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The Geopolitics of Land and Water Grabbing

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Abstract

I fenomeni di Land Grabbing e di Water Grabbing hanno assunto crescente criticità nell'ambito delle Relazioni Internazionali, riflettendo l'intreccio complesso tra geopolitica, economia e sostenibilità ambientale. Questa tesi fornisce una panoramica completa il più possibile sul Land Grabbing e il Water Grabbing, esplorando la loro evoluzione storica, i motivi scatenanti, le implicazioni globali e i quadri normativi. Un'interpretazione plausibile fa risalire il fenomeno del Land Grabbing alle espansioni coloniali, periodo in cui si crea il collegamento tra le risorse naturali ed il loro sfruttamento per il guadagno economico. Nell'era contemporanea, le acquisizioni di terre su larga scala sono diventate sempre più diffuse, la mercificazione delle risorse naturali viene intensificata da fattori come la crescita demografica, le preoccupazioni per la sicurezza alimentare e la crescente domanda di biocarburanti. Queste acquisizioni coinvolgono spesso lo spostamento delle comunità locali, il degrado ambientale e l'instabilità sociale, evidenziando le sfide etiche e legali insite in tali pratiche. Allo stesso modo, anche il Water Grabbing ha assunto maggior rilevanza negli ultimi anni, il discorso di accaparramento legato all'acqua è particolarmente critico a livello sociale in quanto l'acqua è un bene fondamentale per la sussistenza umana. La distribuzione ineguale delle risorse idriche a livello globale, unita agli impatti del cambiamento climatico (come la desertificazione e la perdita di biodiversità) hanno esacerbato le tensioni legate alla scarsità d'acqua. In questo contesto, la necessità di garantire accesso alle risorse idriche ha scaturito tensioni politiche tra stati, i quali percepiscono sensibilmente la scarsità, o la minaccia di una scarsità imminente. Le modalità dei Water Grabs variano, spaziando negoziazioni, all'appropriazione illecita e/o violenta, sottolineando gli squilibri di potere e le ingiustizie insite nel processo. La natura globalizzata del Land Grabbing e del Water Grabbing pone sfide alla governance e alla regolamentazione. Infatti, il coinvolgimento di una molteplicità di attori rende ancor più complesso affrontare i fenomeni sotto un punto di vista giuridico, per esempio si vedono coinvolti gli stati, ma anche le società transnazionali. La carenza di definizioni giuridiche acclamate e un atto avente forza di legge *ad hoc* pongono un grosso limite alla regolamentazione ed al monitoraggio del Land e Water Grabbing. Nonostante questa grossa mancanza esistono delle iniziative internazionali che affrontano questi fenomeni promuovendo una amministrazione responsabile delle terre, ne sono un esempio le linee guida della FAO (Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests). Tuttavia, si tratta di atti a adozione volontaria, sicuramente positivi, ma comunque non stringenti dal punto di vista normativo.

La competizione per le risorse naturali ha il potenziale per esacerbare conflitti e disuguaglianze sociali esistenti, evidenziando la necessità di pratiche di gestione delle risorse sostenibili e meccanismi di distribuzione equi. Tra tutti i casi di Land Grabbing e Water Grabbing menzionati in questa tesi uno in particolare verrà analizzato in profondità. Nell'ultimo capitolo di questa tesi verrà preso in esame il caso della centrale idroelettrica Aswan High Dam, costruita in Egitto sul fiume Nilo in Africa nord-orientale. Le complesse dinamiche geopolitiche tra gli stati che si spartiscono le risorse del fiume Nilo verranno affrontate. Inoltre attraverso l'analisi quantitativa, questo case study tenderà di mettere in luce gli effetti di una delle più comuni pratiche di Land Grabbing: il dirottamento dei corsi d'acqua attraverso le dighe. In conclusione, questa tesi punta a sottolineare l'urgente necessità di approcci olistici che prioritizzino la sostenibilità ambientale, la giustizia sociale e la cooperazione internazionale. Si richiama ad affrontare le cause alla base dell'impovertimento naturale globale ed alla corsa alle risorse, promuovendo trasparenza e responsabilità nelle pratiche di redistribuzione delle stesse.

Table of Contents

Table of Figures	8
Introduction	10
Chapter One: Land Grabbing and Water Grabbing: definitions and triggering factors	14
1.1. Land Grabbing	15
1.2. Water Grabbing	20
1.3. Historical evolution of grab practices	23
1.4. Geopolitics of grabs	25
1.4.1. Political power asymmetries in recent Water Grabbing cases	25
1.4.2. Quantitative overview of the extension of Large-Scale Land Acquisition (LSLA)	37
1.5. Triggering factors	43
1.5.1. Population growth and social pattern changes	44
1.5.2. Increase in oil prices and growing demand for biofuels	46
1.5.3. The 2009 EU Renewable Energy Directive, and the United States 2007 policy drift on bioethanol use	47
1.6. Indirect Land Use Change (ILUC)	52
Chapter Two: Global current implications and international regulation	54
2.1. The subjects of international law: State and Non-State Actors	56
2.1.1 The centrality of the State	57
2.1.2 Transnational corporations (TNCs)	58
2.1.3 Non-governmental Organisations (NGOs) and International Organisations (IOGs)	61
2.2. Land Grabbing's legal framework	62
2.2.1 The right to food and food security	62
2.2.2 Global land Policies	66
2.2.3 The European Union Policy Guidelines	67

2.2.4	The WBG’s RAI Principles	68
2.2.5	The African Union Framework and Guidelines on Land Policy	68
2.3.	Water Grabbing’s legal framework	69
2.3.1	The right to water and water security	70
2.3.2	FAO Voluntary Guidelines on the Governance of Tenure of Land, Fisheries and Forests	74
2.4.	The SDGs and the MDGs	76
2.5.	Free, Prior, and Informed Consent (FPIC) of Indigenous populations	79
2.6.	Notes on the limitations of the current legal system	81

Chapter Three: The Case study of Egypt and the Aswan High Dam on the River Nile

3.1.	Methodology and justification	88
3.2.	Variable 1: food security	90
3.3.	Variable 2: Affordable and clean energy	95
3.4.	Final evaluation and recommendations	100

Conclusion

102

References

104

Table of Figures

Chapter One

1.1. Patagonia	19
1.2. Large-Scale Land Acquisition	37
1.3. Distribution of grabs	38
1.4. Population's increase overtime	45
1.5. Congressional volume target for renewable fuels	50
1.6. Biofuel production	51

Chapter Two

2.1. The cycle of food insecurity	63
2.2. Did we achieve the MDGs?	78

Chapter Three

3.1. The Nile	84
3.2. Percentage of arable land equipped for irrigation (3-year average)	90
3.3. Inflation rate, end of period consumer prices (CPI) annual percent change	91
3.4. Prevalence of undernourishment (PoU %)	92
3.5. Agricultural products Imports & Exports	93
3.6. Egypt's cereal import dependency	94
3.7. Total energy supply (TES)	95
3.8. Fossil fuels Imports and Exports	96
3.9. Egypt energy consumption per type of energy	98
4.1. GDP per capita	99

Introduction

Land Grabbing and Water Grabbing are intertwined phenomena, they are commonly defined as land and water resources large scale acquisitions by public or private international actors. They recently became resounding terms in the international relations field. Even if land and Water Grabbing are not brand-new phenomena, it is only in the last fifteen years that they have become increasingly central and spoken about topics. Water acquisition is a rather dated phenomenon, throughout human history water disputes and water wars have taken place. Water has always been subjected to some type of contention. Since the beginning of time, tensions for the management of water courses acts have led to water wars, but they have rarely taken the form of conventional warfare fought only for water resources. Instead, historically, water has been a source of strife and a contributing factor in other types of disputes. In certain instances, water was utilized as a direct weapon because it might harm enemy communities and troops by robbing them of their water supplies or by eroding those resources.¹ While Water Grabbing has much in common with prior waves, it differs in the method, the extent of it, and by the far-reaching resonance of the backlashes in such a globalised world. Water Grabbing is driven by accumulation, privatization, and commodification processes, and it can develop in multiple ways.² Grabbing can take place through market mechanisms, delegitimizing legally embedded rights, or simply dispossessing unregistered users by violent appropriation. In some circumstances, the acquisition of water is unlawful; in others it is legal on paper, but not rightful, but it can also be realised through completely legal transactions or deals. Thus, grabbers frequently take the murky legal framework managing water rights and use them to their advantage.³ Power imbalance comes therefore to the advantage of one of the parties and the detriment of the other. The “loosing” countries are threatened from an economic point of view, but even more threatening can be the risk of desertification of their territory, and lack of water security. The complexity of the subject makes it difficult to track all water grabs, but some there are some portals displaying the acknowledged cases. Climate Diplomacy, for example reports ongoing transboundary water management cases, this project is realised by Adelphi in cooperation with the German Federal Foreign Office.⁴ The Environmental Justice Atlas created

¹ Angelakis, A. N., Valipour, M., Ahmed, A. T., Tzanakakis, V., Paranychianakis, N. V., Krasilnikoff, J., ... & Giacco, L. J. D. (2021). *Water conflicts: From ancient to modern times and in the future*. *Sustainability*, 13(8), 4237.

² Franco, J. C., Feodoroff, T., Kay, S., Kishimoto, S., Pracucci, G., & Santos, R. (2014). *The global water grab: A primer*. Amsterdam: Transnational Institute.

³ Ibid

⁴ Climate Diplomacy (2023). *Case study, transboundary water management*. Retrieved March 29, 2023, from <https://climate-diplomacy.org/case->

by the Institute of Environmental Science and Technology (ICTA) at the Universitat Autònoma de Barcelona, is another exhaustive database which documents and catalogues social conflict developing around environmental issues.⁵

Land grabs follow a different dynamic than what has been mentioned so far. Territories in the global south are seen as a resource for food and fuel production to react to potential future price jumps. Biofuels, food crops, mineral deposits, and reservoirs of environmental services are the scope of these land use, thus the instrumentalization of the global south.⁶ Most speculative major land deals take advantage of Sub-Saharan Africa lands, while major areas in South America, Central America, Southeast Asia, and the former USSR are being targeted for commodity crops, fuel crops, investment, and ecosystem services.⁷ Land grabs often referred as Large Scale Land Acquisitions (LSLA) are characterised by the outstanding dimension grabbed of the parcel. They are realised through variable strategies, ranging from easy private-private acquisitions and public-private leases for biofuel production to the acquisition of vast swaths of land for conservation purposes.

