THE CONCEPT OF BENEFIT SHARING IN THE CONTEXT OF THE EASTERN NILE BASIN

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This doctrine is championed by upstream riparians as it purports to deny any claim of the water by the downstream riparians as of a legal right. Because of this reason, the Absolute Territorial Sovereignty doctrine denies the international character of an international river and as such disclaims any responsibility for any downstream impairment or harm. Because of its self - centric nature, the doctrine had suffered serious criticism and was discredited by subsequent decisions of international tribunals and writings of scholars on the field.[72] Surprisingly, this theory failed to settle the issue for which it was created as the dispute between the US and Mexico had been resolved on the basis of equitability.[73] Since this theory is a source of a problem than being part of a solution, it is considered as "anachronism in today's interdependent and water scarce world.[74]

2.5.2 Theory of Absolute Territorial Integrity (Riparian Right)

This theory falls at the other end of the Harmon Doctrine. Its preoccupation is to ensure the uninterrupted and undiminished flow of water from its origin upstream to the downstream. It denies any conceivable right of the upstream riparian and veto any water related developmental endeavors that in any way impacts the natural flow and volume of the water reaching downstream. Since the theory endorses the interest of downstream riparians, it is championed and invoked by some countries like Egypt, Argentina, Bangladesh, Syria and Iraq against their respective riparians. Because it tampers with the sovereign right of upstream riparians to use their natural resource that lies within their sovereign territory, it is colored with the spirit of egoism. Like the Harmon Doctrine, this theory has also negated the international character of the transboundary water. In effect, this theory protects "existing use or prior appropriation"[75] and advocates a "no harm" doctrine.[76] As this theory and the Harmon Doctrine went against the very reliance and dependence of other riparian states networked with the transboundary water,

[72] Salma A. *Supra* note 70.

[73] Spiegel, *Supra* note 52, at 335

[74] Id.

[75] Salman A, *Supra* note 70

[76] Spiegel, *Supra* note 52

they are bound to lead to a zero-sum game and, thus, are not recognized as part of the contemporary international water law.[77]

2.5.3 Limited Territorial Sovereignty (Integrity) Theory

The substance of this theory is based on the assertion that all riparians (upstream and downstream) have an equal right in terms of utilizing the common water resource without inflicting any harm to the other.[78] This theory is the reflection of the old legal Maxim "*sic utere tuo ut alienum non caedus*", an embodiment of the idea that states must respect the right of other states sharing the same watercourse as they all have equal right.[79] Because of this middle ground argument, the theory rejects the two extreme positions promoted by the Harmon Doctrine and the Theory of Absolute Territorial Integrity. This theory recognizes the interdependence of riparians over the common water resource and the sovereign right of all the riparians to make use of the water resource lying within and passing through their territory. It is a theory that harmonizes the rule of "No Significant harm" and "Equitable Utilization" and because of this reason it had survived the taste of time and become the basis of modern International water Law.[80]

It is interesting to note, however, that a keen look at this theory would reveal that the principle of "No significant Harm" is not only an argument forwarded by the downstream riparian (as it is almost always the case to be) but also by an upstream riparian that may be prevented from utilizing the common water resource for developmental purposes and thereby precluded from benefiting the fruit generating there from. Such an upstream state can make use of this principle as any denial to develop the common water resource will let it suffer a significant or appreciable harm. Therefore, this theory, if not employed wisely and in good faith would backfire and create a "no winner" scenario. This is a very important fact that downstream riparians should always bear in mind.

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[77] Salman A, *Supra* note 70

[78] Id.

[79] Spiegel, *Supra* note 52, at 336

[80] Id, at 628

2.5.4 Theory of Prior Appropriation

This theory rests on the premise that the earliest user of the common water resource maintains such a right of use throughout, even against the interest of the other upstream or downstream riparian. The test to exercise such a right is a time reference- being a senior beneficiary of the water. Therefore, this theory can be championed by whoever had started using the water first. It is based on "first in time, first in right" principle.[81] This theory is also known as a "Historic Right" or "Acquired Right". It takes the other riparian states hostage to the senior beneficiary as no water can be extracted without the consent of the senior riparian. Any attempt to make use of the water by the new claimant would be vetoed. Since in most cases it is the strong and most developed downstream country that would start exploiting the water resource first, the theory is promoted by such riparians. Because of this reason, this theory is subjected to a strong argument that it is not based on fair and equitable foundation.[82]

The Prior Appropriation Theory awards the strongest and relatively most developed riparian that had an opportunity to develop the water ahead of other riparians on the basis of a disproportionate right. This theory in effect promotes monopolization and tends to perpetuate the developmental gap of the basin's riparians. Above all, it fails to accommodate the changing dynamics on the ground and tends to result in a zero-sum game. Owing to this limitation, the theory had long been challenged as incompatible with the generally accepted principles of "Equitable Utilization" and "No Significant Harm".

[81] Id, at 336

[82] Beaument, *Supra* note 71, at 477; Upreti, *Supra* note 50, at 106

2.6 The UN Convention on the Law of the Non-Navigational Uses of International Watercourses

The Convention on the Law of Non-navigational uses of International Watercourses was adopted by the United Nations General Assembly on May 21, 1997. The Convention contains two cardinal principles on the management of an international watercourse. These are the "Equitable and Reasonable Utilization" (Art.5) and the "No significant Harm" (Art.7) Principles. Though codified in a Global Convention, the two principles found their origin from rules of Customary International Law.[83] The codification of these principles into an International Convention is a manifestation of a strong effort to mitigate the impending transboundary water conflict through the instrumentality of legal principles.[84]

Prior to the emergence of UN Convention on the Law of Non-navigational Uses of International Watercourses, the principles of "Equitable Utilization" and "No Significant Harm" were embodied into the Helsinki Rules of 1966 which had generally been a basis for the later work of the International Law Commission.

2.6.1 The Principle of Equitable and Reasonable Utilization

The basic essence of this principle is codified in Art.5 of the UN Watercourse Convention which states:

1. *Watercourse states shall in their respective territories utilize an international water course 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 benefit there from, taking into account the interests of the watercourse states concerned, consistent with adequate protection of the watercourse.*

[83] Particiak. Wouters etal, UNESCO, Sharing Transboundary Waters: An Integrated Assessment of Equitable Entitlement 21, 76 (2005); Sergei vinogradov etal, UNESCO, Transforming Potential Conflict into Cooperation Potential: The Role of International Water Law 10 (2003)

[84] Spiegel, *Supra* note 52 at 334

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 utilize the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present convention.*

Paragraph 1 of this Art. sets forth how a riparian state should use the common water resources vis-a-vis other riparians. Though the Convention does not define as to what constitutes "Equitable and Reasonable Use" the factors that ought to be taken into account in establishing the fact are outlined under Art.6. The enumeration made under Art. 6 is not exhaustive, leaving the parties concerned with the utmost freedom to consider some other factors as well. Thus the issue of what type and manner of use shall make up "Equitable and Reasonable Use" is to be decided on a case by case basis.

Paragraph 2 of the Convention deals with what is called 'equitable and reasonable participation to safeguard the integrity of the ecosystem'. Such Participation envisages mutual cooperation between and among riparians to take affirmative actions, individually or jointly, with regard to the watercourse.[85] Thus the right to "Equitable and Reasonable Use" is linked with a duty to cooperate in the preservation and protection of the aquatic environment. The element of sustainability is embodied therein.

As it has already been noted, the principle of Equitable and Reasonable Utilization is not a Convention created norm. Its root goes back to the judicial practice of Federal states like the USA, Germany and Switzerland and attained the status of Customary International Law. Federal Supreme Court decisions in these countries reveal the application of this principle as the major basis of resolving the interstate water disputes.[86] In this regard, the US Supreme Court applied the principle of Equitable Utilization in disposing the water dispute between Kansans and

[85] Stephen C. McCaffrey; Mpazi Sinjela, *The 1997 United Nations Convention on International Watercourses*92 The American Journal of International Law 99 (1997)

[86] Lucius Caflisch, "Regulation of the uses of International Water Courses", In Salman M. A. Salman and Chazournes L.B (eds.) International Water Courses: Enhancing Cooperation and Managing Conflict, World Bank, Technical Paper. No 414, the World Bank, Washington DC, 1999, at 13.

Colorado in 1907 (Kansas V. Colorado). In this particular case, Colorado (the upstream state) started using water from the Arkansas River. Such an act of Colorado had been met with opposition from the down stream state Kansas. Colorado tried to establish its right on the basis of the Harmon Doctrine, while Kansas protested on the basis of Prior Appropriation theory and No Harm Principle. The Court rejected both arguments and reasoned its ruling on the basis of Equitable Utilization Principle by stating "so adjust the dispute upon the basis of equality of rights as to secure as far as possible to Colorado the benefits of irrigation without depriving Kansas of the like beneficial effects of a flowing stream".[87] The same reasoning had been applied by the Supreme Court on an interstate dispute over the Lara Mine River between Wyoming and Colorado states (Wyoming V. Colorado).[88]

The core idea of the principle of Equitable and Reasonable Utilization is the question of entitling all watercourse states to have a fair share in the common water resource on the basis of the recognition that each basin state has an equal right to develop the commonly available resource.[89] The principle basically protects and ensures the right of riparians who are yet to harness the water within their territory and seeks to avoid free ride and attain distributive justice on the basis of equity and fairness. It aspires the establishment of future use rights by trying to put such new rights in par with previously established water use rights.[90] Aaron Wolf described it as "the principle (that) gives the needs of the present the same weight as those of the past".[91] Not surprisingly, therefore, the principle of Equitable and Reasonable utilization is keenly espoused by upstream riparians which for different political and economic reasons have been unable to develop the common water resource.

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[87] Spiegel, *Supra* note 52 at 432

[88] Id.

[89] A Dan Tarlock, *How Well can International Water Allocation Regimes Adopt to Global Change,* 15 Joint Issue/Land Use and Transnational 423, 432(2000).

[90] John Waterbury, *Between Unilateralism and Comprehensive Accords: Modest Steps Toward Cooperation in International River Basins,* 13 Water Resources Development 279, 281(1997)

[91] Aaron T. Wolf, *International Water Conflict Resolution: Lessons from Comparative Analysis,* 13 Water Resources Development, 338 (1997).

It is to be noted that the equation of the principle of Equitable and Reasonable Utilization is supplemented by Art.6 of the UN Convention which recommends the consideration of:

A. *Geographical, hydrographic, climatic, ecological and other factors of natural character;*
B. *The social and economic needs of the water courses in each water course states concerned;*
C. *The population dependent on the water course in each water course state;*
D. *The effects of the use or uses of the water course in one watercourse state on the other water course state;*
E. *Existing and potential uses of the watercourse;*
F. *Conservation protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;*
G. *The availability of comparable value to a particular planned or existing use.*

The above outlined factors can fall into two broad categories as factors of natural character like hydrological, climatic, ecological etc... and factors of economic and social nature like economic needs, population dependent on the watercourse, effects of use on the water course state, existing and potential uses, conservation measures and availability of alternatives.

Though, this principle have somehow won wide advocacy by the international community as a best mechanism to do away with potential water conflict, striking the balance with its corresponding principle i.e., the duty not to cause "Significant Harm", is a daunting challenge.

2.6.2 The Principle of No Significant Harm

The 1997 UN Convention recognizes the principle of "No significant Harm" as the other side of the principle of "Equitable and Reasonable Utilization". Article 7 of the Convention is devoted to this principle. It States:-

1. *Watercourse states shall, in utilizing an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other water course states.*

2. *When significant harm nevertheless is caused by another water course state, the state whose use causes such a harm shall, in the absence of an agreement to such use, take all appropriate measures, having due regard for the provisions of article 5 and 6, in consultation with the affected state, to eliminate or mitigate such harm and when appropriate, to discuss the question of compensation.*

The "No Harm Principle" had the support of state practice as exhibited by different treaties between states and thus it is a norm of Customary International Law. The principle is also an extension of the Private Law old maxim '*sic utere tuo ut alienam non Laedas*' which prohibits the use of ones own property to inflict an injury to the property of another.[92]

Joseph Dellapena argues that unless some sort of flexibility is injected to it, the tightly worded nature of the principle would sanction any meaningful developmental efforts of the upstream countries that ultimately would reduce the principle into a mere variant of the Absolute Territorial Integrity Doctrine.[93] On the other hand, Hubert H.G Savenije and Peter Van der Zaag argued that "Equitable and Reasonable Utilization" and "No significant Harm" principles are not mutually exclusive, rather they are two sides of the same coin to be applied concurrently.[94] The latter argument is much more convincing for the following reasons. First, the principles of "Equitable and Reasonable Utilization" and "No Significant Harm" are not arguments exclusively reserved for upstream and downstream countries respectively. Situations where "No significant Harm" rule can be relied upon by an upstream riparian and the rule of Equitable and Reasonable Utilization" by the downstream riparian are not totally excluded. In this regard, Joseph Dellapenna questions: "Would not the barring of all development in the upstream state be harm to it, just as a reduction in the quantity or quality of flow reaching the downstream state is an injury to it?"[95] Second, the question of conforming to the test of Equitable and Reasonable

[92] Dellapenna, *Supra* note 69, at 265

[93] Id.

[94] Hubert H. G. Savenije and Pieter Vander Zaag, *Conceptual Framework for Management of Shared River Basins with Special Reference to SADC and EU,* 2 Water Policy 9, 24(2000).

[95] Dellapenna, *Supra* note 69, at 279

Utilization cannot be sufficiently addressed without having due regard to the degree of harm that such a use may inflict on the interest of the other riparian at the other end of the tunnel. Therefore; there is an organic and logical interplay between the two principles. A riparian which complains to have suffered a 'significant harm' should establish that the harm complained of was occasioned because the other riparian has utilized the water beyond what is considered to be equitable and reasonable. This state of affair thus implies that the test of equitability of use without having regard to the degree of harm and the test of no significant harm without having recourse to the degree of equitability would not result in a fair disposition of the dispute. Any understanding of these principles out of the context of their organic relationship would render the principles devoid of their intended meaning and significance and would bring about the egoistic principles of Absolute Territorial Sovereignty and Absolute Territorial Integrity back to the fore- a zero-sum-game.

