

**SUSTAINABLE DEVELOPMENT AND
INTERNATIONAL WATERCOURSES AGREEMENTS:
THE MEKONG AND THE RHINE**

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Sustainable Development and International Watercourses Agreements: The Mekong and The Rhine¹

Introduction

Since rivers flow naturally from their source down to their mouth and may run through the territory of one or more states, problems relating to ‘ownership’ of the water may occur. Hydrologists estimate that the world-wide demand for water may be doubled by 2050 having dramatically increased over the last 100 years.² This leads to the conclusion that water resources may become limited or even scarce in terms of per capita availability and may also lead to more international or regional conflict between riparian states.³ In other words, international watercourses may cause international disputes when it proves impossible to harmonise the interests of those states.⁴

In the light of the possibility of such conflicts, attempts have been made to clarify the legal principles applicable to this area of law, such as water allocation and water protection. The imperative problem of water scarcity in some areas of the world such as in Africa countries however forces international watercourses law not to limit its scope only with those current problems, but also to deal with the long term issue of sustaining and improving the amount and quality of water available for future generations. The inclusion of water issue in the Rio Declaration and Agenda 21 clearly illustrates this well. The same situation is also seen in the forthcoming World Summit on Sustainable Development that to be held in Johannesburg in August 2002 as water issue remains one of the most imperative problems on its agenda.⁵

To this end, this paper is therefore aimed at suggesting the practical approach of dealing with water issues in the light of sustainable development. The Mekong and the Rhine river basins are taken as the case study for two reasons. First of all, both regimes adopt the concept of sustainable development in their Agreements. Their interpretation of this notion are thus of great interest as they reflect what this notion is understood by these two different regimes. The mechanisms adopted in the Mekong and the Rhine Agreements also illustrate their particular existing interests, focuses and problems, which are different but useful to learn from an international law point of view.

Secondly, the legal mechanism of the 1995 Mekong Agreement shows great evolution that is influenced by this concept. However, some provisions, particularly that concerning water

¹ This paper is prepared before the Johannesburg Summit. All discussions are therefore limited to the information up to June 2001.

² Dowdeswell, E., “UNEP Water Conference Speech”, speech presented at the Ministerial Conference on Drinking Water Supply and Sanitation of the United Nations Environment Programme, Noordwijk, The Netherlands, 22 March 1994, ECONET, environmental water file, Topic 317, stating that ... Demand has tripled since 1950 and is nine times as great as that of 1900 (demand is expected to double again by 2050), quoted in C. Kukk and D. Deese, “At The Water’s Edge: Regional Conflict and Cooperation Over Fresh Water”, 1 *UCLA Journal of International Law and Foreign Affairs*, (1996), n. 19, 27.

³ E.g. the dispute between Hungary and Czech and Slovak Federal Republic on the Gabčíkovo-Nagymaros Project, for the judgement, 37 *I.L.M.* 162 (1997) or http://www.icj-cij.org/icjwww/idocket/ihs/ihsjudgement/ihs_ijudgment_970925_frame.htm

⁴ Baxter, R., *The Law of International Waterways*, (1964), 34.

⁵ www.johannesburgsummit.org.

conservation are quite problematic. The system of the Rhine river basin, which is one of the most successful rivers in terms of the maintenance and improvement of water quality, is thus taken as a model in order to suggest the better mechanism for the Mekong. The term 'water conservation' is used here instead of 'water protection' because the former gives a broader interpretation of activities that protecting the water from the current activities and also preventing it from possible harm that may occur in the long term future. The term protection however provides the narrower interpretation because it aims to protect the water from the possible harm that already caused or will be occur in the near future.⁶

This paper is thus divided into three parts in order to introduce the proper picture of international watercourses law and the concept of sustainable development, the problems that the Mekong river basin are encountering in achieving its sustainability, and the lesson learnt from the Rhine in attaining the same goal. The first part will explore the development of international watercourses law and the influence of the concept of sustainable development in this area of law. The concept of sustainable development will then be discussed, particularly its influence and meaning in this area of law will be particularly investigated.

The second part will discuss in depth the influence of the concept of sustainable development on the Agreement on the Co-operation for the Sustainable Development of the Mekong River Basin (the Mekong Agreement).⁷ The influence of the above notion on the existing principles concerning water quantity and water quality issues will be focused. The weak points of the Mekong Agreement will be pinpointed here. The same methodology will be applied to the 1999 Convention on the Protection of the Rhine (the Rhine Convention) in order to discover the useful mechanism for the Mekong. It is important to state here that the main objective of this instrument does not aim to deal with the issue of water quantity because the Rhine riparian states do not have history of shortage of water. The focus of this part thus remains on the issue of water conservation whereas only a short analysis will be made on the issue of water quantity. The last part will sum up the finding of this paper as it is expected that some legal mechanism concerning water conservation of the Rhine will also be useful and practical for the Mekong as well.

I. Sustainable Development in International Watercourses Law

Although the title of this part stated as above, it is important to begin the discussion with the wider topic of international watercourses law. It is to provide a broad view of the evolution of this area of law, particularly before the emergence of the concept of sustainable development. The main focus of this part, however, remains on issue of the influence and development of international watercourses law derived from the concept of sustainable development.

1. International Watercourses Law

International law governing the use of international watercourses has been developed since the 19th century when navigation was the only option to transport people and merchandise across riparian countries. Legal principles established during that time therefore dealt with

⁶ *Oxford Advanced Learner's Dictionary* (2000), 1018. Protection is defined as the act of protecting someone or something or the state of being protected. This gives the sense of current rather than future actions.

⁷ 34 *I.L.M.* 864 (1995).

navigation⁸ and international agreements were thus concluded mainly to recognise rights and liability of the riparian states.⁹

Non-navigational uses of international watercourses have become more important when other alternatives of transportation like car or train were introduced. The idea of sharing this resource between the riparian states thus became so significant: the issue of ownership of transboundary water. To solve this problem, it is necessary to mention the four fundamental theories of water allocation.¹⁰

Absolute Territorial Sovereignty: The Harmon Doctrine

This is an extreme concept, which allows a state to use or exploit the water and other related resources as much as it pleases without consideration of any adverse effect its action might have on neighbouring states. It is based on the theory of absolute territorial sovereignty, which means a riparian state has an absolute right to use the water that run through their territory. This concept very much favours upstream riparian states since it does not impose any responsibility upon them for any adverse consequences of their uses to downstream riparian states. Also, from the environmental perspective, it ignores imposing the duty, for example, a duty not to disperse or cause harm to the shared resources in order to protect the environment of the watercourses to the upstream riparian states. The first reference to this concept occurred in relation to the Rio Grande, when the Attorney General of the United States, Judson Harmon, denied any US responsibility for the adverse effect on Mexico of US diversion of water concerned.¹¹

Absolute Territorial Integrity

In contrast to the principle referred to above, this concept supports the interests of the downstream riparian states as it guarantees the right to obtain without interference or harm, access to all of the natural water flowing from the upstream riparian states. The sovereign integrity doctrine, also referred to as a 'riparian right', has been espoused by some writers,¹² by downstream riparian states such as Egypt in the dispute over the Nile,¹³ by Pakistan in the Indus river dispute.¹⁴ Nevertheless it has been rejected by state practice as it only favours downstream riparian states, and does not have current evidence of applying it or represents principle of international law.¹⁵

⁸ The principles such as the riparian states' right to free navigation.

⁹ For example, the Final Act of the Congress of Vienna that mainly dealt with European rivers, such as Main, Necker, Moselle, Meuse and Scheldt. In this instrument, a watercourse was considered only if it was navigable. The 1856 Treaty of Paris recognised the navigability of the Danube. The 1886 Act of Berlin acknowledged freedom to navigate of the Congo and Niger rivers.

¹⁰ For a comprehensive survey of these principles, see S.C. McCaffrey, *The Law of International Watercourses* (2001), ch. 5; P.W. Birnie and A.E. Boyle *International Law and the Environment*, 2nd ed. (2002), 6.

¹¹ 21 Ops Atty-Gen (1895), 274; J. Moore, I *Digest of International Law*, (1906), 654; F. Berber, *Rivers in International Law* (1959), 14.

¹² *Ibid.*, 19-22.

¹³ Exchange of Note between the UK and Egypt concerning the Use of the Waters of the River Nile for Irrigation Purposes of 7 May 1929, no. 1, para 2., *Legislative Texts*, Treaty no. 7, 100, see also S.C. McCaffrey, *op.cit.*, n. 10, ch. 7.

¹⁴ See Baxter, *op.cit.* n. 4, 451.

¹⁵ See below for the argument whether the requirement of minimum flow is the revival of this theory.

These above two extreme concepts however never solved the problem of ownership of water.¹⁶ This pressure forces many international organisations, such as the International Law Association (ILA) to carry out a comprehensive study on this subject.¹⁷

Equitable Utilisation¹⁸

This concept is introduced as a balance reached between the above two extreme concepts. It endorses the idea of considering international watercourses as common resources shared between the riparian states. Although the right to share water between riparian states is equal,¹⁹ the amount of water to be shared under this concept is not necessarily to be equal. Equitable use is however based on relevant factors and circumstances²⁰ that may allow, for instance, State A to have more share of water than State B if the former has more population than the latter. The application this concept is however quite problematic because, for exaple, its meaning is quite unclear and requires interpretation based on case by base basis. More importantly, the equal right to use water of every riparian state makes it difficult to implement because they do not accept the interpretation of one another. To apply this notion, it thus requires an establishment of a joint organisation that will maintain the standard of such interpretation and secure equitable use between the riparian states.

