



Università  
Ca' Foscari  
Venezia

Master's Degree programme – Second Cycle  
(*D.M. 270/2004*)  
in Relazioni Internazionali Comparate

Final Thesis

—

Ca' Foscari  
Dorsoduro 3246  
30123 Venezia

# Water Rights and the Human Right to Water

From principles to practice

**Supervisor**

Ch.ma Prof.ssa Sara De Vido  
Ch. Prof. Stefano Soriani

**Graduand**

Eleonora Moro  
Matriculation Number 833859

**Academic Year**

**2014/2015**



# INDEX

Index	3
Abstract	4
Introduction	14
Chapter 1	19
1.1 The Recognition of the Right to Water	21
1.2 Water Rights	27
1.3 The International Law of Fresh and Ground Water	29
1.4 The UN Convention on the Law of the Non-Navigational Uses of International Watercourses 1997	33
1.5 The Helsinki Convention of the Protection and Use of Transboundary Watercourse and International Lakes	40
1.6 ILC Draft Articles on the Law of Transboundary Aquifers	46
Chapter 2	57
2.1 Water: cause of tension and push for cooperation	58
2.2 International water conflicts settlement	64
2.3 Threat posed to water by terrorists	74
2.4 A case study: Israel, Palestine and the Jordan Basin	79
Chapter 3	87
3.1 What is water grabbing?	89
3.2 Land, Water and Governance	95
3.3 Impacts and Consequences	104
3.3.1 The case of Peruvian mining company	106

Chapter 4	113
4.1 Gender dimension in water management	114
4.2 International approach	120
4.3 Gender in Water and Sanitation	132
4.4 Financing Women's Organization	135
4.5 Case Study: Gender Pilot Plan in Peru	139
Conclusion	144
References	149
Links	153
Documents	154
Ringraziamenti	157



## **ABSTRACT**

Lo scopo del mio lavoro è quello di dimostrare l'importanza di un pieno riconoscimento del diritto all'acqua e della conseguente applicazione dei diritti legati all'acqua. Infatti, in molti settori che interessano vari aspetti della nostra vita, l'acqua sta acquisendo un ruolo rilevante a causa delle numerose sfide che si stanno presentando. La crescita della popolazione globale, i cambiamenti climatici, la sicurezza alimentare sono solo alcuni dei problemi più significativi che influiscono e minacciano la possibilità di una crisi idrica. Oltre a questi fattori di rischio, l'acqua sta assumendo un ruolo sempre preponderante seppur diverso in alcuni dei settori chiave, quali i conflitti, l'economia e la questione di genere.

Quello che si vuole far emergere in questo lavoro è l'attuale mancanza di una legislazione all'interno del diritto internazionale che vada a disciplinare in maniera concreta ed efficace le problematiche legate all'acqua e ai diritti che il suo utilizzo comporta. Sebbene nei secoli passati ci si sia interessati alla regolamentazione di fiumi, sorgenti, falde acquifere e risorgive solo in relazione alla loro navigabilità e alla determinazione dei confini, visto che i canali idrici sono stati riferimenti importanti per la definizione di confini tra stati, oggi giorno l'acqua non assolve più ad un ruolo marginale ma, proprio per la sua natura, entra con forza in molti ambiti della vita quotidiana. Si è deciso perciò di porre l'accento sull'importanza delle acque, sui diritti ad essa legate, sulle attuali normative internazionali e sulle varie questioni ancora da disciplinare. Il lavoro è stato suddiviso in quattro capitoli, ognuno dei quali affronta una tematica diversa.

Nel primo capitolo ho analizzato le convenzioni internazionali più significative relative all'acqua e al suo management. Un breve accenno al riconoscimento del diritto all'acqua è stato obbligato. Di fatti, dopo aver riconosciuto il diritto all'acqua come tale a livello internazionale, sono stati fatti molti passi avanti nella disciplina e nell'attuazione effettiva di tale diritto, grazie all'impegno dei singoli Stati oltre che a programmi, quali per esempio i Millennium Development Goals o i più recenti Sustainable Development Goals, che includono l'azione di agenzie regionali ed internazionali, di Organizzazioni Non Governative (ONG) e di istituti finanziari internazionali. Tuttavia, la concreta messa in atto del diritto all'acqua e di tutte le conseguenze che ciò comporta non è ancora stata concretizzata in maniera paritaria in tutto il mondo; in alcuni paesi in via di sviluppo mancano ancora l'accesso all'acqua e ad una igiene adeguata, che sono il fondamento del diritto all'acqua. Di conseguenza, sono ancora molti i bambini che quotidianamente devono lottare contro le malattie legate ad una scarsa la qualità dell'acqua; al contempo, le donne, e in particolare le giovani ragazze, sono vittime di violenza sessuale poiché è di loro responsabilità il recupero e il prelievo della dose giornaliera d'acqua e non potendo usufruire di adeguate strutture igieniche, come i bagni, sono costrette a viaggiare di notte e in zone pericolose aumentando esponenzialmente il rischio di essere vittime di abusi.

Accanto al riconoscimento del diritto all'acqua, è necessario porre l'attenzione sui diritti dell'acqua, i cosiddetti *water rights*. Essi sono tutti quei diritti che derivano dal possesso o dall'uso di una certa quantità di acqua che proviene da determinata sorgente, indistintamente dalla sua natura. Questi diritti sono stati riconosciuti fin dai tempi dell'impero romano ed erano

strettamente collegati all'uso pubblico o privato dell'acqua, caratteristica che poi è stata mantenuta anche nei codici civili europei dei successivi secoli. Oggi, i *water rights* sono considerati di grande importanza poiché sta crescendo in modo repentino il valore dell'acqua in termini economici. Tuttavia, rimane molto difficile effettuare un'analisi a livello internazionale delle normative a cui fanno riferimento i *water rights* poiché sono disciplinati dalle leggi nazionali e sono gli stessi governi a gestirli.

Negli ultimi decenni, a livello internazionale, l'acqua è diventata una tematica importante tanto da avere permesso la stesura, e in alcuni casi la ratifica, di vari trattati essenziali soprattutto di quelli relativi alla gestione delle riserve idriche, sia di superficie e le acque sotterranee. In queste convenzioni, il principio dell'uso equo e ragionevole e l'obbligo di non danneggiare le riserve acquifere si ripetono spesso in quanto sono determinanti nei processi di gestione di tali risorse e nella gestione delle acque transfrontaliere. Nonostante contengano queste norme riconosciute come principi del diritto internazionale consuetudinario, questi trattati devono affrontare ancora sfide, ostacoli e contrarietà da parte degli Stati per la loro entrata in vigore; problema che porta a difficoltà nel controllo e nella gestione delle controversie tra Stati per quanto riguarda le risorse idriche condivise. La ratifica di questi trattati da parte di tutti gli Stati diminuirebbe la probabilità di creare e quindi di dover affrontare situazioni di rischio portando allo stesso tempo alla creazione di un piano giuridico internazionale effettivo e riconosciuto per la gestione delle acque transfrontaliere e dei bacini a cui attingono due o più Stati. Questi trattati sono la Convenzione sull'utilizzo dei corsi d'acqua internazionali per scopi diversi dalla navigazione del 1997, la

Convenzione di Helsinki sulla protezione e sull'utilizzazione dei corsi d'acqua transfrontalieri e dei laghi internazionali, e il progetto di articoli della Commissione di Diritto Internazionale sulla normativa degli acquiferi transfrontalieri o condivisi da due o più Stati del 2008.

Se rimane certo che gli accordi multilaterali e internazionali rappresentano gli strumenti per lo sviluppo di nuove norme al fine di disciplinare la gestione delle risorse idriche, è necessario pensare ad una attuazione veloce ed effettiva delle acque in termini economici e di management dei conflitti, continuando a lavorare per garantire a tutti un equo accesso all'acqua e ai servizi igienici. In quest'ottica, l'implementazione di una normativa internazionale può aiutare e può essere aiutata dalla cooperazione tra Stati, ONG e organizzazioni parte della società civile che operano con una prospettiva multisetoriale, diminuendo le minacce collegate ad una inefficiente gestione dell'acqua.

Nel secondo capitolo, ho cercato di dimostrare come viene utilizzata l'acqua durante i conflitti. Essendo stata una delle cause di guerra fin dai tempi antichi, in questi ultimi decenni l'acqua ha cominciato ad essere vista non più solamente come una causa, ma come un bersaglio o uno strumento da usare durante i conflitti armati e non, da parte delle fazioni nemiche. Il prosciugamento di dighe, la diversione dei canali, il blocco del flusso di acqua sono tutte tecniche usate anche oggi per mettere in difficoltà i gruppi contrari e per forzare i nemici ad abbandonare le loro terre d'origine causando problematiche sociali, economiche e politiche sia a livello regionale sia a quello globale.

A livello internazionale, le Convenzioni di Ginevra e i Protocolli aggiunti rappresentano trattati cardine per la tutela delle persone durante i conflitti armati e non armati in quanto sottolineano la necessità di garantire una quantità d'acqua sufficiente per i bisogni di base. Oltre a questi, vi sono altri documenti internazionali che sostengono la fondamentale importanza di proteggere le acque, in tutte le sue forme, durante le dispute. Al giorno d'oggi l'acqua è considerata dai gruppi terroristici come una vera e propria arma e, pertanto, la usano per creare una situazione di disagio minacciando di avvelenare o degradare con armi biologiche e chimiche le falde acquifere e i corsi d'acqua o per creare situazione di sofferenza bombardando dighe e altre infrastrutture necessarie al filtraggio e allo scorrimento delle acque.

Nonostante questa idea di utilizzare l'acqua come un'arma o come un obiettivo di attacchi di vario genere, essa potrebbe e può costituire uno straordinario strumento per promuovere la cooperazione tra gli stessi paesi coinvolti nel conflitto. Infatti, la creazione di strutture che permettano lo scambio di dati, la creazione di sistemi di monitoraggio della qualità dell'acqua e del suo scorrimento, il controllo congiunto delle acque transfrontaliere e dei corsi d'acqua condivisi possono essere un mezzo per superare divari economici, sociali portando ad un indebolimento delle cause di conflitto, o almeno, ad un miglioramento dei rapporti tra i soggetti coinvolti in queste dispute. In questo senso, il riconoscimento da parte delle fazioni in conflitto dell'acqua come un diritto e dei successivi diritti che questo comporta rendono la società civile più consapevole dei rischi che comporta l'uso dell'acqua durante i conflitti, a prescindere dalla loro natura e dal coinvolgere elementi armati o no. Tutto ciò deve e può essere sostenuto

dall'aiuto e dal lavoro delle ONG, delle autorità locali e delle istituzioni regionali affinché si possa raggiungere un accordo con le parti in conflitto utilizzando l'acqua non più come un'arma ma come un punto d'incontro proprio per l'essere un elemento vitale per noi uomini.

Nel terzo capitolo, l'acqua viene presentata come un bene economico, valore attribuito con la Convenzione di Dublino. Il considerare l'acqua come un bene economico è stato sostenuto, oltre che dal suo carattere finito, dalla spinta che gli Stati hanno avuto nel cercare biomateriali da usare come fonte di energia alternative e dalla paura che l'aumento della popolazione globale in aumento causa per quanto riguarda la sicurezza del cibo. Per questi motivi, alcuni Stati, specie quelli appartenenti al Nord del mondo, acquistano territori e acque da altre nazioni, sfruttando talvolta situazioni non propriamente legali. Con l'acquisto di grandi porzioni di terra, gli Stati aumentano la loro capacità di produzione e la possibilità di coltivare materiali per la creazione di biocarburanti. Ciò che non sempre viene specificato è che l'acquisto di questi appezzamenti comporta l'accaparramento, tacito o esplicito, delle riserve idriche sotterranee e/o dell'acqua di superficie utilizzata per l'irrigazione dei terreni; fenomeno comunemente noto come *water grabbing*. In questo modo, vengono a crearsi enormi disparità tra ciò che il paese che compra riesce ad ottenere e la perdita che i paesi che "vendono" subiscono, poiché in alcuni casi questi ultimi potrebbero non essere più in grado di soddisfare i bisogni fondamentali legati all'acqua. Tutto questo scambio di risorse idriche viene aiutato e supportato dalle grandi multinazionali che usufruiscono di vuoti in materiale legate per portare avanti queste pratiche sottraendo alle popolazioni locali i loro storici diritti all'acqua.

La mancanza di normativa, la corruzione presente all'interno di certi governi, la grande capacità economica di queste aziende, l'incapacità della società civile di difendersi da tali trattative e la spinta neo-liberale promotrice di politiche di privatizzazione e di deregolamentazione degli ultimi decenni sono tutti fattori che sostengono e che in maniera diversa aiutano la vendita di terra e di grandi quantità di acqua, creando un divario sempre più grande tra paesi ricchi e paesi in via di sviluppo.

A questo proposito, la comunità internazionale dovrebbe adottare nuove convenzioni e documenti per proteggere i diritti legati all'acqua e per verificare che l'acquisto di terreni non nasconda meccanismi di *water grabbing* che potrebbero causare la mancanza di acqua nei paesi. Pertanto, un ulteriore elemento atto a garantire la sicurezza di terra ed acqua è l'intervento di istituzioni finanziarie internazionali che garantiscano una partizione uguale di acqua tra i paesi coinvolti e gli effetti sulle regioni a valle. Un altro progetto da realizzare è la diffusione di informazioni su questi traffici economici tra le popolazioni civili che, con il sostegno di ONG e di altri attori, potrebbero esprimere le loro posizioni, favorevoli o contrarie a tali procedure economiche essendo i primi utilizzatori di queste riserve d'acqua nascoste nei grandi appezzamenti di terra che vengono comprati.

Nell'ultimo capitolo, ho cercato di dimostrare quanto è importante l'adozione dell'approccio relativo alla questione di genere in tutti i settori legati all'acqua. In molti paesi del mondo, le donne sono coloro le quali ogni giorno si spostano per andare a prelevare l'acqua delle sorgenti in modo tale da prevedere al fabbisogno giornaliero delle proprie famiglie. Inoltre, oltre a gestire l'acqua per la famiglia, esse aiutano i propri mariti e i propri padri

nella coltivazione dei campi e dei giardini, occupandosi in particolar modo dei sistemi d'irrigazione. E' per questa capacità delle donne di gestire in maniera ottimale le risorse idriche e la loro capacità di analizzare la qualità a costituirne il loro grande valore. La conoscenza acquisita, infatti, sarebbe di grande vantaggio per le attuali compagnie che si occupano di gestione delle acque e di irrigazione. Troppo spesso però le donne sono ancora vittime di stereotipi sociali che identificano la sfera di appartenenza della donna alla casa e alla famiglia, e quella dell'uomo alla vita pubblica e politica. Accanto a riforme che riconoscano la possibilità per le donne di essere proprietarie terriere e, di conseguenza, di veder riconosciuti i diritti sulla terra e sull'acqua, le autorità devono essere promotrici di un nuovo pensiero sociale e culturale che aiuti le donne ad essere attrici reali della scena e della vita politica e sociale.

Prima di tutto, però, la comunità internazionale deve garantire a tutte le donne l'accesso all'acqua e ai servizi igienici adeguati, poichè si conta che più di 300 milioni di persone, soprattutto donne e ragazze, a causa di queste mancanze, sono vittime di stupri e di violenze sessuali. In secondo luogo, le istituzioni devono lavorare per un graduale coinvolgimento delle donne nei processi decisionali della gestione delle acque, dal momento che la parte femminile della società può fornire nuove idee e soluzioni. Questa inclusione passa attraverso diversi livelli e diversi obiettivi. Le istituzioni regionali e le autorità in generale devono lavorare e collaborare verso l'eliminazione degli stereotipi di genere che considerano le donne adatte a far parte solo dell'ambiente domestico. Al contrario, le donne hanno una grande conoscenza della qualità e la corretta gestione delle risorse idriche e il loro

punto di vista è, senza dubbio, di grande valore e può essere utilizzato per ottenere ottimi risultati anche in politiche che mirano ad attuare un approccio sostenibile nell'ambito del management delle risorse idriche. Allo stesso tempo, le autorità devono sostenere le donne garantendo loro la possibilità di avere una buona educazione, al pari dei loro coetanei maschi, e devono essere sostenute affinché riescano ad acquisire fiducia in se stesse così da poter entrare nella vita pubblica senza avere il timore del paragone e delle eccessive sfide a cui vengono sottoposte dai loro colleghi uomini.

Come emerge da questa analisi, il futuro pone varie sfide per quanto riguarda la gestione delle acque. La popolazione in aumento, le disuguaglianze tra Stati e all'interno di questi, i cambiamenti climatici, la scarsità delle risorse naturali rappresentano un numero crescente di ostacoli e sfide che minacciano l'equilibrio esistente. In questo senso, è assolutamente rilevante la posizione che prenderà ogni singolo Stato a livello internazionale per proteggere le risorse, garantire i diritti fondamentali, i bisogni sostanziali e aiutare i paesi in via di sviluppo di raggiungere obiettivi importanti nei processi di gestione delle risorse idriche. La comunità internazionale è chiamata ad attuare programmi e ad adottare documenti che mirano ad un'effettiva protezione delle acque, il loro mantenimento, la loro gestione e il loro uso. Ciò permetterebbe di diminuire la pressione tra allocazione dell'acqua e aiuterebbe i paesi sottosviluppati e in via di sviluppo ad utilizzare le loro riserve correttamente, promuovendo la creazione di una comunità internazionale più forte e in grado di superare le sfide future, non solo quelle legate all'acqua.



## INTRODUCTION

Water is an essential element to life. Though its simple formula, water carries with itself a great value, not only in terms of economic goods but also in terms of legal, political and social element.

Nowadays, water is starting to be at the centre of a new wave of crisis. The blue gold, as it is more and more referred, is posing a long series of significant challenges as recent statistics report. By 2030, the global need of water will double and is expected to exceed the current accessible supply by 40%; at the same, the availability of fresh and ground water supply is diminishing<sup>1</sup>. Moreover, fresh water, which is the water needed for the survival of life, represents only the 2.5% of the total amount of water on the planet and it is said that by 2030 we will suffer from a deficit of 1,600 billion of cubic meters. Ground water is about the 30% of the global amount of water. Even the distribution of water constitutes another important issue. In every country we have areas suffering from aridity (that happens when evaporation exceeds precipitation); there are arid zone in Europe (33%), Asia (60%), Africa (85%), almost the entire land of Australia and the western region of the United States of America<sup>2</sup>. Directly linked to the arid zone, the population increase over last few decades represent a force to take into consideration. Population is expected to reach 9.3 billion by 2050 with the highest percentage in the developing countries that will have to face with inadequate access to fresh water, leaving many countries in a water-stress situation<sup>3</sup>. Along with these

---

<sup>1</sup> 2030, Water Resources Group, *Charting Our Water Future*, 2009, p. 5

<sup>2</sup> Ibidem, p. 6

<sup>3</sup>Ibidem, p. 6

problems, also the water used for economic growth and consumption will increase in the next twenty years: by 2030 the water necessary to agriculture will reach 4,500 billion cubic meters and 1,500 for industrial use.

What emerges from the statistics reported above is the finite character of water. Indeed, in the hydrological cycle there is no beginning and no end, underlining in this way that in our planet we have a fixed amount of water. At the same time, if we consider the amount of fresh water available, the finite character is reflected by the water made accessible from the passages from one reserves to the other during the hydrologic cycle<sup>4</sup>

In the first chapter, I want to analyse some of the main international conventions concerning water. Starting from the recognition of the right to water, access to water and sanitation have been very important issue in the international field. Several United Nations (UN) agencies have promoted projects and programmes for helping underdeveloped and developing countries to achieve and satisfy basic needs linked to water. Very significant are the Millennium Development Goals and the newly approved Sustainable Development Goals, both containing specific goals related to water quality, access and sanitation. At the international level, the management of transboundary water has gained importance so that treaties have been signed but not all have been ratified. However, their importance remains as they contain some principles (equitable and reasonable use, no harm obligation)

---

<sup>4</sup>There are seven major *reservoirs*: atmosphere, oceans, rivers, lakes, soils, glaciers, snowfields and groundwater. Water moves from one to reserves to another through the different natural processes. From FAO, Water: A Finite Resource, available at <http://www.fao.org/docrep/u8480e/u8480e0c.htm>, last accessed: October 23rd, 2015. In BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, Oxford University Press, Oxford

considered as norms of customary laws. It is noteworthy to underline that even though the international community have tried and is still trying to regulate water in its various forms, many issues are still missing a proper legal regulation, as the it will be underlined in the following chapter.

The second chapter deals with a worsening of the situation presented in the statistics because of problems linked to politics and economics. From ancient times to our days, water has been used as a weapon and as a target in several conflicts around the world: closures of dams, draining or diversion in the direction of rivers are techniques still used during hostilities to lessen the power of the enemy. Despite the promotion of international water laws and principles contained in the important conventions, the international community has to take further step in the protection of water resources during armed conflicts. The aim should be the integration of humanitarian law with water and environmental laws.

In the economic field, which is the topic of the third chapter, water is becoming an economic and valuable good hidden in the practices of land grabbing. Recently, it has gained so much power that it has become a real issue on its own. Talking about water grabbing, we have to consider water rights and tenure rights. The recognition of water as an economic good should have led to the strengthening of the implementation of water access or at least to a greater consideration of the right to water.

Unfortunately, this event has brought a series of critical situations. Powerful actors, as corporate companies, are adopting measures to acquire and reallocate water reserves in order to increase their water capacity. Even States are using water-grabbing policies as the water crisis starts to deeply felt.

The narrative of the marginalized land and the belief that private sector investments are better than the public ones helps this phenomenon. Another interesting factor is the lack of regulation at the international level and the lack of a strong legal network at the nation level create a perfect gap for the realization of water grabbing. The consequences of water grabbing are several and concern the health and the environment of the grabbed population and worsen the already precarious economic and political situation of countries.

The fourth and last chapter deals with the gender issue, above all the difference between men and women in the water management systems and access practises. Indeed, water has recently assumed a significant role in the gender discourse. In developing countries, women are responsible for the collection of water and the management of water within the household. In the majority of cases, women are also workers in agriculture as they provide irrigation of fields and gardens. Nonetheless their important role, women cannot take part to decision-making process because of several issues, as the belief that some works are only a man affairs. In recent years, new irrigation companies managed by women have been implemented. This experiment has been helpful for women as they have been able to acquire important freedom at the local level. Although they will have to continue on fighting for the recognition of an equal treatment between men and women, the chances posed by these new realities show the importance of allowing women to enter in the water management, as they are able to implement very successful projects.

In the last decade in spite of the many step made toward the assessment to drinkable water and its sanitation, the legal instruments both at the international and local level are not sufficient to deal with the upcoming set of

uncertainties brought by the water crisis.

The aim of this work is that of analysing the importance of water in relation to conflicts, economics and gender by looking at the international approach considering especially international water law. Through these analyses I would stress the lack of a proper legal network concerning water resources in all these sectors and the need for addressing these issue on a global scale. This is required due to amount of future challenges that we are going to face: climate change, growing population, water scarcity and energy consumption. In all the sphere of our lives, from drinking to eating, from agricultural products to industrial products, water is an essential part. This is the reason why the international community has to guarantee its access and protect its reserves so that in the future times everybody will able to enjoy this vital element.

## **CHAPTER ONE**

### **WATER RIGHTS AND RIGHT TO WATER**

After presenting a brief history and explanation of the right to water, this chapter aims at analysing the main international conventions related to fresh, ground and transboundary water and their uses. Despite the fact that International Water Law is quite ancient, it is only in the last decades that the regulation of fresh and ground water has started to become relevant. Considering that the right to water has officially been recognized only in 2010, water and sanitation have become central issues in the agenda on UN agencies above all in the Millennium Development Goals and in the recent Sustainable Development Goals.

On the contrary, the regulation of fresh and ground water and reserves of riparian States has been developed only recently. Customary laws are the basis on which these conventions are constructed but each of these presents a step forward in a more suitable and legal control of water resource. At the beginning it was taken into consideration only freshwater shared by two or more States, then, thanks to several meetings, bilateral and regional agreements, the issue of groundwater and aquifers has started to be present in international negotiations.

Another decisive goal has been the recognition that it was needed a regulation of water as a vital human need. Due to the fact of being indispensable for our survival, water has been used since the past as both a weapon during conflicts and also as target of two fighting parties. This identification plays a fundamental role not only in the management of water

itself but also in the prevention of the breakout of water related conflicts that are very numerous still today – from 2010 to the present, around the world, there have been 88 conflict related to water, as demonstrated by the Pacific Institute<sup>5</sup>.

A very important difference to take into account while talking of water and rights is the one concerning the Right to Water and the Water Rights. The first one is the recognition of water as a vital human rights, as it will be later described, the latter, on the contrary, are those rights emerging in general from the ownership of the piece of land that is adjacent to or covers a watercourse, or from a real use of watercourse. It is also possible that water rights come out after a contract is signed, if this considers the transfer of water right from one person to another. Water includes rivers, streams, lakes and groundwater sources. These water rights are regulated by Common Law, federal or state governments and depend on the internal structure and regulation made by single governments<sup>6</sup>. Because their connection with property and use, water rights are still today the cause of many legal and physical controversies around the world, not only in problematic areas of so-called developing or not developed countries but also in the industrialized countries, as proved by the recent dispute occurring in California and Colorado, USA over the amount of water, taken from a basin, that can be used for irrigations and industrial uses<sup>7</sup>.

In this chapter, after a brief summary of the historical steps that led to recognition of the Right to Water, I will analyse the main Conventions that at the international level protect and control fresh and ground water and water

---

<sup>5</sup> PACIFIC INSTITUTE, Water Conflict Chronology Timeline, available online at <http://www2.worldwater.org/conflict/timeline/>, last accessed: November 27<sup>th</sup>, 2015

<sup>6</sup> LEGAL DICTIONARY, Water Rights, available online at <http://legal-dictionary.thefreedictionary.com/Water+Rights>, last accessed: November 21<sup>st</sup>, 2015

<sup>7</sup>The entire explanation of water crises and rights situation of California and other American States can be found online in several website journals.

resources and that can be considered as the sources of the international water law.

### **1.1 The Recognition of the Right to Water**

Water is the most important element for human life. Although it is possible to survive for weeks or even a month without food, an individual could not survive for more than few days without water<sup>8</sup>. It is also true that in the developed (or high income) countries, turning on a tap and let water flow out is one of the most common actions in everyday life but in the rest of the world, having the access to drinkable water is still a challenge to face.<sup>9</sup>

Despite the fact the importance and the need of water, until the beginning of the century, there have been no international instruments that recognized the right to water, which was, therefore, derived from other rights. Only in November 2002 the right to water started to be recognized with the General Comment No. 15 of the United Nations (UN) Committee on Economic Social and Cultural Rights (CESCR), where article 1 claims that “the human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights ”<sup>10</sup>. In the same Comment the right to water is defined as the right to have access to sufficient, safe and

---

<sup>8</sup>LIVE SCIENCE, (2015), *How Long Can a Person Survive Without Water?*, available online at: <http://www.livescience.com/32320-how-long-can-a-person-survive-without-water.html>, last accessed: November 30<sup>th</sup>, 2015

<sup>9</sup> According to the World Health Organization (WHO) and UNICEF Joint Monitoring Programme (JMP), “*Progress on Drinking Water and Sanitation, 2015 Update and MDG Assessment.*”, in 2015 still 663 million people, about 1 in 10, lack access to safe water.

<sup>10</sup>UN Committee on Economic Social and Cultural Rights (CESCR), *General Comment No. 15, the Right to Water, November 2002*, para 1. The UN Committee on Economic, Social and Cultural Rights is the treaty body of the UN responsible for monitoring the States compliance with the International Covenant on Economic, Social and Cultural Rights. Its General Comments are interpretations of the Covenant.

acceptable water both for personal and domestic uses.<sup>11</sup> The Committee gives attention to the right to water as part of the rights to an adequate standard of living, to adequate food, housing and clothing. Therefore, the right to water is considered part of the necessary guarantees for having a proper standard of living given that water is vital for survival. In its analyses, the Committee underlined the “the [International Covenant on Economic, Social and Cultural Rights] Covenant [...] clearly imposes a duty on each State party to take whatever steps are necessary to ensure that everyone enjoys the right to water, as soon as possible”<sup>12</sup>. It also defined the five criteria that must be followed for the complete realization of this right: availability, accessibility, safety, affordability and acceptability<sup>13</sup>.

In the Geneva Conventions of 1949 and in the Additional Protocols of 1977, international humanitarian and environmental laws describe the necessity to protect the access to safe drinking water and sanitation for health and survival during armed conflict regardless if they are international or non-international.

In 1992, it was ratified the Convention on the Protection and Use of Transboundary Watercourses and International Lakes where it is affirmed that States, parties of the Convention, must take proper measures to guarantee access to drinking water and sanitation and to avoid the pollution of water resources.

A push towards the recognition of this right has been given by the work of the Special Rapporteur on the human right to safe drinking water and

---

<sup>11</sup>UN CESCR, General Comment No. 15, the Right to Water, November 2002, para 2.

<sup>12</sup>UN CESCR, General Comment No. 15, the Right to Water, November 2002, para 45.

<sup>13</sup> DE VIDO S., (2012), *The European Contribution to the Recognition of the Human Right to Water*, European Yearbook on Human Rights, p.222.

appointed by the Human Rights Council in 2008 to examine and report back on a country situation or a specific human rights theme.

