

ADVERSARIES INTO PARTNERS: INTERNATIONAL WATER LAW AND THE EQUITABLE SHARING OF DOWNSTREAM BENEFITS

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[This paper first reviews the role of international law in the governance of international watercourses, including the role of the principle of equitable utilisation. Discussion then turns to a suggested logical corollary to the principle of equitable utilisation: a principle of equitable sharing of downstream benefits. The situation with regard to the equitable sharing of downstream benefits on the Columbia River is discussed together with other examples. Consideration follows of the possible application of the principle of equitable sharing of downstream benefits to help resolve conflict in other international watercourses including the Karnali and the Mekong. The paper concludes that there is a role for an emerging principle of equitable sharing of downstream benefits in helping to turn historical adversaries into partners.]

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I INTRODUCTION

There are currently at least 250 international watercourses in the world shared between two or more sovereign nations.¹ In many of these sovereign nations

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¹ The two best known international legal instruments dealing with shared watercourses are the *United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses*, opened for signature 21 May 1997, 36 ILM 700 (1997) (not yet in force) ('*UN Watercourses Convention*') and the Committee on the Uses of the Waters of International Rivers, International Law Association, *Helsinki Rules on the Uses of the Waters of International Rivers and Comments* (1966) ('*Helsinki Rules*'). They use slightly different terminology. The *UN Watercourses Convention*, in art 2, defines a 'watercourse' as

water resource development is considered a critically important vehicle both to help alleviate poverty and to stimulate economic growth.² Many of these nations also wish to obtain economic benefits, including those from flood control, irrigation and hydropower development activities.³ This paper has three objectives. The first is to review briefly the development of the fundamental international water law principle of 'equitable utilisation'. The second objective is to identify and review a suggested logical corollary to the principle of equitable utilisation, namely an emerging principle of equitable sharing of downstream benefits, by considering experiences in relation to the Columbia River and elsewhere. The third objective is to apply the principle of equitable sharing of downstream benefits to the Karnali (Nepal/India) and Mekong (China/Myanmar/Cambodia/Laos/Thailand/Vietnam) international watercourses, to assess the potential usefulness of the principle in assisting to resolve longstanding conflicts between upstream and downstream states, and in helping to turn historical adversaries into partners.

II INTERNATIONAL WATER LAW

International water law belongs to the field of public international law that deals primarily with the non-navigational uses of international watercourses.⁴ International law in general is composed of decisions about events that have effects on more than one state or entity, and provides expectations about how states are expected to behave in particular circumstances.⁵

The 'principle of equitable utilisation' is generally considered to be the fundamental principle of the law of the non-navigational uses of international

'a system of surface waters and ground waters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus' and an 'international watercourse' as 'a watercourse, parts of which are situated in different States'. Contrast with the *Helsinki Rules* which, in art 2, define an 'international drainage basin' as 'a geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus.'

² B Verghese et al (eds), *Converting Water into Wealth: Regional Cooperation in Harnessing the Eastern Himalayan Rivers* (1994) 13–14, 86–109.

³ *Ibid* 101.

⁴ The literature dealing with the non-navigational uses of international watercourses is voluminous. See, eg, Stephen McCaffrey, *The Law of International Watercourses: Non-Navigational Uses* (2001); Richard Paisley and Timothy McDaniels, 'International Water Law, Acceptable Pollution Risk and the Tatshenshini River' (1995) 35 *Natural Resources Journal* 111.

⁵ Article 38 of the *Statute of the International Court of Justice* is 'generally regarded as a complete statement of the sources of international law': Ian Brownlie, *Principles of Public International Law* (5th ed, 1998) 3. These sources include treaties, custom, general principles recognised by civilised nations, domestic judicial decisions and learned teachings. Article 38 also empowers the Court to exercise *ex aequo et bono* jurisdiction where the parties consent. For further discussion of the sources of international law, see Paisley and McDaniels, above n 4, 118; William Burke, *International Law of the Sea: Documents and Notes* (1997) xxiii.

watercourses.⁶ This principle is enshrined in both the *Helsinki Rules* and the *UN Watercourses Convention*.⁷

⁶ Charles Bourne, 'Fresh Water as a Scarce Resource' (Paper presented at a Panel Discussion at the Canadian Council on International Law Conference, October 1989), cited in Paisley and McDaniels, above n 4, 118–19, notes that prior to the emergence of the principle of equitable utilisation in the 1960s as the dominant undisputed principle of international water law there were three competing theories:

the first was territorial sovereignty; under it a state can do as it pleases with the water in its territory, ignoring the effect of its actions on neighboring states. Upstream states favored this view of the law. The second theory was riparian rights; the waters must be allowed to flow downstream substantially unchanged in quality and undiminished in quantity. Under it a downstream state in effect has a veto over any major utilization of the waters by upstream sites. Downstream states adhered to this view. The classic case was Pakistan's invocation of this principle in its dispute with India over the Indus River in the 1940s and 1950s. The third theory was prior appropriation; the first utilization has priority in law. In other words, existing uses must not be affected by subsequent developments. This principle seems reasonable until its implications are fully realized. Developments of an international river usually take place first near its mouth and gradually proceed upstream. Consequently when the upstream state later wishes to develop its part of the river, it is faced with substantial prior appropriations downstream. In substance this theory was used against Canada in the dispute with the United States about the development of the Columbia River.

According to Bourne, it was the imperfections of these theories which led eventually to the principle of equitable utilisation becoming the governing principle in international water law: at 3. For further discussion regarding equitable utilisation and its relationship to the 'no harm' principle, see Stephen McCaffrey, 'The UN Convention on the Law of Non-Navigational Uses of International Watercourses: Prospects and Pitfalls' in Salman Salman and Laurence Boisson de Chazourmes (eds), *International Watercourses: Enhancing Cooperation and Managing Conflict — Proceedings of a World Bank Seminar* (1998).

⁷ The statement of the principle of equitable utilisation in arts IV to VII of the *Helsinki Rules*, above n 1, is as follows:

Article IV

Each Basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin.

Article V

- I What is a reasonable and equitable share within the meaning of Article IV is to be determined in the light of all the relevant factors in each particular case.
- II Relevant factors which are to be considered include, but are not limited to:
- 1 The geography of the basin, including in particular the extent of the drainage area in the territory of each basin State;
 - 2 The hydrology of the basin, including in particular the contribution of water by each basin State;
 - 3 The climate affecting the basin;
 - 4 The past utilization of the waters of the basin, including in particular existing utilization;
 - 5 The economic and social needs of each basin State;
 - 6 The population dependent on the waters of the basin in each basin State;
 - 7 The comparative costs of alternative means of satisfying the economic and social needs of each basin State;
 - 8 The availability of other resources;
 - 9 The avoidance of unnecessary waste in the utilization of waters of the basin;
 - 10 The practicability of compensation to one or more of the co-basin States as a means of adjusting conflicts among uses; and
 - 11 The degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State.

...

III THE PRINCIPLE OF EQUITABLE UTILISATION

The principle of equitable utilisation requires states to act reasonably and equitably when dealing with transboundary water resources in their territory. It requires that the reasonableness of any utilisation is to be determined by weighing all relevant factors and by comparing the benefit that would follow from the utilisation with the injury it might inflict on the interests of another basin state.⁸

The genius of the principle of equitable utilisation lies in its flexibility because it prescribes a 'reasonableness' test for determining what is lawful or unlawful conduct in connection with international water resources.