Common Management

It is the concept that all the riparian states are collaborating to manage the use of water in international watercourse for the benefits of the whole. The establishment of a joint institution that every riparian state is the most significant element of this approach as it can be seen in many regions of the world such as the Mekong,²¹ the Niger,²² the Rhine,²³ and the Ganges.²⁴

As suggested in the 1997 UN Convention on Non-navigational Uses of International Watercourses that the Contracting Parties may consider establishing such joint organisation, this mechanism is not an absolute requirement but practice of states illustrates that it is the most effective approach that promotes not only the co-operation between the riparian states, but also the development of international watercourses law.²⁵

¹⁶ For example, in the *Lac Lanoux* Arbitration, Spain argued that France was not allowed to divert water without taking into account the interest of the downstream riparian state like Spain. Spain even proposed that to do so, France required the consent from them. The Arbitration did not rule in the favour of Spain that far but held that France, as an upstream riparian state must consult Spain to safeguard her right in the watercourse. 24 *International Law Reports* (1957), 101.

¹⁷ For the contribution of ILA on this area of law, see S. Bogdanović, *International Law of Water Resources: Contribution of the International Law Association (1954-2000)* (2001).

¹⁸ See also, for example, J. Lipper 'Equitable Utilisation' in Garretson, Hayton and Olmstead, *The Law of International Drainage Basin* (1967), 15; McCaffrey, *op.cit.* n. 10, ch. 9.

¹⁹ *Op.cit.*, n. 16.

²⁰ See details of these factors in Article XI of the 1966 Helsinki Rules or Article 7 of the 1997 UN Convention on Non-navigational Uses of International Watercourses.

²¹ See Part II.

²² The 1963 Act Regarding Navigation and Economic Co-operation between States of the Niger Basin, 587 *UNTS* 13.

²³ See Part III.

²⁴ The 1996 Treaty on Sharing of the Ganges Waters at Farraka, 36, *I.L.M.* (1997), 519.

²⁵ Birnie and Bolye, *op.cit.*, n. 10, 304.

1.1 The 1966 Helsinki Rules

The International Law Association was one of the earliest organisation that carried out a study on international watercourses law. The 1966 Helsinki Rules was the first international non legally binding instrument that compiled the principles concerning non-navigational uses of international watercourses. Article 5 of this instrument asserted the concepts of the *equitable utilisation* as the principle for water allocation. Equitable share means that the ‘equal right’ of co-riparian states in sharing water of a particular international watercourse must be recognised and given effect. This concept has been used and applied in many classic interstate river disputes in the United States, including in such cases as Kansas v. Colorado,²⁶ New Jersey v. New York,²⁷ and Connecticut v. Massachusetts.²⁸ In considering so, all relevant factors must also be taken into account.²⁹

The obligation *not to cause substantial harm* to other states was also adopted³⁰ in Article X. However, it was clearly subordinated to the concept of equitable utilisation. It did not allow new uses to cause water pollution to the existing equitable use of other riparian states because this provision states it clear that ‘Consistent with the principle of equitable utilisation, a state must prevent new form of water pollution....’. This provision gives rise to a long discussion at international and regional level and in particular when the Helsinki Rules were submitted to the Sixth Committee of the United Nations for approval as an ideal convention on international watercourses.³¹ They were however rejected on the ground that it does not represent state practice. Even so, the Helsinki Rules remains to date widely influential both at international and regional levels.³²

The United Nations later requested the International Law Commission (ILC) to conduct a study and draft a convention on international watercourses law.³³ The ILC spent twenty four years to complete the Draft Articles on Non-Navigational Uses of International Watercourses in 1994. The Working Group of the Whole of the Sixth Committee was established in 1996 to elaborate the Draft Articles. A great number of proposals considered this instrument and commentaries were submitted by states. The final draft of this instrument was adopted in 1997 by the General Assembly and opened for signature. It is important to state here that the following discussion of the 1997 UN Convention will be limited only on four issues, (a) the equitable use of water, (b) the obligation not to cause significant harm, (c) the obligation concerning water flow, and (d) the obligation to protect the related areas as they are the focus of Part II and III.

²⁶ *Kansas v. Colorado case*, 185 U.S (1902) 125, 46 L. ed. 838; 206 U.S (1907) 46, 51 L. ed. 956.

²⁷ *New Jersey v. New York case*, 238 U.S (1931) 336, 75 L. ed. 1104.

²⁸ *Connecticut v. Massachusetts case*, 282 U.S (1931) 660 at 661, 75 L. ed. 602. The Supreme Court, in ruling that the dispute was to be settled on the basis of equality of right, found that this did not necessarily mean equality of water use, but rather an ‘equitable allocation’.

²⁹ These include for example, the geography, the hydrology, the climate, the past utilisation of the waters, and the economic and social uses of the water of the basin. See Article 6 of the Helsinki Rules.

³⁰ Articles V and X respectively.

³¹ *Yearbook of International Law Commission* (1976) vol. 2, pt 1, 147, UN Doc.A/CN.4/SER.A/1976/Add 1.

³² A large number of international conventions later followed this trend by adopting at least these two principles in their regimes. For example,

³³ UNGA Resolution 2669 (XXV) of 8 December 1970.

1.2 The 1997 UN Convention³⁴

The 1997 UN Convention on Non-Navigational Uses of International Watercourses is the first legally binding instrument governing the use and other related activities of international watercourses. To date, there are sixteen signatories.³⁵ This instrument is very important as it codifies principles of international watercourses law through its seven parts, thirty seven articles and one Annex. According to the above mentioned four important issues, only Parts I, II and IV of the Agreement will be discussed.

Part I: Introduction, Article 1 sets out the aim of the Convention, viz. to establish general rules for non-navigational uses of international watercourse. Article 3 (2) subtly encourages states sharing water to adopt or consider harmonising their existing agreements with the principles of this Convention, which reflects the characteristic as a framework Convention of this instrument clearly.³⁶ Although this argument is challenged by the number and variety of existing agreements, the principles adopted in this Convention at least reflect the needs and limitations of the Contracting Parties at that certain period.

Part II declares ‘General Principles’ of international watercourses law. It is in this part that the concept of equitable utilisation and the relevant factors of the Helsinki Rules are adopted in Articles 5 and 6 respectively. Article 7 asserts the obligation not to cause significant harm. An obligation to co-operate on the establishment of a joint commission is the subject of Article 8. A duty to exchange information and data between the watercourse states is affirmed to ensure that the necessary information will be circulated and available to all the riparian states and a policy of transparency is promoted.

Part IV: Protection, Preservation and Management asserts the rules relating to protection, preservation and management of international watercourses. Watercourse states are required to protect and preserve the ‘ecosystem’ of international watercourse.³⁷ Existing pollution in the watercourse is required to be controlled and reduced whereas new pollution must be prevented. An obligation to prevent the introduction of alien species that might affect the ecosystem of watercourses and result in significant harm to other watercourse states is also affirmed. The most advanced environmental provision is the obligation to protect the marine environment, stated in Article 23. This provision expands the scope of freshwater protection to the related marine. These two issues had never been taken into account in an international instrument before.

The 1997 UN Convention has been regarded as not proposing as much development in international watercourses law. In particular, it does not solve the conflict between the principle of equitable utilisation (Article 5) and the no harm rule (Article 7). The upstream states want the no harm rule to be one of the elements of equitable use. The downstream states, however, disagree and want the no harm rule to be operational on its own. This would mean that if any equitable use causes harm to international watercourses, the states concerned are responsible for the harmful effects caused. During the work of the ILC, the relationship of these two principles was extensively discussed. Until Articles 5 and 7 were

³⁴ See also, S.C. McCaffrey, *op.cit.*, n. 10, Part IV.

³⁵ UN A/51/869. This information is as of 21 May 2002.

³⁶ For further discussion on this provision, see L. Caflisch, Regulation of the Uses of International Watercourses in Salman M.A. Salman and L. Boisson de Chazournes (eds.), *International Watercourses: Enhancing Co-operation and Managing Conflict*, World Bank Technical Paper No. 414, 3-16.

³⁷ Article 20.

adopted in the Working Group, upstream riparian states and downstream riparian states opposed each other.³⁸ These provisions were later accepted by 38 votes to 4, and there were 22 abstentions. This explains why this Convention is considered by some that it does not solve the above conflict between upstream and downstream riparian states.

Article 20 of Part IV requires watercourse states to protect and preserve ecosystem of international watercourses either individually or jointly. This obligation has been extended its application to include that to protect and preserve the marine environment as well.³⁹ This is the first time that other related areas, such as the marine environment, is incorporated in the freshwater protection mechanism. This approach supports the idea that the protection of watercourse ecosystem should consider other related environments that interact with the watercourse as activities in those areas can also harm the quality of the watercourse resources. Conservation of both these environments are thus required in order to conserve biological resources that depend on international watercourses.