On July 28<sup>th</sup>, 2010 the approval by the United Nations General Assembly (GA) of Resolution 64/292 with 122 votes in favour and 41 abstentions recognizes officially the right to water and sanitation, underlining that clean drinking water and sanitation are essential for the realization the other human rights.<sup>14</sup> With this statement, the right to water is considered as an independent human right<sup>15</sup>. The Resolution affirmed that both States and international organisations have to help developing countries to provide safe and clean water and sanitation contributing with financial resources, capacity building and transfer of technological information.<sup>16</sup>

Later in 2010 a Human Rights Council Resolution passed by consensus reaffirms that the rights to water and sanitation already exist in international law because they can be derived from the right to an adequate standard of living and the right to health declared under articles 11 and 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR or the Covenant).<sup>17</sup>

In the Resolution it was also presented the challenge given by the achievement of the Millennium Development Goal (MDG) number 7 entitled “Ensure Environmental Sustainability”, which at point 7C aimed at halving by 2015 the number of people living without access to safe drinking water and

---

<sup>14</sup>UN GA Res.64/292, July 2010, para 1.

<sup>15</sup>UN GA Res. 64/292, July 2010, para 2.

<sup>16</sup>DE VIDO S., (2012), *The European Contribution to the Recognition of the Human Right to Water*, European Yearbook on Human Rights, p. 222.

<sup>17</sup>Right to water and sanitation, available at <http://www.righttowater.info/why-the-right-to-water-and-sanitation/>, last accessed: November 4<sup>th</sup>, 2015.

basic sanitation<sup>18</sup>. The MDG aim was to halve the number of people without access to water and to improve water resources and sanitation facility. Nonetheless, according to international human rights law, it is not sufficient to reduce the number of people living without water but it is necessary to work toward a progressive realization of the human right. In this way, article 2 of the Covenant calls the State to work for a universal coverage using both international instruments and national policy. However, in the MDG Agenda it was said that States had to achieve determined targets but it was not specified that the focus had to be on people and areas living in the worst condition. For this reason, States are free and could have reached targets even without considering the most marginalised area.

Notwithstanding this critique, many targets of the MDG goal have been achieved even before the 2015 deadline thanks to the approval of national laws allowing the access of people to water and thanks to the transfer of facility between the countries.

A long discussion has taken place with the end of the MDGs that has led to the approval of a new Agenda: the Sustainable Development Goals (SDGs) otherwise known as the Global Goals. In comparison to the Millennium Development Goals, SDGs and its sustainability agenda address the main causes of poverty and the universal need for development “putting our world on an inclusive and sustainable course [...], meeting citizens' aspirations for peace,

---

<sup>18</sup>Between 1990 and 2015, 2.6 billion people gained access to improved drinking water sources. Worldwide 2.1 billion people have gained access to improved sanitation. Despite progress, 2.4 billion are still using unimproved sanitation facilities, including 946 million people who are still practising open defecation. Data available at <http://www.un.org/millenniumgoals/envIRON.shtmL>, last accessed: November 4<sup>th</sup>, 2015.

prosperity and well-being, and to preserve our planet”<sup>19</sup>.

As for water, the SDG 6 is entitled “ Ensure availability and sustainable management of water and sanitation for all”; the main aims here described are that of by 2030 affording drinking water for all, improving water quality, promoting an efficient use of water managing freshwater scarcity, supporting the participations of local communities in the improvement of water and sanitation management<sup>20</sup>.

Despite the several efforts and measures taken to improve water access and sanitation, today still 663 million people do not have access to safe water, 1 in 3 still lack access to toilet, globally more than the 30% of all schools lack proper access to water and sanitation; in low and middle-income countries, 1/3 of all healthcare structure lack water sources. As stated by the World Economic Forum at the beginning of 2015, water crisis is the first cause of a global risk, exceeding weapon of mass destruction, terrorist attacks and interstate conflicts.

---

<sup>19</sup>Comment to the SDGs made by the United Nations Development Programme (UNEP) Administrator Helen Clark, available at [www.undp.org/content/undp/en/home/mdgoverview/post-2015-development-agenda.html](http://www.undp.org/content/undp/en/home/mdgoverview/post-2015-development-agenda.html), last accessed November 6<sup>th</sup>, 2015.

<sup>20</sup> For a complete description of the SDGs and of Goal number 6, see <https://sustainabledevelopment.un.org/post2015/transformingourworld>, last accessed: November 6<sup>th</sup>, 2015.

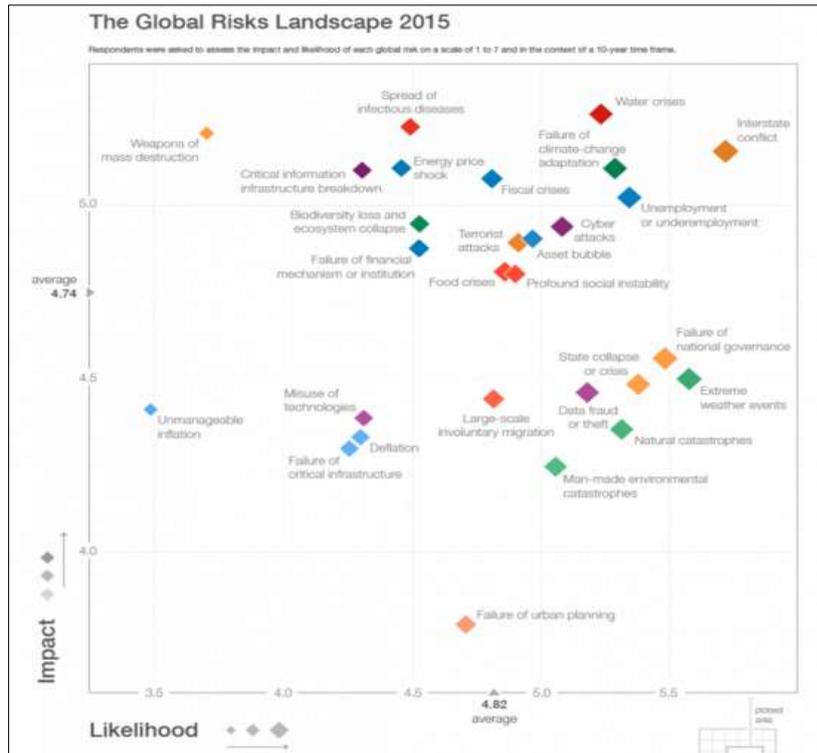


Figure 1: Global Risk Landscape 2015 according to the World Economic Forum

The realization of these goals will be possible if single States, international institutions and non-governmental organizations work together for a more strong collaboration among themselves supporting policies that focuses on sustainable water management, efficient monitoring processes, proper arrangements for technology transfers and the creation and communication between local, national and regional networks. An example of a concrete global network working with this approach is the Cap-Net UNDP International Network for Capacity Development in Sustainable Water Management operating for a sustainable management of water resources and playing a leading role in the implementation of SGDs thanks to its well-established structures and partnerships<sup>21</sup>.

<sup>21</sup>All the information about the Cap-Net programme and a detailed description of their works is available online at <http://www.cap-net.org/>, last accessed: November 20<sup>th</sup>, 2015.

## 1.2 Water rights

As previously noted, water rights are linked to the ownership of a body of water and the possibilities to use it in a certain amount to obtain a beneficial purpose<sup>22</sup>.

Traditionally water rights have been linked to land rights, either because the right to use land depended on water, as in arid area or because the access to water was guaranteed only in relation to the ownership of a portion of land<sup>23</sup>.

Historically, during the ancient times of the Roman Empire, water rights were given to those living and owning a piece of land near a watercourse. Anyway, the Roman law prohibited the ownership of flowing water as it was considered part of the community, even if the community could use and take advantages from the use of waters in order to prevent over-exploitation and to maintain order<sup>24</sup>. It also recognized the public use of rivers and streams that were considered perennial and gave the government the right to stop the public access to these sources as well as the authorization to navigate them<sup>25</sup>.

The distinction between private and public use remained and it was included in the civil laws tradition of many countries, especially those in Europe.

---

<sup>22</sup>WALKER A., (2015), *What are water rights?*, Gizmodo, 13<sup>th</sup> April 2015, available online at <http://gizmodo.com/what-are-water-rights-1696881723>.

<sup>23</sup>HODGSON S., (2004), *Land and Water – the rights interface*, adaptation by FAO, available online at [http://www.unep.org/training/programmes/Instructor%20Version/Part\\_2/Activities/Economics\\_of\\_Ecosystems/Water/Supplemental/Historical\\_Water\\_Rights.pdf](http://www.unep.org/training/programmes/Instructor%20Version/Part_2/Activities/Economics_of_Ecosystems/Water/Supplemental/Historical_Water_Rights.pdf).

<sup>24</sup>HODGSON S., (2004), *Land and Water – the rights interface*, adaptation by FAO, supra note. p.1.

<sup>25</sup>HODGSON S., (2004), *Land and Water – the rights interface*, adaptation by FAO, supra note, p.1.

In the French Civil Code promulgated by Napoleon in 1804, public waters were the ones considered to be navigable under the control and management of the government<sup>26</sup>; on the contrary, private waters were those located along of below a land and whose use came from the possession of that part of the land. Also the Spanish Water Act adopted in 1886 stated that waters standing and springing on a private land were a private property and that could be used by the owner only in that portion on land<sup>27</sup>.

In the common law, this tradition was not followed. The Roman principle that flowing waters were of property of the government was kept but a new interpretation of water rights was proposed. Indeed, according to the common law, “a riparian land owner had the right to make ‘ordinary’ use of the water flowing in the watercourse<sup>28</sup>.” This meant that the owner could make use of water for any purpose encompassing the domestic use if this use did not damage or restrict the rights of the other riparian land owners<sup>29</sup>.

In modern times, the water rights were divided from the simple land ownership and were brought to the control of state authorities. This approach should allow to manage water reserves in a rational way permitting users to gain real and secure legal rights<sup>30</sup>. It is also note worthy that still today many countries do consider water rights strictly linked to the portion of land owned and do not have an effective control management and protection of these rights,

---

<sup>26</sup>HODGSON S., (2004), *Land and Water – the rights interface*, adaptation by FAO, supra note, p.1.

<sup>27</sup>HODGSON S., (2004), *Land and Water – the rights interface*, adaptation by FAO, supra note, p.2.

<sup>28</sup>HODGSON S., (2004), *Land and Water – the rights interface*, adaptation by FAO, supra note, p.2.

<sup>29</sup>HODGSON S., (2004), *Land and Water – the rights interface*, adaptation by FAO, supra note, p.2.

<sup>30</sup>HODGSON S., (2004), *Land and Water – the rights interface*, adaptation by FAO, supra note, p.3.

as it will later explained.

### 1.3 International Law for Fresh and Ground Water

While talking of water, it is necessary to distinguish between fresh water and ground water. Freshwater is defined as water containing less than 1000 mg/litre of dissolved solids, mainly salt. As shown in Figure 2, in the world, almost 97% of water is found in oceans that are obviously salty and therefore not usable. The total amount of freshwater that individuals can use is 3%, the main reserve is permanent ice (glaciers) containing almost 69% of the global supply of freshwater. Freshwater is also found under the soil as groundwaters or aquifers that constitute around 30% of the water supply. Surface water represent less than 1% and it is divided into lakes, rivers and swamps<sup>31</sup>.

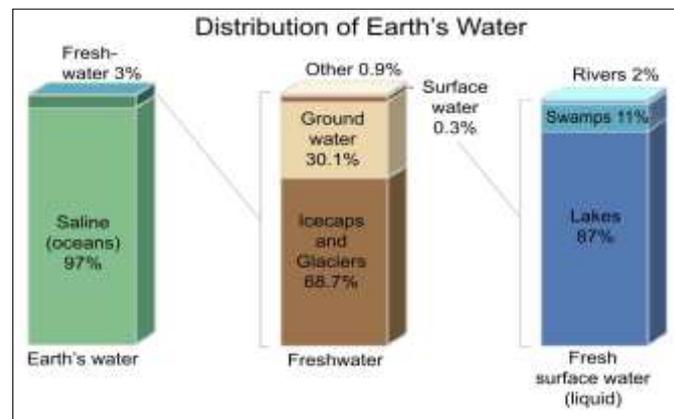


Figure 2: Representation of global water supply

Freshwater is necessary for several uses and the amount of water changes according to the specific field water is used and to geographical position of States. The main sector to use water is agriculture and irrigation: for

<sup>31</sup> THE ENCYCLOPEDIA OF THE EARTH, *Freshwater*, available online at <http://www.eoearth.org/view/article/152861/>, last accessed. November 25<sup>th</sup>, 2015.

example in Africa and Asia employ around 90% of their reserves, in the United States the 50%. It is supposed that by 2025 around 330 million hectares will be used for agriculture. The second sector is industry that takes water from reserves and dams to produce energy in addition to the taking of water for the industrial processes. These are counted to use 20% of global freshwater. Finally, water is used for domestic purposes and is related to the water available for the population in the cities. Statistic demonstrates that industrialized countries consume less water because of centralized systems and a stronger awareness linked to waster of water; on the contrary, underdeveloped and developing countries uses ten times more water than the rest of the world for the difficulties in water management and water access.

In regards to international law, it is possible to say that water agreements dates back to a distant past, however, in the last two centuries more than 2,000 agreements have been signed. There are different kinds of reason behind these treaties: they were used to demarcate borders, to help seamen in navigation and to control water resources. During the 19<sup>th</sup> century new issues emerged from the agreements as the ecosystem protection; these were signed primary in Europe even though also colonized countries started to be part of water treaties given that European States used them to extend their possessions and to control access to rivers for navigational and commercial purposes<sup>32</sup>.

The real change in water agreements is found in the previous century with two picks: the 1920s and the 1960s. In the first pick, accords focused on navigational and border issues because of the political changes that countries

---

<sup>32</sup>BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, The Hauge Academy of International Law Monographs, Vol 7, p. 88.

were undergoing with the end of World War I and the establishment of new States. States signed also treaties concerning the situation of water reserves in their colonial empires both within their own possessions and also negotiating with foreign tribes or populations. Therefore, agreements concerned boundaries, navigation purposes and how water had to be used. The second highest point dates back to the 1960s and it was caused by a new interest for freshwater as a source employable in industrial processes and agriculture. Much attention was given to water a source of energy for the creation of hydropower. Together with this issue, also pollution and ecosystem protection started to be discussed in treaties. In this period, international organizations started to provide financial help for the realization of projects linked to water.

Over the 1990s, in the Food and Agriculture Organization (FAO) database, more than fifty multilateral and bilateral are found concerning basin all over the world. We find articles considering and regulating data exchange, monitoring programmes, evaluation procedure

This century treaties concern water allocation and use addressing at the same time the issues of pollution, ecosystem protection and cooperation. Many agreements of the first decade of the twenty-first century have created a “framework convention”<sup>33</sup> that have helped to address all the problems related to a specific basin. These agreements are not only international but there are numerous bilateral or regional conventions that address also the problem of water management establishing joint commissions<sup>34</sup>. There are numerous example of these treaties: the Agreement between Belarus and Russia on the Collaboration in the Field of Protection and Rational Use of Transboundary

---

<sup>33</sup>BROWN WEISS E., (2013), *supra* note, p. 90.

<sup>34</sup>BROWN WEISS E., (2013), *supra* note, p. 91.

Water (2002) dealing with many aspects of the use of surface and ground waters<sup>35</sup>; the Convention on the Sustainable Management of Lake Tanganyika (2003) concerning pollution prevention and sustainable use for the economic development<sup>36</sup>; the Danube River Protection Convention<sup>37</sup> (1994) promoting the sustainable and equitable use of Danube River Waters.

Groundwaters started to enter into agreements later if compared to surface water. The first treaty where we find them is dated 1888 and it is bilateral agreement between France and United Kingdom that together with other few concordats constituted an exception for the international water law of the 19<sup>th</sup> and 20<sup>th</sup> centuries. It was only from the new millennium that we find agreement addressing issues related to a specific aquifer, mainly bilateral or regional. We find for example a treaty for the management, exchange of groundwaters and monitoring signed by Chad, Egypt, Libya and Sudan; or a treaty over the treatment of Guarani aquifers involving Argentina, Brazil, Paraguay and Uruguay; or the treaty signed by Switzerland and France for the use, monitoring and recharge of the Franco-Swiss Genevois Aquifer<sup>38</sup>.

Transboundary water represents a relevant issue. Nearly 40% of the world's population lives in a lake or river shared by two or more States and almost 90% lives in a country that is sharing a basin. Around the world there are 276 transboundary lakes or river basins divided into 148 States that includes one of these within their territories and 21 States lying within them. Transboundary waters are vital to millions of people as it supports incomes and livelihood;

---

<sup>35</sup>BROWN WEISS E., (2013), supra note, p. 92.

<sup>36</sup>BROWN WEISS E., (2013), supra note, p. 92.

<sup>37</sup> Danube River Protection Convention, available online at <https://www.icpdr.org/main/icpdr/danube-river-protection-convention>.

<sup>38</sup>BROWN WEISS E., (2013), supra note, pp. 94-95.

transboundary water bodies help society to create connections and network that are hydrological, social and economic. If States are willing to implement adequate policies, create strong partnerships with other countries and international and/or regional agencies, transboundary water can be a mean toward the promotion of regional peace and security; on the contrary, the lack of joint mechanisms, sharing of data and information may bring to the severe conflicts<sup>39</sup>.

Although treaties are sometimes considered as fixed means, they have been able to create a common ground for parties in order to help them to accept obligations, promote new procedures and to implement important principles.

Even if many steps have been taken toward a clear water management, cooperation and control, enforcement measures and public participation are still missing or at least do not have a great impact in the conventions<sup>40</sup>.

#### ***1.4 The UN Convention on the Law on the Non-navigational Uses of International Watercourse 1997***

The 21<sup>st</sup> May 1997 the UN General Assembly adopted the Convention on the Law of the Non-Navigational Uses of International Watercourses (UN Watercourse Convention), an instrument that for the first time establishes at the universal level a framework for the government of freshwater resources shared by States. The treaty provides a definition of watercourse, a list of principles

---

<sup>39</sup> UN WATER, *Transboundary Waters*, available online at <http://www.unwater.org/topics/transboundary-waters/en/>.

<sup>40</sup> WATER ENCYCLOPEDIA, available online at <http://www.waterencyclopedia.com/St-Ts/Transboundary-Water-Treaties.html>.

related to water sharing, the obligation to cooperate and the inclusion of non-State actors. The Convention reached the necessary number of ratification entering into force on the 17<sup>th</sup> August 2014.<sup>41</sup>

The adoption of this Convention closes a process that started twenty years before when the GA adopted resolution 2669 (XXV) on “Progressive Development and Codification of the Rules of International Law Relating to International Watercourses” where the International Law Commission (ILC) was asked to study the development and codification of the law of international watercourse in their non-navigational uses. The text of the UN Watercourse Convention was discussed in a special “Working Group of the Whole” established by the Sixth Legal Committee of UN GA.<sup>42</sup>

The scope is illustrated in Article 1 of the Convention where are considered all the uses of water apart from navigation and the attention is focused also on the protection and management of watercourse during these kind of uses.

One of the key points of the this treaty is the definition of “watercourse” that, in article 2, is defined as “a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus”<sup>43</sup>, and even more specifically, an international watercourse is defined as a system, “parts of which are situated in different States”<sup>44</sup>. These explanations call attention on the interrelationship between

---

<sup>41</sup> When the UN Watercourse Convention was approved, three States opposed the Convention while other twenty-seven did not vote.

<sup>42</sup> A complete historical background of the Convention is available on the website of the Audiovisual Library of International Law at <http://legal.un.org/avl/ha/clnuiw/clnuiw.html>, last accessed November 6<sup>th</sup>, 2015.

<sup>43</sup> UN GA, Res. 51/229, 1997, article 2.

<sup>44</sup> UN GA, Res. 51/229, 1997, article 2.

surface and underground water flowing into an international watercourse. These descriptions encompass the idea that watercourse is a synonym of river and provide a broader meaning; indeed, considering that the majority of freshwater is located underground and that is related to surface water, the treaty consider groundwater as part of a watercourse system if the surface and ground parts constitute a unitary whole and flow into a common terminus. Anyway, this definition excludes fossil and recharging aquifers since they are not linked to surface water.

Article 3 addresses the issue of the effect on the Convention on existing or future international treaties concerning water. It invites States, if necessary and if States are willing to modify existing treaties, to harmonize agreements on the principles of this Convention. Paragraph 3, however, allows countries to conclude agreements that differ from the term of UN Watercourse Convention.

The UN Watercourse Convention presents the main block in the management of water at the international level and its core is represented by the General Principles contained in Part II. Article 5 draws upon the Equitable and Reasonable Utilization principle that obligates State to use an international watercourse in a manner that is reasonable and equitable for other States that share it. The importance of this principle has been reaffirmed by the International Court of Justice (ICJ) in the *Gabčíkovo–Nagymaros* case emphasizing the relevance of working at the project in a “reasonable and equitable use”<sup>45</sup>. Furthermore, article 5 introduces a new notion of the principle: States have the duty to use and develop proper collaboration from the

---

<sup>45</sup>International Court of Justice, *Gabčíkovo–Nagymaros Project*, judgement of 25 September 1997, para 78.

protection of water from pollution and other form of degradation taking favourable steps both individually and jointly. In this way, the treaty helps to widespread the idea that the protection of watercourse and the preservation of ecosystems are not possible only through individual practices but that cooperation and joint actions are necessary and will be significant in the future.

Article 6 sets a list of factors that must be taken into account in the realization of the principle described above. The balance of these elements is given to States that can determinate the relevance of each in comparison with the significant of the others. In the text of the UN Watercourse Considering several mechanisms and commissions can be help to achieve cooperation as listed in article 8, paragraph 2. Data exchange, information sharing and notification planning can be strengthened through the implementation of commissions and could robust water management and could avoid conflicts breakout. It is a due diligence kind of obligation that do not force States to achieve a precise outcome. As noted by Boisson de Chazournes, efforts to include all riparian States into these institutional settings should be done in order to entail a greater flexibility for them to participate, even as observers or in a similar role, in the mechanisms of these commissions. This procedure would promote integrated management system and would allow the “involvement of such 'outsider' States as parties to an eventual agreement encompassing all riparians”<sup>46</sup>.

One of the most discussed issues of the UN Watercourse Convention is article 7 entitled “obligation not to cause significant harm”<sup>47</sup> and more

---

<sup>46</sup>BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, Oxford University Press, Oxford, p.31.

<sup>47</sup>UN GA, Res. 51/229, 1997, article 7.

precisely the controversy was based on whether the equitable and reasonable use, expressed in article 5 and 6, is to consider more relevant than the no harm rule outlined by article 7 or vice versa. It seems that the reasonable and equitable use rule now prevails<sup>48</sup> as it is possible to deduce from paragraph 2 of article 7 acknowledge that harm may be caused without the engagement of the harming state's responsibility<sup>49</sup>. However, downstream riparian States do not accept the prevalence of using water in reasonably and equitably because they have less power in negotiations than if the no harm rule prevailed. In the draft article of the ILC it is possible to find the opposite situation, indeed, the no harm rule was considered on a par or even higher in comparison with the rule to use water in a reasonable and equitable manner. In actual conflicts, it seems quite true that the balance of rules and principle is to be found case-by-case avoiding the following of any a priori law. Also in article 10, paragraph 2, it is explained that in case of conflict between the different uses of a watercourse, this has to be “resolved with reference to article 5 and 7, with special regard being given to the requirements of vital human needs”<sup>50</sup>. The explanation of the meaning of vital human need can be found in the statement of the Working Group specifying that “in determining 'vital human needs,' special attention is to be paid to providing sufficient water to sustain human life, including both drinking water and water required for production of food in order to prevent starvation.”<sup>51</sup>

Part III of the Convention contains the Planned Measures, procedures

---

<sup>48</sup>This is also proved by the United State of America domestic water law where harm to riparian States situated downstream, is one of the factors to be taken into account when considering if the water use made by a riparian State is reasonable or not; see BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, The Hauge Academy of International Law Monographs, p. 31.

<sup>49</sup>McCAFFREY S., (2011), *International Water Law for The 21st Century: The Contribution Of the UN Convention*, Journal of Contemporary Water Research and Education, 118.

<sup>50</sup>UN GA, Res. 51/229, 1997, article 10, para 2.

<sup>51</sup>McCAFFREY S., (2011), *supra* note p.14.

to be followed by a State while promoting a new action that could have a relevant impact on other States sharing the international watercourse. For this reason, the State that is planning this action must give “timely notification”<sup>52</sup> to the other States that, if they believe the measures to be incompatible with article 5 or 7, could start consultations and negotiations whose aim is to find an equitable solution.

Part IV deals with the Protection, Preservation and Management and faces the environmental issues. Article 20 speaks of the protection and preservation of ecosystem considering not only water itself but also the land at the border of a watercourse. This article is quite innovative because it recognizes the ecological characteristic of international watercourse system and gives attention to the necessity of protecting the ecosystem in order to have water.

Article 21 deals with pollution, article 22 faces the introduction of new or alien species, article 23 deals with the problem of marine pollution from land-based sources. It has to be said that all these articles impose a due diligence standard on watercourse States, as affirmed by a statement of the Working Group.<sup>53</sup>

Part V is called “Harmful Conditions and Emergency Situations”. The conditions defined in the articles cover a wide range of events as water-borne diseases, erosion, drought or desertification. The Convention requires all riparian States to take all the necessary procedures to prevent or control these circumstances that can be harmful to other countries. The emergency situations include both natural phenomena and human-caused events; if a State is

---

<sup>52</sup>UN GA, Res. 51/229, 1997, article 12.

<sup>53</sup>McCAFFREY S., (2011), *supra* note, p.15.

undergoing an emergency concerning watercourse must notify other endangered States as well as international organisations along with the realization of all measures to “prevent, mitigate and eliminate harmful effects of the emergency.”<sup>54</sup>

In part VI, article 33 talks about the settlement of disputes. Along with the traditional diplomatic means for controversy solution, the convention provides the addition of a fact-finding commission that can be established at the request of any party involved. This article 33 affirms that States have to declare in accepting the treaty that they recognize as compulsory the submission of such controversies to the ICJ or to arbitration<sup>55</sup>.

In article 32 it is contained a clause that ensure to individuals the access to judicial and other procedures on a non-discrimination basis<sup>56</sup>.

In general, the UN Watercourse Convention has codified the customary international law of three main principles: equitable use, prevention of relevant harm and prior notification of planned actions<sup>57</sup>. What has been important is the recognition of these principles in a diplomatic conference with a universal participation. Of relevance is also the emerging of a principle of customary law that is the obligation of States to actively protect ecosystems on international watercourses.<sup>58</sup> The Convention has underlined the need to safeguard not only water but also related lands calling for the preservation freshwater species and control of water itself is not degraded by land

---

<sup>54</sup>UN GA, Res. 51/229, 1997, article 28.

<sup>55</sup>BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, supra note, p. 112.

<sup>56</sup>UN GA, Res. 51/229, 1997, article 32.

<sup>57</sup>BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, Oxford, supra note, p.31.

<sup>58</sup>McCAFFREY S., (2011), supra note p. 16.

activities<sup>59</sup>.

In conclusion it is possible to affirm that the UN Watercourse Convention has been of great importance for the codification of international law, for the principle it carries and for being the first convention of universal character in regards to international watercourses. It is also important because it encourages States to develop agreements or to modify the present ones in accordance with the obligations of UN Watercourse Convention<sup>60</sup>. Nonetheless, quality and quantity of water reserves are not dealt together in treaty. The equity of apportionment of water remains an open question, while, at the same time, cooperation and data exchange information need to be strengthened as in many countries these data about water are not public or considered not of public domain; at last, prevention and dispute of avoidance mechanisms needs to be implemented more efficiently as they remains quite underdeveloped<sup>61</sup>. Furthermore, some criticisms have been moved to the Convention because it does not refer to recharge areas of aquifers, to water basin or basin ecosystem, but only transboundary aquifers linked to surface water failing to recognize the importance of the unite hydrological cycle and to broaden the vision over water basin<sup>62</sup>.

### ***1.5 The Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes 1992***

Although the Helsinki Convention on the Protection and Use of

---

<sup>59</sup>BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, supra note, p. 112.

<sup>60</sup>BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, p. 112.

<sup>61</sup>McCAFFREY S., (2011), supra note p. 15.

<sup>62</sup>BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, supra note, p. 119.

Transboundary Watercourses and International Lakes approved in 1992<sup>63</sup> (Helsinki Convention) is a regional treaty signed within the United Nation Economic Commission for Europe (UNECE). It is relevant in the context of water law because it has influenced the International Law Commission's works for the International Law Commission Draft Articles on Transboundary Aquifers<sup>64</sup> and it is also one of the few regional agreements to take into consideration water issues not connected with a specific international river or basin.<sup>65</sup>

The Helsinki Convention has a wider scope than the UN Watercourse Convention. The main aim is to prevent, control and diminish the transboundary effect of water uses and policies. Transboundary water is described in article 1 as “any surface or ground waters, which mark, cross or are located on boundaries between two or more States”<sup>66</sup>.

Part I deals with the General Provisions Relating to the Parties. The articles call the Parties to be more watchful in the protection of environment. It is stated that countries have to take all the necessary measures to “prevent, control and reduce any transboundary impact”<sup>67</sup> that is defined as “any significant adverse effect on the environment resulting from a change in the conditions of transboundary waters caused by a human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of a Party”<sup>68</sup>.

---

<sup>63</sup>Helsinki Convention entered into force on October 6<sup>th</sup>, 1996 with the 16<sup>th</sup> instrument of ratification, acceptance, approval or accession, as claimed in article 26 of the Helsinki Convention itself, U.N. Doc. E/ECE/12697.

<sup>64</sup>The scope of the UNECE Convention is similar to the one of the International Law Commission Draft Articles with the attention given to transboundary aquifers than the aquifers positioned in one State.

<sup>65</sup>BROWN WEISS E., (2013), *supra* note, p. 98.

<sup>66</sup>U.N. Doc. E/ECE/12697, article 1, para 1.

<sup>67</sup>U.N. Doc. E/ECE/12697, article 2, para 1.

