1995. For that fishing season NAFO decided to set the TAC at 27,000 tonnes (Canadian Department of Fisheries and Oceans, 1995a). The division of the TAC into national quotas, however, was contentious. The Convention requires that allocation of the TAC "take into account the interests of Commission members whose vessels have traditionally fished" in the region (Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries 1978, Article 11(4)), but there were competing interpretations of this mandate in the turbot context. Canada requested the highest allocation based on a traditional turbot fishery in the area and proximity to the stock. The European Union argued on behalf of Spain that it had taken the largest percentage of the catch of the species during the previous two years. A slim majority of six to five, with two abstentions, voted to divide the quota by allocating 16,300 tonnes to Canada and 3,400 tonnes to the EU. The European Union lodged an objection, not to the overall TAC, but to the national

quotas, and thus was not bound by them. The EU indicated that it would abide by a self-imposed quota of 19,000 tonnes, which would constitute nearly three-quarters of the overall quota (Canadian Department of Fisheries and Oceans, 1995a). If all states in the region caught the quotas of fish they agreed to, the fish stock would become severely depleted, by all scientific estimates. But because the EU followed the official objections procedure, NAFO was powerless to do anything about the situation.

NAFO was a weak organization in other ways. European vessels have routinely overfished even the quotas they have agreed to (Canadian Department of Fisheries and Oceans, 1995b). Although the agreement calls for states to implement “a scheme of joint international enforcement” (Convention 1978, Article 18), only six of 49 European vessels charged in 1993 with use of illegal nets or misreporting of catch statistics were prosecuted by the NAFO member states in which they were registered (Kedziora, 1996/7).³³¹ The situation is even worse when fishing vessels register in states that are not members of the organization. Such registrations are often called flags of convenience, because states require little in the way of obligation from shipowners in order to lure new ship registrations. This practice was becoming a real problem for NAFO by the mid-1990s. Vessels flagged in such non-member states as Honduras and Belize fished in the area, only to be re-flagged in other locations such as Sierra Leone and Sao Tomé e Príncipe when official NAFO dispatches complained to their flag states and implored them to stop these vessels from fishing in NAFO regulatory areas. Estimates suggest that in 1994 fishing by non-contracting party vessels accounted for more than 22,500 tons of groundfish caught in the NAFO regulatory area (NAFO, 1995). In response, the Canadian Parliament in 1994 passed a law allowing Canadian authorities to enforce NAFO rules and quotas on ships flying flags of convenience in the NAFO regulatory area, *outside* of Canada’s EEZ (Springer, 1997). There were official protests lodged against this new Canadian law, because it did not set clear limits to the authority that Canada was claiming (e.g., “New Canadian Law,” 1994). But on the whole, other member governments of NAFO did not mind having Canada police the NAFO area to protect fish stocks against non-members. This situation continued to be satisfactory as long as the Canadian government applied the law only to ships flying flags of convenience.

The Crisis

By mid-February of 1995, Spanish and Portuguese trawlers had already taken more than the original EU allocation of 3,400 tonnes, and showed no signs of stopping. By the end of February, Spanish fishers had already caught 5,000 tonnes of turbot (‘Flatfish with the High Profile,’ 1995). In late February, the Canadian government decided to make a public issue of

turbot overfishing, and by the beginning of March most major Canadian newspapers were covering the issue extensively. Turbot, which several months earlier few people had heard of, became a major national issue.

In early March, the Canadian Minister of Fisheries and Oceans, Brian Tobin, in response to the EU lodging an objection to its NAFO quota, called for a moratorium on fishing for turbot in the NAFO regulatory area until the quota issue was resolved, in order to prevent further overfishing (Cox, 1995). Predictably, the call was ignored by the European Commission, which was acting within the letter of international law and of its treaty commitments. The bulk of the Spanish and Portuguese fleets similarly ignored the call. The Canadian federal cabinet expected that the call for a moratorium would be ignored and saw that it could draw upon broad public support on the issue. Claiming a need to act unilaterally to protect a threatened resource, it decided to expand its authority under the regulations passed the previous year that allowed it to police NAFO rules in international waters. It amended the regulations and announced that it would henceforth interpret its law to allow it to police the actions not only of ships flying flags of convenience, but also those flying Spanish and Portuguese flags (Springer, 1997).³³² This set the stage for confrontation.

On March 6th, (1995) Fisheries Minister Tobin announced that Canada would use this new authority to enforce the proposed moratorium on the turbot fishery (Springer, 1997). This announcement, again predictably, was roundly denounced by European authorities. Spain went so far as to threaten to send warships to the region to protect its fishing fleet ('Ceasefire in the Turbot War,' 1995). However, the Canadian announcement was much more effective than the original suggestion of a moratorium. More than half of the foreign trawler fleet in the affected area, including some 25 Spanish and Portuguese trawlers, promptly left. Many ships that remained moved farther away from the Canadian EEZ (Cox, 1995). But those that remained continued to fish actively.

Three days later the Canadian government decided to push the issue further by authorizing the arrest of a European trawler outside of Canada's EEZ. The Canadian Department of Fisheries and Oceans settled on a Spanish Trawler called the *Estai*, and on the next day, March 9th, a Coast Guard ship spotted the *Estai* and ordered it to surrender. The *Estai* cut its nets and ran, but after a four hour chase followed by the firing of warning shots, it finally surrendered. It was boarded and seized; the ship was impounded and the captain arrested (Stewart, 1995). The Coast Guard had chosen its target well; the *Estai* was in violation of a wide range of NAFO rules. Canadian authorities claimed that 79 per cent of the turbot found on board were juveniles, smaller than would be caught by nets with legal mesh sizes. They also claimed that the *Estai* had hidden storage holds,

which contained species, such as American Plaice, that were under an international moratorium and thus should not have been on board in any quantity at all. The Department of Fisheries and Oceans also recovered the fishing nets that the *Estai's* crew had cut, and found the mesh size of the nets to be smaller than the minimum allowed under NAFO rules (Beesley and Rowe, 1995). The next day, the Captain of the vessel was released on CDN\$8,000 bail, and the trawler was returned to its owners upon the posting of a half-million dollar bond.

