28 The relationship between the law of international watercourses and sustainable development

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Introduction

The present chapter will focus mainly on the application of sustainable development to international watercourses rather than on definitional issues of the concept, as this has been elaborated in the chapter by Duncan French on 'Sustainable Development'. Only a working definition of sustainable development will be adopted, to constitute a theoretical basis on which the analysis will be based.

The application of this concept to international watercourses follows general international environmental law and the law of natural resources. The task at hand is not an easy one, as the concept of sustainable development is notoriously vague and ill-defined (see Boyle and Freestone, 1999: 1–18; Lowe, 1999: 19–39; Cordonier Segger and Khalfan, 2004; Cordonier Segger and Weeramantry, 2005; French, 2005; Gillespie, 2001; Ørebech et al., 2005; Barral, 2015). There are, however, certain elements of sustainable development which can be identified, although, it may be said that the list differs depending on the author's viewpoint. At a minimum, sustainable development can be reduced to three core elements: intergenerational equity which refers to the sustainability dimension of the expression; intra-generational equity, which refers to the developmental dimension of the expression; and integration, which blends both dimensions together. Beyond this irreducible core, the list of standards and principles gravitating around sustainable development and contributing to its achievement may vary but generally include sustainable utilisation and conservation of natural resources; the polluter-pays principle; the principle of precaution and procedural elements (EIA, access to environmental information; public participation and environmental justice). This variability is partly due to a lack of binding document specifically spelling out its different elements. The 1992 Rio Declaration on Environment and Development, the most authoritative document on the matter, remains a soft law instrument. Agenda 21, which adopts a subject-specific approach to sustainable development, is also non-binding in nature and States sense a lack of commitment in its implementation. The two follow-up summits at Johannesburg in 2002[1] and at Rio+20 in 2012[2]– aimed at moving from pledges to action rather than further feed into the meaning of the concept– did not bring about more precision or upset the aspirational character of the content of sustainable development.

There is, however, agreement in the literature on the subject that sustainable development is based on three pillars: environmental, economic and social (see French, Chapter 3 in this volume).[3] The correlation between these three pillars is also purely speculative, although some writers, such as Fuentes, adhere to the view that environmental protection has gained a certain priority over economic considerations (Fuentes, 2002: 109). Such a state of affairs is due, according to the same author, to participation by more influential environmental NGOs than the ones which deal with poverty and economic issues. Arguably, a better approach to this relationship is to research it on the basis of specific treaty regimes and on a case-by-case basis, as due to different socio-economic structures, there is very little consistent and widespread practice allowing general conclusions to be drawn.

The concept of sustainable development as regards watercourse cooperation has impacted on the evolution of existing principles (such as equitable utilisation, the 'no significant harm' rule and the duty to protect the environment of the watercourse). There is no doubt that sustainable development has influenced the evolution of the law of international watercourses and that the traditional approaches to water law and water management based on the apportionment of rights, have given way to the articulation of more long-lasting objectives, which are encapsulated in the concept of sustainable development (Decleris, 2000).[4] General conclusions on the relationship between the principle of equitable utilisation and the concept of sustainable utilisation were based almost exclusively on the 1997 United Nations Convention on the Non-navigational Uses of International Watercourses (hereinafter the 1997 Watercourse Convention) as a potential reflection of customary international law, but other specific treaty regimes are also particularly informative of the relationship between water cooperation and sustainable development. In this context, this chapter will first offer a short description of key principles of the law of international watercourses (1) before exploring further the nexus between sustainable development and principles of international water cooperation (2). Finally, selected watercourses treaty regimes will be examined (3).

1. Brief description of the main principles underlying international watercourse cooperation

The main principles underlying international watercourse cooperation are the equitable utilisation and non-significant harm principles. They are also the fundamental principles of the 1997 Watercourse Convention.[5] The text of the Convention is the result of an uneasy compromise achieved between the conflicting interests of riparian and non-riparian States, upper riparian States and lower riparian States. Support for either of these principles depended on the geographical position of a State. The core provisions of the Convention are contained in Articles 5 (equitable utilisation and participation)[6] and 7 (obligation not to cause significant harm). Article 6 lists all the factors relevant to equitable and reasonable utilisation that must be considered in order to determine whether the utilisation of an international watercourse is conducted in an 'equitable and reasonable' manner.[7] Article 6(2) specifies that in the application of Article 5 and paragraph 1 of Article 6, 'watercourse States concerned shall when the need arises enter into consultations in a spirit of cooperation'. Article 6(3) stipulates that the weight given to each factor is to be established by its importance in comparison with other factors. In the determination of what is reasonable and equitable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

The second crucial provision contained in Article 7 of the Watercourse Convention concerns the issue of non-significant harm.[8] Article 8 containing the general obligation to cooperate is linked to Article 5.[9]

The so-called principle of no-harm is derived from the maxim *sic utere tuo ut alienum non laedas* (use your property in such a manner as not to harm that of others) (Caflisch, 1993b; Caflisch, 1993a: 9–226). The terminology is not accurate as not all harm is prohibited, and a degree of harm is permitted. The threshold of permissible harm is one of the unresolved issues in international environmental law. In relation to the Watercourse Convention, it was formulated at the level of 'non-significant'. Support for the applicability of this principle in general law derives from the 1941 *Trail Smelter Arbitration (United States v. Canada).* This case involved transboundary air pollution. Nonetheless, its findings also apply to the trans-boundary pollution of waters. Moreover, in reaching its decision, the Tribunal drew on practice concerning transboundary pollution of water between States in the United States. The most often cited statement is as follows: '[n]o State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another of

properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence'. The threshold of harm, in this case, is set at the level of seriousness.

The 1949 *Corfu Channel* case was another general decision which is interpreted as formulating the prohibition of transboundary harm (*Corfu Channel* case, 1949: 4). The Court enunciated a very well-known principle i.e. 'every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States'. It appears that to link this statement directly to the law of international watercourses or even to international environmental law is to stretch a point, as the Court did not specify what rights of a State it had in mind. An alternative perspective on the Court's statement is that a State's right to use its territory is not unlimited and 'it subject to rights of other states' (McCaffrey,2019 482). The no-harm principle was incorporated into numerous international instruments, both hard and soft, one of the best-known being Principle 21 of the Stockholm Declaration on the Human Environment. It provides in its first paragraph the following:

> States have, in accordance with international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or areas beyond the limits of national jurisdiction.

This principle, with some changes, was incorporated in the 1992 Rio Declaration on Environment and Development.[10] The threshold of harm was set at 'significant' in the 1997 Watercourse Convention. It was reached after many heated discussions within the ILC, during which other limits, such as 'substantial' or 'appreciable', were debated. The Memorandum of Understanding attached to the 1997 Convention explains that

> the term 'significant' is not used in the present Convention in the sense of 'substantial'. What is to be avoided are localised agreements, or agreements concerning a particular project, programme or use, which have a significant adverse effect upon third watercourse States. While such effect must be capable of being established by objective evidence and not trivial in nature, it need not rise to the level of being substantial. (Statements of Understanding Pertaining to Certain Articles of the Convention, 1997: 719)

The relationship between the principle of equitable utilisation, the no-harm rule and the principle of due diligence ('all appropriate measures') has had a long and troubled history, which was exacerbated by the lack of clarity as to the legal nature of each of these three elements. The ILC struggled to link them together in a coherent manner but without much success. In particular, there is the question as to which element – equitable utilisation or the prohibition of significant harm – has priority. The awkward drafting of Articles 5 and 7 in the Watercourse Convention did little to dispel the doubts and confusion surrounding the relationship between the principles of no-significant harm, equitable utilisation and due diligence (appropriate measures standard).[11] However, it must also be noted that this Convention contains a very extensive set of procedural obligations, among them, *inter alia*, notification of planned measures, adequate notice to give time to respond, and regular exchange of available data.