The judgment of the International Court of Justice ('ICJ') in the *Gabčíkovo-Nagymaros Project*⁹ also supports the proposition that equitable utilisation is the basic governing principle of customary international water law.¹⁰ The facts of the dispute are relatively straightforward. In 1997 Hungary and Slovakia appeared before the ICJ in a dispute over the Danube River. Despite several attempts at peaceful settlement, the parties could not find a solution to issues involving the construction of a dam at Gabčíkovo-Nagymaros. Hungary refused to proceed with the project agreed to in an earlier bilateral agreement¹¹ on the grounds that the work would cause damage not foreseen at the time of the conclusion of the agreement. Slovakia reacted by diverting the Danube and implementing a 'provisional solution' aimed at providing for itself the benefits anticipated under the Nagymaros works. In their arguments before the ICJ, each side took opposing views on the principles of international law applicable to the development of the Danube. Hungary alleged that Slovakia had violated the rules of equitable utilisation and 'no-harm' by diverting the Danube and implementing

Article VI

A use of category of uses is not entitled to any inherent preference over any other use or category of uses.

Article VII

A basin State may not be denied the present reasonable use of the waters of an international drainage basin to reserve for a co-basin State a future use of such waters.

⁸ Ibid.

⁹ *Gabčíkovo-Nagymaros Project (Hungary v Slovakia) (Merits)* [1997] ICJ Rep 7.

¹⁰ According to McCaffrey, 'The UN Convention on the Law of Non-Navigational Uses of International Watercourses', above n 6, 20–2, the lack of mention of the 'no harm' principle in the decision suggests that the court viewed equitable utilisation as a more important rule than the no harm principle. See also, McCaffrey, *The Law of International Watercourses*, above n 4, 186–97. The literature on the Gabčíkovo-Nagymaros dispute is voluminous. See, eg, Aaron Schwabach, 'Diverting the Danube: The Gabčíkovo-Nagymaros Dispute and International Freshwater Law' (1996) 14 *Berkeley Journal of International Law* 290; Ida Bostian, 'Flushing the Danube: The World Court's Decision Concerning the Gabčíkovo Dam' (1998) 9 *Colorado Journal of International Environmental Law and Policy* 401; Aaron Schwabach, 'The United Nations Convention on the Law of Non-Navigational Uses of International Watercourses, Customary International Law, and the Interests of Developing Upper Riparians' (1998) 33 *Texas International Law Journal* 257.

¹¹ *Treaty between the Hungarian People's Republic and the Czechoslovak Socialist Republic Concerning the Construction and Operation of the Gabčíkovo-Nagymaros System of Locks*, opened for signature 16 September 1977, 1109 UNTS 235 (entered into force 30 June 1978).

a 'provisional solution'.¹² The ICJ rejected the no harm principle and ruled in favour of Slovakia. In the process, the ICJ reinforced the proposition that the principle of equitable utilisation continues to be the dominant principle of international water law.

IV THE COLUMBIA RIVER AND THE EQUITABLE SHARING OF DOWNSTREAM BENEFITS¹³

A good example of the principle of equitable utilisation in practice is the development of mutually beneficial treaties between Canada and the United States. These two countries share a 6400 kilometre boundary between the main portions of their provinces and states, and an additional 2400 kilometres between the Yukon Territory and Alaska.¹⁴ The Columbia River is just one of many international watercourses shared by Canada and the US where Canada is generally the upstream watercourse state and the US is generally the downstream watercourse state. Stretching 1952 kilometres, the Columbia River is the fourth largest river in North America and the Columbia River basin covers 640 000 square kilometres of territory in Canada and the US.¹⁵ In recognition of the importance of cooperating with regard to their many shared water resources, Canada and the US concluded an agreement in 1909, known as the *Boundary Waters Treaty*,¹⁶ which, among other things, established an entity called the

¹² Patricia Wouters, 'Editor's Foreword' in Patricia Wouters (ed), *International Water Law: Selected Writings of Professor Charles B Bourne* (1997) xvii–xviii.

¹³ The advice and assistance of Chris Sanderson QC of Lawson Lundell, Vancouver, Canada is gratefully acknowledged in regard to the matters discussed in this section. See also Chris Sanderson, *International Energy Exchange: The Columbia River Treaty* (1993); Charles Bourne, 'The Columbia River Controversy' (1959) 37 *Canadian Bar Review* 444.

¹⁴ See, eg, Aaron Wolf, 'Transboundary Waters: Sharing Benefits, Lessons Learned' (Draft Thematic Background Paper, International Conference on Freshwater, 2001) <http://www.water-2001.de/co_doc/transboundary_waters.pdf> at 23 September 2002.

¹⁵ Paul Pitzer, 'Annex 11: Negotiating the Columbia Basin Treaty, Draft Grand Coulee Dam and Columbia Basin Project Case Study' (Working Paper, World Commission on Dams, 1999) [A11–2] <http://www.dams.org/docs/studies/us/usfinaldraft_anx11.pdf> at 23 September 2002.

¹⁶ *Treaty between the United States and Great Britain Relating to Boundary Waters and Questions Arising between the United States and Canada*, opened for signature 11 January 1909, 23 UKTS 1910 (entered into force 5 May 1910). For a history of the *Boundary Waters Treaty*, see McCaffrey, *The Law of International Watercourses*, above n 4, 293–6. According to the official IJC website the IJC is composed of four commissioners. The President of the US, on the advice of the US Senate, appoints the American delegation, while the Governor-in-Council of Canada appoints the Canadian delegation. The commissioners must follow the Treaty. However, the commissioners are supposed to act impartially rather than simply represent their respective governments. This independence is confirmed by art XII of the Treaty, which requires commissioners to make a solemn declaration in writing that they will faithfully, and impartially, perform their duties under the Treaty. This independence is further established through immunity from judicial process for both the Commission and the commissioners in both countries. In addition, the Commission's decisions are not subject to appeal to the courts of either country. They can, in practice, be reversed only by an agreement between the two countries. The IJC has three main functions. First, the IJC can make binding decisions and appoint boards of control to oversee its decisions and recommendations with respect to 'new uses, obstructions or diversions of boundary waters in either country that affect the natural level or flow of waters in the other country, [as well as] the construction of any works, dams or other obstructions in rivers that flow from boundary waters, or rivers that flow across the border, if these projects will raise the natural level on the other side of the boundary in the upstream country.'

International Joint Commission ('IJC') to govern their relations. Prior to the inception of the IJC various ad hoc commissions, established to resolve water-related issues, were proving to be incapable of handling the growing water related disputes between the two countries.¹⁷ Even the International Waterways Commission, established in 1905, only dealt with issues on a case-by-case basis. As the two countries entered into negotiations to establish a permanent body to replace the International Waterways Commission, the tone of the discussions was informed by the concerns of each state. The issue of most concern to the US was sovereignty. The US, while realising the necessity of an agreement to manage transboundary waters, wanted to ensure that its political independence was not compromise in the process.¹⁸ This was expressed in the US position that absolute territorial sovereignty must be retained over the waters within each state's territory.¹⁹ It was the view of the US that tributaries should not be included in the new commission's authority. In contrast, Canada was interested in establishing an egalitarian relationship with the US.²⁰ Canada was hampered in its pursuit not only by the relative size and level of development of the two states at the time, but also because Canadian foreign policy was still the purview of the United Kingdom. Consequently, negotiations had to be carried out between Ottawa, Washington and London. Generally, however, Canada wanted a comprehensive agreement, which would include tributaries, and a commission with greater authority than former bodies.