The Canadian government justified its actions as environmentally necessary. It claimed that its extraterritorial use of force was in support of a multilateral agreement to conserve a valuable natural resource, and that it had to use force because the Spanish and Portuguese governments were not living up to their obligations to enforce the rules of the conservation organization. The European Commission saw the seizure of the *Estai* as a clear and unjustifiable breach of international law, and claimed that it undermined NAFO because a cooperative multilateral organization could not function effectively when faced by unilateral uses of force by its members. In other words, both sides to the dispute justified their positions as supporting NAFO, yet managed to come to opposite conclusions as to what actions would best support effective multilateral management of the Northwest Atlantic fishery.

Following the seizure of the *Estai* the Canadian government reiterated its commitment to enforcing a moratorium on the turbot fishery until an agreement was reached on a sustainable quota. Canada also used the evidence of illegal fishing practices on the *Estai* to broaden its position and demand that existing NAFO rules be tightened and more effectively enforced. The show of force successfully communicated Canada's commitment; most trawlers promptly left the region. Many of those that remained left after March 26, when Canadian forces cut the nets of another Spanish trawler, the *Pescamaro Uno*. Following this incident, the Spanish Navy sent a patrol boat to escort the fishing fleet (Todd, 1995), and Canada responded by sending in larger naval vessels to enforce the moratorium (Nickerson, 1995). Meanwhile, the Spanish government announced that in retaliation it would henceforth require visas of all Canadians trying to enter the country, and would begin the process of taking the issue to the International Court of Justice. The EU looked into the possibility of some kind of retaliation, but in the end took no action.

The crisis aroused popular passions in both Canada and Spain, and the positions of both governments were hugely popular within their respective populations. Both governments also tried to make their case internationally, with limited success. Brian Tobin, the Canadian Minister of Fisheries, went to New York to make the Canadian case both to the United Nations

and to the international media. The Spanish government demanded the support of its partners in the European Union. The United States remained studiously neutral on the issue, and the EU was less enthusiastically supportive than the Spanish government had hoped. Some EU members, most notably Portugal, supported Spain's accusations. Other EU members which had had fisheries disputes with Spain in the past, most notably the United Kingdom and Ireland, did not ('EU and Canada Sign Easter Deal,' 1995).

The Resolution

The parties involved pursued several approaches to resolving the conflict. Spain appealed to the International Court of Justice (ICJ). At the same time, the EU and Canada worked to negotiate a new division of the total catch limit of turbot. They also negotiated a set of more restrictive rules for monitoring and inspecting catches. In addition, the United Nations negotiations on how to implement the Law of the Sea for straddling and highly migratory fish stocks, already scheduled for that spring, provided an opportunity for further resolution of the issues brought up by the turbot conflict.

Despite the ongoing diplomatic negotiations to re-allocate the turbot quota, Spain asked the ICJ to rule against Canada's use of force in the conflict. The ICJ decided in December 1998 that it did not have jurisdiction to hear the case (ICJ, 1998). In the meantime, however, Canada and the EU reached a compromise for dividing the national quotas more equitably. The EU was allowed to catch an extra 5,000 tonnes for the current fishing year (Ryan, 1995). In the following fishing year, the EU would get 41 per cent of the quota and Canada 37 per cent (NAFO, 1996).³³³ It was understood that future allocations would be divided similarly. The TAC and national division remained the same for the following two years, and the national quota allocation has stayed constant as the overall TAC has increased slightly since then (NAFO Annual Reports 1995 through 2000).

These parties also agreed to more restrictive regulations on minimum mesh sizes for nets and for fish, and most importantly for increased independent observer coverage and satellite tracking of fishing vessels in the NAFO regulatory area (NAFO, 1995). Previously member state inspection vessels had the right to board and inspect NAFO vessels and report non-compliance to the flag state, a system that was rarely implemented successfully. A new system was created that required that all NAFO member vessels be equipped with a satellite tracking device and that all NAFO vessels fishing in the regulatory area have independent and impartial observers on board by January 2001. These observers undertake a variety of functions, including recording and reporting on the fishing activities of

the vessel, observing and estimating catches and catch locations, recording the type of gear and mesh sized used, and verifying entries made in log-books. They are required to report any potential infringement of Conservation and Enforcement measures to a NAFO inspection vessel (NAFO, 2001). While the states themselves are responsible for hiring, housing, and feeding the observers, the observers are only allowed to provide the functions described above and those suggested by the Commission. Additionally, member states with ports provide inspectors to be present when catches by member states are offloaded, to “verify the species and quantities caught (NAFO, 2001).”

NAFO took further steps to improve enforcement, with the adoption of a “Scheme to Promote Compliance by Non-Contracting Party vessels with the Conservation and Enforcement Measures Established by NAFO.” This regulation was designed to stop fishing in the area by vessels flagged in states that are not NAFO members through inspections and the possible prohibition on landings of fish caught by such vessels, as well as diplomatic pressure on non-member states whose vessels were fishing in the regulatory area (NAFO, 1997).

Canada also agreed to repeal the regulation that allowed enforcement of quotas outside its EEZ on NAFO member vessels (“EU and Canada Sign Easter Deal on Fishing Rights,” 1995). This new agreement granted both parties victories they could take home to their national constituents, although the Spanish government was less than enthusiastic and acceded to it only under pressure from other EU governments (White, 1995c). Each side was able to claim that its most important goals had been met. Spain gained an increased percentage of the TAC and the implicit admission that it had been right to object to such a low allocation in the first place. Canada, which argued that better enforcement had always been the goal of its action, gained a system in which cheating was made less likely, and in which Spain was much more likely to fish within its national allocation. This system, negotiated bilaterally, had to be accepted by the other members of NAFO, and in September it was, although not without concern on the part of some of the members for the precedent set by member state side deals (‘Turbot Pact Ratified,’ 1995).