Why are Land Grabbing and Water Grabbing increasingly central topics for international relations and global governance?

There are some factors which contributed to the intensification of the collective interest on the matter. The 2008 economic crisis, being one of those, increased poverty, and as a chain reaction, it increased the global concern about food and energy security. Global warming has also increased threats to water security, and general stable availability of resources. These two disruptive events, climate change and financial crisis, contributed to a shift in geopolitical, economic, and social interests. Therefore, private, and public international actors have started gravitating toward the acquisition of these natural and processed resources. The economic interest on land and water to produce food, fuels, and energy, soared. But the monetary interest continues to be not the only reason to purchase. Another main driver is ensuring basic needs satisfaction for countries, and their populations. As the world is becoming increasingly challenged by the effects of climate change, the necessity to secure the generations ahead in

studies?term=&filter%5Bgeolocation%5D%5Bcenter%5D=19.0933679%2C13.1100849&filter%5Bconflict_risk_fct%5D%5B0%5D=Transboundary+water+management&widget%5Bmap%5D%5Bzoom%5D=3

⁵ ICTA (2023). *Mapping Environmental Justice*. Environmental Justice Atlas. Universitat Autònoma de Barcelona. Retrieved March 29, 2023, from <https://ejatlas.org/>

⁶ Borras Jr, S. M., Hall, R., Scoones, I., White, B., & Wolford, W. (2011). *Towards a better understanding of global Land Grabbing: an editorial introduction*. *The Journal of Peasant Studies*, 38(2), 209-216.

⁷Ibid.

that country with food and water also increases. The number of grabs grows over time and Land Grabbing and Water Grabbing became more socially relevant. As it can be grasped, this is an intricate and unexplored subject, and it can trigger a series of issues from a global governance point of view. Dealing with water supplies and land management is a delicate matter because humans are deeply dependent on them, for survival reasons, obviously, but also because of the social and economic dynamics. Considering the scarcity of resources that are faced, that is going to become even more severe, the purchases of water and land can be heavy on the grabbed states. Thus, causing disadvantages and increasing the already harsh inequality gap between states. In the last twenty years, several crises coming together have necessitated economic and strategic actions from the public and private sectors, with the goal of minimizing losses and securing the greatest number of resources. For all these reasons, which are going to be examined furtherly in depth in the next chapters, the fundamental and primal constituents of our world, land, and water are being purchased. The literature on Land Grabbing and Water Grabbing is not particularly extensive yet, that could be because the bargaining process is not always transparent or because it is rather complicated. The subject matter is indeed complex; thus, it must be analysed through different lenses: the juridic, the social, and the geopolitical. Many papers and accredited publications try to identify the causes of the phenomena considering the geopolitical or the environmental framework in which it develops. However, the research often lacks an analysis of the regulation, or the quantitative assessment of the effects of these phenomena, and a comprehensive study on the drivers. Maria Cristina Rulli, Antonio Saviori, and Paolo D'Odorico with their scientific research paper Global land and Water Grabbing are the first writers that I crossed paths with when approaching the subject. With their attempt to measure the size of the grabs, they contributed to trigger the curiosity to further investigate quantitatively the consequences of land and Water Grabbing on the grabbed countries. Considering what the literature is offering on Water Grabbing and Land Grabbing this thesis aims at unveiling the dynamics with a wide spectrum of observation, also focusing on particularly interesting case studies to quantitatively assess the impact of the phenomena. Amongst the goals of this research there are: the achievement of a deep understanding of the roots of land and Water Grabbing, the unfolding of the international law regulation on the matter, and the quantitative assessment of the consequences of the natural resources management.

A large extent of this dissertation will revolve around the scarcity of resources, both as the driver for the acquisition rush and because of it. Heavy pressure is exercised by the steady

growth in the number of the population that requires a bigger food production, and together with that water, and energy. Furthermore, economic development, the construction of new infrastructures and technological development are contributing to pressure the collective need for natural resources. An emphasis on sustainable practices and renewable energy sources has emerged because of increased climate change strain. This has raised interest in renewable energy sources e.g., biofuels. Natural resources supply has now an increased value and desirability, having a commercial potential greater than ever before. From this introduction it can already be grasped that water and Land Grabbing are extremely complex and multifaceted phenomena. To understand the nature of it and its real impact there is the need to assess it from various perspectives. From a global governance perspective, it is relevant to point out the power dynamics driving the grabs. In the first chapter definitions will be provided, and the general context will be described. Understanding these grabs means to identify the actors involved and framing their role. To further give context the identification of some of the possible reasons driving these grabs will be conducted e.g., the change of preference for fuels after the policies' drifts in the EU and the US. Subsequently, from a legal point of view, examining how they are regulated at the international level. Finally, a case study on the effects of water management will be conducted. Land and water are often subjected to grabs for their potential of energy production, which can be realised through various processes, one of them being hydroelectric power generation through water infrastructures. For this reason, a quantitative analysis will attempt to measure the effects of the construction of a dam on the food and energy sector of a country, Egypt. As will be further specified in the methodology, two variables will be chosen to assess the social and economic consequences of the grab. The assessment of these two variables will be conducted through the analysis of a sample of indexes, which will provide information of the outcomes of the phenomenon overtime.

Water and land resources are becoming increasingly scarce, and so the desire and the necessity of their possession is growing proportionally. Geopolitically this has consequences, in this thesis it is argued that Water Grabbing, and Land Grabbing have adverse implications over the territories and the populations that are deprived of their resources. As these practices are spreading, and the combination with global warming and environmental instability, Water Grabbing, and Land Grabbing are expected to have a significant negative impact.

Chapter One

Land Grabbing and Water Grabbing: definitions and triggering factors

1.1. Land Grabbing - 1.2. Water Grabbing - 1.3. Historical evolution of grab practices – 1.4. Triggering factors - 1.4.1. Population growth and social pattern changes - 1.4.2. Increase in oil prices and growing demand for biofuels - 1.4.3 The 2009 EU Renewable Energy Directive, and the United States 2007 policy drift on bioethanol use - 1.5 Indirect Land Use Change (ILUC)

In contemporary global governance a renewed interest has been raised on natural resources and their availability.⁸ The acquisition, the distribution, and the trading of natural resources is mutating due to factors like the growth of the global population, climate change, and military conflicts. Secured land and property rights are the cornerstone of food security, energy security, and prosperity of the population.⁹ Thus, to foster well-being and growth, both governments and private companies started investing on natural resources. The phenomenon of Land Grabbing and its closely related counterpart, Water Grabbing, have gained substantial attention in recent years. A trend of investments in the agricultural land sector has emerged in the early 2000s.¹⁰ These two interlinked issues present intricate challenges that span across geographical boundaries and have profound implications for both social and environmental landscapes. To understand these phenomena with all its complexity there is the need to start unveiling the basic information answering to the questions: what are these grabs and what are the leading causes behind them? As we delve into this multi-faceted realm, this chapter sets the stage by providing an in-depth exploration of the foundational concepts of land and Water Grabbing, while also shedding light on the critical factors that drive these phenomena.

This chapter serves as a foundational platform for the comprehensive investigation into land and Water Grabbing and their associated drivers. By dissecting the essential components of

⁸ Rulli, M. C., Saviori, A., & D'Odorico, P. (2013). *Global land and Water Grabbing*. Proceedings of the National Academy of Sciences, 110(3), 892-897.

⁹ Land. World Bank. (2020, April 16). Retrieved January 25, 2023, from <https://www.worldbank.org/en/topic/land>

¹⁰ Rulli, M. C., Saviori, A., & D'Odorico, P. (2013).

these issues, we aim to facilitate a profound understanding of the complex interplay between economic, social, and environmental forces that underlie these global phenomena. Furthermore, the subsequent chapters of this thesis will delve into the case studies and their analysis, contributing to the growing body of knowledge on land and Water Grabbing and its consequences. To provide a framework of the phenomena in this chapter a definition will be provided for both Land Grabbing and Water Grabbing. Furthermore, an analysis of the triggering factors will be conducted to understand the source of the two phenomena. The study will encompass societal, political, and legal contributing factors, basing the reasoning upon both literature and data retrieved.