The resulting *Boundary Waters Treaty* is thought to reflect to some extent the interests of each negotiating state.²¹ For example, for the purposes of the *Boundary Waters Treaty*, 'boundary waters' were defined as

the waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the US and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such

Second, the IJC can investigate and advise the governments on transboundary issues referred to it. The conclusions and recommendations brought forth from these fact-finding cases are not legally binding. Third, the IJC can act as an arbiter for disagreements jointly submitted to it. The US must have approval from the Senate to submit such a case. The IJC is guided by a number of principles such as: trying to maintain strict impartiality in the performance of its duties; seeking to achieve consensus wherever possible, both in its own deliberations and those of its boards or similar bodies; employing joint fact-finding as a foundation for building consensus and determining appropriate action; affording all parties interested in any matter before it a convenient opportunity to be heard and promote the engagement of state, provincial and municipal governments and other authorities in the resolution of these matters; in environmental matters, affirming the concept of sustainable development, the ecosystem approach, and the virtual elimination and zero discharge of persistent toxic substances, while emphasising the importance of a sound scientific basis for its conclusions and recommendations. The Commission also recognises that it may sometimes be necessary to adopt a precautionary approach and to act even in the absence of a scientific consensus where prudence is essential to protect the public welfare. See IJC Website (2002) <<http://www.ijc.org>> at 23 September 2002.

¹⁷ Wolf, above n 14, 32.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.²²

Pursuant to the *Boundary Waters Treaty*, each country reserved the right to control the use of waters within its jurisdiction while maintaining that boundary waters were subject to equal and similar rights.²³

The regulation and management of the Columbia River first began to receive serious consideration by the IJC in 1944.²⁴ According to Pitzer, it then took

[t]wenty years, from the mid 1940s through the mid 1960s, for the US and Canada to identify the best dam sites, calculate the benefits of storage, and negotiate allocation of the benefits from dams in British Columbia that would regulate the flow of the Columbia. Understanding the process that led to upstream storage in Canada requires a detailed look at complicated politics in both the US and Canada. The Boundary Waters Treaty of 1909 had created an International Joint Commission [IJC] and gave that body some jurisdiction over the streams that flowed between the two countries. IJC decisions were not binding, however, and had to be supported by treaties negotiated between the two countries. On 9 March 1944, the US government referred the matter of increased storage on the Columbia River to the IJC. The IJC, in turn, created the International Columbia River Engineering Board composed of two members from each country. The board set up an Engineering Committee and charged it with the task of obtaining data and analyzing the situation. Planners realized that increased reservoir storage in Canada would produce massive benefits in the US. Charles Stewart, Chairman of the US section of the IJC, stated in 1944, that no water would be backed up on either side of the border until everyone interested had been heard and that such action would not be for the sole benefit of 'Grand Coulee Dam and other downstream power sites.' With that in mind, the IJC and its boards and committees began determining the exact value of those benefits and the fairest way of crediting to Canada a reasonable share of the resulting wealth.²⁵

The extensive technical studies of the IJC continued until December 1959, when, at the request of Canada and the US, the IJC promulgated a set of principles intended to govern any sharing of benefits between Canada and the US which might arise as result of joint development of the Columbia River.²⁶

In making its various recommendations, the IJC was guided by the basic precept that its principles should result in both the equitable sharing of the

²² *Boundary Waters Treaty*, above n 16, preliminary art.

²³ A Dan Tarlock, 'International Water Allocation, Law of Water Rights and Resources' in A Dan Tarlock, *Law of Water Rights and Resources* (2001) §11–14. Should one country cause the other to suffer damage as a result of a water diversion etc, that country is entitled to the same rights as a resident of the offending country.

²⁴ For a more complete description of the *Columbia River Treaty*, below n 31, and its aftermath, see McCaffrey, *The Law of International Watercourses*, above n 4, 293–6. See also Ralph Johnson, 'Effect of Existing Uses on the Equitable Apportionment of International Rivers I: An American View' (1959) 1 *University of British Columbia Law Review* 389; Ralph Johnson, 'The Columbia Basin' in Albert Garretson (ed), *The Law of International Drainage Basins* (1967) 167; Bourne, 'The Columbia River Controversy', above n 13, 444.

²⁵ Pitzer, above n 15, [A11–2].

²⁶ IJC, *Report of the International Joint Commission on Principles for Determining and Apportioning Benefits from Cooperative Use of Storage Waters and Electrical Interconnection within the Columbia River System* (1959).

downstream benefits attributable to any cooperative undertakings that might take place, and an advantage to each country as compared to any alternatives that might be available to them. The IJC further stipulated that power benefits in the US from upstream storage in Canada should be shared on a substantially equal basis, provided that an equal split of benefits would result in an advantage to each country as compared to available alternatives. When an equal split would not result in an advantage to each country, the countries would then have to negotiate such other division of benefits as would be equitable to both countries and make cooperative development feasible.²⁷

The critical acknowledgment underlying the IJC stipulation was that an international project ought not to proceed unless both countries would benefit.²⁸ However, to the extent that a benefit occurred in one nation and costs were imposed in another, the solution was not to dispute whether the project should proceed, but rather to redistribute the benefits so that both countries obtained an interest in them.²⁹

Another important aspect of the IJC's recommended principles was that the focus was on gross benefits, which eliminated the difficulties of calculating net benefits.³⁰ Different countries necessarily assign different values to that which they view as important, and determining the net benefits and costs of a particular initiative will often be impossible. However, when both countries have at least the assurance that they are better off with rather than without an initiative, they are then in a better position to support that initiative.

Based on these principles, the parties were eventually able to negotiate the *Treaty Relating to Cooperative Development of the Water Resources of the Columbia River Basin* ('*Columbia River Treaty*').³¹ The *Columbia River Treaty* explicitly recognised that the construction and operation of three treaty projects in Canada would increase both the useable energy and dependable capacity of power plants in the US, as well as provide irrigation and flood control benefits in the US, all of which would not be possible at the same cost without the three treaty projects.³²

In return for building the three *Columbia River Treaty* projects in Canada, the Treaty specifically entitled Canada to a lump sum payment for various downstream (flood control) benefits, as well as one half of the additional power

²⁷ Ibid 49–50; see also Sanderson, above n 13, 10.

²⁸ Sanderson, above n 13, 28.

²⁹ Ibid.

³⁰ According to Pitzer, above n 15, [A11–10], the IJC spent considerable time and money unsuccessfully trying to factor respective costs into the sharing agreement for downstream benefits. This 'netting' approach proved to be exceedingly complex and difficult. However, enormous staff time was taken up before this was realised and the approach finally abandoned.

³¹ Opened for signature 17 January 1961, United States–Canada, 542 UNTS 244 (entered into force 16 September 1964); *Protocol to the Columbia River Treaty*, in Secretary Martin to Secretary Rusk, 'Annex to an Exchange of Notes Dated January 22, 1964 between the Governments of Canada and the United States Regarding the Columbia River Treaty' [1964] *Department of State Bulletin* 202. See also Pitzer, above 15, [A11–7]; Sanderson, above n 13, 18.

³² Sanderson, above n 13, 25.

generated by power plants in the US that resulted from storage across the border in Canada.³³

V DOWNSTREAM BENEFITS³⁴

The widely acknowledged situation with respect to the equitable sharing of downstream benefits of the Columbia River aptly illustrates both the existence of a principle of equitable sharing of downstream benefits and its practical application. However, the Columbia River example is not the only illustration of a suggested principle of equitable sharing of downstream benefits. There are a growing number of international agreements which provide for the return, either in kind or in monetary form, of a share of the benefits received in a state or states as a result of acts done in another state or states. Some examples include: the *Treaty of Peace with Germany (Treaty of Versailles)*;³⁵ the *Convention and Statute on the Regime of Navigable Waterways of International Concern*;³⁶ the *Agreement Regulating the Use of the Waters of the Kunene River for the Purposes of Generating Hydraulic Power and of Inundation and Irrigation in the Mandated Territory of South West Africa*;³⁷ the *Cunene River Basin Agreement (South Africa and Portugal)*;³⁸ the *Convention on the Protection of*

³³ Ibid 15.

