REGIONAL COOPERATION, AND THE ROLE OF INTERNATIONAL ORGANIZATIONS AND REGIONAL INTEGRATION

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NON-TECHNICAL SUMMARY

This paper examines the issue of regional cooperation among neighboring countries in the area of regional public goods. This public goods include water basins (e.g., lakes, rivers, underground water), infrastructure (e.g., roads, railways, dams), energy and the environment. The analysis focuses on developing countries and the potentially beneficial role that international organizations and regional integration may play in bringing the relevant countries to a cooperative equilibrium.

A major problem in reaching a cooperative solution is likely to be the lack of trust. If neighboring countries, because of past problems, do not trust each other, they may fail to reach a cooperative solution, with each trying to maximize its gain from the regional public good and losing because of the spillover effects which are not taken into account in the decisions of the various parties. Other constraints on reaching a cooperative solution are its complexity and the financial requirements.

Two types of institutions may help resolve some or all of these problems. International organizations can help with trust, expertise and financing. The UN and the World Bank have been involved in a number of such projects in Asia, Africa and elsewhere and have been successful in helping the parties reach cooperative solutions. Regional integration agreements, though not necessary for regional cooperation, may be helpful by embedding the negotiations on

regional cooperation in a broader institutional framework. These issues are examined in this paper with the support of both analysis and a number of case studies.

REGIONAL COOPERATION, AND THE ROLE OF INTERNATIONAL ORGANIZATIONS AND REGIONAL INTEGRATION

Countries can benefit greatly from cooperation when they share common resources such as rivers, fishing grounds, hydroelectric power, rail connections or the environment. In the presence of economies of scale or inter-country externalities, market solutions are generally sub-optimal, and failing to cooperate can be very costly. However, regional cooperation is not the same as regional integration, and, indeed, there is generally rather little connection between them.

Finding equitable ways to share the burdens and benefits of regional cooperation can be difficult. First, countries are sometimes unwilling to cooperate because of national pride, political tensions, lack of trust, high coordination costs among a large number of countries, or the asymmetric distribution of costs and benefits. Second, there are strong incentives to behave strategically in one-off negotiations. Countries that are dissatisfied with the potential distribution of benefits may withhold their agreement on a particular issue. They can increase the credibility of their threatened veto by making investments that would be useful if the agreement were not implemented. This is inefficient if the investments are made, exploitative if the other partners concede their demands, or destructive of cooperation if they do not. Third, international and regional cooperation agreements are typically harder to achieve than national ones because, given the absence of courts or higher authorities to which to appeal, the enforcement of property rights is ambiguous and weak at the international level. As a result, international agreements must

be self-enforcing, which, in turn, reduces the set of feasible cooperative solutions, possibly to nothing.

Of course, solutions can frequently be found despite these difficulties, but at least two types of agency can help to resolve them and so increase the set of feasible solutions from which countries can choose. First, international organizations – such as the World Bank – have often helped achieve agreements that might not have been possible otherwise. They can use their credibility, technical expertise, broader perspective, neutrality and financial resources to broker and enforce deals outside the set that is feasible for the countries acting alone.

Second, RIAs can be a help in cooperating on non-trade issues. To be implemented effectively, cooperation agreements usually need specialized institutions, including mechanisms to enforce the provisions, to deal with disputes on how to share benefits, and to deal with changes in situations that require the renegotiation of agreements. While the institutional framework can be tailor-made for each agreement, a wider set-up shared by a whole set of agreements could be both cheaper and more effective. Also, the ties of collaboration and frequent interactions at policy-level provided by some RIAs generate practice in shared problem solving and can raise the degree of trust among the parties. Moreover, RIAs can also help by putting more issues on the table and embedding them in a wider agreement, which both lowers the size of the compensatory transfers required to get agreement on particular issues and makes enforcement more effective. This last case is basically the only intersection between regional cooperation and regional integration, and it can be inferred that, although assisting cooperation may add to the benefits of forming an RIA, only very rarely will it be the principal motivation.

Two important illustrations of the potential for regional cooperation in which partial cooperation has been achieved but full cooperation proved impossible are:

- Egypt and Sudan who ignored upstream users in their 1959 bilateral agreement and allocated the Nile's total flow of water to themselves—even though cooperating with the other riparians could have generated more irrigation water and electric power; and
- The Indus River Basin, where intervention—backed with financial assistance—by the international community helped India and Pakistan draw up a plan to share the waters, although continuing tension has so far prevented them from undertaking the joint developments that could provide additional benefits for both countries.

In fact, international water resources – where externalities are pervasive, property rights are contested, and gains from cooperation can be very substantial – are the most common subject of international cooperation agreements. More than 280 international treaties have been signed on water issues, two thirds in Europe and North America. Without cooperation, lakes, rivers and seas are vulnerable to the "tragedy of the commons" in which each user tries to maximize its own benefits from a resource without paying attention to the effects on other users. This leads to overexploitation—to depleted fish stocks, pollution or lower water levels—that harms all users.

River basins are also, however, sources of continuing international tension: upstream water use, pollution, deforestation or over-fishing can lower the quantity and quality of water and fishing downstream. Often, up- and downstream countries can both benefit directly from

cooperation – i.e. compensation is not necessary for either party to show a positive return. For example, building a dam can help to regulate water flows downstream, reducing the likelihood of flooding or siltation. A dam might not provide the upstream country enough direct benefits to justify its construction, but that might change if it could sell electricity or irrigation water to the downstream neighbor. Similarly, an upstream country might benefit from—and may help to finance through investment or user fees—downstream port facilities.