1.1. Land Grabbing

Land Grabbing is commonly defined as the acquisition of an area of land, which could often imply the use of force or coercion.¹¹ A wide framework is useful in providing a definition, considering the complexities faced when approaching the phenomenon.¹² A comprehensive description of Land Grabbing is carried out by Eco Ruralis, published in the Food and Agriculture Organisation (FAO) webpage. Eco Ruralis collects several definitions and attempts to tackle every facet of Land Grabbing, it does so by keeping into account environmental, economic, social welfare, and human rights issues. This review operates enlarging the spectrum of analysis, it encompasses the perspective on the nature Land Grabbing of a multitude of actors that can be involved, e.g.: civil society, governments, corporations, and financial institutions.¹³

According to Eco Ruralis:

“Land Grabbing can be defined as being the control (whether through ownership, lease, concession, contracts, quotas, or general power) of larger than locally-typical amounts of land by any person or entity (public or private,

¹¹ Land grab. LAND GRAB | definition in the Cambridge English Dictionary. (n.d.). Retrieved January 26, 2023, from <https://dictionary.cambridge.org/us/dictionary/english/land-grab>
Merriam-Webster. (n.d.). Land Grab Definition & meaning. Merriam-Webster. Retrieved January 26, 2023, from <https://www.merriam-webster.com/dictionary/land%20grab>

¹² Fao.org. FAO. (n.d.). Retrieved January 26, 2023, from <https://www.fao.org/family-farming/detail/en/c/1010775/>

¹³ Baker-Smith, K., & Attila, S. B. M. (2016). *What is Land Grabbing?* A critical review of existing definitions. *Eco Ruralis Report*. Retrieved January 26, 2023, from https://www.farmlandgrab.org/uploads/attachment/EcoRuralis_WhatIsLandGrabbing_2016.pdf

foreign or domestic) via any means ('legal' or 'illegal') for purposes of speculation, extraction, resource control or commodification at the expense of peasant farmers, agroecology, land stewardship, food sovereignty and human rights.¹⁴”

Eco Ruralis framework has been developed considering Romania as a case study, collecting data relatively to its land deals. However, it is designed to work universally, thus allegedly it could be used to define Land Grabbing in relation to any geographical area, or to any country¹⁵. Another peculiar trait of this review is that every definition given by the perspective of an actor, analysing the phenomenon through five different lenses. First the size of it is examined, to understand the extent of it, thus the seriousness for the country. Secondly, the identification of the grabber, to understand whether it is an individual, a group, or a company, if it is a public or private actor, e.g., governmental, or non-governmental organisation, or more, if it is domestic or foreign. Thirdly, the analysis moves control, to understand where power is. Land grabbers have several options for controlling territories, including renting land, e.g.: through concessional long-term leases from governments, employing tenant farmers or sharecroppers, or owning the land. Furthermore, the legality of the action is encompassed, and lastly, the purpose of its usage. The use that is made of these lands could be either harmful for the environment, or disadvantageous to the local population. One damaging aspect of lands grabbing can be the change of purpose of use of the lands, from agricultural use to another sector, e.g.: mineral or oil extraction or water grab. This review allows to consider the numerous interests at stake in land deals.

Land Grabbing can be also defined as a type of "neoliberal globalization" whose driver are the increase of global demand for food and biofuels, the changes in global land use policies, and the financialization of land.¹⁶ According to Margulis, McKeon, and Borras Jr. in their 2013 article "Land Grabbing and global governance: critical perspectives," the impacts of Land Grabbing can be significant and negative for local communities and the global governance challenges.¹⁷ The displacement and loss of livelihoods for local communities, is one of the first issues mentioned by the authors. Land Grabbing often results in the forced eviction of local communities from their land, which can lead to poverty and food insecurity as communities

¹⁴ Baker-Smith, K., & Attila, S. B. M. (2016).

¹⁵ Ibid.

¹⁶ Margulis, M. E., McKeon, N., & Borras Jr, S. M. (2013). *Land Grabbing and global governance: critical perspectives*. Globalizations, 10(1), 1-23.

¹⁷ Ibid.

lose access to their land, homes, and resources. Hence, human rights violations can verify in the care of forced displacements, for violations of the right to food, and other basic rights that will be analysed in **Chapter 2** under the legal framework of the matter. Another backlash of Land Grabbing, as identified in the text, can be environmental degradation. Namely, the destruction of natural habitats, loss of biodiversity, and increased greenhouse gas emissions (GHG). The communities which are deprived of their territories can also suffer from the loss of their control of the land resources, rising higher barriers to sustainable development. A discernible branch of Land Grabbing is green grabbing, a process which has been steadily gaining significance and recognition. The ongoing discourse on 'Land Grabbing' has underscored instances in which claims of environmental stewardship are invoked to legitimize the appropriation of land for agricultural or energy production.¹⁸ For example, in certain cases, large expanses of land are acquired not solely with the aim of achieving more efficient farming or ensuring food security, but also with the purported objective of reducing pressure on forested areas.

In other scenarios, environmental conservation and sustainability objectives stand as the primary driving forces behind such land acquisitions. These goals are frequently linked to initiatives involving biodiversity preservation, biocarbon sequestration, biofuel production, the provision of ecosystem services, ecotourism endeavours, or activities related to ecological offsets. In certain instances, these endeavours result in the complete dispossession of land, while in others, they entail the restructuring of regulations and authority pertaining to the access, utilization, and management of resources, potentially leading to profound dispossessive consequences. In affluent nations like the United Kingdom and the United States, the acquisition of land by well-funded conservationists is greeted with approval, as it tends to uphold or elevate the value of land in the market. Conversely, in economically disadvantaged countries, because such actions frequently provoke apprehension and antagonism. With the current surge in the acquisition of agricultural land, meadows, mountainous terrains, and wooded areas by an incipient number of individuals, charitable organizations, foundations, and environmental conservation entities, there is growing concern that a fresh wave of ecological colonization is potentially being set in motion.¹⁹

¹⁸ Fairhead, J., Leach, M., & Scoones, I. (2012). *Green grabbing: a new appropriation of nature?*. *Journal of peasant studies*, 39(2), 237-261.

¹⁹ Vidal, J. (2008, February 13). *The great green land grab*. *The Guardian*. Retrieved October 19 from <https://www.theguardian.com/environment/2008/feb/13/conservation>

A persisting land dispute in the Patagonia region is intricately connected to the challenges faced by the indigenous Mapuche community, the most populous South American Indian group.²⁰ They encounter substantial complexities when dealing with both the Argentine government and foreign corporate entities. Regarding the involvement of foreign corporations in Patagonia, it is noteworthy to highlight the significant role played by the Italian conglomerate Benetton in exacerbating unrest within the region. In 1991, the Italian corporation Benetton acquired approximately 970,000 hectares of land from *Compania de Tierras Sur Argentino S.A.*, a prominent landholding entity in Argentine Patagonia at the time.²¹ Significantly, a substantial portion of this acquired land had historical significance as the ancestral territory of the indigenous Mapuche community, who had been forcibly displaced from their homelands. Eleven years later, Atilio Curiano and Rosa Nahuelquir initiated the occupation of 385 hectares of land situated in Santa Rosa-Leleque to reappropriate of their lands. The revolt was triggered a noteworthy media campaign, bolstered by the endorsement of Adolfo Perez Esquivel, an esteemed Argentine Nobel Peace Prize laureate, who expressed solidarity with the Mapuche cause. In 2007, a faction of Mapuche individuals reintroduced themselves to Santa Rosa, as the underlying conflict remained unresolved, thereby perpetuating the occupation.²² It was not until late in the year 2014 that the Government of Chubut officially acknowledged the Mapuche people's rights to the usage and ownership of 625 hectares of land in Santa Rosa, a recognition conducted within the legal framework provided by law 26.160 regulating the Argentinian national census on indigenous communities²³. Subsequently, in response to the escalating tensions, the company extended an offer to the Mapuche community, proposing the allocation of 7,500 hectares of land within the Chubut province as an alternative.²⁴ Regrettably, both the Mapuche community and the provincial government rebuffed this proposal, contending that the offered land was unsuitable for productive use. According to the public statement by a small community of young Mapuches living in, what are by law, Benetton's properties, citizens were living in harsh conditions and were being exploited as labour force. Their Attempts by the police to dislodge them proved unsuccessful, and Benetton subsequently initiated a criminal complaint, leading to charges being brought against five individuals. As of the present, the last information with regards to the disputes between the two, dates to 2019, when a group of

²⁰ Ayala, di F., & Ayala, di F. (n.d.). *Mapuche: Popolo della Terra*. Treccani, l'Enciclopedia italiana. https://www.treccani.it/magazine/atlanter/geopolitica/Mapuche_popolo_terra.html

²¹ Greyl, L. (2019, August 18). *Mapuche communities resisting Land Grabbing by Benetton*, Argentina: Ejabatlas. Environmental Justice Atlas. <https://ejatlas.org/conflict/benetton-mapuche-conflict-argentina>

²² Ibid.

²³ Normativa sobre Pueblos Indígenas y sus comunidades (1994). Ley Nacional 26160.

²⁴ Greyl, L. (2019, August 18)

indigenous perpetrated unlawful entry of an area owned by the Compañía de Tierras Sud Argentino, owned by Edizione Holding (the Benetton family holding company).²⁵ As the Holding legally remains one of the biggest landowners in Patagonia, it is likely that the indigenous population will continue to claim their native lands back. As it can be grasped from **Figure 1.1**, Patagonia is commonly recognized as the geographical expanse jointly occupied by the nations of Argentina and Chile, located on the southernmost border of the South American continent.²⁶

Figure 1.1
Patagonia



The inclusion this case serves as a significant illustration of the profound implications that land dispossession can have over a population across various dimensions. Amongst the tangible backlashes of this specific case of Land Grabbing there are environmental and socio-economic impacts. The Holding utilized its territory as a site for 260,000 animals’ husbandry. Breeding sheep, goats, and rams for wool production, exporting approximately 1,300,000 kilograms to

²⁵ Position statement - *claims by the native Argentinean population* (Mapuche). Benetton Group. (n.d). <https://www.benettongroup.com/en/media-press/press-releases-and-statements/position-statement-claims-by-the-native-argentinean-population-mapuche/>

²⁶ Maps of World (2018). *What is Patagonia?* (2018, September 27). <https://www.mapsofworld.com/answers/geography/what-is-patagonia/#>

the European market.²⁷ Furthermore, the land served as a space for forestry operations. As it happens in several cases deforestation took place, to leave space to husbandry. Thus, causing biodiversity loss, agro-diversity loss, and loss of vegetation cover in that extensive Patagonian area. Desertification, drought, loss of landscape, aesthetic degradation are accessory consequences of this land change use change, adding up to the already severe negative impacts.²⁸ Moreover, social impact is heavy on the Indigenous population, which is by its culture extremely connected to its land and traditions.

Luciano Benetton in one of his interviews claimed its philosophy was and will always be to be global. His vision is that of a Sustainable and creative Capitalism, exporting democracy, a capitalism that does not invade, but helps the population in developing countries. He calls it “sweet globalization,”²⁹ a sweetened portrait of their commercial colonising behaviour, this vision was created to defend the family and the holding from the public accusations, never abandoned, promoting a way of living more than a product. A philosophy which encourages to believe to the strong social responsibility of the brand. This is the window that Benetton showcases, but what was happening in Argentina unveiled what was the reality behind the Benetton philosophy, a well-orchestrated marketing strategy, which contribute to the expansion of Benetton’s wealth. The disputes and the lack of regards toward the Mapuche’s revendication of their traditional heritage disclose the real interest of the Holding and the family.