However, the formidable challenge in this regard is the difficulty to concur on what constitutes "Equitable and Reasonable Utilization" and "No significant Harm". The major problem is the vulnerability of both principles to different subjective interpretations in such a way that best serves the interest of each riparian state. This is especially true in a river basin where there exists no treaty based legal regime governing the management of the common water resource. To get out of this circular argument, Stephen C. McCaffrey advises:

> ***The practice of using treaties to regulate the relations of states sharing freshwater resources is generally advisable and to be recommended. Treaties stabilize those relations, giving them an element of certainty and predictability that is often not present otherwise. Riparian countries may also use treaties to establish joint management institutions with powers to further facilitate their cooperation with regard to sharing uses and benefits of international water courses.***[96]

The other continuing debate is associated with as to which principle prevails over the other. Dellapenna claims the unanimity of international water law experts on the primacy of equitable

[96] Stephen C. McCaffrey, *The Need for Flexibility in Fresh Water Treaty Regimes,* 27 Natural Resources Forum 156, 157(2003)

utilization rule[97] ,while Stephen C.McCaffrey (Fourth Special Rapporteur for the project) held the view that the International Law has intended for the prevalence of "No harm Rule" over the rule of "Equitable Utilization".[98] However; a closer look at Art. 7 which provides for "No significant Harm" suggests the primacy of Equitable Utilization especially when viewed against the reading of paragraph 2 of the Article which accommodates a sort of harm, if it is not of a significant nature. Even in the case of Significant Harm, the remedy to the complaining riparian is limited to having recourse of consultation with the acting state with the view to eliminate or mitigate and where such effort fails to consider options of compensation.

Therefore, even though paragraph 1 of Art.7 seems to categorically prohibit causing significant harm by imposing a duty of taking "all appropriate measures", paragraph 2 renders a mitigating spirit to the duty. In this regard, Stephen C. McCaffrey is of the view that when a conflict between the two principles is encountered the principle of Equitable Utilization would override the No Harm principle.[99] Subjecting the examination of the harm to the provision of Art.5 and 6, he argues, is another indication that Equitable Utilization is given preeminence.[100]

As already discussed, watercourse states may not find a lasting and stable solution through the straight forward application of the rules of the UN Convention. The Convention is to mediate relations or conflict in the absence of a treaty based legal regime and because of the rocky road towards the settlement of water disputes via the application of the rules of the Convention *per se* basin states are not only recommended but also urged to sustainably settle their potential dispute through an all paying negotiated water treaty.

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[97] Muserref Yetim, *Governing International Common Pool Resources: The International Water course of the Middle East,* 4 Water Policy 305, 317 (2002). Dellapenna, *Supra* note 69 at 279

[98] Dellapenna, *Supra* note 69 at 279

[99] McCaffrey, *Supra* note 96, at 101

[100] Id.

CHAPTER THREE: HISTORY OF COOPERATION IN THE NILE BASIN

No attempt towards a multilateral engagement over the Nile Basin has been exercised prior to the 1960s. Many of such attempted cooperative frameworks had not only preoccupied themselves with technical matters such as, the collection and exchange of hydrological data, but also had not been able to attract the principal basin states like Ethiopia as their full fledged member. Despite their functional limitations, the Nile Basin had witnessed the following multilateral cooperation endeavors.

3.1 HYDROMET (Hydrometreological Survey of Equatorial Lakes)

The basic motivation for the establishment of this project lies over the concern of the rising level of Lake Victoria in the early 1960s owing to an exceptional rainfall. Such a worry brought together Egypt, Kenya, Sudan, Tanzania and Uganda to establish this project with a basic aim of collecting and analyzing data for Lake Victoria, Kyoga and Albert Catchments and also to study the water balance of the White Nile.[1]

The collection and analysis of the hydrological data was destined to facilitate water conservation planning and socio economic development. Besides, it was meant to pave ways for a possible intergovernmental cooperation for the storage, regulation and use of the Nile Water resources.[2] The project had, however, failed to provide a cooperative framework for basin wide economic development by addressing differences and with the intent to better manage the Nile Waters among the riparian states. This functional limitation had led some basin states to the perception that the whole effort was little more than evading the water allocation issue of the Basin.[3] From the very outset Ethiopia and Kenya were very skeptical of the move. Ethiopia kept herself away

[1] Allan Nicole, UNESCO, The Nile: Moving Beyond Cooperation 22(2003)

[2] Diana Rizzoli Karyabwite, UNDP, Water Sharing in the Nile River Valley 38(2000)

[3] Nicol, *Supra* note 1, at 22

from the club, though she joined it later after four years as a mere observer. Such lack of wholeheartedness was even shared by the Equatorial riparian states for the mutual benefit of which the initiative was supposed to function. The dominance of the initiative by downstream Egypt was among other factors that gave rise to the misgiving. Finally, the project came to an end in 1992 without realizing its mission due to mistrust among its members, non-membership of Ethiopia and Kenya and lack of confidence building measures by the downstream state Egypt.[4] The project lasted from 1967-1992.

3.1.1 UNDUGU/1983 – 1989/

Unfortunately, this initiative had no much story to be told. It was established in 1983 by Egypt, Sudan, Uganda, DRC, Rwanda, Brandi and Central African Republic (a non-basin state). Here again, Ethiopia, Kenya and Tanzania were not full-fledged members but mere observers. Though the group was organized to realize cooperation in areas of infrastructure, environmental cooperation culture and trade, it accomplished neither of them than being a forum of discussion on drought.[5]

3.1.2 TECCONILE (Technical Cooperation Commission for the Promotion and Development of Nile)

This initiative is a relative success viewed against its predecessors. It had crafted projects for the common good of the basin states though much of their implementation on the ground had never been put into effect. Its members included Egypt, Sudan, Rwanda, Tanzania, Uganda and DRC, while Ethiopia, Kenya, Burundi and Eritrea opted to remain as observers. In the words of knife Abraham TECCONILE is a "resuscitated Hydromet".[6] The initiative came into being on January 1993 upon the signing of its constitutive document with a long term and short term objectives to

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[4] J.G.Timmerman, Transboundary River Basin Management: The Nile Basin Case Study,7-8(2005);Tesfaye, at 105.

[5] Robert O. Collins, The Inscrutable Nile at the Beginning of the New Millennium/ available at http://www.history.ucsb.edu/faculty/inscrutable % zo Nile 1. pdf. Accessed on June 2008/; Tesfaye, at5 – 6.

[6] Kinfe Abraham, Nile Dilemmas: Hydropolitics and Potential Conflict Flashpoints 18 (2004).

reap future cooperative framework on water resource development of the basin. The long term objective include the development of the Nile in an integrated and substantive manner and effecting equitable sharing of the Nile waters through the instrumentality of a basin wide cooperative framework. Its short term objective was geared towards the development of infrastructure, capacity building, upgrading technical know-how for the management of the water resource and the formulation of National Master Plan.[7]

The success stories of TECCONILE included *inter alia,* the formulation of 22 proposals, though they fell short of implementation owing to insufficient funding, and the initiation of the "Nile 2002 Conferences", an annually organized discussion forum of basin related issues since 1993. The D3 project is the most notable project as it sets the foundation for the establishment of a framework for a basin wide cooperation.[8] It is to be noted that the project proposals of TECCONILE were transferred to its successor the Nile Basin Initiative (NBI).

3.2 A Prelude to a Basin Wide Cooperation

The ever- growing and competing economic interests over shared water resources are keeping the hydropolitical dispute in a constant motion. The increasing gap between the demand and supply management of transboundary water due to demographic change and the deterioration of the aquatic ecosystem had become a tremendous concern for riparian states of the world.

Many of the theories or principles supposed to adjudicate the right of access to transboundary water were not found to be of help to harmonize the contradictory claims as they are asserting an exclusive right of use by one riparian against the other. Principles embodied in the 1997 UN Convention on International Watercourses are not as yet able to win the assent of all riparian states because of their vulnerability to different possible interpretations.

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[7] Karyabwite, *Supra* note 2, at 30

[8] Abdel Fattah Metawie, *History of Cooperation in the Nile Basin,* 20 International Journal of Water Resources Development 47, 52(2004)

The growing consensus that a formula that pays all well would be better designed by a constructive engagement than by confrontation and the insistence on the direct application of international water law principles brought riparian states to a conviction of negotiating a workable formula. Of these, the protection and maintenance of the aquatic ecosystem which is the basic factor to keep the quantity and quality of the water intact through an integrated basin management is another impetus for a constructive engagement. Because of these considerations the Nile Basin which is considered by many as a potential flash spot for conflict is witnessing a multilateral approach to harmonize conflicting interests between and among the basin states.

As briefly discussed above, some earlier multilateral attempts of cooperation were not capable of addressing the focal and substantive points of difference on the use of the Nile waters, since they were structured to deal with technical and scientific issues like the collection and exchange of data. In addition, such initiatives were not able to engage Ethiopia, the major Stakeholder of the basin as an active member.

As of 1999 the Nile Basin countries have created a new transitional cooperative framework, called the NBI which is the watershed in breaking the code of silence and which also aspires to forge a peaceful and substantive solution on how the Nile Water resource should be equitably utilized by the basins sates.

3.2.1 The Nile Basin Initiative

The Nile Basin Initiative is basically a synergy that heralds the commencement of basin wide cooperative efforts and a shift from unilateralism to multilateralism in the development of the Nile Water resource. It is designed in such away that it will function in harmony with the protection of the aquatic environment which is an indispensable ingredient for the sustainability of the resource base. The multilateral engagement on environmental issues can be viewed as manifestations of consideration for inter- generational interests of the people of the basin.

In terms of functional structure, the Council of Ministers of Water Affairs of the Nile Basin States (NILE- COM) is the supreme decision making authority of the NBI, supported by the Nile

Technical Advisory Committee (NILE-TAC) while the Secretariat (NILE-SEC) based in Entebbe, Uganda is its executive arm.

To advance the common interests of the Nile Basin states, the Council of Ministers of Water Affairs of the Nile Basin Countries agreed upon the creation of a transitional initiative that would act as a linking path to the critically needed permanent legal and institutional framework. The NBI, which had officially been launched in Feb.1999, has five basic objectives as indicated in the Policy Guidelines for the Nile Basin Strategic Action Program of Feb.1999. These are:

1. *To develop the water resources of the Nile Basin in a sustainable and equitable way to ensure prosperity, security and peace for all its people;*
2. *To ensure efficient water management and the optimal use of the resources;*
3. *To ensure cooperation and joint action between the riparian countries seeking win-win gains;*
4. *To target poverty eradication and promote economic integration;*
5. *To ensure that the program results in a move from planning to action.*[9]

In addition the Initiative is dictated by a basin wide shared vision which is destined:

> ***"to achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin Water resources"***

3.2.1.1 The Shared Vision Program [SVP]

In order to realize the "Shared Vision "program across the basin SVP was crafted through the participation of all basin states, save Eritrea. These Shared Vision Programs are to be put in effect through the instrumentality of the "Subsidiary Action Program (SAP) at the Sub-basin and local level.

[9] Id, at 54 – 55

The Shared Vision Program of the Basin has identified seven projects which are endorsed by NILE-COM for implementation. These are:

1. *Applied Training Project- to strengthen capacity in areas of water resource planning and management.*
2. *Nile Trans boundary Environmental Action Project- to provide a strategic framework for environmentally sustainable development of the Nile River Basin.*
3. *Nile Basin Regional power Trade Project- to establish the institutional means to coordinate the development of regional power markets among the Nile Basin Countries.*
4. *Efficient water use for Agriculture Project- to provide a sound conceptual and practical basis to increase the availability and efficient use of water for agricultural production.*
5. *Water Resources planning and Management Project – to enhance the analytical capacity for basin wide perspective to support the development, management and protection of Nile Basin waters.*
6. *Confidence Building and Stakeholders Involvement Project- to develop confidence in regional cooperation under the NBI, both at basin and local levels, and ensure full stakeholder involvement in the NBI and its projects.*
7. *Socio-economic Development and Benefit Sharing Project- to strengthen Nile River basin wide socioeconomic cooperation and integration.*[10]

3.2.1.2 The Subsidiary Action Program [SAP]

The first wing of the SAP is the Eastern Nile Subsidiary Action Program (ENSAP) which comprises Ethiopia, Egypt and Sudan, while the other wing is the Nile Equatorial Lakes Subsidiary Action Program (NELSAP) which comprises all the Nile Basin States except Ethiopia and Eritrea.

[10] NBI Shared Vision Program, Project Implementation Plan: Water Resource Planning and Management Project (Draft), 2004, at 154-155.

ENSAP and NELSAP are supposed to engage in the following twelve main economic and environmental activities:

1. *River regulation*
2. *Water harvesting and conservation*
3. *Hydropower generation*
4. *Irrigated food production*
5. *Watershed management and soil erosion control*
6. *Reduction of evaporation losses from swamps*
7. *Fisheries development*
8. *Transport and navigation development*
9. *Eco-tourism development*
10. *Weed control*
11. *Waste water treatment, pollution control and water quality management and;*
12. *Water use efficiency improvement.*[11]

In the Eastern Nile Basin, a Joint Technical Team (ENSAPT) is established to give technical support to ENSAP in terms of defining and prioritizing water related projects which are of common interest to members of the sub-basin.[12] The ENSAP's cooperative aspiration is the development of the Eastern Nile water resource in a sustainable and equitable manner so that prosperity, security and peace can be attained by the entire people of the sub-basin as a dividend

[11] Id, at 155

[12] Metawi, *supra* note 8 at 57.

of cooperation.[13] These specific ideals of the sub-basin are the sub-set of the basin wide Shared Vision Program.

With the view to put developmental and environmental plans into action ENSAP has designed the following sub-projects for implementation.[14]

1. Integrated water Resources planning and Management.
   - Eastern Nile Planning Model
   - Baro-Akobo Multipurpose Water Resources Project.
2. Flood and Drought Management,
   - Flood preparedness and Early Warning
3. Hydropower Development and Regional Power Trade,
   - Ethiopia-Sudan Transmission Interconnection
   - Eastern Nile Power Trade Investment Program
4. Irrigation and Drainage Development,
   - Irrigation and Drainage Development
5. Watershed Management
   - Watershed Management

The successful accomplishment of these projects is crucial to demonstrate that win-wins can be achieved at the sub-basin level.