This paper makes many of its main points by reference to water issues, but we also consider briefly two other areas in which cooperation can benefit all parties – pollution control and transport. Pollution pays no attention to national boundaries; once it crosses them amelioration usually requires that all the affected countries work in concert. Transport cooperation ranges from agreeing to global air transport standards and rules under the International Civil Aviation Organization to bilateral cooperation to provide rail, road, and water corridors to landlocked countries.

1 Making International Cooperation Work: Multilateral Agencies Can Help

Unbalanced costs and benefits, and the frequent need for lumpy front-end investments can make it difficult to reach cooperative agreements. Whether the gains from cooperation are reciprocal or not, international cooperation agreements must be self-enforcing, usually in isolation, but occasionally as part of a broader package. Countries will join in an agreement only

if they obtain positive gains, and probably also only if they feel they will get fair shares of the overall gains. These are essentially questions of expectations.

1.1 Trust is better than Punishment if you can create it

One basis of expectation is a country's ability to punish its partner if the latter defects from an agreement. Such a strategy can enforce an agreement that provides greater benefits to each partner than either could get by first defecting and then bearing the punishment that the other imposed. The success of such strategies clearly depends on a host of technical issues specific to each particular case, but economically we know that cooperation will be more likely the more patient countries are (the more they value future benefits relative to the short-run gains from defection) and the more credible the punishment strategies. The last, in turn, requires that *after a defection* the other party does not suffer too much itself from imposing punishment rather than merely accepting the sinner back into the fold and resuming cooperation. Unfortunately, many projects yield almost nothing if there is not full cooperation, so unless the punishing-state is willing to effect punishment in other spheres of interaction, there is rather little it can do to hurt the defector. If both parties are in this situation, it is clear that punishment strategies do not provide the means for independent self-enforcement, and countries find themselves in a so-called *prisoners' dilemma*.

Punishment generally becomes more difficult to effect the more parties there are to an agreement. Other than when there is a hegemon – a powerful country willing to bear the burden of enforcement on other smaller countries – a free-rider problem can arise. Each state hopes that, in the event of defection, the others will bear the cost of imposing the punishment, while it

continues to operate normally. A potential defector that detects this problem among its partners will place a correspondingly lower probability on being effectively disciplined.

These strategic problems do not merely afflict agreements once they are in place but pervade the negotiation phase. Each partner makes an assessment of the likely enforcement problems, and will decline to join an agreement that it considers flawed in that respect. Even where a country is willing to proceed with an agreement because it believes enforcement is feasible, it will be tempted to 'play games' during negotiation. An important example of this is making – or threatening to make – investments that increase the value of the 'outside option' – i.e. that improve the country's welfare if there is no agreement. Barrett (1994) shows how, by means of such a strategy, British Columbia extracted better terms from the USA in the Columbia River Agreement. Late in the negotiations, indeed after the Canadian and US federal governments had agreed on terms, the provincial government of British Columbia threatened to build an alternative project. This led the US government to renegotiate the agreement and offer better conditions to Canada, and hence to British Columbia.

While it worked in this case, such opportunism can frequently be very costly. If the alternative projects are built, the partners are left either with no agreement and a second-best solution to the problem or an agreement plus redundant investment. On the other hand, if the alternative projects are not built and the other partners concede the aggressor's demands, we get efficiency in an allocative sense (no wasteful activities are undertaken), but the seeds of future frictions. Even though it is reasonable to expect countries with better outside options to

do better in a negotiation, naked opportunism sours relations and makes future cooperation more difficult.

The alternative to explicit punishment strategies is trust.[1] Agreements often involve transfers among the cooperating countries, and without them one or more may lose compared to the non-cooperative situation—or feel that its benefits are unfairly small compared to those obtained by its partners. In most cases, there are no courts or other authorities to which countries can appeal, so those that stand to lose (or feel they are treated unfairly) in the absence of compensation are unlikely to enter an agreement unless they are quite sure that they will be compensated. Countries sharing a resource may all be willing to cooperate and share the gains from cooperation equitably, but if they believe their potential partners are not, they are unlikely to reach a cooperative solution. This failure to cooperate is not due to an unwillingness to share, but to an unwillingness to trust. Solving this problem requires a credible mechanism for ensuring that future transfers the countries agreed on are actually forthcoming.

Box 1 Institutions for Regional Cooperation: The US-Canada Water Commission

The US-Canada International Joint Commission is widely seen as successful in trans-boundary water management: it implements the Boundary Waters Treaty signed between the US and Canada in 1909. Nearly all the cases referred to the IJC have been resolved *unanimously*.

[1] One can debate whether trust is merely a generalized punishment strategy defined over many issues with tolerant trigger points before punishment is imposed. We shall merely assume that it has some independent existence.

The US and Canada share more than 150 bodies of water along their 8,000-km long border, including the Columbia River and the Great Lakes. Extensive industrialization in the Great Lakes region has led to serious pollution of the US-Canadian waters.

The two governments originally intended IJC to focus on regulating water supplies on either side of the border, but today it coordinates cooperation on water pollution in boundary waters and trans-boundary rivers, on air pollution, and apportions water flows and levels (to ensure navigation).