In April of 1995 the United Nations negotiated an agreement for how to deal with highly migratory fish or those fish stocks (such as turbot) that straddle national or international boundaries. The conflict over turbot was in the press as the negotiations were underway, and Canada participated actively in the negotiations. The agreement that resulted indicates that states have a “duty” to participate fully and in good faith in fisheries agreements and that member states of multilateral fisheries organizations have the right to inspect the vessels of other states if these states are not fully

enforcing the agreements. In addition to suggesting that member states have an obligation to accept organization quotas even when legally allowed to opt out, this agreement legitimates the rights of inspection NAFO has since incorporated against non-member states.

The new NAFO observation and inspections process seems to be working. Allegations of illegal fishing practices have dropped from nearly 60 per year before the new system was put in place to only one or two per year. Violators are also now more likely to be caught through international inspections processes. For instance, in April 2000, a Canadian Fisheries Patrol vessel inspected a Portuguese vessel fishing for cod in the NAFO regulatory area. It determined that the vessel, the *Santa Mafalda*, had misreported its catches of cod, and contacted EU and Portuguese authorities, which ordered the vessel back to its home port for inspection. John Mercer, of the Canadian Department of Fisheries and Oceans explained that “we have no reason to believe NAFO is not working... This incident is actually an example that shows it works (“Portuguese Fishing Vessel Nets Violation Charge”). In addition, no party has objected to the turbot quota or its national allocation since the resolution of the conflict. Perhaps as a result, stocks of turbot have recovered significantly, more than doubling from the pre-regulatory low in the 1990s (NAFO Scientific Council, 1998; NAFO, 2000).

Relevance to Environment and Security

This case is an important one for discussions of environment and security because of the context in which it happened. The literature on environment and security leads us to expect that environmental conflict should be more likely the poorer the populations in question, the more economically central the environmental resource in question is to them (Homer-Dixon, 1999), and the less institutionalized the setting in which it happens (Matthew, 1999). The Turbot War developed between two rich, industrialized countries, over a resource that was of marginal importance to their overall economies, and the harvesting of which was governed by an existing multilateral environmental agreement. Given these circumstances, why did the confrontation devolve into a diplomatic, and nearly military, confrontation?

The literature on environment and security outlines two general situations in which environmental degradation is likely to result in international security issues. The first is when environmental scarcity removes the livelihoods of actors, undermining social structure and leading to civil unrest. The second is when countries have disputes about resources that are critical to their economic well-being, like petroleum or freshwater (Homer-Dixon, 1999). This case does not match either of these pathways.

Although it is true that the depletion of Grand Banks fisheries did threaten the livelihoods of individual fishers and fishing communities in Newfoundland and Northern Spain, it was not these fishers who pursued the conflict but the governments of Canada and Spain. In addition, the turbot fishery was not particularly important in aggregate to either economy as a whole. The annual economic value of the fish under dispute was on the order of one ten-thousandth of the national product of the protagonists. Both countries might actually have ended up economically better off if they had gotten rid of their Grand Banks fisheries and the large volume of government subsidies given to them. In any case, the costs of engaging in the dispute may have approached the economic value of the resource (Koring and Milner, 1995). So the driving force of the dispute was not, in the end, economic.

Why then did the two governments pursue the dispute to the degree that they did? It became a question not of economic interest *per se*, but of national politics more broadly defined. To a significant extent, the dispute was driven by national pride. The general populations of both Canada and Spain, most of whom had never been to Newfoundland or the Galician or Basque regions, turned out to be receptive audiences to claims by their leaders that they were acting to protect national heritage, and, coincidentally, international law. The Canadian government was clearly playing to the Canadian popular self-image as an environmentally and internationally responsible people. It claimed to be enforcing its laws on the high sea not to protect its economy, but to protect an international environmental resource. This is a new twist to the link between environment and security. It is not only environmental degradation, but also environmental nationalism (albeit one born, perhaps, from previous environmental failures), that can lead to conflict.

The problem with this particular kind of environmental nationalism and the enthusiasm for regulation that its proponents can generate is that it can display the “new convert” phenomenon. In environmental issues, the phenomenon happens when a country, after many years of abusing an environmental resource, sees the unsustainability of what it is doing, and changes policy suddenly and radically. We see this phenomenon in issues as widespread as sea turtle protection and nuclear testing. From the perspective of these “new converts,” having been convinced that the environment needs to be protected, they are eager to ensure that it is protected as well as possible and are the most rigid of believers. From the perspective of other users of the resource, however, it smacks of hypocrisy. From the outside, it seems that the country used the resource until it became threatened, and then attempts to prevent everyone else from getting their fair share. This dynamic was certainly present in the turbot dispute.

The second way in which the Turbot War does not fit the normal pattern of environmental security issues is that it happened within the context of a multilateral environmental agreement. The Convention on Future Cooperation in the Northwest Atlantic Fishery was ratified by both of the parties to the dispute and had been designed specifically to prevent both the depletion of fish stocks in the region and disputes over fishing rights. Yet in this case, the presence of NAFO arguably exacerbated the dispute for without it, the Canadian government would have had much more difficulty justifying its actions. Without the NAFO agreement, the Canadians would not have been able to point to a formal Spanish commitment to fishery conservation. In other words, without NAFO the turbot would probably have continued to be overfished but there may well not have been a conflict. If NAFO rules had been stricter, however, the crisis would again probably not have occurred. If, for example, the rules of the organization had allowed for more than limited third-party inspection of trawlers and not allowed members to object to specific quotas, Spanish fishers would not likely have attempted to overfish to the same degree in the first place, nor cheated even on the rules Spain had agreed to.