3.2.2 The Nile River Basin Cooperative Framework

[13] Id.

[14] Id, at 58

As it is noted, the NBI is a Transitional Cooperative Initiative. The basin countries have agreed to negotiate and come up with a permanent legal and institutional cooperative frame work, which is capable of diffusing the age old disputes on the management and utilization of the Nile Waters. This permanent cooperative framework is expected to put in the equation the widely recognized general principles of International Water Law, especially the harmonized version of 'Equitable Utilization' and 'No Significant Harm', to mould a permanent institutional structure with the objective of administering the would be delivered multilateral water treaty.

With this basic objective in mind, the NILE-COM has endorsed the D3 Project in Feb.1995 which was later integrated into the NBI to deal with negotiating the Cooperative Framework Agreement. The project had two long term objectives to attain:

1. *To determine equitable entitlements for each riparian country for the use of Nile Waters.*
2. *Enhance and promote the utilization of Nile Waters for maximum socio-economic benefits of the inhabitants of the basin.*[15]

In order to have a blue print for consideration, a Panel of Experts (POE), with three representatives from each country, had been established. Accordingly the POE has produced the following two inputs for the NILE-COM.

1. *Recommendations for an appropriate multidisciplinary framework for legal and institutional arrangements for water resources development on the Nile basin.*
2. *Recommendations for processes, methodology and activities that could lead to the determination of equitable and legitimate rights of equitable and legitimate rights of water use in each riparian countries.*[16]

[15] Id, at 62

[16] Id.

Unfortunately, the text of the cooperative framework drafted by the POE was found to be inadequate to address substantive differences and resulted in the establishment of a Negotiating Committee to reach an agreement on the basic bone of contention.[17] The outstanding differences, basically, rested on whether the new cooperative framework should supersede the prevailing agreement or should it honor and leave it intact.[18]

As moving ahead with the negotiation proved difficult, a concept called "Water Security" was introduced in a quest to harmonize the outstanding differences. Conceptually an attempt has been made to define "Water Security" at the extraordinary meeting of the Nile-COM at Addis Ababa in March, 2006. Accordingly, the concept was defined to be "***the right to reliable and sustained access to and use of [The Nile River System] water for health, livelihoods and production***" The inclusion of the phrase 'the Nile River System' was proposed by Ethiopia.[19] It is not clear whether such a definition has enjoyed the approval of all the basin states. To the dissatisfaction of many the pace of the negotiation suffered a setback again, which obliged the negotiators to conclude the negotiation process as it was and pass it over to the Head of States of the Nile Basin states for further consideration. Such a decision was reached by the Nile-COM at a meeting in Entebbe, Uganda, in June 2007.

The contentious Art.14 on Water Security as its final version upon the conclusion of the negotiation reads as follow:

Art.14

Water Security

Having due regard for the provision of Art.4 and 5, Nile Basin States recognize the vital importance of water security to each of them. The states also recognize that cooperative

[17] Id, at 63

[18] Yacab Arsano & Imeru Tamirat, *Ethiopia and the Eastern Nile Basin,67* Aquatic Science15,20(2005)

[19] The information and facts discussed in relation to the negotiation of the Cooperative Framework Agreement are based on a personal communication with an informant who is near to the negotiation process and who requested anonymity.

management and development of the water of the Nile River system will facilitate achievement of water security and benefits. Nile Basin States therefore agree, in a spirit of cooperation;

a. *to work together, to ensure that all states achieve and sustain water security.*
b. *not to significantly affect the water security of any other Nile Basin State.*[20]

All the basin states agreed to such a formulation except Egypt and Sudan. Egypt, especially insisted to re-phrase sub-article (b) as follows:

> ***"not to adversely affect the Water Security and <u>Current uses and rights</u> of any other basin state"*** [21] ***[Stress Added]***

A painstaking comparative analysis of the contentious sub-article as agreed upon by other Nile riparians (except Egypt and Sudan) and the re-phrased version of the same by Egypt is critically important. As already noted, before the concept of water security was introduced into the negotiated document the real difference was rested on whether or not prior water agreements should continue to be valid. While Ethiopia and other upper riparian states argued for the repudiation of such agreements, Egypt and Sudan, on the other hard press hard to maintain the *status quo*. Hence, the issue for debate, by then, was crystal clear- a move for and against the *status quo*.

Now, a close examination of the contentious sub-article (b) on water security would reveal the essence of the underlying difference. The wording of sub-article (b) as approved by the upstream states of the basin establishes that water security shall be achieved by all the basin states, but such a right is to be relied upon if and only if a use of the water by a basin state inflicts significant water security problem to another basin state. This formulation appear to be in tandem with the interplay between the principle of equitable and reasonable utilization and no significant harm principle as norms of conventional and customary international law. The formulation accepts the right of a basin state to use the waters of the Nile to such an extent that it

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[20] The New Times, Rwanda's First Daily; issue 13640, (Kigali) 1 September, 2008.
[21] Id.

doesn't produce "significant" effect on the water security of the other basin states. This is inconformity with the first paragraph of Art.14 that provides for the principle of equitable and reasonable utilization and factors to be considered in establishing equitability and Art.5 which is devoted to the principle of no-significant harm. Hence, the effect of the interplay between Art. 4 and 5 has found expression on sub article (b) of Art.14.

The basic and inherent problem within the formulation is, however, its potential of falling back to the issue of ***the status*** of previous water agreements. For instance, it poses a basic question as to from when does the point of departure for water security start. If the current use of water is taken to be the point of reference in establishing whether a given use has caused significant water security problem or not, then it means in effect that water use rights established by prior agreements should remain intact. Therefore, if a point of departure for weighing water security issues is not clearly established any new use that would inevitably change the established pattern of the Nile water utilization may be taken as "significant" in bringing about a water security problem to historical uses. This possible scenario makes clarity on this point enormously important. Even the agreed version of sub-article (b) by other riparian states lacks capacity in spotting the point of departure.

The redesign of the wording of sub-article (b) by Egypt is quite clear in its intention. It made it abundantly clear that the issue of water security be related to ***current uses and rights.*** The point of departure is the existing use and the established rights in line with the 1959 Water Agreement. Therefore, Egypt's point of view is nothing but the other way of putting her age old argument that any cooperative agreement on the use of the Nile waters should not impact the *status quo.* Because of such polarized positions between upstream and downstream states, the concept of water security as it stands now added no value in breaking the stalemate.

As Ana Elisa Casiao stated the embodiment of the concept of water security into the draft document as "Constructive ambiguity" turned out to be destructive as the very concept itself happened to be "the corner stone...of the hydropolitical impasse in the basin"[22]

It is argued that ambiguities may have a potential value to ***"cement conflicting positions over natural resources when sovereignty costs are high and there is an asymmetrical power balance"***[23] and thereby move the negotiation process forward. However, when the very area of ambiguity touches upon the basic essence of the negotiation clarity rather than ambiguity should be opted. This is true in the Nile context where the ambiguity was tried to be applied to the real ***problematique*** and as a result of which the whole effort proved to be a point of polarization than making a break through over the negotiation that lasted more than a decade.

If the current stalemate is to continue basically because of the insistence of Egypt to maintain the *status quo,* the following three questions would naturally arise. First what rational does Egypt has to come to the negotiation table without a compromising mentality? Second in the absence of such a mentality is engagement in a negotiation process a tactic to perpetuate the *status quo?* Third, would such a stance serve the long term interest of Egypt? These are some of the basic questions that need careful examination.

There are evidences to the effect that Egypt's decision to embark upon negotiation over the utilization of the Nile waters is not a self motivated but an imposed move.

Ashok Swain stated the matter clearly as follows:

> ***As a result of World Bank pressure Egypt has agreed to a shift in its foreign policy over the Nile water issue. Egypt's economy is in a precarious state; the problem become more acute after the World Bank sharply reduced its lending to the country from $500 million in 1990 to approximately $50 million in 2000. This changing economic landscape has practically forced***

[22] Ana Elisa Cascao, Constructive Ambiguity as a Solution for the Nile Legal Dead Lock, (Paper Presented on Nile Basin Development Forum Conference (Dec. 2008) Khartoum, Sudan, at 2,6

[23] Itay flaschhender, *Ambiguity in Transboundary Environmental Dispute Resolution: The Israeli Jordanian Water Agreement*, 45 Journal of Peace Research 91, 106(2008)

> ***Egypt into expressing its willingness to cooperate and relinquish its longstanding policy of defending disproportionate consumption of Nile water based on the principle of 'acquired rights'[24]. [Stress Added]***

As clearly depicted from the above citation the pressured move of Egypt to engage in the negotiation process and the unwillingness to compromise on the *status quo* somehow expresses her dilemma. Hence, if such a dilemma persists and if equitable and reasonable utilization of the Nile waters is not realized the many accusations which allege Egypt's engagement in the negotiation process as a tactical application to perpetuate the *status quo* would make sense. Whatever tactic may be applied the *status quo* can not be maintained indefinitely. Basin states advocating for equitable and reasonable utilization would resort to aggressive unilateralism which may not take into account the interest of other basin states. Such a move would not only pose a potential conflict but is also detrimental to the ecosystem of the basin as a whole. These developments are not certainly to the interest of Egypt in the long run.

The diagram below by Anna Elisa Casiao which is based on the information collected through interviews with national negotiators, NBI officers, external partners and analysts depict a gloomy picture which somehow highlights the real challenge of converting divergences into convergences over the basic issues of negotiation.

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[24] Ashok Swain, *The Nile River Basin Initiative: Too Many Cooks, Too Little Broth*, XXII SAIS Review 293, 302-303(2002)

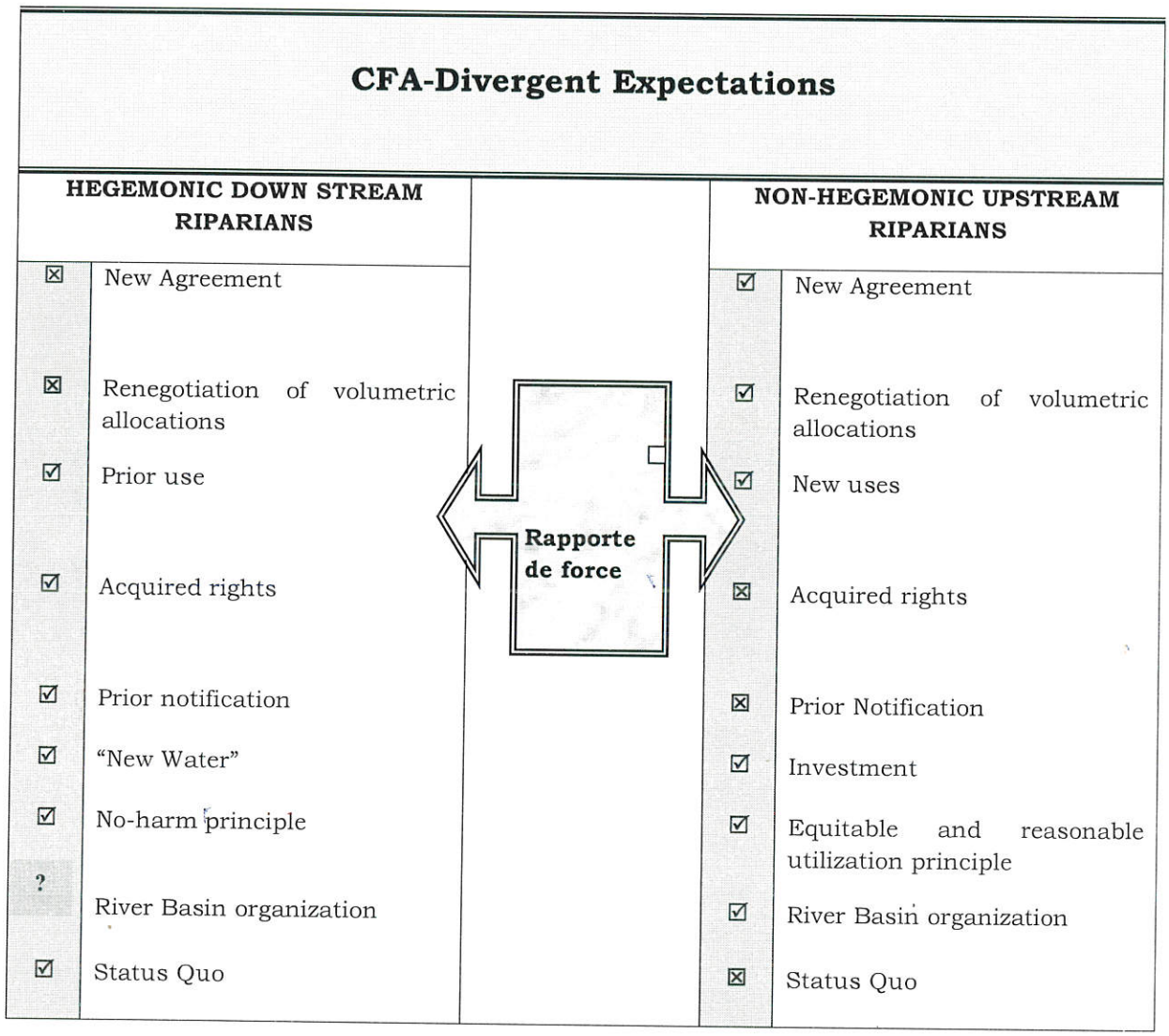

Figure 0-1 Upstream and Downstream Expectation towards the Cooperative Framework Agreement

Source: Anna Elisa Cascao (2008)

The above picture shows that downstream states are not expecting a new agreement that allows the renegotiation of volumetric allocation of water while they are looking for an agreement that ensures prior uses, acquired rights, prior notification, new water and no-harm principle. In short they are preoccupied with saving the *status quo*.

On the other extreme, the upstream riparians are looking for the delivery of a new agreement that allows the renegotiation of volumetric allocation of water, new uses of water, and an agreement that recognizes the principle of equitable and reasonable utilization, and that repudiates acquired rights. In general they are against the maintenance of acquired rights.

Even if the above picture may not necessarily be true and there may still be a possibility to change the picture positively through further negotiation, as things stand now many of them appear to be reasonable observations.