The IJC is an independent body, seldom divided along national lines even early in its existence. It operates by majority rule. It is has six non-tenured commissioners, three appointed by each country. It also depends heavily on an extensive network of advisory boards, task forces, and working groups whose members are borrowed from federal, state, and provincial government agencies. Other advisors come from academia, industry, and environmental organizations. These advisory councils do not receive any instructions from national government agencies, and their members do represent their home institutions. Canada and United States share all joint expenses of the IJC, including providing the financial, scientific, and engineering resources required by these groups.

Reaching well beyond its initial quasi-judicial role, the IJC is a science-based institution that expends much effort on scientific investigations, most of which involve environmental concerns. The commission's members know that its credibility depends on the strict application of technical standards. In addition to its reputation for impartiality, political sensitivity has also contributed to the IJC's continued effectiveness as an advisor to the two governments. In its

role as watchdog over the Great Lakes Water Quality Agreement, the IJC has sternly criticized the American and the Canadian governments for their lack of progress while being careful not to cross the line into environmental advocacy, which could erode its influence. The expansion of IJC's role beyond its initial mandate is perceived to have helped Canada and the US deal with various parts of their trans-boundary problems.

Trust is probably most important in situations where some partners expect to lose. This was the case with the development of the waters of the Nile: Egypt and Sudan's unwillingness to trust Ethiopia to deliver the electricity and water that would make the efficient solution acceptable to them led them to pursue a second-best solution – building the Aswan High Dam (Box 2). They were able to agree to the latter jointly partly because they were on better terms politically – for example, both are Moslem, and Sudan supported Egypt in its conflict with Israel – and partly because the Aswan solution naturally delivered positive returns to both countries

Trust is possibly somewhat less important when there are reciprocal externalities, i.e., when all participants gain from cooperation, and transfers are not needed to guarantee positive returns. Then agreements are self-enforcing. This seems more likely where countries confront the problem relatively symmetrically, for example where they share a lake rather than being located along a river course, and where inaction imposes costs on all countries.

Institutions to Foster Trust

It seems obvious that anything that can foster trust in international agreements is likely to be pretty valuable because it will enlarge the set of feasible alternatives. Joint institutions to study the costs and benefits of cooperation and examine potential cooperative solutions have often proved helpful in providing transparency and increasing trust. Ideally, such institutions should be made up of independent experts from all the countries involved. Even if they are limited to economic analysis to quantify the costs and benefits for all parties, they can be important in moving the consultative process forward and developing a shared vision as the basis for a program of cooperation. The US-Canada International Joint Commission (IJC) is such an institution, and has been successful in regional water management (Box 1). One of the lessons for countries seeking to emulate it is to do nothing to undermine its independence through, for example, trying to influence its decisions for short-term gain or make unsuitable appointments. This is not necessarily an easy prescription to follow, particularly if the governments themselves are insecure or constitutional institutions are fragile.

International organizations can also participate in, or help create, institutions to foster trust. International water bodies require integrated management. Basin states and organizations in developing regions may not have the capacity to develop and manage their own shared water resources. They may lack information, expertise, or the financial capacity to follow through with planning and operations. External assistance and encouragement can be valuable, and sometimes essential, ingredients in establishing international water agreements. The international community has often provided technical and financial support to identify the benefits available from cooperation and draw up mechanisms for sharing costs fairly. Moreover, the international

community may be willing to provide financial aid for regional cooperation that might not be available in the absence of cooperation. The authority, neutrality, expertise and global experience of the World Bank and UN agencies have allowed them to take a leading role in this process, aided, of course, by their ability to mobilize financial support. Several examples of such contributions are discussed in the rest of this section.

Box 2 The Costs of Non-Cooperation along the Nile

The 10 countries lying along the banks of the Blue and White Niles – which include seven of the ten poorest countries in the world – gain hundreds of millions of dollars worth of water by cooperating*. But under a 1959 treaty, which included the building of the Aswan High Dam, Egypt and Sudan allocated the total yearly flow of the two rivers (averaging 84 billion cubic meters) to themselves.

But building dams upstream along Ethiopia's Blue Nile — where rocky mountain soils and narrow gorges would reduce seepage and evaporation by 50% — would have increased the available water by an estimated 6 billion cubic meters or more. As the shadow price of water in the Middle East is estimated at $0.10/cubic meter (Fisher et al. 1996), this cooperation would have been worth $600 million p.a. to Ethiopia and its downstream neighbors. Such co-operation would have also allowed elimination of the antiquated Jebel Auria reservoir on the White Nile (that serves mostly for hydropower), further reducing evaporation losses. And the water stored in Ethiopia could also have been used to generate three times more hydropower than produced by the Aswan Dam. While this is far beyond Ethiopia's needs for the foreseeable future, the excess power could have been sold to meet the needs of Egypt and Sudan.

The problems with reaching a cooperative solution included the unbalanced distribution of benefits and costs, with Ethiopia gaining US$ 1.2 billion and Egypt and Sudan both losing US$ 300 million, and Egypt and Sudan's dependency on water supply from Ethiopia. This asymmetry could clearly have been addressed by transfers leaving net gains all year round, but Egypt and Sudan did not seem to trust Ethiopia to make appropriate transfers and/or water deliveries in the future. Egypt and Sudan, on the other hand, were traditionally close (religiously and politically) and thus found it easier to agree between themselves.