These apparent loopholes in NAFO suggest that, as a multilateral environmental agreement, it was weak. There are three aspects of this weakness that are relevant to the turbot crisis. First, the existence of the objection clause that allows countries to opt out of specific quotas, second, the relatively weak inspection procedures, and third, the slow, sometimes ponderous, process of scientific review that can delay regulation of a fishery until it is too late. The objection clause means that NAFO cannot in the end require that a country do something that it does not want to do. But countries are loath to sign fisheries agreements that give the final say over national fishery policy to international bodies. In fisheries agreements in particular, there is an advantage to empowering a commission to make annual decisions about catch limits as information on previous catches and stock sizes becomes available. Doing so would be impossible if a new agreement had to be fully negotiated and re-ratified each time a new catch limit or regulation were imposed. Instead, most such agreements allow a commission to make non-unanimous decisions that are then implemented by all participants. However, in international law no state can be bound without its consent, and the participant governments would likely have seen NAFO as an infringement of their sovereignty if decisions could be imposed on them that they did not agree to. Few would therefore have joined the institution without a process that allowed them to opt out of commission decisions to which they were severely opposed.

Countries prefer weaker inspection procedures not only because stronger ones might infringe on sovereignty, but also because strong inspections procedures can lead to international embarrassment. The better the inspec-

tion procedure, the more likely it is that governments that are not adequately enforcing quotas and rules are going to get caught. This means that governments that are less enthusiastic about strict enforcement of quotas and rules either have to police their own fishers more thoroughly and effectively than they want to, or risk the international embarrassment of being identified as countries that do not live up to their treaty obligations. Since countries do not know when they sign agreements of this sort how strongly they will apply the rules to their own national fishing industries several years down the road, it is often safest to design agreements with weak inspection procedures, to avoid the possibility of being made to look bad (or incompetent) in front of an international audience.

The slowness of the regulatory process also helped create the circumstances for the crisis. Note that, although there was evidence that the turbot stock was declining, there had been no regulation of the stock before the 1995 fishing season. This slowness to restrict catches is also a hallmark of fishery and other conservation agreements. The NAFO fisheries commission exists to protect the interests of fishers, by imposing short run costs to protect the health of the resource in the long run. But because the short-term costs of fishery conservation measures are palpable and the uncertainty about the necessity of regulation high during the times when it would be most usefully imposed, even fishery commissions are unlikely to impose costly restrictions until signs of stock decline are incontrovertible. By then it is often too late to protect the stock except by implementing drastic measures, which are both politically untenable and leave a smaller catch limit to divide among interested parties. This scientific and political caution can thus lead to crisis.

This particular security crisis, then, can trace some of its origin to an international institution that was weak, both in terms of making and of enforcing its rules. This weakness points to a dilemma often faced by those designing multilateral environmental agreements; weaker agreements are less effective at protecting a resource, but stronger agreements are less likely to be accepted by the community of countries using the resource. This dilemma helps to explain the three features discussed here: the objection clause, the limited inspection procedures, and the slow scientific process. Without these three features, the treaty would have done a much better job of regulating the fisheries of those countries that signed it. But without these features, many of the major participants in the Northwest Atlantic fishery would not have signed the agreement in the first place. So in order to get all the major fishers in the northwest Atlantic to sign on, NAFO had to be designed with its flaws, even though they were recognized as flaws at the time.

Finally, and perhaps most disturbingly, the crisis appears to have led to greater protection of the resource, largely by remedying some of the weak-

nesses of NAFO. Had Spain not led the European Union into objecting to a quota it did not like, it would not have been able to get what ultimately was a more politically acceptable share of the catch. Had Canadian fisheries ministers not “gotten religion” after nearly destroying fish stocks within Canadian waters and been willing to take on this environmental cause, the turbot stock would have continued to be depleted and the agreement would have continued to allow fishing vessels to get around both the letter and the spirit of the law.

There is a limit to how strong an institution NAFO can be. Since states are unlikely to join an agreement where they can be bound without their consent, this element of the NAFO regulatory process is unlikely to disappear. But the expanded inspections system, the NAFO-wide effort to bring non-member states into the regulatory process, and a more equitable division of national allocations that decreases the likelihood that states will use that objections procedure, does suggest that the fisheries resources of the Northwest Atlantic may be better protected after the conflict than they were before. Given the danger of escalation inherent in any threat or use of force, it would be a depressing conclusion indeed if this were the only way this resource could have been protected.

Conclusion

What role does this leave for IUCN in this sort of dispute? The departures from the normal pattern of environmental security issues in this case all point to weaknesses in the international institutional structure with respect to fisheries issues, and these weaknesses point to gaps that IUCN can fill. Potential roles for IUCN in preventing fisheries and other environmental commons problems from becoming security issues include as a forum, as a watchdog, and as a knowledge builder. These roles would help, respectively, to diffuse crises at the outset, to identify situations where crises are brewing, and to understand the sorts of situations in which resource depletion is likely to lead to confrontation.

As a forum, IUCN might have been able to diffuse the Turbot War before it began. It was clear well before shots were fired that a crisis was brewing. There was almost a week between the announcement by the Canadian government that it would enforce a moratorium on turbot fishing, and the taking of the *Estai*. It was clear throughout this week that neither the Canadian nor Spanish governments, nor the European Commission, were going to back down in the absence of third-party mediation. But there was no third party well-placed to mediate. There was little incentive for other states, such as the United States, to get involved. NAFO could not act as a neutral arbitrator, because it directly represented the interests of its member governments in the issue. IUCN, however, acting as an entrepreneur-

ial forum, might have successfully arbitrated the dispute before it escalated. It could have identified during the first week of March that the parties were on a path to escalation of the dispute and recommended that they meet under IUCN auspices to negotiate. Such arbitration may well have resulted in an outcome similar to the one that the parties to the dispute eventually agreed to a month and a half later. We refer to this role as an entrepreneurial forum because it would call on IUCN not only to act as a neutral mediator, but to actively track budding environmental disputes and nip them by pre-emptively suggesting its services. This would help deal with the “recent convert” phenomenon by providing an impartial but environmentally responsible view of the condition and needs of the resource in question.