Be that as it may, Cooperative Framework Agreement is the basis for further negotiated agreements on volumetric allocation and/or benefit sharing arrangements. Along with benefit sharing mechanisms, volumetric water allocation need to be agreed upon, as the two scenarios are not mutually exclusive but are 'inverse faces of the same coin'.[25] The simultaneous application of the two approaches is of pivotal importance especially in a basin where inequitable volumetric fixation is prevalent.[26] In the Eastern Nile context such a joint application is also quite relevant firstly because commercializing water access during seasons of peak flow between riparians is one aspect of benefit sharing (through purchase agreements) and secondly ensuring equitable and reasonable utilization concurrently implies volumetric fixation. In this regard it is held;

> ***"any...system of sharing benefits must nevertheless be related in some fashion to volumetric allocations, as otherwise no coherent plat form exists for deciding on how the benefits may be shared (or on compensation)"***[27]

In a similar tone it is further emphasized:

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[25]Andres Jagerskog & David Phillips, UNDP, Managing Transboundary Water for Human Development 10(2006)

[26]Halla Qadumi, ODI, Practical Approaches to Transboundary Water Benefit Sharing 6 (2008)

[27]David Phillips etal, Swedish Ministry of Foreign Affairs, Transboundary Water Cooperation as a Tool for Conflict Prevention and Broader Benefit sharing 154(2006)

> ***there is a question as to whether the issue of water right can be separated from that of benefit sharing .For example where benefit sharing implies transfer of existing fixed water supplies, some assignment of water right is required in order to determine the compensation due[28].***

Under such a context, one practical scenario can be looked into. As already noted, Sudan has the greatest potential for irrigated agriculture. Such a big potential can be fully exploited if it is supported by a water flow from Ethiopia. Ethiopia would be willing to release her water resource to the agricultural plot downstream if she is convinced of a greater economic return as opposed to using the water within her territory unilaterally. Under such practical circumstances water is used as a contribution to the common economic project for sharing benefits. To do this Ethiopia need first to establish her legitimate and equitable share of the Nile waters.

Hence, any cooperative deal which would not envisage volumetric allocation along with a benefit sharing scheme may not be able to exploit the benefit sharing arrangement to its optimal limit. Disregard for volumetric fixation would, therefore deny water not only as an economic variable for contribution in mutual developmental projects but would also disable commercialization of water as an important tool of addressing water scarcity within the basin.

In relation to the issue of water allocation in the Nile there are proposals forwarded by scholars. Whittington and McClelland (1992) and many others advocated a water control structure in Ethiopia as a replacement for the Aswan High Dam (AHD) and Lake Nasser which would reduce evaporation and seepage with the ultimate effect of making water available for reconfiguring the Nile water for Ethiopians consumption.[29] This water saving strategy though capital and time intensive may ease the downstream states worry over the reallocation of the Nile water.

Finally, it should, however, be noted that, the above discussion on the Draft Cooperative Framework is without prejudice to the commendable consensual resolutions on the two cardinal

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[28] Qadumi,*supra* note26

[29]Id.

principles of international watercourse law -the principle of Equitable and Reasonable Utilization (Art.4(1) DCFA) and the principle of No Significant Harm (Article 5/1, DCFA).

The wordings of the two principles are directly transported from Art. 5 and 7 of the 1997 UN Convention. Such direct incorporation makes the wealth of international literature on these issues to belong to the Nile Basin legal regime.

The DCFA has come also with two additional variables relevant in establishing equitable and reasonable utilization which are not within the list of Art. 6 of the 1997 UN Convention. However, it should be stated that such variables, i.e. the contribution of each basin state to the waters of the Nile River System (Art. 4/2/h, DCFA) and the extent and proportion of the drainage area in the territory of each basin state (Art 4/2/i, DCFA) are not pure innovations but adaptations from the provision of Art. 5(2)(a) and art 5(2)(f) of the Helsinki (1966) Rules.

CHAPTER FOUR: BENEFIT SHARING – A FRAMWORK FOR THEORETICAL ANALYSIS

In the international water management sharing benefits is claiming preference over the traditional physical water allocation. The conceptual rational for such a benefit sharing is the understanding that water as a resource should not be considered a "stock" but as a "flow" which can generate more benefits over a long period of time . Such an approach enables the optimum utilization of the full economic potential of an international river basin.

Conceptually benefit sharing is defined to be "any action designed to change the allocation of costs and benefits associated with cooperation"[1] . The definition makes clear that costs and benefits are two versions of the same coin. The cost benefit analysis is an important element which would help decide whether a cooperative framework with benefit sharing in mind would be realized or not. It is only when riparian states are of the conviction that the deal is "feasible, cost effective and fair" that they would contemplate to be part of a cooperative arrangement[2] . Cooperative engagement is sometimes called a risky business, because it entails relinquishing not only the hitherto available gains from unilateral actions but may also include financial, institutional and political/ relational costs[3].

Transboundary water cooperation is fundamentally political activity as it involves geopolitical, strategic and foreign policy interest[4] . However, the interactive role of economics should not be neglected.

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[1] Claudia W. Sadoff & David Grey, *Cooperation on International Rivers: A Continuum for Securing and Sharing Benefit,* 30 International water Resources Association, December 2005, at 3.

[2] Id. at 6

[3] Id.

[4] Alex Klapnake, Economic and Political Benefits of Transboundary Water Cooperation, paper presented at the Technical University of Berlin(March 10-11, 2005), Koblenz, Germany

The big challenge in the realization of benefit sharing as the higher level of cooperation is the difficulty to frame the formula through which cost and benefits can be apportioned. This is so, because of the diversified and sometimes contradictory expectations of the riparian states out of the cooperative endeavor. For benefit sharing to be sustainable there need to be satisfaction among the riparian states that the "pie" is fairly distributed[5] . As states are welfare maximizing entities, they would commit themselves to forge cooperation if they perceive that the benefit to be extracted will outweigh the imagined benefit deriving from unilateral actions[6] . Therefore, the virtue of benefit sharing lies as long as it can prove itself of offering a greater bundle of net economic and social benefits to the stakeholders than they can imagine under purely state-centric unilateral developments. It is only when this dilemma is solved clearly that states would opt for cooperative arrangement relinquishing unilateral advantages. In this connection Erike Motert held:

> ***What drives transboundary water management are not 'objective' benefits but the subjective perceptions and motivation of the major stakeholders. If in their eyes cooperation is a better alternative than non-cooperation, transboundary water management will progress. If not it will stall[7].***

Cooperation for benefit sharing has also other triggers than the perceived economic and social benefits. Floods, pollution hazards, acute water scarcities and other environmental problems, which by their nature are beyond unilateral management, would pave the way for cooperation and benefit sharing arrangements[8] . Riparians in arid and semi-arid regions with acute water scarcity, as is the case in the Jordan River basin, are more ready for cooperation than riparians

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[5] Sadoff and Grey *Supra* note 1 at 4.

[6] Id. at 6

[7] Erik Motert, German Development Institute, How can International Donors Promote Transboundary Water Management? 5 (2005)

[8] Pieter Van der Zaag & Hubert H.G. Savenije, *Towards Improved Management of Shared River Basins: Lessons from the Maseru Conference,* 2 water Policy 47, 62 (2000)

with hypothetical water scarcity[9]. In such kind of collective problems, the incentive for cooperation is much more compelling[10].

Natural and man-made crises had also necessitated the desire for cooperation, the Sandoz incident of 1986 where a large amount of agro-chemicals flowed into the Rhine in Switzerland inflicting an environmental disaster in the downstream riparians formed the basis for the Rhine Action Program of 1987 through which the cleaning of the Rhine was facilitated jointly. Similarly, the sever drought that hit southern Africa in 1987 was a major factor that triggered the framing and signing of a "Protocol on Shared Watercourse Systems" which is a general framework for water related works between riparians[11].

Conflicts over the question of access to a common water resource are not necessarily and always with negative implications. A conflict properly handled may be a catalyst for a win-win cooperation through innovation, new ways of thinking and additional management options. In this regards, the NBI (Nile Basin Initiative) can be an illustration[12] .

In terms of typology, Sadoff and Grey identified four types of benefits that cooperation may bring about. These are benefits to the river (type 1), benefits from the river (type 2), benefits because of the river (type 3) and benefits beyond the river (type 4)[13] . Building up on the works

[9] Muserref Yetim, *Governing International Common Pool Resources: The International Water Courses of the Middle East,* 4 Watery Policy 305, 319 (2002)

[10] Alex Klapnake & Waltina Scheumann, Understanding Transboundary Water Cooperation: Evidence from Africa 3-4(2006)

[11] Hubert H.G Savenije & Pieter Van der Zaag, *Conceptual Framework for the Management of shared River Basins; with special Reference to the SADC and EU* 2 water policy 9, 21-22 (2002)

[12] William J. Cosgrov, UNESCO, Water Security and Peace: A Synthesis of Studies Prepared under PCCP- Water for Peace Process 64-65 (2003).

[13] Claudia .Sadoff & David Grey, *Beyond the river: The Benefits Of Cooperation on International Rivers,* 4 water policy 389, 401-402 (2002); Sadoff & Grey, *Supra* note 1, at 2

of Sadoff and Grey, a theoretical tool known as the Inter-SEDE model has also been developed.[14]

The Model employs three indicators as drivers of cooperation. These are Security, Economic development and Environment. The Model helps to identify which driver is more relevant and significant to drive cooperation. It enables stakeholders to pinpoint the best dynamic issue of grave concern that necessitated cooperation. Employing the model as a tool of analysis it has been revealed that issues of water related security have been the predominant concern of riparians in the Jordan River Basin. The same analysis has also established that issues of biodiversity and biological productivity driven by flood pulse have been the preoccupation of riparians in the Mekong river basin[15] . The four types of benefits discussed by Sadoff and Grey have been categorized to be benefits of environment (type 1), direct economic cooperation (type 2), political (type 3) and indirect economic cooperation (type 4)[16] . These variants of cooperation are interlinked in such a way that any success or failure in one of the variants may have a negative or positive implication on the other[17] . For instance, a sound and professional management of the basin's ecosystem would undoubtedly enhance the potential benefit to be derived from the river - therefore, a logical and clear interdependence between type 1 and type 2 benefits. Any setback in the realization of trustworthy and sustainable political relations under type 3 would inevitably hamper potential benefits under type 1, type 2, and type 4 benefits.[18]

Of all these benefits, benefit to the river (type 1) is of utmost importance, as all other benefits pivot upon it. Extracting economic and social benefits is unthinkable in a fragile and wretched ecosystem. If securing social, economic and political gains are targeted, keeping the ecological integrity becomes a mandatory task for riparians. This paramount task of maintaining the

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[14] Anders Jagerskong & David Phillips, UNDP, Managing Transboundary Waters for Human Development 12(2006)

[15] Id.

[16] Sadoff and Grey, *Supra* note 13, at 403.

[17] Id, at 402

[18] Id; Sadoff & Grey, *Supra* note 1, at 3

productivity of the ecosystem is to be carried out through the instrumentality of the tool called Integrated Water Resource Management (IWRM). This tool is defined by the Global Water Partnership to be:

> ***A process which promotes the coordinated development of water, land and related resources to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystem*** [19]

When issues of benefit sharing are contemplated all stakeholders of an international watercourse may not be arithmetically on equal position to benefit equally for various reasons. Under such circumstances compensatory schemes have to be designed. The riparian(s) which in relative terms benefit more should compensate the other riparian(s) which stand to benefit less (total loss is unimaginable in a cooperative framework) through the instrumentality of different tools like financial grant to the extent of the loss suffered, in kind compensation for lost benefits, preferential access and treatment in other services of mutual interest, provision of non-water related goods and services[20]. However, it should be noted that relevant compensatory schemes are situation specific and are subjected to negotiation between or among riparian states.

Before a cooperative framework for benefit sharing is fully agreed upon in any international river the types of specific benefits (i.e., agriculture, hydropower, flood control, and other like cultural, environmental, fishery, navigation, and eco-tourism), the priority and the distributive mechanisms of the benefits, the cost sharing mechanism have to be fully assessed to the satisfaction of all riparians.[21]

In general terms benefit sharing is a new paradigm that discourages polarized claims for water and is capable of defusing the conflict potential that stems from unilateralism. The fundamental basis for its operation is the convergence of interests of the riparian states (shared vision) as it

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[19] Cosgrov, *Supra* note 12 at 81

[20] Sadoff and Grey, *Supra* note 13, at 397

[21] Biniam Eyob, Equitable Distribution of Benefits in Transboundary Waters: The Nile and Columbia River Basins, AGG presentation; Boston (2008)

may be expressed by the political commitment for mutual engagement in the development of the common water resources.

4.1 Basic Justifications for Benefit Sharing

There are many justifications for benefit sharing as will be discussed below. These justifications can be classified into three broad categories as economic, environmental and peace and security.

4.1.1 Economic or Development Rational

It has been discussed that one of the benefits that can be spawned from a cooperative framework for benefit sharing is economical- benefit from the river. This is the leading rational that motivates cooperation. Benefits of economical nature include hydropower, irrigated agriculture, navigation, eco- tourism, flood control, fishery, livestock, forestry etc.... The type of optimum economic benefits to be reaped depends upon the peculiar nature of each basin.

There are some experiences where riparians were able to extract economic benefits out of cooperation both in bilateral and multilateral settings. In the case of bilateral arrangements the Lesotho Highland Water Project (LHWP) between Lesotho and South Africa and the Columbia River basin between the US and Canada are illustrative ones.

In the case of "LHWP" South Africa and Lesotho signed a deal to mutually benefit from a joint river development. Under the arrangement the two parties agreed to construct water control structures (dams) on the territory of Lesotho in the upper reaches of the Orange-Senque River for the purpose of water supply and hydropower generation.[22] The arrangement provides for least cost water transfer to the industrial province of South Africa (Gauteng Province) against the payment of royalty that amounts up to 5% of the Lesotho GDP.[23] The hydropower benefit of the project goes to Lesotho as per the 1986 Treaty between the two countries.[24]

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[22] Klaphake and Scheumann, *Supra* note10 at 10

[23] Sadoff and Grey, *Supra* note 13, at 396.