* The countries of the Western or White Nile are Burundi, Democratic Republic of Congo, Kenya, Rwanda, Tanzania and Uganda; those of the Eastern or Blue Nile are Eritrea and Ethiopia. Sudan and Egypt receive water from both sources.

1.2 Water Basins

There is a compelling case for cooperation among riparian countries sharing major water basins. More than 200 river basins covering more than 50% of the earth's land area are shared by at least two countries. With the rapid population and economic growth of recent decades, water use conflicts are becoming more important; a quarter of the world's population is expected to face severe water scarcity in the next 25 years, even during years of average rainfall (Serageldin, 1998). The Nile River basin, located in an area of acute water shortage and connecting some of the world's poorest countries, is a telling example of the losses arising from a lack of cooperation (Box 2).

But cooperation in sharing water resources across national borders is often difficult. Property rights, even within nations, are often unclear or contested. The situation is even more fraught with difficulties when sovereign nations contest those rights and the direct benefits from developing resources are unbalanced. All these factors constrain the set of cooperative market solutions, and make it less likely that the solution which maximizes the sum of the benefits for all the countries involved can be achieved. These are precisely the types of situations where international organizations can play a vital role in helping the countries concerned reach a cooperative solution.

International law offers potential water basin cooperators at least four—conflicting—bases for negotiating each country's right to use, abstract, or pollute its sovereign section of a water basin. Upstream countries—quite understandably—prefer the principle of "unlimited (absolute) territorial sovereignty," which allows them to pollute, over-fish or change the course of the river without regard to the effects on the quantity or quality of water or fish downstream. The doctrine of "unlimited territorial integrity," preferred by downstream countries, states that the river belongs equally to all riparians, and that upstream countries may not do anything to affect the river's water downstream. A third legal doctrine, "prior appropriation," gives water rights to the entity that is the first (in time) to use them. And a fourth, "reasonable share" or "equitable use" criterion, favored by the UN's International Law Commission, expresses respect for a riparian country's sovereign rights within its territory, but requires it to ensure reasonable shares for other users.

An example of successful international cooperation concerns the Rhine. Some 40% of the salt pollution of the Rhine came from a single potash mine in Alsace, which was hurting Dutch agriculture downstream. The solution entailed funding from the French, the Germans, the Dutch and the Swiss. The upstream Swiss had nothing to gain directly, but, given the fact that the Rhine runs through their country, they decided—based on the principle of "solidarity" as defined by the OECD Principles of Transfrontier Pollution—that it was worth contributing to the costs of the cooperative solution. There seems little doubt that cooperation is easier when the partners are richer and more stable than otherwise, and possibly that democracy helps as well. In part this greater ease might reflect the higher value that richer countries place on environmental cleanliness in general, but more likely it stems from the longer time horizons that stability induces, the generalized trust between similar nations, and the greater sophistication of their dispute settlement traditions in general. In addition, three of the four countries belong to a RIA where cost of failure is likely to be higher since it is likely to affect ability to successfully negotiate other deals or trust existing deals.

Sponsoring Successful Cooperation.

As stated earlier, in many cases countries sometimes need external help to reach agreements. International agencies have frequently provided the expertise, financing, and broader viewpoints needed to make bilateral water basin cooperation work. In the Aral Sea Basin, solving the problem of river water diversion and extreme environmental degradation would not have been possible without their support. The Aral Sea Basin extends over 690,000 km^2 in the five Central Asian republics of Kazakhstan, Kyrghyz Republic, Tadjikistan,

Turkmenistan, and Uzbekistan. The basin is formed by the Amu and Syr rivers, two of the largest in Central Asia, and has three distinct ecological zones: the mountains, the deserts, and the Aral Sea with its deltas.

The Aral Sea was once the world's fourth largest inland lake, covering 68,000 km^2. Today it is a saline lake, with less than half its 1960 surface area due to nearly total diversion of Amu and Syr river flows for irrigation. The draining of the sea, destruction of its ecosystems, and pollution of surface and groundwater due to inefficient irrigation, inadequate drainage, and excessive use of chemicals on cotton and rice crops, have caused serious environmental and health problems.

UNEP began working on environmental issues in the Aral Sea basin in 1989, and issued an action plan in 1992. A World Bank mission later that year recommended stabilizing the environment of the sea, rehabilitating the disaster zone around it, undertaking comprehensive management of its waters, and building regional institutions to carry out these programs. The five riparian states agreed to joint cooperative management of the Aral Sea's resources, and signed an intergovernmental agreement in February 1993.

The World Bank, UNEP, and UNDP organized a seminar in Washington in April 1993 to mobilize donor support. A program for donor financing was prepared, and the republics established three regional organizations—the Interstate Council, the International Fund for Aral Sea, and the Executive Committee. A donor's meeting was held in May 1994 in Paris at which both bilateral and multilateral money was contributed. The republics then took a major step to resolve one of the most crucial problems in the region—jointly managing the water resources—

by establishing the Inter-Disciplinary Coordinating Water Management Commission, which directly manages water resources. The Commission—selected from the leaders of each country's water management bodies—draws up yearly water consumption shares for each of the states and the entire region. It has two working executive and control bodies, the Syr Darya and Amu Darya Water Management Associations, which are funded jointly by all five states.