The second role that this case suggests for IUCN is as a watchdog. The Northwest Atlantic fishery had been showing signs of conflict for some time. On the one hand, it was governed by a multilateral environmental agreement. On the other hand, this agreement was showing signs of severe strain. While the objection clause in the treaty was designed to allow governments to get out of specific quota allocation, it was not designed to allow governments to avoid their quota allocations most of the time, which is how the European Commission was using it by the mid-1990s. Similarly, much of the European fleet was chronically breaking NAFO regulations on fishing practices, and member governments, particularly Spain, were clearly not interested in enforcing these regulations. Many of the participant countries had histories of chronic overfishing. In short, then, by the mid-1990s NAFO was in a situation of chronic noncompliance and ineffectiveness. IUCN acting as a watchdog might have identified NAFO as an agreement in trouble, and recommended that the parties to the agreement get together and rethink the terms of their cooperation. In other words, IUCN could help alleviate the dilemma facing designers of this sort of institution by identifying when weaknesses in institutional design are being abused by the countries involved.

The third role that this case suggests for IUCN is as a knowledge builder. The watchdog role can tell us that specific multilateral environmental agreements are getting into trouble, but it cannot help us predict in a broader sense where trouble is likely to brew. Many disputes are settled through negotiation without any threat of escalation, whereas others seem destined for conflict. What sorts of international fishery situations, for example, are likely to generate confrontation, and which are not? Recent research suggests, for example, that situations involving national fishing fleets with very different types of vessels are likely to be more conflictual than situations involving national fishing fleets that use broadly similar types of vessels (Barkin and DeSombre, 2000). But there is no organization that guides, organizes, collates, and disseminates this sort of research.

IUCN, by acting both as a builder and a disseminator of information, can help to identify the sorts of environmental degradation that are likely to lead to security situations, and the sorts that are not.

The introduction to this chapter identifies three notable elements to this case: that the conflict took place through broad national interest considerations, that it happened in the context of an existing multilateral organization, and that it resulted in a greater level of protection of the resource than had previously been the case. These elements are notable, but are by no means unique to this case. As environmental degradation proceeds, as multilateral organizations come under increasing strain as a result of this degradation, and as states as a result increasingly feel the need to deal with environmental threats unilaterally, we can expect that these elements will become more common. The three roles suggested here for IUCN could perhaps help prevent this from happening. The forum role can help to prevent the escalation of environmental conflict into broader patterns of conflict that acquire undertones of nationalism. The watchdog role can help to make existing international institutions work better, and help to fix them when their design is not suitable to their role. And the knowledge builder role makes it easier for both individuals and states that are interested in more environmental management of the Earth's resources to create effective management regimes without having to resort to the use or threat of force. This would create an important and potentially productive place for IUCN in issues of environment and security.

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Environment and Security Brief 10

Environment and Security in Australia: Uranium Mining in
Kakadu National Park

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Introduction

The Kakadu region in Australia’s Northern Territory can be described as a place where the Nuclear Age has collided with the Stone Age, the fall-out from which has generated social tension and instability. Home to a unique array of natural ecosystems and a rich indigenous culture, it also possesses several valuable uranium ore deposits. The juxtaposition of large-scale hazardous developments with one of the most remarkable wild landscapes on the Australian continent has become a source of conflict between three competing sets of interests: those of the traditional owners and inhabitants of the region, the uranium industry, and environmental conservationists. The proposed development of the Jabiluka mine has ignited the most recent confrontation in the region. On-site protests, the arrest of traditional owners for trespassing on their own land, international awards to traditional owners/activists, public inquiries, and more recently the direct involvement of the UNESCO World Heritage Committee are just some of the events that have shaped this conflict. While far from resolved, this conflict provides some important lessons on the problems associated with land use planning and geographic compromises that seek to accommodate seemingly irreconcilable interests.

Kakadu’s Natural and Cultural Heritage

Kakadu National Park was established in three stages, with each stage followed by a nomination for World Heritage Listing.

	National park establishment	World heritage listing
Stage 1	1979	1981
Stage 2	1984	1987
Stage 3	1987/89/91	1992

One of the few World Heritage Sites inscribed for both its natural and cultural significance, Kakadu's indigenous inhabitants have maintained a relatively high degree of cultural integrity and retain a strong sense of belonging to the land. Some scientists believe the Kakadu region to be the first place where original human inhabitants entered the continent, continuing to arrive until the last rise in sea level. The region has yielded the oldest evidence of continuous human occupation—at least 50,000 years—on the Australian continent, and the escarpment showcases of one of the most extensive and spectacular outdoor galleries of traditional indigenous art in the world. The region is therefore of great importance not only to its contemporary traditional owners, but also to our understanding of human development.

Kakadu's natural significance rests with its complex of ecosystems such as tidal flats, floodplains, lowlands, and plateau, as well as its wide range of endemic species. The productive freshwater wetlands on the coastal plain, especially the Magela wetlands, are a primary focus for conservation efforts. These wetlands are valued because of the large populations of wildlife species that depend upon them, especially bird life. Moreover, the Magela wetlands were, and continue to be, important to surrounding indigenous communities, as they are used for hunting and gathering of food.

Because of these unique natural and cultural qualities, traditional inhabitants and conservationists have worked to protect the region from damage and degradation. The first proposal to establish a national park in the Kakadu region was put forth in 1965, a time when environmental conservation issues and Aboriginal land claims were coming to the fore. Four years later, the first major uranium deposit—the Ranger ore body—was discovered in the region. This simultaneous initiation of three sets of interests—conservation, Aboriginal rights, and uranium prospecting—laid the foundations for a complex and prolonged conflict that has attracted international attention in recent years.