[24] UNEP, Dams and Development Project: Compendium on Relevant Practice (2nd stage) 87 (2007).

Hence, this bilateral deal produced a tangible economic benefit to the parties, in terms of supplying water for industrial and municipal consumption and generating hydropower as well.

The Columbia River Treaty and Protocol (1964) provides for the establishment of an upstream storage structure in Canada and the sharing of the power and flood control benefits that accrues to the US because of the upstream storage[25]. According to the treaty Canada agreed to construct dams which would have the effect of enhancing the development of hydroelectric power and protecting flood in the down stream USA. The US reciprocally agreed to pay Canada for the power and flood control benefits[26]. The extent of Canada's benefits was agreed to be half of the power benefit that have resulted from the storage facility and a fixed sum for the food protection[27]. Therefore the Columbia River treaty also exhibits the sharing of economic benefits out of the mutual development of the river.

In a multilateral context, the Senegal and the Mekong River Basins are worth considering experiences. The Senegal River Basin countries in response to the drought they suffered in the 1970s opted for a multilateral approach to develop the Senegal River Basin and share benefits equitably. To this effect Senegal (down steam) Mali and Mauritania (both up stream) established an institution, OMVS (The Senegal River Basin Development Authority) in 1972 that would coordinate and facilitate their common vision. Guinea (upstream) is not active part of the cooperative framework though it holds an observer status. The joint developmental program manifested itself in the construction of Diama Dam in Senegal and Mauritania Dam in Mali both owned and operated jointly. The economic output expected was the supply of year round water for irrigation and municipal uses, hydropower production and year long navigation, for member riparians. From this common project, Mali was to benefit navigation and hydropower while Mauritania was to benefit from irrigation and hydropower and Senegal stood to benefit from

[25] Keith W. Muckleston, UNESCO, International Management in the Columbia River System 30 (?).

[26] Particia Jones, Operationalizing Equitable and Reasonable Utilization: Practice on the Columbia River, a paper presented on International Specialty Conference(August 6-8, 2001)University of Dundee

[27] Id.

navigation, irrigation and hydropower[28].The Senegal basin development Scenario therefore, represents the significance of cooperation in exploiting the economic potential of the common water resources to the benefit of all the stake holders- a win- win resolution.

The other multilateral approach where the concept of benefit sharing had been put into practice is the Mekong River Basin. This basin is characterized by cooperation among members of the Lower Mekong sub-basin, i.e., Cambodia, Vietnam, Thailand and Laos. Due to the absence of China and Myanmar from the cooperative framework, cooperation in this basin is not an all-inclusive.

Four of the basin countries have established the Mekong River Commission (MRC) by the 1995 Agreement on cooperation for the sustainable development of the Mekong River Basin [29]

The 1995 framework agreement has tried to accommodate different interests of the basin countries. For instance, Thailand is interested to have cheap hydropower and enough water for her agricultural sector, Laos wishes to enhance her hydropower generating potential, Cambodia is much more interested in having a well secured seasonal flow for her fishing industry while Vietnam looks for the construction of hydropower facilities in the central highlands and for the development of efficient agriculture and aquaculture in the Delta[30].

The co-riparians according to Art. 1 of the 1995 Agreement committed themselves to jointly develop "irrigation..., hydropower, navigation, flood control, fisheries, timber floating, recreation and tourism in a manner to optimize the multiple use and mutual benefits of all riparians and to

[28] Klaphake and Scheumann, *Supra* note 10, at 14

[29] David Phillips etal, Ministry of Foreign Affairs, Sweden, Transboundary Water Cooperation as a Tool for Conflict Prevention and for Broader Benefit Sharing 98(2006); Jonathan L.etal, *Integrated River Basin Management in the Multi- Jurisdictional River Basins: The case of the Mekong River Basin*, 17 International Journal of Water Resources Development 365, 366 (2001).

[30] Id, at 96

minimize the harmful effects that might result from natural occurrences and man made activities"[31].

As it is self evident from the above citation the scope of benefits that the agreement anticipates to achieve is wide in scope. To this end the vision for the Mekong River Basin is defined to be "An economically prosperous, socially just and environmentally sound Mekong River Basin"[32]. Besides, institutional vision and mission has also been agreed upon. Accordingly the vision for the MRC was crafted to be "A world class, financially secure, international river basin organization serving the Mekong countries to achieve the basins vision" [33], while the mission is " To promote and coordinate sustainable management and development of water and related resources for the countries mutual benefit and the people's well being by implementing strategic programs and providing scientific information and policy advise" [34]

Of all the areas of cooperation agriculture stands to benefit the basin states more in providing food security. Statistics shows that all the signatory states (except Thailand) find themselves under the poverty line[35]. In Laos and Cambodia agricultural represent 30 and 50% of their total GDP respectively[36]. All this shows how significant cooperation over the agricultural sector is.

The hydropower potential of the basin is 55,000MW of which only 8% is exploited[37]. Even though the level of exploitation as compared to the total potential is minimal, the untapped potential still shows the tremendous economic potential that could be generated.

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[31] Cf. David Phillips etal, *Supra* note 29, at 113.

[32] Olli Varis etal, *The Rocky Road from Integrated Plans to Implementation: Lessons Learned from the Mekong and Senegal River Basins*, 24 International Journal of water Resources Development 103, 111 (2008).

[33] Id.

[34] Id.

[35] Id. at 105

[36] Id. at 108

[37] Id. at 109

The Mekong River Basin agreement, therefore, demonstrates the strong anticipated economic benefits which are capable of driving riparian states to forge cooperation with the view of sharing benefits. But, it should be noted with caution that there is a big space between conceptualization and realization.

4.1.2 Environmental Considerations

It has been pointed out in the discussion *supra* that the cooperation for maintaining the ecological integrity should be given prior concern if the natural resources of any international watercourse is to be sustainably exploited for the benefit of inter and intra generations. This concern for the aquatic system is taken to be one of the benefits that basin cooperation aspires to achieve. In the words of Sadoff and Grey, it is labeled to be *benefit to the river.*

The regard for maintaining the integrity of the aquatic environment was not of a serious agenda in a cooperative framework up until the 1990s where sustainable economic development is linked to the well managed ecosystem, which takes coordinated development and management of water, land and related resources as its component. (*See* the definition of IWRM *infra*)

The issue of caring for the aquatic environment was first discussed in the 1977 United Nations Conference on Water held in Mar del Plata, Argentina. Motivated by the desire to avoid global water crises before the turn of the 20thc, the Conference approved what is called the Mar del Plata Action Plan. The Action Plan came up with a set of recommendations, and resolutions, which, *inter alia,* include essential components of water management like natural hazard, environment, pollution control etc[38]. More significantly, the Conference considered the issue of water management in a holistic and comprehensive manner[39]. This was meant in effect that an international watercourse should be taken as a single whole or unit (from its month to its terminus) for the purpose of an integrated management. Lowi expressed the concept best:

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[38] Id. at 108-109

[39] Id. at 109

***Geography suggests that, by virtue of its physical unity, a river basin should be developed as a single, indivisible whole, irrespective of political divisions. This is because water binds land areas together as it flows toward an outlet, and interference with the water and its movement at any point has repercussions else where is the basin*[40].**

The necessity of protecting and preserving the ecosystem is also recognized under the 1997 UN Framework Convention on the Law of Non- Navigational uses of International Watercourses. To this effect, Art. 20 of the Convention imposed a duty on watercourse states to protect and preserve the ecosystems of the international watercourse individually and where appropriate jointly. Art. 23 of the Convention provides for the specific protection and preservation of the Marine environment. The provision runs:

Water course states shall, individually and when appropriate, in cooperation with other states, take all measures with respect to an international watercourse that are necessary to protect and preserve the marine environment, including estuaries, taking into account generally accepted rules and standards.

Hence, if negotiation on cooperation over basins doesn't take a wide- angle view to incorporate the issue of an integrated water resource management as one component the resource would be driven to the edge of its natural limit and there would be river closure. Ultimately, this would render the targeted economic benefits to be unsustainable. Therefore, concern for the safety of the aquatic environment is not an option especially in the face of the current climate change that is impacting the hydrological cycle and thereby the resources base of the water resource.

From the point of environmental consideration, the Mekong Agreement clearly incorporated issues of sustainable development in relation to the protection and preservation of the marine environment. The vision statement of the basin clearly addresses the issues when it defines its objective to be "An economically prosperous, socially just and environmentally sound Mekong

[40] Miriam R. Lowi, *Rivers of Conflict, Rivers of Peace,* 49 Journal of International Affairs 124, 125 (1995)

river basin" [41] In addition; environmental program is incorporated as one of the basin's core programs[42].

To conclude, it can be noted that watercourse states should bring their desire for the utmost extraction of economic benefits in harmony with the quest for healthy marine environment. To achieve this, cooperative negotiations should put agendas of environmental concern on the discussion table.

4.1.3 Peace and Security Considerations.

Putting an end to a potential conflict that may arise from acts of unilateralism is one of the benefits that cooperation brings about. This conflict preventive role of cooperation is so significant given the fact that a scarce resource like water is serving competing needs in agriculture, industry, urban and rural population across several watercourse states. It is held that the vital nature of freshwater is a powerful incentive to move stakeholders toward cooperation. Mikhail Gorbachev, Chair, Green Cross International is quoted to have said that *"water has the power to move millions of people - let it move us in the direction of peace"*[43]

The transformation of potential conflict into a cooperative potential basically rests from the perception of looking water not as source of competition and conflict, but as an incentive for mutual cooperation through the instrumentality of equitable agreements and treaties [44] An international watercourse which is characterized by conflict would not have an opportunity to holistically manage the basin and extract the maximum and diversified benefits that the basin can offer.

The peace and security dividend is not a type of benefit that can be extracted immediately. It is after confidence and mutual trust reign among the riparian states of the watercourse that the

[41] Olli Varis et al, *Supra* note 32, at 111

[42] Id.

[43] Green Cross International, Water for Peace, Between Conflict and Cooperation: The Role of Civil Society 7 (2004).

[44] Id, at 8

benefit of peace and security can be sensed. Jordan River Basin is the best example in bringing relative peace and security to otherwise unfriendly neighbors. As Jordan River is the major source of water available to Jordan and Israel, it was one basic component of the 1994 Peace Treaty between the two riparian countries. They have resolved the water issues by agreeing on allocation regime and by now the two riparians are out of a "legal state of war". This demonstrates the fact that water has a unique inducing character in bringing hostile riparians to forge cooperation in the face of disputes over other issues[45].

In the Nile Basin context, other than benefits of economic and environmental nature peace and security is also incorporated as an incentive to cooperation. To this effect, one of the primary objectives of the NBI is defined to be:"To develop the water resources of the Nile Basin in a sustainable and equitable way to ensure prosperity, security and peace for all its peoples". Evidence shows that co-riparians with water related treaties are much more in a cooperative mood than co- riparians with out such a treaty[46].

Once an equitable and fairly reciprocated water agreement is negotiated and signed riparians are more inclined to keep the agreement intact despite the prevalence of some disagreements over non-water issues. The best illustration of this scenario is the case in the Mekong River Basin. This regional cooperation had been able to survive violent conflicts like the Vietnam War and the Khmer Rouge in Cambodia and ideological differences during the cold war[47]. Not only this, even during events of conflict between co- riparians contractual commitments enshrined in a water agreement were observed. The case of Thailand and Laos is a relevant illustration. While Laos and Thailand were in a state of conflict, Laos never hesitated to provide Thailand with hydro electricity and Thailand continued to pay the bill[48].

[45] Aaron T. wolf, Regional Water Cooperation As Confidence Building: Water Management as a Strategy for Pace 5(2004)

[46] Id, at 9

[47] David Phillips etal, *Supra* note 29 at 98.

[48] Sadoff & Grey, *Supra* note 13, at 400

The most important point to make here is the fact that cooperation over water has a lot to contribute in letting state relation to continue even in the face of violent conflicts. This is possible, because riparians are not willing to disrupt the some how stabilized relation brought about by cooperation over water. By doing so, states are in effect protecting their respective and treaty-based benefits over water issues.

The benefit generated from cooperation over water apart from enabling to reduce costs of military expenditure for violent conflict may also result in radiating trust and confidence that would allow a policy shift to developmental engagements and ultimately opens up an opportunity to undergo a broader regional cooperation and integration in other economic and social sectors too[49]. This dynamics demonstrate illustrates the interplay that exists between benefits because of the river and benefits beyond the river. The type of benefits, the challenge they resolve and the opportunities they open up is briefly explained in the table below.

TABLE 0-1 **Type of Cooperation and Benefits on International Rivers**

Type	The challenge	The opportunities
Type 1- increasing benefit to the river.	Degraded water quality, watersheds wetlands and biodiversity.	Improved water quality, river flow characteristics, soil conservation biodiversity and over all sustainability.
Type 2- increasing benefits from the river.	Increasing demands for water, sub-optimal water resources management and development.	Improved water resources management for hydropower and agricultural production, flood drought management.
Type 3- reducing costs because of the river.	Tense regional relations and political economy impacts.	Policy shift to cooperation and development, away from dispute/conflict; from food (and energy), self-sufficiency to food (and energy) security; reduced dispute/conflict risk and military expenditure.
Type 4-increasing benefits beyond the river.	Regional fragmentation	Integration of regional infrastructure, markets and trade
Source; Sadoff and Grey (2002)		

[49] Id, at 393

4.2 BRIEF OVERVIEW OF AREAS OF COOPERATION ON THE BASIS OF COMPARATIVE ADVANTAGES.

4.2.1 Context

The Nile basin countries are longing for poverty eradication, food security and a sustainable economic growth in the long run. To materialize this common objective an equitable utilization of the common water resource was found to be imperative, and this fact had been the major drive that resulted in the establishment of the NBI.

To harmonize competing needs for water from the common resource, the NBCs came to the understanding that a demand for water for a specific purpose in one riparian state may not necessarily be in conflict with the interest of the other riparian state. To this end they have agreed on the conceptualization and realization of benefit sharing mechanism as it is evidenced from the endorsement of the "socio-economic development and benefit sharing" project by the Nile-Com along with other six projects.