2. The nexus between sustainable development and principles of international water cooperation

2.1 Evolution of international water cooperation law in the light of sustainable development

2.1.1 An uneasy relationship between international watercourses law and sustainable development?

Many studies have highlighted the link between the law of international watercourses and sustainable development (see Wouters and Rieu-Clarke, 2001; Pichyakorn, 2002, 2005; Rieu-Clarke, 2005; Hildering, 2004; Fitzmaurice and Elias, 2004: chapter 6).[12] The most common approach is to analyse the general concept of sustainable development and to apply it to the law of international watercourses (Rieu-Clarke, 2005; Hildering, 2004). For some however, such an approach ignores the legal character of the principle of equitable utilisation and its role in the management of international watercourses (Hildering, 2004: 57), which as was pointed out above, is initially a means of resolving conflicts between riparian States, not an embodiment of the concept of sustainable development. Hildering argued that international water law has developed in a fragmented manner and that the concept of sustainable development applied to watercourses would result in the construction of a coherent and integrated system, which would contribute to overcoming the inherent difficulties of fitting the equitable utilisation principle into sustainable development.
To achieve this

> [t]he principle of equitable and reasonable utilisation and its outcomes are to be adjusted to the goal of sustainable development. First, sustainable development should be set as goal. Second, further protection of vital human needs, ecosystem protection and sustainability is needed. Third, cooperation is to be enhanced. And fourth, participation in the process is to be extended beyond (riparian) states. (Hildering, 2004: 69)

We can agree with these postulates. However, the question arises as to their practical application, that is, how to implement them in practice, how to adjust the principle of equitable and reasonable utilisation to the concept of sustainable development in the context of particular water treaty regimes. This can be achieved through a joint body, which would protect the interests of all riparian States. However, in reality, such a body will have difficulty securing cooperation beyond riparian States, as postulated by Hildering, as it is a well-known phenomenon that international water cooperation in certain regions is fraught and at times even hostile between riparian States themselves (Hildering, 2004: 190).[13] The above-cited author analysed approaches to international watercourses and sustainable development from the point of view of three pillars of sustainable development: that is, water as a social, economic and ecological good (Hildering, 2004: 143–88). Water as a social good, that is, access to water, includes several other elements, the legal status of which is not entirely clear, such as the human right to water at community level, eradication of poverty at the national level and the principle of equity at the international level. Theoretically, such an approach is very logical and well structured. However, again it raises a host of practical issues relating to the legal content of some of the concepts, such as a human right to water (one of the most hotly disputed and debated issues in international environmental law in general and water law in particular) and the notion of equity in international law, the substance of which is not well-defined. Water as an economic good is characterised by an equally theoretical and perhaps not entirely realistic approach. Arguably, water as an economic good signifies control over water, which in turn includes a right to use water at the community level, water as an economic good at the national level and a supportive and open international economic system at the international level. Hildering reached the following conclusions:

> i. ownership of water in principle concerns users rights that are preferably regulated and controlled by democratic public bodies. ii. Community-public-private partnerships can under conditions provide a promising way to manage water. iii. An economic approach to water can assist in the efficient management of water but is not necessarily compatible with sustainable development. (Hildering, 2004: 190)

Community management may be preferable from the point of view of sustainable development and is also in agreement with the postulates of the 2002 Johannesburg Summit

Plan of Implementation (which stresses the promotion of women's equal access to and full participation in decision-making at all levels and the general improvement of their status) (Hildering, 2004: 108).

There are certain acknowledged principles of international environmental law which, according to Hildering, further sustainable development, such as the right to development and the principle of common but differentiated responsibilities; the right to a healthy environment; the precautionary principle and eco-justice; the polluter-pays principle, no-harm principle and the concept of the common heritage of humankind. It may be observed again that all these principles have very loosely defined normative content and their practical application is often unclear and doubtful (such as the concept of common heritage of humankind). Hildering, concludes that 'the current international law on freshwater resources does not necessarily contribute to sustainable development and although international law on sustainable development is emerging, its application to freshwater resources remains unclear' (Hildering, 2004: 191).

Arguably however, recent developments may have somewhat clarified this relationship.

2.1.2 The reflection of sustainable development in international watercourses law

In 2013 the UNECE Water Convention opened to accession to all United Nations members, thus purporting to turn it into a treaty with global reach, while in 2014 the UN Watercourse Convention finally entered into force. These developments are significant as both treaties incorporate and reflect, although with their own specificities, sustainable development's discourse. The UNECE Water Convention is analysed in detail below (see 3.2 infra) and only its most relevant features will be highlighted here. The UN Watercourses Convention however deserves some attention. Whilst it was adopted in 1997, the text of the treaty was based on the codification work of the ILC which had concluded in 1994. This is significant as, during its negotiations, the ILC was mindful of the Rio process and according to Tanzi, 'quite willing to link its work on the topic with the environmental principles and concepts that were being developed within the Rio Conference process at the time' (Tanzi, 2015: 20). And there is indeed very little question that sustainable development has marked and influenced the Watercourse Convention text. The most salient impact of the concept is arguably its influence on the wording of Article 5 of the Convention relating to the principle of equitable and reasonable utilisation and participation which provides in its first paragraph that:

> Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and *sustainable* utilization thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse. (emphasis added)

Interestingly, the word 'sustainable' is an addition to the text proposed by the ILC in 1994. Tanzi argues that:

> These additions were made with a view to enhancing the goals according to which the rule must be interpreted and applied by providing 'public interest limitations' on the traditional doctrine of equitable utilization, not simply as factors in assessing the equitable character of a given utilization but as values inherent in the principle of equitableness itself. Accordingly, any utilization of an international watercourse that disregards one of these criteria – e.g., a patently unsustainable use of the watercourse – is inequitable for the purpose of the Convention. (Tanzi, 2015: 44)

This means that sustainability is not just one factor in the assessment of the equitableness of a particular utilisation but part and parcel of the principle itself. This view, as we will see further below, has been confirmed by judicial developments and support for the intimate link

between sustainable development and the principle of equitable and reasonable utilisation is also widespread. Wouters and Rieu-Clarke for example argue that the principle as worded in Article 5 of the Watercourse Convention requires that States 'take into consideration the factors tied to sustainable development of the resource, thus providing the legal framework for operationalising this concept' (Wouters and Rieu-Clarke, 2001: 283). According to these authors, the implications of sustainability on the principle of equitable and reasonable use are that States will need to:

> take into account the interrelatedness of freshwater bodies, sectoral integration and multi-interest considerations. While the notion of equity requires that these issues be reconciled, the notion of reasonableness implies a certain standard on how a transboundary watercourse is utilized. Given our present knowledge of the effects of economic development, it is extremely unlikely that a use, which endangers the long-term potential of renewable resources such as water, would be considered reasonable (note omitted). Finally, in line with the promotion of sustainable development, the principle of equitable and reasonable use requires that in reconciling competing uses of transboundary watercourses, 'special regard' must be given to 'vital human needs' (Article 10(2), UN Watercourses Convention 1997). (Wouters and Rieu-Clarke, 2001: 281-282)

These comments rightly suggest that the Watercourse Convention has incorporated and reflects the various dimensions of sustainable development, i.e. its environmental as well as economic and social dimensions, as embodied in the notion of vital human needs. For McIntyre the incorporation of sustainable development in the equitable and reasonable utilisation principle would 'lend support to the proposition that considerations of environmental protection enjoy very considerable significance under the latter principle, as environmental protection has always constituted a major factor of the former' (McIntyre, 2007: 362). He also points out that this makes applicable to this area of law 'the plethora of international rules and standards relating to environmental protection in general and to the protection of water quality and watercourse ecosystems in particular' (McIntyre, 2007: 365).

It is notable that the influence of sustainable development on the principle of equitable use is again evident in the 2004 International Law Association Berlin Rules on Water Resource Law which incorporate the concept of sustainable development and sustainable use.[14] Sustainable use is defined as

> the integrated management of resources to assure efficient use and equitable access to waters for the benefit of current and future generations while preserving renewable resources and maintaining non-renewable resources to the maximum extent reasonably possible. (Art. 3 – Definitions)

Article 7 – Sustainability, reads as follows: 'States shall take all appropriate measures to manage waters sustainably'. The commentary to this Article explains that it encapsulates the concept of sustainable development, as included in several international instruments, such as the 1992 Rio Declaration, the 2002 Johannesburg Declaration and the 2002 International Law Association New Delhi Declaration on Principles Relating to Sustainable Development. Sustainable development in this Declaration was based on several principles: eradication of poverty; sustainable use of natural resources (including the principle of equity); the precautionary approach to human health (Art. 23 of the Rules), natural resources and ecosystems; the principle of public participation and access to information and justice (Art. 18 of the Rules); the obligation of good governance and that the management of natural resources must take place in an integrated manner (Arts 5 and 6 of the Rules). The Commentary emphasises that the whole body of Rules is focused on sustainability, and in that is different from the Helsinki Rules, in which the pivotal role was accorded to the principle of equitable utilisation, it said as follows:

> [t]he rule of equitable utilisation … still expresses the primary rule of international law, … regarding the allocation of waters among the basin States … the emerging international environmental law is

> compatible with the rule of equitable utilisation, yet there is nothing to require that States using water – even equitably and reasonably – must conform themselves to the mandates of international environmental law. Sustainability then is separate and compelling obligation that … conditions the rule of equitable and reasonable use without displacing it. Yet sustainability is not an absolute obligation … a due diligence obligation to which States can be expected to conform.