The Geographic subdivision of Kakadu: Accommodating conflicting interests

Aboriginal people occupied their traditional lands until the 1970s, yet few had legal title to their land. In 1973, the Australian Government commissioned an inquiry (called the Woodward Inquiry) into Aboriginal land rights in the Northern Territory and concluded that Aboriginal title, coupled with national park status and joint management would be as a fair and effective way of protecting both the natural environment and Aboriginal land rights.³³⁴ Meanwhile, shortly after the discovery of the Ranger deposit in the Kakadu region, several other uranium ore bodies and prospects were identified, including Koongara and Jabiluka. Because of growing concern over the environmental

effects of uranium mining and the proposal to develop the Ranger deposit, in 1975 the Australian Government commissioned an inquiry to examine the impacts of the uranium mining. The Inquiry, later known as the Ranger or Fox Inquiry, gave conditional approval for the sequential development of the Ranger and Jabiluka projects—in spite of their being situated within the proposed national park region—and strongly advised against a third mine in the Kakadu region at Koongara. The Government also accepted most of the Inquiry's other recommendations, including the granting of Aboriginal title and establishing a major national park in stages.

Upon being granted title over land in the area in 1978, the Kakadu Aboriginal Land Trust entered into an agreement for their land to be leased back to the Australian Government and managed as a national park. Stage 1 of Kakadu National Park was therefore established the following year, based on the Woodward Inquiry's vision, and was managed jointly between the Aboriginal landholders and the Australian National Parks and Wildlife Service. Mining interests were also accommodated, as Aboriginal landholders negotiated and eventually granted separate mineral leases to mining companies, although Aboriginal leaders today claim these agreements were signed under duress. Each stage of Park establishment and extension involved the incorporation of a mining lease, either at Koongara, Ranger or Jabiluka, creating uranium enclaves within the Park/World Heritage area. Thus, while each enclave occupied land within the eastern boundary of Kakadu, the mines were legally excised from the Park/World Heritage property.

Mining Activities in the Region and the Jabiluka Proposal

The Ranger Uranium Mine, the lease for which was granted in 1978, is the third largest uranium mine in the world and has been operating continuously since 1980. The social impacts of such a large project, which included the building of a new town, Jabiru, could be readily predicted. The mine brought ready access to and for outsiders through a massive highway transport system, connecting Kakadu to the city of Darwin, to export facilities, and to the outside world in general. Unprecedented financial earnings were accompanied by social disruption through the introduction of alcohol and technology. The environmental impacts were less understood, however, and policies and procedures tended to evolve in response to events, planned and unplanned. The spillage of radioactive contaminated water into the catchment of Magela wetlands, for example, has led indigenous users to lose confidence in the safety of their food supply.³³⁵

Following the granting of the Ranger lease, the Jabiluka mining lease was granted in 1982. Its development, however, was curtailed by the

policies of a newly elected government that same year. The Government's "Three Mines" policy restricted Australia's uranium mining activities to those mines that were already operational. Another change of government in 1996 resulted in lifting all export restrictions on uranium mining in Australia. Valued at close to US\$4 billion, the Jabiluka uranium deposit was considered once again for development and the project was granted conditional approval to proceed. In June 1998, Energy Resources of Australia (ERA) commenced work in the area.

After more than ten years of experiencing the impacts of the Ranger mine's activities and after a change in traditional leadership, The Mirrar, the traditional owners of the Jabiluka uranium mine site, were—and continue to be—strongly opposed to the mine, consistently and actively campaigning against its development. On site protests and police action have characterized some of this campaigning. The Mirrar claim that permission for mining, given by a former traditional owner, was obtained through unfair means and inadmissible pressure. Moreover, they feel that the Jabilkula mining project threatens the integrity of their sacred cultural and natural heritage—the same values which made Kakadu eligible for World Heritage Listing. Although the project has been subject to an extensive environmental impact assessment (EIA), traditional inhabitants and conservationists have deemed them insufficient, hasty or inadequate. In short, the continued persistence to forge ahead with the Jabiluka project is seen to constitute nothing less than a fundamental disregard and/or infringement of Aboriginal rights and conservation principles.

The Jabiluka conflict exemplifies how the geographic subdivision of the land to accommodate competing interests has served to entrench opposing positions. The Ranger uranium mine was established in the Magela wetlands catchment, and Jabiluka is poised to be the second. Also, the Jabiluka mine is within a well-defined band of art and archaeological sites of undisputed global significance. The Malakananja II sacred cultural site, arguably the most important archaeological site in the region, was a major element in the Australian Government's second and third stage World Heritage nomination. However, the site was subsequently found to be outside of the protected Kakadu National Park/World Heritage Area and instead, within the Jabiluka mining lease.

Citing these examples and others, opponents of Jabiluka argue that such artificial boundaries in the region are in many ways irrelevant to traditional owners, wildlife, water flows and many other natural processes. Rather, the legally excised mining enclaves occupy small pockets of a

larger, complex, and interdependent ecosystem. Contaminated run-off, radioactive leaching into the water system, and other impacts cannot be contained to the area of the mining leases and thus have much broader social and ecological implications. Thus, the World Heritage values associated with Kakadu National Park have not been fully protected and as a consequence are vulnerable and threatened.

It was for these reasons that in 1998, conservation groups, supported by the Mirrar, requested that Kakadu National Park be placed on the List of World Heritage in Danger. The use of such an embarrassing sanction would threaten the Park's World Heritage designation, and calls attention to its plight. The Committee responded by dispatching a mission to Kakadu in October of that year in order to ascertain the threats of mining activities and the relevant views of all stakeholders. The mission presented its report to the Committee in November, with strong recommendations against the Jabiluka mine proceeding. The matter was deferred to another meeting. The World Heritage Committee reconvened in July of 1999 for an extraordinary session to discuss the mission's recommendations. Under strong appeal from the Australian Government however, the Committee decided not to inscribe Kakadu as a "World Heritage in Danger," although the threats to World Heritage values were recognized.