Putting into effect benefit sharing schemes however, demands the assessment of different comparative advantages that all riparian states may command. Therefore, the task of looking into the comparative advantage of the watercourse states is at the heart of the concept of benefit sharing. From this perspective, assessing the comparative advantages that Ethiopia, Egypt and Sudan would have is crucially important in developing a feasible and economically paying benefit sharing mechanism in the Eastern Nile context. Such analysis is necessitated because the tremendous amount and variety of resource potentials from which benefits are to be extracted are not evenly distributed across the basin.

4.2.1.1 Ethiopia

A. Hydropower

Ethiopia represents 58% of the total potential in the sub-basin in terms of generating hydroelectric power[50]. At the level of the sub-basin it is only 11% of the total potential that have been exploited. At a country level Ethiopia has only managed to exploit less than 2% of her available hydropower potential[51]. Therefore, as more than half of the total potential lies within the Ethiopian territory (owing to its higher latitude), Ethiopia do have a comparative advantage over the other watercourse states from the hydropower point of view.

The development of hydroelectric power in Ethiopia, not only provide dependable, low- cost hydropower to the basin states, for their economic development, but it would also render downstream benefits in controlling flood, easing siltation and cascading water to the irrigated agriculture of the downstream countries[52]. Such a coordinated scenario of using the water of the Nile changes the traditional perception of considering it as a stocked commodity, rather than a flow.

Hydropower plant development in Ethiopia and its transmission at an affordable price to other downstream states would facilitate socioeconomic development, which is to certain extent inhibited by power constraint. The Aswan Dam, which, according to an estimate made in 1994, is not capable of providing more than 20% of Egypt's power demand. Egypt, to seek the balance had to go using its gas and oil resource, which is very expensive, viewed in relation to

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[50] Simon A. Mason, From Conflict to Cooperation in the Nile Basin 109 (2004)

[51] Id.

[52] Salah El-Din Amer etal, *Sustainable Development and International Cooperation in the Eastern Nile*, 67 Aquatic Science 3, 8 (2005)

hydropower[53]. Because of such a power limitation it is argued that economic development in Egypt is constrained not for want of water but power[54].

Power constraint in Sudan is also a set back. According to the assessment made in 1994, woody biomass, petroleum products, non woody biomass and hydroelectricity represent 71%, 19 %, 8% and 2% of the total power balance of the country respectively[55].The highest percentage of woody biomass denotes the highest rate of deforestation while the petroleum figure implies the expensive nature of the power supply. This minimum percentage of hydropower is generated from the three hydropower plants built before 1970 and is highly affected by the magnitude of flow variability from the Blue Nile[56]. Therefore, the general pattern of energy source of Sudan implies the necessity of having a sustainable and affordable power supply from a hydropower plant.

A project appraisal document of the NBI Regional Power Trade Project indicated the basin's power requirement to be 39GW in 2010 and 65 GW in 2020. To address this power demand 12,000 MW of new capacity should be installed every year at a cost ranging between US $ 10 to 20B[57]. From this pattern of growing need for power and its huge financial implication, the Eastern Nile basin will have its share. This hard fact makes the development of hydropower at a cost-effective site (most reasonably in Ethiopia) a timely assignment for the basin states.

Unlocking this tremendous hydropower potential demands a financial commitment from all the stakeholders. Through a negotiated arrangement access to the power generated at a price that takes into account the level of financial or otherwise contribution towards the realization of the project would be appropriate. It is because of this understanding that basin states in the Eastern

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[53] Inter Africa Group, Trans- boundary water Resources in the Nile basin: Strengthening Civil Society Engagement in the Nile Basin Initiative 114 (2005)

[54] Diann Rizzolio Karyabwite, UNEP, Water Sharing in the Nile River Valley 36 (2006)

[55] Osman El-Tom Hamad and Atta El-Battahani, *Sudan and the Nile Basin,* 67 Aquatic Science 28, 33 (2005)

[56] Id.

[57] World Bank, Project Appraisal Document for Regional Power Trade Project [NBI-SVP], 4 (2005)

Nile jointly formulate The Regional Power Trade Project as one of the thematic project of the Shared Vision Program with a mission to establish the institutional pillar to coordinate and facilitate regional power market via the creation of the Nile Basin Power Forum[58]. It is to be noted that the hydropower potential in the Eastern Nile basin is so enormous that, interconnection is feasible even to the Equatorial Lakes Region[59].

Given the highest economic potential that can be reaped from hydropower development for its national consumption and the revenue generated from power marketing for other basin states, Ethiopia do have compelling incentive to engage in tapping this vital resource on joint and unilateral basis.

The identification and presentation to the NBI of 13 (thirteen) hydropower projects for implementation in Nov 2000, is a clear manifestation of this strong desire[60]. In concrete terms, hydropower development projects in Baro, Gibe, Birbir and Karadobi have won the approval of the Nile COM under the umbrella of the SAP[61].

B. Watershed Management

A greatest environmental and economic benefit can also be extracted from watershed management schemes from the high lands of Ethiopia. Such an arrangement especially benefits downstream states through reducing erosion and thereby mitigating sediment load that originates from the Abay Blue Nile and Tekez–Atbara river system[62]. This intervention would ultimately boost power generation potential of hydropower plants downstream; reduce costs for the maintenance of irrigation canals, pumps and costs for the removal of sedimentation[63]. These

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[58] Id, at 1

[59] Hamad & Battahani, *Supra* note 55.

[60] Yacob Arsano & Imeru Tamrat, *Ethiopia and the Eastern Nile Basin*, 67 Aquatic Science 15, 21 (2005)

[61] Inter Africa Group, *Supra* note 53, at 28.

[62] ENTRO, Watershed Management in the Eastern Nile Basin: Challenges and Opportunities for Alleviating Poverty at 18.

[63] Id.

downstream benefits can be economically quantified and be the basis of payment as one possible aspect of benefit sharing for an upstream basin state .In the long run concerted management in the watershed management will facilitate economic development and poverty alleviation of the rural population of the basin states which are languishing under the merciless pain of poverty principally owing to the high degree of natural resource degradation[64]. The Nile Basin states aware of this tremendous potential have incorporated watershed management as a project package at a basin level in their Shared Vision Program and at the sub basin level in the Subsidiary Action Program. In the Eastern Nile Basin, Watershed Management as one component of cooperation is envisaged in the JMP (Joint Multi -Purpose Projects)[65].

C. Livestock

Ethiopia stands to have the leading figure in the number of herds in Africa. This quantitative supremacy if managed in terms of quality as well would be a significant source of economic development. The joint exploitation of the livestock potential in Ethiopia would enable Egypt and Sudan with a constant and affordable supply of meat[66].

4.2.1.2 Sudan

In the Eastern Nile basin the greatest agricultural potential via irrigation lies in Sudan. The potential manifests itself in the high quality alluvial soil between the Blue Nile and White Nile rivers in the Eastern part of the country coupled with the largest reserve of cultivable land (about 47 million hectares) in Sub Sahara Africa[67]. Of this estimated potential, Sudan has only managed

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[64] Id,at11

[65] ENTRO, Joint Multi-Purpose Program Launch Phase Draft Report, 2008,

[66] Dennis Wicheins Etal, *Cooperation Regarding Water and Other Resources Will Enhance Economic Development in Egypt, Sudan, Ethiopia and Eritrea,* 19 International Journal of water resources Development 535,549 (2003)

[67] Mohamemd Mustafa Abbas, Towards Hydro Political Cooperation in the Nile Basin: Assessment of Joint Integrated Water Resources Project between Sudan and Ethiopian to Transform Conflicts 9(2006).

to develop 1.9 million hectare according to the World Bank study in 2006[68]. Because of this tremendous potential Sudan is sometimes labeled to be the "bread basket" of the sub-basin and beyond.

Joint development of irrigated agriculture would enable the basin countries to enhance their capacity to ensure food security and alleviate poverty in the long run in line with the Millennium Development Goals which seeks to eradicate extreme poverty and hunger (Goal 1) by reducing by 50% people living with less than US1 dollar a day by 2015.

This is critically important especially for Ethiopia and Sudan where the number of population living with less than a dollar per day represent a significant segment of their people (31.3%) in the case of Ethiopia according to the world Bank report of 2006[69] and where the contribution of the agricultural sector to the GDP is remarkable i.e., 47.7% in the case of Ethiopia and 33.7% in the case of Sudan[70].

Despite the existence of arable land suitable for irrigation development the water supply to support the scheme within the country is far below than required. Thus, agricultural development is bottlenecked for want of sufficient water availability[71]. This situation discloses the very important cooperative linkage especially with Ethiopia to secure the necessary water provision. To ensure such a cascading of water on a much more dependable basis water reservoir works in the highlands of Ethiopia would be imperative, which could also generate hydropower for mutual benefit. This scenario highlights the natural interconnectedness of hydropower and agriculture in the Eastern Nile basin. Thus, Sudan's comparative advantage in irrigation potential makes sense in as much as it is linked to the water supply from Ethiopia. Such interplay establishes the very merit of cooperative framework for sharing benefits.

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[68] Munir A. Hanjra and Francis Gichuki, *Investments in Agricultural Water Management for Poverty Reduction in Africa: Case Studies of Limpopo, Nile, and Volta River Basins*, 32 Natural Resources Forum 185, 197 (2008).

[69] Id, at 191

[70] Id, at 192

[71] Hamad & Behahani, *Supra* note 55, at 29.

Harnessing the irrigation potential jointly would also give rise to the importance of engagement in the development of agro- industries to meet the growing demand for food, drink and clothing across the basin[72]. Well-managed joint engagement in the agricultural and power development sector will offer abundant layers of benefits over other sectors too. Therefore, benefit-sharing mechanism should be conceived from a wider perspective as mutual interdependence between and among different sectors is one important aspects of it.

4.2.1.3 Egypt

A. Agriculture

The greatest consumer of water in Egypt is the agricultural sector. It claims about 86% of the available water[73]. However, the sector with such high degree of consumption of the already scarce water is not able to ensure food security. Its contribution to the overall GDP is very insignificant. As per the report of the 2006 FAO report its contribution to the GDP was only 13.9[74]. Unable to depend on the local agricultural output for food security, Egypt had to look to international market to find the balance of food supply[75]. Efforts to meet the deficit by reclaiming additional irrigable land didn't produce the desired effect. Assessment of data in the 1980s revealed that agricultural outputs coming from the newly reclaimed lands had to contribute less than 1% to the overall agricultural production[76].

However, the failure of the agricultural sector is only related to crops (like maize, sorghum, rice and Sugar Cane) which are very water consuming and less yielding for a unit of water. The reallocation of water from such crops to high value and less water demanding agricultural products would enable Egypt to establish comparative advantage over other basin countries.

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[72] Id, at 38

[73] T. Sileet etal, Impact of the Nile Basin Initiative on the Agricultural Policy of Egypt 6 (2007).

74 Hanjra & Gichuki, *Supra* note 68, at 192.

[75] T. Sileet etal, *Supra* note 73, at 1.

[76] Muserref Yetim, *Governing International Common Pool Resources: The International watercourses of the Middle East*, 4 Water Policy 305, 316 (2002).

Because of such a perception, it is argued that Egypt stands to benefit much by specializing on the production of high revenue generating agricultural products aimed to be exported to European and Middle Eastern markets[77].This comparative advantage is more real given the hundred years of irrigated experience of the country.

B. Aquaculture.

Fish farming is another economic sector that Egypt undoubtedly would have a comparative advantage. Egypt stands seventh globally in fish farming. In the African context Egypt is leading the sector in terms of high production[78]. The fishing industry is becoming significant for achieving food security, although food security is mostly assessed in terms of the availability of agricultural crops[79].

It should be stressed, however, that some of the comparative advantages that have been dealt with in relation to the basin countries are not closed lists. As cooperation intensifies other sectors of cooperation will open up. For instance, operating a refinery and distribution system jointly in Sudan would ensure sustainable access and fair price deal among the basin states. A boost in agricultural products in Sudan, especially of raw materials (cotton) for the Egyptian textile industry would secure market for farmers in Sudan, and generate additional employment opportunities in Egypt[80].

In conclusion, it is important to note that, benefit sharing is a practical expression of the common vision developed by riparians sharing the same international river .It goes through three logical steps. First, the stake holders need to reach at a common understanding as to expectations of benefits from the benefit sharing framework. Secondly, the stake holders should identify the scope and categories of benefits (baskets of benefits) to be extracted and finally the magnitude of

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[77] Dennis wichelns etal, *Supra* note 66, at 543

[78] Michael Zwirn, Aquaculture in Egypt: *Improving Food security and Resolving Resources Allocation conflicts,* 11 Journal of Environment and Developemnt129, 130 (2002).

[79] Id.

[80] Dennis Wichelns etal, *Supra* note 66, at 548

the basket of benefits has to be determined in such away as to result in a positive –sum-outcome. [81] Optimal extraction of diverse benefits nonetheless, demands a profound understanding by the stake holders as to the greatest potential that a transboundary river would have in releasing many tangible and intangible benefits if managed in a cooperative framework. It means, in effect, doing away with "business as usual" approach.

[81] Melvin Woodhouse&David Philips,NBI, Transboundry Benefit Sharing Framework(Training Manual)10-16(2009)

CHAPTER FIVE: SETTING BENEFIT SHARING IN MOTION

The Nile Basin States have unanimously developed a common vision which is supposed to guide their future and joint common water resource management for the betterment of their respective peoples' economic and social wellbeing. To this end, the shared vision longs *"to achieve sustainable socio-economic development through equitable utilization of and benefit from, the common Nile Basin water resources"*. Such a vision statement signifies the very fact that the mutual development and management of the Nile waters is to be guided by the principle of equitable utilization. The embodiment of this principle in the shared vision statement is in fact an adherence to one of the cardinal principle of international water law as enshrined under Art 5 of the 1997 UN Framework Convention.

The real challenge of establishing equitability to the taste of all the stakeholders in the basin, however, lies ahead. Resolving such an issue appears to be a testing exercise in a basin of many players like the Nile and in a situation where economic, political and geographical power asymmetries prevail which ultimately would determine the bargaining strength of the basin states.[82] In light of the hitherto unresolved legacy of the 1959 water agreement which is not taken to be fair and equitable, designing a formula that ensures equitability of use through a fresh look at the existing use is the essence of the Nile *problematique*[83]. Unless and otherwise a consensus is reached on this *problematique* ensuring equitability in the use of the Nile waters appears to be a long shot.