<sup>68</sup>U.N. Doc. E/ECE/12697, article 1, para 2.

The Helsinki Convention integrates in the text, at article 2 paragraph 1, the principle of equitable and reasonable use of both surface and ground water that are shared by two or more countries. It also covers ground water that itself crosses the borders of different States but it appears that aquifers, part of just one State, are not included even though they flow into internationally used basins.<sup>69</sup> This rule along with the no-harm rule, in article 2 paragraph 2, and the cooperation principle, contained in article 2 paragraph 6, constitute the core normative pillars of the treaty<sup>70</sup>.

Strongly connected with the reasonable and equitable utilization of waters, article 2, paragraph 5c, the Helsinki Convention shows a great interest for future generations. In fact, in the interpretation of the treaty, it has to be considered the principle, reaffirmed also in the 1992 United Nations Conference on Environment and Development<sup>71</sup>, that the management of water resources should fulfil the needs of the present generation without endangering the chances of future generations to satisfy their own necessities. Therefore, the use of international waters cannot be considered equitable if it is not sustainable; in other words, a Riparian State is not allowed to enjoy the maximum benefit from a water resource, and as consequence its use cannot be identified as equitable and reasonable, if this use prejudices the protection of the reserves.<sup>72</sup>

A relevant principle contained in the Helsinki Convention related to

---

<sup>69</sup>BROWN WEISS E., (2013), *supra* note, p. 98.

<sup>70</sup>BROWN WEISS E., (2013), *supra* note, p. 98.

<sup>71</sup>Annex I of Report on the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992, in articles 3, affirms that "The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations." In the Helsinki Convention, article 2, para 5c, explains that "water resources shall be managed so that the needs of the present generation are met without compromising the ability of future generations to meet their own needs."

<sup>72</sup>UNECE (2013), *Guide to Implementing the Water Convention*, Geneva, Switzerland, p. 23.

environment protection is the polluter-pays one that is identified as the rule “by virtue of which, costs of pollution prevention, control and reduction measures shall be borne by the polluter”<sup>73</sup>. The principle is aimed at avoiding damages to be done, stressing the need of preventive actions. Many attention has to be given to the fact that this principle is a regulative mean for domestic government willing to internalize environmental costs, namely to order companies performing polluting activities to reflect these costs in the final prices of their goods<sup>74</sup>. In this way, the private producer will pay the environmental costs directly from its economic profit and the charge will not be attributed on public administrations. The polluter-pays rule include also the costs of accidental activities, guaranteeing that the final costs of pollution control and reduction are paid by polluters.<sup>75</sup>

The cooperation principle is specified in articles from 9 to 15, contained in Part II, and establishes several forms of institutional mechanisms aimed at improving sharing knowledge and actions between countries<sup>76</sup>. For example, it is outlined that cooperation has to be developed through consultations, joint bodies and monitoring programmes, joint researches and development activities, mutual assistance and warning procedures to be applied in emergency situations. All these joint efforts seek at sharing information and data for a proper water management, for a strong protection of transboundary waters as well as for the prevention and reduction of the so-called

---

<sup>73</sup>U.N. Doc. E/ECE/12697, article 2, para 5b.

<sup>74</sup>BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, Oxford, supra note, p.31.

<sup>75</sup>UNECE (2013), supra note, p. 29.

<sup>76</sup>UNECE (2013), supra note, p. 31.

transboundary impact. Riparian States<sup>77</sup> can implement these structures through both bilateral and multilateral agreements following a base of equality and reciprocity; in particular, these forms of accordance have to follow a strong structure due to the difficulties that some States sharing river basins can find.<sup>78</sup> To encourage cooperation in 2000, the European Parliament and Council voted a Directive for the establishment of a European Union Water Framework Directive<sup>79</sup>. This encourages cooperation in the management of environment, calls for protection and for a proper use of water within the border of the European Union. It also establishes the implement of a basin approach, assuring that each Member States assign every international river to a river basin district<sup>80</sup> and they have to designate or create administrative structures for each international basin in order to manage and harmonize the use and maintenance of reserves<sup>81</sup>.

In Part II it is contained article 16, which deals with public information. The article support the idea that data and information have to be made available for the public in order to raise citizen's consciousness<sup>82</sup>. The article tries also to make the public an operative part in the decisional process. The public is

---

<sup>77</sup>In the Helsinki Convention, Riparian States are defined in article 1 paragraph 4 as the Parties borders the same transboundary water. They are the ones to sign bilateral or multilateral agreements. At the same time, Parties are considered countries that have ratified or acceded to the convention itself. See UNECE (2013), supra note, p. 32.

<sup>78</sup>UNECE (2013), supra note, p. 32.

<sup>79</sup>BROWN WEISS E., (2013), supra note, p. 92.

<sup>80</sup>According to the article 3 of the Directive 2000/60/EC, of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, the " Member States shall identify the individual river basins lying within their national territory and, [...], shall assign them to individual river basin districts." The Directive considers also groundwaters that, in case they do not flow into a particular basin, "they shall be identified and assigned to the nearest or most appropriate river basin district". At last, as for coastal waters, they "shall be identified and assigned to the nearest or most appropriate river basin district or districts."

<sup>81</sup>Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000, art. 3.

<sup>82</sup>UNECE (2013), supra note, p. 94.

defined as “one or more natural or legal persons, and, in accordance with national legislation or practice, their associations, organizations or groups”<sup>83</sup>. In this way, Riparian States making information public do not have to discriminate people. According to this notion, even associations and organizations might be recognized as public if they are so considered in their countries, according to the domestic laws<sup>84</sup>. To guarantee the sharing of information to public, States might decide to organize trainings for government officials or a satisfying management of information for the public.<sup>85</sup> This interest for the public is found also in two additional protocols adopted later: the Protocol on Water and Health 1999, safeguarding health and the human well-being through a better water management and fighting against waterborne illnesses, and the Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accident on Transboundary Waters 2003, providing for a comprehensive civil liability scheme and a proper and sufficient indemnity regime for damages on international water caused by the transboundary impact of industrial disasters.<sup>86</sup>

Part III of the Helsinki Convention provide the Institutional and Final Provisions. Article 22 is significant because analyses the settlement of disputes between countries. It obligates States to solve their controversies in a peaceful manner and in good faith through negotiation, mediation, conciliations or other accepted means. This duty is linked to the principle of cooperation, explained in the first part of the treaty. The recourse to the ICJ or the arbitration process is possible only when the two States involved made a declaration accepting one of

---

<sup>83</sup>UNECE (2013), *supra* note, p. 94.

<sup>84</sup>UNECE (2013), *supra* note, p. 95.

<sup>85</sup>UNECE (2013), *supra* note, p. 96.

<sup>86</sup>BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, p. 34.

these options, the decision of both arbitration and ICJ are binding upon the Parties.<sup>87</sup>

Even though the Helsinki Convention was initially stipulated only between the countries part of the Economic Commission for Europe, in 2003 the Parties voted decision III/1 adopting an amendment<sup>88</sup> that broadens its geographical scope. The aim is to gather together the majority of States, above all the ones confining with the UNECE areas. In this way, also non-member countries of the UNECE may adhere to it if the Parties votes in favour.<sup>89</sup>

In conclusion, it is valuable to show that born as a regional agreement, the Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes has grown to become a treaty with a universal dimension covering both regional issues as the water management and quality and also international questions as the relevance given to principles of international customary law, facilitating the development of international law<sup>90</sup>.

### **1.6 ILC Draft Articles on the Law of Transboundary Aquifers**

In 2003, the ILC decided to include in its work a program called “Natural Shared Resources” focusing on groundwater reserve and other relevant natural materials such as oil and gas. This has constituted a milestone for the preservation and control of this kind of resources that have not been at the

---

<sup>87</sup>UNECE (2013), supra note, p. 100.

<sup>88</sup>The amendment entered into force in February 2013. See UNECE (2013), supra note, p. 103.

<sup>89</sup>BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, p. 34.

<sup>90</sup>BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, p. 34.

centre of international laws.<sup>91</sup>

Article 1 of the ILC Draft Articles on the Law of Transboundary Aquifers (ILC Draft Articles or 2008 Draft) explains that it is directed to the utilization and actions having an impact on aquifers or aquifers systems and to their conservation, protection and control.

In Article 2, the draft defines aquifer as a “permeable water-bearing geological formation underlain by a less permeable layer and the water contained in the saturated zone of the formation”<sup>92</sup> and an “aquifers system” as a “series of two or more aquifers that are hydraulically connected”<sup>93</sup>. The phrase groundwater is here substituted by the term aquifer because it is more suitable for a technical and scientific approach, as outlined by the Special Rapporteur Chusei Yamada in one of the comments to the Draft Articles.<sup>94</sup> In this way, the inclusion of geological water bearing underlines the importance of aquifer uses that are different from water supply. Both the ILC Draft Articles and the UN Watercourse Convention codify general laws of international water law but if the latter covers groundwater resources only when these are connected on surface water of an international watercourse, the 2008 Draft includes also transboundary aquifers not linked to surface water<sup>95</sup>.

Part II of the Draft deals with the General Principles. Article 3 is a clear

---

<sup>91</sup> MECHLEM K., (2008), *International Law Commission Adopts Draft Articles of a Transboundary Aquifers Convention*, American Society of International Law Insights.

<sup>92</sup> ILC, *Draft Articles on the Law of Transboundary Aquifers*, February 28, 2008, UN Doc. A/RES/66/104, article, para a.

<sup>93</sup> *Ibidem*, article 1, para b.

<sup>94</sup> YAMADA C., Special Rapporteur for the ILC, (2008), *Fifth Report on Shared Natural Resources: Transboundary Aquifers*, February 21, 2008, UN Doc. A/CN.4/591, para 15, available at [http://legal.un.org/docs/?path=../ilc/documentation/english/a\\_cn4\\_591.pdf&lang=ESX](http://legal.un.org/docs/?path=../ilc/documentation/english/a_cn4_591.pdf&lang=ESX), last accessed, November 13<sup>th</sup>, 2015.

<sup>95</sup> LEB C., (2012), *Water Conflicts and the Role of International Law in Their Prevention*, available at SSRN: <http://ssrn.com/abstract=2000951>.

reference to the sovereignty wanted by many States, in particular by those who believe that water reserves are part of the State where they are located, and therefore, under their sovereignty. This article explains that each State with aquifers has the sovereignty over them for the part located in its territory.<sup>96</sup>

Articles 4 and 5 further the development in the delineation of the equitable and reasonable use principle. Indeed, due to the fact that aquifers are not renewable unless in case of artificial aquifers, the maximization of benefits should be implemented through the setting of a plan shared by the involved States considering both present and future needs. The consideration of future generation has to be done in economic and social fields and also in all other practices considered relevant for a State. Even though the attention to future generations was already present in the UN Watercourse Convention, the stress given in the 2008 Draft reveals the need of recognizing the dynamic nature of freshwater system<sup>97</sup>. Moreover, paragraph c underlines the relevance of having an a priori plan for the utilization of the water reserves.<sup>98</sup> The interpretation of this principle is given by its effective realization that necessitate an enduring collaboration between States because it requires continued arrangements due to the changes in the conditions of the water reserves and the hydrographic system. The required cooperation among countries encourages them to find coordination of their activities through peaceful engagements as the data and information sharing. In this way, institutionalized joint sharing mechanisms can

---

<sup>96</sup>UNITED NATIONS, (2015), *Report of the Commission to the General Assembly on the work of its sixtieth session*, Yearbook of the International Law Commission 2008, Volume II, Part Two, Geneva, p. 27, available at [http://legal.un.org/docs/?path=../ilc/publications/yearbooks/english/ilc\\_2008\\_v2\\_p2.pdf&lang=EFS](http://legal.un.org/docs/?path=../ilc/publications/yearbooks/english/ilc_2008_v2_p2.pdf&lang=EFS), last accessed: November 27<sup>th</sup>, 2015.

<sup>97</sup>LEB C., (2012), *supra* note.

<sup>98</sup>UNITED NATIONS, (2015), *supra* note, p. 29.

be useful in the prevention of conflict.<sup>99</sup> Furthermore, article 5, paragraph 2, assumes a new point of point, including the protection and consideration of “vital human need”<sup>100</sup> in the determination of equitable and usable principle. These human needs have to be taken into account before the breakout of a conflict but earlier in the process of assessing the uses of aquifers. In this way, the 2008 Draft strengthened its position in the prevention of disputes related to water. This is a forward-looking approach for the 2008 Draft since in the 1997 UN Watercourse Convention, in art. 10, human needs are given importance only in case of a conflict. The protection of human need is reaffirmed in article 17 in the assessment of emergency situations rules. In an emergency situation both natural and human-caused, States are allowed to take all necessary measures to satisfy these needs in spite of the obligations they are subjected and linked to the equitable and reasonable use<sup>101</sup>.

Article 6 deals with the obligation not to significant harm so that States have to “all the appropriate measures to prevent the causing of significant harm to other [...] States”<sup>102</sup>. The article covers damages inflicted by the direct use of an aquifer and by activities that harm the quality of water, as industrial pollution. The concept of significant harm has been defined as an injury, which is more than “detectable” without the need to be identified as “serious” or “substantial<sup>103</sup>”. Anyway, the commentaries to the 2008 Draft underlines the importance of factual assessments in each case rather than a legal

---

<sup>99</sup>LEB C., (2012), *Water Conflicts and the Role of International Law in Their Prevention*, available at SSRN: <http://ssrn.com/abstract=2000951>.

<sup>100</sup>ILC, *Draft Articles on the Law of Transboundary Aquifers*, article 17.

<sup>101</sup>LEB C., (2012), *supra* note, p. 4.

<sup>102</sup>ILC, *Draft Articles on the Law of Transboundary Aquifers*, February 28, 2008, UN Doc. A/RES/66/104, article 6, para a.

<sup>103</sup>ILC, *Draft Articles on the Law of Transboundary Aquifers*, February 28, 2008, UN Doc. A/RES/66/104, article 6.

verification<sup>104</sup> giving the principle a great flexibility in the classification of a harm. In the draft it is not explicitly described what has to be done when a significant harm is proved; therefore, the question of compensation is left to the international laws related to State responsibility and international liability<sup>105</sup>.

Article 7 concerns the duty to cooperation among aquifer States. This article is inspired and takes the ideas of art.8 of the UN Watercourse Convention. It restates the principles of sovereign equality and territorial integrity as the basis for proper cooperation actions. In the 2008 Draft it has been included also the rule of sustainable development. The way cooperation has to be put into practice is through joint mechanisms without excluding present and already established apparatuses. These mechanisms may be composed of commission or authorities wanted by State in order to obtain a precise result and cooperation can take different forms as data and information exchange, that are regulated also by article 8<sup>106</sup>, strong communication systems including warning and alarm practices, management, research and development among countries<sup>107</sup>. All the data and information are necessary for the realization of the reasonable and equitable use principle; States can fulfil these requirements by signing agreements among themselves. Furthermore, article 9, matching article 3 of the 1997 UN Watercourse Convention, encourages countries to sign both bilateral and regional concordat given that as far as aquifers are regarded the majority of agreements are still at an early stage and a suitable system has not been developed. All the States have the

---

<sup>104</sup>UNITED NATIONS, (2015), supra note, p. 30.

<sup>105</sup>UNITED NATIONS, (2015), supra note, p. 30.

<sup>106</sup>Article 7 of the 2008 Draft was taken by article 9 of the UN Watercourse Convention and adapted to the requirement of aquifers.

<sup>107</sup>UNITED NATIONS, (2015), supra note, p. 31.

same possibilities to take part to agreements according to the location and the use of an aquifer basin<sup>108</sup>.

Part III of the ILC Draft Articles is about of the protection, preservation and management of ecosystem, in article 10, of recharge and discharge areas in article 11, of pollution in article 12<sup>109</sup>.

In relation to groundwaters, it is of great relevance the protection of recharge areas in order to guarantee the survival and the functioning of aquifers. After having identified where and which areas are discharge zones, States must take all the necessary norms to prevent or at least reduce the risk of harmful impact, as the prevention of the entrance of polluting elements, of these areas since they play a great role in the protection of aquifers. In this process, a relevant position is held by the States that have discharge zones and aquifers within their territories; however, even non-aquifer countries that share recharge or discharge areas have to cooperate with aquifer States to protect the environment and the ecosystem, rule strengthened by the general duty to cooperate in article 7 of the 2008 Draft<sup>110</sup>. Prevention from pollution is also reaffirmed in article 12 given that States are required to take on their own or through cooperation measures to “prevent, reduce and control pollution of their transboundary aquifers or aquifer systems, including through the recharge process that may cause significant harm to other aquifer States”<sup>111</sup>. It is significant to underline that even though the preservation of the environment

---

<sup>108</sup>UNITED NATIONS, (2015), *supra* note, p. 33.

<sup>109</sup>ILC, Draft Articles on the Law of Transboundary Aquifers, February 28, 2008, UN Doc. A/RES/66/104, articles 10, 11 and 12.

<sup>110</sup>UNITED NATIONS, (2015), *supra* note, p. 34.

<sup>111</sup>ILC, *Draft Articles on the Law of Transboundary Aquifers*, article 12. This article of the 2008 Draft Article recalls article 21 of the 1997 UN Watercourse Convention entitled “Prevention, reduction and control of pollution”, as well as the necessity called in article 2 of the Helsinki Convention.

and the ecosystem is frequently recalled within the articles of the 2008 Draft, there is no mention of the polluter-pays principle contained in several agreements, as the Helsinki Convention<sup>112</sup>.

Articles 13, 14 and 15 deal with the monitoring, management and planned activities concerning aquifers and groundwaters. These three actions are connected between them seeing that monitoring of water is essential to a proper management and it is highly recommended in the planning of different actions. Although in many cases the monitoring processes are started by single State and by local government, the best situation would be represented by a group of States, sharing the some model of aquifers, willing to implement a mutual monitoring. It is also to be said that in cases where it is not possible to have a joint actions, the ideal goal is to create a strong sharing information and data system in order to implement suitable monitoring operations<sup>113</sup>. The definition of management is taken from article 24 of the 1997 UN Watercourse Convention where is explained that “‘management’ refers, in particular, to: (a) planning of the sustainable development of an international watercourse and providing for the implementation of any plans adopted; and (b) otherwise promoting the rational and optimal utilization, protection and control of the watercourse”<sup>114</sup>. In the Helsinki Convention, it is clarified which are the elements to be taken into account related to water management embracing the new attention to future generation in the use of water<sup>115</sup>. In regards to this aspect,

---

<sup>112</sup>BROWN WEISS E., (2013), *supra* note, p. 115.

<sup>113</sup>UNITED NATIONS, (2015), *supra* note, p. 35.

<sup>114</sup>UN GA, Res. 51/229, 1997, article 24.

<sup>115</sup> Article 2, paragraph c, of the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes reads as follow: “Water resources shall be managed so that the needs of the present generation are met without compromising the ability of future generations to meet their own needs.”

the 2008 Draft is aimed at encouraging States to create a network for planned management of aquifers in which consultation and data sharing are important elements to be considered even if it is clear that the establishment of these procedures are not possible at the same level everywhere<sup>116</sup>. As far as planned activities are concerned, the 2008 Draft is applicable to those States presuming that these kinds of actions, within their borders could alter a transboundary aquifer and cause an injurious effect on other States. However, given that few countries have regulation concerning aquifers, the Draft Articles provide a minimalist approach compared to the accurate approach of the 1997 Watercourse Convention. For this reason, article 15 establishes the basic obligation States have to follow in the evaluation of a planned activity, consisting not only in the use of transboundary groundwaters but also in activities that might have an impact on these, only when there is a concrete risk of harmful consequences<sup>117</sup>.

Part IV of the ILC Draft Articles is entitled Miscellaneous Part. Article 18 is about the protection of aquifers in time of armed conflict. This article is very similar to article 29<sup>118</sup> of the UN Watercourse Convention, in fact, the main aim of this article is that of reminding to States the application of law during armed conflict to transboundary waters, of international and national law that contains rules for water resources, in fact, during armed conflicts, laws regulate the protection of water reserves and related works and their access and use. Due to the fact that wars and disputes can produce consequences on non-aquifers

---

<sup>116</sup>BROWN WEISS E., (2013), *supra* note, p. 114.

<sup>117</sup>UNITED NATIONS, (2015), *supra* note, p. 38.

<sup>118</sup>Article 29 of UN Watercourse Convention reads as follow: "International watercourses and related installations, facilities and other works shall enjoy the protection accorded by the principles and rules of international law applicable in international and non - international armed conflict and shall not be used in violation of those principles and rules".

States, this article is applicable to all countries and not only to the aquifer ones. Moreover, since conflict may affect aquifers and their protection, the article 18 clarify that States have to follow the laws and the principle governing armed conflict as well as the international convention on humanitarian law in the extent States are under their obligations<sup>119</sup>.

Article 19 of the 2008 Draft speaks about the data and information vital to national defence or security requiring State to collaborate in good faith to share the possible amount of information with other States without infringing other rights as the property or industrial rights<sup>120</sup>. This article was created to allow aquifer States to be informed of possible adverse consequences that can occur in a planned activity<sup>121</sup>.

In conclusion, the recognition of the importance of groundwater in international water law and the establishment of a basis for future development is the core of the ILC Draft Articles. The articles shows a meaningful step forward in the creation of a system aimed at protecting transboundary aquifers combining accepted rights with obligations of international water law with the needed rules for an adequate government of groundwaters.

The 2008 Draft Articles, as underlined by the Special Rapporteur<sup>122</sup>, pushes State to sign initially bilateral and regional agreements in order to move toward negotiating round table for a concluding convention at a later stage.

The ILC Draft stresses in an innovative way the importance of protection of vital human needs recognizing that people basic water needs

---

<sup>119</sup>UNITED NATIONS, (2015), supra note, p. 42.

<sup>120</sup>ILC, *Draft Articles on the Law of Transboundary Aquifers*, article 19.

<sup>121</sup>UNITED NATIONS, (2015), supra note, p. 43.

<sup>122</sup>YAMADA C., Special Rapporteur for the ILC, (2008), *Fifth Report on Shared Natural Resources: Transboundary Aquifers*, supra note.

decrease the risk of conflict and political instability linked to water reserves<sup>123</sup>. By focusing the protection of these human needs, it calls State to a sustainable and peaceful management of transboundary resources and underlines that this approach has to be considered in the evaluation off equitable and reasonable utilization<sup>124</sup>.

In December 2011, the General Assembly, during the sixty-sixth session, passed Resolution 66/104 encouraging States to “make appropriate bilateral or regional arrangements for the proper management of their transboundary aquifers”<sup>125</sup> and it was decided to continue the work on the form that the Draft has to be.

The importance of transboundary cooperation has been recently reaffirmed during the 7<sup>th</sup> session of the Meeting of the Parties to the UNECE Convention on the Protection and Use of Transboundary Watercourse and International Lakes where it has been discussed the management of transboundary water in face of climate change. Thanks to the SDGs, States underlined the need for a specific indicator on transboundary cooperation adopting a reporting procedure to be implemented between 2016 and 2017 that provides information on the implementation of both the UNECE Convention and the SDG on Water<sup>126</sup>.

In sum, international water agreements remain the main source and

---

<sup>123</sup>BROWN WEISS E., (2013), *supra* note, p. 115.

<sup>124</sup>LEB C., (2012), *Water Conflicts and the Role of International Law in Their Prevention*, p. 4.

<sup>125</sup>UN GA, Res. N. 66/104, December 9, 2011, A/RES/66/104, para 1.

<sup>126</sup>UNECE, *UNECE Water Convention gears up for role as the “United Nations home for transboundary water issues”, adopting a reporting mechanism to track progress towards global goals*, 24<sup>th</sup> November 2014, Press Release, available online at <http://www.unece.org/info/media/presscurrent-press-h/environment/2015/unece-water-convention-gears-up-for-role-as-the-united-nations-home-for-transboundary-water-issues-adopting-a-reporting-mechanism-to-track-progress-towards-global-goals/doc.html>, last accessed: December 1<sup>st</sup>, 2015.

instruments of international law. Throughout the times, agreements have covered numerous issues facing the problems posed by politics, economics and history; for this reason, they are not fixed elements but are in a progressive evolution in order to face the questions posed by needs and times.

Multilateral and regional agreements represent tools for the development of new international norms and allow the adjustment of the general provisions to the specific frameworks. In this way, since in some cases international and universal laws are not sufficient to ensure an adequate management of freshwater and groundwater systems, regional agreements could help to fill the empty spaces left by international water law.

Continuing to work for guaranteeing access to water and sanitation to all the people and populations worldwide and to reduce the number of conflicts related to water use and access, one of the future questions that States will have to face is the one linked to market and economy. Due to a progressive decrease of water reserve and to the increase of disasters both natural and human-caused, States might start storing surface water or aquifers or riparian States might start selling water to other States using some of the proceedings to implement water structures.

Another issue that will be necessary to implement with a stronger approach is cooperation and partnerships with organisations at all the levels. Indeed, conflicts related to water and the use of water during armed disputes, especially in the last decade, could represent a serious risk for water itself and for its reserves.

## CHAPTER TWO

### WATER AND CONFLICTS

Disputes over water have always been numerous in the history of mankind. Since water is such a vital element for life, violent conflict over the control and the usage dates back even to the 3000 BC<sup>127</sup>. As of December 2014, from the ancient times to nowadays, in the world it is possible to count around 343 conflicts over water, the majority of which has broken into armed conflicts. Due to the extreme insecure situation in the Middle East, in the Asian Countries and in Africa, only in 2014 sixteen new disputes have arisen either as real armed conflicts or disputes within a violent situation. The list proposed by the Pacific Institute includes different kinds of conflicts as they vary not only in the parts involve, that could be state and non-state actors, but also in the uses, if, for example, water resources or systems are targets or tools of violence or if these are the cause of the contention in a broader context of economic and social development<sup>128</sup>. It is also worth noting that in many cases actors and causes are not easy to define and a dispute can fall into different categories as situations, actors and motivations are changing factors and cross one another.

The current crisis that fresh water is undergoing, the growing number of people affected by water scarcity, the increasing pollution of water reserves and the sharing of river basins and aquifer between two or more States are the possible and real causes of the broke out of new disputes linked to water.

In addition to issues related to the localization of water and to the

---

<sup>127</sup>PACIFIC INSTITUTE, *The World's Water*, Water Conflict Chronology List, available online at <http://www2.worldwater.org/conflict/list/>, last accessed: December 20<sup>th</sup>, 2015.

<sup>128</sup>PACIFIC INSTITUTE, *The World's Water*, supra note.

dispute for the use of reserves, water is threatened by wars and armed conflict not directly linked to it. In fact, in many situations, especially in current conflicts, water has started to be used as a weapon in order to make enemies suffer, to force huge groups of people to escape and to cause huge problems and losses.

According to some scholars<sup>129</sup>, water can be also a strong incentive towards cooperation in complex circumstances as it could represent an efficacious way to promote a dialogue between States. International conventions, transboundary cooperation, international organizations and agencies can provide States in conflict with powerful tools to create a strong network in order to settle disagreements and try to avoid the burst of new tensions.

In this chapter, I would like to analyse water as an element that is at the same time cause of tensions and a catalyst for cooperation among countries thanks also to the use and the implementation of international regulations. With a specific case study related to the current situation in the Middle East, I would like to underline and to focus on the difficulties linked to the real management of water.

## ***2.1 Water: cause of tension and push for cooperation***

Disputes over water dates back to ancient time. Although many steps towards a better and more effective management of water basins and ground water aquifers, the growing number of population, the increasing scarcity of

---

<sup>129</sup> SWAIN A., (2001), *Water Wars: fact or fictions?*, in WRIGHT D. J., *International Encyclopedia of the Social & Behavioral Sciences*, 2nd ed, Volume 25, Oxford, Elsevier, p. 772; BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, The Hague Academy of International Law Monographs, Vol 7, Martinus Nijhoff Publishers, Leiden, p. 157; CARIUS A., DABELKO D.G., WOLF T.A., (2004), *Water, Conflict and Cooperation*, Policy Brief, ESCP Report, Issue 10, p.60.

water and the pollution of water reserves might be seen as the new relevant cause leading to future water-related conflicts.

According to Edith Brown Weiss, it is possible to identify five different types of disputes linked to boundaries, navigation, and use of water resources, quality and protection of ecosystem<sup>130</sup>. The first two categories focus on the reasons, which are at the basis of water conflicts from ancient times to the first half of the 20<sup>th</sup> century. Nowadays, the use of water is a major cause of interest for all the States sharing the almost 276<sup>131</sup> international river basins. An example is the exploitation of the Mekong River<sup>132</sup> in the South-east Asia. In 1995 an agreement was signed between four countries, namely Thailand, Laos PDR, Cambodia and Vietnam for the regulation of basin water concerning with dam constructions, agricultural and industrial water uses and the consequent polluting effects. The countries involved were able to find a compromise thanks to the work done by the Mekong River Commission that led to the sign of the agreement. As both China and Burma (Myanmar) are States bordering the Mekong River, they took part to the negotiations but decided not to sign the agreement. In this accord, the projects are approved and financially supported by the Asian Development Bank that helps States to improve a common ground and understanding for the use of shared water reserves<sup>133</sup>. The Mekong River

---

<sup>130</sup>BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, The Hague Academy of International Law Monographs, Vol 7, Martinus Nijhoff Publishers, Leiden, p. 123.

<sup>131</sup>JÄGERSKOG A., *Transboundary water management – why it is important and why it needs to be developed*, in GRIFFITHS J., LAMBERT R., (2013), *Free Flow: Reaching Water Security Through Cooperation*, UNESCO.

<sup>132</sup>The Mekong River is the second largest river in Asia, it is 4,200 km<sup>2</sup> long and it covers an area of 800,000 km<sup>2</sup> divided into six States: China, Laos, Thailand, Cambodia, Vietnam and Myanmar. Its water is used from more than 30 Million people, especially for agricultural cultivations.