While it is clearly too early to be sure, this approach to rehabilitating the Aral Sea looks as if it is working well. As a result of the Management Commission's efforts, flow discharge to the Aral Sea rose by more than 160% in the very first year (Kipshakbaev, 1993).

International sponsorship is particularly necessary when the countries that share a resource are less than friendly. The international community brought Thailand and Laos together to share the hydropower resources of Laos' Nam Ngum River—a Mekong River tributary—despite poor relations and mistrust between the two countries. As far as institution building was concerned, the Mekong Secretariat, which was established in response to international pressure, provided a forum in which Laos and Thailand were able to agree to develop the river's hydro potential. The UNDP and Japan financed a feasibility study and the project was built with grants from Australia, Canada, Denmark, France, Japan, the Netherlands, New Zealand and the United States. The World Bank administered the funds and supervised implementation. Most of the power output was intended for use in Thailand because demand in Laos is very limited. The project proved to be financially viable despite charging low tariffs: it provided cheap power to Thailand and an opportunity for Laos to earn substantial foreign exchange (Kirmani and IWRA 1990).

The international community also helped overcome seemingly intractable problems between India and Pakistan over the waters of the Indus River. India and Pakistan were unable to agree on a division of the Indus River Basin waters after the 1947 partition, and tensions between them rose a year later when India diverted water needed to feed Pakistan's irrigation system. In the early 1950s the World Bank – aware that the wide gap between the positions of the two precluded the joint development and use of water resources of the river basin as a single unit – offered help to resolve the dispute. In 1954, the Bank proposed a solution based on dividing the Indus and its five tributaries. The proposal allocated the three eastern rivers (Ravi, Beas and Sutlej) to India and the three western rivers (Indus, Jhelum and Chenub) to Pakistan; a system of canals was to transfer surplus water from the western rivers to compensate Pakistan for the net loss of access that the scheme entailed. India was asked to pay the cost of replacement works.

But further studies showed that there was not enough surplus water in the western rivers to replace all irrigation uses on the eastern ones, so that storage dams would be required. The cost of the system of canals and storage dams was large, and India disputed the need for the latter.

The Bank recognized that it would be virtually impossible to resolve the dispute unless financing was made available for the huge cost of replacement works. Australia, Canada, Germany, New Zealand, United Kingdom, Italy and United States established the Indus Basin Development Fund to finance the works. Thus, after more than a decade of conflict, the September 1960 Indus Water Treaty divided the Indus river and its five tributaries. The Indus

Basin Development Fund was administered by the World Bank and the system of works was successfully completed by Pakistan within the 10-year transition period specified in the treaty. While India and Pakistan have implemented the treaty's provisions faithfully, greater trust would have permitted their cooperating on joint water development projects that would have benefited them even more.

1.3 Pollution: Facing Down the Cruise Lines

Sometimes cooperation is the only way to meet a problem. The Organization of Eastern Caribbean States[2] (OECS) states are small island economies with fragile ecosystems that depend on agriculture (mainly bananas and sugar) and tourism for the bulk of their foreign exchange earnings. The quality of the environment, and in particular the marine environment, is vital to their prosperity—and the Caribbean has come under increasing pressure from solid waste dumping on land and by ships at sea. Much of this solid waste washes up on the beaches, and threatens to damage the flourishing beach-based tourist industry. This debris also causes permanent damage to the unique and fragile coastal and marine ecosystems of the Caribbean Sea. The Cruise lines, however, which are among the worst offenders for ocean dumping, had warned the OECS governments that any island that imposed waste disposal charges would lose cruise-tourism because the lines would merely call at ports on different islands.

St. Lucia Prime Minister John Compton recognized that the OECS states needed solidarity to face down the cruise lines. In the early 1990s he brought the OECS secretariat

[2] Antigua and Barbuda, Grenada, St. Lucia, St. Vincent and Grenadines, Dominica, St. Kitts & Nevis, Anguilla, British Virgin Islands, and Montserrat.

together to draw up a joint plan to improve the waste management and disposal systems in all the islands, and equip the ports and harbors with facilities to handle ship-generated wastes. The secretariat turned to the World Bank and four other external donors for expertise and financing. Together they drew up a package of waste management investments for each island nation—totaling more than $50 million—backed by harmonized cost-recovery legislation.

The program had to withstand a last-ditch stand by the cruise lines, which tried again in 1997 to split the islands with threats of boycotts. The donors mediated the dispute—with what one participant described as "a bit of arm twisting"— and a $1.50 charge per cruise ship passenger was charged from May 1998. The charge extends to hotel guests, marina visitors, and other tourists—and will be used to pay for and operate solid waste facilities so that the OECS countries can meet their obligations under the 1972 International Convention for the Prevention of Pollution from Ships. The waste recovery program, which will be implemented by private contractors with the island governments falling back to a regulatory role, is expected to have an economic rate of return above 20%.

While this initiative called upon an existing regional body – the OECS – and its Secretariat, this was not sufficient to achieve a solution. Rather, external support – including, in the end, political support in facing down the industrial country-based cruise lines – was required. This suggests that the regional links established by the OECS, though necessary to achieve a solution, needed outside help to get the members to act cooperatively in this very critical area.