1.2. Water Grabbing

A widely recognised definition of Water Grabbing describes the phenomenon as a large-scale appropriation of water resources, such as rivers, lakes, and aquifers, by individuals, corporations, or governments. Since water is not fixed and flows regardless of boundaries and barriers, it is difficult to gauge the extent of water grabs. Unlike land, water is characterised by mobility and dynamism, indeed it is in constant motion, following the hydrologic cycle.³⁰ The mobility factor of it increases the complexity of the phenomenon, which can be interpreted in

²⁷ Greyl, L. (2019, August 18)

²⁸ Ibid.

²⁹ Di Vico, D. (2008, May 12). *La globalizzazione? può essere dolce*. Corriere Della Sera. Retrieved October 31, 2023, from https://www.corriere.it/economia/08_maggio_12/divico_8c6a1e14-1fe7-11dd-895d-00144f486ba6.shtml.

³⁰ Franco, J., Mehta, L., & Veldwisch, G. J. (2013). *The global politics of Water Grabbing*. *Third World Quarterly*, 34(9), 1651-1675.

diverse ways and can be achieved through different processes and dynamics. Because water grabs are undoubtedly global in scope, just like land grabs, these measurement challenges are rooted in a variety of disciplines, including hydrology, ecology, and law. Water resources appropriation is also often referred as a Land Grabbing subset phenomenon, or at least as associated to it. The interest in land acquisitions is often driven by the need of water resources, thus Water Grabbing is considered to be a subset of Land Grabbing.³¹ According to the sharp rise in international land transactions between 2005 and 2009, states and businesses have begun to purchase relatively affordable and profitable agricultural land located abroad.³² These transactions are often between actors living in areas where water resources are scarce on one side, and on the other side poor communities living in fertile territories. Water Grabbing is most of the times harmful to the people living in proximity to the grabbed area because resources are depleted, and the local communities are excluded from accessing them.³³

Water Grabbing can be realised either through the reallocation and redefinition of water rights, by detouring rivers through dams reconfiguring the water flow, or in the form of freshwater appropriation with large-scale land acquisitions (LSLAs). These acquisitions especially happen in underdeveloped countries³⁴. Since Water Grabbing is largely realised through LSLAs it is widely portrayed as a Land Grabbing associated phenomenon³⁵. Definitions are often provided by offering a link to Land Grabbing. In fact, grabbing is a race not only for the land itself, but also for the freshwater resources that can be found in those traded areas.³⁶ In instances of Land Grabbing, the control of water resources is often a key factor in the decision to invest. Thus about 85% of freshwater (e.g.: rainwater and irrigation water) is grabbed for agricultural purposes.³⁷ Water is essential for agricultural production, as well as for supporting other land-based activities like mining and industry. Foreign investors, corporations or governments may target lands with access to water resources and secure control over them to ensure the success

³¹ Franco, J., Mehta, L., & Veldwisch, G. J. (2013).

³² Rulli, Savioli, & D'Odorico, (2013).

³³ Veldwisch, G., Franco, J., & Mehta, L. (2018). *Water Grabbing: Practices of Contestation and Appropriation of Water Resources in the Context of Expanding Global Capital*. In R. Boelens, T. Perreault, & J. Vos (Eds.), *Water Justice* (pp. 59-70). Cambridge: Cambridge University Press. doi:10.1017/9781316831847.004

³⁴ D'Odorico, P., Rulli, M. C., Dell'Angelo, J., & Davis, K. F. (2017). *New frontiers of land and water commodification: Socio-environmental controversies of large-scale land acquisitions*. *Land degradation & development*, 28(7), 2234-2244.

³⁵ Duvail, S., Médard, C., Hamerlynck, O., & Nyingi, D. W. (2012). *Land and Water Grabbing in an East African coastal wetland: The case of the Tana delta*. *Water alternatives*, 5, 322-343.

³⁶ Rulli, Savioli, & D'Odorico, (2013).

³⁷ Ibid.

of their operations. The increase of food demand, the soaring food inflation and bio-energy policies are amongst the identified factors influencing the decision to invest on fertile lands.³⁸

The linkage to land grab and its relevance in the global governance arena are easily highlighted through recent cases. One example of land grab with water grab purposes is the case of Tana River, the longest river in Kenya.³⁹ For many local groups that have engaged with these ecosystems throughout the years, they have served as a multi-user, multifunctional location with great socioeconomic value. Livelihoods are frequently seen as indicators of various local identities. The Kenyan setting of competing access to resources (e.g.: forests, land, water, pastures), poor governmental mediations favouring autochthony, and water shortages has not lessened ethnic differentiations, despite some movement in that direction. The Wataa, a primitive hunter-gatherer civilization, are widely acknowledged as the delta's first settlers. The property has been leased through commercial or group ranches since the end of the 1960s, adhering to the ranch model pushed by the World Bank under the Kenyan Livestock Development project and incorporated into Kenyan Law by a parliamentary act in 1968.⁴⁰ From the early two-thousands, the access to the land in that region underwent to further negotiation, this time with the involvement of private companies. Vast portion of property around the delta of Tana River have been purchased or subleased to the detriment of the local community, whose access to the river resources has been limited. It is evident that this can trigger a widespread displacement of local communities who rely on these resources for their livelihoods.

Stakeholders involved in Water Grabbing transactions are mostly driven by personal gains, at the expense of local communities who depend on water for their livelihoods. The unequitable distribution and the lack of accessibility of resources for the population increases the chances for human rights violations. Representing a new global governance challenge, clearly Water Grabbing necessities of an up-to-date regulation on the matter. The case of privatisation of the Turkey River in Ankara raises questions about the responsibility of the government and private corporations to ensure fair water access.⁴¹ In this case, the Turkish government has allowed private companies to build hydropower plants and take control of water resources, resulting in

³⁸ Theesfeld, I. (2018). *From land to Water Grabbing: a property rights perspective on linked natural resources*. *Ecological Economics*, 154, 62-70.

³⁹ Duvail, S., Médard, C., Hamerlynck, O., & Nyngi, D. W. (2012).

⁴⁰ Ibid.

⁴¹ Islar, M. (2012). *Privatised hydropower development in Turkey: a case of Water Grabbing?*. *Water Alternatives*, 5(2).

negative impacts on local communities who depend on these water sources for agriculture, fishing, and other livelihoods. Equitable and sustainable access to water falls within the United Nations goals of sustainable development, moreover, are regulated by International Law. Hence, the global governance nature of the issue to tackle, and the international duty to address an adaptive response to this new challenge.⁴²

1.3. Historical evolution of grab practices

As it has been said, the lust for natural resources is a milestone in human lives that is registered from ancient times until nowadays. However, the current time episodes of grab that are here studied are significantly different from its antecedent forms. That is because land has always played a fundamental role in human lives, the soil's potentiality of being fecund gives land the characteristic of representing an instrument of improvement for men's conditions and wealth. Another common trait behind these practices is the enduring and expanding asymmetry of powers which resides in the relationship among the diverse stakeholders engaged in this context. These power dynamics have historically progressed into more pronounced relationships of dominance of the landowner, who is commonly an aristocrat, on the rest of the population. Building, enclosing, and cultivating are only a few of the many ways in which a piece of land can be used productively, to turn it into a precious mean of subsistence by using its resources. Even though the importance of possessing land remained precious, the ways in which ownership of parcels has been claimed has been changing through time, going hand in hand with societal evolutions.⁴³

In the Middle Ages, the feudal system envisaged land ownership as a concession by the landowners to thirds (e.g.: families, individuals, et cetera), for agricultural or livestock purposes. As primordial contracts, those grants entailed obligations and rights, however, remaining immensely distant from the contemporary concept of ownership. A step closer to reaching the current state of the arts has been reached in a far more recent point in history.

⁴² Islar, M. (2012). *Privatised hydropower development in Turkey: a case of Water Grabbing?*. *Water Alternatives*, 5(2).

⁴³ A brief history of Land Grabbing. FORUM DES LUTTES POUR LA TERRE ET LES RESSOURCES NATURELLES. (n.d.). Retrieved January 27, 2023, from <https://strugglesforlandforum.net/en/breve-histoire-de-laccaparement-des-terres/>

Capitalism played a significant role in changing the patterns, as it reshaped the market, bringing development in both the agricultural and industrial sector. Privatisation of land at that point started giving the right to the landowners not only to enjoy the resources that their land produces, but also to determine how such rights may be applied to their land, and the freedom to dispose of it the way they think would be more appropriate. Hence, the community duties that had weighed on the majority of agricultural or forestry land were reversed when private land ownership was enforced, either via the use of force or the passing of legislation (i.e., enclosure acts), to the detriment of undivided common property. Spreading through colonial practices, this system interested not only Europe but established roots overseas. Another significant this evolution has been the exacerbation of the disparities in the power dynamics. Notably the relationships of dominance, as elucidated earlier accelerated during a specific temporal juncture, resonating globally in the aftermath of the financial and food crises of 2007-2008.