<sup>133</sup>MEKONG RIVER COMMISSION FOR SUSTAINABLE DEVELOPMENT, *The Story of Mekong cooperation*, available online at <http://www.mrcmekong.org/about-mrc/history/>,

Agreement has been the basis of a series of agreements and protocols to further develop the original treaty<sup>134</sup>.

The Pacific Institute Water Conflict Chronology divides conflicts linked to water into categories that involves State actors and non-state actors. The authors identify four different groups according to the role played by water: military tool, where water is used by a State or a nation as a weapon during conflicts; military target, if water systems or reserves are the targets of military actions; terrorism or domestic violence, if water is both the target and the tool of violence or coercion; development dispute, if water is a reason of disputes for economic or social development<sup>135</sup>.

Figure 3 shows the average number of disputes and conflicts related to water issue from 1931 to 2012. The recent peak is attributable to better procedures of data collections and information reports but also to the increased interest toward limited freshwater reserves. What is important to underline is that this disputes are linked to access, resources sharing and pollution of basins and/or aquifers. The growing number of these disputes can be found in countries with unstable governments and weak political authorities, especially in the local or sub-national areas in which the international laws have a weaker role. In fact, although there is a great availability of diplomatic ways for controversies resolution, they are not sufficient in intrastate or sub-national violences.

---

last accessed 8<sup>th</sup> January, 2016.

<sup>134</sup>MEKONG RIVER COMMISSION FOR SUSTAINABLE DEVELOPMENT, *The Story of Mekong cooperation*, supra note.

<sup>135</sup>GLEICK P., HEBERGER M., (2014), *Water Conflict: Events, Trends, and Analysis*, The World's Water, Water Brief 3, Volume 8, p. 160.

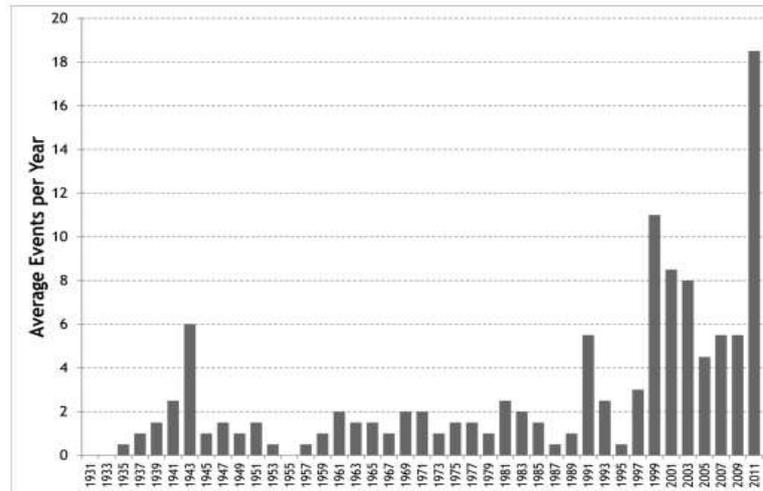


Figure 3: Number of Reported Water Conflict Events per Year, 1931–2012, taken from the *Water Conflict: Events, Trends, and Analysis*

If disputes are not solved, armed conflicts blow up causing strong consequences not only on civil population, but also contaminating natural resources. The use of hazardous substances and the damage of industrial sites cause a deprivation of water quality and access. Moreover, bombs, missiles explosives can destroy water system, contribute to soil erosion, degrade water quality. Because water systems are physical infrastructures made up of several pieces used to access, distribute water and pass information for maintenance, their destruction whether intentional or unintentional causes water shortages leaving population and enemy armies in a weaker position. In many current conflicting situation, water distribution systems that require constant control may become sources of pollution if the entire complex is not disinfected causing a multi-level contamination because they bring water to different areas of the same nation and sometimes they are the sources of drinking water also for bordering countries<sup>136</sup>. During the Kosovo War, some industrial firms producing fertilizers, oil and chemical elements were hit causing the release of substances

<sup>136</sup>COOLEY H., MORRISON J., DONNELLY C., HA M., (2013), *Water as a Casualty of Conflict: Threats to Business and Society in High-Risk Areas*, United Nations Global Compact, Pacific Institute, The CEO Water Mandate, p. 8

and noxious smoke in the soil and in the air not only in the Kosovo area but also in bordering States as Romania and Bulgaria. Controversies can lead to the theft of information of water system and of customers, destruction of the complex itself, loss of property ownership and occupancy<sup>137</sup>. This kind of system are taken as target during present conflict as they cause casualties in the enemy side, damage even a wider zone and cause problems in water management. Another strategic target are dams as they provide drinking water, electricity and flood control; their inefficient operation may cause problems to hospitals, schools, and governmental buildings<sup>138</sup>.

A very puzzling factor in the management of risky situation is the growing number of actors. If in the past only States were the participants as they exercised the sovereignty, today there are several other players such as NGOs, multinational businesses, local governmental authorities, stakeholders and international intergovernmental organizations. Because of the great number of actors involved, finding a proper solution is not always effortless. In some cases, national authorities might be contrary to sign an agreement if this is going to increase the power of local or provincial governments, international financial institutions are relevant as they offer economic advantages to contribute to a positive result, NGOs play a pivotal role in water-related issues as they ask the inclusion of climatic elements and of local interests and are not stable actors since they may intervene to raise in favour or against a matter and

---

<sup>137</sup> COOLEY H., MORRISON J., DONNELLY C., HA M., (2013), *Water as a Casualty of Conflict: Threats to Business and Society in High-Risk Areas*, supra note, p. 8

<sup>138</sup> COOLEY H., MORRISON J., DONNELLY C., HA M., (2013), *Water as a Casualty of Conflict: Threats to Business and Society in High-Risk Areas*, United Nations Global Compact, Pacific Institute, The CEO Water Mandate, p. 8

disappear when this is settled<sup>139</sup>. The variable composition of actors necessarily bring to a wide range of methods for the resolution of disputes, preferring softer form of decision as good offices, negotiation and mediations<sup>140</sup>.

Regarding future situations, scholars are divided between two sides: the ones who believe that cooperation will have the best outcomes, and the others who claims that conflicts will depend on economic and political insecurities together with climate change and resource deterioration. In both cases, especially for cooperation, one important step to do is the identification of enabling factors that are the identification and definitions of all those elements necessary to promote cooperation<sup>141</sup>. On the contrary, when these factors fail to be followed, identified or to be present, a situation where conflicts might blow up is created. The most important of these factors is the existence of legal mechanism aimed at governing transboundary and ground waters, containing binding legal agreements for the management of waters. These legal tools might be implemented and might work within regional institutions such as river basin organizations created on a mandate of international organizations. These regional organizations may provide funds, with constitute another enabling factor, for specific projects related to water management, monitoring and scientific projects<sup>142</sup>.

---

<sup>139</sup>BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, supra note, p, 129

<sup>140</sup>BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, supra note, p. 129. A deeper analysis on the role played by all these actors in the conflict resolutions according to the international laws will be analysed in the following paragraph.

<sup>141</sup>INTERNATIONAL GROUND WATER RESOURCES ASSESSMENT CENTRE, (2014), *Factors Enabling Transboundary Aquifer Cooperation. A Global Analysis*, p. 9

<sup>142</sup>INTERNATIONAL GROUND WATER RESOURCES ASSESSMENT CENTRE, (2014), *Factors Enabling Transboundary Aquifer Cooperation. A Global Analysis*, p. 23. In this report, apart from the factors explained, the authors identify other relevant enabling factors; these are: high institutional capacity, previous water cooperation, scientific research, strong political will, third-part involvement and case-specific factors. These factors are also important related to time, geographical position, frequency, and

## **2.2 International water conflicts settlement**

The protection and the use of water reserves is ruled by international law principles and binding norms that can be found in treaties and in international customary law.

The protection of water during conflicts is contained in several international law norms. In the Additional Protocol to the Geneva Conventions of 12 August 1949, and relating to the protection of victims of international armed conflicts (Protocol I), in article 54.2, entitled Protection of the objects indispensable to the survival of the civilian population, it is stated that *“it is prohibited to attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as [...] drinking water installation and supplies and irrigation works, for the specific purpose of denying them for their sustenance value to the civilian population or to the adverse Party, whatever the motive, whether in order to starve out civilians, to cause them to move away, or for any other motive<sup>143</sup>”*. In this article, the protection of natural resources, as water, is linked to its access and sanitation and it aims at guaranteeing the survival of civil population. This concept is reaffirmed in article 14 of the Additional Protocol to the Geneva Conventions of 12 August 1949, related to the Protection of Victims of Non-International Armed Conflicts (Protocol II), 8 June 1977, where it is underlined the prohibition of starving civilians by attacking, destroying or rendering useless vital elements for the survival as “ agricultural areas for the production of foodstuffs, crops, livestock, drinking

---

extension of aquifers and basins.

<sup>143</sup>Protocol additional to the Geneva Conventions of 12 August 1949, and relating to the protection of victims of international armed conflicts (Protocol I), available online at <https://treaties.un.org/doc/Publication/UNTS/Volume%201125/volume-1125-I-17512-English.pdf>, last accessed: January 8<sup>th</sup>, 2016

water installations and supplies and irrigation works<sup>144</sup>”.

The protection of civilian through the safeguard of natural resources and their accesses is a rule, which cannot have derogation and Protocol II has been thought in order to make this humanitarian law be respected in every circumstance. Moreover, the eventual destruction of essential objects for the survival of civilian might result in the necessity of people to flee from their territory; this action is comparable to the use of force and it is affirmed in article 17 of the Protocol II, prohibiting the forced movement of civilians<sup>145</sup>. An adequate amount of water and food, the possibility to access water and soap for washing and proper hygiene, the supply of water in terms of quality and quantity commensurate to the age and the need of individuals in order to maintain good health and a proper standard of hygiene must be provided to civilians during wartime as outlined in 1949 Geneva Convention IV relative to the Protection of Civilian Persons in Time of War<sup>146</sup>.

The access to water and sanitation has been reaffirmed in the last years in the General Comment No 14 on the Right to the Highest Attainable Standard of Health of the Committee on Economic, Social and Cultural Rights (CESCR) (hereinafter General Comment No 14). Interpreting the right to health, the CESCR underlined that this is not only the guarantee of a timely and

---

<sup>144</sup>Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of Non-International Armed Conflicts (Protocol II), 8 June 1977, available online at <https://www.icrc.org/applic/ihl/ihl.nsf/Treaty.xsp?documentId=AA0C5BCBAB5C4A85C12563CD002D6D09&action=openDocument>, last accessed: January 8<sup>th</sup>, 2016.

<sup>145</sup>Commentary of 1987, Protection of Objects Indispensable to the Survival of the Civilian Population, available online at <https://www.icrc.org/applic/ihl/ihl.nsf/Comment.xsp?action=openDocument&documentId=22A3363FA0482A57C12563CD0043AB5D>, last accessed: Hanuary 8<sup>th</sup>, 2016.

<sup>146</sup>Convention (IV) relative to the Protection of Civilian Persons in Time of War. Geneva, 12 August 1949, available online at <https://www.icrc.org/ihl.nsf/INTRO/380?OpenDocument>, last accessed: January 8<sup>th</sup>, 2016.

suitable health care but also the access to all the elements part of healthcare, as the access to “safe and potable water and adequate sanitation<sup>147</sup>”, to safe food, nutrition, housing and health-related education. For these reasons, States have to protect and guarantee this right by safeguarding availability, accessibility and quality of all the vital elements part composing the right to health<sup>148</sup>. States have to protect resources from pollution, industrial waste and toxic substances that could damage or destroy them<sup>149</sup>. Moreover Parties cannot limit access, and they must forbid third parties to block access, to health care during armed conflict because it violates the right to health and the international humanitarian law<sup>150</sup>.

In the General Comment No 15, the Committee affirms, following the principles outlined in the Geneva Conventions and Additional Protocols, that the right to water and the protection of element necessary to the survival of population must be guarantee during armed conflicts by States under the international humanitarian law<sup>151</sup>. Moreover, States have the obligation to protect intervention of third parties whose aims are that of negating equal access to water, willing to pollute it or illegitimately extracting water from natural resources as well as irrigation systems<sup>152</sup>.

The international law of watercourses regards the protection of water

---

<sup>147</sup> UN Committee on Economic Social and Cultural Rights (CESCR), *General Comment No 14, The right to the highest attainable standard of health*, August 2000, E/C.12/2000/4, para 11

<sup>148</sup> UN Committee on Economic Social and Cultural Rights (CESCR), *General Comment No 14, The right to the highest attainable standard of health*, August 2000, E/C.12/2000/4, para 12

<sup>149</sup> UN Committee on Economic Social and Cultural Rights (CESCR), *General Comment No 14, The right to the highest attainable standard of health*, August 2000, E/C.12/2000/4

<sup>150</sup> BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, Oxford University Press, Oxford, p. 170

<sup>151</sup> UN Committee on Economic Social and Cultural Rights (CESCR), *General Comment No. 15, the Right to Water*, November 2002, para 22-23

<sup>152</sup> BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, p. 170

during armed conflict as they promote the obligation not to cause significant harm and the principle of equitable and reasonable use. The 1997 UN Watercourse Convention in article 29 deals with the International watercourses and installations in time of armed conflict, stating that both international humanitarian law and international watercourse law has to be applied in armed conflict. The article refers to the protection of “international watercourses and related installations, facilities and other works<sup>153</sup>.” Article 33 of the treaties present a list of possible methods to be used in case of disputes, leaving the parties to appeal a fact-finding Commission that can suggest recommendations for a peaceful settlement of the controversy<sup>154</sup>.

The International Law Commission (ILC) and the International Court of Justice (ICJ) have clarified that if there are no provisions, as the ones contained in the law of international watercourse, States and parties involved in conflicts must follow the international conventions on environment, specifically to the rules regulating rivers, basins and aquifers. In the 63<sup>rd</sup> Report of the ILC it is possible to find, as annex to the 2008 Draft Articles, a list of treaties that continues to find application during disputes. At the same time, the ICJ has affirmed that the need of State to self-defence is not blocked or restrained by the need of the implementation of environmental laws<sup>155</sup>. The implementation of

---

<sup>153</sup>UN GA, Res. 51/229, 1997, article 29

<sup>154</sup>UN GA, Res. 51/229, 1997, article 33 reads as follow:

“2. If the parties concerned cannot reach agreement by negotiation requested by one of them, they may jointly seek the good offices of, or request mediation or conciliation by, a third party, or make use, as appropriate, of any joint watercourse institutions that may have been established by them or agree to submit the dispute to arbitration or to the International Court of Justice. [...]

4. A Fact-finding Commission shall be established, composed of one member nominated by each party concerned and in addition a member not having the nationality of any of the parties concerned chosen by the nominated members who shall serve as Chairman.”

<sup>155</sup>*Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, ICJ Reports 1996, para 30 in BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, p.

international watercourse, the already existing norms of international humanitarian and environment laws aim at protecting both the natural resources and the civil population during armed and non-armed conflicts.

Another relevant situation, in addition to the laws applicable during conflicts, is the peaceful settlement of dispute between actors. This is a fundamental rule of the UN Charter, explained in article 33 that obliges State to resolve their disputes through peaceful procedures as “*by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice.*”<sup>156</sup>

As noted in the previous paragraph, water related problems are becoming the cause of new disagreements between State, NGOs, and international organizations. In recent times parties are choosing binding methods to solve their disputes even though negotiation and bilateral agreements are becoming more and more significant<sup>157</sup>.

Before the ICJ only seven disputes regarding fresh water have been brought; five out of seven faced with the problem of boundary recognition and navigational issues. The other two cases have dealt with dam construction and pump mills. The first case is the *Gabčíkovo-Nagymaros Project* where for the first time the Court showed its jurisdiction over disputes involving international rivers and environmental consequences under the application of international law<sup>158</sup>. The other case concerns Argentina and Uruguay over the pollution

---

171.

<sup>156</sup>UNITED NATION CHARTER article 33, para 1.

<sup>157</sup>BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, The Hague Academy of International Law Monographs, Vol 7, Martinus Nijhoff Publishers, Leiden, p. 128.

<sup>158</sup>BROWN WEISS E., (2013), *supra note*, p. 132.

deriving from the construction of pump mills on River Uruguay<sup>159</sup>. In this case and for the first time, the ICJ affirmed the commitment to hand in an impact assessment over environment of new projects and defines this as a general rule of international law<sup>160</sup>.

As more than 276 river basins<sup>161</sup> are shared between countries and due to the growing crisis of fresh water, many States are trying to sign agreements both bilateral and multilateral in order to avoid real conflicts. Peaceful practises as good offices and mediations are relevant ways to solve dispute and to find a dialogue between actors. A famous case where thanks to good offices it was possible to sign an agreement between riparian States regards the use of the Indus River water. The border between India and Pakistan crosses the Indus River allowing India to control the headwater and leaving Pakistan with short supply of water. Although the two States tried to solve this dispute many time, it was only with the engagement of the President of the World Bank, Eugene Black, that the two parties signed an agreement, the 1960 Indus Waters Treaty<sup>162</sup>. Both countries submitted to the World Bank their development plans. It took almost ten years of mediations and negotiations to finally sign an accord that divided water resources quantitatively and that included an opportunity to exploit water reserves with future projects<sup>163</sup>. The treaty divided the waters assigning the eastern to India and the western to

---

<sup>159</sup>BROWN WEISS E., (2013), supra note, p. 132.

<sup>160</sup>INTERNATIONAL COURT OF JUSTICE (ICJ), *Pulp Mills on the River Uruguay, Argentina v. Uruguay*, Judgement of 20 April 2010.

<sup>161</sup>JÄGERSKOG A., *Transboundary water management – why it is important and why it needs to be developed*, in GRIFFITHS J., LAMBERT R., (2013), *Free Flow: Reaching Water Security Through Cooperation*, UNESCO.

<sup>162</sup> SWAIN A., (2001), *Water Wars: fact or fictions?*, in WRIGHT D. J., *International Encyclopedia of the Social & Behavioral Sciences*, 2nd ed, Volume 25, Oxford, Elsevier, p. 772.

<sup>163</sup>SWAIN A., (2001), supra note, p. 772.

Pakistan and imposed to India to supply Pakistan with a fixed amount of water during the works for the construction of storage systems that were controlled by Permanent Indus Commission and the World Bank<sup>164</sup>. In recent years, water demand has increased and India proposed the construction of a dam to which Pakistan opposed, therefore, the World Bank appoint an expert who addressed several issues and whose decision were accepted both by India and Pakistan<sup>165</sup>. This case shows also how water scarcity has brought States, especially riparian countries, to look for negotiations rather than engaging in wars or conflicts<sup>166</sup>.

Non-Governmental Organizations has started to acquire an important role and from 1980s in Europe two NGO water tribunals have been established. The first one, the First International Water Tribunal was based in the Netherlands and solved issues related to water pollution in Europe; the Second International Water Tribunal based in Amsterdam dealt with disputes between developing countries on the topics of pollution, mining works and water management<sup>167</sup>. In these tribunals, NGOs and individuals might submit claims by presenting a brief summary of the issue. Then, if the tribunals accepted the application, a more specific description and a financial fund were asked. A commission made of experts evaluated the proposal and if the proposal was accepted, the defendant was notified while the complainant presented the case to the tribunal. This could decide whether to address the jury or the tribunal. The solutions were not legally binding but they were important for the moral and

---

<sup>164</sup> UNITED NATIONS TREATY SERIES, *The Indus Water Treaty*, 16 September 1960, available online at <https://treaties.un.org/doc/Publication/UNTS/Volume%20419/volume-419-I-6032-English.pdf>, articles 2, 3, 4, last accessed: 8<sup>th</sup> January, 2016.

<sup>165</sup> BROWN WEISS E., (2013), *supra* note, p. 142.

<sup>166</sup> SWAIN A., (2001), *supra* note, p. 775.

<sup>167</sup> BROWN WEISS E., (2013), *supra* note, p. 143.

ethical values they brought; in total, to the tribunals 22 cases were submitted and 12 of this passed the experts commission. Even though the tribunals did not continue because of several reasons, their creation has represented a possibility and the will of part of the civil society to get a more prominent role in the settlement of water disputes and it has contributed to the widespread of a stronger consciousness linked to water quality and management<sup>168</sup>.

During last century, diplomatic procedures in order to solve conflicts started to raise thanks also to the decision of States to sign agreements containing provisions in case of the presence of disputes, especially in determined geographical areas as the Middle East and the Asian countries. This has been helped also by the creation or by the possibility to form ad hoc commissions or committees for controversy resolutions<sup>169</sup>. In fact, the formation of river basin agreements or organizations helps States to find new forms of collaboration allowing a better management of water and encouraging them to work together for the achievement of the greater benefits, especially of net benefits. It is also noteworthy that the actors involved whether they are States, political leaders, lenders, donors, or financial institutions, have to be flexible in the negotiations and open to compromises. If these crucial elements lack, the agreement will not be reached and the change of a proper water management fails to be implemented<sup>170</sup>. There are several examples of this kind of agreements containing the diplomatic tools that have to be used in case of disputes. One example is the International Boundary and Water Commission of the United States and Mexico whose mission is that of “providing solutions to

---

<sup>168</sup>BROWN WEISS E., (2013), *supra* note, p. 146.

<sup>169</sup>BROWN WEISS E., (2013), *supra* note, p. 154.

<sup>170</sup>SWAIN A., (2001), *supra* note, p. 778.

issues that arise during the application of United States - Mexico treaties regarding boundary demarcation, national ownership of waters, sanitation, water quality, and flood control in the border region<sup>171</sup>". Another example is the Charter of the Waters of River Senegal whose aim is to "fix the principles and the methods of the distribution of water of the Senegal River enters the various sectors of use [...] uses of water of the River can relate[d] to agriculture, [...] the water supply of the urban and rural populations, health, industry, navigation and the environment, by taking account of the domestic uses<sup>172</sup>" and it establishes mediation and conciliation as the two tools to solve disputes, recognizing, at the same time, the Commission of Conciliation and Arbitration of the African Union and the International Court of Justice as last chances for the settlement of disagreements against parties<sup>173</sup>.

International water law serves as a basis for a concrete cooperation providing a framework where all the aspects can be directed. It provides the legal path to follow in case of controversies suggesting the procedure to adopt while trying to find a compromise and a form of dialogue between the national laws of the countries involved. It works as a "platform for integration<sup>174</sup>" as it gives the chance to identify and analyse the factors and the circumstances linked to the management of a specific watercourse thanks to data information and policy

---

<sup>171</sup> INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES AND MEXICO, available online at <http://www.ibwc.state.gov/home.html>, last accessed: January 8<sup>th</sup>, 2016.

<sup>172</sup> CHARTER OF WATER OF THE RIVER SENEGAL, article 2 para 1, article 30, available online at [http://iea.uoregon.edu/pages/view\\_treaty.php?t=2002-SenegalRiverWaterCharter.EN.txt](http://iea.uoregon.edu/pages/view_treaty.php?t=2002-SenegalRiverWaterCharter.EN.txt), last accessed: January 8<sup>th</sup>, 2016.

<sup>173</sup> CHARTER OF WATER OF THE RIVER SENEGAL, article 30, available online at [http://iea.uoregon.edu/pages/view\\_treaty.php?t=2002-SenegalRiverWaterCharter.EN.txt](http://iea.uoregon.edu/pages/view_treaty.php?t=2002-SenegalRiverWaterCharter.EN.txt), supra note.

<sup>174</sup> WOUTERS P., (2013), *International Law – Facilitating Transboundary Water Cooperation*, published by the Global Water Partnership, Global Water Partnership Technical Committee (TEC) Background Papers, p. 23.

information. The consequence of international water law, on a micro-level, is the implementation of general principles and laws into national and regional mechanism that promotes cooperation, the creation of shared mechanism and a greater dialogue in data monitoring.

Special attention in the management of disputes has to be given to groundwaters since the disputes connected with them is not well regulated. Aquifer regulations is quite challenging as their dimensions<sup>175</sup> vary greatly between them, their conditions differ and they face situation of pollution and over-exploitation. Therefore, it is not possible to simply divide cases either of conflict or of cooperation. The management of groundwater provokes cooperation and conflict between actors, especially stakeholders. It is possible to analyse three different grades of cooperation: low cooperation if a scientific report is prepared about a challenging situation and States are about to decide whether and how to face the problem; medium cooperation if it is supported by regional authorities, meaning that it has been discovered a table for negotiation and dialogue in order to produce concrete results in the management of aquifers. Last step is the high cooperation that is difficult to reach, as it requires a stronger legal context, the presence of other relevant actors as financing institutions, third-party organizations and organizations that may promote partnerships and education on the topics related to governance of aquifers<sup>176</sup>.

Notwithstanding the difference between fresh and ground waters, in future decades there will be tough challenges to face in the context of disputes settlement as new causes will arise. One of these is climate change that is

---

<sup>175</sup>The biggest aquifer is 2,199,900 km<sup>2</sup> while the smallest covers an area of 19 km<sup>2</sup>.

<sup>176</sup>CONTI K.I., *Cooperation over transboundary aquifers: lesson learned from 10 years of experience*, in GRIFFITHS J., LAMBERT R., (2013), *Free Flow: Reaching Water Security Through Cooperation*, UNESCO, p. 40

going to affect regional in several ways; it is likely that there will be rainy years followed by years of drought; geographical area will experiment an over-abundance of water while in other part of the world a process of desertification will start. At the time being, there are few agreements dealing with the need to compensate the lack or the excess of water, as they focus on water allocation according to water volume and not to the real flow of water, which would allow a better chance to manage water. Hence, the instability brought by climate change will increase the pressure between countries creating favourable condition for the rising of new conflicts<sup>177</sup>.

For these reasons, the international community has to continue their strength in the implementation of water laws to protect it from future threat posed by climate change, the growing water scarcity and the use of water made by terrorist groups or, more in general, armed groups who want to gain political, social and economic benefits by menacing physical and biological attacks to water facilities and quality.

### ***2.3 Threat posed by terrorists to water***

Water resources and systems are attractive targets for terrorists but an attack to these remains poorly considered by authorities and water managers. However, water is undergoing a significant threat from terrorists groups as water might be poisoned, water pipelines and systems might be destroyed, and the course of rivers might be diverted.

Water terrorism could be used only as a public threat without the real

---

<sup>177</sup>JÄGERSKOG A., *Transboundary water management – why it is important and why it needs to be developed*, in GRIFFITHS J., LAMBERT R., (2013), *Free Flow: Reaching Water Security Through Cooperation*, UNESCO

possibility of a concrete attack; however, as all the threats posed by terrorism, only the probability of a potential attack can cause waves of fear and anxiety in populations<sup>178</sup>. The best way to control and avoid such feelings is the confidence posed in authorities, in water systems management, in the creation of strong apparatuses that monitor water system, water quality and proper information dissemination helped by recent technological improvements.

It is well known that at the international level is difficult to find a proper definition of terrorism; in the case of natural resources a distinction between environmental terrorism and eco-terrorism is suitable to understand the different effects. In the first case terrorists make an unlawful use of force against environmental resources or systems with the aim of harming individuals or endangering population by depriving them of environmental benefits. On the contrary, eco-terrorists want to protect the environment from human destruction and to stop or at least slow the exploitation of natural resources<sup>179</sup>; therefore, they make an unlawful use of force against people or properties<sup>180</sup>.

Although in last decades terrorism has started to be a relevant issue at the global level, water terrorism dates back to the 2450/2400 BC when the King of Lagash decided to divert water in order to deprive the near city of Umma of water<sup>181</sup>. From that time on, history is full of acts and attacks involving water<sup>182</sup>. Even recently terrorists use water. In June 2015, the Islamic State has taken control of the Ramadi dam that provides water in a vast region in the Southern

---

<sup>178</sup>GLEICK P., (2006), *Water and Terrorism*, Water Policy, Issue N. 2006, p. 482

<sup>179</sup>LEE, M. F. (1995). Violence and the environment: the case of 'Earth first!' Terrorism and Political Violence, Volume 7, Issue 3, p. 109– 127 in GLEICK P., (2006), *supra note*, p.484

<sup>180</sup>GLEICK P., (2006), *supra note*, p.484

<sup>181</sup>GLEICK P., (2006), *supra note*, p.484

<sup>182</sup>A full list of examples of water terrorism is available on the Pacific Institute website, online at <http://www2.worldwater.org>

Iraq; since then, the flow of the Euphrates River has decreased of 50% of its normal rate leaving without enough water a region of about 20 thousand square kilometres of farms<sup>183</sup>. In this way, using freshwater as a weapon, the ISIL will gain advantages and important strategic territories for its own purposes.

The main recorded episodes were associated by water development project or its allocation; therefore, terrorist or marginalized groups started to threaten or attack water management systems. They attacked these systems in different ways; sometimes, they opted for an absolute deprivation so that it was impossible to fulfil even the basic needs, otherwise, in case of a relative deprivation, terrorists could allow people to satisfy the basic needs but the water allocation or control is made unfair and discriminatory<sup>184</sup>.

In the majority of cases water-related attacks are directed to dams and pipelines, or in general to water infrastructure. In this way, even though the terrorist group is equipped with a small amount of explosive, the strength of an attack may not be powerful enough to destroy the entire structure but it might cause interruption to power generation, prevention of water operations, the death of thousands of people<sup>185</sup>. More modern infrastructure using remote computer to attacks pipelines are quite easy to attack as the programmes are developed with no or little attention to security. The United States, in a National Security Directive, have recognized this problem and affirmed that telecommunications and information systems are very sensitive to interception and unauthorized access by criminals and terrorists<sup>186</sup>. However, these kinds of

---

<sup>183</sup>PARASZCZUK J., *ISIS is waging a 'water war' in Southern Iraq*, June 28 2015, Business Insider

<sup>184</sup>GLEICK P., (2006), *supra note*, p.484

<sup>185</sup>GLEICK P., (2006), *supra note*, p.492

<sup>186</sup>National Security Directive 42 (1990), *National Policy for the Security of National Security*

attacks that concern technological elements are considered under the regulation of cyber-security and cyber-terrorism.