1.4.Cooperating on Transport: Essential for Land-locked Countries

Cooperation can also be vital in the transport sector. Symmetric externalities – which are much easier to overcome - arise when two comparable neighboring countries—such as Colombia and Venezuela, or Algeria and Morocco—build a road or railway from which both countries benefit. The externalities are asymmetric and thus much less tractable when the countries are not comparable, perhaps because of differences in size—such as with Brazil and Uruguay – or differences in need and/or outside options – such as with transport corridors for land-locked states. The gains from cooperation are likely to be large for a landlocked country[3] that needs a transport corridor as a lifeline to export and import its goods. Those for the littoral (coastal) country are typically smaller, although still positive because the corridor will enhance its access to the interior market. Thus, for example, if Spain and Portugal build a better road to facilitate Spanish Atlantic exports, Portugal may also use the road as a corridor to improve its trade with France and other parts of Europe. Similarly, while some Andean provinces of Argentina may find it cheaper to export their agricultural products through corridors to Chilean ports on the Pacific than to Argentinian ones on the Atlantic, the corridors also improve Chile's access to Argentine markets.

Although Bolivia is landlocked, it is less vulnerable to exploitation than most other such countries, because it has several realistic alternative routes to the sea. Its least-cost transport

[3] There are 27 landlocked countries in the world: 2 in South America (Bolivia and Paraguay); 8 in Asia (Afghanistan, Laos, Nepal, Bhutan, Mongolia, and the Kirghiz, Tajik and Uzbek Republics); 12 in Africa (Botswana, Zimbabwe, Zambia, Malawi, Chad, Central African Republic, Uganda, Rwanda, Burundi, Niger, Burkina Faso, and Mali); and 5 in Europe (Luxembourg, Switzerland, Austria, Hungary, and the Czech and Slovak Republics). In some cases (e.g. Paraguay and Switzerland) major navigable rivers offer some palliative to the costs of land-lockedness.

option depends on the location of production or consumption within the country. For La Paz, Arica in Chile is the least-cost port, while for minerals from the Potosi region, Antofagasta in Chile is; from Cochabamba, the Pacific and Atlantic ports are about equally costly to reach, while the Atlantic ports are cheaper to reach from Santa Cruz. Bolivia derives considerable security from its ability to trade through both the Atlantic and the Pacific, which increases its economic freedom and diminishes the threat of one of its neighboring countries imposing—for political or economic reasons—barriers on Bolivia's transit trade. It has sought to exploit this by cooperating on both sides to ensure the development or maintenance of routes to both oceans.[4]

The situation is much less sanguine in Africa. Almost a third of the Sub-Saharan countries are landlocked, and finding ways to facilitate transport to the outside world is very important to their development. The cooperation that this requires has frequently been complicated by border conflicts or internal strife in littoral countries. For example, internal hostilities, such as Mozambique's long-running insurrection required the countries in east and central Africa to negotiate longer and more expensive (and, thus, inefficient) routes to the sea. A 1994 World Bank review of 42 completed Sub-Saharan transport projects aimed at improving international transit between eight landlocked and seven coastal countries showed mixed outcomes that often reflected problems specific to least-developed countries. These included inadequate ports legislation, poor cost accounting for railways, and poorly organized highway agencies. Even in the case of a direct railway between their capitals, the Cote d'Ivoire and Burkina Faso governments were unable to manage facilities efficiently. Poor management,

[4] It has also been trying to obtain a land corridor with permanent access to the Pacific Ocean.

under-investment, declining reliability and excessive tariffs drove business from the railways to the already over-stretched and inadequate road system, and political mistrust between the governments eventually let to splitting the railway into two separate national companies, neither of which flourished. Rail operations on the Abidjan-Ouagadougou railway line were eventually privatized and have since turned around and at least approached profitability – Box 3.

Box 3 Marriage Beats Divorce: Sharing an African Railroad

For almost a century the jointly owned Abidjan-Ouagadougou railway has linked landlocked Burkina Faso—then called Upper Volta—to the sea 1,260 km. away through Cote d'Ivoire. After independence in 1960, the two countries merged the public rail companies on the Abidjan-Ouagadougou line and began trying to run a railroad together. In 1989 they gave up and split into separate state-owned companies because of critical financial difficulties and political differences.

Within three years both countries realized that marriage—cooperation—made more sense than divorce when trying to operate a shared resource. Dividing the railroad into two firms had only exacerbated inefficiencies, driving up costs and driving more and more long distance traffic from rail to road transport. But rather than simply remerging two public companies, the Burkinabe and Ivoirian governments decided to seek greater efficiency by turning the line over to a private concessionaire. The winning bidder—SITARAIL—was a consortium that joined two major regional freight forwarders, an international shipping line, and a railway engineering consulting firm.

The two governments liquidated their railway operating companies, replacing them with "railway landlord corporations" that own each country's tracks and rolling stock and other equipment, which they lease to SITARAIL. The latter is financially and technically responsible for operating and maintaining freight and passenger services. It also maintains the line's infrastructure, and manages the real estate owned by the landlord companies. SITARAIL sets its own rates. It pays its landlord companies a usage fee—varying from zero to 4% of its revenues—for the rail lines, and rental fees on the equipment it uses. It also pays the debt service for loans the governments or landlord agencies take on for rehabilitation investments.