A subsequent report from the Australian Government to the World Heritage Bureau in October 1999 claimed progress in the implementation of the Kakadu Regional Social Impact Study as well as the establishment of a Cultural Heritage Management Plan. However, traditional owners have contradicted these claims of progress and the conflict remains unresolved. In the meantime, the mining company has decided not to proceed with ore production at Jabiluka for the time being, citing Indigenous opposition and economic concerns as the basis for their decision.

Lessons Learned

The Kakadu conflict is a glaring example of the difficulty in addressing development, Indigenous and environmental interests concurrently. The natural and cultural values of the Kakadu region only became an issue with the threat of uranium mining and all of its environmental and ethical connotations. However, by the time these issues were forcibly raised, it was too late for an unconditional hand-back of the land to the traditional owners or for a conservation regime fitting of this outstanding landscape. Uranium prospecting and mining titles were being issued on a continuous basis for many years. With the economic success of the first mines in the 1970s, continued mining in the region seemed a foregone conclusion.

Those areas allocated for uranium mining, Aboriginal ownership and national park status were each achieved through the geographic subdivision of the landscape, based on the belief that subdivision represented a resolution to the conflict. In reality, it had the opposite effect. With each of the three key players in the region—uranium miners, traditional owners and nature conservationists—progressively reinforcing their presence in the Kakadu catchments, the overall result is deadlock. Some of the lessons from the conflict include:

- Understanding the dangers of adopting an incremental or reductionist approach to land use and development issues. In some cases, simplistic local geographic compromises—in this case, carving out “enclaves”—can create more problems than they solve;
- Recognizing the potential value of regional-scale environmental planning in minimizing land-use conflicts of the Kakadu type, by better accounting for the sustainability needs of natural systems—in this case, the wetlands catchments;
- The need to carefully consider the implications of fundamentally incompatible land uses, such as conservation, Indigenous values, and mining.

The global significance of the heritage values of Kakadu National Park, as well as the whole of the Kakadu catchments, and the perceived injustices imposed on the Mirrar people only serves to emphasize the importance of seeking a long-term resolution of the wider “Kakadu Conflict.” How the Jabiluka component of the wider conflict is resolved will have major implications for future uranium mines planned for the Kakadu catchments, as well for the many other mines being proposed in areas of global cultural and natural significance.

Environment and Security Brief 11

EU-West African Fisheries

Poor management of West African fisheries is leading to the over-exploitation of fish stocks by distant water fishing fleets (DWFs), translating into lost revenue and livelihoods for the peoples of Mauritania and Senegal. The European Union is subsidizing its offshore fleets to fish off of West Africa in order to move them out of over-fished European waters.³³⁶ These fleets effectively compete for fish with local artisanal and industrial fisherman, thereby threatening their livelihood security, and undermine the economic development of poorer West African nations who lack the resources to monitor fishing activities and enforce regulations. These management limitations lead to under-reporting and illegal fishing, which result in the loss of revenue from taxes and license fees. Longer-term consequences include over fishing and lack of accurate statistics for ascertaining the level of stocks.³³⁷

Ironically, the relatively good management of fisheries in other parts of the world, especially in developed countries, is compounding the problem. While effective management schemes in developed countries yield healthier domestic fish stocks, they can encourage fishing in foreign waters, particularly those near less-developed countries, where fleets encounter few restrictions and are able to exploit less-managed stocks.³³⁸

Yet some West African nations are attempting to take matters into their own hands by establishing marine protected areas in their territorial waters. According to a recent WWF report, Mauritania is banning all fishing, except traditional non-motorized fishing by local communities, in the Banc d'Arguin National Park, a 12,000 km² coastal wetland. Guinea Bissau is announcing the creation of the Joao Viera/Poilao National Park, a 500 km² marine protected area in the southern part of the Bijagos Archipelago. Senegal, too, is due to announce a project that would develop its own marine protected areas.³³⁹ The creation of protected marine areas would not only help to conserve national fish stocks and ensure their sustainable management, but it could generate international pressure against the European DWFs that fish there.

The EU itself has the responsibility to assist these nations in conserving their natural resources. Julie Cator, WWF's European Fisheries expert, summed up the EU's precarious position: "If developing countries in West Africa can invest precious resources in safeguarding fish stocks, why can't the European Union stop over fishing in West African waters?"³⁴⁰

Environment and Security Brief 12

Dams and Conflict: The South Eastern Anatolia Project (GAP)

The South Eastern Anatolia Project (GAP), Turkey's \$32 billion water development scheme involving 22 dams, 19 hydroelectric power plants and a network of irrigation canals for the Tigris and Euphrates Rivers, has generated a considerable amount of political tension and has the potential to trigger armed conflict.³⁴¹ The project was launched in the early 1980s by the Turkish government in an effort to promote economic growth and prosperity in the underdeveloped Southeast Anatolia region. With Turkey in the dominant headwater position, however, both Syria and Iraq are dependent on Turkish cooperation for the quantity of water they receive. Thus, management of the Tigris-Euphrates river basin has brought to the fore a complex range of issues that threaten peaceful relations between Turkey, Syria and Iraq, while also drawing international pressure from environmental activists.

Some of the most serious direct social and environmental impacts of the Project are those associated with large-scale damming, whereby reservoirs flood towns, villages and hamlets. So far an estimated 200,000 people have been displaced through such activities.³⁴² Government compensation to displaced persons are said to perpetuate economic disparities, as promises to rebuild modern villages are replaced with offers of cash that are easily spent in urban centres. Moreover, reservoir developments have had adverse human health effects, as modified biophysical environments have eased the transmission of some vector-borne diseases and increased the presence of certain toxins. Such impacts have created internal resistance and opposition to further GAP-related projects.