Beyond the UN Watercourse Convention, sustainable development is also embodied in the UNECE Water Convention (see further 3:2 below). Whilst there are arguments that this Convention gives preeminence to the no harm rule (Article 2(1)) over the principle of equitable use (Article 2(2)(c)) (Tanzi and Kolliopoulos, 2015: 138-139), the link of the latter with sustainable development is undeniable. The *Guide to Implementing the Water Convention* notes indeed that:

> Article 2, paragraph 2 (c), should be read in conjunction with article 2, paragraph 5 (c), according to which 'water resources shall be managed so that the needs of the present generation are met without compromising the ability of future generations to meet their own needs'. This is fully in line with the contemporary developments of international customary water law according to which the principle of equitable use incorporates that of sustainable development. That is to say that a use of an international water body may not be considered as equitable, therefore legal, if it is not sustainable.[15]

The complementarity of these two conventions has often been highlighted[16] and it has been argued that together they have 'updated international water law by incorporating…some of the major development in environmental law…particularly with regard to the sustainable development principle and its implications' (Tanzi, 2015: 16). This same author posits that the normative framework created by these two water treaties is also largely evidentiary of customary international law in the field (Tanzi, 2015: 80-81). There is little controversy that the UN Watercourse Convention reflects current customary principles of water law (see Loures, Rieu-Clarke, Dellapenna and Lammers, 2013: 49-54; Salman, 2013: 30; McCaffrey, 2019 :440, McIntyre and Tignino, 2013: 287) and this was the case even before its entry into force as pointed out by the ICJ itself in the *Gabčíkovo-Nagymaros* case.[17] Customary international law may have however developed further than the Watercourse Convention itself especially from the point of view of procedural obligations and the incorporation of environmental principles into water law (see McIntyre and Tignino, 2013: 288). This confirms, from a customary law point of view, the complementarity of the UNECE Water Convention and its greener approach to the Watercourse Convention. Together, they thus arguably embody a balanced view of sustainable development.

Sustainable development's colouring of international watercourses law is ultimately confirmed by recent judicial pronouncements. The *Gabčíkovo-Nagymaros* case is the most often cited example of the support of the International Court of Justice for the application of the concept of sustainable development to international watercourses, especially in paragraph 140 of the Judgment.[18] Interestingly, in relation to the applicability of this concept in the context of this particular case, most important is the last sentence, in which the Court says as follows:

> For the purposes of the present case, this means that the Parties together should look afresh at the effects on the environment of the operation of the Gabčíkovo power plant. In particular they must find a satisfactory solution for the volume of water to be released into the old bed of the Danube and into the side-arms on both sides of the river.

The above quotation indicates that in order to apply the concept of sustainable development to international watercourses (or perhaps in the context of any other concrete situation), the best way forward is to focus on practical issues at hand, such as the volume of water. It may also be argued that the Court suggests that an evolutionary approach to existing water-courses and joint management are also elements of sustainable development (Benvenisti, 2002: 199-200).[19] It is notable, however, that the Draft of the ILC on Shared Natural Resources follows the approach adopted by the 1997 Watercourse Convention and is based on the principle of equitable and reasonable utilisation (ILC, 2006: UN Doc.A/CN.4.L.688).[20]

The example of the 1957 *Lac Lanoux* arbitration is often given in support of procedural provisions pertaining to sustainable development (such as the duty of prior negotiations and consultations). Such a conclusion, however, appears to be far-fetched, as in 1957 the Arbitral Tribunal in this case drew conclusions from the historical development of the law of international watercourses, which did not relate at all to sustainable development. The same argument applies to the historical doctrine of community of interests, which was formulated in the 1929 *River Oder* case and is considered at present to contribute to the development of sustainable development (*River Oder* case, 1929: 27–8).[21] This doctrine was applied by the Court to the non-navigational uses of international watercourses in the 1997 *Gabčíkovo-Nagymaros* case.

If the ICJ applied sustainable development to the law of international watercourses in the *Gabčíkovo-Nagymaros* case without defining the legal implications of what it termed a concept, a more ambitious approach to sustainable development, if not in the context of water, was adopted in the 2005 *Iron Rhine* case (paras. 58–9).[22] This general statement of the Arbitral Tribunal is indeed more detailed than that in the *Gabčíkovo-Nagymaros* case. Most important, however, is the last sentence of para. 59, in which the Tribunal applies the concept to a particular situation, that is, in relation to the EC Habitat Directive:

> The Habitats Directive aims at reconciling the maintenance of biodiversity with sustainable development by developing a coherent European ecological network ('Natura 2000'). This is to be effected by the designation of special areas of conservation, as 'sites of Community importance', in accordance with a specified timetable. Sites eligible for such designation are proposed by the EC Member States. (Art. 4, para. 126)

The approach of the Arbitral Tribunal appears to be constructive as it applies sustainable development to a particular situation, thereby giving it operational substance.

The question of the applicability of sustainable development to international watercourses arose again in the 2010 *Pulp Mills on the River Uruguay* case *(Argentina v. Uruguay)*. Whilst, unsurprisingly considering its time of adoption, the relevant conventional framework made no reference to sustainable development, the ICJ nevertheless reads what it now coins an objective (rather than a concept as in the *Gabčíkovo-Nagymaros* case) into the terms of the 1975 Statute of the River Uruguay. Article 27 of the Statute provides that: 'The right of each Party to use the waters of the river, within its jurisdiction, for domestic, sanitary, industrial and agricultural purposes shall be exercised without prejudice to the application of the procedure laid down in articles 7 to 12 when the use is liable to affect the regime of the river or the quality of its waters'. Interestingly, this formulation reflects for the Court both the principle of equitable and reasonable use and that of sustainable development, which seem to have merged into one single concept. Indeed, the Court sees in Article 27 'not only the need to reconcile the varied interests of riparian States in a transboundary context and in particular in the use of a shared natural resource, but also the need to strike a balance between the use of the waters and the protection of the river consistent with the objective of sustainable development' (para. 177). In other words, it 'embodies this interconnectedness between equitable and reasonable utilization of a shared resource and the balance between economic development and environmental protection that is the essence of sustainable development' (para. 177). Such judicial pronouncement confirms that sustainable development has successfully coloured the interpretation of the principle of equitable and reasonable use which now incorporates environmental protection concerns and that utilisation of a shared resource will only be equitable and reasonable if it is sustainable (Barral, 2016: 11, see also McCaffrey, 2013: 15). This view is shared by many, including McIntyre who posits:

> the Court has made it quite clear that the requirements of equitable and reasonable utilisation correspond to those of sustainable development, including all of the far-reaching norms and standards relating to environmental and ecosystems protection attributed to the latter. It has left no room for

> doubt as to the central significance of procedural rules of cooperation for equitable and reasonable utilisation and, by extension, sustainable development. (McIntyre, 2011: 139)

The Permanent Court of Arbitration adopted a somewhat more conservative approach in its 2013 *Indus Waters Kinshenganga* case *(Pakistan v. India)*. Pakistan was of the view that the development of an Indian hydro-electric project requiring the diverting of the waters of the river Kishenganga/Neelum was contrary to the 1960 *Indus Waters Treaty* in the light of its adverse environmental consequences and its potential impact on the river's water flow. Such reduced flow, it was argued, would affect Pakistan's legitimate right to use the river for agricultural and industrial purposes downstream. The dispute thus concerned conflicting interests in the use of the river and whilst the Court did not make reference to the principle of equitable and reasonable utilisation, it nonetheless purported to establish the appropriate balance between these competing claims to the use of the river. In this context, it ruled the Indian project legitimate but it nevertheless had to determine minimum water flow to be maintained by India to preserve Pakistan's right to use the river and minimise the adverse environmental consequences of the project's operation (see final award para. 101). However, whereas the Court recognises the general duty of prevention of environmental damages, it nevertheless adds that it is not:

> appropriate, and certainly not 'necessary' for it to adopt a precautionary approach and assume the role of policymaker in determining the balance between acceptable environmental change and other priorities, or to permit environmental considerations to override the balance of other rights and obligations expressly identified in the Treaty – in particular the entitlement of India to divert the waters of a tributary of the Jhelum. The Court's authority is more limited and extends only to mitigating significant harm. Beyond that point, prescription by the Court is not only unnecessary, it is prohibited by the Treaty. (Final award para. 112)

The Court thus limits its role to minimising environmental damages within the confines of the application of the treaty without incorporating into its text contemporary principles of environmental protection and modern understandings of the principle of reasonable and equitable use despite indications to the contrary in its earlier partial award (Barral, 2015: 328-329 and partial award para. 452). Whilst the award may be less ambitious than previous cases on similar issues, it has been pointed out that it may be seen as a mere application of *lex specialis* (Moussa, 2015: 711), and that it took care to place its findings within the broader case law drawing the link between international water law, environmental protection and sustainability (McCaffrey, 2014: 8, Moussa, 2015: 713-715). The 2015 *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)* case, involved, from the point of view of international watercourses, dredging activities in the San Juan River. The ICJ did, building on its previous *Pulp Mills* case, incorporate contemporary principles of international environmental law within the solution of the dispute. It did so especially with respect to duties relating to prevention of transboundary harm, EIA, notification and consultation (see *I.C.J. Reports 2015*, p. 665 paras. 101-120). It did not however refer or connect these duties with the objective of sustainable development or the principle of equitable and reasonable use.