In recent years, the risk of chemical and biological attacks has become more relevant. Generally, this offence concerns the introduction of poisoning elements or chemical contaminants<sup>187</sup> into public water supply. The best response to this kind of attacks would be the instant recognition of the substance and the following closure of the structure in order to neutralize the attack and avoid a great number of deaths. Nonetheless, the use of these substances is very difficult to manage not only to carry out an attack but also to prepare it, as terrorists need firstly, a sufficient quantity of the element they want to use; secondly, they must take the necessary tools to keep it and to move it and finally, they have to be able to handle the substance in a proper way so that not to cause accident leading, in the worst case, to their own death.

The problem posed by a possible attack to water is the absence of a proper assessment of risk; therefore, in order to be able to face future attacks is necessary to understand vulnerabilities and to develop some technological mechanism to control water infrastructures. Together with these measure is also relevant the creation of procedures and protocols to detect and treat illnesses and dangers posed by a probable attack. In 2002 the US passed the so-called Bioterrorism Act that has established requirements that water systems serving more than 3,300 individuals must develop “an assessment of the vulnerability of its system to a terrorist attack or other intentional acts intended to substantially

---

*Telecommunications and Information Systems*

<sup>187</sup>A list of potential biological agents to drinking water is available in the feature article of KHAN, A. S.; SWERDLOW, D. L.; JURANEK, D.D, (2001), *Precautions against biological and chemical terrorism directed at food and water supplies*, Public Health Reports, Volume 116, Number 3, p.8

disrupt the ability of the system to provide a safe and reliable supply of drinking water<sup>188</sup>". The scientific community has developed also the Early Warning System (EWS) that are monitoring systems that allow a rapid identification of contaminations in order to permit an efficient response. These systems must be able to install, should have a high level of precision and must provide an quick notification in the unlucky event. The national water associations, national governments and also the World Health Organization have established fixed range of the quantities of substances contained in water that must be followed in the analyses; new technologies are able to evaluate the values of these elements and to notify potential variations or dangers to water managers<sup>189</sup>.

What is very relevant in the prevention of water-terrorism attacks is the role played by institutions and authorities. In addition to find valid political and social solutions to terrorist groups, governments have to prepare plans able to respond both to threat and to real attacks as they have the authority to implement and promote useful protocols to be used in the event of terrorist attacks both water-borne and non water-borne. This kind of response can vary and include public advisories, use of alternative water sources and supplies, disinfections, deep analyses of data gathering and monitoring. Although it could seem ineffective, governments should provide guidelines not only to water managers and stakeholders but also to community leaders and the media<sup>190</sup>. An example of these measures is the series of laws enforced by the American government. Apart from the Bioterrorism Act of 2002, the Environmental

---

<sup>188</sup>Public Health Security and Bioterrorism Preparedness and Response Act (the Bioterrorism Act), (2002), Title IV *Drinking Water Security and Safety*, setion 1433, para 1.

<sup>189</sup>WORLD HEALT ORGANIZATION, (2003) edited by BARTRAM J., BALLANCE R., *Water quality monitoring: A practical guide to the design and implementation of freshwater quality studies and monitoring programmes*, CRC Press.

<sup>190</sup>GLEICK P., (2006), *supra* note, p. 500.

Protection Agency (EPA) promoted an initiative called WaterSentinel whose aim is that of designing, deploying and evaluating the water EWSs and provided population with emergency response plans in case of water systems are threatened or disrupted<sup>191</sup>.

In conclusion, assessment of risks, strengthening of infrastructures, quality controls and implementation of security measures are the centre of a proper plan to prevent illnesses and attacks from terrorist groups. Moreover, States must implement stronger laws for the protection of water facilities and to promote preventive strategies between the several actors involved to be taken in the event of an attack. Besides, they have to invest in the development of stronger communication tools able to value both natural disaster and accidents. All these measure together with a strong political project facing the original causes of terrorism should be the best net to prevent attacks and to limit the threat posed by these groups.

#### ***2.4 A case study: Israel, Palestine and the Jordan Basin***

The Jordan River is an adequate case study for understanding how water management is relevant in an unstable situation. The stretched relations between the riparian countries using this basin water has caused since 1950s the need to promote cooperation, or, where thought to reach, at least the change to sing agreements regulating the use of water. Still nowadays, due to the spreading of new tensions and the obstacles caused by the terrorist groups living in this area, the use of water both as a tool and a target is becoming more and more decisive for the survival of civil population.

---

<sup>191</sup>See the website of the EPA, *Drinking Water and Wastewater Resilience* section, available online at <http://www.epa.gov/waterresilience>.

The Jordan River covers an area of 18,285 km<sup>2</sup>, is 223 km long and its water is shared by five States, namely Israel, Palestine, Lebanon, Jordan and Syria, supplying water for more than 7 million people<sup>192</sup>. The river is divided into three different parts: the Upper Jordan River, the Lake Tiberias, the Yarmouk River and the Lower Jordan River.

The Jordan River is one of the rivers that have undergone several disputes because of two main reasons: the scarcity of water and the establishment of a Jewish State. The creation of a new State at the beginning of the 20<sup>th</sup> century caused several changes in the management of water reserves. From the second half of the century, border countries of Jordan, Syria and Israel decided to implement national plans in order to develop their economy that unfortunately, would have spoiled the relationships between these countries for the use of water. Owing to the increase of agricultural demand for water, the growing population and the introduction of pumping technology water usage and management started to be put in danger.<sup>193</sup>

Another relevant cause for the break out of international conflict is the establishment of the State of Israel in 1948. In 1950s, these riparian States started to develop unilateral hydraulic plans and Israel began to build its own National Water Carrier to provide water in the southern part of the region redirecting water coming from Lake Tiberias to cities and agricultural areas. Syria government decided to diver water-heads to stop the supply of water to

---

<sup>192</sup>UN-ESCWA and BGR (United Nations Economic and Social Commission for Western Asia; Bundesanstalt für Geowissenschaften und Rohstoffe), (2013), *Jordan River Basin*, Inventory of Shared Water Resources in Western Asia, Beirut, p. 172.

<sup>193</sup>UN-ESCWA and BGR (United Nations Economic and Social Commission for Western Asia; Bundesanstalt für Geowissenschaften und Rohstoffe), (2013), *Jordan River Basin*, Inventory of Shared Water Resources in Western Asia, Beirut, p. 192.

Israel<sup>194</sup>. Israel responded to Syria using force, bombing the diversion system that had been built causing several obstacles for population to access water. Therefore, the United States decided to appoint a special ambassador to the Middle East in order to help those States to sign a unified water allocation plan for the Jordan Valley. The result of the ambassador's work has been the so-called Johnston Plan<sup>195</sup> that aimed at promoting cooperation and stability by considering water quotas, the use of water outside that region and providing an international supervision<sup>196</sup>.

This tension about water influenced also the 1967 Arab-Israeli War, where Israel occupied the West Bank, the Gaza Strip, the Golan Heights and the Sinai Peninsula. It was also said that more than one third of Israel annual water supply was taken from an aquifer located under the Gaza Strip, while the missing water volume was taken from another basing contained in the pre-1967 boundaries. The control over such a large portion of groundwaters, the tensions between Palestine and Israel has kept on growing leaving many issues unsolved, especially in regards to aquifer management, the effect of water withdrawal and water quality<sup>197</sup>. In Military Order 92, Israel forbade to drill new

---

<sup>194</sup>GLEICK, P., Peter H; YOLLES, P.; HATAMI, H., (1994), *Water, war & peace in the Middle East*, Environment; Volume 36, Issue N. 3; Research Library pg. 9.

<sup>195</sup>UN-ESCWA and BGR (United Nations Economic and Social Commission for Western Asia; Bundesanstalt für Geowissenschaften und Rohstoffe), (2013), *Jordan River Basin*, Inventory of Shared Water Resources in Western Asia, Beirut, p. 194.

<sup>196</sup>Negotiations lasted from 1953 to 1955, the Unified Plan was accepted by the technical committees of the League of Arab States (Arab League) and Israel. Israel's government informed the United States that it would accept the plan, but in October 1955, the Arabs decided not to ratify it. In fact, there has been implementation of the Johnston Plan on the part of Israel and separately by Jordan. The responses of other States of the region were different. Syria decided to not to accept it as its acceptance would have signified the recognition of Israel and the strengthening of Israel position. Jordan was partially happy as it acquired enough water to irrigate its own main agricultural area. Palestine opposed the Plan not for the water allocation but for the term of exchange as the Plan asked Palestinians to resettle outside their original homes. Lebanon did not sign the agreement for political reasons.

<sup>197</sup>GLEICK, P., Peter H; YOLLES, P.; HATAMI, H., (1994), *Water, war & peace in the Middle*

wells without the authorities permissions, posed fixed quotas for the pumping of already existing wells and expropriated all wells in the occupied territories. This regulation deprived Palestine with a great volume of water, preventing population from using water for agricultural and industrial use. The results were heavy. Israel and Palestine had a relevant difference in the per capita quantity of water that allowed Israel population to waste water for not essential purposes as the irrigation of lawns and the creation of swimming pools<sup>198</sup>. The 1967 war and its consequences caused a great movement of refugees and a resettlement of population.

In the following years, Israel faced armed conflicts with Lebanon and Jordan over Jordan River water. Suspecting that Jordan was redirecting a great amount of water, Israel decided to send raids to Jordan. Almost ten years later, the government of Israel invaded Lebanon to take control over Wazzani Spring, part of the river headwaters.

In the last fifty years, several agreements over water resources have been signed but the difficulties remain due to the regional conflicts. The 1991 Madrid Conference tried to initiate a peace process in the region by finding an effective solution to the Arab-Israeli conflict. From this conference, a series of negotiation for bilateral and multilateral agreements over several issues, as shared water management, started.

Today there are seven water agreements in the Jordan River basin. As far as Israel and Palestine are regarded, the most important concordat is the 1993 Oslo Accord, officially known as the Declaration of Principles on Interim Self-Government Arrangements, signed between Israel and the Palestine

---

*East, Environment*; Volume 36, Issue N. 3; Research Library pg. 10.  
<sup>198</sup>GLEICK, P., Peter H; YOLLES, P.; HATAMI, H., (1994), *supra* note, p. 36.

Liberation Organization (PLO). The process of negotiation started with the Conference of Madrid and the 1995 Israeli-Palestinian Interim Agreement followed it on the West Bank and the Gaza Strip, or Oslo II<sup>199</sup>. The Oslo Accord marked the formal recognition of the two States of one another and contained the commitment to find a solution to stop their conflicts; therefore, it was not a peace treaty. It established an interim governance arrangement, based on the UN Security Council Resolution 242 and 338, and net in order to facilitate the negotiation for a proper peace treaty. The treaty gave to a new Interim Palestine Authority<sup>200</sup> the control of the major cities in the West Bank and the Gaza Strip. The aim was to push Israel toward a withdrawal of its troops in the region while, at the same time, limiting Palestinian self-government.

The principle aim of the agreement of the treaty was to divide the West Bank and Gaza into three areas whose control was under Israel or Palestine civil authority or the Palestinian<sup>201</sup>. It also allowed Palestinian election, as established by article 2<sup>202</sup>.

For water management, it is necessary to focus on Article 40 of the Protocol on Civil Affairs (annex 3) of Oslo II agreement. The article, dedicated to water and sewage, recognizes to the Palestinians the water rights in the West Bank. It calls for “the coordin[ation of] the management of water and sewage resources and systems in the West Bank during the interim period”, focusing on

---

<sup>199</sup>UN-ESCWA and BGR, supra note, p. 212.

<sup>200</sup>Israel-Palestine Liberation Organization Agreement 1993, article 1.

<sup>201</sup>Article 1 of Oslo II is dedicated to the Transfer of Authority.

<sup>202</sup>Article 2 reads as follow: “1. *In order that the Palestinian people of the West Bank and the Gaza Strip may govern themselves according to democratic principles, direct, free and general political elections will be held for the Council and the Ra’ees of the Executive Authority of the Council in accordance with the provisions set out in the Protocol concerning Elections attached as Annex II to this Agreement (hereinafter “Annex II”).*  
2. *These elections will constitute a significant interim preparatory step towards the realization of the legitimate rights of the Palestinian people and their just requirements and will provide a democratic basis for the establishment of Palestinian institutions.”*

the prevention of water deterioration and the amount of additional water needed by Palestinians. It also refers to the principle of equitable and reasonable use of water as it imposes on parties to use reserves “in a manner which will ensure sustainable use in the future, in quantity and quality” and “adjusting the utilization of the resources according to variable climatological and hydrological conditions.”<sup>203</sup> The agreement contains a rule, which can be attribute to the no-harm rule explained in the international water laws. Paragraph e obligates States to take “all necessary measures to prevent any harm to water resources, including those utilized by the other side<sup>204</sup>” and it is reaffirmed by paragraph h reading that “each side shall take all necessary measures to prevent any harm to the water and sewage systems in their respective areas<sup>205</sup>”. The article contains also measures for further cooperation with the part dedicated to mutual cooperation, not only in the definition of quantity of water used but also for data transfer, sharing of technology, research and development techniques.<sup>206</sup>

After the treaty was signed, the Joint Water Commission, established by article 40, was created. From its records, it is possible to see that Israel was the party to gain more benefits from this agreement. Because of its power superiority, it was able to restrict Palestinian water consumption by maintaining its control over aquifers<sup>207</sup>. Palestine faced water shortages, were forced to build illegal wells and cisterns and faced problem of water quality. Even

---

<sup>203</sup>Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, annex III, article 40, para c and d.

<sup>204</sup>Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, annex III, article 40, para e.

<sup>205</sup>Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, annex III, article 40, para h.

<sup>206</sup>Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, annex III, article 40, para 20.

<sup>207</sup>BLACK I., *Water under the bridge: how the Oslo agreement robbed the Palestinians*, The Guardian, 3 February 2013.

Amnesty International reported that Palestine population was not able or had to struggle to fulfil their basic water needs, while Israeli had enough water to fill swimming pools and sustain large farms.

Still nowadays the Middle East remains an area where political and ideological conflicts are numerous and unresolved. Anyway, there are signs of a growing will for cooperation over waters. On the one hand, the sign of 1995 Agreement between Palestine and Israel represents an example of how cooperation over shared water might provide a common ground for collaboration in other field. On the other hand the strong power inequalities between Israel and Palestine render almost impossible to find a real implementation to a similar agreement<sup>208</sup>. Because Palestine does not have the same strength domestically and internationally, Israel is able to control the region and water management. Even the recognition of Palestine water rights has not helped the countries to acquire a firmer role in water control.

The case study here proposed want to show how difficult is still nowadays the water management. The growing number of factors to be taken into account while discussing the implementation of international water laws is about to increase in future decades leaving States to deal with several difficulties in the regimentation of natural resources. Water remains a subject to which States want to exert their control; therefore it is important that scholars, politicians and lawyers helps leaders to shape water law at the national and international level in order to face the challenges of the future.

As regards conflicts, States have to consider the role played by water both as a target and a vital element for the survival of their population; at the

---

<sup>208</sup>GLEICK P., HEBERGER M., (2014), *Water Conflict: Events, Trends, and Analysis*, The World's Water, Water Brief 3, Volume 8, p. 165.

same time, at the international level, leaders have to recall the attention to the necessity to protect water itself, reserves and the access to water. A stronger condemnation and concrete actions have to be taken for the protection and the guarantee of the essential quantity of water for civil population regardless their group or social identity. To achieve these important goals, new actors as NGOs, financial institutions can increase their role working together with opposing parties, helping to find compromises and being mediators in situations that might led to armed conflicts.

Because a century ago water was not considered as a target or a tool during war, experts did not take it into consideration; however, the recent breakout of water-related conflicts shows how water still play an important role in dispute settlement especially in those countries suffering from water scarcity, heavy water pollution and where water access in not guaranteed. Many of future controversies will rise at the sub-national level and between countries that have not signed an international agreement over the management of shared water reserves yet. The portrayed situation leaves many questions opened but the implementation of cooperation between countries and the creation of new international water laws, principles respectful of humanitarian and security laws would help the prevention of future disputes that could bring to real armed conflicts, and even wars.

## CHAPTER THREE

### WATER RIGHTS IN WATER GRABBING PRACTICES

From the food prices crisis in 2007, a new phenomenon started to enter in the relations between countries. Land grabbing is the acquisition of large portions of land in foreign countries for agriculture productions. But grabbing, or buying a portion of land, brings to the acquisition of the natural resources contained in it particularly water. The re-allocation of water through land grabbing concerns both surface and groundwater and it is considered only in last years as a separate and serious phenomenon, called water grabbing.

The acquisition of water poses both opportunities and risks. On the one hand, it may be seen as a potential revenue for poor countries, it may rise technological innovation and increase productivity thanks to the know-how transfer from developed to underdeveloped countries. On the other hand, water grabbing comes at high costs. It may be the origin of conflicts, creating long-term precedent and undermining the downstream livelihoods and populations that lose their property rights and the security of having enough water<sup>209</sup>. In many cases, in fact, the grabbed quantity of water exceeds the water needs for a balance diet in grabbed countries; some studies show that the withdrawn quantity would be sufficient to guarantee

---

<sup>209</sup>RULLI M.C., SAVIORI A., D'ODORICO P., (2013), *Global Land and water grabbing*, Proceedings of the National Academy of Science, Volume 110, Issue 3, p. 892.

food security and, at the same time, decrease malnourishment in the poor countries<sup>210</sup>.

The fluid nature of water and its variability due to climate, environment and time renders the impact of water in allocation and distribution difficult to analyse and manage. For its nature, water may be hidden during land grabbing processes, as it is almost impossible to buy land without taking the natural resources contained in it. However, water and natural resources are not mentioned during this mechanism.

At the international level, a proper law governing the trade of water is still missing. There are many bilateral and trade agreement that do not help actors in the protection of water; on the contrary being very numerous and being signed by powerful players, these agreements provide the possibility of adoption illegal solutions<sup>211</sup>. These situations are also set forth by the new-liberal approach<sup>212</sup> applied not only in national policies but also in global approaches.

Even the recognition of the right to water has not stopped the rush of grabbing water. Indeed, even though the international community has accepted and recognised the right to water, the phenomenon of water

---

<sup>210</sup>RULLI M.C., SAVIORI A., D'ODORICO P., (2013), *Global Land and water grabbing*, supra note, p. 892.

<sup>211</sup> As it will later explained, several problems in governments, societies and corporations management increase the chances of signing agreements that justify or that exploit illegal gap in order to adopt water grabbing processes. See also FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, Third World Quarterly, Volume 34, Issue 9, p. 1652.

<sup>212</sup> Starting from the 1990s, a new wave of neoliberal policies began to be relevant in the global context. This neoliberal agenda contained a shift away from the idea that governments were responsible for the poors' problems and through an idea in which States were required to play a facilitating role without their direct engagement, leading to a progressive privatization tendency. In this way, nowadays, water has moved from being considered a public good to a commodity managed according to the economic principles. See FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, Third World Quarterly, Volume 34, Issue 9, p. 1663.

grabbing menaces the equal access to water and sanitation as the acquisition of water by powerful actors does not look to civil population and downstream users. Through this lens water grabbing is not only an obstacle in the realization of the right to water but it is because the violation of other rights, as landowning rights, tenure rights and others related to economic and social issues.

Water grabbing has several critical consequences. The re-allocation of water used by small farmers and producers leaves them without the sufficient amount of water and decreases their economic capacity. This goes together with the promotion of capital-intensive productions and corporate agriculture. Water grabbing is also linked to the growth of new disputes among countries and other actors due to the growing scarcity and the unequal allocation of water helped by this kind of practice.

In this chapter I will try to analyse water grabbing in its main aspects and with the key factors. However, being in many cases a hidden phenomenon, it must be included in a discourse highly correlated to land grabbing. Furthermore, I would like to underline the points that the international community is missing and that should take into consideration for a strong regulation of water in its economic values in order to finally guarantee the right to water to everybody and to protect the water rights of civil societies.

### ***3.1 What is water grabbing?***

The increase of population and the consequent increase of food demand, climate changes, new but different dynamics in energy and finance

have brought a new interest toward water reserves. Since 2007, to all the mentioned factors it was added a rush for the appropriation of land and water has started due to the adoption of new policies in the United States<sup>213</sup> and in the European Union<sup>214</sup> regarding the production and use of bioethanol.

In this context, a phenomenon has risen: the land grabbing. Land grabbing is described by the 2011 Tirana Conference of the International Land Coalition<sup>215</sup> as the *“acquisitions or concessions [of land...] (i) in violation of human rights, particularly the equal rights of women; (ii) not based on free, prior and informed consent of the affected land-users; (iii) not based on a thorough assessment [...] (iv) not based on transparent contracts that specify clear and binding commitments about activities, employment and benefits sharing, and; (v) not based on effective democratic planning, independent oversight and meaningful participation<sup>216</sup>”*. As the definition explains, land grab concern the breaching of human rights as it deals with access to food and water but also with the property rights over thee natural resources; many times land grab happens without the participation of civil

---

<sup>213</sup>*Energy Independence and Security Act* of 2007, United States of America. It aims at moving the USA toward a greater energy independence and security; at increasing the production of renewable energies, the efficiency of existing products, buildings and means of transports and the development of renewable fuel production; at promoting the research on greenhouse gas capture.

<sup>214</sup>Directive 2009/28/EC of the European Parliament and of the Council, April 2008. It establishes a common ground for the production of clean energy and of renewable sources. It asks States to promote a national plan for 2020 fixing a quota for renewable energy sources in key sectors as transports and heating; it obligates States to guarantee renewable energy sources as the origin for heating, electricity and cooling and to build the necessary infrastructures; it aims at making the production of biofuels and bioliquids sustainable.

<sup>215</sup>The Tirana Conference of the International Land Coalition was issued by the International Land Coalition at the conference “Securing Land Access in Times of Intensifies Natural Resources Competition”. It represented more than 45 countries thanks to the representative of civil societies, social movements, international agencies and governments.

<sup>216</sup>INTERNATIONAL LAND COALITION, (2011), *Global assembly 2011, (Tirana Declaration)*, paragraph 4.

societies and in some cases is not a clean process but is the result of illegal or not transparent deals with no or little consideration for the social and environmental impacts.

Therefore, land grabbing can be considered as capturing the control of land and the connected resources, of their use, access and the benefits they bring. According to some authors, land grabbing may be considered as a new form of colonialism<sup>217</sup> as it may be seen as the transfer of ownership from one poor and disadvantaged actor to dominant actors. Land grabbing may be supported for two different reasons: the first is the physical acquisition for an immediate use, while the second is linked to the appropriation of land as a consequence of multi-factor crisis: food, prices, energy, finance, climate change are fundamental causes bringing to grabbing land.

At the beginning of this land grabbing phenomena, water was not taken into consideration in the deals. However, land grabbing is not only the appropriation of the land but is also the appropriation of water resources, both irrigation water and rainwater, available within the land. Indeed, it is quite difficult to grab water without grabbing land. On a global scale, most agricultural productions depend on rainwater that infiltrates the soil (in this case water is called green water) but surface waters (or so-called blue water) are more reliable resources for the market and for commercial agricultural production<sup>218</sup> due to the fact that agriculture management nowadays needs

---

217BEDDINGTON J, (2010), *Food Security: Contribution from science to a new greener revolution*, in RULLI M.C., SAVIORI A., D'ODORICO P., (2013), *Global Land and water grabbing*, Proceedings of the National Academy of Science, Volume 110, Issue 3, p. 892

218FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, Third World Quarterly, Volume 34, Issue 9, pp. 1652

more water which is withdrawn from streams, rivers and lakes. From this perspective, the narrative of marginalized or unexploited land and water resources started to be used by transnational and national actors to stimulate large-scale investments.<sup>219</sup> It is also noteworthy that investors do buy land if this has no water, underlying the growing interest in water more than land itself.

Water grabbing, therefore, is a process in which dominant actors take control or re-allocate to their own scopes, water reserves used by local communities or “feed aquatic ecosystems on which their livelihoods are based<sup>220</sup>”. Powerful actors may use legal means to divert water sources and take away to local communities the water they use. This involves not only the physical withdrawal of water from rivers and lakes but also the privation of local people of their previous water rights to use the river or the lakes. As a consequence, water grabbing happens because of flaws in the legal apparatus and of corruption and other obstacles in the political systems that are possible due to the unequal relations of power between the actors involved. The legal pluralism that exists because commercial users live together with invisible actors is relevant in the practices of water grabbing. Furthermore, in many countries the laws controlling water management and the ones ruling land are separated from each other, allowing an easier chance for powerful actors to take advantages from this gap created by laws<sup>221</sup>.

---

219Ibidem, p, 1652

220METHA L., VELDWISH G.J., FRANCO J., (2012), *Introduction to the Special Issue: Water Grabbing? Focus on the (re)appropriation of Finite Water Resources*, *Water Alternatives*, Volume 5, Issue 2, p. 197

221FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water*

Water grabbing is a complex phenomenon: it can be driven by different interests, is not limited to a single geographical region; concerns both land and water rights and leads to different impacts. It is driven by alliances between States and involves several processes that may render possible the grab; for example, policy reforms, interpretation of new policies, violation of state law, private and/or business coalition, bypass of democratic processes.<sup>222</sup>

It is not limited geographically; it interests the entire globe, apart from Antarctica. The most affected countries are located in Africa and Asia, which represent respectively the 47% and 33% of global grabbed area; while the major grabbers are located in the rich part of the world, i.e. Europe, North America and Middle East. There are some countries that are both grabbed and grabbers. This is the case of Argentina, Australia, the Philippines and Sudan<sup>223</sup>.

How much water is being grabbed? Figure 4 shows the distribution among continents of the grabbed areas and the amount of water grabbed in each area. It interests deltas, floodplains, lakes, rivers, streams, wetlands and also semi-arid plains.

---

*Grabbing*, supra note, p. 1655

<sup>222</sup>Ibidem, p. 1655

<sup>223</sup>RULLI M.C., SAVIORI A., D'ODORICO P., (2013), *Global Land and water grabbing*, supra note p. 893

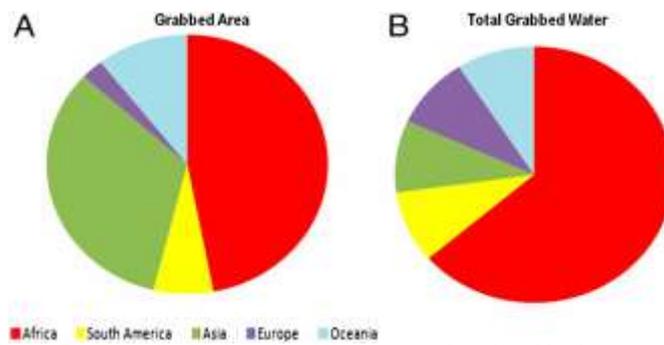


Figure 4: distribution of grabbed area and total grabbed area

taken from *Global Land and water grabbing*

The consequences of water grabbing are various. Intervening on the water cycle, the grab of water alters the amount of water available for downstream and upstream users; it changes the time of the cycle modifying when peaks and base flows happens; it affect the water quality, excluding fresh and clean water for population living nearby the water reserve because this water may be polluted as the powerful actors have the strength not to follow, or at last to evade, the environment duties and they leave to downstream population the costs of their choices.

A significant issue in determining how water grabbing affects both the civil societies and the environment is the nature of water. Taking several forms, the grab does not involved only fresh and surface sources of water, it deals also with groundwaters and with the so-called virtual water. Virtual water is defined as the amount of “water used to produce a[n agricultural or industrial] product but it is not necessarily contained in the final product<sup>224</sup>”. Most virtual water is used in agricultural products and in their derivatives. For example, to produce a kilo of beef, the virtual water used (which is the water

---

224BROWN WEISS, E., SLOBODIAN, L., (2014), *Virtual Water, Water Scarcity, and International Trade Law*, Journal of International Economic Law, Volume 17, Number 4, p. 720

drunk by the beef, the water used for the crops I eats and so on) amounts to 15400 litres<sup>225</sup>. Linked to this concept, there is the definition of water footprint that is the entire amount of virtual water contained in or used by a certain product, country or individual<sup>226</sup>. The water footprint and the virtual water are important to analyse business risks, to understand the role of water in national economies and the amount of water used by single States and to know the quantity of water hidden in the products we use daily. Given these two significant aspects of water, it is possible to understand deeply how nations are interested in water grabbing. In a situation of deep water crisis, it is important to take into consideration all the forms that water can have.

### **3.2 Land, Water and Governance**

Traditionally, water resources regulations have been associated with state control by government. On the contrary, water grabbing involves new players at the legal level and at the international level as it sees the rise of new politic and economic relations.

Internationally, there are numerous attempts to regulate the local natural resources and the on-going use of global capitals. In this context, the World Bank (WB) adopted the Principles of Responsible Agriculture Investment <sup>227</sup> (PRAI), the Food and Agriculture Organization (FAO)

---

225 This and many other exmaple are reported online. See <http://www.angelamorelli.com/water/> and the Water Footprint Newtork at <http://waterfootprint.org/en/water-footprint/>

226 BROWN WEISS, E., SLOBODIAN, L., (2014), *Virtual Water, Water Scarcity, and International Trade Law*, supra note, p.720

227 The Principles of Responsible Agriculture Investment approved during the 41<sup>st</sup> session of the Committee on World Food Security provide a framework that can be used by investors and stakeholders in the development of policies, programmes, agreements and contracts. It regards all types of investments in agriculture and in food systems. These Principles are not binding and are voluntary, but they are important as they represent the

described the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security<sup>228</sup>, and the G8 adopted the Land Transparency Initiative<sup>229</sup>. It is relevant to analyse that none of these documents considers water access and its great role, as they remains oriented to the governance of agricultural mechanisms.