Be that as it may, the question of framing equitable formulae for equitable utilization would be of a negotiated settlement and because of this reason a "one-size fits all" approach doesn't function. As it has already been discussed *infra* arriving at an acceptable scheme of benefit sharing and trading this finite resource for non- zero or integrative solution demands different scenarios of compromise which calls for working-out compensatory schemes for those who gain

[82] Halla Qaddumin, ODI, Practical Approach to Transboundary Water Benefit Sharing 3(2008)

[83] David Phillips etal, Swedish Ministry for Foreign Affairs, Transboundary Water Cooperation as a Tool for Conflict Prevention and for Broader Benefit Sharing 153(2006)

less by those who are to benefit more out of the jointly developed economic venture. This compensatory arrangement is so crucial to keep least beneficiaries onboard the cooperation truck. Hence, the question of effecting equitable benefit sharing demands two approaches, i.e. aspiring to share benefits in an equitable manner and framing a mechanism by which compensation can be made.

In order to ensure distributive justice, in the context of sharing benefits, partners ought to be accommodative and responsive to claims and suspicions of their fellow stakeholders. Negotiation on benefit sharing should be conducted with utmost possible good faith and sense of consideration for the legitimate and reasonable interest of others. It should never reduce to a mere exercise of rehearsing one's own interest to the detriment of other partners. In this regard Savenije and Zagg identified four elements that need to be adhered to in the course of negotiating international cooperation in water resource management. The first element is the principle of good neighborliness which underlines the mutual interdependence of watercourse states so that they should strive to resolve emerging problems through the conclusion of treaties and putting in place resultant institutions. Recognizing riparian interests is the second element. This demands basin states to appreciate the special interest that a riparian state may have over the common water resource in as much as it is not incompatible with the mutual and individual interest. The third element is the development of joint activities which is the actualization of commonly designed protects. The last phase is the ultimate effect of the other three elements which is the transformation of crises into tangible opportunities.[84]

5.1 The 1997 UN Convention as an Aiding Tool

Benefit sharing as one possible variant of transboundary water management was envisaged in The 1997 UN Convention. The reference both to the "utilization" and "benefits" in the formulation of Art.5 signifies such a fact[85]. Factors enumerated to establish equitability under

[84] Hubert H. G Savenijie and Pieter Van der Zaag, *Conceptual Framework for the Management of Shared River Basins; with special Reference to the SADC and EU*, 2 Water Policy 9, 20 – 21(2000)

[85] David Philips etal, *Supra* note 2

Art.6 are basically meant for volumetric allocation[86].This is so because establishing equitability in a benefit sharing framework is basically a negotiated settlement on a project by project basis. Nonetheless, guidelines under Art.6 would still be of relevant application by reducing some of the factors into measurable economic units[87].

As already discussed the Draft Cooperative Framework Agreement of the Nile Basin under Art 4/2 went further to add two additional variables to be considered in establishing equitable use. Whatever agreed unit value is attached to these basic variables they would represent a different figure to all the watercourse states as it would be shown from interpreting the data in the following tables.

TABLE 0-1 AREA OF NILE COUNTRIES IN THE NILE BASIN.

Country	Total area of the country (Km^2)	Area of the country within the basin(Km^2)	As % of total area of basin (%)	*As % of total area of country (%)*
Egypt	1,001,450	326,751	10.5	*32.6*
Ethiopia	1,127,127	365,117	11.7	*33.2*
Sudan	*2,505,810*	*1,978,506*	*63.6*	*79.0*

Source - S.A. Mason (2004) quoting FAO 1997a.

TABLE 0-2 DEPENDENCY RATIO OF COUNTRIES ON THE NILE WATERS.

Country	**Dependency Ratio (%)**
Egypt	97
Ethiopia	0
Sudan	66

Source: S. Mason 2004 (adopted)

[86] Id.

[87] Jhon Waterbury, *Between Unilateralism and Comprehensive Accords: Modest Steps toward Cooperation in International River Basins*, 13 Water Resource Development 279, 285(1997).

TABLE 0-3CONTRIBUTION OF WATER TO THE NILE RIVER (%)

Country	Contribution (%)
Egypt	nil
Ethiopia	86.0
Sudan	nil
Equatorial Riparian	14.0

Source: Tesfaye Tafesse 2001 quoting Whittington, Dale and McClelland, Elizabeth, 1992 (adopted)

As it is evident from a look at Table5.1 Egypt, Ethiopia and Sudan do have different geographical extent in the overall basin area. Under such a scenario, Sudan which has the largest drainage area within the basin will benefit much out of the scoring white Egypt and Ethiopia will have almost similar grade. When contribution of water (Table5.3) is considered Ethiopia will have a 100% grade as neither Egypt nor Sudan contribute nothing to the water flow of the Nile Basin.

In terms of dependency ratio (Table5.2) Egypt stands to benefit more than Sudan while Ethiopia will get nil. In this regard some inquiry appears to be imperative. The dependency ratio analysis seem to have considered as to whether there is any other source of water for basin states' agricultural, industrial and municipal use and not the result of a conclusion that the Nile water is irrelevant for Ethiopian's development endeavor. From this point of view the issue of dependency ratio as a possible input in the determination of equitability may demand a fresh look.

Population size dependent on the Nile waters is also one factor to be considered as it is indicated under Art 4/2/C of the Draft Cooperative Framework Agreement. This determinant variable is becoming a significant factor as access to water is taken to be a human right issue as back as 1948 when the universal Declaration of Human Right (UDHR) was adopted under the auspices of the United Nations. To this effect Art 25 of the declaration provided:

> ***Everyone has the right to a standard of living adequate for the health and well being of himself and his family, including food, clothing, and housing and medical care and necessary social services...***

Even though access to water as an individual human right is not specifically indicated *expressions like the standard of living adequate for the health and well being of himself and of his family including food* implies water as a necessary input towards the realization of such rights, thus water being obliquely inherent as a human right[88]. A part from this the Committee on Economic, Social and Cultural Rights of the United Nations had reinterpreted and concluded in 2002 that provisions of Art 11 and 12 of the Covenant on Economic, Social and Cultural Rights (CESCR) are human right issues[89]. Such a conceptual understanding of access to water had achieved recognition when the United Nations Millennium Development Goals, under its 7th Goal targeted to reduce by half the proportion of people without sustainable access to safe drinking water in 2015[90]. This characterization of water as a human right stimulated an argument by many activist NGOs that the provision of water shall remain within the domain of the public sector lest commercializing water through the private sector would endanger its free or subsidized supply[91].

As discussed above, since water is not only an economic good but a social good too, any contemplated benefit sharing formula should allot equal value to each and every citizen dependent on a common water resource. Viewed from the size of population dependent on the Nile waters Egypt would claim the highest grade followed by Sudan while Ethiopia would have the least grade.

Generally speaking, albeit, Art 6 of the 1997 UN Framework Convention would be of much help in providing, natural (physical) social, economic and population variables to be considered as an aiding tool, a workable benefit sharing arrangement would come out of the innovative bargaining exercise of all the stake holders by taking into account the peculiar nature of the basin and the diversified social and economic needs of the basin states.

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[88] Olli Varies, *Right to Water: The Millennium Development Goals and Water in the MENA Region*, 23 International Journal of water Resources Development 243, 244(2007)

[89] Asit K. Biswas, *Water as a Human Right in the MENA Region Challenges and Opportunities,* 23 International Journal of water Resources Development 209, 209 (2007)

[90] Id.

[91] Id, at 217

5.2 Types of Benefit Sharing Mechanisms

Once a formula to share benefits is developed, it is imperative to see what form (type) the benefits to be shared would take. Out of the four benefits that have already been discussed those economically quantifiable are the ones to be subjected to benefit sharing mechanisms. In this regard, benefit from the river (direct economic benefit) is much more relevant. Benefits to the river, benefits because of the river, and benefits beyond the river are not easily quantifiable in terms of clear economic unit as they are intangible benefits.

Even though, the following different types of benefit sharing mechanisms are concepts basically developed for benefit sharing from dam projects in relation to dam affected communities[92] the concept can still be analyzed for benefit sharing scenarios in a wider perspective.

5.2.1 Revenue Sharing and Constituting a Trust Fund

Revenue sharing envisages a situation where common projects produce an output above the needs of the basin states and where it is possible to commercialize the out put beyond the basin and generate revenue to be shared among the basin states. A high capacity hydropower plant, eco- tourism, extensive irrigated agriculture is among the many projects that can generate revenue through commercialization within and beyond the basin.

In addition to sharing revenues from jointly owned and operated projects, bringing such revenues under the common reserve as a trust fund for further investment or for upgrading the already existing ones is another possible scenario of enhancing the pie.

5.2.2 Preferential Rates and Purchase Agreements

Preferential fee contemplates a situation where a partner, for instance, in a jointly developed hydropower plant may have a relatively lower rate of tariff depending on the highest input of one or the other type. The LHWP (Lesotho Highland Water Project) extended this scenario to an

[92] Dominique Egre etal, The World Bank, Benefit Sharing from Dam Projects (Final Report) 12 (2002)

extreme situation where the benefit of hydropower generated went exclusively to Lesotho while the water was transferred to South Africa against the payment of an agreed sum of money.

A purchase agreement for water is one phenomenon in the context of water allocation. For this mechanism to operate, property rights over water need first be established. Such an arrangement enables the buyer to have an access to water on the basis of an assigned right without transferring water right *per se*[93]. This mechanism helps to tranquilize water scarcity within a basin as a state with a relatively abundant water resource can transact the resource against the payment of an agreed sum of money. Purchase agreements can also be negotiated for agricultural products, fisheries and other outputs of a common project and hence can be used to re-allocate or configure benefits of water use as between riparians[94].

5.3 Major Challenges of Implementation

Signing a cooperative agreement over the utilization of transboundary water is one major step while realizing the agreement on the ground in line with its letter and spirit is quite another matter. However, deep the professionalism and commitment of technical experts may be, a transboundary water management would not bear the desired fruit in an environment where the corresponding political and financial commitment is lacking.

5.3.1 Political Commitment as a Decisive Tool of Implementation

The management of international water treaties is a complex process that involves different phases, i.e. from conceptualization to realization. Cooperative agreements over transboundary water would not be able to defuse potential conflict and move the basin out of the zero -sum predicaments without unswerving political steadfastness. Thus, if basin states really meant to use fresh water as a tool of economic and social development they need to go long miles to see to it that what they meant in the text is realized on the ground. As the virtue of any international

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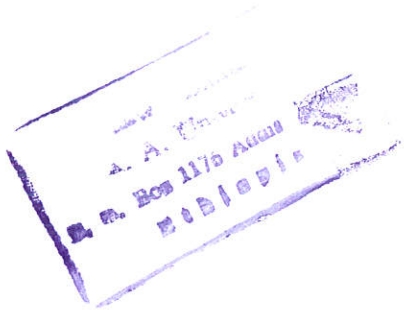
[93] Clauda W. Sadoff & David Grey, *Cooperation on International Rivers: A Continuum for Securing and Sharing Benefits*, 30 International Water Resource Association, November 2005, 3.

[94] Id, at 4

agreement is its implementation, the crux of the matter is not the mere conclusion of the treaty but the concretization of the same. There are water treaties with impressive and broader common vision but fall short of full scale implementation for lack of the desired political commitment. The Mekong Basin is a case in point. The periodical financial contribution which should be made by member basin states to the MRC (Mekong River Commission) has not been fully paid, despite the 1995 Mekong Agreement and persistent international effort to that effect[95]. Furthermore, the MRC had lost its relevance over issues of hydropower development within the basin as regards Thailand and Laos[96]. A political engagement can not be secured easily in a climate of political distrust and in a situation where the issue of water is not desecuritized. Especially ensuring political commitment throughout is a difficult task as perceptions of cooperation may vary from time to time. It would be even much more difficult in basin states where mature and established democracy is lacking and where a change in the political sphere may bring a fresh and even an incompatible view with its predecessor thereby posing a real challenge for implementation.

Savenije and Van der Zaag conceptually developed a metaphor for an effective management of shared river basins where politics is taken to be one of the pillars in sharing common water resources (see fig. 1 below)



[95] Olli varies *etal, The Rocky road from Integrated Plans to Implementation: Lessons Learned from the Mekong and Senegal River Basins*, 24 International Journal of Water Resource Development 103, 115 (2008).

[96] Id.

Figure 0-1 The Classical Temple of Sharing International Water Resources

Source: - Savenije & Zaag (2000)

It is underlined that the interplay among the three conceptualized pillars is vital to arrive at equitable sharing of international waters. Thus it is emphasized:

> ***The central pillar is that of technical cooperation, which may also be called the operational pillar. The two side pillars are the political pillar, responsible for an enabling environment, and the institutional pillar responsible for laws and institutions. All three pillars are necessary to arrive at a balanced and equitable sharing of international waters. If one of the side pillars is weak, meaning either a low political commitment or inadequate legal and institutional arrangement, the sharing of international river basins may not be firmly embedded and is prone to unbalanced management decisions.***[97]

Even though, the harmonization of the three pillars is of utmost importance, the greatest value should be attached to the political pillar as it is this particular pillar (the enabling environment) which is the source of an effective legal and institutional framework. This signifies the

[97] Savenije & Zaag, *Supra* note 3, at 15

fundamental point that the greatest effort by all the stake holders must be geared towards mobilizing the political will. At least, the level and momentum of the political will as it has been at the conclusion of the treaty right up to the phase of implementation is enormously important. Though the Temple refers to a water sharing arrangement its relevance in the context of benefit sharing scenario is apparent.

5.3.2 Financial Resource Constraint

Transboundary river basin management connotes considerable financial expenses ranging from administrative costs to investment capital. This financial implication is tremendous in the context of a benefit sharing framework as it involves the design and execution of various projects. Owing to the low level of economic development of the Nile riparians and the capital intensive nature of the projects (especially a hydropower development) financing such projects via locally generated capital is a big challenge.