Taking the enterprise out of the public sector helped substantially to de-politicise it and avoid the previous situation in which the railway had been a political football in a generally worsening atmosphere. A private company sets rates commercially rather than for policy objectives and immediately reduces or removes the concern that one government is trying to manipulate the other. With joint management and a degree of transparency, each side can see that it is being fairly treated. This is certainly a lesson that other developing countries could take to heart for managing transport corridors.

Merging the two operations also had strong business advantages. It enabled SITARAIL to cut the rail line's staffing by almost half—from 3,470 to 1,815—and achieve other efficiencies, including restructuring passenger services and dropping loss-making tasks. While the line experienced losses in its early years, these were lower than forecast, and freight traffic almost doubled in its first year of operation. The rail line stopped losing market share to road transport, and was expected to break even financially within a few years.

2 RIAs as an aid to Cooperation

Achieving cooperative outcomes is difficult at the best of times, and the existence of outside agencies and/or a broader framework in which to embed an agreement can both help the process along. This section examines whether tariff preferences or the other elements commonly associated with RIAs can facilitate regional cooperation, even if they are not strictly necessary for it to occur.

On several counts, it might be easier to conclude cooperative agreements among countries if they are members of RIAs. By increasing trade between member countries and the degree of contact and interaction between their policy makers, RIAs might foster greater trust (Schifff and Winters 1998). RIAs also provide ready-made institutions and embed cooperation agreements in a wider framework of cooperation, allowing--–as showed in Schiff and Winters (forthcoming, Chapter 6)-–both more trade-offs, which makes it easier for everyone to win, and permitting more effective punishment strategies if they are required. Through the former route RIAs help in distributing the benefits of efficiency-enhancing cooperation by putting more issues on the table; this eases compensation problems, because different countries are likely to benefit in different areas. Rather than compensation going in only one direction as when just one issue is under negotiation—and therefore being fiercely contested in principle or in amount—multi-subject arrangements tend to allow all countries to trade-off gains against losses, reducing or even removing the need for explicit compensatory transfers. However, while RIAs may assist the search for cooperative solutions to natural resource problems, they would rarely be justified

in these terms alone. Given the potential for distortion that trade preferences entail, the negotiating effort required to form an RIA would almost certainly be better spent directly on the resource issue at hand if that were all the RIA is intended for.

2.1 Regionalism has helped cooperation in Southern Africa and North America

One example where an RIA appears to have helped is in power cooperation in Southern Africa (Box 4). The key factor in this cooperation was the institutional base provided by the Southern African Development Community (SADC), which served as a focal point for promoting regional integration and facilitated investments in the needed inter-connection projects.

Box 4 Power Pooling in Southern Africa

The Southern African Power Pool (SAPP) was begun in 1995 to take advantage of the distribution of power sources in the region. The 12-country region (Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe) has a large reserve of low-cost hydroelectricity in its north (especially the Inga Reservoir), large reserves of cheap coal in South Africa, and the Kariba dam (on the Zambia/ Zimbabwe border) in the middle of the regional system, which can play the "buffer" role.

SAPP was the first formal international power pool outside of North America and Western Europe. The pool covers about 6 million square miles and 200 million people. While utilities in the region had been importing and exporting electricity for decades through bilateral

contracts, these were difficult and cumbersome to administer. The objective of shifting to the pool is to create a more efficient regional market. Though it is still embryonic, as trade volumes are only 3% of production, sector coordination and (perhaps) mutual trust among the 12 members and their utilities was growing as a result of the agreement.

SAPP is modeled on the "loose" pools in Western Europe and United States, which emphasize constant exchange of information to maximize the cost and reliability benefits from trading and system autonomy. Rather than relying on central dispatch, loose pools rely on long-term bilateral contracts drawn up with common designs and security standards plus some central services. Unlike in the developed world, SAPP-membership is limited to national utilities.

Each member must meet its Accredited Capacity Obligation, a requirement that each utility have capacity to cover its forecast monthly peak. Each member is also obliged to cover emergency energy up to six hours, to provide automatic generation control and other facilities in its control area, and to allow 'wheeling' through its system (i.e. transmission of sales between two other partners) where technically and economically feasible. SAPP includes most Southern African Development Community (SADC) members and is predicated on the latter's institutions, including the SADC Treaty, the SADC Dispute Resolution Tribunal, the SADC energy ministers, and the Technical and Administrative Unit. The energy ministers are responsible for resolving major policy issues and the Technical and Administrative Unit for seeking funding according to recommendations of the executive committee.

The pool's potential benefits include reducing or postponing new requirements for generating capacity and reserves, lower fuel costs, and more efficient use of hydroelectricity. A

SADC electric power study conducted in 1990-92 estimated a saving of 20% ($785 million) in costs over 1995-2010.

Three factors were keys to the development of the regional agreement: the availability of complementary power sources, an active regional organization for economic cooperation, and the political will to support increased regional energy trade. SADC and its predecessor, the Southern African Development Coordination Conference served as focal points for promoting regional integration facilitating investments in the needed interconnection projects.