The FAO Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security is very critical in the disputes concerning the interpretation of natural resources. This document elaborates, for the first time, the rights to land and the tenure right holders, therefore, States “*should take reasonable measures to identify, record and respect legitimate tenure right holders and their rights, whether formally recorded or not; to refrain from infringement of tenure rights of others; and to meet the duties associated with tenure rights*”<sup>230</sup>. It establishes also that State have to protect legitimate tenure rights from threats and arbitrary loss, and to promote the realization of these rights.

---

first attempt to gain a global consensus on the investments in agriculture. See <http://www.fao.org/cfs/cfs-home-old/resaginv/en/>.

228The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security describes the principles and the approaches that State may refer to in the regulation and management of land, fisheries and forests rights. They include the participation of authorities, civil society, international community and representative of the private sector. Their aim is that of promoting food security, supporting sustainable development through the improvement and the guarantee of the access to land, fisheries and forests. See <http://www.fao.org/docrep/016/i2801e/i2801e.pdf>.

229The Land Transparency Initiative reflects the need for greater transparency on land and open data. Transparency in accountability, where money goes and the real ownership of companies are fundamental for developing countries. The representatives of G8 Members claimed that the lack of transparency may bring obstacles to investments, it weakens the local community by excluding them from decision-making processes and create space for illegal business trades and conditions. See <http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8599.pdf>.

230FAO, *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*, General Principle 3.1.1, p. 3.

Despite the significance of this principle, the document does not consider water at all since it is excluded from the action of these guidelines. At the negotiation table, struggles were made by the civil society representatives to include water but the powerful actors denied their claims considering water a too difficult topic to discuss even though water is strictly connected with other natural resources the guidelines deal with.

A step forward was made with the recognition of the right to clean water and sanitation in 2010. However, all over the world it remains a gap between the human right discourse and the practical implementation of this rights by governments in the financial sphere; indeed, governments uses approaches that changes according to the role of water as an economic good<sup>231</sup> or as the right to be guaranteed. Even countries, which have fought for the recognition of the right to water, pursue economic development based on activities that results in breaching the human right to water<sup>232</sup>. It is the case of South Africa, the first country to include the right to water in its constitution but adopted water policies following a market-driven approach with the consequent introduction of water fees for population, cut-off of water availability and focusing on cost recovery.

So far, the human right to water has not been taken into consideration in the water grabbing discourse as well as it has not been used either for opposing to it or for supporting it. To this regards, even the UN Special

---

<sup>231</sup> Water as an economic good has been established by the 1992 Dublin International Conference on water and the environment.

<sup>232</sup>FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1659

Rapporteur on the Right to Water has never engaged in water grabbing situations<sup>233</sup>.

The main international tools for water regulation within economy are the bilateral trade agreements and the free trade agreements. This contributes to create an even more complex framework for the application of water-related laws. Indeed, these agreements confuse the national governments efforts in the regulation of environment, natural resources, trade and so on. Related to this, there are the narratives used for justifying land and water grabbing. Beside the theory of the marginal land deployed to excuse large-scale productions, mono-cropping and high-tech agricultures<sup>234</sup>, there is the “economic scarcity” discourse sustaining the policies for the grabbing. These assumptions have allowed the introduction of the private sector in irrigation supported also by the idea that the public are short and that private investments are more efficient in water management. The bilateral and free trade agreements used these narratives to promote opportunities for foreign investments and are helped by the international approach banks encouraging deregulation and the private sector<sup>235</sup>.

The international regulation of water remains very challenging; at the time being, it water regulation contains several ambiguities due to the various actors and processes and it does not provide enough agreed rules or mechanisms of decision-making. Firstly, this could be attributed to the fact that water is not considered as a global good. Very often water is thought as

---

<sup>233</sup>FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1658

<sup>234</sup>METHA L., VELDWISCH G.J., FRANCO J., (2012), *Introduction to the Special Issue: Water Grabbing? Focus on the (re)appropriation of Finite Water Resources*, supra note, p. 199

<sup>235</sup>FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1659

something localized within the border of a State or at least in the regional space. Secondly, this may be the result of water availability across different areas on the world; climates, environment and season pose obstacles for a unique regulation concerning water resources in a global view.

In international law, there are some documents relevant documents related to water and its management. The first Conference held under the United Nation (UN) concerning water is the 1977 Mar del Plata Conference that results in the approval of the UN Water Decade aiming at the achievement of global access to water and sanitation by 1990. As still today millions of people do not access to drinking water, the target were highly missed. The following step was the New Delhi Conference that underlined the importance of protecting environment and health through the integration of water resources management, it called for institutional reforms and by a community control of integrated services. The aims of the New Delhi Conference were obscured by the 1992 Dublin Principles (or Statement) taken during the International Conference on Water and the Environment (ICWE) organized by the World Meteorological Organization. The Principles recognise the finite nature of water<sup>236</sup> and its role in life, development and environment; the importance of a “participatory approach involves raising awareness of the importance of water among policy-makers and the general public [...] with full public consultation and involvement of users in the planning and implementation of water projects<sup>237</sup>”. The Dublin Statement affirms the economic value of water, whose interpretation remains controversial still today. Many scholars believe that water in economic terms

---

<sup>236</sup> *Dublin Statement on Water and Sustainable Development*, art. 1

<sup>237</sup> *Dublin Statement on Water and Sustainable Development*, art. 2.

“legitimises its commodification<sup>238</sup>” but, according to another point of view, it helps justifying the privation of water reserves. In the new-liberalist approach, the acknowledgement of the economic aspect of water has promoted the idea that corporate agricultures, mining, hydropower and capital-intensity activities are more efficient than sustaining small producers, the guarantee of drinking water and tradition fisheries<sup>239</sup>.

The idea of Integrated Water Resources Management (IWRM) has been a direct consequence of the Dublin Statement<sup>240</sup>. IWRM has been defined by the Global Water Partnership as the “process, which promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems<sup>241</sup>.” According to UN Department of Economic and Social Affairs (UNDESA) and the UN Water, IWRM is a widely accepted approach that strives for efficient, equitable and sustainable development and control of water. It works through development of infrastructure, protection of environment, increase of management instrument and institutional policies<sup>242</sup>. This approach considers the enabling of environment putting in place a strong institutional framework for the adoption of good policies and it sets the management instrument necessary for the adoption and implementation of policies and strategies. It

---

<sup>238</sup>FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1662.

<sup>239</sup>Ibidem, p. 1662

<sup>240</sup>FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1662.

<sup>241</sup>GLOBAL WATER PARTNERSHIP, *What is IWRM?*, availability online at <http://www.gwp.org/The-Challenge/What-is-IWRM/>.

<sup>242</sup>UNITED NATIONS, International Decade for Action “WATER FOR LIFE” 2005-2015, *Integrated Water Resources Management*, available online at <http://www.un.org/waterforlifedecade/iwrm.shtml>.

requires a cross-sectoral integration between the use of water made by people, food, nature and industries<sup>243</sup>.

Although it a very innovative concept and finds its root in the typical idea of a good management, the IWRM remains vague as its purposes are maximization of economy, equity and protection of environment and population, which are too complex concepts to balance.

IWRM contains the idea of the decentralization of water management. This means the organization of water from administrative offices to the geographical and physical units, for example basins<sup>244</sup>. This re-allocation involves Water Users Associations (WUAs) and River Basin Organization (RBOs) that put emphasis on the involvement of water users. However, their presence do not prevent powerful actors to obtain great advantages and, sometimes, the presence of users might help actors to capture the part they want<sup>245</sup>. Currently, the participatory works have become the real ground to discuss about appropriation and the legitimate use of water grabbing. This works, however, may serve a controller for denying the practices promoting the grab. In fact, for some acquisitions on large-scale, investors have to pass through a stakeholders' consultation that may stop the licence for the acquisition. What is questionable is the strength of these consultations as stakeholders' ends up by approving the procedures due to the power of investors and to the flows contained in these consultation methods<sup>246</sup>.

---

<sup>243</sup>ibidem, available online at <http://www.gwp.org/en/The-Challenge/What-is-IWRM/>.

<sup>244</sup>ibidem.

<sup>245</sup>FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1665

<sup>246</sup>GLOBAL WATER PARTNERSHIP, *What is IWRM?*, supra note.

The IWRM declares that water rights so far considered of local regulation become now a responsibility of the national law. Promoting the use of licence for the appropriation or maintenance of these rights, small farmers find themselves without rights. This is a consequence of the complex system of license, which excluded drinking water giving to it the status of exemption. This practice is widely used to dispossess these smallholders and to advantage rich investors. The exclusion of small owners makes allocation procedure easier<sup>247</sup>.

This idea of exemption of water rights comes from a colonial perception<sup>248</sup>. In some cases, small actors are aware of not having recognized in their national laws these water rights, in this way, the water grab is even easier as small farmers are not protected by the national legal system leaving them even without the chance to protest or to oppose to the grab<sup>249</sup>.

Although IWRM foster economic growth and agricultural development, actors do not use it in a fair manner. Due to their economic power and taking advantages from uncertain political situations, strong actors are able to take huge amount of water without the participation of civil population in the decision-making processes. In many cases, the governments of grabbed countries are not able to counter the power of investors and end up giving away many natural resources that are actually necessary for their survival<sup>250</sup>.

---

<sup>247</sup>FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1665

<sup>248</sup>FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1666

<sup>249</sup>METHA L., VELDWISH G.J., FRANCO J., (2012), *Introduction to the Special Issue: Water Grabbing? Focus on the (re)appropriation of Finite Water Resources*, supra note, p. 201

<sup>250</sup>FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1667

In all the context of water grab, transnational corporate groups are a very relevant players in water resource management and water policies as they utilizes huge amount of water to produce beverages, crops and services. This utilization of water makes them interested in the access to reserves due to the growing water crisis.

Some of these corporation businesses are inserted in the water management system in a positive way because they promote data sharing, information sharing and engagement with bordering communities. Anyway, economic interests prevail over the others; data sharing may become a critical issue for the definition of the situation of an area and may serve to other purposes as well as the engagement with other stakeholder may be only symbolic and could be used to hidden real economic scopes<sup>251</sup>. In the wave of privatization and applying the narrative that private budgets are more consistent than public ones, governments might support private corporate interests in spire of local and national interests and environment protection<sup>252</sup>. After all, the power of these business enterprises is so considerable that they have better opportunities to achieve their goals, more money and more political power over global decisions and trade policies than governments themselves. This is the case of global corporation as Coca-Cola, Pepsico and Nestlè. The way in which these companies operate is controversial<sup>253</sup>. On the one hand is engaged in a policy aimed at water-use efficiency reducing also the bottling volume, on the other hand, they extract

---

<sup>251</sup> Ibidem, p. 1667.

<sup>252</sup> METHA L., VELDWISH G.J., FRANCO J., (2012), *Introduction to the Special Issue: Water Grabbing? Focus on the (re)appropriation of Finite Water Resources*, supra note, p. 203.

<sup>253</sup> FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1667.

huge amount of water per day calculated around 1,5 million litres in the case of Coca-Cola and by polluting waters surrounding their industrial complex<sup>254</sup>.

Although it is possible to argue that the corporate companies have acquired a certain influence in the water management but not in the water grabbing practices, it is quite evident their power in the re-allocation of water, posing threats and risks for future grabbing mechanisms. Even though they promote the sustainable development and are engaged in some practices of data sharing and democratic participation, they remain the more powerful actor having, as consequence, the economic, political and social strength to reach their goals whatever the legal network of grabbed countries says and wherever they decide to operate.

### ***3.3 Impacts and Consequences***

Water grabbing is very complex event as it involves financiers, authorities, water managers, agriculture experts, banks both at the local and at the international level. Therefore, water grabbing takes place through several mechanisms. In the majority of the cases, the grab phenomenon is made possible by the grabbed State, where political and sectoral reforms are used to justify the grabbing practises. In this way, the country may take advantages from the gap left by an inefficient legal framework or they misinterpret or misread the existing laws. Sometimes a coalition of new power enters into force; many high-level bureaucrats and officials within the governments and agencies are interested in serving the private interests, so

---

<sup>254</sup> For the water use of Coca-Cola in India, see Coca-Cola and their water rights issued in third world countries, available online at <https://www.youtube.com/watch?v=5sFO3KZsANc> and Coca Cola's unethical practises in India, available online at <https://www.youtube.com/watch?v=qlsyjfwklwU>

that they provide active support, invitation or participation to private investors. In all this decision-making process, the local level is completely unconsidered. Vulnerable local users accept low economic compensations for their water and land offered by the investors, which, on the longer term, gain high earnings for the same land and water access<sup>255</sup>. Besides suffering from this sort of deceits, farmers have to deals also with collateral impacts of the new use of water made by investors. The pollution of rivers, lakes and aquifers is an added problem to an already precarious condition of these smallholders.

Water grabbing leads to a critical appropriation of water and water tenure rights affecting also the right to water. Downstream communities lose their access to water reserves that was primary utilized in agriculture and for domestic use. The consequence of this aspect is that farmers move from the water resources, causing a loss in the potential possibilities to their own and their community development. Furthermore, losing their water rights and their land rights, they are no longer responsible for water and land that results in economic and financial problems for these small actors. This situation would change if the disparity between farmers and government-based investors and companies were closed involving small farmers in the processes of land and water acquisition.

The grab of water does not interest only the total amount of water acquired, but is linked also to the changes of this amount through time and space. With a strong pressure on water reserves because of their scarcity,

---

255METHA L., VELDWISH G.J., FRANCO J., (2012), *Introduction to the Special Issue: Water Grabbing? Focus on the (re)appropriation of Finite Water Resources*, supra note, p. 201.

while planning the appropriation, corporates and other companies considers the quantity of water available in determined periods, for example during drought times. Indeed, grabbers have always looked to water in the flood period of the year, where is availability is higher<sup>256</sup>. In the last few years, they have shown interest also for the dry seasons, as the cultivation of some crops do not require a big amount of water. In both cases, it remains clear the will of corporations to gain the maximum profits.

Although they get few chances to stand against big companies and governments, local communities have always tried to react to those impacts. They have been supported by NGOs, media and sometime also by politicians or agencies officials. This group of actors are is able to raise awareness about the on-going phenomenon claiming their rights and increasing the pressure over governments in the approval of agreements supporting water grabbing<sup>257</sup>. By raising their voices, farmers may enter in the negotiation table having the opportunity to protect their own rights. Even though it is very challenging for communities facing economic crisis, instability and social unrest, to win against the interests and the means of big companies, the mere fact of being able to protest and to act against these agreements remains a critical aspects because they make their own voice to be listened.

### **3.3.1 The case of Peruvian mining company**

An example of the strength of wealthy company and of the dispossession of water rights from the local farmers in the hidden process of water grabbing happened in Peru. Here, the gold mines represent one of the most profitable

---

256Ibidem, p. 202

257Ibidem, p. 203

activities of the country. In the region of Cajamarca, in the northern Peruvian Andes, farmers are involved in the production of agricultural goods and dairy products. Both these activities depend widely on the irrigation done through deviated water streams and channelled water coming from high mountains<sup>258</sup>. In order to manage these channels, farmers organized themselves in WUAs that took decisions in a collective way consulting the community and they were the owner of water rights, specifically permits, licences and authorizations linked to water. In this region there is an important gold mine, Yanacocha, which border with an important water reserve. At the beginning of the 2000s, the area faced some changes in soil cover because of natural processes of erosion and compaction that altered the downstream flows. Indeed, it lowers the amount of downstream water, it damaged the drainage systems and it faced pollution problems. The mining company defined this situation as moderate. For downstream users, this situation was more severe than moderate as they had been obligate to close five irrigation channels because of the lack of enough water. As a consequence, the affected communities asked the company to have their water back. The company proposed to look for water in another area by building dams, proposal that was refused by local users.

In a second step, the Yanacocha, that was the name of the company, proposed that it would have collected the residual water used in its mining processes next to harvesting and collecting rainwater that had to be treated before local community used it. Therefore, the company built the San Josè

---

258Ibidem, p. 203

Reservoir<sup>259</sup>. On the one hand this proposal might be seen efficient but on the other hand, new issues started to rise. The amount of treated water could be used only for irrigation and not for domestic consumption. Some farmers protested and started a long judicial process against the company to give their natural water back; the local users lost and they were forced to accept treated water. In 2007, the company signed *transacciones extra judiciales* affirming that the access to treated water was possible only if users gave up their water rights over the flows located in the area nearby the mine, signing an application for new water rights, precisely signing their awareness and will to have treated water, even in on a smaller quantity. The act of the company was very simple: by taking away former rights that returned to the government, the company had the chance to obtain them. Community leaders decided to sign the agreement, as they did not have any water alternative. It is noteworthy to underline that the agreement expressly says that members of the community and of WUAs “give the permission to Yanacocha to use this part of the canal and land for its own purposes<sup>260</sup>”.

The results of these processes are very complex. On the one side, the company has helped the community by building schools, roads, drinking water systems, and it has given a financial compensation to local users. On the other side, the agreements shifted the water responsibility from local WUAs to the mining company, which is the only actor to control the use of water and to manage its allocation, without informing communities or the central government. The net result of this entire process was the giving up by

---

259 Sosa M., Zwartveen M., (2012), *Exploring the Politics of Water grabbing: The case of large mining operation in the Peruvian Andes*, Water Alternatives, Volume 5, Issue 2, p. 370

260 *Ibidem*, p. 370

WUAs of their old water rights and the sing of new water rights depending completely from the company. It is also relevant to underline that the entire process came with the full acknowledgement and permissions of the central governmental authorities that left the provision of more than a thousand of users and the control of more than five channel to a private company<sup>261</sup>.

The signed agreement allowed an irreversible transfer of rights, which deals not only with the acquisition of the water reserve but mainly with the allocation of water. Differently from a land grabbing process that happens in a more public way, the case of the Peruvian mines shows the covered and hidden process that brings to water grabbing. It involved blur and unclear processes of negotiation and participation of the actors, which, of course, are not balance as the power gap between local WUAs and communities and the mining company. This shift of water governance allowed the company to gain a big amount of water that can use and allocation without any supervision from the government or other agencies while dispossessing communities from water rights obtained in the old times<sup>262</sup>.

The impacts of this agreement will affect future water availability and may be devastating for future generations<sup>263</sup>. Before this grab, water was used for agriculture and feeding animal for diary production, now water is used for gold extraction and exports; an activity that does not help the farmers and that has a short life. In this way, mining company has destroyed an entire existing economic micro-system, with a bad impact of local

---

261Ibidem, p. 371

262Ibidem, p. 371

263METHA L., VELDWISH G.J., FRANCO J., (2012), *Introduction to the Special Issue: Water Grabbing? Focus on the (re)appropriation of Finite Water Resources*, supra note, p. 201

communities leaving them in an uncertain condition, as it is impossible to foresee which are the long-term consequences of this water grabbing.

In this chapter, I have tried to underline the basic issue that make possible the water grabbing. The distance between grabbers and grabbed actors is still very wide. The economic and political possibilities of powerful actors are almost impossible to be blocked by local users that are already living in precarious conditions. In addition to this gap, national governments are not able or are not willing to adopt strong law protecting their local communities and allowing them the chance to protest and fight big investors both on the social and on the legal ground. Even when and where this kind of laws exist, the problems within governments (as corruption, difficult application of norms and so on) render difficult the protection of national water rights and open the floor for big corporation to enter and take advantage from the appropriation, allocation and exploitation of the water reserves.

This situation is then worsened by the new wave of “neo-liberal tendencies, elaborated alongside policies of integration, participation, water rights formalisation and basin management<sup>264</sup>” that promotes and are promoted by the narrative supporting the idea that private funds are better than the public ones. Along with privatization, it is taking place a process of financing resources, especially water; in this way, the acquisition of water by private corporations will grow in the future decades.

It is very unlikely that this kind of illegal acquisitions will end on their own. An intervention by regional and international authorities is urgently

---

<sup>264</sup>FRANCO J., MEHTA L., VELDWISCH J.G., (2013) *The Global Politics of Water Grabbing*, supra note, p. 1669

needed not only for the protection of water rights but also for the basic need of having enough water to survive. Authorities should take into consideration the effects of water grabbing throughout space and time, understanding the regulation of water no longer in volumes but in issues of access, quality and availability.

The European Union has tried to actuate a formal response to the issue of land grabbing by promoting the 2004 “European Union (EU) Land Policy Guidelines: Guidelines for Support to Land Policy Design and Land Policy Reform Process in Developing Countries<sup>265</sup>” aimed at offering to State Members a counterweight market based approach to land issues, recognizing that the access to land and resources was linked to the proper realisation of some fundamental human rights<sup>266</sup>. Together with these Guidelines, the EU has started to revise its programmes over the acquisition of biofuels contained in the Renewable Energy Directive (RED)<sup>267</sup> in order to decrease the use of agro-fuels and support energy conversation and non agro-fuel renewable energy sources<sup>268</sup>. As EU has been revising and adopting a stronger commitment in the issues linked to land grabbing, the

---

<sup>265</sup>Communication from the Commission to the Council and the European Parliament of 19 October 2004, *EU Guidelines to support land policy design and reform processes in developing countries*. COM (2004) 686, available online at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:dv0016>.

<sup>266</sup>Communication from the Commission to the Council and the European Parliament of 19 October 2004, *EU Guidelines to support land policy design and reform processes in developing countries*, supra note.

<sup>267</sup>The Renewable Energy Directive (RED) adopted in 2009 by the European Parliament mandated that 20% of the energy used in the Union and 10% of each Member State transport fuel must come from renewable energy source by 2020. *Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources*, available online at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0028>.

<sup>268</sup>TNI, FIAN INTERNATIONAL, FIAN NETHERLANDS, FIAN GERMANY, FIAN AUSTRIA, IGO IN POLAND, FDCL IN GERMANY, *The European Union and the Global Land Grab, Hands off the Land*, available online at <https://www.tni.org/files/download/european-union-and-the-global-land-grab-a5.pdf>.

same should be done with policies and projects that do favour or help water grabbing; regulation still missing even in the EU legislation.

Together with a stronger regulation of water rights and rights to water, it should be implemented a series of laws or principles governing the control of water management system from an economic point of view. It has to be underlined the importance that water and land rights have within local communities for their survival and for their future development. In a precarious situation, as that of developing countries, the loss of these rights means an even more unstable environment that renders impossible to promote development in all its aspects. Furthermore the involvement of local WUAs, farmers, and smallholders has to be taken into consideration while negotiating the re-allocation of natural resources. They have to be provided with tools and possibilities to discuss, counter-react and, in the worst case, to resort to a proper legal framework.

## CHAPTER FOUR

### GENDER, WATER AND RIGHTS

Especially in developing countries, water collection is a women issue as they spend even five or six hours a day collecting water, helped by young girls who carry this burden together with their mothers<sup>269</sup>. Using it for houseworks and for everyday life, they have a great knowledge of water quality and requirements. However, women are still excluded from every decision related to water as settlements and politics remain even today a man business.

From the beginning to the end of the water-related system, whether we talk about pipelines or dam construction or we consider social consequences of new irrigation system, women are excluded. They do not have the right to be part of the entire process. As observed by Margreet Zwarteveen, irrigation world is a “man's world<sup>270</sup>”.

Anyway, in the recent years, some attempts to decrease the gender gap have been made by promoting the role of women in the management of water, or at least, allowing women to have access to them. In the cases where women have been involved, water projects resulted in an increase of their effectiveness from six to seven times; and when women obtained the same access to resources as men, they could increase yields on their farms by until 30%, lifting about 150 million people out of hunger<sup>271</sup>. At the same time, the reduction of the distance from the water source has allowed more young girls to

---

<sup>269</sup>UNITED NATION WATER, *UN-Water factsheet on water and gender*, World Water Day, available online at [www.unwater.org/fileadmin/user\\_upload/unwater\\_new/docs/water\\_and\\_gender.pdf](http://www.unwater.org/fileadmin/user_upload/unwater_new/docs/water_and_gender.pdf)

<sup>270</sup>ZWARTEVEEN M., (2011), *Questioning masculinities in Water*, Economic and Political Weekly, Volume 46, Issue 18, p. 40

<sup>271</sup>UNITED NATION WATER, *UN-Water factsheet on water and gender*, supra note.

attend school and following lessons as they male mates.

The case of some irrigation system managed by women is a remarkable example of how women may make a contribution for a more equal participation and direction of water system. The participation of women in such mechanisms helps them to acquire more freedoms that in many occasions are still denied to women and girls, and to make their voices to be listened in their governments, whether they are local or national.

In this chapter, I would like to show how deep women are linked to water and the importance to include women in the decision making process. Helping women to gain a stronger awareness of their abilities and possibilities in the society could fill the current gender gap in some poor and developing countries. Even though these experiments obtained some important goals, many other policies have not been put in practice because there is a lack of a proper knowledge and understanding of gender issues by policy-makers and projects staff, and the ability to overcome cultural believes in societies<sup>272</sup>

Although their struggle towards a more equal world is not easy and without obstacles, the strong will of women to have a more free and balanced situation will make them acquire their role in water management systems and in the public life, playing a central role in the reduction of poverty and securing food.

#### **4.1 Gender dimension in water management**

Women role in water management is essential as they are the ones

---

<sup>272</sup> INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD), WAHAJ R., HARTL M., (2007), *Gender and water, securing water for improved rural livelihoods. The multiple-users system approach*, Rome, p. 3.

who withdraw, carry and store water in order to use it for basic needs as drinking, washing, cooking and cleaning. They pay more attention than men to water quality as they use it for fulfilling water needs of children and they are the caretakers of health of the entire family. Therefore, sanitation and hygiene practices are women responsibilities and they often intervene in the construction and maintenance of sanitation structure.

Especially in underdeveloped countries as well as in developing countries, it is proved than women and children, particularly girls, walk on average six kilometres a day bringing about twenty litres of water on their heads, habit that causes severe problems to the neck and the spine<sup>273</sup>, together with the great amount of children who that fall ill for water related illnesses. The collection of water is an everyday work and in case of scarce or contaminated water sources, women and girls have the responsibility to search alternatives.

While causing several health problems, the walk for fetching water may be seen as something positive for the development of women relationships. This practice may help women to foster social relations as it allows them with a chance to meet and talk with other women outside their family<sup>274</sup>. Despite this positive fact, the fetching of water is even a risky situation because of the threats that women have to cope with as they are victims of violence, rape and health hazards, as it is unfortunately often reported.

Moreover, women are also involved in agriculture helping their husbands and/or families thanks to their great knowledge of crop biodiversity,

---

<sup>273</sup> WATER FOR AGES, *10 Facts on Women and Water*, available online at <http://waterfortheages.org/2009/12/02/10-facts-on-women-and-water/>, last access: January 8<sup>th</sup>, 2016.

<sup>274</sup> INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD), WAHAJ R., HARTL M., (2007), *Gender and water. securing water for improved rural livelihoods. the multiple-users system approach*, supra note, p.3.

local production and location of water reserves. Generally, women are employed in rain-fed agriculture and irrigation of home gardens, while men deal with facilities, commodities and land aspects of irrigation systems<sup>275</sup>. For all these reasons, women have a deep knowledge of water sanitation and management<sup>276</sup> not only related to households but also in the agricultural sphere.

Nevertheless, women are very often shut out from the project and programmes decision-makings that are mainly directed to men and deal with the manly part of the agricultural system as these take into consideration, for example, only the crops cultivated by men<sup>277</sup>. Since water projects are linked to land access that is considered a man business, the consequent property of land is not permitted to women. Indeed, women in several part of the world are not landowners but, in same specific situation, they might gain control of land through their families or husbands. Their ownership is not guaranteed and they do not have particular securities because in case of death of husbands or fathers women may loss the access to land, leaving them in dangerous and even poorer conditions.

In spite of the fact that women are a considerable force in agriculture, especially in the irrigation system, this keeps to be managed by men for several reasons. Firstly, although they are significant workers in agriculture and water field, women do not follow the further steps in the supply chain of the cultivated

---

<sup>275</sup>Ibidem, p. 6.

<sup>276</sup>WATER FOR AGES, *10 Facts on Women and Water*, supra note.

<sup>277</sup>ADBELLATIF M., (2007), *Mainstream Gender Dimension in Water Management for Food Security*, in Sagardoy J.A. (ed.), Lamaddalena N. (ed.), Quagliariello R. (ed.), Chimonidou D. (ed.),Guelloubi R. (ed.), Pinca V. (ed.), *Mainstreaming gender dimensions in water management for food security and food safety*, Bari: CIHEAM, p.97-104.

products that is controlled almost entirely by men<sup>278</sup>. Secondly, women are less paid and have few chances to buy or to become landowner, as previously explained. Thirdly, the membership of irrigation companies is reserved to man as the public meetings and businesses are seen as part of the domain of men. As consequence, women do not have a role in the decision-making process and do not have the possibilities to influence choices about water management and distribution<sup>279</sup>. Another level controlled entirely by men is the professional dimension. Engineers, experts, managers, politicians are all men, helped by the perception that bureaucratic professions or relevant positions in the work world have to be occupied by male professionals<sup>280</sup>. This belief that being a real men is linked to owning an important job, as being an engineer is seen in some countries, dates back to the colonial times when irrigation and water development was linked to revenues, power and political strategic positions from which women were completely excluded. This idea has passed though times given that still nowadays becoming an irrigation engineer is considered a matter proper of young boys and men and helps to spread the idea of masculinity, presenting a rational, controlled and self-confident man<sup>281</sup>. The gender mainstream and stereotypes proposed even in school causes in the steering girls way from scientific and technological subjects. The feminist approach in international studies and the growing connection between engineers and professional in the world have shown that the link of masculinity with engineer and prestige is only a social and historical construction.