³⁴ The advice and assistance of Professors Charles Bourne and Steve McCaffrey and the late Professor Albert Utton in helping to identify these examples of state practice of the equitable sharing of downstream benefits is gratefully acknowledged.

³⁵ Opened for signature 28 June 1919, 2 USTS 43 (entered into force 10 January 1920). This Treaty gave France the exclusive right to use the waters of the Rhine for power production, subject to France's paying Germany one-half the value of the energy produced.

³⁶ Opened for signature 20 April 1921, 7 LNTS 35 (entered into force 31 October 1922). Article X suggests the sharing of downstream benefits and even upstream benefits, providing that where a state is obliged under the Convention to take steps to improve the river or is put to expense to maintain it for navigation, it is entitled to demand a reasonable contribution to the costs involved.

³⁷ Opened for signature 1 July 1926, South Africa–Portugal, 70 LNTS 316 (entered into force 1 July 1926). This Agreement gave South Africa the right to build a dam upstream in Angola and to undertake certain diversion works. Article 12 further provided as follows:

No charge shall be made for the water diverted from the Kunene River for the purpose of provided means of subsistence for the Native Tribes in the Mandated Territory; but should it be desired to utilise a portion of the water referred to in Article six above [one half of the flood water of the river] for any other purposes, being for the purposes of gain ... South Africa shall give to ... Portugal three months' written notice of such intention and shall pay, for such portion of the water so utilised, to that Government such compensation as may be mutually agreed upon.

³⁸ UN Department of Technical Cooperation for Development, *Treaties Concerning the Utilization of International Water Courses for Other Purposes Than Navigation: Africa* (1984). This more recent Treaty between Portugal and South Africa for the Kunene River (under the name of the Cunene River) sees one watercourse state paying another for benefits received by it as a result of developments of the watercourse in the other state. Under this agreement Portugal was to construct the Gove Dam and South Africa agreed 'to participate in the financing of the dam in respect of components forming part of the storage function, but excluding costs incurred for hydro-power generation purely in the interest of the Portuguese government'. In return, Portugal agreed not to extract more than fifty per cent of the resulting regulated flow of the river, and to operate the dam so as to provide a regulated flow: arts 4.1.3, 4.1.11–4.1.12. The Treaty also provided for the construction and operation of works for the diversion (by means of pumping water from the Cunene River) for human and animal requirements in south west Africa and for irrigation. South Africa agreed to pay for the construction of the works, and for their operation which would be done by the

the Rhine against Pollution from Chlorides;³⁹ the *Treaty on the Lesotho Highlands Water Project between the Government of the Kingdom of Lesotho and the Government of the Republic of South Africa*;⁴⁰ the *Treaty between the Hungarian People's Republic and the Czechoslovak Socialist Republic Concerning the Construction and Operation of the Gabčíkovo-Nagymaros System of Locks*⁴¹ and the *Decree of the Government of Kyrgyzstan*.⁴²

These examples confirm that state practice can be invoked in support of an emerging principle of customary international law regarding the equitable sharing of downstream benefits where the act that confers the benefit on one state appears to have been done, or not done, at the request of another state.⁴³

Portuguese authorities. South Africa was also to pay a fixed amount for the ground occupied and for the flooding caused by these works: art 4.

³⁹ Opened for signature 3 December 1976, France–Netherlands, 16 ILM 265 (1977) (entered into force 5 July 1985). It provides that the Netherlands is to pay a substantial share of the cost to France of disposing of waste salts from the Mines de Potasse d'Alsace in ways other than discharging them into the Rhine. Thus in this example the downstream state pays the upstream state for the conferral of a benefit (freedom from pollution harm). While not an upstream 'development' case, this is a particularly striking example since it could be argued that France had a duty to avoid significant pollution harm to the Netherlands irrespective of Treaty obligations.

⁴⁰ Opened for signature 24 October 1986 (entered into force 24 October 1986) <<http://www.fao.org/docrep/W7414B/w7414b0w.htm>> at 23 September 2002. Pursuant to this treaty, the downstream state, South Africa, was to pay a substantial share of the cost of constructing the project in Lesotho in return for the downstream benefits it would receive from it.

⁴¹ Opened for signature 16 September 1977, 1109 UNTS 235 (entered into force 30 June 1978). This Agreement, which gave rise to *Gabčíkovo-Nagymaros Project (Hungary v Slovakia) (Merits)* [1997] ICJ Rep 7, provided for the development of a dam and hydroelectricity plant that was to produce the bulk of the electricity under the Treaty located on a bypass canal wholly within Slovakia. The majority of Danube water is diverted into that canal then rejoins the bed of the Danube, which forms the boundary between the two states. Under the Treaty, Hungary was to receive power from that plant, as well as flood control benefits — both arguably downstream benefits. For a more complete description and analysis of the case, see McCaffrey, *The Law of International Watercourses* (2001) 186–97.

⁴² A recent decree of the Government of Kyrgyzstan reflecting a principle of equitable sharing of downstream benefits stated that:

in the Field of Use of Water Resources of Rivers Having Their Source in the Territory of Kyrgyzstan and Flowing into the Territory of Neighbouring Republics and in pledging to collaborate with neighbouring states in the rational use of river water resources, Kyrgyzstan favours the principle of payments by its downstream neighbours for the use of water resources flowing from it. Whereas this does not imply that the country will automatically claim compensation for the river water flowing past its borders, it nonetheless signals that such payments are regarded by the country's leadership as a legitimate matter for negotiations. In this connection, it will be recalled that Kyrgyzstan has succeeded to a series of agreements dating to Soviet Union times providing for the sharing of the waters of rivers among the republics of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. These agreements were reaffirmed in the Alma Ata Agreement of 18 February 1992.

See Stefano Burchi, 'International Rivers and Lakes/Groundwater' (1997) 8 *Yearbook of International Environmental Law* 187, 187–8.

⁴³ See McCaffrey, *The Law of International Watercourses* (2001) 264, where the author, while acknowledging that 'it is not uncommon for some form of compensation (eg sharing electric power) to be part of an overall package of equitable apportionment of the uses and benefits of an international water-course', goes on to add the important caveat that

This raises a number of questions: first, is there support for a wider proposition that a state is obliged to share benefits that it receives from the acts or omissions of another state that it has not asked for or to which it has not agreed? Second, does the obligation to share benefits exist under customary international law, even when these benefits have not been solicited or agreed to?⁴⁴ Third, if benefits are to be shared equitably, why should it matter whether the beneficiary sought them or is simply receiving them without asking? Fourth, would a failure to share windfall benefits constitute a case of ‘unjust enrichment’? Fifth, is there anything to distinguish a case in which a state has asked for a benefit from one in which it has not asked? Sixth, would equity in the latter case dictate that the paying state not pay as much as it would have to if the other state had specifically requested the benefit? Finally, might it be possible to apply the principle of equitable sharing of downstream benefits to help turn historical adversaries into partners? It is this latter and perhaps most important question to which this paper now turns by examining two case studies: the Karnali River (Nepal/India) and the Mekong River (China/Myanmar/Thailand/Cambodia/Laos/Vietnam).

VI THE KARNALI RIVER (NEPAL/INDIA)⁴⁵

Nepal is a land-locked developing country considered to have enormous water resource development potential.⁴⁶ The Karnali is just one of a number of major international rivers that Nepal shares with India to the south and China to the north. Nepal and India have been long time adversaries over the sharing of downstream benefits that might result from the development of water resource projects on rivers in Nepal that flow into India.⁴⁷ Does the principle of equitable

on the other hand, modern international law does not accept the notion that seems to underlie such a claim for compensation, namely, that a state ‘owns’ the waters of an international watercourse that are, for the moment, situated in its territory, and is free to do with them as it pleases, regardless of the consequences for other riparian states. On the contrary, upper riparians are under an obligation not to prevent such waters from flowing to a lower riparian country. The only interference with such flow that would be permissible are those that would be equitable and reasonable in the context of the states’ fluvial relations.