It is overall nevertheless striking that a significant proportion of the case law relating to sustainable development involves international watercourses disputes. The number of disputes on the role of international courts and tribunals has indeed recently steadily increased, every time involving matters concerned with the balance between conflicting economic and social uses and environmental protection concerns. It remains to be seen whether these concerns make their way into the latest dispute involving a (potentially) international river on the role of the ICJ, the Silala waters dispute opposing Chile and Bolivia *(Dispute over the Status and Use of the Waters of the Silala (Chile v. Bolivia).* This peculiar state of affairs ultimately lends support to the proposition that international water law operationalises the concept of sustainable development and we can agree with McIntyre that:

> Although the principle of equitable and reasonable utilisation has its origins in inter-state arrangements for allocating co-basin states' quantum share of transboundary waters, it is now largely concerned with environmental requirements and the environmental consequences of incompatible uses. Indeed, as it seeks to balance economic, social and environmental imperatives in the use of water, equitable and reasonable utilisation is now widely understood as the means of operationalising the more nebulous concept of sustainable development in the specific context of transboundary water resources. (McIntyre, 2017: 240)

Beyond its intimate connection with the principle of equitable and reasonable use, sustainable development also arguably exerts a broader influence on international water law.

2.2 The broader impact of sustainable development on international water law

In 2002 water is put at the heart of sustainable development at the *World Summit on Sustainable Development* through the elaboration of the notion of Integrated Water Resources Management (IWRM). The *Plan of Implementation* thus views IWRM as a key component for achieving sustainable development. Equally, in 2012, the *Future We Want*, the outcome document of the Rio+20 Conference posits:

> We recognize that water is at the core of sustainable development as it is closely linked to a number of key global challenges. We therefore reiterate the importance of integrating water in sustainable development and underline the critical importance of water and sanitation within the three dimensions of sustainable development. (para. 119)

This is reflected again in the 2015 *Sustainable Development Goals* (SDGs) whose goal 6 requires to ensure availability and sustainable management of water and sanitation for all by 2030. Interestingly, international water cooperation is identified as particularly relevant in the context of IWRM and a means to achieve it in goal 6 target 5. IWRM is also closely connected to the ecosystem approach envisaged at Article 20 of the UN Watercourses Convention which provides: 'Watercourse States shall, individually and, where appropriate, jointly, protect and preserve the ecosystems of international watercourses' and is also a prominent feature of the UNECE Water Convention (see further below). These support the argument that catchment areas be used as water management units, which in relation to water law, according to Canelas de Castro:

> permits and facilitates a more realistic or effective legal discipline: one where development of water is not any longer the sole goal pursued, but development becomes integrated with the goal of protection of water; one where, therefore, only sustainable development is lawful. (Canelas de Castro, 2015: 895)

One effect of these developments, may be, according to Spijkers, to further influence the interpretation and application of foundational principles of international water law in a sustainable manner (Spijkers, 2016: 39). This author considers the specific potential impact of the SDGs in that respect and argues that they may form the inspiration to move beyond an interpretation of the no-harm rule from a purely transboundary perspective, to one that applies to the watercourse itself, irrespective of transboundary effects, in order to prevent harm to future generations (Spijkers, 2016: 44-45). According to this same author, the SDGs may also lend further support to an interpretation of the principle of equitable and reasonable utilisation that takes account of future generations and the environment itself beyond inter-state relations, thus interpreting the notion of equity in the principle as encompassing inter-generational equity. (Spijkers, 2016: 45-46).

Sustainable development also requires transboundary water cooperation, in particular, according to the SDGs to achieve IWRM. IWRM is a process promoting the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.[23] With its focus on an integrated approach, it is a perfect embodiment of sustainable development and it has been said to constitute 'the internationally recognized

paradigm for sustainable water management' (Kranz, Winter and Eid, 2013: 248). These authors further explain that

> The IWRM paradigm promotes cross-sectoral cooperation at all levels to balance different interests and needs of various users in achieving sustainable water resource management. It also facilitates the mainstreaming of water issues in the political economy of a country and, as such, across all sectors. IWRM focuses on better allocation of water to different water groups and, in so doing, stresses the importance of involving all stakeholders in the decision-making process. (Kranz, Winter and Eid, 2013: 248)

If IWRM requires transboundary cooperation, it goes beyond this traditionally international dimension and is testimony of the broader impact of sustainable development on water law in general beyond any transboundary element. Its inclusion in the SDGs is likely to further enhance international regulation in a sustainable manner irrespective of the existence of a transboundary element. The same can also be said of the ecosystem approach. Spijkers points out that even though Article 20 of the UN Watercourse Convention does not mention sustainable development, the ILC made clear in its commentary 'that ecosystems needed protection and preservation in order "to ensure their continued viability as life support systems, thus providing an essential basis for sustainable development"' (Spijkers, 2016: 47). According to this author the SDGs (especially SDG 6.6 and 15) 'further trigger the development, and rise to prominence, of the ecosystems approach in international water law' which could replace the traditional approach focusing on the watercourse itself by a 'more modern approach [which] would then focus on the protection of the entire ecosystem, including the land areas' (Spijkers, 2016: 47). The ecosystem approach takes IWRM a step further by setting itself as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way (Rieu-Clarke and Spray, 2013: 16). This approach has itself been further complemented by that of ecosystems services, which aims to manage ecosystems in a way that reflects the values and services for humans that flow from these ecosystems, hence valuing non-traditional market costs (Rieu-Clarke and Spray, 2013: 24). There again these approaches undoubtedly reflect the spirit of sustainable development and further confirm the ever broader impact of the concept on international water law beyond its purely transboundary dimension. In relation to the ecosystem approach is concerned, McIntyre goes even as far as to suggest:

> If taken to its logical conclusion, the ecosystems approach could spell the end for international water law as a discrete body of rules and practices as it would be subsumed into a broader corpus of international ecosystems law that would facilitate the integrated sustainable management of the various constituent components of the broader ecosystem, which might sometimes even extend beyond the drainage basin. (McIntyre, 2014: 88)

International watercourse law is not however on its last breath yet and there is still much scope for the operation of sustainable development in a purely transboundary context. Overall, analysis of the relationship between the concept of sustainable development and international watercourses has been based mainly on the substantive (equitable and reasonable utilisation) and procedural (for example, exchange of information on planned measures) principles, which are contained in the 1997 Watercourse Convention (Rieu-Clarke, 2005: 133-42). Rieu-Clarke postulated that '[t]he successful advancement of international law in the field of sustainable development, as shown by the law of international watercourses, should be supported through procedural rules and mechanisms capable of promoting good governance within the context of sustainable development' (Rieu-Clarke, 2005: 161).

The establishment of proper mechanisms to manage international watercourses is no doubt a sound idea (Rieu-Clarke, 2005: 161). However, such mechanisms are not unique features of sustainable development. In fact, they have been widely used for centuries as the most effective way of administering an international watercourse. We may say, therefore, that such joint institutional arrangements may be adopted within and adapted to the framework of the concept of sustainable development and serve its furtherance, but they are not new creations

but traditional mechanisms, which States were establishing long before the concept of sustainable development was coined.[24]

Additional problems include the diversity of geopolitical conditions relating to various watercourses in different regions of the world. The notion of sustainable development and its elements can only be generalised to a certain degree, but ultimately applicability of this concept will depend on the region in which a particular watercourse is situated. There is a great difference between conditions relating to regions of the world with water shortages and conflicting political regimes and those with an abundance of water and similar political systems, such as in the case of the Nordic countries. Therefore the interpretation of fundamental principles of watercourse cooperation between States will depend on their geopolitical situation. The same is true of the concept of sustainable development, which is differently interpreted and applied depending on the region, according to the principle of common but differentiated responsibilities and the intrinsic variability of the concept (as well as *materiae* and *temporis*).