Looking at how the theme has been dealt with over time, the discussion among scholars has mostly revolved around land deals. The nature of water set itself the prerequisites for a different approach to grabs compared to what has been seen so far for land. Water grabs have always manifested as the actor taking control or reallocating water resourced to their own advantage with a non-consumptive or a consumptive approach, meaning leaving or not the resources immediately available for other actors to use.⁴⁴ The former case refers to those practices such as hydroelectric power generations which use the natural water flow which are recently new in human history and do not affect the environmental, industrial, or societal uses of the downstream water bodies. The latter regards those practices which prevent third actors from enjoying the use of the resource, e.g., hydroelectric dams which are constituted of reservoirs for hydropower generation purposes. The seize of the grabs and the modality of them changed overtime following the technological advancement pace. In the Vitruvian era in Rome, the first non-consumptive method of hydroelectric power was invented, in the first century B.C. Water-driven turbines where at that time used with the power of the water flow ad employed for the milling of grains to produce flour and bread. Water mills, invented contemporarily, were largely used until the industrial revolution to, once again, mill grains, but also to chop wood and to generate heat for steel production. The Industrial Revolution brought significant changes in the hydroelectric field. The first hydroelectric power plant was built in 1882, on the Fox River in

⁴⁴ Dell'Angelo, J., Rulli, M. C., & D'Odorico, P. (2018). *The global Water Grabbing syndrome*. *Ecological Economics*, 143, 276-285.

situated in Appleton, Wisconsin.⁴⁵ This consumptive system is a high impacting sort of grab, which is because enclosing a large section of a river obstructs the fruition of water to other users. The seize and capacity of the hydroelectric power stations and the seized of grabs increased *pari passu* throughout time, following the technological advancement and the increased need for resources to meet the needs of an expanded and globalized humanity.

1.4. Geopolitics of grabs

1.4.1 Political power asymmetries in recent Water Grabbing cases

The Colorado river also known as the “American Nile” in the American continent has been the centre of gravity of a century long dispute. The Colorado River, stretching for 1,450 miles, has long served as a vital water source for nearly 40 million people in seven states and northern Mexico, catering to their needs for drinking water, agricultural irrigation, and hydroelectric power. This river originating in the Rocky Mountains in Colorado passes through seven states in the United States and it should flow in the sea in the Gulf of Cortez, in Mexico. Unfortunately, the river is grappling with the consequences of prolonged drought and excessive utilization, leading to the depletion of major reservoirs. The drastic reduction in the river's flow can be attributed to the construction of the ending trait of this river has been severely affected by two main factors, e.g. the desertification process due to global warming, and the regulation of the river flow through a Dam. The Hoover Dam is indeed located at the border between Arizona and Nevada on the west side of Lake Mead and it has been hardly contested. This dam facilitates the irrigation of 80 thousand hectares of land and provides hydroelectric power to the industrial areas and metropolitan regions of California and Arizona. The current scenario, characterized by historic lows in the Colorado River's water levels, has exacerbated tensions among the seven states having interests in its water resources: Arizona, California, Colorado, New Mexico, Nevada, Utah, and Wyoming. The initial agreement outlining the distribution of river water among these states lacked the foresight to anticipate and address pressing issues such as prolonged drought. Consequently, the American Southwest finds itself confronting a crisis that was foreseeable but inadequately prepared for. The future of the Colorado River now hinges on

⁴⁵ Rutledge, K., McDaniel, M., Teng, S., Hall, H., Ramproop, T., Sprout, E., Hunt, J., Boudreau, D., & Costa, H. (n.d.). *Hydroelectric Energy: The Power of Running Water*. Education. <https://education.nationalgeographic.org/resource/hydroelectric-energy-power-running-water/>

the collective ability and willingness of the states to devise a comprehensive plan. This plan must include substantial reductions in water consumption and an equitable distribution strategy for the remaining resources. The urgency of this situation underscores the need for effective collaboration and negotiation among the states to safeguard the sustainability of the Colorado River and ensure its continued support for the diverse needs of the region's populace.⁴⁶ The initial agreement outlining the distribution of river water among these states lacked the foresight to anticipate and address pressing issues such as prolonged drought. Consequently, the American Southwest finds itself confronting a crisis that was foreseeable but inadequately prepared for. The future of the Colorado River now hinges on the collective ability and willingness of the states to devise a comprehensive plan. This plan must include substantial reductions in water consumption and an equitable distribution strategy for the remaining resources. The urgency of this situation underscores the imperative for effective collaboration and negotiation among the states to safeguard the sustainability of the Colorado River and ensure its continued support for the diverse needs of the region's populace. The topic at the centre of the dispute over the Colorado River is the depletion of its flow and the desertification of its delta penalizing some states. In the 19th century, the river flow in Mexico exceeded 1,200 cubic meters per second, the first disruption of its natural flow is to be attributed to the construction of the Alamo Canal. This construction project redirecting river flow to water agricultural lands in California's Imperial Valley was allegedly the produce of a successful contract between corrupted Mexican officials and American entrepreneurs. Building the canal on the Mexican side of the border, the enterprise assumed control over most of the fertile land and water resources over that area. Further control of the territory's resources happened a few years later, when the United States assumed control of the Colorado River, constructing a dam, and transforming desert areas into a thriving agricultural region. The construction of the Hoover Dam in 1936 significantly diminished the river flow in Mexico, reducing it to 164 cubic meters per second, to the detriment of the populations living alongside the river or having a water dependent business in the Mexican territory. In 1944, the fate of the Colorado River was determined through an agreement between Mexico and the United States to build the Morelos Dam at the border, ensuring water allocation to Mexico exclusively for agricultural purposes. Subsequently, with the completion of the Glen Canyon Dam in Arizona in 1966, the river's flow in Mexico drastically decreased to 8.3 cubic meters per second. During the 1980s,

⁴⁶ Flavelle, C., & Rojanasakul, M. (2023, January 27). *As the Colorado River shrinks, Washington prepares to spread the pain*. The New York Times. <https://www.nytimes.com/2023/01/27/climate/colorado-river-biden-cuts.html>

approximately 80% of the delta's forests and wetlands experienced depletion, leading to the partial destruction of the estuary. This had severe consequences for marine life, migratory birds, mammals, and Indigenous communities. Since 1998, the river has not reached the Gulf of Cortez at its end, except for a brief period in 2014 when an ecological experiment was conducted to replicate spring floods. This experiment facilitated natural germination and resulted in a 43% increase in bird numbers. For numerous Native American tribes in the Western United States, the Colorado River has been objected to perpetuated by institutionalized oppression. Access to the river remains unattainable for some groups of people, and the river's water does not reach their communities. Notably, the Navajo Indigenous reserve in Arizona has faced consistent denial of access to the Colorado River, despite possessing legitimate legal entitlements to its resources. The 1922 agreement provides minimal acknowledgment of tribal water rights, encompassed in a solitary sentence stipulating, "Nothing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes." Numerous tribes continue to await their rightful share of the Colorado River. The U.S. Supreme Court is set to consider the Navajo Nation's plea for its allocation in a case filed against the state of Arizona. A scholar noted that tribes were either actively discriminated against or, at the very least, legally overlooked, reflecting an enduring historical injustice. Many tribes, often displaced to inhospitable lands in the West, hold entitlement to water rights that remain unquantified and undelivered.⁴⁷ Some attempts have been made by Indigenous populations to restore the ecosystem in areas around the dry river. E.g. the Cucapá Indigenous community actively took part in the restoration project of the Lagoona Grande. They recreated some connectivity channels to boost the repopulation of the ecosystem by dredging the riverbed, removing dense mud from it.⁴⁸ In April 2023 Biden administration developed three proposals for a renewed distribution of the river's water across the county. Aiming at the settlement of the long-standing legal dispute persisting for a century among states in the American Southwest, he planned on the redistribution of the supply cut. The first proposal underscores the fact that Uniform reductions in water allocations among the Lower Basin states would mark a departure from established legal norms that have served as the cornerstone of water law in the Western United States for over a century. The region adheres to the prior appropriation law, which dictates that those who initially accessed water and put it to beneficial use are granted senior

⁴⁷ Medzerian, D. (2023, December 13). *The water wars of the future are here today* — USC News. USC Today. <https://today.usc.edu/the-water-wars-of-the-future-are-here-today/>

⁴⁸ Guardian News and Media. (2019, October 21). *The lost river: Mexicans fight for mighty waterway taken by the US*. The Guardian. <https://www.theguardian.com/environment/2019/oct/21/the-lost-river-mexicans-fight-for-mighty-waterway-taken-by-the-us>

water rights. California holds senior water rights on the Colorado River system, prioritizing the state to receive its annual allotment ahead of others. This plan has faced opposition from California officials who argue that it circumvents existing water laws acknowledging the state's status as the senior water rights holder. The proposed arrangement would particularly impact California farmers, especially those in the Imperial Valley, and consumers. The Imperial Valley is a major producer of alfalfa, a crucial forage crop for California dairy cows and a significant nutrient source during winter. Shon Hiatt, an associate professor of business administration at the USC Marshall School of Business, emphasizes that a reduction in the state's water allocation would lead to decreased alfalfa production, impacting dairy product prices as alfalfa is a less profitable crop. In the second proposal, California would maintain its priority status for water rights from the Colorado River, while Arizona and Nevada would face more substantial reductions. Consequently, California emerges favourably compared to the countries located in the Lower Basin of the Colorado River. In this scenario, the entire Lower Basin should encompass innovative strategies to reallocate water from agricultural use without jeopardizing the livelihoods of farmers or compromising food security. Thus, they would need an increased efficiency in agricultural practices. Despite several experts expressing contrasting opinion, the third proposal is a no action proposal.⁴⁹ All of these plan's lack of consideration of the effects that the redistribution would have on Mexico, its population, especially considering the Indigenous populations.