Article 25 requires watercourse states to co-operate in the regulation of water flow. It does not however extend the obligation to maintenance of minimum flow for the purpose of environmental protection so as to preserve the ecological integrity of the watercourse.⁴⁰ This is rather disappointing because this article is in Part IV entitled Protection, Preservation and Management, but it does not sufficiently consider the management of water for environmental purposes.

2. The Concept of Sustainable Development and its Elements in International Watercourses Law

Recently, the concept of sustainable development has been played an important role in the development of the international legal regime for protection of resources. Three important elements, social, economic and environment importance are the main factors under the umbrella of the concept of sustainable development. Each element is considered equally. This concept is important because it reconciles the economic development with protection of the environment.⁴¹

2.1 The Concept of Sustainable Development

What exactly does this concept mean? It is not easy to answer this question because the specific definition of this concept is still far from clear.⁴² The first term was coined by the WCED in 1987, which defined it as follows: ‘sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs’.⁴³

³⁸ A/C.6/51/SR.51-62.

³⁹ Article 23.

⁴⁰ See below for further discussion on the similar provision of the Mekong Agreement.

⁴¹ The judgement of the International Court of Justice on *Gabčíkovo-Nagymaros Case*, *op.cit.*, n. 3, para. 140.

⁴² Many scholars still hesitate to accept its clear-cut definition. These include U. Beyerlin, *The Concept of Sustainable Development*, in R. Wolfrum, *Enforcing Environmental Standards: Economic Mechanisms as Viable Mean?* (1996), 95-121, 95; P. Sands, *Principles of International Environmental Law* (1994), 199.

⁴³ World Commission on Environment and Development, *Our Common Future* (1987), 8.

The broad nature of this definition leads to the need to at least identify the elements of sustainable development that has impact on the law. According to Birnie and Bolye, there are seven such important elements:⁴⁴

- (a) Integration of environmental protection and economic development;
- (b) The right to development;
- (c) Sustainable utilisation and conservation of natural resources;
- (d) Inter-generational equity;
- (e) Intra-generational equity;
- (f) The polluter pays principle;
- (g) Procedural elements of sustainable development.

Element (a) reflects the need to balance the environmental and developmental concern as the current condition of the global environment has proved that consideration of either environmental or social economic needs in isolation does not produce long lasting results. Element (b) is rather controversial and not universally recognised as an environmental principle of international law. It is, however, an extremely important principle for developing countries and implies that environmental protection may not disregard their needs for economic development.⁴⁵

Element (c) implies that the conservation of natural resources is required to ensure that they will be available in the future, so the use of these resources must not be made more than their capacity to regenerate and absorb pollution. Inter-generational equity confirms the sense of partnership between generations. This requires that the present generation, element (d), may use natural resources in a manner in which the quantity and quality of such will not be worsened when it is passed on to the next generations.⁴⁶

Element (e) seeks equity within the same generation and the differentiated treatment of developing countries in many instruments reflects this well.⁴⁷ Polluter Pays Principle as stated in (f) lays down a liability for damage on the person who causes pollution to the environment. Although it is widely accepted that it is one of the environmental policies that acquires non legally binding status but it is very well adopted at national level as taxation and pricing mechanisms are examples of putting this principle into practice. Procedural elements of sustainable development include the right of access to information as well as requirements for environmental impact assessment and monitoring, and public participation. These procedures are important in implementing the substantive obligation related to sustaining quantity and quality of the global's natural resources.

2.2 Its elements in international watercourses law

Having considered the above definitive elements, sustainable development in international watercourse context can be considered to be 'the development of water in a manner in which adequate supply of good quality of water is sustained and the watercourse ecosystem is maintained for the uses of future generations'. The specific goals and needs of each basin

⁴⁴ Birnie and Bolye, *op.cit.*, n. 10, 86-95. These elements are extracted from the Rio Declaration.

⁴⁵ *Ibid.*, 87.

⁴⁶ Brown, W. *In Fairness to Future Generations* (1988).

⁴⁷ In particular in the post-Rio agreements such as the Ozone and Climate Change Convention.

can however be identified according to their specific characteristic and requirements of the riparian states.

The objective stated above permits the identification of more specific elements of sustainable water development that can be identified as follows:

- (a) the right to use water;
- (b) the protection, prevention of water degradation;
- (c) the maintenance and conservation of water flow,
- (d) the ecosystem related approach;
- (e) procedural elements to achieve sustainable water development.

In essence, international watercourse law should not only aim to regulating current behaviour of riparian states in order to solve the current problems between them, but it should also address the long term future of water uses and functions. How much water will be available for use in the next hundred is uncertain. This fact forces international watercourses law to adopt itself to aim at long term objective rather than only to focus on solving current water allocation or water pollution. It is here that the concept of sustainable development has played an active role as the rationale for extending the scope of international watercourses law.⁴⁸

3. Influence of the Concept of Sustainable Development on Selected Issues of International Watercourses Law

The concept of sustainable development in international watercourses law has influenced the evolution of existing principles, such as the equitable utilisation, the no harm rule, or the duty to protect the environment of the watercourse. The two main aspects, water quantity and water quality and three selected issues has been chosen to illustrate how this area of law has evolved since the emergence of the concept of sustainable development.

3.1 Water Quantity

3.1.1 Duty to Use Water Equitably

According to the concept of equitable utilisation, the riparian states are entitled to use the shared water equitably. This concept only deals with sharing the amount of water and equitability does not mean equal shares in the amount of water.⁴⁹ This perspective has been changed by the judgement of the International Court of Justice in the Gabčíkovo-Nagymaros Case⁵⁰ in which the concept of equitable utilisation was challenged by the need to achieve sustainable development of the Danube River. In its judgement, the court confirms that the use of water for economic reasons must also take into account the effects upon the environment and the risks for present and future generations.⁵¹ This decision has

⁴⁸ Decleris, M., *The Law of Sustainable Development: General Principles*, a report produced for the European Commission (2000), 61.

⁴⁹ *Supra*.

⁵⁰ *Op.cit.*, n. 3.

⁵¹ *Ibid.*, para. 140.

changed the way in which the concept of equitable utilisation had been applied and is very much in conformity with Article 5 of the 1997 UN Convention in which the interests of other watercourse states and adequate protection of the watercourse are also considered as factors of equitable utilisation. This also means that the international court of justice does not consider that the no harm rule should be subordinated to the equitable utilisation concept, and it referred to the concept of sustainable development as a rationale for its decision.

As observed by Birnie and Bolye, the watercourse agreements that were concluded during late 1990s begun to take into account environmental and inter-generational concerns.⁵² It seems that the broader notions such as sustainable utilisation and sustainable management are likely to replace the concept of equitable utilisation as they offer a more comprehensive approach to water utilisation at the same time.⁵³ However, the successful implementation of those broader concepts seems to occur only in the well developed regimes such as the Danube and the Rhine. Sustainable utilisation requires high standard of environmental practice. The regimes in developing countries like the Mekong are however striving to put it into practice as they do not realise the need to implement it effectively yet.⁵⁴

3.1.2 Duty to Maintain Water Flow

Generally speaking, the duty to maintain water flow is adopted basically for the purpose of flood control or drought prevention. This duty concerns controlling, alteration or change of the direction of water.

It is not the purpose of this paper to discuss the legal status of the obligation and whether it has become a principle of customary international law.⁵⁵ But clearly, the maintenance of water flow is one of the most important elements of international watercourses law. According to an observation of Utton, the practice of the Western American States⁵⁶ and a number of international watercourse agreements include this requirement in their legal regimes so as to deal with the problem of flood control and drought. However, flood and drought do not just affect the quantity of water but it also changes the quality of the ecosystem and these two issues are interrelated by nature.

This issue of maintaining minimum flow for environmental conservation purpose has thus been increasingly discussed in international forums⁵⁷ and it seems that the international

⁵² Birnie and Bolye, *op.cit.*, n. 10, 316.

⁵³ These include, for example, Article 2 of the 1994 Convention on Co-operation for the Protection and Sustainable Use of the Danube River, Article 3 of the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Article 3 of the 1994 Conventions for the Protection of the Meuse and Scheldt, Articles 3 and 4 of the Convention on the Protection of the Rhine, Article 1 of the Agreement on the Co-operation for the Sustainable Development of the Mekong River Basin, Article 2 of the 2000 Revised Protocol on Shared Watercourses in the Southern African Development Community and Article 1 of the EU Water Framework Directive of 2000/60/EC.

⁵⁴ The MRC Secretariat, *WUP Information Bulletin No. 2* (January-February 2001), unpublished, 2.

⁵⁵ For further discussion on whether or not there is a general principle of customary international law on the maintenance of minimum water flow, see A.E. Utton and J. Utton, Adequate Stream Flow in *International Law of Water Resources*, *op.cit.*, n. 17, 387.

⁵⁶ Such as Colorado, California, Oklahoma Oregon, and South Dakota.

⁵⁷ The Committee on Water Resources Law of the begun a study on 'adequate stream flows' since 1996 and the final recommendation was adopted in 2000 in the International Law Association's Campione

community increasingly accepts the need to establish such rule. This is because the threat of degradation of biological resources that depend on water becomes increasingly serious.