Dellapenna argues persuasively that:

> the concept of sustainability was always implicit in the law relating to water resources, for the right to use water equitably is a 'usufactory' right rather than absolute ownership … The right to use of the water and the fruits of that use simply never included the right to waste, destroy, or fully consume the resource. This legal tradition, as well as the fact that the hydrological cycle operates on a time scale that is meaningful for humans, suggest that the proper standard for water usage is 'sustainable use' rather than 'sustainable development'. (Dellapenna, 2004: 89)[25]

Dellapenna is also of the view that 'what uses are sustainable must remain a highly specific analysis of the proper uses of a particular resource in a particular setting' (Dellapenna, 2004: 89). It is thus useful to explore how this relationship has been conceptualised in the context of specific transboundary water regimes.

The next section of this chapter will examine two of the existing watercourse agreements, which are representative of African and European regions of the world and analyse the way these agreements include sustainable development (if at all).

3. Selected watercourse treaty regimes and sustainable development

The 2000 SADC Protocol (Revised) on Shared Watercourses[26]

The 2000 SADC Protocol revised a 1995 Protocol. There are fundamental differences between these two Protocols. The 1995 Protocol was largely based on the 1966 Helsinki Rules on the Uses of Waters of International Rivers (ILA, 1967a). The new (Revised) Protocol mirrors the 1997 Watercourse Convention and generally sets out the principles for joint management of rivers shared by two or more countries. It also refers to the concept of sustainable development, sustainable utilisation of shared resources and the concept of environmentally sound management, as reflected in Agenda 21. It is the first watercourse agreement to rely on the three pillars of sustainable development, as it reads as follows: '[c]onvinced of the need for coordinated and environmentally sound development of the resources of shared watercourses in the SADC Region in order to support sustainable socio-economic development' (Preamble). Article 1, para. 1(i) explains that

> management of a shared watercourse means planning the sustainable development of shared watercourse and providing for the implementation of any plans adopted; and (ii) otherwise promoting the rational, equitable and optimal utilisation, protection and control of the watercourse.

The main objective of the Protocol outlined in Article 2 is undoubtedly the expression of the concept of sustainable development:

> [t]he overall objective of this Protocol is to foster closer cooperation to judicious, sustainable and coordinated management, protection and utilisation of shared watercourses and advance the SADC agenda of regional integration and poverty alleviation. In order to achieve this objective, this Protocol seeks to:
> (a) promote and facilitate the establishment of shared watercourse agreements and Shared Watercourse Institutions for the management of shared watercourses; (b) advance the sustainable, equitable and reasonable utilisation of the shared watercourses; (c) promote a coordinated and integrated environmentally sound development and management of shared watercourses; (d) promote the harmonisation and monitoring of legislation and policies for planning, development, conservation, protection of shared watercourses, and allocation of the resources thereof; and (e) promote research and technology development, information exchange, capacity building, and the application of appropriate technologies in shared watercourses management.

Article 3 (General Principles), para. 4 states explicitly that the 'State Parties shall maintain a proper balance between resource development for a higher standard of living for their people and conservation and enhancement of the environment to promote sustainable development'.

Similarly to the 1997 Convention, the SADC Protocol is based on the principle of sustainable and reasonable utilisation.[27] However, interestingly, the Protocol integrated the principle of equitable and reasonable utilisation with that of the protection of the riparian environment, which is a new and very important development, as it combines elements of watercourse management, which used to be considered incompatible (see above).

The Protocol has an integrated management approach to water as it relates to surface and ground water (Art. 1). The Protocol's definition of significant harm is the same as in the 1997 Watercourse Convention, as it means: 'non-trivial harm capable of being established by objective evidence without necessarily rising to level of being substantial' (Art. I definitions). However, the consequences of causing harm are formulated in broader terms than in the 1997 Watercourse Convention, as it also takes into account the persons (natural and juridical) who suffered or are under a serious threat of suffering from transboundary harm and grants them access to justice regardless of nationality, residence or place where the injury occurred.[28] The Protocol follows the 1997 Watercourse Convention as regards ample procedural provisions and environmental protection and preservation. Article 6 of the Protocol provides for very extensive and elaborate institutional arrangements. The SADC principal water organs are as follows: the Committee of Water Ministers; the Committee of Water Senior Officials; the Water Sector Co-ordinating Unit and the Water Resources Technical Committee and Sub-committee.

SADC Water Division is part of the Infrastructure and Services Directorate and comprises of Revised Protocol on Shared Watercourses, the Regional Water Strategy (2006) and a series of Regional Strategic Action Plans for the Water Sector - currently on version 3. The SADC water policy is in particular based on addressing the challenges of water resources management, especially transboundary.[29]

As described above, the Protocol has a legal structure that enables the realisation of the concept of sustainable development, which in fact is the main objective of this instrument. The Protocol also works in practice. One such an example is the SADC Shared Watercourses Support Project for Buzi (Mozambique/Zimbabwe), Ruvuma and Save River Basins (Tanzania/Mozambique) on the basis of the Revised Protocol, and Kunene River Permanent Joint Technical Commission (PJTC) (Angola and Namibia).[30] The project covers the three river basins and addresses the three areas identified in SADC's Regional Strategic Action Plan for Integrated Water Management and Development (RSAP-IWRMD): surface waters assessment/management; ground-water assessment/management; and capacity- building. The RSAP/IWRMD is an integral part of the Revised Protocol. The Strategy's objective is 'to unlock the potential for water (and related resources) to play its role as an engine and catalyst for socio-economic development through water infrastructure development and management to support water supply and sanitation, energy, food security, and security from water related disasters with the ultimate goal of contributing towards peace and stability, industrialisation,

regional integration and poverty eradication'.[31]

RSAP is a blue-print for regional integration and cooperation. The goal of the Project is to foster sustainable development by way of development of integrated water resources management and related physical infrastructure development, which furthers regional integration and poverty reduction. The Project's objective is to ensure a sustainable framework for the integrated planning and management of shared water resources in the three river basins and to support the livelihood of the local communities. The project consists of five components: (1) development of river basin monographs and strategies; (2) enhanced knowledge and information support system; (3) community basin management; (4) project management and capacity-building; and (5) audit services. The Project has an institutional framework: the executive Agency is the SADC Secretariat through its Water Division, Infrastructure and Services Directorate. The River Basin Management Institutions will be the Project Implementing Agencies. There are also regional offices.[32] This Project indeed fosters sustainable development as it is not conducted in isolation but is part of a wider and a Short-term Action Plan on transboundary water resources management. Its implementation will contribute towards the 2003 African Union programme for Comprehensive Africa Agricultural Development Plan (CAADP). It has been implemented in several stages, starting in 1991 (RSAP 1). Each and every one of them had different aims and purposes. For example RSAP 1 **(**1999-2004) focused on 'creating and establishing an enabling environment for the integrated management of water resources in the region in support of the achievement of other regional objectives'. RSAP 1 covered the following categories: legislation, policy and strategic planning; capacity building and training; awareness, creation, consultation and public participation; information collection, analysis, management and dissemination and improved national and transboundary river basin management, planning and co-ordination, infrastructure investment, and standalone – special priority areas. RSAP 2 (2005-2010) focused on water and development through projects and initiatives in the four main areas of: regional water resources management, planning and development (assessment, monitoring, planning, operation); Infrastructure Development Support (Regional Strategic Water Infrastructure Development Programme (RSWIDP); water governance (implementation of Protocol, stakeholder participation, implementation of policy and strategy); capacity building (skills training, academic IWRM training and research, support to SADC WD, strengthening RBOs).[33] The RSAP III was implemented from 2011 – 2015, building on the progresses made by the RSAP I and II, and served as a work plan to guide the development and implementation of activities in the SADC water sector for the period 2011-2015. The current RSPAP (IV) (2016-2020) was approved in September 2015 and it is supported by the Global Water Partnership Southern Africa (GWPSA). This relates to all 15 SADC countries in the region to promote water resource management.[34] The issues which are under consideration concern a cluster of problems which represent a holistic approach to water, such as human right to water; industrialisation, climate change issues (indigenous and local knowledge systems); water quality issues; UN groundwater articles; involvement of the youth in programme implementation; more focused water research for development.[35] The SADC water programme is based on the integrated approach (IWRM) and defined as mentioned 'as a process which promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems'.[36] The IWRM supports the implementation of sustainable development as enshrined in the 2015 Sustainable Development Goals (SDGs). 'IWRM provides a framework within which to consider trade-offs between different development objectives and, where possible, to identify win-win water investments'.[37]

The selection of these three river basins focused on the eradication of poverty and the reduction of downstream flooding, in particular in Mozambique. The Project is meant to assist certain constraints in the region as regard its water resources management, such as the lack of

joint management; uncertainties in water allocation; insufficient data and monitoring. In order to further the sustainable development of water resources, it is of fundamental importance to make a quantitative estimation of the available resources based on reliable information and data. Therefore there is a need to create a systematic operational hydro-meteorological network, to effectively store available data and to facilitate access to data. The Project's objective is also to establish joint strategies and operational rules, as well as bodies, which jointly manage the transboundary watercourse. Most importantly:

> [t]he lack of appreciation of equitable water resources utilisation is a constraint in itself, partly emanating from the stakeholders' participation in river basin development planning acts as further constraint. A key issue in this respect is the lack of awareness of the cross-sectoral nature of water problems and the need for a new development paradigm towards integrating the technical, economic, environmental, social and legal aspects of water management. Users need to be sensitized of these issues through activities such as stakeholder workshops, pilot programmes on integrated water resources management, etc … In rural areas, the region faces the challenges of providing necessary water infrastructure … in a cost-effective manner and within reach of the rural poor.[38]

Arguably, the above-quoted passage is an effective description of the application of sustainable development to international watercourses.