---

<sup>278</sup>ZWARTEVEEN M., (2011), *Questioning masculinities in Water*, Economic and Political Weekly, Volume 46, Issue 18, p. 40

<sup>279</sup>ZWARTEVEEN M., (2011), *Questioning masculinities in Water*, supra note, p. 40.

<sup>280</sup>Ibidem, p. 40.

<sup>281</sup>Ibidem, p. 45.

Women willing to enter in the irrigation fields often came across institutional obstacles because of problems within governments and institutions. These obstacles are reflected in the local communities that tend to isolate women who are able to acquire a position in the system. Moreover, women face also hostility and threat by their male counterpart making women leave their position because the cost of having a powerful role is too high.<sup>282</sup>

Another relevant issue to be considered when talking about gender balance in water management is the equilibrium between the requirements of men and women. Many issues have to be considered: what men and women wants, the context they live in, their access to sources, constraints to women participation, national development policies, the institutional framework required to develop policies of gender equality, the barriers blocking them, namely poverty and illiteracy<sup>283</sup>. Assessing these differences between men and women is pivotal to gather information in order to find realistic solution in the water management.

According to the United Nations, women who are landowner are less than 1% in the world; the illiteracy rate among women reaches the 66%; more than two-third of people living in absolute poverty around the world are women; women perform 67% of the labour in the world but they gain less money than men; and, in the a global basis, women occupying a parliamentary seats are only the 10%<sup>284</sup>. These statistics confirm the motives explained above, showing how the gender gap is still wide and that still many steps have to be made.

There are other barriers to the implementation of the gender approach.

---

<sup>282</sup>JALAL I., (2014), *Women, Water, and Leadership*, Asian Development Bank, Number 24.

<sup>283</sup> FONG M. S., WAKEMAN W., BHUSHAN A., (1996), *Toolkit on gender in water and sanitation*, Gender Toolkit Serie Number 2, Washington D.C.

<sup>284</sup> WORLD BANK, *Gender and Equality*, World Development Report 2012, p.198.

Apart from the gender blindness that does not allow to see that societies are not made up of an homogeneous group but are rather heterogeneous association of individuals who occupy different posts and have their needs and rights, many importance should be given to gender-neutral programs and budgets; therefore, there should be not mention and identification of different roles, without explicitly writing boys and girls, rich poor, men and women<sup>285</sup>.

Although many governments have included the gender approach in the water-related programmes, in many cases it covers a marginal role and women are provided with powerless units or are given contracted gender consultants, making real change impossible. In other cases, decision-making processes are based on quota policies that women do not have, or if they have, they are not enough to raise gender issue in these processes<sup>286</sup>.

The World Bank in 2001 presented a document where it is affirmed that when gender approach is ignored, many inequalities comes at great costs for the people and countries' well-being that are consequently not able to reduce poverty and promote developing policies. Through the analyses made on various countries, the World Bank notes how leaving outside women cause a gap because States lose the so-called "missed potential", that is the know-how and the ideas brought by women<sup>287</sup>.

In countries where the gender approach has been inserted in policies, the projects planned and implemented by heterogeneous group composed by both men and women had better outcomes. Benefits coming from women participation include better facilities functions, a more hygiene environment, a

---

<sup>285</sup> WORLD BANK, *Gender and Equality*, World Development Report 2012, p.199.

<sup>286</sup> WORLD BANK, *Gender and Equality*, World Development Report 2012, p.199.

<sup>287</sup> WORLD BANK (2005), *Agricultural Growth for the Poor, an Agenda for Development*, p.10.

better maintenance and improvement in budget management. The inclusion of women and the steps forward obtained may bring improvement to other sectors of society in an indirect way, for example educational programmes are integral to the possession of good water access and supply because women spend less time in fetching water and more time to dedicate in school and in seeking work<sup>288</sup>.

Promoting differences between men and women, recognized the diverse approach and values that women carry will help identify the obstacle to a more effective implementation of decision and it will help to avoid or lessen conflicts among ethnic groups and social and economic stereotypes. Beside the chance of improving women access to water services, their involvement will make possible to reduce poverty and improve food and water security<sup>289</sup>. To support this view and to effectively help societies and States to lessen the gender gap, starting from the agricultural sector that see women very much involved in developing countries, the international community, regional institutions and local governments should follow a common path by strengthening their role, adopting efficient laws, promoting projects and agendas that, on the one hand, put women at the centre sustaining their voice in societies, on the other hand, promote the elimination of gender stereotypes and cultural changes towards a more gender neutral discourse.

#### **4.2 International Approach**

The most important document for the recognition of women rights is

---

<sup>288</sup> WORLD BANK, (2000), *Toolkit on Gender in Water and Sanitation*, p. 8.

<sup>289</sup> ADBELLATIF M., (2007), *Mainstream Gender Dimension in Water Management for Food Security*, p.100.

the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)<sup>290</sup>, adopted by the UN General Assembly in 1979. It entered into force the 3<sup>rd</sup> September 1981 and, at the time being, 99 Countries have signed it and it has 189 Parties. It is legally bounding; therefore, all the Parties are obligated to put the provisions into practice and they have to submit national reports every four years on the taken measures to the Committee on the Elimination of Discrimination against Women established by article 17 of the CEDAW<sup>291</sup>.

The CEDAW aims at the elimination of all form of discrimination here defined as *“any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field<sup>292</sup>”*. By accepting the CEDAW, the States Parties condemn all sort of discriminations and agree to *“embody the principle of the equality between men and women in [...] constitution<sup>293</sup>”* adopting the necessary laws and using all the appropriate means; they have to establish legal protection of women<sup>294</sup> and to abolish and not to promote actions in favour of women discrimination<sup>295</sup>. The CEDAW is

---

<sup>290</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, 18 December 1979, United Nations, Treaty Series, vol. 1249, p. 13.

<sup>291</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, art. 17.

<sup>292</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, art. 1.

<sup>293</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, art. 2, para a.

<sup>294</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, art.2, para c.

<sup>295</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, art.2, para e,f,g.

significant as it poses the basis for the recognition of equality between men and women, specified in fourteen articles. It guarantees the equal access and opportunities in public and private life, assuring the right to vote and to run for public roles<sup>296</sup> as well as the right to education, health and employment<sup>297</sup>. These requirements are directed especially toward rural women struggling with vital economic situation.<sup>298</sup>

The CEDAW is the only human rights convention affirming the reproductive right of women, requiring the understanding of “maternity as a social function<sup>299</sup>” and the consequent shared responsibilities of the two sexes for children caring. It affirms also that reproduction is a women choice as it is a woman's right to “to decide freely and responsibly on the number and spacing of their children and to have access to the information, education and means to enable them to exercise these rights<sup>300</sup>”. Indeed, States have to protect maternity and maternity and reproductive choice cannot be considered as discriminatory values.

In the third part the CEDAW consider the role of cultural and tradition in discriminating women. Parties are asked to work toward the abolition of gender stereotypes and to promote behaviour and good practices “with a view to achieving the elimination of prejudices and customary and all other practices

---

<sup>296</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, articles 7 and 8.

<sup>297</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, articles 10,11 and 13.

<sup>298</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, art. 14, para 1. It reads as follow: “ States Parties shall take into account the particular problems faced by rural women and the significant roles which rural women play in the economic survival of their families, including their work in the non-monetized sectors of the economy, and shall take all appropriate measures to ensure the application of the provisions of the present Convention to women in rural areas.”

<sup>299</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, art. 5, para 2.

<sup>300</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, art. 16, para e.

which are based on the idea of the inferiority or the superiority of either of the sexes or on stereotyped roles for men and women<sup>301</sup>". These good practices have to be analysed and thought in schools, textbooks and cultural events. To this regard, the treaty targets all the cultural schemes and idea that define women's sphere the domestic one and the men's world as the public life<sup>302</sup>.

Even though the gender approach is gaining awareness in water management issues, in international water laws and agreements lack a clear provision concerning the role of women. Indeed, as many organizations and projects are relevant in the recognition of women empowerment and many steps toward the strengthening of politics to guarantee an equal access to water, to water management institutions, in many part of the world, women still suffer from huge inequalities in comparison to men. Therefore, it should be responsibility of international organizations to adopt laws containing binding principle for the implementation of gender equality<sup>303</sup>.

During the 1970s and 1980s some policies called "Women in Development"(WID) were established in order to integrate women participation in the already existing systems by creating ad hoc women activities. Even though these initiatives improved health and activities in the short term, they did not address the deep root of the gender gap leaving many issues unsolved<sup>304</sup>, they did not take into consideration the multiple role covered by women and they did not calculated precisely the elasticity of their time and labour. From the

---

<sup>301</sup>UN GA, *Convention on the Elimination of All Forms of Discrimination Against Women*, supra note, art. 5, para 1.

<sup>302</sup> GLOBAL WATER PARTNERSHIP (2006), *Gender Mainstreaming: An Essential Component of Sustainable Water Management*, Stockholm.

<sup>303</sup>ZWARTEVEEN M., (2011), *Questioning masculinities in Water*, supra note, p. 42.

<sup>304</sup>SADHU G., CHAKRAVARTY N., (2012), *Gender Mainstream in Water Management*, International Journal of Scientific and Research Publications, Volume 2, Issue 11.

1980s it was promoted a “Gender and Development”(GAD) approach aimed at removing disparities in social, economic and politic fields in order to diminish the gender gap and it has helped to promote gender network by stressing the women empowerment. Both the programmes are still used.

Integrated Water Resources Management (IWRM) offers a chance to create a shift in water resources management. Using this approach requires a good balance between institutions, policy, and measure that consider of environmental sustainability, race, class, age and cultural background<sup>305</sup>.

At the international level, the recognition of women as provider of water and their importance in the irrigation system have been affirmed for the first time in the Dublin Statement on Water and Sustainable Development (Dublin Principles) in occasion of the International Conference on Water and Environment that took place in Dublin in 1992. Indeed, the guiding principle 3 reads that “women play a central part in the provision, management and safeguarding of water”, affirming the significant role of women as users and household manager of water. The identification of this role requires, according to the principle, to adopt policies to “address women specific needs and to [...] empower women to participate at all level in water resources programmes <sup>306</sup>”. The Dublin Principle forms the basis for the good practices of water management under the integrated water management approach, it contains the confidence that this administrative good practices would have brought a greater consideration of gender issues at all the levels of water institutions. Although some progresses have been made at the local and sub-national level as women

---

<sup>305</sup> GLOBAL WATER PARTNERSHIP (2006), *Gender Mainstreaming: An Essential Component of Sustainable Water Management*, Stockholm.

<sup>306</sup> *Dublin Statement on Water and Sustainable Development*, art. 3.

have gained more visibility and have gained access to water systems, at the international level the inclusion of gender approach in water systems still lack.

Other principles concerning gender and water are contained in international soft law. In the Rio Declaration on Environment and Development 1992, in principle 20 it is affirmed that “women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.”<sup>307</sup>

Women and sustainable development issue is contained also in Agenda 21. Chapter 24 is dedicated to this arguments; one of the objectives is the increase of the number of women in the positions of decision makers, planner and managers<sup>308</sup>. It also aims at “*implement[ing] clear governmental policies and national guidelines, strategies and plans for the achievement of equality in all aspects of society, including the promotion of women's literacy, education, training, nutrition and health and their participation in key decision-making positions and in management of the environment, [...] by facilitating better access to all forms of credit, particularly in the informal sector, taking measures towards ensuring women's access to property rights as well as agricultural inputs and implements*”<sup>309</sup>. Therefore, governments are asked to take active step in reviewing policies, strengthening women groups and equal employment opportunities, promoting education and improve girls enrolment in schools, establishing health facilities and elimination cultural believes and gender-based stereotypes<sup>310</sup>.

---

<sup>307</sup>UN GA, *Report of the United Nations Conference on Environment and Development*, A/CONF.151/26.

<sup>308</sup>Agenda 21, chapter 24, para 2 b.

<sup>309</sup>Ibidem, para 2 f.

<sup>310</sup>Ibidem, chapter 24, para 3.

The Beijing Platform for Action 1995 calls governments, institutions and authorities to eliminate economical inequalities, inequalities of power and decision-making roles at all levels and “gender inequalities in the management of natural resources and in the safeguarding of the environment<sup>311</sup>”. Therefore, this convention wanted to promote women role by involving women actively in the decision-making levels, integrating the gender approach and creating a network for the implementation of policies in favour of women.

Another important step is represented by the Johannesburg Plan of Implementation of the 2002 World Summit on Sustainable Development (WSSD) and precisely paragraph 25 launch actions to halve the proportion of people who are unable to reach safe drinking water by “facilitat[ing] access to public information and participation, including by women, at all levels in support of policy and decision-making related to water resources management and project implementation<sup>312</sup>” and by “mobiliz[ing] international and domestic financial resources at all levels, [...], ensuring that such infrastructure and services meet the need of the poor and are gender-sensitive.<sup>313</sup>”

The Millennium Development Goals besides considering water and sanitation as important targets focus also on gender equality. The decade 2005-2015 was entitled “Water for Life”<sup>314</sup> and wanted to highlight water-related programmes where it was possible the participation and the involvement of women. Goal 3 of MDGs aims to promote gender equality and empower women, and is connected with Goal 7, target 7.C dealing with the halving of the

---

<sup>311</sup>Beijing Platform for Action 1995, para 44.

<sup>312</sup>Plan of Implementation of the World Summit on Sustainable Development, para b.

<sup>313</sup>Plan of Implementation of the World Summit on Sustainable Development, para 25 a.

<sup>314</sup>UN Water, *International Decade for Action “Water for Life” 2005-2015*, available online at <http://www.un.org/waterforlifedecade/>.

proportion of the population without access to safe drinking water and basic sanitation<sup>315</sup>. In this way, the MDGs assumed that community-based organizations might help women to improve their social capital and opportunities, even by creating relationships among themselves; they asked for an improvement of water services that could mitigate women work as health carers so that they would acquire time for education. Furthermore, the improvement of water access and sanitation would have helped to reduce the risk for girls and women to be victims of sexual harassment while fetching water<sup>316</sup>.

The MDG was not entirely reached. Even though 2.6 billion people gained access to a drinking source, still 663 million people lack the chance to access an improved drinking resource whose majority live in developing countries; eight out of ten people still lived without improved drinking water resources in rural areas. As sanitation is regarded, the goal was not met as seven out of ten people lived without improved facilities and still 9 out of ten people practised open defecation in rural areas<sup>317</sup>. This constitutes a severe problem for women, as they may be victims of sexual assault as they wait for the night. Indeed, reports of attacks or harassment nearby toilet facilities are very common and it is estimated that in rural areas of the world one in three women are victims of violence once in their life. It is sadly famous the situation that Indian women are leaving. It is said that about 300 million women and girls are

---

<sup>315</sup>UNITED NATIONS, Millennium Development Goals, Goal 3. Promote gender equality and empower women, available online at <http://www.un.org/millenniumgoals/gender.shtml>.

<sup>316</sup>UN Water, (2006.), *Gender, water and sanitation: A Policy Brief*, United Nations, New York, p. 2.

<sup>317</sup>WORLD HEALTH ORGANIZATION, UNITED NATIONS INTERNATIONAL CHILDREN'S EMERGENCY FUND, (2015), *Joint Monitoring Program for Water Supply and Sanitation*, available online at <http://www.wssinfo.org/>.

obligated to use open defecation, which practically means go and search for a place (fields, roadsides, train tracks and so on) for toileting, due to the lack of facilities. In 2014 two teenagers girls from the Uttar Pradesh region left their home to go to the toilet, while looking for a suitable place, they were gang-raped and found, three days later, hanging on a tree. After this episode, unfortunately not uncommon, and thanks to engagement of writers and scholars, such as the head of *WaterAid India*, who funded a campaign to ask for toilets, the Indian government built more than a hundred new toilets in that region. However, the problem remains as the lack of toilet is one significant factors for the security and protection of women<sup>318</sup>.

After the end of the period of action of the MDGs, the new Sustainable Development Goals (SDGs) have entered into force. Goal 5 is entirely dedicated to gender equality: it aims at recognized and value the unpaid domestic work through the improvement of public services and protection policies; it wants to ensure the effective participation of women and equal opportunities for leadership at all levels of decision-making in public life, social, economic and political spheres; it asks States to undertake policies to ensure equal rights to economic resources, ownership and control over land and other properties<sup>319</sup>. To be effective, SDGs have to be implemented by several organizations and supporting with financial tools. One of these is the Fund for Gender Equality.

---

<sup>318</sup>NAQVI N., *Why change is crucial for women*, 25 October 2015, ASEPSIS, available online at <http://www.asepsis.org/blog/2015/10/25/why-change-is-crucial-for-women>.

For a full description of the episode see also BISWAS S., *Why India's sanitation crisis kills women*, 30 May 2014, BBC News; MCCARTHY J., *How A Lack Of Toilets Puts India's Women At Risk Of Assault*, 9 June 2014, NPR.

<sup>319</sup>UNITED NATIONS, Sustainable Development Goals, Goal 5: achieve gender equality and empower all women and girls, available online at <http://www.un.org/sustainabledevelopment/gender-equality/>.

The Fund for Gender Equality (FGE) is a fund for a financial support for programmes that aims at advancing women's empowerment both in economic and political sphere. In the first case, the FGE wants to increase women presence in the decision-making, technological, credit and livelihood decisions; while, politically, deals with helping women and girls to take leadership roles. The Fund, born within the UN Women Agency, has financed 96 programmes that interest more 121 civil society organizations and governmental organizations accounting for more than \$ 56,5 million<sup>320</sup>. After the approval of the SDGs, the fund will help the projects working following their requirements. The programmes that will be awarded are those demonstrate a strong engagement of marginalized women and that will bring a concrete impact in women and girls' lives. Indeed, the Fund is a demand-driven process that delivers money into the hands of organizations or advocates able and willing to promote gender equality at the local, national and even regional level<sup>321</sup>. For projects and programmes aimed at implementing the SDGs, last December the FGE announced the establishment of \$7,26 million in grants to divide between 24 projects in 80 countries for boosting “women's empowerment and political leadership and participation<sup>322</sup>”.

What is significant to underline is the fact that gender empowerment

---

<sup>320</sup>According to the last data available (2014), the Portfolio of the FGE counts 67 active programmes distributed in all the region of the world, for a total of \$43,8 million grants dividing into programmes backing women's leadership, engagement in electoral processes, access to resource by rural women, social and work protection, entrepreneurship and change in policies and legislation. Data are taken from UN WOMEN, FUND FOR GENDER EQUALITY, *2014 Annual Report*, pp.8-9.

<sup>321</sup> UN WOMEN, *Grant-Making, Fund for Gender Equality*, available online at <http://www.unwomen.org/en/trust-funds/fund-for-gender-equality/grant-making>.

<sup>322</sup>UN WOMEN, *Press release: UN Women's Fund for Gender Equality awards USD 7.3 million for implementation of the Sustainable Development Goals*, available online at: <http://www.unwomen.org/en/news/stories/2015/12/fge-awards-for-implementation-of-the-sdgs#sthash.OapWZocL.dpuf>.

deals not only with the increase in number of women present in institutions but with the need for a real change in political decision-making process<sup>323</sup>.

The international global framework for the management of waters consist of several international laws and agreements between States, at the regional level and at the international level, as the 1997 UN Watercourse Convention and many other treaties containing principles of customary law<sup>324</sup>. In this treaty, in article 6 deals with the equitable and reasonable utilization, explaining how water allocation should be made, considering social and economic needs, the population depending on that water resource in which a gender approach could be considered, however, it lacks of a clear recognition of a gender issue<sup>325</sup>. The 1992 UNECE Convention is believed to be more precise in its scope but, even though it contains strong laws about environment matters, it does not take into consideration a gender approach and it makes not mention of women role while explaining the public right of access to information, contained in article 16<sup>326</sup>.

For the proper and effective recognition of women in the water systems, many factors have to be taken into consideration. Their participation is linked to several rights: we need to guarantee the access to safe drinking water and sanitation for women; there is the necessity to recognize that even women

---

<sup>323</sup>EARLE A., BAZILLI S., (2013), *A gendered critique of transboundary water management*, Feminist review, Volume 103, Issue 1, pp.103.

<sup>324</sup>Ibidem, p.16.

<sup>325</sup>Ibidem, p. 109.

<sup>326</sup>Article 16 reads as follow: “the Riparian Parties shall ensure that information on the conditions of transboundary waters, measures taken or planned to be taken to prevent, control and reduce transboundary impact, and the effectiveness of those measures, is made available to the public. For this purpose, the Riparian Parties shall ensure that the following information is made available to (a) Water-quality objectives; (b) Permits issued and the conditions required to be met; (c) Results of water and effluent sampling carried out for the purposes of monitoring and assessment, as well as results of checking compliance with the water-quality objectives or the permit conditions.”

have to be land owners and their work in agriculture and household must be validated<sup>327</sup>.

Having met the legal approval and mandate from the agreement that create them, the implementation of legal decision is put into practice by organizations or specific entities controlling the correct implementation of the provisions contained in the convention<sup>328</sup>. However, the developments of the required are driven by political decision at the national level and are implemented by the groups of water managers who can be identified as professionals from governments or organizations. It is at this level that the need of a stronger participation by women is felt, as their presence allows to design more sustainable project with the best economic and social return<sup>329</sup>. The problem is that in international laws managing water lacks the promotion of the gender equality. As domestic, national laws depends partly from the international law due to the fact that what is agreed by a State in an international agreement it has to be implement in their own national legal regime. The result is that what is decided internationally must be implemented domestically, at the local level, national laws have to be in line and to follow the requirements contained in international principles. Therefore, nonetheless the increasing pressure over gender inclusion asked by the global community, there is less recognition of women participation at the international legal level.

---

<sup>327</sup> GLOBAL WATER PARTNERSHIP (2006), *Gender Mainstreaming: An Essential Component of Sustainable Water Management*, supra note.

<sup>328</sup> EARLE, A., BAZILLI, S., (2013), *A gendered critique of transboundary water management*, supra note, p. 105.

<sup>329</sup> GLOBAL WATER PARTNERSHIP (2006), *Gender Mainstreaming: An Essential Component of Sustainable Water Management*, supra note.

### **4.3 Gender in Water and Sanitation Sector**

To acquire prominent roles in the public sector as water management, landownership and in irrigation facilities, women have to be an equal access to water and sanitation. In order to analyse the relationship between men and women in this context, we have to consider three different categories of roles traditionally linked to women: market or productive roles, household maintenance and reproductive role and community role. The implementation of women passes through these distinctive elements and through the identification of women within the societies as the balances and division between household and public duties must be kept.

The role played by women in water and sanitation is strictly linked to their traditional position. Being carers, providers and managers of water at home, women have a great knowledge of water sources, quality and reliability. If women are not involved in the orientation of the sector, a relevant part of the demand is not considered, causing a failure in the impact of new projects<sup>330</sup>. Beside all the benefits explained in the previous sections, an increase in water supply can bring to an increase in the production of food, enhancing food security, especially in those parts of the world where food and water remain difficult to have. Moreover, the interaction between men and women abilities is fundamental for fruitful projects; the skills and the point of views of men and women are different and their mix might result is the development of new techniques and better approaches<sup>331</sup>.

Thanks to several experiments, some important results have been discovered. Women and men participation should start at the very beginning of

---

<sup>330</sup>WORLD BANK, (2000), *Toolkit on Gender in Water and Sanitation*, p.9.

<sup>331</sup>WORLD BANK, (2000), *Toolkit on Gender in Water and Sanitation*, p.9.

the project because otherwise it is very challenging for women to be included in later stages. Involving them in the technological decisions help women to acquire a deeper understanding of the process and their utilization in the future will be made easier. It has been also demonstrated that in cases where women were excluded, the outcomes have shown that poor women had not gained access to improved facilities<sup>332</sup>.

In many communities it is strong the idea that men deal with the public sphere while women are responsible for the private sphere. On the contrary, these experiments have shown that this distinction is obsolete; women have relevant opinion about water management in their home, knowledge that may be moved to public facilities asking local authorities for practical improvements.

The important benefits coming from an equal involvement of men and women do not at an easy cost. Women may suffer from fewer possibilities to move, reducing the number of systems to be controlled, they need more time for training and they have always to find a delicate equilibrium with their household duties. Although they face all these obstacles, the effectiveness in regular maintenance of water access controlled by women is higher if compared to the ones managed by men<sup>333</sup>.

What are the necessary objectives to consider for helping women effectively? First, there is the necessity to gather disaggregate data. The separate collection of data from men and women allow a deeper analyses because it is possible to see whether the results of a project are perceived in the same way by men and women. Secondly, after a separate analysis, it is important to understand how men and women work together in different areas,

---

<sup>332</sup>WORLD BANK, (2000), *Toolkit on Gender in Water and Sanitation*, p.9.

<sup>333</sup>WORLD BANK, (2000), *Toolkit on Gender in Water and Sanitation*, p.8.

from maintenance to financial arrangements, from construction to household decision-making. Authorities, both international and national, may be help in this study by the NGOs so that the results are more clear and impartial. Thirdly, it is necessary to put into effect what the previous stages have demonstrated. At the project level, ad hoc policies may be used so that to ensure women access; at the national or international level, governments and institutions have to provide supportive policies aimed at considering gender issues in the programmes and in the decision-making process<sup>334</sup>.

Efforts for gaining more rights have to be supported by international organization and also by Non-Governmental Organizations. These may be very important actors given that they might cover the role of mediators and partners in the mobilization of local communities. Because in NGOs we find experts, they can support projects and are helpful in providing experience in the collaboration with women in local communities<sup>335</sup>.

In conclusion, gender approach has started to be considered in policies only in the last years. For a future work, what is required is the assessment of other variables, as the socio-economic relations between men and women and linked to class, caste and religion. The gender approach aims also at considering the relations men and women create, their shared tasks and the exchanges of different point of views. Being such an essential sector for the survival of societies and communities, the empowerment of women have to be seen as an acquired value and as a change to improve social, economic and living conditions of groups suffering from scarce water, food and sanitation<sup>336</sup>.

---

<sup>334</sup>WORLD BANK, (2000), *Toolkit on Gender in Water and Sanitation*, p.10.

<sup>335</sup>WORLD BANK, (2000), *Toolkit on Gender in Water and Sanitation*, p.10.

<sup>336</sup>WORLD BANK, (2000), *Toolkit on Gender in Water and Sanitation*, p.10.

#### **4.4 Financing women's organization**

In the previous paragraph, I proposed an example of fund for programmes supporting gender equality in developing countries. However, around the world there are many donors, as States and organizations, willing to give financial aids. Nonetheless, even funding programmes bump into implementation challenges<sup>337</sup>.

With the adoption of the Paris Declaration of Aid Effectiveness in March 2005<sup>338</sup>, many organizations, advocates and researched questioned the approaches used to deliver economic aids to women's rights organizations and their relationship with the civil societies.

What is particularly significant is the several factors that donors have to take into consideration. They have to be sure that the amount of money they are giving will reach the women's organizations. Although donors' programmes contain an efficient accountability and a process of money tracking, insecurities and difficulties in societies constitute a problem<sup>339</sup>. In some cases small organizations cannot take grants because they lack of absorbing capacity and are not able to meet the requisites of the finance procedures. For example in Ghana, small organizations related to women cannot access to new funding

---

<sup>337</sup>OECD, (2008), *Innovative Funding for Women's Organizations*, Dac Network on Gender Equality.

<sup>338</sup>The Paris Declaration of Aid Effectiveness was adopted in 2005 at the Second High Level Forum on Aid Effectiveness in order to base development efforts on previous experience. The Declaration is based on five pillars, that are: i) ownership, so that developing countries can set their own strategies for poverty reduction, corruption and improvement of institutions; ii) alignment between donors and the local systems; iii) harmonization of the different policies used by donors; iv) results to which both donors and developing countries should reach; v) mutual accountability as donors and partners are accountable for development results. The Paris Declaration has been signed by more than a hundred countries and is available online at <http://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm>.

<sup>339</sup>OECD, (2008), *Innovative Funding for Women's Organizations*, supra note.

due to the fact that proposed funds are too high compared to their need and due to the detailed schemes asked for strategic plans and policies<sup>340</sup>.

Nevertheless, there are well-known NGOs and women's funds that help organizations to administer small grants, that are grants from \$500 to 20,000. These helping funds support expenses and programmes in order to allow organizations to cover the main costs, are mediators between several donors so that these small association might make long term projects, and, finally, involves projects regarding non-mainstream group, as homosexual and trans-genders<sup>341</sup>.

An example of these women's fund is the Global Fund for Women<sup>342</sup>. It is based in the idea that women, as well as men, are entitle of human rights and aims at helping women in those part of the world where their right are still denied because of their gender. They support women's effort fighting for their rights every day and want to provide every women with a work to have the right to vote, to run for office, to have a fair wage and live free from violence. The Global Fund for Women is based on two international documents: the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) and the Beijing Declaration and Platform for Action. Apart for proving local association with grants, this organization promotes a wide range of campaigns varying in their scope. The last campaign deals with the refugee crisis in the Middle East and is aimed at sustaining women in the re-building of their lives in a very challenging environment.

Another issue to take into consideration is the partnership between

---

<sup>340</sup>OECD, (2008), *Innovative Funding for Women's Organizations*, supra note.

<sup>341</sup>OECD, (2008), *Innovative Funding for Women's Organizations*, supra note.

<sup>342</sup> GLOBAL FUND FOR WOMEN, *What we stand for*, available online at [www.globalfundforwomen.org](http://www.globalfundforwomen.org).

donors and governments of developing countries<sup>343</sup>. The basis for a good communication and purposes of funds is the clear commitment of government to the relevance of gender equality in all the aspects of the governance. In this way, it is important to support policies and government efforts in the integration of gender-based actions to allow a proper inclusion of women. For this reason, donors may be helped by expertise and NGOs specialists for the assessment of gender situation and to follow the steps forward made by authorities by studying practises with a real impact<sup>344</sup>.