⁴⁴ See generally Paisley and McDaniels, above n 4, 111.

⁴⁵ The advice and assistance of Dr Kul Bhurtel, Scott Ferguson and Dr Vic Galay of Northwest Hydraulic Consultants in Vancouver, Canada, in helping to prepare this section is gratefully acknowledged.

⁴⁶ For an introduction to Nepal and water resource development, see Dipak Gyawali, *Water in Nepal: An Interdisciplinary Look at Resource Uncertainties, Evolving Problems and Future Prospects* (1989); Surya Subedi, ‘Hydro-Diplomacy in South Asia: The Conclusion of the Mahakali and Ganges River Treaties’ (1999) 93 *American Journal of International Law* 953; Jagadish Pokharel, *Environmental Resources: Negotiation between Unequal Powers* (1996); S Pun, ‘Sharing of the Ganges Waters — The Writing’s on the Wall’ (1999) 10 *WECS Bulletin* 32; Hans Schreier et al, *Sedimentation of the Kulekhani Reservoir: A Case Study of the Importance of Sediment Dynamics in the Nepalese Himalayas* (1999) (CD ROM) (copy on file with author); Prem Thapa, ‘Water-Led Development in Nepal: Myths, Limitations and Rational Concerns’ (1997) 5 *Water Nepal* 35; Dipak Gyawali and Ajaya Dixit, ‘Mahakali Impasse and Indo-Nepal Water Conflict’ (1998) 34(9) *Economic and Political Weekly* 1.

⁴⁷ Subedi, above n 46, 954; Verghese, above n 2, 31–5.

sharing of downstream benefits have a possible role to play in turning these historical adversaries into partners?

This analysis begins with an introduction to Nepal and an examination of factors that have historically challenged water resource development in Nepal. Nepal has a total area of 147 181 square kilometres of which about 83 per cent are mountains and 17 per cent are lowlands. The mountainous region is divisible into three distinct ecological zones: the Terai Plain (an extension of the Gangetic Plain of India); the Hills (the foothills of the Himalayas), ranging in height from 500 metres to 4000 metres; and the Himalayan mountains, ranging in height to above 8000 metres.⁴⁸ Eight of the 10 highest mountains in the world are located in Nepal.

By most standard economic measurements, Nepal is classified as one of the least developed countries in the world, with a per capita income of less than US\$250 per annum.⁴⁹ According to World Bank data, overall economic growth has decelerated steadily in the past few years to an estimated 1.9 per cent of gross domestic product in the fiscal year 1998.⁵⁰ This deceleration reflects, among other factors, weather related setbacks to agriculture as well as a slowdown in non-agricultural growth.⁵¹ Private investment and activity levels have also declined, in part due to lack of business confidence associated with the political environment, problems faced by traditional export industries (such as carpets), weak domestic demand, and uncertainties regarding global economic prospects, particularly general developments in India and East Asia.⁵²

The interaction of the monsoon weather with the Himalayan Mountains dominates the hydrology of Nepal. Heavy rains from June until September characterise the monsoon pattern, coupled with dry weather from October to May. The average run-off from all of Nepal's rivers is estimated to total 224 000 million cubic metres.⁵³ The four largest rivers in Nepal, the Mahakali, the Karnali, the Gandak and the Kosi, together account for more than two thirds of the total annual water discharge.⁵⁴ The hydroelectricity development potential in Nepal is thought to be about 83 000 megawatts.⁵⁵ However, Nepal currently has only about 261.8 megawatts installed capacity of hydropower and an additional 57.1 megawatts of installed capacity for thermal power.⁵⁶ Presently, hydropower accounts for just one per cent of total energy consumption in Nepal and only about nine per cent of the population has access to electricity.⁵⁷

⁴⁸ Schreier et al, above n 46.

⁴⁹ The World Bank, *Nepal Development Forum: Economic Update 2002* (2002) <[http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/rpt/\\$File/econnp.doc](http://lnweb18.worldbank.org/SAR/sa.nsf/Attachments/rpt/$File/econnp.doc)> at 23 September 2002.

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Ibid.

⁵³ Gyawali, above n 46, 93–101.

⁵⁴ Ibid.

⁵⁵ Subedi, above n 46, 954. See also James Clad, 'GDP Set to Slump in Wake of Transit Dispute: Gasping for Breath', *Far Eastern Economic Review* (Hong Kong), 8 March 1990, 26.

⁵⁶ Clad, above n 55, 26.

⁵⁷ Verghese, above n 2, 37–8.

In addition to hydropower generation, the potential benefits to Nepal from water resource development include water supply for irrigation and domestic use, flood control, sedimentation control, navigation, fisheries and recreational benefits.⁵⁸ However, there is also a wide range of potentially negative social and environmental repercussions that may be associated with water resource developments in Nepal. These include the potentially negative impact of water resource development on the aquatic environment, local populations, inundation of forests and the movement of alluvium.⁵⁹ Similar potential costs and benefits could also accrue in India.⁶⁰ In addition, social, environmental and political conditions could prove challenging to water resource development in Nepal.⁶¹

As if possible cooperation between Nepal and India regarding water resource development were not already sufficiently challenging, the two countries have also entered into several controversial agreements regarding a number of the international rivers that they share.⁶² The three international watercourses shared between Nepal and India which are currently governed by agreements are the Kosi, the Gandak and the Mahakali. The Kosi and the Gandak are international rivers. The Mahakali River is a boundary river, which forms part of the border between India and Nepal on Nepal's western flank.

The *Agreement between the Government of India and the Government of Nepal on the Kosi Project ('Kosi Agreement')*⁶³ was signed in 1954 and revised in 1966, and is valid for 199 years. The primary purpose of the *Kosi Agreement* is to enable India to build control structures in Nepal that provide flood control to Bihar State in India. The Kosi Development Project that grew out of the *Kosi Agreement* was planned, designed and constructed by India. The *Kosi Agreement* has had a mixed reception in Nepal.⁶⁴ On the one hand, it confirms Nepal's right to substantial future developments in the Kosi River basin, even though Nepal is yet to exercise those rights.⁶⁵ On the other hand, it has been suggested that Nepal may have so far derived relatively little benefit from the agreement. More

⁵⁸ Schreier et al, above n 46.

⁵⁹ Ibid.

⁶⁰ Ibid; Thapa, above n 46, 44–8.

⁶¹ From an environmental perspective the following factors challenge water resource development in Nepal:

- The stream system is relatively poorly studied;
- Nepal's rivers carve through the highest relief in the world;
- The rainfall distribution is highly seasonal;
- The bedrock geology is highly fractured and uplifting at a relatively rapid rate;
- The current climatic, hydromatic and sedimentation monitoring network is relatively inadequate for modeling and prediction;
- The surface configuration is changing rapidly due to rapid population growth, increased agriculture intensification, expansion into marginal lands and degradation of forests and grasslands;
- The interactions between rainfall events, topography, geology, terrain stability, land use and stream response are generally poorly documented.

See Schreier et al, above n 46.

⁶² Subedi, above n 46, 954.

⁶³ Opened for signature 25 April 1954, United Nations Legislative Series, *Legislative Texts and Treaty Provisions Concerning the Utilization of International Rivers for Other Purposes than Navigation* (1963) 290, UN Doc ST/LEG/SER.B/12 (entered into force 25 April 1954).