Article 6 of the Mekong Agreement responds to the above problem positively. It is so far the only provision in international watercourse agreements that clearly declares this requirement for the purpose of environmental protection. A serious threat of salt-water intrusion in the Mekong Delta with potential damage to the floodplains and sources of food production of Vietnam as well as to the biological diversity in the area led Vietnam press during the negotiation for the inclusion of this provision in the Mekong Agreement.⁵⁸ Although it is not an international watercourse, the Murray-Darling basin is another example of a watercourse regime that requires ‘adequate flow’ of water for the purpose of environmental conservation.⁵⁹

3.2 Water Quality

3.2.1 Duty to Protect the Environment of the Related Areas

The ecosystem approach modifies the application of the obligation to protect the quality of water and the environment of international watercourses. This is because, as stated earlier, the ecosystem is not limited only to the water, mainstream or tributaries of the watercourse, but it should also incorporate terrestrial and marine environment interacting with it. This means that the obligation related to environmental protection in international watercourse regimes should be expanded to include terrestrial, freshwater and marine environments related to the watercourse in order to promote the health of the whole ecosystem of international watercourses.

As seen in Article 23 of the 1997 UN Convention, Article 4 the EU Directive of 2000/60 EC, Article 3 of the Rhine Convention, Article 2 of the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, and the Preamble of the 1998 Danube Convention, the environmental protection mechanisms of these instruments have already adopted the ecosystem approach. Their applications are therefore extended to protect at least the related marine environment and in some cases like the Rhine, the related terrestrial environment as well.⁶⁰

II. Legal Mechanism Applied in the Mekong River Basin to Achieve Sustainable Development

1. Introduction

Consolidation at their Conference in London. *The 2000 Report of the ILA*, the Committee on Water Resources Law, 2.

⁵⁸ Radosevich, G., *Draft Commentary to the 1995 Mekong Agreement*, unpublished work (1995), 23.

⁵⁹ This obligation is also known as ‘the Cap’. The Cap is the volume of water that would have been diverted under 1993-1994 levels of development. By limiting future growth of water utilisation, the Cap promotes the sustainable use of the Basin by preserving the existing security of water supply for users and preventing deterioration of the flow at South Australia. Further details, see The Annual Report of the Murray-Darling Basin Commission.

⁶⁰ In particular Article 2 (4) of the Rhine Convention.

The Mekong development project was initiated in 1957 by the United Nations Economic Commission for Asia and the Far East (ECAFE)⁶¹ The Mekong River Basin is situated in south east Asia and has two upper riparian states, namely China, Myanmar, and four lower riparian states, viz. Thailand, Laos, Cambodia, and Vietnam. For the last four decades, the four lower riparian states have collaborated in a joint Mekong co-operation in order to utilise and develop the Mekong River for the benefit of their people. The two upper riparian states did not join this programme.⁶²

In 1995 the four lower Mekong countries concluded a new agreement on the Co-operation for the Sustainable Development of the Mekong River Basin (the Mekong Agreement). This instrument was the first international watercourse agreement that adopted the concept of sustainable development. This indicates a significant forward step forward of the Mekong riparian countries in tackling the problem of their water resources.

This section considers two main topics, i.e. water quantity and water quality how the Mekong mechanisms have evolved after adopting the concept of sustainable development as the goal to achieve. Within those two topics, the focus of discussion is on water allocation and conservation. The role of the Mekong River Commission will be also analysed to pinpoint their weaknesses in promoting the effectiveness of the implementation of this Agreement.

With regard to water quantity, it is expected to discover that the concept of sustainable development has watered down the application of the principle of equitable utilisation. It is the need to consider other related issues, such as the conservation of quality of water and related areas that have become increasingly important elements in using water resources. The Mekong Agreement illustrates this well as these two qualifications are paid attention likewise.

2. The influence of the concept of sustainable development in the Mekong Agreement

The Mekong Agreement applies this concept as an *objective of co-operation*.⁶³ The language of the agreement shows a clear intention of the state Parties to introduce it as an umbrella objective that includes all related water activities such as water development, utilisation, conservation and management under one roof.

⁶¹ It is one of the subsidiary organs to be responsible for restructuring and reforming the economic situation of the Asia and Pacific countries after the World War II. ECAFE has been renamed as Economic and Social Commission for Asia and Pacific (ESCAP) in 1974 in order to focus more on the issue of economic as well as social problem. For further details, see www.unescap.org.

⁶² Nonetheless, the four countries have attempted to promote the full co-operation between the six countries by inviting China and Myanmar in their annual meetings and the Dialogue Meeting that aims to convene twice a year. The MRC, *Proceeding of the Second Exploratory Meeting*, 19th March 1996, 2. It is also worth noting that China has increasingly involved with the Mekong co-operation. The signing of the Data-Sharing Agreement with the Mekong River Commission (MRC) on 1st April 2002 has shown the higher level of understanding and co-operation between China and the four lower riparian states. For latest development, see www.mrcmekong.org

⁶³ Introduction of the Mekong Agreement.

Paragraph 5 of the Preamble emphasises the importance of the concept of sustainable development, which the four Contracting states consider as a mission to pursue. For the first time, the need to reconcile the social and economic requirements with the needs to protect, preserve, enhance and manage the environment of the basin is highlighted, which reflects the very important element of sustainable development.⁶⁴ This is the first time that the four countries agree to make this a regional goal to achieve.⁶⁵

In addition, the object of the Mekong Agreement is also broadened to include the conditions of water and land resources, air, flora and fauna that exists in this region.⁶⁶ The condition of water clearly does not mean only the quality of water, but also suitability to support related living resources. The condition of land resources reflects the need to conserve areas that can cause harm to the river, whereas the protection of air seems to be presently theoretical because the activities along the Mekong river are mostly agriculture and do not produce much air pollution yet.

The above analysis indicates quite clearly that the framework of the Mekong Agreement is greatly influenced by the broad concept of sustainable development. This makes the Mekong Agreement the focus of international attention because it is the first international watercourse agreement that adopts the concept of sustainable development. This is quite challenging particularly for the Mekong riparian states, which are all developing countries. It is therefore worth considering the legal mechanism by which they attempt to transform this notion into practice.

3. Legal mechanism of the Mekong Agreement

Under the umbrella concept of sustainable development, it is clear that the legal mechanism in the Mekong Agreement has become much more extensive than in the past.⁶⁷ In the 1975 Joint Declaration, the most advanced Mekong instrument concluded before the 1995 Mekong Agreement, the issues of water allocation occupied most of the provisions adopted therein since the riparian states were very much concerned with how to share water.

In the 1995 Mekong Agreement, the main objective is to deal with both the issues of water allocation and water conservation.⁶⁸ This is because the riparian states have suffered from the drought as much as from the degradation of water. Article 1 clearly calls for a co-operation in the field of sustainable development that also includes utilisation, management and conservation of water.

⁶⁴ *Supra*.

⁶⁵ In 1987 the Interim Mekong Committee noted this notion by stating that the Mekong Basin ‘can only provide sustainable benefits if the characteristic ecology of the area to be developed is taken into account during the process planning’ (*sic*). *The 1987 IMC Annual Report*, 11

⁶⁶ The Preamble and Chapter II of the Agreement that relates to definition.

⁶⁷ Since 1957, the four Mekong riparian states concluded three agreements. The 1957 Mekong Statute, text in, United Nations, *Legislative Texts and Treaty Provisions Concerning the Utilisation of International Rivers for Other Purposes than Navigation*, ST/LEG/SER.B/12 (1863), 267; the 1975 Joint Declaration of Principles for Utilisation of the Waters of the Lower Mekong Basin, text in FAO, *Treaties concerning the Non-Navigational Uses of International Watercourses: Asia*, FAO Legislative Study No. 55 (1995), 11; the 1978 Declaration concerning the Interim Committee for Co-ordination of Investigation of the Lower Mekong Basin, *ibid.*, 21.

⁶⁸ The reason to use the term ‘water conservation’, see Part I of this paper.

All the projects concerning water utilisation, management or conservation that to be carried out in the Mekong river basin are required to take into account three important factors, stated in Article 2. Firstly, it must provide ‘sustainable benefits’ to all riparian states; secondly it must prevent wasteful use of water; and lastly, it must be formulated in accordance with the Basin Development Plan. It is the Basin Development Plan that is expected to translate sustainable development goal into tangible and practical water development policies and plans. This is to ensure that all development projects be formulated and carried out along the same goal of providing ‘sustainable benefits’ whereas wasteful use is prevented. The Basin Development Plan is, however, not expected to be concluded before 2008⁶⁹ while the ecological circumstance of the Mekong river as well as the related social and economic needs of each riparian country are changing constantly.

Apart from the general guiding plan expected from in the Basin Development Plan, the Mekong Agreement requires the Parties to comply with general legal principles that are adopted therein. The most important ones are those concerning the use of water and the conservation of water. The following section is thus designed to explore and illustrate the principles that the Parties adopt to achieve sustainable development and discuss how effective they are or may become.