Apart from domestic concerns, tensions between Turkey and the downstream riparian states of Syria and Iraq have been mounting. Each country's steadfast insistence on owning and controlling nearly all water resources within their respective national boundaries has fueled political conflict.³⁴³ Turkey, controlling the majority of the Tigris-Euphrates headwaters, claims "absolute territorial sovereignty"³⁴⁴ over those water resources. Former Turkish president Suleyman Demirel's speech at the opening of the Ataturk Dam exemplified this stance when he stated, "This is a matter of sovereignty. We have a right to do anything we like. The water resources are Turkey's and oil resources are theirs [Syria and Iraq]. We don't say we share their oil resources, and they cannot say they share our water resources."³⁴⁵ Meanwhile, Syria, who is unhappy not

only with the amount of water that the Turkish dams release downstream but also with the quality of the water (as it is often recycled many times in irrigational use), has called for Turkey to release flows of water that can adequately sustain hydroelectric production and irrigation.³⁴⁶ This demand has been characterized by Turkish authorities as hypocritical, as Syria, who is in the dominant headwater position along the Al-Asi River, releases only 10 per cent of the flow to Turkey, with plans for further reductions.

Hostility between these countries has existed outside of the GAP issue. However, decisions surrounding the development scheme have become another venue through which to air historical grievances and exert political pressure. For example, both Syria and Iraq have been accused of supporting the terrorist independence struggle of the minority Kurdish Workers' Party (PKK), prompting Turkey to threaten to cut off the flow of water to both states on more than one occasion.³⁴⁷ At the same time, the PKK alleges that the Turkish government is drowning Kurdish towns and orchards with their large-scale damming projects, displacing thousands of rebel Kurds and allowing the government to better control them.³⁴⁸ Iraqi authorities maintain that they possess "acquired rights" to the Tigris and Euphrates Rivers based on their "ancestral irrigations," whereby existing irrigations and water installations, some of which date back to Sumerian times, should be guaranteed their access to relevant water resources.

Amidst the deep-seated interests of Turkey, Syria and Iraq, there is much room for negotiation, mediation and creative problem solving. First, transparency must be added to the various levels of intergovernmental mediation in order to allow many of the GAP/dam-related issues to become depoliticised.³⁴⁹ Second, conservationists can raise the profile of environmental issues at relevant negotiations and promote the long-term advantages of sound ecosystem protection and management. Third, the shared interest these countries have in resolving their GAP-related conflicts must underscore all discussions and negotiations. Furthermore, conservationists can recommend a more encompassing decision-making process that considers both the interests of affected groups as well as the shared benefits of hydromodifications across societies.³⁵⁰

Endnotes

330. If the fishing season is ended when an overall catch limit is reached, for example, fishers who underreport their catches extend the fishing season and thereby their opportunity to catch more fish. False reporting is also likely in the case of noncompliance.
331. Referrals of oceanic mis-deeds to flag states rarely result in states taking action against their own vessels, unless international agreements compel them to, and NAFO did not provide any way to ensure that they would.
332. The specific change was to the Coastal Fisheries Protection Regulations, Section 21, Table IV, and was made on 3 March, 1995. The Canadian federal government had amended its Criminal Code (Section 25) to give Canadian enforcement officers the authority to enforce the new fisheries regulations. This was done on 12 May, 1994, the same day as the original changes to the Coastal Fisheries Protection Act became law (ICJ 1998, paragraphs 14–16).
333. The quota of 27,000 tonnes had been for turbot in a region that straddled the boundary of the Canadian EEZ. For the 1996, this was divided into a 7,000 tonne quota within Canada's EEZ, all of which accrued to Canada, and a 20,000 tonne quota in international waters, of which Canada got 3,000, the EU 11,070, Japan 2,050 and Russia 2,2550, with the remaining 1,330 tonnes divided up among various other NAFO members.
334. A.E. Woodward, "Aboriginal Land Rights Commission, First Report," Parliamentary Paper No. 138 of 1973, (AGPS, Canberra, 1973).
335. Gundjehmi Corporation, Personal Communication.
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336. "West Africa puts EU to Shame," Creating a Sea Change for Fisheries in West Africa, August 3, 2001, WWF web site: <http://www.panda.org/endangeredseas/westafrica/news.htm>
337. "Case Study: DWFs off Mauritania and Senegal," The footprint of distant water fleets on world fisheries (2001), pp. 36–37. Available at: <http://www.panda.org/resources/publications/water/footprint/action.html>
338. *Ibid*, p. 37.
339. "West Africa puts EU to Shame," WWF (2001), Available at: <http://www.panda.org/endangeredseas/westafrica/news.htm>
340. *Ibid*.
341. Green Cross International, *National sovereignty and international watercourses* (Geneva: Green Cross International, March 2000), p. 95.

342. Export Credits Guarantee Department (ECGD), "Stakeholders' attitudes to involuntary resettlement in the context of the Ilisu Dam Project, Turkey," Report prepared for the U.K. government by an independent expert in resettlement and social development (22 December 2000). Available at: www.ecgd.gov.uk/downloads/ILISUfinal.pdf
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344. Green Cross International (2000), p. 95.
345. A. K. Biswas, *International waters of the Middle East: From Euphrates-Tigris to Nile* (Bombay; New York: Oxford University Press, 1994), p. 53.
346. A. Darwish (1998), p. 2.
347. "Inventory of Conflict and Environment Case Studies: Tigris-Euphrates River Dispute," Trade and Environment Database (2002). Available at: <http://www.american.edu/ted/ice.tigris.htm>
348. A. Darwish (1998), p. 2.
349. *Ibid.*
350. F. M. Fisher and H. Askari, "Optimal Water Management in the Middle East and Other Regions", *Finance and Development* (a quarterly magazine of the IMF) 38(3) (September 2001). Available at: <http://www.imf.org/external/pubs/ft/fandd/2001/09/fisher.htm>