⁶⁴ Verghese, above n 2, 31–5.

⁶⁵ Ibid.

specifically, it has been suggested that the expected benefits to Nepal from the Chatra canal have not materialised, and the westward shifting of the Kosi has damaged land and agricultural crops in the Saptari district of Nepal.⁶⁶ Also, the promised powerhouse of 20 megawatt capacity using the canal head could not be made operational.⁶⁷

The *Agreement between His Majesty's Government of Nepal and the Government of India on the Gandak Irrigation and Power Project* ('*Gandak Agreement*') was signed by Nepal and India in 1959 and revised in 1964.⁶⁸ The primary purpose of the *Gandak Agreement* was the construction of structures in India and in Nepal to facilitate irrigation, primarily in India.⁶⁹ The 1964 amendments deleted a schedule of water requirements that was a part of the original 1959 agreement, and confirmed that Nepal has the right to withdraw water from the Gandak water basin for irrigation or any other purpose, except for inter-basin transfers in the lean months of February to April. Unlike the *Kosi Agreement*, the *Gandak Agreement* appears to have no expiry date. However, it too has had a mixed reception.⁷⁰ India believes that Nepal was given numerous benefits at no cost, yet planned benefits of irrigation and power generation in Nepal have not been fully realised because of poor maintenance of the canal, which is located mainly in India. Also, the Narayani Irrigation Project in Nepal is in a precarious situation on account of Nepal's water supply from the Don Branch Canal in India being irregular and less than the agreed volume.⁷¹

The *Agreement between the Government of the Republic of India and His Majesty's Government of Nepal Concerning the Integrated Development of the Mahakali River Including Sarada Barrage, Tanakpur Barrage and Pancheshwar Project* ('*Mahakali Treaty*')⁷² was signed in 1996 and is the most recent agreement between Nepal and India. It has a term of 75 years and establishes a long-term discharge rate focusing on the utilisation of waters and the integrated development of the Mahakali River, including the Sarada Barrage, Tanakpur Barrage and Pancheshwar Multipurpose Dam Project.⁷³ The primary purpose of the Sarada and the Tanakpur Barrages, both located in India, is to facilitate irrigation in both India and Nepal. Tanakpur also has a 120 megawatt capacity hydropower generating station installed, 70 megawatt hours of which, according to the agreement, are supposed to be given to Nepal free of charge. India is also supposed to provide the necessary power transmission line to Nepal. The size of the generating component of the Pancheshwar Multipurpose Dam Project is projected to be 6480 megawatts, consisting of two power sources of equal capacity on both sides of the river.⁷⁴ Article 3 of the *Mahakali Treaty* states that

⁶⁶ Ibid.

⁶⁷ Pokharel, above n 46, 35–48.

⁶⁸ Opened for signature 4 December 1959, India Bilateral Treaties and Agreements (1958–60) vol 3, 264 (entered into force 4 December 1959).

⁶⁹ Pokharel, above n 46, 43–4.

⁷⁰ Ibid 37–48.

⁷¹ Ibid.

⁷² Opened for signature 12 February 1996, 36 ILM 531 (1997) (entered into force 12 February 1996).

⁷³ Philippe Sands, 'Introductory Note' in *Treaty on Sharing of the Ganges Waters at Farakka*, opened for signature 12 December 1996, 36 ILM 519 (1997).

⁷⁴ Pun, above n 46, 33.

'[a]ll benefits accruing to both parties with the development of the (Pancheshwar) Project in the forms of power, irrigation, flood control etc, shall be assessed' and that '[t]he costs of the project shall be borne by the Parties in proportion to benefits accruing to them.' Article 3(a) of the Exchange of Letters between the Prime Ministers of Nepal and India states that '[i]rrigation benefit shall be assessed on the basis of incremental and additional benefits due to augmentation of river flows and flood control benefit shall be assessed on the basis of the value of works saved and damages avoided.'⁷⁵

The *Mahakali Treaty* has also had a mixed reception in Nepal.⁷⁶ It has been praised as breaking the ice in the hitherto uncomfortable relations between India and Nepal on water related matters, and has the potential to inspire collaboration on water projects if implemented to the satisfaction of both parties.⁷⁷ However, controversy continues regarding the interpretation of the *Mahakali Treaty*, particularly the interpretation of article 3.⁷⁸ This has mainly focused on the interpretation of the term 'existing consumptive use', and the possible exclusion of the amount of water already available and used by the parties from the definition of their equal entitlement to the waters of the Mahakali.⁷⁹

Despite sporadic attempts by both India and Nepal to negotiate, the fourth major international watercourse, the Karnali, has not yet been the subject of an agreement between the parties. This situation is unlikely to be resolved anytime soon, in part because India and Nepal have been unable to agree as to how they might share downstream benefits.

VII THE MEKONG RIVER

(CHINA/MYANMAR/THAILAND/CAMBODIA/LAOS/VIETNAM)⁸⁰

The Mekong River originates high on the Tibetan Plateau, and makes its way through six countries: China, Myanmar, Laos, Thailand, Cambodia and Vietnam, before reaching the South China Sea.⁸¹ At 4800 kilometres, the Mekong River generally ranks twelfth in the world in terms of length, and eighth in terms of

⁷⁵ Letter from His Excellency Mr Sher Bahadur Deuba, Prime Minister of Nepal, to His Excellency Mr P V Narasimha Rao, Prime Minister of India, 12 February 1996; Letter from His Excellency Mr P V Narasimha Rao, Prime Minister of India, to His Excellency Mr Sher Bahadur Deuba, Prime Minister of Nepal, 12 February 1996.

⁷⁶ Subedi, above n 46, 956–7.

⁷⁷ Ibid 962.

⁷⁸ Ibid 956.

⁷⁹ Ibid 956–7.

⁸⁰ The advice and assistance of Sokhem Pech, Chaiyuth Sukhsri and Dr George Radosevich in helping to prepare this section is gratefully acknowledged.

⁸¹ Regarding the Mekong, see generally, Greg Browder and Leonard Ortolano, 'The Evolution of an International Water Resources Management Regime in the Mekong River Basin' (2000) 40 *Natural Resources Journal* 499; Philip Hirsch, 'Beyond the Nation State: Natural Resource Conflict and "National Interest" in Mekong Hydropower Development' (1999) 29 *Golden Gate University Law Review* 399; Nancy Nelson, 'Water Allocation' [1996] *Colorado Journal of International Environmental Law and Policy* 120; Brian Shanahan, 'Recent Development in International Environmental Law: Agreement for the Sustainable Development of the Mekong River Basin Cambodia, Laos, Thailand, Vietnam — Signed, April 5, 1995; Entered into Force upon Signing' (1996) 8 *Georgetown International Environmental Law Review* 496; Patricia Wouters, 'An Assessment of Recent Developments in International Watercourse Law through the Prism of the Substantive Rules Governing Use Allocation' (1996) 36 *Natural Resources Journal* 417.

average annual run-off.⁸² The flow in the Mekong varies with the tropical monsoon climate. The flows begin to increase at the onset of the wet season in May, peaking in August or September, and decreasing rapidly until December. The flows recede slowly during the annual dry period from December to their lowest levels in April. An enormous volume of water flows through the Mekong Basin in the wet season, resulting in extensive flooding. The floodwaters support a productive and diverse freshwater ecosystem, but also result in loss of human life and damage to crops and structures. During the dry season, a dramatic reduction of flow leads to water shortages for domestic and agricultural use, and limits navigation. The coastal plain of the basin constantly suffers from an intrusion of seawater.