3.1 Water Quantity

3.1.1 Equitable Utilisation

In the Mekong Agreement, it is clear that the existing principle of equitable utilisation remains fundamental for the region. Although Article 1 asserts the term sustainable utilisation, Article 5 that deals directly with water allocation affirms ‘reasonable and equitable utilisation’ concept and confirms that uses of water of the Mekong river must be carried out in a reasonable and equitable manner. The uses of water in the Mekong are divided into two main categories, ‘intra-basin’⁷⁰ and ‘inter-basin’ uses.⁷¹ The justification for equitable inter-basin or intra-basin uses is subject to three further important factors: (1) all relevant factors and circumstance; (2) the Rules for Water Utilisation and Inter-basin Diversion (the Rules);⁷² and (3) the provisions of Article 5 (A) and (B).

The last factor is the most significant one because it sets out very detailed regulations for different uses in different season that can be tabulated as outlined below.

⁶⁹ The MRC, *Formulation of the Mekong Basin Development Plan (Basinwide)* (1999), unpublished work.

⁷⁰ Intra-basin’ use refers to diversion of water within the Mekong drainage basin, for example, the flowing from the Tonle Sap (the Great Lake) in Cambodia to the nearby basin where the waters are geographically connected.

⁷¹ Inter-basin diversion, on the other hand, covers all diversion of water from the Mekong River to other basins, which are not geographically connected to the Mekong basin. The diverted water will not, of course, return to the Mekong basin; for instance, water diverted from the Mekong mainstream to the Chao Phraya basin in Thailand is inter-basin diversion.

⁷² It is aimed to establish five additional rules, including (1) the time frame for the wet and dry seasons; (2) the location of hydrological stations, and determining and maintaining the flow level requirements at each station; (3) the criteria for determining surplus quantities of water during the dry season on the mainstream; (4) the mechanism to monitor intra-basin use; and (5) the mechanism to monitor inter-basin diversions from the mainstream.

Table 1

Type of Diversion	Wet Season	Dry Season
Mainstream <i>Intra-basin uses</i>	Notification to the JC	Prior consultation which aims at arriving at an agreement by the JC
<i>Inter-basin diversion</i>	Prior consultation which aims at arriving at an agreement by the JC	Any project shall be agreed upon by the JC through a specific agreement for each project prior to any proposed diversion with assurance that a surplus quantity of water will be available which may be verified and unanimously confirmed as such by the JC.

An ‘inter-basin’ diversion is strictly governed by the concept of equitable utilisation because it does not return the water flow to the Mekong basin. When this occurs during the dry season, the country concerned is required to obtain a specific agreement agree by the Joint Committee prior to the diversion and at the same time it must ensure that surplus water will be available for the uses of all Parties. This is due to the nature of inter-basin uses that the water will not return to the Mekong basin since the two basins considered have no hydrological linkage between each other. The control of such uses is therefore very strict to ensure that the interest of other riparian states will not be affected. During the wet season, the state concerned is required just to notify or arrange prior consultation with the Joint Committee as the case may be.

Although the above requirements seem to ensure that the use of water will be controlled during the dry season and the amount of water will be sustained, they seem in practice to curtail rights to exploit the resources which the riparian States share. For example, in the case of diverting inter-basin in the dry season (which requires the conclusion of a specific agreement by the Joint Committee) if any member of the Joint Committee votes against such project, it is immediately discarded. As a result, the proposing States have no freedom to proceed with the project in question at their own risk or even have no chance to re-submit a less controversial alternative. This leads to an argument whether they can appeal the decision of the Joint Committee to the higher body, i.e. the Council for a final decision, particularly if there is an exceptional need of human water consumption in the inter-basin area. Unfortunately, this provision does not provide for such appeals.⁷³

As for the duty to notify, it is stated in the Draft Commentary to the Mekong Agreement that only ‘one’ notification is adequate to fulfil the notification requirement, as it is believed that uses subject to notification would remain constant every year thereafter.⁷⁴ One may wonder whether or not this obligation will result in equitability of use. Even during the wet season, when there is plenty of water available, it is unlikely that the states concerned would not increase their water use due to the increasing number of their population and economic needs. This requirement might be an underestimation of future uses, which might thus result in an incorrect assessment of how the Mekong river should be used.

⁷³ Compare with Article 20 of the 1990 ILC’s Draft Article, UN Doc. A/CN.4/428 where the operator was allowed to re-propose another alternative project that produced less harm in the case that the State of origin refused the operation of the original project. See also A. Boyle, *Codification of International Environmental Law and the International Law Commission: Injurious Consequences Revisited* in A. Boyle and D. Freestone (ed.), *International Law and Sustainable Development* (Oxford University Press: Oxford, 1999), 81.

⁷⁴ Radosevich, *op.cit.*, n. 58, 13.

This being said, the equitable utilisation concept is not an absolute principle of water allocation in the region because the riparian states are also required to use water in a manner in which minimum water flow is maintained for environmental conservation. This means that the riparian states and the Joint Committee are obliged to consider ecological factors in permitting any use of water.

3.1.2 The Maintenance of Water Flow

Article 6 asserts the obligation to maintain water flow during three critical seasons: (a) during the dry season, minimum monthly natural flow during each month must be maintained; (b) during the wet season, certain level of flow must be maintained to enable the acceptable natural reverse flow; and (c) during the flood season, certain flow of water must be maintained in order to prevent peak flows. Each level of water flow for each season is to be established in the Rules for Water Utilisation and Inter-Basin Diversions as stated in Article 26 but so far these have not yet been formulated.

The obligation to maintain minimum flow is not a new requirement for the Mekong states as it was firstly introduced in Article IV and XVIII of the 1975 Joint Declaration.⁷⁵ However, this is the first time that it considers environmental conservation as in the past the purpose of flood control and drought prevention were the only objective for this provision. This evolution is due to the severe drought and degradation of wetlands, estuaries and the Mekong Delta in Vietnam that destroys natural conditions of these areas and their biodiversity. Sedimentation and salt water intrusion in the area of Mekong Delta in Vietnam that damages the largest food production area of this country is another factor, which led to this evolution.⁷⁶

When one takes a closer look at Articles 5 and 6, it is clear that they have established a new relationship between the concept of equitable utilisation and the requirement to maintain the water flow within the law concerning water allocation. First of all, the Mekong Agreement affirms that the concept of equitable utilisation is not an absolute principle for water allocation because the diversion of water must take into account the obligation to maintain the water flow. Apart from the dry season, the most critical period, Article 6 lays down the limitations for riparian states to use or divert water in the wet and flood seasons. In the wet season, this article demands that the water must not be used beyond an acceptable level, which would affect the storage of water in the Great Lake in Cambodia for use in the dry season. During the flood season, the water flow must be controlled for the purpose of flood prevention.

Secondly, the language of Article 6 implies that this provision is a justification of considering whether or not a particular equitable use is permitted. The duty to maintain the water flow is applied only when equitable ‘diversions’, as stated in Article 5, are

⁷⁵ Article IV of the 1975 Joint Declaration asserted that ‘the Basin States shall ensure the conservation of the Basin water resources by taking every reasonably necessary measure to:

1. maintain their flow and quality;
2. prevent their misuse, waste and pollution.’

⁷⁶ Hoi, N.C. et al., *National Wetland Conservation and Management Strategy: Status, Utilization, Conservation and Management*, Proceedings of the Workshop on National Wetland, Conservation and Management Strategy, Ha Noi, 7 - 8 February, 1996, unpublished work.

considered. However, such diversions may not be allowed if they cannot maintain certain levels of water as requested in this article. The Joint Committee may object to these projects during their consultation process as they are required to take into account the effect it would have on the flow of the water. The strong character of this provision gives rise to the more active role of environmental conservation in this Agreement and provides a new consideration to the principles governing the allocation of water.

The above provision clearly challenges the practicality of the existing principle of equitable utilisation concept, determining that it is not sufficient for the continued sustainability of the Mekong river basin. This is because it does not consider the environmental damage that may be caused in its' equitability. The requirement to maintain the water flow seems to fill this gap well as it pays more attention on the prevention of water degradation than the former. The Mekong Agreement is one of the rare examples of introducing this requirement along side the equitable utilisation concept. This model has been mentioned quite often over the last few years, particularly by those who support and would like to see sustainable development in international watercourses.⁷⁷

3.2 Water Quality

3.2.1 Water Quality Conservation

With regard to water conservation, the concept of sustainable development has influenced and played an important role in modifying the mechanism of the Mekong water protection regulations. Article 3 establishes a broad area of co-operation on the protection of four important elements of the Mekong river basin: (a) the 'environment', which includes 'the conditions of water and land resources, air, flora, and fauna that exists in this region';⁷⁸ (b) natural resources; (c) aquatic life and its conditions; and (d) ecological balance of the Mekong river basin.

Article 7 elaborates this co-operation further by requiring the Contracting states to avoid, minimise and mitigate harmful effect to the 'environment'. A duty is laid down on the states suffering the damages to notify the states whose projects are causing the harm to them.

Articles 3 and 7 illustrate a mechanism for the environmental protection of international watercourses. They do not limit their scope only to the conservation of water, but expand it to cover that of the flora and fauna, the habitats, the ecosystem, and the biodiversity of the basin. This is the most comprehensive environmental mechanism that has ever been adopted in the Mekong basin,⁷⁹ which reflects the integrated approach that has been increasingly promoted both at international and regional levels.⁸⁰

⁷⁷ *Op.cit.*, n. 57 and S. Bogdanovic', *op.cit.*, n. 17, 387.