It appears that the Protocol (Revised) truly captures the idea of sustainable development. It is based on the three pillars: social, economic and environmental. It approaches the implementation of sustainable development as a holistic process, combining together the principle of equitable utilisation, the protection of the watercourse environment, legal regulation and joint management. Therefore, all these elements are treated not as competing with each other, as argued by some scholars (see, for example, Fuentes above) but as complementing and enforcing each other.

The 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes[39]

This is a framework Convention, which, however, is drafted in considerable detail, usually absent in instruments of this type. This Convention has a broad regulatory subject-matter, as is stated in its Preamble:

> [c]ommending the efforts already undertaken by the ECE Governments to strengthen cooperation, on bilateral and multilateral levels, for the prevention, control and reduction of transboundary pollution, sustainable water management, conservation of water resources and environmental protection.

The Convention, like other watercourse treaties, is based on the following principles: sustainable water-resource management in Article 3, para. 1(i) (including an ecosystem approach, rational water management, conservation of water resources and environmental protection); equitable and reasonable use;[40] prevention, control and reduction of pollution; the precautionary principle (Art. 2, para. 5(a)), polluter-pays principle (Art. 2, para. 5(b)), the prevention of transboundary significant impact (Arts 1 and 2) and intergenerational equity (Art. 2, para. 5(c)). Article 2(2)(b) further states that 'transboundary waters are used with the aim of ecologically sound and rational water management, conservation of water resources and environmental conservation'.

This Convention, like other agreements, imposes on the Parties a duty to, where appropriate, define water-quality objectives and water-quality criteria. This Convention also includes very extensive procedural obligations, which are contained in Articles 5 (exchanging the results of research and development and experiences of the Parties in the course of the implementation of the Convention), 6 (provides for wide exchange of information between the Parties to the Convention on issues covered by the Convention), 8 (specifies what

information should be protected) and 9 (exchange of information on the basis of bilateral and multilateral cooperation).[41] The Convention includes a general duty to consult (Art. 10).[42]

As mentioned above, the 1992 Water Convention as a framework agreement serves as model for bilateral or multilateral cooperation (Art. 9), which imposes a duty on the riparian States-Parties to the Convention to enter into bilateral and multilateral cooperation and establish joint bodies. However, even this general framework Convention is based on integrated management of water and related ecosystems, an approach adopted in its work plan 2004–6.[43] This included the implementation of the 2000 EU Framework Water Directive. One of the main objectives of the integrated approach is to finance the protection and sustainable use of ecosystems. As it is noted the concept of sustainability pervades this Convention. The central obligation of the Convention to 'prevent, control and reduce any transboundary impact' is closely linked with the concept of sustainability. This Convention defines transboundary impact as 'any significant adverse effect on the environment resulting from a change in the conditions of transboundary waters caused by a human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of a Party, within an area under the jurisdiction of another Party' (Article 1.2). According to Rieu-Clarke, by its focus on the regulation of significant adverse effects on the environment, the Convention aims at the protection of long-term viability of the resource, and for that reasons it follows the principle of sustainability (Rieu-Clarke, 2015: 204). There are in fact several principles enshrined in this Convention which support sustainable development. These are the obligation of pollution prevention, the promotion of ecologically sound and rational water management, conservation of water resources and environmental protection, the use of water in a reasonable and equitable manner and ensuring the ecosystems are conserved and when necessary restored. This Convention is also based on a principle of intergenerational equity, which is one of the elements of sustainable development (Article 2.2) (Rieu-Clarke, 2015: 204). Through the means of the prevention, control and reduction of the transboundary impact, which is the focus of the Convention, sustainability is central to this Convention (Rieu-Clarke, 2015: 204-5). One of the most important aspects of the Convention is also its requirement of 'sustainable water management', including the application of the ecosystem approach in dealing with transboundary impact. The ecosystem approach is the best method of implementation of sustainability. In case of the UNECE Water Convention such work had already started in1990s by adopting several recommendations which recognised that 'ecosystem-based water management, as a holistic way of viewing, planning and managing the ecosystem components, promotes sustainability, of these components and the environment as a whole' and that efforts to apply the ecosystem approach should provide for 'the sustainable use of water resources in ways that meet the exigencies of aquatic ecosystems and various human needs, individually and collectively, without comprising the ability of future generations to meeting their needs'. Such an ecosystem approach should take account of the whole catchment area setting water management objectives (including ecological quality and quantity parameters); establishing appropriate legal and institutional arrangements to ensure effective coordination across relevant sectors; ensuring participation of private sector organisations; land-owners and public interest groups in water management; developing natural resource accounting systems that place economic values on components of aquatic ecosystems; establishing ecosystem assessment systems; fostering research, education and training in the ecosystem-based approach. Similar goals were included in the 1993 Guidelines on the Ecosystem Approach to Water Management (Rieu-Clarke, 2015: 205-6). The 2006 Recommendations on Payment for Ecosystems Services in Integrated Water Management are built on the 'best practice' across the UNECE region. They relate to the establishment and use of payments for ecosystems services, as a method of 'promoting, restoration and sustainable use of water-related ecosystems at all levels' (local and transboundary). The most fundamental elements of recommendations relate to the identification and valuation of ecosystems services schemes (public participation at all levels). The follow-up is the adoption of the recommendation of a

pilot project to establish payment for ecosystem services in the lake Issyk Kul basis (Rieu-Clarke, 2015: 207). The provisions of the Convention support the integrated water management (IWRM). The scope of this Convention included both surface and ground waters (Article 1.1) and as it was mentioned, obliges parties to take all appropriate measures to prevent, control and reduce any transboundary impact, thus including the 'no-harm' principle (Jekel, 2015: 230). The objectives of the Convention (Articles 2 (b-d) and 5 (c) and 3 (1)(i)) should be achieved through ecologically sound and rational water management, the reasonable and equitable use of transboundary waters and ensuring conservation and restoration of ecosystems. These provisions reflect the inclusion in the Convention of IWRM (Jekel, 2015: 230). The 2007 UNECE's Recommendation on Payments for Ecosystem Services in Integrated Water Resources Management define ecosystems as a 'dynamic complex of plant, animal and microorganisms communities and their nonliving environment interacting as a functional unit…and water-related ecosystems as forests, wetlands, grasslands and agriculture land that play vital roles in the hydrological cycle through the services they provide', in line with the Convention on Biological Diversity (Jekel, 2015: 231).

In conclusion it may be said that the UNECE Water Convention fully conforms with and includes the principle of sustainable development, which as it was explained is reflected in its provisions and through further development of the Convention by the recommendations which support this principle in more practical detail, also through the IWRM. The UNECE Water Convention was one of the first international instruments to focus on the ecosystem services of surface and ground water. There are some projects based relevant Recommendations such as the Dutch-German Vecht River project (Jekel, 2015: 231).

Conclusions

The above survey of two watercourse treaties clearly indicates that they include as an overarching objective the achievement of sustainable development. It may be suggested that the concept of sustainable development, which is generally considered to be vague and with an elusive normative content, in the concrete context of watercourse cooperation appears to acquire a certain legal substance, in particular through joint programmes and plans, established in the implementation of regional treaties.