NAFTA has also fostered regional cooperation on the environment by tying essentially extraneous environmental issues to the trade and investment deal. This link helped to create the necessary political support for NAFTA in the USA and encouraged the Mexicans to move further on the environment than they may have done independently in order to close the deal. The North American Agreement on Environmental Cooperation (NAAEC) was signed as one of the side agreements appended to NAFTA at the last moment. It created the Commission for Environmental Cooperation (CEC) in Montreal in early 1994 to carry out the provisions of the agreement. The CEC has a young but growing conservation portfolio, focused mainly on protecting habitats and species. A broad program of cooperation to protect North American birds is in place, aiming to identify important bird areas across the three member countries and tie them into a protected network. A Biodiversity Information Network is under creation, and strategies are being developed for cooperation in protecting marine and coastal ecosystems. The CEC has also coordinated measures to protect the monarch butterfly. Currently, there is an

active task force working to stop smuggling of endangered species. Under the program, US Fish and Wildlife officers are training Mexican officers.

There are also many examples of cooperation on the management of adjacent protected areas in the border region between the United States and Canada – for example, Glacier National Park and its northern neighbor Waterton Lakes National Park. And in May 1997, the USA and Mexico signed a letter of intent to cooperate on adjacent parks in their border region. Whether NAFTA was necessary to Canadian-US co-operation is rather doubtful – after all, these two countries had already created a role-model for cross-border cooperation in the form of the International Joint Commission for water resources (Box 1). However, it presumably did not harm and NAFTA has quite probably helped on the USA's southern border.

Where spillover relationships are potentially exploitative, embedding them in a wider agreement such as a RIA can be beneficial, especially if the bloc includes dispute settlement capability. For instance, the fact that France, Germany and the Netherlands belong to the EU, that they built trust through past cooperation, and that continued and expanded cooperation is valuable to them, may have helped in resolving the problem of Rhine pollution – see above. On the other hand, the role of the Swiss – who are not members of the EU – in helping to resolve this case suggests that the answer lies more in democracy, stability, long time horizons and repeated interactions than to preferences *per se*, although, of course, forty years of integration may have helped to foster these dimensions as well.

2.2 Transportation Infrastructure does not necessarily need boosting when an RIA is signed

There is a common perception that forming an RIA needs to be accompanied by additional expenditure on intra-RIA infrastructure. This is perfectly possible, but is, perhaps surprisingly, not inevitable. Increased investment in regional transport infrastructure may be unjustified because the increase in regional trade may be the result of trade diversion and facilitating this by reducing its costs could just increase its economic burden. Specifically, in considering an infra-structure project, the prices at which costs and benefits are evaluated should reflect world prices, not those internal to the RIA that are distorted by members' external tariffs (Box 5 provides an illustration).

Box 5 Infrastructure Investment in RIAs

Increases in intra-bloc trade volumes within RIAs do not necessarily imply that investment in regional transport projects is desirable. Suppose two members of a small RIA whose intra-bloc trade has increased are considering cooperation on transport infrastructure. How should such programs be evaluated compared to the alternative of each country developing its infrastructure for trading with the rest of the world? Say each country imports a good from the rest of the world at price 100 and applies a tariff of 20. These imports fix the internal price at 120, but because there is no tariff on intra-bloc trade, this is the price actually received by producers on intra-bloc trade. Hence, any unit of intra-bloc trade (at 120) will seem 20% more valuable than trade with the rest of the world (at 100), and that will make infrastructure for intra-bloc trade seem more attractive.

In fact intra-bloc trade-enhancing and extra-bloc trade-enhancing projects should be assessed using the same value for the same goods traded. Using different values is likely to

result in the wrong investment and in exacerbating whatever trade diversion may have already taken place. Moreover, using the post-RIA volumes of trade for assessing the alternative projects will also bias the decision, as these volumes are also likely to be affected by trade diversion.

Bond (1997) provides a specific illustration of this argument. Suppose transportation infrastructure is the responsibility of the Transport Ministry, which takes trade policy as a given in making its assessments of the returns to investment. When there are tariffs, any trade that does take place creates economic welfare not only by facilitating consumption of the imported goods but by raising government revenue as well. Thus a well-informed and well-meaning Ministry will seek to boost trade by investing more heavily in infrastructure than if only the consumption benefits mattered. When tariffs are removed on trade with partner countries, trade is likely to grow and there will be more pressure on, and hence higher marginal cost from using, regional transportation infrastructure. This gravitates towards investing more on 'intra-bloc' infrastructure. However, pushing the other way is the fact that, although there is more of it, the marginal unit of trade is worth less because it no longer generates tariff revenue, and so there is less case for using infrastructure to boost it. Bond shows that the balance between these two forces can be positive or negative according to quite subtle parameters of the demand for goods. In particular, he shows that if demand curves are linear, the two forces cancel out, so that if transportation spending was rationally chosen prior to the RIA, the RIA creates no presumption that it should be increased for intra-bloc trade.

These are not all-or-nothing decisions but rather decisions about where additional investments should be made. They are especially relevant for RIAs with coastal member countries where trade with the rest of the world is typically by sea while intra-bloc trade is mainly by land. In essence, ports are outward looking, while roads and bridges to partners are inward looking.

Conclusion

This paper examined the issue of cooperation among neighboring countries in regional public goods such as water basins, infrastructure, energy and the environment. Based on theory and evidence from a number of cases, the paper showed that international organizations can help generate cooperative outcomes by facilitating the solution to problems of trust, financing and expertise; and regional integration agreements may also be helpful by embedding the negotiations on regional cooperation in a broader institutional framework.

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