⁷⁸ Chapter II: Definitions of Terms.

⁷⁹ Compared with the environmental protection mechanism of the 1975 Joint Declaration,

⁸⁰ These include, for example, the 1999 Convention on Co-operation for the Protection and Sustainable Use of the Danube River (Article 6), the 1994 Rhine Convention (Article 3), the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Article 2), and the EU Directive of 2000/60 EC (Article 4). On the contrary, the 1997 UN Convention on Non-navigational Uses of International Watercourses does not interpret the concept of 'ecosystem' in a broad sense as such because the International

Nonetheless, Articles 3 and 7 remain controversial due to four possible arguments. Firstly, the language of Article 3 demonstrates the intention to protect the environment from pollution or other harm that result from development plans and certain uses of water, but how effectively can it be implemented? The question is especially relevant because the Mekong Agreement makes no mention of precautionary or preventive actions, which are two of the most effective elements of environmental protection mechanism.

Secondly, although Article 7 asserts the need to avoid, minimise, and mitigate harmful effects that might occur to the environment, there is no mechanism in place to assist the riparian states in the identification of situations which may result in these effects. This Mekong Agreement makes no mention of any such scientific study, nor does it require an environmental impact assessment (EIA),⁸¹ although it was included in the earlier Joint Declaration. This weakens the environmental preventive mechanism of the Mekong Agreement as it provides an opportunity for the riparian states to carry out planned activities without informing other riparian states of the possible harm that might cause them.

Thirdly, Article 7 also adopts an unusual and impractical procedure to terminate the operation of any project that causes substantial damage to other riparian states. It requires the state suffering from harmful effects to notify the states whose project produces damage with ‘proper and valid evidence’. This may prove difficult in practice, in particular for the less developed countries like Laos and Cambodia due to their lack of the necessary technology and know how to detect such damage and produce the ‘proper and valid evidence’ required. In addition, ‘proper and valid evidence’ is not defined in the Mekong Agreement. Criteria need to be developed, but the Mekong Agreement does not mention any competent body to deal with this problem.

Lastly, the level of ‘substantial damage’ of Article 7 is controversial because it is unclear what the term ‘substantial’ means. It is not defined in the Agreement.⁸² This will allow the Contracting Parties to argue that they are not causing ‘substantial damage’.⁸³ If this situation occurs, who would then decide whether a ‘damage’ is substantial; what are the

Law Commission clearly limited its meaning to mean only to the area of the watercourses itself. II *Yearbook of International Law Commission* (1994), Part II, 119. See also useful criticism on this issue in Birnie and Boyle, *op.cit.*, n. 10, 314.

⁸¹ The 1995 Mekong Agreement makes no mention of the obligation to carry out environmental impact assessment (EIA). However, EIA remains a part of the Mekong project but becomes only as a regional policy. The Environment Unit of the Mekong River Commission has been working on drafting a ‘Basinwide Environmental Impact Assessment Policy’. Under this circumstance, it is doubted whether the ‘Basinwide EIA Policy’ are acceptable in the light of any existing international or regional standards as set up in, for example, the 1991 Espoo Convention, because it is just a non legally binding policy.

⁸² Should the ‘methodologies and criteria’ suggested by the UN Economic Commission for Europe (ECE) be applied in this regime? This methodologies and criteria provide guidance for States to consider the ‘significance’ of adverse transboundary impact and it covers the criteria in many areas of natural resources, including water resources. For details, <http://www.unece.org/env/eia/cepwg3r6.htm>.

⁸³ Compare this requirement with the relevant provisions and Annexes of the 1972 Convention for the Prevention of Marine Pollution by Dumping of Waste and Other Matter in which some substances listed therein are permissible to be dumped in the sea. The similar provision is also found in Article 21 (3) (c) of the 1997 UN Convention on Non-Navigational Uses of International Watercourses as it requires the establishment of lists of substances that must be prohibited, limited, investigated or monitored

criteria for such consideration; can the concerned states appeal the decision to a higher authority?

From the above observation, the Mekong Agreement demonstrates the potential for achieving the sustainable quality of water of the Mekong river; however, some modifications should be made in order to promote the effectiveness of the existing systems. The duty to conduct an EIA should also be adopted as it informs every state concerned of any possible environmental damage. They would then be aware of such damage, likely to harm them. The adoption of precautionary and preventive actions is among the most urgent requirements that must be included. These would enhance the effectiveness of the measures for avoiding harmful effects of Article 7. They would require the Parties whose projects are likely to cause substantial damage to regulate and control their foreseeable harm. This would be a fairer mechanism as it puts more responsibility on those states which wish to exploit the resources to restrain their activities than on the states that suffer from those countries' activities.

The possibility that the less developed countries like Cambodia and Laos can benefit from the existing water conservation mechanism may be the joint alert programme that the Mekong River Commission should initiate. This is to assist and facilitate two countries that have different technological levels in the effective implementation of the above provision.

4. The Mekong River Commission (MRC)

The 1995 Mekong Agreement establishes a joint institution to promote and provide adequate support for the implementation of this instrument to each member country. This is the Mekong River Commission (MRC). It is comprised of three bodies, the Council, the Joint Committee, and the Secretariat, which are responsible for different tasks. The Council is the highest body and consists of one member from each state at Ministerial or Cabinet level. It is mandated to supervise and make decisions which deal with establishing policies and plans at basin level, including the Basin Development Plan (BDP)⁸⁴ and the Rules for Water Utilisation and Inter-Basin Diversion (WUP). It may resolve any disputes referred to it. Its Chairman serves for a term of one year only, and this post shall rotate among the states.

The Joint Committee (JC) is an executive body of the organisation, comprised of one member from each participating countries at no less than Head of Department level. Its Chairman serves only for a year term. The Joint Committee is the most important and active organ in the MRC, as it is mandated to perform many significant executive functions, viz. to implement the decision and policies of the Council, to formulate of the BDP, the Rules, and other development plans, and to resolve the disputes referred to it.

The MRC Secretariat is the permanent office and renders technical and administrative services to the Council and the Joint Committee, and assists both in the implementation and

⁸⁴ The BDP is elaborated in Chapter II of the Mekong Agreement as 'a general planning tool and process that the JC would use as a blueprint to identify, categorise and prioritise the projects and programmes to seek assistance for and to implement the plan at the basin level'.

management of projects and programmes.⁸⁵ The Chief Executive Office (CEO) is the head of the Secretariat appointed by the Council.

The performance of the Mekong River Commission is however not so impressive. This is because it is a large organisation that is mandated to manage, provide assistance to, and in some cases carry out research for the four riparian states because they lack the necessary resources.

Its' large size and numerous functions, but also the lack of expertise and specialists impedes its' progress. For example, the principles concerning water allocation in the Basin Development Plan⁸⁶ and the Rules for Water Utilisation and Inter-Basin Diversion⁸⁷ are still being developed because of the lack of experts in these areas.⁸⁸ The World Bank has recently approved its support to the Commission by providing legal experts and funding for consultation and training in 2000.⁸⁹

The Mekong Agreement makes no mention of the role of the Commission in dealing with environmental issues. As stated earlier, in cases where the state Parties do not have the capacity to detect environmental damage, the Commission should have been mandated to act on behalf of any member state in notifying or alerting the states of their harmful activities. This might well assist the countries that are not yet capable of doing so, and promote the effectiveness of the existing water conservation mechanism.

Another significant impediment to the progress of the Mekong River Commission is that the Secretariat has to move every five years between Cambodia and Laos. This was agreed in 1996 because other member States would like the Mekong River Commission Secretariat to be based in their countries for political reasons.⁹⁰ The first relocation was to Cambodia in 1998 and it will be moving to Laos in 2003.

This situation is controversial since it is doubtful whether such rotation is beneficial for the operation of the Mekong River Commission and the riparian States. Firstly, it is inevitable that moving the Secretariat will cause disruption to all the ongoing projects of the MRC, not only because of the unnecessary administrative upheaval and transfer of books, paperwork and officials, but also such upheaval disturbs the mentality of the staff. Secondly, this will not only delay the completion of projects and affect their quality, but that delay may affect the confidence of and potential funding of donors. Lastly, the execution of each rotation absorbs a large sum of money. A considerable amount has to be spent on buildings, transportation and other tasks, e.g. packing all the documents and

⁸⁵ Articles 28-33.

⁸⁶ The MRC, *Formulation of the Mekong Basin Development Plan (Basinwide)* (1999), 1. The initial formulation of the Plan is expected to be accomplished by 2004.

⁸⁷ The MRC Secretariat, *Water Utilisation Programme: Project Implementation Plan*, MRC Secretariat, Phnom Penh, 1999. This recent report explains the MRC's objectives in its ongoing work concerning that drafting of the Rules (according to Article 26). These are to a) assist the MRC to put in place a mechanism to promote and improve coordinated water management in the basin and among the riparian countries, b) promote reasonable and equitable water utilisation by the countries of the Basin, and c) enhance the protection of the environment, aquatic life and the ecological balances of the Basin.

⁸⁸ The MRC Secretariat, *WUP Information Bulletin No. 1* (October 2000), unpublished, 1.

⁸⁹ *Ibid.*, 2.