The general observation can be made that these specific watercourse treaty regimes set very well-defined targets as to what methods have to be adopted in order to achieve the objective of sustainable development. These targets are very concrete and practical (they encompass widely understood definitions of pollution of the river environment and protection of biodiversity) and are based on the principle of integrated management – the River Basin Management (which includes an ecosystem approach).[44] Academic discussion on sustainable development is usually focused on its relationship with the principle of equitable and reasonable utilisation, as well as the way environmental protection conflicts with developmental objectives. The application of sustainable development must also however be assessed on an individual treaty basis, taking into consideration general practical methods of achieving sustainable development. The analysed treaties relied on general principles of sustainable development such as intergenerational equity but also on practical principles such as the ecosystem approach. It also appears that discussion as to the incompatibility of the principle of equitable utilisation and that of sustainable development is solved in many treaties by the inclusion of equitable utilisation within the holistic integrated concept of water basin management, in which all elements are harmonised and linked together in one system, which also includes social and economic factors (see, for example, the SADC Protocol the UNECE Water Convention). Therefore, the principle of equitable and reasonable utilisation cannot be assessed in isolation but in conjunction with other principles under the general chapeau of the concept of sustainable development.

It must be noted as well that the implementation of sustainable development in treaty regimes evolves through the adoption of joint action programmes, which define in greater detail the objectives of treaties and are based on new scientific information, unavailable at the time of entry into force of a treaty. Conca observed that the most important condition for the establishment of international river treaties is the existence of prior treaties in the region, as the beginning of the cooperative process is critical. Such a cooperative process enables further policy coordination and a single cooperative area becomes part of the whole nexus of interdependent relations (Conca, 2005: chapter 4).

Finally, it may be mentioned that members of the European Union which are parties to watercourse treaties are in the process of transformation of their objectives through Plan and Programmes, which have adopted the regulatory and management measures provided for in the 2000 EU Framework Water Directive (Directive 2000/60/EC).[45] Some States, which are not Members of the EU and are Parties to these treaties, agreed to follow it or already have in place legislation which is based on a similar approach (such as Switzerland, in the case of the Rhine Convention). Therefore, it may be expected that sustainable development as it relates to water law will be applied in the future in the European context in a uniform manner. This Directive is revolutionary in so far as it adopts water management based on river basins, rather than based on national frontiers. The river basin management plan will be updated every six years. It also provides for the active involvement of the public.

The gist of this Directive is the full integration of all the factors relating to the management of international watercourses and taking integrated water management into other areas, such as transport, agriculture, fisheries and so on (para. 15) in order to secure the sustainable use of waters within the framework of social and economic objectives.[46]

Notes

1. World Summit for Sustainable Development (UN Doc. A/CONF/199/20 2002).
2. United Nations Conference on Sustainable Development (UN Doc. A/CONF.216/L.1 2012).
3. Also of interest is McIntyre (2006). The text is available at: http://esil-sedi.org/English/pdf/McIntyre.PDF (last visited on 20 March 2008).
4. The Report is available on the website: http://www.hilloftara.info/docs/Decleris%20-%20the%20law%20of%20sustainable%20development.pdf at p. 60 (last visited on 20 March 2008). See also Brunnée and Toope (1994: 67–8); Bourne (1997: 221–30); Wouters and Rieu-Clarke (2001: 283).
5. Text available on the website: http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf. This was the final product of the 25 years of work of the International Law Commission (ILC). In Resolution 2669 (XXV), which was adopted on 8 December 1970, the UNGA recommended that the ILC should study the law of non-navigational uses of international watercourses. On the Convention, see Boisson de Chazournes *et al* (2018), Fitzmaurice (1997: 501–508); Sinjela (1998); Tanzi and Arcari (2001).
6. Art. 5:

   > 1. Watercourse States shall in their respective territories utilise an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilisation thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse. 2. Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the right to utilise the watercourse and the duty to cooperate in the protection and the development thereof, as provided in the present Convention.

   See, on the fundamental principles, Boisson de Chazournes *et al* (2018), Fitzmaurice (2003: 3–45).
7. Art. 6:

   > Utilisation of an international watercourse in an equitable and reasonable manner within the meaning of Art. 5 requires taking into account all relevant factors and circumstance, including: (a) Geographic, hydrographic, hydrological, climactic, ecological and other factors of natural character; (b) The social and economic needs of the watercourse States concerned; (c) The population dependent on the water- course in each watercourse State; (d) The effects of the use or uses of the watercourse State on other watercourse States; (e) Existing and potential uses of the watercourses; (f) Conservation, protection, development and economy of the use of the water resources of the watercourse and the cost measures taken to this effect; (g) Availability of alternatives, of comparable value, to a particular planned or existing use. 2. In application of Article 5 or paragraph 1 of this Article, watercourse States concerned shall, when the need arises, enter into consultations in the spirit of cooperation. 3. The weight to be given to each factor is to be determined by its

importance in comparison with that or other relevant factors. In determining what is reasonable and equitable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

8. Art. 7:

> 1. Watercourse States shall, in utilising an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States. 2. When significant harm nevertheless is caused to another watercourse State, the States whose use causes such harm shall, in the absence of agreement to such uses, take all appropriate measures, having due regard for the provisions of Articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.

9. Art. 8:

> 1. Watercourse States shall cooperate on the basis of sovereign equality, territorial integrity, mutual benefits and good faith in order to attain optimal utilisation and adequate protection of an international watercourse. 2. In determining the manner of such cooperation, watercourse States may consider the establishment of joint mechanisms or commissions, as deemed necessary by them, to facilitate cooperation on relevant measures and procedures in light of experience gained through cooperation in existing joint mechanisms and commissions in various regions.

10. The ICJ in the *Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons* stated that this legal principle was codified in Principle 21 of the Stockholm Declaration (para. 29, available at the website: http://www.icjcil.org/icjww/icases/iunan/iunanframe.htmparagprah (last visited on 7 April 2008).
11. However, please note that Tanzi and Arcari claim that the Convention has the perfect balance between the principles of equitable utilisation and no-harm (Tanzi and Arcari, 2001: 178).
12. The Pichyakorn article is available at: http://www.iucn.org/themes/law/pdfdocuments/CDGFinalPaper SunnyPichyakorn.pdf (last visited on 7 April 2008).
13. The summary of arguments presented in the book.
14. The Berlin Rules on Water Resources were approved by the International Law Association's Water Resources Law Committee in 2004 (Professor Dellapenna – the Rapporteur; Professor Loibl – the Chair). These Rules include customary international law relating to freshwater resources. They develop the Helsinki Rules (The Helsinki Rules on the Uses of the Waters of International Rivers Adopted by the International Law Association at the Fifty-second conference, held at Helsinki in August 1966. Report of the Committee on the Uses of the Waters of International Rivers London, International Law Association, 1967), incorporating concepts derived from international environmental and human rights law and sustainable development. Text available on the website: http://www.asil.org/ilib/WaterReport2004.pdf (last visited on 7 April 2008).
15. Guide to Implementing the Water Convention (New York and Geneva, United Nations, 2013), para. 102.
16. See for example Tanzi 2015 in general and McCaffrey 2015 at 58-59.
17. *Case Concerning Gabčíkovo-Nagymaros Project* (*Hungary v. Slovakia*), 1997 *ICJ Rep*. 7 para. 85.
18. It is clear that the Project's impact upon, and its implications for, the environment are of necessity a key issue. The numerous scientific reports which have been presented to the Court by the Parties – even if their conclusions are often contradictory – provide abundant evidence that this impact and these implications are considerable. In order to evaluate the environmental risks, current standards must be taken into consideration. This is not only allowed by the wording of Articles 15 and 19, but even prescribed, to the extent that these Articles impose a continuing – and thus necessarily evolving – obligation on the Parties to maintain the quality of the water of the Danube and to protect nature. The Court is mindful that, in the field of environmental protection, vigilance and prevention are required on account of the often irreversible character of damage to the environment and of the limitations inherent in the very mechanism of reparation of this type of damage. Throughout the ages, mankind has, for economic and other reasons, constantly interfered with nature. In the past, this was often done without consideration of the effects upon the environment. Owing to new scientific insights and to a growing awareness of the risks for mankind – for present and future generations – of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development. For the purposes of the present case, this means that the Parties together should look afresh at the effects on the environment of the operation of the Gabčíkovo power plant. In particular they must find a satisfactory solution for the volume of water to be released into the old bed of the Danube and into the side-arms on both sides of the river.
    Judgment available on website: <icj-cij.org/icjwww/idocket/ihs/ihsjudgement/ihs_ijudgment_970925_ frame.htm> (last visited on 7 April 2008).
    19. This author compares unfavourably the 1997 Watercourse Convention with the judgment in the *Gabčíkovo-Nagymaros* case, as being wider than that of the Convention. The Convention deliberately refrains from characterising the type of rights riparian States have in 'international water- courses', the ICJ decision contains references to the Danube River as a 'shared resource', to the notion of a 'community of interest' that give rise to a 'common legal right' and to obligation to further promote common utilisation of shared water

resources. Whereas the Watercourse Convention confines its purview to the system of surface water and 'unconfined' groundwater as constituting 'international watercourses', the ICJ decision takes a wider approach, looking also to the environmental impacts of water uses. Whereas, the Watercourse Convention gives a precedence to existing water-related treaties and insulates them from future developments, the ICJ construes such treaties as subject to evolving norms on environmental protection, which are based on new scientific findings and new standards set by international community. Finally, the court embraced two related notions that the Convention rejects: first, the ongoing, rather than discreet, character of water-related agreements, and second, the preference of joint management over litigation as the preferred mechanism in dispute resolution.