In the Eastern Nile context, for instance (the Eastern Nile power Trade program under the SVP) the pre-feasibility study of the Mandaya (Ethiopia) hydropower project entails a project cost of more than 2.4 billion USD.[98] Similarly the same study for the Boarder hydropower project (Ethiopia) needs an investment capital of more than 1.4 billion USD.[99] In addition, the karadobi and Mabil hydropower generating plants are estimated to cost more than 2.2 billion USD and 1.7 billion USD respectively as their initial construction cost.[100] These are some instances to illustrate the capital intensive nature of projects on hydropower generation. Such a massive amount of capital can not be solely squeezed from basin states unless multilateral financial entities are involved. In this regard the International Consortium for Cooperation on the Nile (ICCON) can be taken to be a positive financial initiative. The Consortium was able to receive

[98] ENTRO, Pre-feasibility study of Mandaya Hydropower project, Ethiopia,2007 (final Report)

[99] ENTRO, Pre-feasibility study of Boarder Hydropower project, Ethiopia,2007 (final Report)

[100] Paul J. Block etal, IFPRI, Integrated Management of the Blue Nile Basin in Ethiopia: Hydropower and Irrigation Modeling 10 (2007)

pledges of support that worth USD 140 million in June 2001.[101] This amount appears to be very insignificant viewed against the estimated total financial requirement for phase I NBI projects which are expected to reach 3 billion USD.[102] Besides the mandate to pool a financial resource, the Consortium established what is called the NBTF (Nile Basin Trust Fund) which aspires to provide "Streamlined, cost-effective funding...which would consolidate donor support and ensure the clarity and cohesiveness of the program."[103]

Despite such initiatives, the project costs cannot be expected to be fully covered by multilateral and bilateral funding thereby raising funds by the basin states themselves a necessity. Such an assignment for basin states of poor economic performance would not be easily met. This serious financial constraint would have an inevitable effect in prolonging the realization of the common vision and impacting the quest and the pace for the badly desired economic development and poverty alleviation.

It is also argued that, high dependence on banks and donors would make the management exercise of the basin vulnerable and as a result it is recommended that decision making, financing and benefiting befall in one hand.[104] In a bid to move toward improving financial self sufficiency the Global Water Partnership (2003) advised basin states to recognize water as an economic good and recovering cost as much as possible from users.[105] It is, however, imperative to take cognizance of the fact that ensuring access to water as a human right and the recognition of the same as a social and cultural value should not be overwhelmed by the sole drive to reclaim costs.

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[101] Ashok Swain, *The Nile River Basin Initiative: Too Many Cooks, Too Little Broth,* XXII SAIS Review 293, 302 (2002)

[102] Id.

[103] Alan Nicol, UNESCO, The Nile: Moving Beyond Cooperation 26(2003)

[104] G.T Raadgever etal, *Assessing Management Regimes in Transboundary River Basins: Do They Support Adaptive Management?,* 13 Ecology and Society (2008)

[105] Id.

From whatever source finance for investment may be earmarked the financial issue would remain a tremendous impairment in the context of implementing integrated plans in a basin inhabited by poor states of the Nile type.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

In the face of growing water scarcity in the world considering water as a fixed stock and going to share this scarce resource in the traditional way was not found to be viable. Such a new perspective of looking at a transboundary water problem has lent hands for a new thinking that takes water as a continuous flow that can generate many, diversified and sustainable benefits to all the stake holders. The outstanding rational for such a preference therefore, basically lies on the basic understanding that if water is viewed as flow and not as a stock optimum utilization of the same is possible. Such a new approach is to be made a reality through the instrumentality of what is called benefit sharing arrangements. Cooperative engagement would enable the optimum utilization of the existing water resource through the design and execution of common developmental projects and the distribution of their economic outputs amongst the basin states.

A successful cooperative management of a transboundary river would, other than direct economic benefits, deliver multifaceted benefits including ecosystem protection and diffusing potential conflicts over competing uses of the common water resources. As cooperation takes root the basket of benefits will enhance and transcend to areas of cooperation in non- water related sectors, e.g., the use of common currency, free movement of people, goods and services within the basin. In the long run, it may even lead to regional integration. Conceptually benefit sharing rests on a clear perception by all the stake holders as to why and how cooperation over transboundary water is to be managed. Such an understanding all along demands a clear understanding as to how costs and benefits can be apportioned amongst the basin sates.

To ensure such optimal utility and to transform the conflict potential into a cooperative potential that enables a positive sum outcome the concept of benefit sharing has been introduced in the Nile Basin discourse through the instrumentality of the Nile Basin Initiative. Currently it is under going a taste in the Eastern Nile Basin.

In the Nile basin where water scarcity is having a counter productive effect in the whole effort of ensuring food security and speeding up economic development, the application of the concept is quite relevant. To realize the concept to the mutual advantage of the basin states win-win

projects are designed at a basin and a sub basin level. Feasibility studies have also been conducted, especially in the power trade sector .The design and implementation of these and other projects is supposed to produce mutual trust and confidence that may be of some impetus for concluding a permanent cooperative framework agreement.

As the Nile basin used to suffer from fierce hydrological confrontation because of the absence of a basin wide agreement over the utilization of the common water resource and because of the prevailing inequity of the *status quo*, arrangements that would be of help in nurturing positive attitudes are significantly important, though the question still remains as to how long should developing mutual trust and confidence should take.

It is true that the Eastern Nile countries do have different comparative advantages of their own which are a very important basis for analyzing a positive -sum –outcome of transboundary water opportunities. However, the implementation of NBI projects at a sub-basin level is far behind implementation. A more talked about Joint Multi-Purpose Program is still a mere project document. By now a passive atmosphere seem to reign over the basin as there is neither an implementation of contemplated projects nor promising hope to positively resolve the outstanding differences in the draft cooperative framework document which is a basis for a would be benefit sharing framework. The expectation that benefit sharing schemes on a project by project basis would deliver an impetus for mutual trust and confidence for the birth of permanent cooperative framework does not produced the desired effect simply because projects are not translated into action and as a result no benefit accrued to basin states.

A cooperative frame work agreement that would be able to harmonies the application of the two cardinal principles of conventional and customary international law is of immense importance for a full scale implementation of benefit sharing arrangements and rectifying the prevailing inequity which is a hindrance for the joint development of the common water resources.

The basic question, in this regard revolves around on whether or not the NBCs would agree on a fresh volumetric allocation that would result in the revision of the *status quo*, as an accomplishment of establishing the badly desired equitability.

As things stand now there is an apparent polarization on this point. One of the core impediments towards the quest for multilateralism in the management of the Nile water resources is the prevalence of a strong attitude to maintain the *status quo*. This attitude can be explained best as *"free ride mentality"* by the downstream states particularly Egypt. Such state of affair is the direct manifestation of securitizing the issue of access to the Nile waters as a political instrument in their foreign relation dealings. This scenario somehow implicates the Nile to be a partially securitized basin. The hydropolitical legacy of the basin which emanated from prior water agreements is still a stumbling block on the way to seek an equitable resolution in the utilization of the Nile waters. Beneficiaries of the *status quo* are demanding that the new resolution should start from such a *status quo*. Upstream states, on the other hand are strongly resisting the continuation of the existing use. However, as the prevailing *status quo* is inequitable by its very nature the quest for equitability cannot start from an inequitable foundation.

The implantation of the concept of water security as a possible tool of breaking the deadlock was not able to result in a way forward. Lack of conceptual clarity and its failure to resolve the point of departure as prerequisite to ensure water security to all the riparian states is the outstanding problem associated with the concept. Leaving aside Egypt's unequivocal posture to fix the point of departure from the existing use, the draft agreement of sub-article (b) of article 14 of the Draft Cooperative Framework Agreement as agreed by upstream states is quite dubious as it failed to clearly pinpoint from where the reference for water security should start. Hence, the formulation of article 14 by both blocks, as it stands now, falls short of resolving the impeding problem. This would significantly hamper the way towards the determination of equitable entitlement of the use of Nile waters for each riparian country. Addressing the inequity in a manner that would not result in a loss to another basin state is therefore, the *problematique* of the Nile basin water management in general and that of the Eastern Nile in particular. If an innovative approach that would strike the equilibrium is not to come out from the negotiation process cooperative management would booth and the basin will continue to pose a conflict potential. Hence, rectifying the prevailing inequity over the utilization of the Nile water is a *sine qua non* for the optimal realization of benefit sharing .This derives from the conceptual basis that the two options are not mutually exclusive but rather mutually reinforcing.

At this juncture, it important to look into possible dimensions within which benefit sharing arrangements can operate. Accordingly, two scenarios are possible. First there are situations where benefits can be generated without the necessity of having a water allocation regime .In this context the JMP (Joint Multi-Purpose Program) of the Eastern Nile can be an illustration. Under such "three countries one system" approach a multi-purpose dam and reservoirs with associated outputs of power generation, transmission system, watershed management, irrigation enhancement and flood management is designed to be implemented in the Blue Nile/Main Nile sub- basin. This multipurpose developmental project was envisaged upon the understanding that the water resources to be utilized by the project would not impact the existing pattern of use in the Eastern Nile countries.

Therefore, such a scenario reveals the fact that the operation of a benefit sharing arrangement that did not call for a water sharing arrangement is possible in a situation where benefit sharing projects are of such a nature that did not impact the existing use pattern. . But the basic question still remains as to whether or not Ethiopia which doesn't have an allocated water share of the Nile as yet and with more than 75,000,000 people is able to ensure food security through such an approach. The answer more significantly depends on the establishment of whether or not there is enough water resource to support as many projects of this type without impacting the pattern of the existing use.

In other scenarios of benefit sharing where anticipated projects demand a high consumptive use of the common water resource, as for instance in an extensive irrigated agriculture scheme, the establishment of a water right through allocation is of immense importance. Such importance basically derives from taking water as an element of contribution and a basis of compensation in a benefit sharing scheme.

Therefore, the very question as to whether benefit sharing as a greater level of cooperation can offer the highest possible positive- sum- outcome is largely contingent up on the equitable resolution of the contentious issues is the draft permanent cooperative framework agreement. Other agreements on different issues of cooperation without a resolution on the current point of difference cannot stand by their own and be of any help in transforming the hydropolitics of the

basin to the better. Positive –sum- outcome on the issue demands the resolution of the contradiction between recognizing the principle of equitable and reasonable utilization and yearning for the *status quo*. Insisting for the maintenance of the existing use and agreeing upon the principle of equitable utilization as one of the governing principle in the utilization of the Nile waters are not able to co- exit harmoniously .The theory that the basin hegemon of the basin dictates the course of the negotiation process in such a way that fits its self interest by disregarding the needs of other basin states seems to be no more relevant in the Nile basin. In the face of a growing awareness, by the hitherto neglected basin states, of their natural water rights the call for a fair share in the Nile water can not be escaped. Unless a clear and positive stance is taken by the downstream countries in renouncing their old posture there is high probability that the basin will resort back to the negative- sum predicament. This undesired outcome would close any potential for possible cooperative engagements.

Therefore, looking for an equitable formula that would administer the utilization of the Nile waters in whatever modality is not an option as the cost of non- cooperation is too much to bear. Failure to reach an agreement means not only forfeiting the optimum potential of benefits that a benefit sharing arrangement can fetch but also heralding aggressive and unguided unilateralism that would fan out the conflict potential. Consequently, polarized interpretations of the principles of equitable utilization and no significant harm will surface on the hydropolitical battle.

In terms of justifying the water utilization the upstream states seem to be in a better position for the following two reasons. First, the two principles are norms of customary international law and as such they operate irrespective of the will and a conclusion of a water treaty by basin states .Secondly, upstream states are entitled to use the water within their territory if doing so didn't result in significant harm to downstream states .The question of significant harm is a relative term that is subjected to whether a given upstream use is equitable or not. Under such circumstances a given use may still be equitable though its effect of harm downstream is significant.

In addition to the above concluding remarks some recommendations as a way forward need to be addressed. One of major road block on the way to the equitable resolution over the use of the

Nile water is the prevailing big disparity between the demand and supply equation. This is the underlying fact behind the threat perception and the securitazion of water especially by the downstream state Egypt. The expedition for the solution demands a water management strategy that would promote a decrease in demand and a boost in the supply side.

In this regard, there are repeated suggestions by different scholars to the effect that a headwater storage facility would reduce the rate of evaporation and seepage that would enhance the volume of water available within the Eastern Nile Basin. It is argued that such additional volume of water will be earmarked for the upstream state Ethiopia in the course of configuring equitable share through reallocation without significantly affecting the pattern of the existing use. Though, there is an apparent utility in employing such a tool there is no much debate as yet on its merit and practicality by the stakeholders. Therefore, an in-depth discussion on this issue is timely.

Efficient utilization of the available water resource through inter- sectoral reallocation i.e., reallocating water to a sector that brings a greater economic return for a unit volume of water is also another important tool worthy of application. This is quite relevant in Egypt where the agricultural sector's contribution to the total GDP is very insignificant despite its highest consumption of the water resource. Wastewater reclamation (recycling), and salt water desalination are also feasible options to employ. In the agricultural sector using drought and salinity resistant crops, using closed pipes as opposed to open drainage systems are important tools in mitigating water scarcity. A check on the size of population and enhancing the awareness of farmers and the population at large as to the scarcity of water is a useful recommendation for basin states where water is seriously in short supply.

The following are key elements of the conclusion and recommendations.

- Optimal exploitation of the potential of a benefit sharing arrangement demands the establishment of an equitable water right over the Nile water.
- Failure to reach on a consensual resolution over the utilization of the Nile water will give rise to aggressive and unguided unilateralism which will have perilous effect to the integrity of the ecosystem.
- Since such a failure would also mean bringing the hydropolitics of the basin back to a zero-sum –outcome it will exacerbate the conflict potential of the basin which ultimately will strain the political and diplomatic relations of the basin states.
- As a lasting disagreement on the CFA is likely to preclude any mode of cooperation over the Nile water, many and divergent potential benefits that the basin will offer would be forfeited to the common disadvantage of the basin states.
- Tools that will have the impact of mitigating the water scarcity problem should be seriously examined and be applied.
- The concerned basin states should strive hard to compromise to reach at an equitable disposition as the cost of non-cooperation is too high to bear.
- International financial and developmental partners should exert their effort more than ever before in helping basin states reach at a common denominator.

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