⁹⁰ *The 1996 Mekong River Commission Annual Report* (1996), 3.

training new staff, etc. Therefore, relocation every five years may well result in doubling the budget, which seems a waste of money, time and effort.⁹¹

III. Legal Mechanism Applied in the Rhine River Basin to Achieve Sustainable Development

1. Introduction

The Rhine River is one of the busiest rivers in Europe, and indeed in the world. It serves the Netherlands, Germany, France, Switzerland, and Luxembourg both for navigational and non-navigational purposes. In 1950, the Netherlands convinced the five countries and the European Community to co-operate for the protection of the Rhine from pollution because the quality of the water from the upper riparian countries had adversely affected the production of drinking water in the Netherlands. The International Commission for the Protection of the Rhine against Pollution (the International Rhine Commission) was thus founded in Basel by the 1963 Convention on the International Commission for the Protection of the Rhine against Pollution (Bern Convention).

⁹¹ This should be compared to the moving of the EC parliament between France and Luxembourg.

Two further agreements, the Convention on the Protection of the Rhine against Chemical Pollution⁹² and the Convention on the Protection of the Rhine against Chloride Pollution⁹³ were concluded in 1976, with the aim of controlling the discharge of chemical and chloride substances into the Rhine. The mechanism of prior authorisation was introduced in order to keep the Contracting states informed of all the activities being carried out and to control the level of waste water and chemical substances in the Rhine.

In 1986 the Sandoz accident⁹⁴ caused a serious degradation of the quality of the Rhine water. The Rhine Action Programme⁹⁵ was therefore adopted the following year. It was a non-legally binding instrument that aimed to keep the Rhine ecosystem alive and in good health, and to restore species that had disappeared.⁹⁶ Noticeable here is that the Rhine co-operation focuses on the issue of ecological balance as much as the quality of the water. The Rhine Action Programme required the member states to adopt a quality standard, which indicated the desired quality of the Rhine. Although the Rhine Action Programme was not legally binding, the return of salmon in the Rhine by the year 2000 testifies to the success of this programme.⁹⁷

Following the success of the Rhine Action Programme, the Rhine Convention on the Protection of the Rhine was adopted in 1999. One of the clear differences between the Rhine Action Programme and this Convention is that the latter lays down internationally binding obligations upon the Contracting states to co-operate for the achievement of long term results, viz. the sustainable development of the Rhine ecosystem. This Convention contains 19 provisions and an Annex. The most important provisions are Articles 3, 4 and 5, as they set out the objectives and declare guiding legal principles and procedural rules. The scope of the instrument is described in Article 2 and embodies the Rhine⁹⁸ ecosystem approach. This Convention therefore applies to the Rhine and areas that interact with it. These include, for instance, ground water, aquatic and terrestrial ecosystems and the Rhine catchment area.⁹⁹ The obligation to assist in the restoration of the North Sea clearly indicates the very comprehensive approach taken here.

Article 4 sets out nine additional principles that will guide the Contracting Parties to achieve the above aims. Procedural obligations are also adopted in Article 5 to ensure that all the undertakings of the Contracting Parties are carried out under the auspices of the principles set out in Article 4. The continuation of the International Commission for the

⁹² 1124 *U.N.T.S.* 425.

⁹³ 16 *I.L.M.* 265 (1977).

⁹⁴ D' Oliveira, H.U.J, 'The Sandoz Blaze: The Damage and the Public and Private Liabilities' in F. Francioni and T. Scovazzi, *International Responsibility for Environmental Harm* (1991), 429. On 31 October 1986, a fire broke out in a warehouse of Sandoz S.A. in Basel. The fire fighter operation used water to extinguish the blaze caused by chemical and pesticides stored in the warehouse. The water went straight to the Rhine and later reached the North Sea. The quality of the Rhine water was very drastic as much as the North Sea. A large number of fish disappeared and the water of the Rhine was not suitable for producing drinking water. It was the most serious accident that ever caused the Rhine this much damage.

⁹⁵ <http://www.iksr.org/hw/icpr/6uk.htm>.

⁹⁶ That was the decision passed by the Ministers in charge of the Rhine and the EC-Commissioner in charge of environmental protection in 1987.

⁹⁷ <http://www.iksr.org/hw/icpr/10uk.htm>.

⁹⁸ Definition of the Rhine is defined in Article 1.

⁹⁹ Article 2. For details, see below.

Protection of the Rhine (ICPR) is recognised in Article 6. Its' mandate is to promote co-operation between the Contracting Parties to accomplish the objectives set out in Article 3.¹⁰⁰

An analysis of the Rhine Convention mechanisms would be useful for a region such as the Mekong, as the 1995 Mekong Agreement has a rather weak water pollution mechanism while the Rhine region concentrates exclusively on this question..

2. The influence of the concept of sustainable development in the Rhine River Basin

The Sandoz accident forced the Rhine riparian states to consider the issue of the quality of the water of the Rhine as a matter of urgency. They agreed that the best option for the control and restoration of the water quality of the Rhine is to prevent new pollution as much as controlling and reducing the existing pollution.¹⁰¹ It is also clear that the pollution of the water of the river had negative effects on other related resources, such as the quality of the floodplain and the amount and diversity of wild flora and fauna. To deal with all of these water-related issues, the concept of sustainable development was adopted in the 1999 Rhine Convention as the main objective of the Contracting states.

It is in Article 3 that the objective, to achieve sustainable development, is affirmed. Six important elements are also recognised as the ways in which the sustainable development of the Rhine's ecosystem can be achieved. These include:

- (a) maintaining and improving the quality of the Rhine's water;
- (b) protecting the population of organisms and species diversity;
- (c) maintaining, improving and restoring the natural function of the waters (the natural flow of the water must promote the flow of solid matter);
- (d) conserving, improving and restoring the most natural habitats possible for wild fauna and flora;
- (e) ensuring environmentally sound and rational management of water resources;
- (f) taking ecological requirements into account in implementing technical measures to develop the waterway.

Article 4 refers to the concept of sustainable development as well, but as one of the guiding principles that the Contracting Parties must apply in implementing the obligations of the Convention. Article 4 however does not however provide a definition of this principle. But Article 4 shows that the concept of sustainable development has a special status in this Convention, as it recognises the importance of the Contracting Parties considering economic, developmental, environmental, and inter-generational factors in their activities.

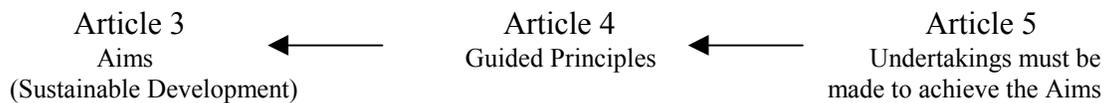
3. Legal mechanism of the 1999 Rhine Convention

The mechanism and the main provisions in the 1999 Rhine Convention are linked to the concept of sustainable development. Article 3 is the first to refer to sustainable

¹⁰⁰ Article 8.

¹⁰¹ The Rhine Action Programme is available from the Rhine Commission Secretariat.

development as the main purpose of this instrument. Article 4 mentions this concept again as a principle that guides the activities of the Contracting Parties. Article 5 affirms the importance of its' role as the objective that all procedural rules must aim for. These three provisions support each other's application.



This makes the Rhine Convention different from that of the Mekong Agreement. The mechanism in the Mekong Agreement functions through the application of the existing principles, such as equitable utilisation and the obligation to protect the environment, whereas the mechanism of the Rhine incorporates the concept of sustainable development as one of the principles guiding the member states, illustrating the more important role it plays in the Rhine Convention.

Two sets of obligations are studied below, which are relevant and potentially useful for the Mekong River Basin, viz. water quantity (management of the water flow) and water quality (the preservation of the water quality). The role of the International Commission for the Protection of the Rhine is also analysed later in order to illustrate to what extent and how this organisation plays an important role in supporting the achievement of the Rhine regime.

3.1 Water Quantity

3.1.1 Management of Water Flow

As mentioned earlier, the main focus of the Rhine Convention is on the quality of the Rhine ecosystem. However, reference to the management of the water flow can be found in Article 3. This provision requires the maintenance of a certain flow of water not by means of an outright obligation to maintain a minimum water flow, but by means of the improvement and restoration of the natural functions of the water. This provision states that the water flow of the Rhine must be managed in a way in which the flow of solid matter is in a condition beneficial to the conservation, protection and activation of alluvial areas and natural floodplains. This means that a flow of water must be maintained allowing solid matter to flow along the river. This provision is only for the purpose of maintaining the Rhine ecosystem in a good condition because the Rhine has no history of conflict over the quantity of water.¹⁰²

It is also important to note that this provision implies the importance of the need to protect and reactivate alluvial areas and natural floodplains. The effective and adequate management of the water flow therefore includes the maintenance of the interaction between the river and those areas as well. This model is very challenging for the Rhine

¹⁰² The interviewed conducted by the writer, *infra.*, n. 110.

riparian states because it has a very broad application¹⁰³ and requires much effective collaboration between the Rhine Commission and other related international organisations.¹⁰⁴

The above model is very interesting for a region like the Mekong, where the Contracting states will consider developing their requirements to maintain the quantity of water¹⁰⁵ for the purpose of preserving the level of biodiversity. It might be useful for the riparian states to consider the above example as one alternative to the implementation of Articles 3 and 7 of the Mekong Agreement.