Beside NGOs, women's associations and States, a very relevant actor delivering funds is the World Bank. The World Bank (WB) is committed to promote gender equality in client countries through the Gender Action Plan (GAP)<sup>345</sup>. It aims at promoting equal economic opportunities for girls and women focusing on private sector initiatives stimulated demand and capacity in a bottom-up perspective. Within this project, the World Bank has created a database collecting statistics and data coming from gender actions and it renders data available to States for international organizations. Together with other organizations, the World Bank has bolstered the MDGs allocating more than \$65 billion to projects advanced by developing countries that consisted in improvement of women and girls health and education, women access to credit and land; it has financed small and medium enterprises owned by women and it focused on grant addressed to agricultural and rural development<sup>346</sup>. Knowing

---

<sup>343</sup>OECD, (2008), *Innovative Funding for Women's Organizations*, supra note.

<sup>344</sup> GLOBAL FUND FOR WOMEN, *What we stand for*, available online at [www.globalfundforwomen.org](http://www.globalfundforwomen.org).

<sup>345</sup> WORLD BANK, *Gender Action Plan*, available online at <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTGENDER/0,,contentMDK:22148542~pagePK:210058~piPK:210062~theSitePK:336868,00.html>.

<sup>346</sup>WORLD BANK, (2016), *Women, Business and the Law, Getting to Equal*, Washington DC

that the gender gap is persisting in some sectors above all among farmers and entrepreneurs, the WB is working with projects that promote women in these fields and want to make countries understanding the inner potential of women. Moreover, it is interested in the laws that restrict the chances of men. In the report on Women, Business and Law the WB states that in 155 countries women faces laws decreasing their economic opportunities, in 100 economies women face job restrictions, and in some States husbands can prevent women from having a job. The majority of the States facing these problems are in Middle East and Africa and partly also in some regions of Asia<sup>347</sup>. Indeed, women suffer from several restrictions due to their nature, as, still in many places of the world they are seen as family and children carers, which is in contrast with the principles contained in CEDAW. At the same time, the presence of a law affirming gender equality does not mean a real equality in the real life, resulting from an inefficient implementation of law, poor enforcement or low capacity. The WB has worked hard in association with governments and NGOs to increase equality in a concrete way and it has obtained good results in protection women from violence, in countries as Kenya, Lebanon, Malawi; in providing incentives to work as in Lao DPR, Mexico and Oman; and in guaranteeing access to a court, as in Chad, Colombia and Tunisia<sup>348</sup>.

From the experiences gained by organizations and international financing mechanisms, the integration of gender-sensitive approach to policies and laws bring benefits both for the civil societies and for women rights. The involvement of women in water-related projects and in programmes promoting women health, education and empowerment results in more sustainable approaches, in

---

<sup>347</sup>WORLD BANK, (2016), *Women, Business and the Law, Getting to Equal*, supra note.

<sup>348</sup>Ibidem.

reduction of hunger and child mortality, in designing new solutions. An example of how the identification of women's needs helped in facilitating access to training and in acquiring participation.

#### **4.5 Case study: Gender Pilot Plan in Peru**

In Peru more than 75% management positions, of public and private enterprises, including water user's organizations (WUOs) are occupied by men. Women face cultural and social restrictions that limit women's participation in water management systems as participation was linked to being a landowner that, therefore, limited their inclusions as women own less than 25% of lands in Peru<sup>349</sup>.

The Gender Pilot Plan (GPP), designed by the Peruvian Ministry of Agriculture and carried out between 2007 and 2009 and supported by the WB Group Gender Action Plan, involved WUOs located in the regions of Cajamarca and Arequipa, respectively in northern and southern Sierra; the scope was to empower women participations as agricultural producers and assisting women willing to acquire a role within the management of the WUO. Women were provided with participatory tools and practical techniques in order to strengthen their role<sup>350</sup>.

The goals to be achieved were the establishment of rules to include women in water management; to strengthen their role by increasing their participation in water management system; and to train women in production

---

<sup>349</sup>WORLD BANK, (2013), *Empowering Women in Irrigation Management, the Sierra in Peru*, Environment and Water Resources, Washington D.C.

<sup>350</sup> DENYS E., STANLEY V., MILLS A., (2014), *Empowering Women in Irrigation Management – The Case of the Gender Pilot Plan in Peru*, Agriculture and Environmental Services Department, Issue 8.

issues and to focus on women's contribution to their household's economy.

The GPP lasted 15 months and involved around two thousand participants half of which were women. It promoted activities oriented to the identification of gender barriers and obstacles and to create proposals and plans aimed at sensitize population and governments. In the planning moments of the projects, it was observed that women were afraid to express their ideas when men were listening to them because of a lack of self-esteem; as a consequence it has been necessary to create two different committees<sup>351</sup>. Due to this obstacle felt by women, which is part of a stereotyped situation linked to cultural perceptions, specific workshop were opened to make women more self-confident and to react to the common belief that man are better leaders<sup>352</sup>. This provision sustains the principle contained in the CEDAW and in the MDGs in order to counteract to the diffusion of this discriminatory concepts. It was established also a joint workshop to raise awareness among men leader of the importance of using a gender perspective in water policies and plans.

The results of these plan have shown that both men and women farmers reacted positively to their inclusion in the project. The GPP raised awareness among the members of the civil society and about needs and expectations of women regarding the water management in agriculture. Women increased their knowledge, especially those linked to technology and gained in self-confidence. At the end of the fifteen-month period, the WUOs acquired ad least one women in a relevant management position, there was a 50% increase in the taking part to training with men supporting women's skill improvement;

---

<sup>351</sup>CHINARRO L., HIDROGO C., DE NYS E., (2011), *Mujeres líderes en la gestión del Riego: una fuente de inspiración para la Sierra del Perú*, World Bank

<sup>352</sup> DENYS E., STANLEY V., MILLS A., (2014), *Empowering Women in Irrigation Management – The Case of the Gender Pilot Plan in Peru*, supra note

40% of women leaders perform their duties and take decision in the decision-making procedure, compared to the previous 20%.<sup>353</sup> These all led to a proper recognition of women in the WUOs.

A milestone was obtained. The National Water Authority agreed to include the gender approach in the water management rules by adopting the *Reglamento 0266-2012 ANA-Resolución Jefatural*<sup>354</sup>, which makes women's participation in WUOs mandatory and enables women to claim their rights.

However some important objectives were not met. For example, the owning of land did not increase, as women who are not married had no right to own the land of the household, according to the Peruvian law. Furthermore, the cultural limitations played an important role because women felt self-confidence and they were not familiar, due also to the high rate of illiteracy, with water management governing rule. In fact, land property is attributed to the head of the household, which is generally considered to be a man, and women may lose the control over land after marriage, besides the few cases in which they can be landowners<sup>355</sup>.

Not to lose the new approach, actions were taken to further mainstream gender in WUOs, by implementing a second project, the PSI-Sierra <sup>356</sup>. Therefore, water engineers are trained on gender in water management, and are controlled by PSI-Sierra specialists; gender has been included in agricultural and irrigation activities by identifying difference in need

---

<sup>353</sup>WORLD BANK, (2013), *Empowering Women in Irrigation Management, the Sierra in Peru*, supra note.

<sup>354</sup>REPUBLICA DEL PERU, Resolución Jefatural n°0266-2012.

<sup>355</sup> WORLD BANK, (2013), *Empowering Women in Irrigation Management, the Sierra in Peru*, supra note.

<sup>356</sup> WORLD BANK, (2013), *Empowering Women in Irrigation Management, the Sierra in Peru*, supra note.

and use.

This simple but challenging example shows how cultural idea and the identification with traditional roles between men and women are difficult to overcome leaving women without the chances to have their own voice. If a gender-based project has to be effective it is necessary to provide women with more self-esteem and to create a network between men and women based on trust. Identifying the use, the role and the knowledge of women will increase the efficiency and will give better outcome in water management systems. Water professional must be aware of the context they are working in and the information they look for are in the hand of women.

Even though many steps in the recognition of women's role in the public sector of water management have been made, still many have to be today. In many part of the world, the idea of including women in the institutional water management is impossible because of strict governmental laws, of cultural belief and because of the lack of women awareness.

The action to be done in the near future is that of guaranteeing to all women in the world access to drinking water and sanitation, and the right to have a private toilet. If these basic needs are not fulfilled, it is impossible and reckless to think to women inclusion in decision-making processes. The governments of those countries, with the help of international organizations, NGOs, and international finance institutions, have to provide women a better condition of life so that women can raise their awareness toward their rights. Although the Convention on the Elimination of All Forms of Discrimination Against Women entered into force more than thirty years ago, their aims are still not met and their principle are not recognized in all the part of the world. What

has to be done is a stronger implementation of the principles proposed by the CEDAW by adopting national and regional policies supporting women rights and a gender approach in the public sphere of society.

Another step that has to be done is the adoption, at the international level, of laws and principles concerning water and water irrigation systems. These laws should contain provisions aimed at helping developing countries to meet their development goals and to pass development policies oriented to the inclusion of women in all the step of the processes. Until these principles will not be set forth by the international community with laws and concrete aids, it is difficult to think that countries suffering from several obstacles and difficulties will implement real gender-based laws and practices.

## **CONCLUSION**

The aim of my work was to show the importance of a full recognition and application of the water rights. In several fields of the present life, water is acquiring a very relevant role due to the several challenges it is dealing. Growing population, climate change, and food security are significant issue that concerns water crisis. Together with these stressing issues, water assumes a different role in some of the most relevant sectors: conflicts, economy and gender issues.

Due to the instability related to water, caused by a wide range of political, economic and social issue, I have tried to analyse the current international approach concerning water.

After having recognized the right to water at the international level, many steps have been made in the regulation of this right through MDGs and other key programmes. However, there are still obstacles to overcome as currently many children have to struggle against water-born disease and women, especially girls, are victims of sexual assault as they are forced to travel by night and in dangerous areas because they cannot access a toilet.

Water has been a cause of war since the ancient times and in more recent decades it has started to be seen no longer as a cause but as a target or a tool by conflicting groups. Moreover, water has been an economic good. Due to the growing scarcity of water and due to the increase of fear for future food scarcity, States are trying to buy lands and waters from other nations.

Starting from the existing international convention about the use and the access to water, it is possible to analyse the step made by the

international community to protect freshwater in all its forms. The ratified documents concern with access, use, protection and prevention of pollution of water reserves in order to guarantee water for the current civil society and, at the same time, protecting water for future generations.

At the regional level, States have formed joint commission, signed bilateral or multilateral agreements and established a system of data sharing in order to create a network for the regulation of water based on cooperation, or when and where this is not possible, on the will to solve conflicts and disputes with a future prospective of settling them in a peaceful way. These regional accords are relevant as they constitute a form to increase the regulation of water resources that historically have been a cause of conflict.

At the global level, there is a strong commitment from States to regulate water in case of shared reserves so that the most important documents are related to the use, data sharing and control management of shared water resources. They contain some of the most significant principles of international water law: the equitable and reasonable use and the no harm principles. Furthermore, in the last thirty years, countries have paid attention to the environment issue, including in agreements the importance of the protection of the natural reserves. This position has been helped by the current acknowledgement about pollution, natural disasters, climate change and recognition of the damages made in previous centuries.

Having said that internationally States have tried to keep attention on water, many other steps have to be made as water needs a regulation in several sectors. In the current situation of many countries, especially those in Middle East, Africa and Southern Asia suffering from water shortage and

affected by groups targeting water, the international organizations with the help of regional, local and inter-state authorities should reconsider the role of water in dispute and they should take stronger efforts to protect it through international agreements. These agreements should meet the local and regional needs while at the same time they should take into consideration the conditions, the protection and the relevance of water resources.

Because of the future threat of a serious water crisis and the status of water as an economic good, the international community should implement a regulation over water in the trade laws. Being an economic good, water needs a strong regulation for its vital nature. States should engage in a complex table of negotiations for finding a solution to the existing gap between agreement over water and the legal systems. In a broader view, it is essential also the intervention of international financial institutions that would guarantee an equal partition of water between the countries involved and the effects on downstream regions. Another project to be implemented is the spread of information about these economic trades among civil populations that, with the support of NGOs and other actors, could stand for or against the trades, protecting and supporting the civil society which do not have a role in the management of water resources.

All these sectors, in which water is involved, are currently dealing with a wide range of risky issues. Population, inequalities, climate changes, scarcity of natural resources are posing a growing number of circumstances that are undermining the existing equilibrium. In this sense, it is absolutely relevant the position that State will take internationally to protect resources

while guarantee basic need and helping developing countries to reach significant objectives in water management processes.

In conclusion, distinct documents should be ratified for the protection of water, as it will face several challenges as its availability starts to decrease. Further strengths have to be taken to create an international network for the protection, management and safety of water in all its forms. This would allow States to decrease the pressure among water allocation and would help underdeveloped and developing countries to use their reserves properly, creating a stronger international community able to overcome future challenges.



## REFERENCES

ADBELLATIF M., (2007), *Mainstream Gender Dimension in Water Management for Food Security*, in Sagardoy J.A. (ed.), Lamaddalena N. (ed.), Quagliariello R. (ed.), Chimonidou D. (ed.), Guelloubi R. (ed.), Pinca V. (ed.), *Mainstreaming gender dimensions in water management for food security and food safety*, Bari: CIHEAM, p.97-104

ALLAN A.J., (2001), *The Middle East Water Question: Hydropolitics and the Global Economy*, IB Taurus, Northampton, Massachusetts

BOISSON DE CHAZOURNES L., (2013), *Fresh Water in International Law*, Oxford University Press, Oxford

BROWN WEISS E., (2013), *International Law in a Water-Scarce World*, The Hague Academy of International Law Monographs, Vol 7, Martinus Nijhoff Publishers, Leiden

BROWN WEISS, E., SLOBODIAN, L., (2014), *Virtual Water, Water Scarcity, and International Trade Law*, Journal of International Economic Law, Volume 17, Number 4, pp.717-737.

CARIUS A., DABELKO D.G., WOLF T.A., (2004), *Water, Conflict and Cooperation*, Policy Brief, ESCP Report, Issue 10

CHINARRO L., HIDROGO C., DE NYS E., (2011), *Mujeres líderes en la gestión del Riego: una fuente de inspiración*

CULLET P., (2011), *Water Law in a Globalized World: the Need for a New Conceptual Framework*, Journal of Environmental Law, Volume 23, Number 2, pp. 233-254

DE VIDO S., (2012), *The Right to Water as an International Custom: The Implications in Climate Change Adaptation Measure*, Carbon & Climate Law Review, Volume 6, Issue 3, pp. 221 – 227

DE VIDO S., (2012), *The European Contribution to the Recognition of the Human Right to Water*, European Yearbook on Human Rights, pp.197-214

DENYS E., STANLEY V., MILLS A., (2014), *Empowering Women in Irrigation Management – The Case of the Gender Pilot Plan in Peru*, Agriculture and Environmental Services Department, Issue 8

EARLE A., BAZILLI S., (2013), *A gendered critique of transboundary water management*, Feminist review, Volume 103, Issue 1, pp.99-119

FAURE G.O., RUBIN J.Z. (eds), (1993), *Culture and Negotiation: The Resolution of Water Disputes*, Sage, Newbury Park, California

FISHER D., (2009), *The Law and Governance of Water Resources: the Challenges of Sustainability*, Cheltenham, Northampton

FONG M. S., WAKEMAN W., BHUSHAN A., (1996), *Toolkit on gender in water and sanitation*, Gender Toolkit Serie Number 2, Washington D.C

FRANCO J., MEHTA L., VELDWISCH G.J., (2013), *The Global Politics of Water Grabbing*, Third World Quarterly, Volume 34, Number 9, pp.1651-1657

FRANCO J., KAY S., et al., (2012), *The Global Water Grab: A Primer*, Amsterdam: Transnational Institute, Amsterdam, available at <https://www.tni.org/en/publication/the-global-water-grab-a-primer>

GERLAK A. K., LAUTZE J., GIORDANO M., (2011), *Water Resources Data and Information Exchange in Transboundary Water Treaties*, International Environmental Agreements: Politics, Law and Economics, Volume 11, Number 2, pp. 179-199

GLEICK P., HEBERGER M., (2014), *Water Conflict: Events, Trends, and Analysis*, The World's Water, Water Brief 3, Volume 8, p. 159-171

GRAFTON QUENTIN R., et al. (ed.), (2014), *Global Water: Issues and Insights*, the Australian National University Press, Australia

GRIFFITHS J., LAMBERT R., (2013), *Free Flow: Reaching Water Security Through Cooperation*, UNESCO

HODGSON S., (2004), *Land and Water – the rights interface*, adaptation by FAO

INTERNATIONAL BUREAU for the PERMANENT COURT OF ARBITRATION (eds), (2003), *Resolution of International Water Disputes*, The Hague, Kluwer

INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD), WAHAJ R., HARTL M., (2007), *Gender and water, securing water for improved rural livelihoods. The multiple-users system approach*, Rome, p. 3

JALAL I., (2014), *Women, Water, and Leadership*, Asian Development Bank, Number 24

LEB C., (2012), *Water Conflicts and the Role of International Law in Their Prevention*, available at SSRN: <http://ssrn.com/abstract=2000951>

McCAFFREY S., (2007), *The Law of International Watercourse*, Oxford University Press, Oxford

McCAFFREY S., (2011), *International Water Law for The 21st Century: The Contribution Of the UN Convention*, Journal of Contemporary Water Research and Education, 118.1 3.

McCAFFREY S., (2009), *The International Law Commission Adopts Draft Articles on Transboundary Aquifers*, *The American Journal of International Law*, Volume 13, Number 2, pp. 272-293

MECHLEM K., (2008), *International Law Commission Adopts Draft Articles of a Transboundary Aquifers Convention*, *American Society of International Law Insights*, Volume 12, Issue 18. Available online at <https://www.asil.org/insights/volume/12/issue/18/international-law-commission-adopts-draft-articles-transboundary>

METHA L., VELDWISH G.J., FRANCO J., (2012), *Introduction to the Special Issue: Water Grabbing? Focus on the (re)appropriation of Finite Water Resources*, *Water Alternatives*, Volume 5, Issue 2, pp. 193-20

NAQVI N., *Why change is crucial for women*, 25 October 2015, ASEPSIS

RAVNBORG H.M., (2004), *Water and Conflict: Conflict Prevention and Mitigation in Water Resources Management. DIIS Report*, Danish Institute for International Studies (DIIS), Copenhagen, Denmark

RULLI M.C., SAVIORI A., D'ODORICO P., (2013), *Global Land and water grabbing*, *Proceedings of the National Academy of Science*, Volume 110, Issue 3, pp. 892-897

SALMAN M.A., (2009), *The World Bank Policy for Projects on International Waterways: An Historical and Legal Analysis*. World Bank. © World Bank. -- <https://openknowledge.worldbank.org/handle/10986/2631> License: CC BY 3.0 IGO

SOSA M., ZWARTEVEEN M., (2012), *Exploring the Politics of Water grabbing: The case of large mining operation in the Peruvian Andes*, *Water Alternatives*, Volume 5, Issue 2, pp. 360-375

STEPHENS T., (2011), *Re-Imagining International Law?*, *Maryland Law Review Endnotes*, Forthcoming; Sydney Law School Research Paper No. 11/47. Available at SSRN: <http://ssrn.com/abstract=1909673>

SWAIN A., (2001), *Water Wars*, in WRIGHT D. J., *International Encyclopedia of the Social & Behavioral Sciences*, 2nd ed, Volume 25, Oxford, Elsevier, pp.769-781

THIELBÖRGER P., (2014), *The Right(s) to Water. The Multi-Level Governance of a Unique Human Right*, Springer, Heidelberg

TNI, FIAN INTERNATIONAL, FIAN NETHERLANDS, FIAN GERMANY, FIAN AUSTRIA, IGO IN POLAND, FDCL IN GERMANY, *The European Union and the Global Land Grab*, Hands off the Land.

UITTO J.I., DUDA A.M., (2002), *Management of Transboundary Water Resources: Lessons from International Cooperation for Conflict Prevention*, The Geographical Journal, Volume 168, Number 4, pp. 365-378

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP), GWA, (2006), *Resource Guide: Mainstreaming Gender in Water Management*

UNITED NATIONS ENVIRONMENTAL PROGRAMME (UNEP), VITAL WATER GRAPHICS, (2008), *An overview of the state of the world's fresh and marine waters*, United Nations Environment Programme. United Nations Educational Scientific, Cultural Organization, New York

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION (UNESCO), (2013), *Free Flow – Reaching Water Security Through Cooperation*, Paris, France

WALKER A., (2015), *What are water rights?*, Gizmondo, 13<sup>th</sup> April 2015

WAHAJ R., HARTL M., (2007), *Gender and Water: Securing Water for Improved Rural Livelihoods: the Multiple-Uses System Approach*, Paper prepared by IFAD

WOUTERS P., (2013), *International Law – Facilitating Transboundary Water Cooperation*, published by the Global Water Partnership, Global Water Partnership Technical Committee (TEC) Background Papers, Number. 17, 2013. Available at SSRN:<http://ssrn.com/abstract=2363809>

WOUTERS P., RIEU-CLARKE A., (2004) *The role of international water law in ensuring 'good water governance': a call for renewed focus and action*, Journal of Water Law, Volume 15, Number 3/4, pp-89-92

WOUTERS P., VINOGRAD S., BJORN-OLIVER M., (2009), *Water Security, Hydrosolidarity, and International Law: A River Runs Through It...*, Yearbook of International Environmental Law, pp. 97-134 -- Available at SSRN: <http://ssrn.com/abstract=2365328>

WORLD BANK, (2013), *Empowering Women in Irrigation Management, the Sierra in Peru*, Environment and Water Resources, Washington D.C.

YAMADA C., Special Rapporteur for the ILC, (2008) *Fifth Report on Shared Natural Resources: Transboundary Aquifers*, February 21, 2008, UN Doc. A/CN.4/591, available at [http://legal.un.org/docs/?path=../ilc/documentation/english/a\\_cn4\\_591.pdf&lang=ESX](http://legal.un.org/docs/?path=../ilc/documentation/english/a_cn4_591.pdf&lang=ESX)

ZWARTEVEEN M., (2011), *Questioning masculinities in Water*, Economic and Political Weekly, Volume 46, Issue 18, pp. 40-48

## LINKS

ACQUASTAT, <http://www.fao.org/nr/water/aquastat/main/index.stm>

FAO WATER, <http://www.fao.org/nr/water/index.html>

GENDER AND WATER ALLIANCE, <http://genderandwater.org/en>

GLOBAL POLICY, <https://www.globalpolicy.org/>

INTERNATIONAL DECADE FOR ACTION "WATER FOR LIFE" 2005-2015,  
<http://www.un.org/waterforlifedecade/gender.shtml>

INTERNATIONAL WATER ASSOCIATION, <http://www.iwa-network.org/>

INTERNATIONAL WATER MANAGEMENT INSTITUTE,  
<http://www.iwmi.cgiar.org/>

PACIFIC INSTITUTE, <http://pacinst.org/>

UN WATER, <http://www.unwater.org/>

WATER ALTERNATIVES, <http://www.water-alternatives.org/index.php>

WATER GRABBING, <http://watergrabbing.net/>

WORLD WATER, <http://worldwater.org/water-conflict/>

WORLD WATER ASSESSMENT PROGRAMME, UNESCO,  
<http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/>

## DOCUMENTS

### **Reports**

2030 WATER RESOURCES GROUP, (2015) *Building Partnerships for Water Security*, 2014 Annual Report

2030 WATER RESOURCES GROUP, (2009), *Charting Our Water Future, Economic frameworks to inform decision-making*

CENTRE ON HOUSING RIGHTS AND EVICTION (COHRE), (2004), *Legal Resource for the Right to Water, International and National Standards*, Source 8

INTERNATIONAL GROUND WATER RESOURCES ASSESSMENT CENTRE, (2014), *Factors Enabling Transboundary Aquifer Cooperation. A Global Analysis*

OECD, (2008), *Innovative Funding for Women's Organizations*, Dac Network on Gender Equality

UNITED NATIONS, (2015), *Report of the Commission to the General Assembly on the work of its sixtieth session*, Yearbook of the International Law Commission 2008, Volume II, Part Two, Geneva

UNITED NATIONS COMMITTEE ON ECONOMIC SOCIAL AND CULTURAL RIGHTS (CESCR), (2003), *General Comment No. 15, the Right To Water*, E/C.12/2002/11

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UNECE), (2013), *Guide to Implementing the Water Convention*, Geneva, Switzerland

UNITED NATIONS ORGANIZATION FOR EDUCATION, SCIENCE AND CULTURE - INTERNATIONAL HYDROLOGICAL PROGRAMME (UNESCO-IHP), (2015), *Public Participation and Water Resources Management: Where Do We Stand in International Law?*

UNITED NATIONS WORLD WATER ASSESSMENT PROGRAMME (WWAP), (2015), *United Nations World Water Development Report 2015. Water for a Sustainable World*

UN WATER, (2015), *Annual Report 2014*

UN WATER, (2015), *UN-WATER Work Programme 2014-2015*

UN WATER, (2014), *Delivering as One on Water Related Issue*, UN-Water Strategy 2014-2020

UNITED NATIONS WOMEN, FUND FOR GENDER EQUALITY, (2014)  
*Annual Report*

WORLD BANK (2005), *Agricultural Growth for the Poor, an Agenda for Development*

WORLD BANK, (2000), *Toolkit on Gender in Water and Sanitation*

WORLD BANK, (2012) *Gender and Equality*, World Development Report

WORLD BANK, (2016), *Women, Business and the Law, Getting to Equal*, Washington DC

WORLD BANK, (2013), *Empowering Women in Irrigation Management, the Sierra in Peru*

WORLD HEALTH ORGANIZATION, UNITED NATIONS INTERNATIONAL CHILDREN'S EMERGENCY FUND, (2015), *Joint Monitoring Program for Water Supply and Sanitation*

***U.N. General Assembly***

UN GA, Res. 51/229, July 8, 1997, A/RES/51/229

UN GA, Res. N. 58/217, December 2003, A/RES/58/217

UN GA, Res. N. 64/292, July 2010, A/RES/64/292

UN GA, Res. N. 66/104, December 9, 2011, A/RES/66/104

UN GA, Res. N. 66/104, January 13, 2012, A/RES/66/104

UN GA, Res. N. 68/157, December 2013, A/RES/68/157

UN GA, Report. N. 68/970, August 12 2014, A/68/970,

UN GA, Res. N. 69/215, January 15 2015, A/RES/69/215

UN GA, *Report of the United Nations Conference on Environment and Development*, A/CONF.151/26

***UN Committee on Economic Social and Cultural Rights (CESCR)***

UN CESCR, *General Comment No 14, The right to the highest attainable standard of health*, August 2000, E/C.12/2000/4

***U.N. Economic Commission for Europe***

UNECE, Convention on the Protection and Use of Transboundary Watercourses and International Law, March 17<sup>th</sup>, 1992, U.N. Doc. E/ECE/1267

***International Law Commission***

ILC, Draft Articles on the Law of Transboundary Aquifers, February 28 2008, UN Doc. A/RES/66/104

***European Union***

Communication from the Commission to the Council and the European Parliament of 19 October 2004, *EU Guidelines to support land policy design and reform processes in developing countries*. COM (2004) 686.

*Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources.*

## RINGRAZIAMENTI

Un ringraziamento speciale va a mamma Ornella e papà Gianni per il loro infinito amore, per il loro supporto continuo e per esserci sempre al mio fianco, aiutandomi a superare tutte le difficoltà. Grazie per avermi sostenuto in tutte le scelte che ho fatto e in quelle che farò, per essere sempre presenti, per aiutarmi a rialzarmi quando cado e per non farmi mai mancare amore e affetto.

Un grazie doveroso va a mia sorella Maddalena e a mio cognato Rudi, fratello a tutti gli effetti. Grazie per i vostri preziosi consigli, per le risate, i viaggi insieme, le chiacchierate, ma soprattutto grazie per essere grandi esempi di vita e fidati consiglieri.

Un ringraziamento tutto particolare va a Vanessa ed Edoardo. A loro devo le risate migliori, i momenti più divertenti e anche quelli più spaventosi. La vostra semplicità e i vostri sorrisi riaccendono la bambina spensierata che c'è in me e la vostra gioia riaccende anche le giornate più buie.

Un grazie speciale va alle mie amiche, a Linda, Giulia, Martina, e Sara per essere compagne di avventure, di pettegolezzi, di confidenze, di tantissime esperienze e di grandi risate e molto divertimento.

Grazie a chi ha condiviso con me questo percorso di studi, ad Anna Paola, Giulia e Flavia, per aver condiviso gioie e dolori di questi lunghi anni, e di essere state partecipi alle corse e ai caffè tutti veneziani.

Un grazie davvero speciale a Michela, una vera amica. Grazie per avermi trascinato in nuovi progetti, di avermi coinvolta in nuove esperienze, ma soprattutto grazie di tutti quei momenti che porterò sempre nel cuore: i caffè da Tonolo, le colazioni all'Impronta, i messaggi pieni di hashtag, i nostri sorrisi, le nostre risate e le nostre sedute di ansia. Grazie per essere un'amica e confidente preziosa.

Un ringraziamento speciale alla professoressa Sara De Vido che con grande pazienza e disponibilità mi ha guidato nella scrittura di questa tesi, e che con le critiche e i suggerimenti sempre costruttivi e sinceri mi ha guidato lungo questo percorso.

Grazie a tutti le persone che mi sono state vicino, che mi hanno fatto crescere con le loro critiche e che mi hanno sostenuta durante tutto il percorso universitario. Grazie a chi, vicino o lontano, ha condiviso con me le difficoltà e le soddisfazioni di questi anni.