20. Text available on the website: http://daccessdds.un.org/doc/UNDOC/LTD/G06/613/94/PDF/G0661394.pdf?OpenElement (last visited on 7 April 2008).
21. [t]his community of interests in a navigable river has become the basis of a common legal right, the essential features of which are the perfect equality of all riparian States in the use of the whole course of the river and the exclusion of any preferential privilege of any one riparian State in relation to the others;
see also *Lac Lanoux Arbitration* (1957: 101).

    22. … Without entering further into those controversies, the Tribunal notes that in all of these categories 'environment' is broadly referred to as including air, water, land, flora and fauna, natural ecosystems and sites, human health and safety, and climate. The emerging principles, whatever their current status, make reference to conservation, management, notions of prevention and of sustainable development, and protection for future generations. (para. 58) and since the Stockholm Conference on the Environment in 1972 there has been a marked development of international law relating to the protection of the environment. Today, both international and EC law require the integration of appropriate environmental measures in the design and implementation of economic development activities. Principle 4 of the Rio Declaration on Environment and Development, adopted in 1992 … which reflects this trend, provides that environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it. Importantly, these emerging principles now integrate environmental protection into the development process. Environmental law and the law on development stand not as alternatives but as mutually reinforcing, integral concepts, which require that where development may cause significant harm to the environment there is a duty to prevent, or at least mitigate, such harm (*see* paragraph 222).

    This duty, in the opinion of the Tribunal, has now become a principle of general international law. This principle applies not only in autonomous activities but also in activities undertaken in implementation of specific treaties between the Parties. The Tribunal would recall the observation of the International Court of Justice in the *Gabčíkovo-Nagymaros* case that '[t]his need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development' (*Gabčíkovo-Nagymaros (Hungary/Slovakia)*, Judgment, *ICJ Rep.*, 1997, p. 7 at p. 78, para. 140).

    And in that context, the Court further clarified that 'new norms have to be taken into consideration, and new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past' (ibid.). In the view of the Tribunal, this dictum applies equally to the Iron Rhine railway (para. 59).

    Text available on the website of the Permanent Court of Arbitration: http://www.pca-cpa.org/ ENGLISH/RPC/ (last visited on 7 April 2008).

23. Technical Advisory Committee of the Global Water Partnership; http://www.gwp.org/en/About/why/the-need-for-an-integrated-approach/.
24. See, for example, the River Oder Commission, established on the basis of the 1919 Treaty of Versailles.
25. The text is available on the website: http://www.ucowr.siu.edu/updates/127/Dellapenna.pdf (last visited on 7 April 2008).
26. 40 *ILM* 321 (2001) Member States of SADC: Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, United Republic of Tanzania, Zambia, Zimbabwe.
27. Art. 3, para. 7a:

    Watercourse States shall in their respective territories utilise a shared watercourse in an equitable and reasonable manner. In particular, a shared watercourse shall be used and developed by Watercourse States with a view to attain optimal and sustainable utilisation thereof and benefits therefrom, taking into account the interests of the Watercourse States concerned, consistent with adequate protection of the watercourses for the benefit of current and future generations.

28. Art. 3, para. 10:

    (a) States Parties shall, in utilising a shared watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other Watercourse States. (b) Where significant harm is nevertheless caused to another Watercourse State, the State whose use causes such harm shall in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of paragraph (a) above in consultation with the affected States, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation. (c) Unless Watercourse States concerned agreed otherwise for the protection of the interests of persons, natural or juridical, who have suffered or are a serious threat of suffering significant transboundary harm as a result of activities related to a shared watercourse, a Watercourse State shall not

discriminate on the basis of nationality or residence or place where the injury occurred, in granting to such persons, in accordance with its legal system, access to judicial or other procedures, or a right to claim compensation or other relief in respect of significant harm caused by such activities carried on in its territory.

29. http://www.sadc.int/themes/natural-resources/water/.
30. See, for example, Multinational SADC Shared Watercourses Support Project for Buzi, Save and Ruvuma River Basins, text available on the website: http://www.afdb.org/pls/portal/docs/PAGE/ADB_ADMIN_PG/DOCUMENTS/OPERATIONSINFORMATION/SADC%20WATER%20ENG%2025%2001%202006.PDF (last visited on 7 April 2008). Kunene River, see http://www.kunene.riverawarenesskit.com/KUNENERAK_COM/EN/GOVERNANCE/WATER_GOVERNANCE_IN_THE_KUNENE_.HTM
31. http://www.gwp.org/en/GWP-SouthernAfrica/WE-ACT/themes/SADC-Regional-Strategic-Action-Plan-RSAP/.
32. http://www.sadc.int/about-sadc/overview/strategic-pl/regional-indicative-strategic-development-plan/.
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34. http://www.gwp.org/en/GWP-SouthernAfrica/WE-ACT/themes/SADC-Regional-Strategic-Action-Plan-RSAP/.
35. Idem.
36. http://www.gwp.org/en/About/why/the-need-for-an-integrated-approach/.
37. http://www.gwp.org/en/About/why/sustainable-development-goals/.
38. See, for example, Multinational SADC Shared Watercourses Support Project for Buzi, Save and Ruvuma River Basins, text available on the website: http://www.afdb.org/pls/portal/docs/PAGE/ADB_ADMIN_PG/DOCUMENTS/OPERATIONSINFORMATION/SADC%20WATER%20ENG%2025%2001%202006.PDF (last visited on 7 April 2008) p. 5. Kunene River, see http://www.kunene.riverawarenesskit.com/KUNENERAK_COM/EN/GOVERNANCE/WATER_GOVERNANCE_IN_THE_KUNENE_.HTM.
39. The Convention was established within the United Nations Economic Commission for Europe. Entered into force in 1996. It has 41 Parties. UNTS 1936, p. 269. On the Convention, see Tanzi (2000a: 79–112, 2000b, 2003: 259–97), Tanzi et al. (2015).
40. Art. 2, para. 2(c):

    [t]o ensure that transboundary waters are used in a reasonable and equitable way, taking into particular account their transboundary character, in the case of activities which cause or are likely to cause trans- boundary impact.

41. Art. 9 mentions the following areas of cooperation: to collect, compile and evaluate data in order to identify pollution likely to cause transboundary impact; to draw up inventories and exchange information on pollution sources; to establish warning and alarm procedures; to serve as a forum for exchange of information on existing and planned uses of water-related installations that are likely to cause a transboundary impact; to promote cooperation and exchange of information on the best available technology. See also Art. 13, which specifies further the exchange of information, included in Art. 9.
42. '[C]onsultations shall be held between the Riparian Parties on the basis of reciprocity, good faith and good-neighbourliness, at the request of any such Party. Such consultations shall aim at cooperation regarding the issues covered by the provisions of this Convention. Any such joint consultations shall be conducted through a joint body established under Art. 9 of this Convention, where one exists'.
43. See website: http://www.unece.org/env/water/cooperation/area422.htm (last visited on 7 April 2008).
44. McIntyre makes the following observations on the ecosystem approach:

    > [i]rrespective of which position one takes in relation to its precise legal status, few would disagree that this scientifically sound and potentially far-reaching approach to environmental rights and obligations has much to offer in relation to the continuing evolution of international environmental law. In a range of ways, it permits consideration of relevant and related factors which would otherwise be excluded under narrow approaches, based on traditional sovereignty. It has particular potential in relation to the environmental protection of international watercourses, where short-term, anthropocentric ideas of the self-interest of sovereign States have traditionally taken priority over long-term protection of shared fresh water resources. (McIntyre, 2004:14)

45. Text available on the website: http://inspire.jrc.it/reports/WFD-EN-22-12-00.pdf (last visited on 8 April 2008). On this Directive, see Blöch (2004: 170–8).
46. This aspect of the fresh water management is particularly important following the 2002 Johannesburg Summit. See Epiney (2003: 377–96). This author also stresses the approach that takes into consideration the interests of future generations.

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