The Colorado River is not the sole transboundary natural feature contested between the U.S. and Mexico. The Rio Grande, flowing through a national park in Texas, serves as a vital link connecting the two nations through shared natural resources, wildlife habitats, socio-economic systems, culture, and history. Managing this transboundary system poses a significant challenge. Oversight of the Rio Grande and its tributaries is governed by a complex web of border treaties, institutions, and domestic laws of the two countries. The 1944 Treaty on the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande is the most recent and prominent border treaty, recognized for fostering innovative and collaborative governance of the three mentioned rivers. However, this treaty regime faces growing pressures. Climate change impacts, population growth, and ensuing changes to water supply and demand in the region have strained domestic and international water governance institutions. Three critical issues merit attention: an escalating emphasis on groundwater and its interactions with

⁴⁹ Medzerian, D. (2023, December 13). *Colorado River Plan could trigger unprecedented supply cuts*. USC Today. <https://today.usc.edu/colorado-river-water-plan-supply-cuts-ripple-effect-on-industries/>

surface water, strained relations between treaty parties and local stakeholders, and addressing Mexico's water debt under Article 4 of the 1944 Treaty while enhancing reliability in Rio Grande water deliveries. The neglect of groundwater in the Mexico-U.S. transboundary water regime is a longstanding issue. While playing a vital role in agriculture, economic development, and social dynamics, the numerous transboundary aquifers and hydrological units remain understudied and are excluded from the existing treaty framework. Groundwater resources, crucial for millions on both sides, are managed under independent domestic legal regimes. The absence of procedures to integrate hydrologically related groundwater into the overall management of the Rio Grande exacerbates the situation. To rectify this, efforts should focus on gathering existing information on groundwater-surface water relationships, conducting additional research, expanding data-sharing systems to include groundwater resources, and enhancing public participation, acknowledging groundwater as a local resource. The International Boundary and Water Commission (IBWC/CILA) oversees Mexico-U.S. border waters, but its limited stakeholder involvement has faced criticism. While the U.S. benefits from advanced stakeholder engagement and transparency, the centralized approach in Mexico hampers meaningful involvement of local communities in water management decisions. Recent protests by Mexican farmers in the Chihuahua state underscored the repercussions of this disenfranchisement. Under the terms of the 1944 treaty, Mexico is obligated to supply an average annual volume of 350,000 acre-feet of water to the U.S., conveyed through the Rio Conchos into the Rio Grande. The treaty allows Mexico to carry over any unfulfilled water balances from one 5-year cycle to the next in the event of an "extraordinary drought." Historically, disagreements between the two nations have arisen regarding the interpretation of "extraordinary drought" and whether a water debt repayment can extend beyond two consecutive 5-year cycles. By the fall of 2021, Mexico had accrued a substantial water debt and was on the verge of entering a third 5-year cycle in arrears. To resolve this issue, the IBWC/CILA, on October 21, 2021, signed Minute 325, wherein Mexico met its delivery obligations by transferring all water from the Amistad and Falcon reservoirs to the U.S. This transfer nearly depleted all stored water in Northern Mexico's reservoirs, aligning with the 1944 Treaty and clearing the debt for the 2016-2020 cycle. Minute 325 also settled the longstanding dispute over Mexico's ability to conclude two consecutive cycles, specifying that two successive cycles "may not end in a deficiency." Additionally, the minute acknowledged the significance of the Rio Grande Hydrology Work Group and the Rio Grande Policy Work Group, assigning them the task of developing a new minute by December 2023 to enhance "reliability and predictability in Rio Grande water deliveries to water users in the United States and

Mexico." Despite persisting challenges, the mechanisms of the 1944 Treaty, particularly the minute system, have demonstrated their efficacy in fostering innovations in water management. Ongoing initiatives at various levels aim to enhance sustainable management and public engagement in the Rio Grande basin. As severe drought conditions affect regions worldwide, emphasizing the imperative to allocate and manage water equitably, efficiently, and peacefully, the need for these qualities in global water management systems becomes increasingly evident.⁵⁰

The Balkans conceal the Blue Heart of Europe, natural resources are particularly thriving in the area situated between Slovenia and Greece. In this region, authentically untamed rivers endure, characterized by clear streams, waterfalls, river canyons, alluvial forests, and colossal wild rivers with extensive gravel banks. Notably, these rivers represent crucial hotspots for biodiversity, as evidenced by a 2022 report.⁵¹ Remarkably, the Balkan's fauna is extremely rich, rivers harbour an approximately 70 fish species which are not found anywhere else globally, the protection and the conservation of its wildlife should be prioritized. Additionally, over 40% of all endangered freshwater mussels and snails in Europe can be traced to these freshwater systems. Regrettably, this eco treasure faces imminent peril, with ambitious dam construction plans for Balkan rivers. In 2022 it was esteemed that approximately 2,796 hydropower plants were planned for development in the forthcoming years. Even the most remarkable and ecologically valuable rivers and national parks, are not excluded this threat. Numerous countries intend to subject all their rivers to extensive damming initiatives.⁵² In the year 2022, there were plans for the establishment of 3,281 hydropower plants (HPPs) in the Balkans, with 108 currently under construction and 1,726 already operational. Notably, small-scale hydropower plants (SHPs) constitute the predominant part, corresponding to around 92% of the proposed projects. These projects and these projects are characterized by a small installed capacity and are useful to supply energy to several houses. Even though they don't require water storage SHPs still have detrimental effects, notably affecting biodiversity on the upper part of the river

⁵⁰ Buono, R. M., & Eckstein, G. (2022, September 29). *The Rio Grande/Río Bravo Basin: Old Disputes in a New Century*. International Water Law Project Blog. <https://www.internationalwaterlaw.org/blog/2022/10/03/the-rio-grande-rio-bravo-basin-old-disputes-in-a-new-century/>

⁵¹ RiverWatch. (2022). The Balkan Rivers: Save the Blue Heart of Europe. Retrieved January 28, 2023 <https://riverwatch.eu/en/balkanrivers/background>

⁵² Ibid.

shed and on the terrestrial surrounding area.⁵³ This surge in hydropower development has resulted in the detrimental transformation of numerous rivers and streams, particularly in Bosnia & Herzegovina, Serbia, Kosovo, Albania, and North Macedonia. Many of these newly established plants are categorized as small-scale dams. There has been a substantial escalation in hydropower development overall, with the number of operational plants witnessing a significant surge from 714 in 2015 to 1,726 in 2022. Focusing specifically on SHPs with a capacity of less than 10 MW, the growth rate is nearly tripled, rising from 590 to 1,568 during the same period.⁵⁴ As the projects continue to be planned and developed the movements against the implementations grow. The 25 June 2020 the Parliament of Bosnia-Herzegovina approved a *moratorium*⁵⁵ on the implementation of projects involving the construction of SHPs within the country, boosting the environmental impact control, and the legal scrutinies for the already existing centrals. This massive wave toward hydropower plants triggered numerous protests, three main groups of protesters have stayed on the frontline over the years, namely Balkan Rivers, Balkan Green Energy News and Save The Blue Heart of Europe. Not only they have organised protests, but they continue to carry assessments of the ongoing project and the effects of the already existing ones.

Pioneering the massive hydraulic projects in Asia, the Karakum Canal represent also one of the main structures which led to the desiccation of the Aral Sea between the 80s and the 90s. with a length of 1,375 km, the Karakum ranks among the world's longest water supply canals. The Karakum was not the only indicted to the disaster, the hydraulic infrastructure in Central Asia includes reservoirs, channelization, embankments, and intensive irrigation practices. These last systems are often complemented by the utilization of pump stations for groundwater extraction and freshwater diversion into various primary and secondary canals. The Amu Darya and Syr Darya, the two major rivers, and their tributaries were extensively exploited, progressively reducing the water discharged into the Aral Sea, resulting in salinization and the formation of the Aralkum Desert, leading to substantial costs for the entire Aral Sea basin. In Central Asia, states created a strong geopolitical bond, for their interdependence of water, food, and energy resources. Kyrgyzstan and Tajikistan were main providers of water supply for crop irrigation for Uzbekistan, Kazakistan and Turkmenistan, thanks to the Amu Darya and the Syr Darya

⁵³ Crnobrnja-Isailović, J., Jovanović, B., Ilić, M., Čorović, J., Čubrić, T., Stojadinović, D., & Ćosić, N. (2021). *Small Hydropower Plants' Proliferation Would Negatively Affect Local Herpetofauna*. *Frontiers in Ecology and Evolution*, 9, 610325.

⁵⁴ RiverWatch. (2022)

⁵⁵ A moratorium is a temporary suspension of an activity for an agreed amount of time.

rivers flow, the effect was also that of controlling winter heavy water floods. The water provision was reciprocated with of energy, primarily from coal, and food, essential crops, from the countries of the lowlands. Thus, establishing a substantial interdependence among Central Asian republics and shaping the regionalization concept. In the 90s the newly independent Central Asian countries pursued water security by asserting their individual claims in the Aral basin based on national priorities. The energy challenges switched the power dynamics of the Central Asia, upstream and economically disadvantaged countries developed hydropower system to meet the new energy needs. The already existing reservoirs were transitioned from agricultural to hydropower sources, collecting water in spring and summer for release in the winter. Downstream countries, namely Uzbekistan, Kazakhstan, and Turkmenistan, advocated for maintaining the old codependent system for agricultural water allocations. They expressed concern about the shift of upstream reservoirs to hydropower mode, fearing a reduction in water availability leading to droughts in summer and floods in winter. The adverse impacts were exacerbated during this period due to the collapse of the Soviet Union, which brought a lack of funding to mitigate the severity the desiccation process of the Aral Sea.⁵⁶

A similar destiny to that of the Aral Sea's appears to be awaiting the Dead Sea, a distinctive global ecosystem situated 427 meters below sea level, with a salinity level ten times higher than the average. The Dead Sea represents the southern border of the Jordan River, which in the north originates from Mount Hermon. Israel, Jordan, and the Palestinian Territories of Gaza and the West Bank exhibit a heightened reliance on the Jordan River's waters. Other states are touched by the river as well however, not being the main actors bearing interests, for the purpose of this thesis they are going to be neglected. The geopolitics of water in the Middle East, fits into the framework of environmentally scarce territories, marked by aridity, a scarcity of precipitation, and highly saline watercourses. Israel and Jordan have conducted extraction of potassium carbonate to produce fertilizers, diminishing water capacity flowing from Jordan River and other tributaries to the Dead Sea. The direct effect of the inflow decline is the lowering of the sea level, which in 2015 was already of approximately 27 meters. In 2005, Israel, Jordan, and the Palestinian Authority entered into an agreement to initiate a feasibility study, the Red Sea-Dead Sea project (Red-Dead). The envisioned purpose was twofold: to elevate the water level of the basin and to generate desalinated water by capitalizing on the