The Mekong Basin's water resources have the ability to support economic growth through irrigation, hydropower, navigation, water supply and tourism.⁸³ Equitable sharing of the water resources and sustainable development of the natural resources in the basin becomes most critical for each country during the dry season.⁸⁴ Laos relies heavily on river transport, and the reduction of dry season flows could adversely affect navigation. Cambodia has long-term potential for increasing its irrigated agriculture. Over the decades, Vietnam and Thailand have developed extensive irrigation systems that currently face dry season water constraints. Vietnam makes use of dry season flows for seawater repulsion and for irrigation. Thailand has recently been studying options for diverting water from the Mekong, and for inter-basin diversion from Thai tributaries to the Mekong.

With respect to hydropower, the World Bank sees benefit in such projects because of their ability to store wet season flows in order to generate power during the dry season.⁸⁵ Hydropower development in the Mekong Basin has been gaining momentum and the question of how to share the consequential additional dry season flow is of key interest to the Mekong's downstream countries. Currently, there are only 500 megawatts of installed capacity in the Lower Mekong and 1500 megawatts along the Chinese portion of the river; however China is constructing several more hydropower projects. Laos also has plans to construct a number of medium sized hydropower projects on Lao tributaries to the Mekong and both China and Laos would like to export power to Thailand. Options for creating a regional power grid are also being studied. However, recent analysis by Aviva Imhof of the International Rivers Network, a

⁸² Guangwei Huang and Nobuyuki Tamai, 'Application of MIKE 11 to the Lower Mekong River' (Paper presented at the 3rd DHI Software Conference and DHI Software Courses, Helsingør, 7 June 1999) [1] <<http://www.dhi.dk/softcon/papers/013/DHI.html>> at 23 September 2002.

⁸³ Shanahan, above n 81, 497; Hirsch, above n 81, 400.

⁸⁴ Browder and Ortolano, above n 81, 529-31.

⁸⁵ Huang and Tamai, above n 82, [1].

California based conservation group, suggests the market for hydropower has slowed due to the Asian economic crisis.⁸⁶

Attempts to cooperate on the Mekong have a long history.⁸⁷ The Committee for Coordination of Investigations of the Lower Mekong Basin ('Mekong Committee') was established in 1957 with four members (Cambodia, Laos, Thailand and Vietnam) under the umbrella of the Economic Commission for Asia and the Far East, the predecessor of the Economic and Social Commission for Asia and the Pacific.⁸⁸ From 1978 to April 1995 the Committee was known as the Interim Mekong Committee ('IMC') due to the absence of Cambodia from the Committee. In 1991 Cambodia submitted a request to rejoin the Committee. Subsequently, the recent and rapid economic and environmental changes in all four countries indicated the need for a new organisation with an expanded mandate to cope with the countries' requirements. In response to this new context, the Mekong Working Group ('MWG'), consisting of representatives from the four countries, was formed to prepare for the establishment of a new Mekong cooperation framework. The MWG, under the direction of the UN Development Programme, initiated the *Draft Agreement on Cooperation for the Sustainable Development of the Mekong River Basin* ('Mekong Agreement')⁸⁹ at its final meeting in November 1994. The *Mekong Agreement* immediately established the Mekong River Commission ('MRC'), replacing the Mekong Committee and the subsequent IMC.⁹⁰

As an intergovernmental organisation, the MRC has three permanent bodies: the Council (ministerial and cabinet level), which makes policies and decisions; the Joint Committee (department head level), which implements policies and decisions; and the Secretariat, which renders technical and administrative services.⁹¹ The MRC's mandate is:

To promote and co-ordinate sustainable management and development of water and related resources for the countries' mutual benefit and the people's well-being

⁸⁶ Aviva Imhof, International Rivers Network (Address delivered to National Laotian-American Symposium on US-Laos, 23 May 2002) [8] <<http://www.laotianlink.com/trade/imhof.htm>> at 23 September 2002. See also Environment News Service, *Four Mekong River Basin Governments Funded to Cooperate* (2000) <<http://ens.lycos.com/ens/feb2000/2000L-02-14-05.html>> at 23 September 2002, where Imhof is reported as saying that 'the Electricity Generating Authority of Thailand [(EGAT)] will defer purchases of electricity from several multi-billion dollar projects in Laos, citing the slowdown in Thailand's power demand. Last June, EGAT announced that the commissioning dates of four privately funded hydropower projects Nam Theun 2, Xe Pian-Xe Namnoy, Nam Ngum 2 and Nam Ngum 3 will be postponed by two years, to 2006.'

⁸⁷ See, eg, Oxfam Community Aid Abroad, 'Hydrodevelopment on the Mekong' (Briefing paper No 22, December 1998) [1] <http://www.caa.org.au/publications/briefing/mekong_hydro/index.html> at 23 September 2002.

⁸⁸ *Statute of the Committee for Co-Ordination of Investigations of the Lower Mekong Basin Established by the Governments of Cambodia, Laos, Thailand and the Republic of Viet-Nam in Response to the Decision Taken by the United Nations Economic Commission for Asia and the Far East*, opened for signature 31 October 1957, United Nations Legislative Series, *Legislative Texts and Treaty Provisions Concerning the Utilization of International Rivers for other Purposes than Navigation* (1963) 267, UN Doc ST/LEG/SER.B/12.

⁸⁹ Opened for signature 5 April 1995, 34 ILM 864 (1995) (entered into force 5 April 1995).

⁹⁰ Ibid.

⁹¹ International Monetary Fund, *Mekong River Commission: Establishment and Functions* (2002) <<http://www.imf.org/external/np/sec/decco/mrc.htm>> at 23 September 2002.

by implementing strategic programmes and activities and providing scientific information and policy advice.⁹²

The four members agree to cooperate in all fields of sustainable development, utilisation, management and conservation of the water and related resources of the Mekong Basin, including, but not limited to, irrigation, hydropower, navigation, flood control, fisheries, timber floating, recreation and tourism. These activities should be undertaken in such a manner as to optimise the multiple-use and mutual benefits of all riparians and minimise the harmful effects that might result from natural occurrences and synthetic activities.⁹³

The key to reaching agreement was the need to find acceptable language that provided both a sense of good faith and cooperation, and the assurance that no party would be disadvantaged under its provisions in light of the doctrine of sovereign equality.⁹⁴

Recently, efforts to promote sustainable water management in the Mekong Basin and protection of its environment, aquatic life and ecological balance received a major boost in the form of a US\$11 million influx of funding from the Global Environment Facility.⁹⁵ The project aims to bring the four downstream nations together for improved and sustainable basin management. The Water Utilization Project, funded by the grant, aims to support the MRC in developing an integrated and comprehensive basin hydrologic modelling package, a functional and integrated knowledge base on water and related resources, and to use these tools to establish 'rules' — one of MRC's five major goals. The rules, or obligations, of the member states will establish guidelines for water utilisation and ecological protection for sensitive ecological systems including wetlands and flooded forests. The grant will support MRC and the member states in ensuring that development of the water resources is carried out in a sustainable manner that preserves the environment.⁹⁶

⁹² *Ibid.*

⁹³ *Ibid.*

⁹⁴ Letter from George Radosevich, Former Senior Legal Advisor, Mekong Working Group UNDP to Richard Paisley, 14 January 2001 (copy on file with author).

⁹⁵ Environment News Service, above n 86.