3.2 Water Quality

3.2.1 Water Quality Conservation

Water quality conservation is dealt with in Articles 3, 4 and 5 of the Rhine Convention. These two provisions aim not only at controlling but also at preventing harmful effects from occurring at the outset.

To accomplish the above objectives, the mechanism for the conservation and preservation of the quality of the water is designed to ‘double guarantee’ in a successful implementation. Firstly, Article 4 lays out the fundamental principles that the Contracting Parties are required to apply in pursuing the objectives set out in Article 3. The most interesting principles include precautionary measures, preventive measures, the polluter pays principle and sustainable development. This in itself is a sufficient legal framework to prevent new pollution or at the very least to maintain the current state of the basin’s environment.¹⁰⁶

Secondly, Article 5 plays a supportive role to Article 4. It is in this provision that additional procedures are adopted, the most important one being the obligation to arrange and obtain ‘prior authorisation’.¹⁰⁷ This requirement is not new, as it was firstly adopted in the 1976 Rhine Chemical Convention¹⁰⁸ and has become one of the most effective water pollution

¹⁰³ Because it has to take into account the natural flow of solid matter and must promote interaction between river, groundwater and alluvial areas.

¹⁰⁴ These include, for example, the local authorities of each Contracting Parties that deal with the issues related to the restoration and improvement of their national wetlands and floodplains.

¹⁰⁵ Article 6, see above for details.

¹⁰⁶ In other words, Article 4 divides its mechanism into three steps. Step 1 is the preventive action, which is formulated under Article 4 (a)-(c). Step 2 is the compensatory process in the event of major technical measures increase damages. Article 4 (d)-(f) is the key provision. Step 3 is the controlling damages that have been increased as described in Step 2. Article 4 (g)-(I) is the main requirement for this Step, which interestingly adopts the concept of sustainable development again. This implies that in the case that there has been an increase of damage, the Contracting Parties are required perform and treats the damages in a way in which sustainable development of the Rhine ecosystem can be achieved. The best environmental practice must then be applied not just to ensure that those damages would be dealt with but to reassure other riparian states that it would not transfer to other environment, so that the sustainable development of the whole basin can still be achieved.

¹⁰⁷ Article 5 (4) (a).

¹⁰⁸ The 1976 Rhine Chemical Convention is the strictest instrument ever adopted in the Rhine history. This was due to the severe condition of water quality and increase of species in the Rhine river that forced the riparian states to adopt this rigid Convention in order to control and reduce the pollution in the water.

controls for the restoration of the quality of the Rhine water since 1976.¹⁰⁹ It is not only the emission of waste water that needs prior authorisation but also any technical measures that may have a serious effect to the Rhine ecosystem must also acquire ‘prior authorisation’ from the authorities of the Government concerned.

With hazardous substances, one of the most important issues during 1950s-1980s, the 1999 Rhine Convention imposes strict obligations. Article 5 (4) (b) requires the Contracting Parties to reduce the discharge of such substances and aims to eliminate such discharges completely. This is the most rigid obligation in this instrument and is another challenge for the Rhine riparian states, as its’ successful implementation requires a strong commitment, and the political will to achieve it. This is because it affects most of the pharmaceutical and other industries that have their plants along the Rhine. To achieve this, the government must be able to negotiate with these powerful industrial operators.

The guidance approach adopted in Article 4 also reflects the reluctance of the riparian states to adopt rigid obligations setting out how they should act to achieve these aims. The aim is to put the responsibility for implementing the flexible framework on the Contracting Parties and let social disapproval be the sanction for failing to comply. This flexible framework makes the riparian states more relaxed and more willing to participate. However, it should be noted that this flexibility may only be successful for regimes with member states that are totally committed and have similar levels of know how and technology. Trust between them is also another important factor driving this co-operation forward.

4. The International Commission for the Protection of the Rhine

In common with most other watercourse regimes, the Rhine riparian states establish a joint organisation to facilitate co-operation between them. The Commission consists of delegations from the Contracting Parties and may appoint experts in order to assist and give advice on particular issues. Delegations consist of senior civil servants who deal with water issues in their countries.¹¹⁰ It is worth noting that the 1999 Rhine Convention does not mention the Ministerial meetings or any rules of procedures for the Rhine Commission. It is the intention of the riparian states that the Ministers should meet once every three years, and the Rhine Commission will operate according to their own rules and procedures adopted later.¹¹¹

The mandate of the Rhine Commission is contained in Article 8. It can be divided into three main tasks: (1) to prepare scientific measurement programmes and make use of the information for the Contracting Parties;¹¹² (2) to promote co-operation between those states;¹¹³ and (3) to make decisions upon certain issues.¹¹⁴

¹⁰⁹ The International Commission for the Protection of the Rhine, *The Rhine: A River and Its Relations*, unpublished work. The table describing the improvement of the species number and oxygen content in the Rhine since 1900.

¹¹⁰ An interview conducted by the author with Mr. H. Oterdoom, Head of the Secretariat, and Dr. M. Braun, Scientific Collaborator, at the Secretariat of the International Commission for the Protection of the Rhine in Koblenz on 22nd May 2002.

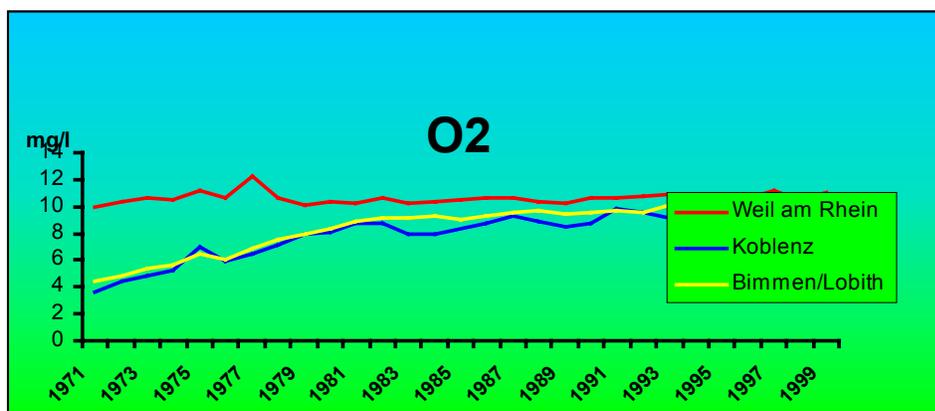
¹¹¹ *Ibid.*

¹¹² Article (1) (a)-(b).

¹¹³ Article 8 (1) (c).

The Rhine Commission has played a very active role in promoting and monitoring the improvement and success of the Rhine Convention. One of the major achievements of this Commission is the monitoring of the implementation of the water quality improvement measures in the Rhine Action Programme. The following chart illustrates the oxygen level in the Rhine monitored at Weil am Rhein, Koblenz, and Bimmen/Lobith over the period 1971-1999.

Chart 1



Source: The International Commission for the Protection of the Rhine (1999)

The above chart shows an increase in the level of oxygen in the water, which is the result of the effective implementation of the Rhine Action Plan. To maintain this success, the 1999 Rhine Convention mandates the Rhine Commission to be the forum for discussing and evaluating the progress and effectiveness of the actions and results of measuring programmes and studies of the Rhine ecosystem. The Contracting Parties are also required to report regularly to the Commission on their legislative, regulatory and other measures adopted in implementing the provisions of this instrument.¹¹⁵ If any country fails to do so, the Rhine Commission may initiate consultation and the results must be reported back to the Commission.¹¹⁶ The Commission also has a duty to inform the public on the state of the Rhine, which puts a measure of pressure on the Contracting states to implement their obligations effectively.

In addition, the Rhine Convention allows (a) states that have an interest in the work of the Commission; (b) intergovernmental organisations whose work is related to the Convention; and (c) non-governmental organisations,¹¹⁷ to participate in the commission's meeting as observers. This means that it allows a country like Austria, which is not a party to this Convention but has an interest in the Rhine co-operation as the headwater of the Rhine is located in Austria, to participate in the Rhine Commission. It also means that Intergovernmental organisations, such as other river commissions, and non-governmental organisations, such as local drinking water associations, can take part in the activities of the Rhine Commission.

¹¹⁴ Articles 8 (2) and 10.

¹¹⁵ Article 11 (3).

¹¹⁶ Article 11 (4).

¹¹⁷ Article 14.

IV. Conclusion

The high quality of water of the Rhine is a result of the effective implementation of the commitments generated by the Rhine Convention. This is the fundamental factor that promotes the success of this regime. Events such as the accidental release of water from the Yali Fall Dams in 2000 in Vietnam that caused Cambodian lives¹¹⁸ indicates failure of adequate and effective communication between Parties and of implementation of the obligations in the Mekong Convention. The time has come for all Mekong Parties to stand up and be counted, assuming their responsibility and obligations in the Mekong Convention. The future of this basin depends on the level of environmental awareness of the Contracting Parties. Only time will tell to what extent the sustainability of the Mekong basin can be maintained for the uses of future generations of the Mekong people.

¹¹⁸ <http://www.irm.org/programs/mekong/break.000801.html>.