⁵⁶ Xenarios, S. (2021, April 8). *The Aral Sea Disaster and Implications for Regionalism In Central Asia*. Retrieved November 24, 2023. <https://www.ispionline.it/en/publication/aral-sea-disaster-and-implications-regionalism-central-asia-29957>

elevation difference between the two seas. However, the canal's realization was hindered by the unstable political relations among the nations involved in the Red-Dead and the potential environmental ramifications it posed. Subsequently, in 2013, an agreement was brokered under the auspices of the World Bank to establish a desalination plant for Red Sea water. This initiative aimed to benefit both Israel and Jordan, accompanied by the discharge of seawater and salt residues into the Dead Sea. Despite constituting another system to foster collaboration between Israel and Jordan, potentially extending to the Palestinian Territories, the project remains encumbered by political limitations and environmental uncertainties that have impeded its implementation thus far.⁵⁷

The Brahmaputra, situated in South Asia is a trans-boundary river. As one of the significant watercourses on the Asian continent, it has been identified as one of the basins with a heightened potential for interstate water conflict. Despite instances of violent conflict between China and India within the Brahmaputra's basin boundaries, the actual likelihood of disputes over water resources is relatively low. This is attributable, in part, to China's functional contribution to the Brahmaputra's flow being less substantial than commonly perceived. Moreover, the river, despite its considerable volume, holds limited capacity to address India's substantial water security challenges. Nevertheless, the Brahmaputra remains a strong triggering factor for Sino-Indian tensions, primarily due to the utilization of water infrastructure investment as a means of territorial demarcation and control. This is due to its shared status among four states, including the two most populous nations globally, China and India. Both nations experience rapid economic growth and confront severe water scarcity challenges. Effectively managing the Brahmaputra becomes more challenging due to evolving monsoon patterns, glacier melting, the absence of formal water-sharing agreements, a history of minimal hydrological data exchange, and strained diplomatic ties. Complicating matters, China, as the upstream state with control over more than half of the Brahmaputra basin, displays limited interest in collaborative transboundary water management, evidenced by unilateral infrastructure developments such as dams without consultation with downstream nations. The complex challenging posed by global warming, the forthcoming increase in the number of the population in those already overpopulated states make the Brahmaputra emerge as a prominent potential conflict zone.⁵⁸ In

⁵⁷ Biancheri, B. (2007, October). *Il Medio Oriente tra boom economico e instabilità*. Editoriale di Boris Biancheri. Retrieved November 24, 2023. <https://www.ispionline.it/sites/default/files/pubblicazioni/QR15.pdf>

⁵⁸ Giordano, M., & Wahal, A. (2022, December 8). *The water wars myth: India, China and the Brahmaputra*. United States Institute of Peace. Retrieved November 24, 2023. <https://www.usip.org/publications/2022/12/water-wars-myth-india-china-and-brahmaputra>

1998 China built its first hydropower station in the Brahmaputra basin, which started a project of numerous dams along the river flow, which up to 2023 counted 18 dams.⁵⁹ Among the HPPs, the most ambitious and contentious is the Great Bend Dam. Its most controversial feature, besides, it is the capacity of doubling the power generation of the Three Gorges dam, is that of potentially increase flood risks by disrupting the river natural flow. China seems not to be showing the coordinated efforts with India which could serve to mitigate these risks. The Indian Ministry of Water Resources plans a 10-gigawatt hydropower project on the Brahmaputra explicitly aimed at countering the adverse effects of the Chinese Great Bend Dam. it is important to highlight that the location of both project and their scope signifies also the states' claim over the territory. In fact, the proposed Chinese dam would mark its first hydrologic infrastructure extending beyond the Tibetan Plateau, onto the southern Himalayan slopes toward the Indian state of Arunachal Pradesh, referred to as "South Tibet" by China. Similarly, India's mega-dam near its border with China signifies control not only over water resources but also territorial claims. The geopolitical weight which is held by this river is significant, thus it serves as a tool for power dynamics for both India, China, and Bangladesh, even though this last one mentioned is the one holding the less grip on the matter. Traditionally, India has held the role of hegemon for water relations within this southern region. However, China is strategically leveraging India's perceived reluctance on water-related issues with its neighbours to cultivate relationships at the expense of India. A concrete illustration of this dynamic is India's ongoing tension with Bangladesh, stemming from its failure to ratify a 2011 agreement for dredging the Indian segment of the Brahmaputra's Teetsa tributary. Seizing this opportunity, China has extended an offer to fund the dredging operations in the Bangladeshi section of the river while also proposing the construction of additional storage facilities to ensure consistent dry season flows for transportation purposes.⁶⁰

The Mekong River, spanning approximately 4,900 kilometers, is the longest river in Southeast Asia. Originating in Tibet, the river flows for almost half of its length through the south of China, precisely in the province of Yunnan, then it courses its way through five Southeast Asian nations, namely Myanmar, Thailand, Laos, Cambodia, and Vietnam. Also known as the Lancang, this river plays a pivotal role as source of sustenance as well as a transportation route.⁶¹ Supporting the 70 million inhabitants residing in the Mekong basin, it is renowned for

⁵⁹ Giordano, M., & Wahal, A. (2022, December 8).

⁶⁰ Ibid.

⁶¹ European Parliamentary Research Service. (2018, April). *Water disputes in the Mekong basin*. [https://www.europarl.europa.eu/RegData/etudes/ATAG/2018/620223/EPRS_ATA\(2018\)620223_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2018/620223/EPRS_ATA(2018)620223_EN.pdf)

having one of the largest inland fisheries in the world and for an extraordinarily rich biodiversity. Interest in Mekong hydro-development has increased due to the region's growing energy needs, particularly since the mid-2000s. HPPs represent a cheap alternative to the use of coal, which is indeed benefitting the populations starting immediately from the moment of construction, in terms of energy access for both domestic and commercial use, and Chian's economy.⁶² However, it is now evident that the overexploitation of the river will show the environmental shortcomings in the long run, posing a threat to the river's biodiversity, and intensifying the competition for natural resources in the future. Furthermore, the construction of the dams, e.g.: the Xayaburi Dam, have caused the displacement of villagers formerly living in the area. China pushes for large-scale hydropower projects, with the Upper Mekong being one of the top priorities. In 1995, the first of the Lancang dams was realised, nowadays there are 13 operating dams and, according to some studies, more than 130 dams may be built by 2030.⁶³ The escalating utilization of the river for hydroelectric power adds to its multifaceted significance. Adding up to the list of issues connected to the creations of hydroelectric infrastructures there are the risks of flooding and desertification, connected to seasonal natural changes, which are nowadays emphasized due to global warming. All these conditions have led to an intricate geopolitical scenario, in which the diplomatic relationship between China and the other southern east's Asian states threatened to be deteriorated. Due to China's unwillingness to become a full member and the Mekong River Commission's (MRC), the MRC's ability to effectively resolve these disputes has been restricted thus far. China claimed the insignificance of the projects' adverse downstream effects, underlining the beneficial aspects of them, e.g.: hydro-electricity generation and the regulation of the stream, preventing floods. Conversely, downstream apprehensions focus on concerns connected to water scarcity, modifications in river flow, the accumulation of sediment, e.g.: the degradation of habitats, and the potential impoverishment of crucial agricultural zones and fisheries. Tonle Sap seems to be a particularly vulnerable area, situated in Cambodia, this integrated lake and river system that has traditionally sustained local livelihoods through its seasonal flooding and originally abundant fishing grounds. Given that fish sourced from the Tonle Sap contribute to nearly two-thirds of

⁶² Agostini, L. D. (2020, February 4). *Water Grabbing and water conflicts: An overview of a nearer future crisis*. Medium. Retrieved November 24, 2023. <https://medium.com/@leodago9/water-grabbing-and-water-conflicts-an-overview-of-a-nearer-future-crisis-22514f7d3d0c>

⁶³ Strangio, S. (2023, October 31). *Hydropower dams threaten crucial mekong supply chains, wwf says*. The Diplomat. Retrieved November 26, 2024. <https://thediplomat.com/2023/10/hydropower-dams-threaten-crucial-mekong-supply-chains-wwf-says/#:~:text=Environment%20%7C%20Southeast%20Asia-.Hydropower%20Dams%20Threaten%20Crucial%20Mekong%20Supply%20Chains%2C%20WWF%20Says,up%20weighing%20down%20economic%20growth.&text=A%20village%20on%20the%20Mekong%20River%20in%20Champassak%20province%2C%20Laos.>

Cambodia's inland fish harvest and serve as the primary source of animal protein in the country, a decline in fish stocks resulting from dam construction and other factors could pose a significant threat to food security in the affected regions.⁶⁴ The limited disclosure of information by China regarding its dam projects further amplifies uncertainties triggering political tension, and with the population growth in Southeast Asia, the imperative for a dependable river flow becomes increasingly crucial.