⁹⁶ A significant step forward occurred on 1 November 2001 in Bangkok: Cabinet ministers from the member countries of the Council of the MRC, committed their countries to exchanging data and information crucial for sustainable development of the Mekong Basin. The agreement was the first of a series of joint decisions that the member countries (Cambodia, Laos, Thailand and Vietnam) will adopt over the next five years regarding water utilisation. The data to be shared includes 'topography, water and other natural resources, agriculture, navigation, transport, flood management and mitigation, urbanization/industrialization, infrastructure, environment/ecology, administrative boundaries, socio-economic status and tourism'. The agreement authorises the MRC Secretariat (based in Phnom Penh) to 'establish technical standards and guidelines to ensure that data can be compared across countries and from year to year but also to ensure progress of the Basin Development Plan.' In the coming years the MRC Council will

consider preliminary terms for notifying and consulting each other on the use of the Mekong's waters and developments that could impact the river [in 2002] ... decide on the final form for notification and consultation procedures, and also on the form for the monitoring of existing water use [in 2003] ... decide on rules for maintenance of water flows [in 2004] and ... [decide] on rules for maintaining water quality [in 2005.]

Constructing a system for coordinating water resource development activities and allocating dry season water, while protecting the environment and maintaining friendly relations among member states, is likely to be a continuing challenge for the MRC. This raises the issue of what role, if any, there might be for an equitable sharing of downstream benefits in order to promote trust and cooperation in the region.⁹⁷

VIII TURNING ADVERSARIES INTO PARTNERS

Can the experiences of the equitable sharing of downstream benefits on the Columbia River and elsewhere help turn historical adversaries into potential partners in situations like the Karnali (Nepal/India) and the Mekong (China/Myanmar/Laos/Thailand/Cambodia/Vietnam) rivers? Is it realistic to expect that relations between upstream and downstream states will ever be completely harmonious? In the case of India and Nepal, the reasons for this disharmony may be found in the vast differences between them in terms of geography, population size and level of economic development. Compared to Nepal, India is large, powerful and relatively developed. India has particularly pressing demands for water supply for irrigation and industrial purposes. India also has a compelling need for flood control and serious demand for electrical energy. Nepal is a comparatively small and weak state. However, Nepal also has a need for economic betterment coupled with an enormous potential for hydropower development, flood control and irrigation that could be of benefit to both Nepal and India.

In the case of the Mekong, there are also vast differences between the four lower Mekong countries in terms of geography, population size and level of economic development. Thailand and Vietnam, compared to Laos and Cambodia, are more powerful and relatively more developed. Thailand is upstream of the other three lower riparians, and has interests in hydropower and reservoirs, the development on water and sediment, irrigation development, water availability, water quality, land use changes and forestry, and impacts on hydrological response. Laos has interests in hydropower potential, irrigation and land use, and forestry changes. Cambodia has interests in hydropower development, possible development of fish migration and potential for increased irrigation. Vietnam's interests include flood control. China and Myanmar also have a wide range of interests with regard to the Mekong.

What are the challenges and opportunities brought forth by these two case studies, and what role, if any, might international law in general, and the equitable sharing of downstream benefits in particular, play in helping to turn adversaries into partners?

First, both upstream and downstream states generally have the potential to derive benefit from the rational and equitable utilisation of shared international watercourses through the rules of international law. These rules require international watercourse states to cooperate with each other, and provide a

Ann Lund, Mekong River Commission, *Lower Mekong Countries Agree to Share Crucial Data* (Press Release, No 12/01, 1 November 2001) [1] <<http://www.mrcmekong.org/media/press2001/press012.htm>> at 23 September 2002.

⁹⁷ Browder and Ortolano, above n 81, 531.

framework that promotes the peaceful settlement of disputes.⁹⁸ Clearly, developing countries need to be shrewd negotiators, as simply having international law on their side is unlikely to get them very far in negotiations with significantly more powerful states. For example, in the Mekong, both upstream and downstream states have the potential to derive benefit from the rational and equitable utilisation of shared international watercourses if they comply with international law. A similar situation exists with regard to the Karnali River between Nepal and India. For the system to work in practice, it will be necessary for downstream states to persuade upstream states of the tangible benefits of cooperation. The equitable sharing of downstream benefits is one way of accomplishing this.

Second, a proper understanding of the legal issues involved in the development of international watercourses, as well as the social, political, economic and environmental implications of proposed actions, is essential for the protection of legitimate interests. In particular, an appreciation of the importance of the legal dimension to the benefits that accrue downstream from developments in an upstream state is crucial. The identification of these benefits can be difficult, and precise calculations complex. However, for upstream states, these benefits can be substantial and the effort to grasp the substance of the principle of equitable sharing of downstream benefits exceedingly worthwhile.⁹⁹ The situation between Nepal and India regarding the Karnali River is illustrative of this point. There are major potential downstream benefits to India from a project on the Karnali River involving the construction of works upstream in Nepal. These benefits include increased river flow during the dry season through regulated release to match the demand pattern for irrigation water, flood moderation, the availability of a non-polluting renewable energy source and the potential for inland water transport.¹⁰⁰ To ensure that they are adequately and properly compensated for the downstream benefits they confer on their basin neighbours, and to achieve their overall objective of poverty alleviation through sustainable development, developing countries like Nepal must strongly and articulately advance their entitlement to such benefits. Similarly, the implementation of the *Mekong Agreement* will take strong political commitment from all member states and the participation and support of stakeholders in the basin and external parties.

Third, before striving for political agreement, there is a compelling case for states to begin by building trust and cooperation through technical cooperation on matters such as the calculation of downstream benefits. The Karnali and the Mekong situations are again demonstrative. Historically, a key stumbling block to an upstream project on the Karnali River in Nepal seems to have been that the Indian scientists and the Nepalese consultants who have studied the Karnali River basin have been unable to agree on a number of matters, including assumptions about water flows and the proposed height of any dam or other

⁹⁸ *UN Watercourses Convention*, above n 1.

⁹⁹ The scope for trade-offs or side deals regarding these downstream benefits is also wide and varied and could include transit facilities, trade preferences, assistance to develop energy intensive industries with assured market access, irrigation facilities, extension of rail heads or road heads, and navigation routes to the sea: see Verghese, above n 2, 125–6.

¹⁰⁰ Verghese, above n 2, 46.

structures.¹⁰¹ This in turn has led to different estimates of capacity to generate power and a different unit cost of power, as well as an overall inability to agree on the scope and magnitude of downstream benefits.¹⁰² Such differences among competing groups of scientists will likely never be resolved simply by gathering more data. Rather, understandings will have to be reached regarding the assumptions both groups of scientists are relying upon before downstream benefits can be calculated with any certainty and further progress made. Similarly in the case of the Mekong, it will likely be necessary to reach an understanding regarding the assumptions of competing groups of scientists and engineers before dry season flows can be agreed upon and downstream benefits can be calculated with any certainty. Perhaps not surprisingly, a similar situation initially occurred regarding the Columbia River. The subsequent agreement between the US and Canada appears to have only been made possible after the parties were first able to build trust and understanding at the technical level, leading to eventual agreement regarding the equitable sharing of downstream benefits.¹⁰³

For all of these reasons, sovereign nations sharing international watercourses should take heed of the emerging principle of equitable sharing of downstream benefits as one possible means of helping to turn historical adversaries into partners.

¹⁰¹ Ibid 52.

¹⁰² Ibid 52–3.

¹⁰³ See also Eyal Benvenisti, 'Collective Action in the Utilization of Shared Freshwater: The Challenges of International Water Resources Law' (1996) 90 *American Journal of International Law* 384, 402 Benvenisti states that '[w]ith the shared language of technical expertise, political constraints may be sidestepped and well-founded decisions more easily reached'. Benvenisti cites as authority the *Agreement between the Government of the Republic of Namibia and the Government of the Republic of South Africa on the Establishment of a Permanent Water Commission*, opened for signature 14 September 1992, 32 ILM 1147 (1993) (entered into force 14 September 1992) which established a joint commission to serve as a technical adviser to the States Parties by, inter alia, gathering data and recommending criteria to be adopted in the allocation and utilisation of common water resources.