Inaugurated in 2016, the Gibe III is an Italian manufactured dam built over the river Omo in Ethiopia 450 kilometres away from the capital Addis Abeba. The dam was built to foster the country's economic development by boosting the internally produced energy rates. The project which was meant as an integration to the already existing Gibe I and II, was planned to further increase the country's energy production by 80%. The river Omo is a transboundary watercourse, it stretches from north to the south in Ethiopia, then its way continues for the last kilometres in Kenya where it flows into the Lake Turkana. The Gibe III hydroelectric dam, represent only one piece of the puzzle for a substantial national energy plan, with the preceding Gibe I and Gibe II, and with the future Gibe IV and Gibe V. Parallel to the Grand Ethiopian Renaissance Dam initiative, this complex mirrors Ethiopia's ambitious objective of attaining a power generation capacity of 40,000 MW by the year 2035. The dam construction is a component of a more extensive development initiative by the Ethiopian government in the Omo Valley, a comprehensive scheme which encompasses activities such as, establishment of sugar plantations, and promotion of commercial agriculture. The biggest threat for the forthcoming years is the worsening of the displacement of the population living in the area, harming the livelihoods of approximately 500,000 indigenous individuals. These communities directly or indirectly depend on the Omo River's waters for their sustenance, for irrigation and fisheries activities. Lake Turkana relies on the Omo River's flow almost entirely, unexpectedly to what one could think the level of the lake is rising, coastline villages are undergoing submersion, conversely, people living inland are facing the hard consequences of dry-river floods. Beyond this initial impact, routine dam operations will exacerbate the detrimental effects on ecosystems and local livelihoods. Alterations to the river's flood patterns will adversely affect agricultural productivity, impede the renewal of crucial grazing zones, and diminish the biodiversity in the

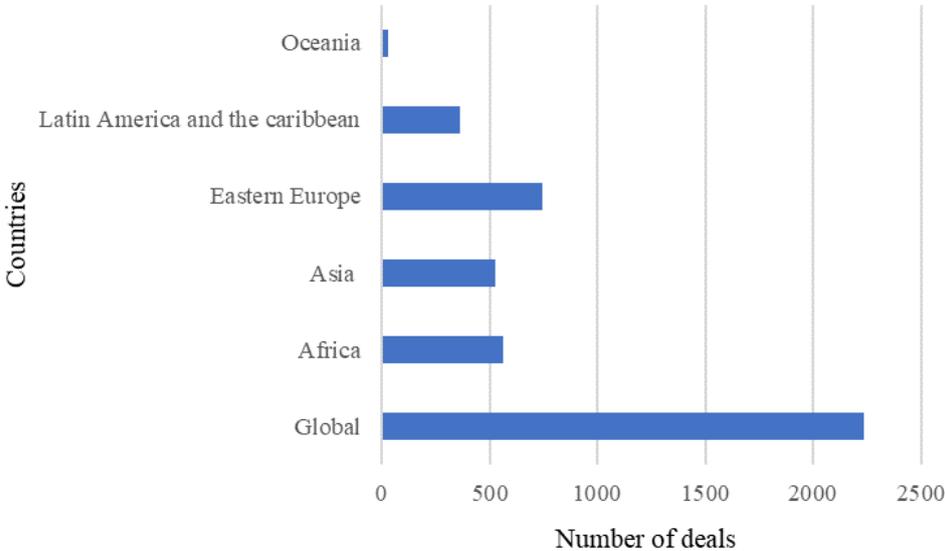
⁶⁴ Climate Diplomacy. (n.d.). *Dam projects and disputes in the Mekong River Basin*. Retrieved November 26, 2024. <https://climate-diplomacy.org/case-studies/dam-projects-and-disputes-mekong-river-basin>

river as well as on the land, all of which are pivotal resources for the well-being of Indigenous communities.⁶⁵

1.4.2. Quantitative overview of the extension of Large-Scale Land Acquisition (LSLA)

This study delves into the comprehensive dataset from the Land Matrix database, covering a 23-year period from 2000 to 2023, to analyse and illustrate the extent of the global phenomenon of Large-Scale Land Acquisitions. The developed dataset provides an insight into the distribution of land deals across continents, offering a detailed examination of the number of deals and corresponding contract sizes measured in hectares. The selection has been made only on concluded contracts, neglecting the contracts with ongoing, failed or cancelled negotiations. Furthermore, contracts have been considered among States, as well as multinational corporations, and other private actors, which in some cases are disclaimed and in others are unknown to the public. The comparison of the number of contracts performed and concluded within regions in the world is showed in the line graph in **Figure 1.2**.⁶⁶

Figure 1.2
Large Scale Land Acquisitions



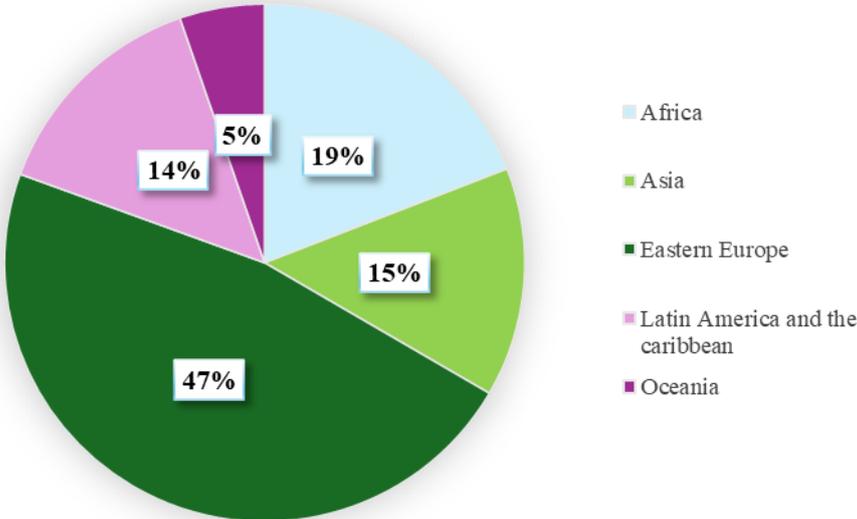
⁶⁵ Salza, A. (2023). *Drought and Floods at Lake Turkana: an Anomaly for Pastoralists?*. *Nomadic Peoples*, 27(1), 95-99.

⁶⁶ Land matrix. (n.d.). *Web of transnational deals*. Retrieved October 24, 2023, from <https://landmatrix.org/>

The global perspective reveals a total of 2,236 land deals, contributing to an extensive contract size of approximately 64,854,901 hectares. This all-encompassing view sets the stage for a deeper analysis of LSLA trends on a continental level. The African continent stands out with 566 land deals, constituting a vast contract size of 12,379,209 hectares. This signifies a significant presence of LSLA activities within the region, warranting a closer examination of the factors influencing this trend. Asia, with 530 land deals, portrays a diverse landscape of large-scale land acquisitions, with a total contract size of 9,287,077 hectares. The dataset prompts an exploration of the drivers and implications of LSLA in the Asian context. Eastern Europe is characterized by 744 land deals, contributing to a contract size of 30,582,809 hectares. This region exhibits a notable presence of LSLA activities, necessitating an in-depth analysis of the underlying dynamics. In Latin America and the Caribbean, 364 land deals have been recorded, accounting for a considerable contract size of 9,181,543 hectares. This demands scrutiny into the socio-economic and environmental impacts of LSLA within this geographic scope. Oceania, with 32 land deals, manifests a relatively lower but discernible presence of LSLA, with a contract size of 3,424,263 hectares. **Figure 1.3** is useful to understand the proportions of the extent of land grabs in the different regions, the pie chart oversimplifies the concept by showing it through percentages.⁶⁷

Figure 1.3

Distribution of grabs



⁶⁷ Land matrix. (n.d.). *Web of transnational deals*. Retrieved October 24, 2023, from <https://landmatrix.org/>

The countries targeted for land acquisitions predominantly belong to the category of low-income states, frequently exhibiting weakened governmental structures but possessing favourable conditions for agricultural production. This comprehensive overview of LSLA trends across continents provides a foundation for further research into the socio-economic, environmental, and geopolitical implications of large-scale land acquisitions. The dataset serves as a valuable resource for policymakers, researchers, and stakeholders engaged in understanding and addressing the multifaceted dimensions of LSLA globally. The choice of using this database as source is justified by the fact that international organisation's databases neglect to collect data specifically related to this subject. Even though the data is not published by an international organisation (e.g. the World Bank Data), Land Matrix shows reliability and accuracy on the information provided, which is allegedly constantly updated. Land matrix is used in scientific papers as a source of information⁶⁸, however, the lack of specificity about the precise sources of the retrieved data remains a strong limitation to the full transparency of the dataset.

The countries targeted for large scale land acquisitions belong to the category of low-income states, frequently exhibiting weakened governmental structures but possessing favourable conditions for agricultural production in terms of resources. This gives rise to various regional trends. Notably, extensive land acquisitions are unfolding in South America, sub-Saharan Africa, Southeast Asia, and the post-Soviet states of Eastern Europe. Figure 3 illustrates the nations witnessing particularly significant levels of investment. Already in the first decade of the 2000s the investments on agricultural land in Zambia were skyrocketing. A significant slice of Zambia Gross Domestic Product (GDP) is occupied by the agricultural sector, which constitutes roughly 20 percent of it. Agriculture in this country engages over 70 percent of the population, thus having a significant place in the Zambian labour market.⁶⁹ The national Government has implemented strategies geared towards the enhancement of this sector, paving the way for Land Grabbing practices. The reasons behind these government policies were the diversification of the national economy and the mitigation of the dependence on the mining industry, consequently addressing the economy's copper prices dependence. For these reasons, the national government instituted a series of boards and agencies for the promotion of the

⁶⁸ E.g.: Rulli, M. C., Saviori, A., & D'Odorico, P. (2013); European Commission (2021), *What are the effects of large-scale land acquisitions in Africa on selected economic and social indicators?* https://knowledge4policy.ec.europa.eu/publication/what-are-effects-large-scale-land-acquisitions-africa-selected-economic-social_en

⁶⁹ Baldarelli, M. (2018). *Large-Scale Land Acquisitions and Legal Pluralism in Africa: The Case of Zambia and Ghana* (Doctoral dissertation, University of Trento).

privatisation of lands, the development of export and boosting the growth of national enterprises. Among these, the Zambia Development Agency (ZDA) and its associated act are particularly relevant in the picture of Zambia's national policies promoting the agricultural sector. This agency is one of the only instruments which enables researchers to provide an esteem of the entity of the grabs. The government in fact established a mandatory subscription to the ZDA for all foreign investors, thus the Agency provides information on the investment certificates of registered actors. The national policy has been effective, a significant surge in agricultural investments has been registered by the ZDA, escalating from \$24,373,000 (USD) in 2004 to the zenith of \$597,707,705 (USD) reached in 2013.⁷⁰ Although the government favours foreign investors occupying, buying, and using its lands, conflictual power dynamics often emerge between the buyers and the local chiefs. Customary land represents a fortune for chiefs because it gives them the opportunity to extract rents, for this reason chiefs might strive for their authority over the customary lands may undermining the negotiations with foreign investors. Serenje, a South African company, is an example of it, facing friction in the negotiation of land with the Mkushi local chief. Tensions arose between the two actors, each asserting authority over the land earmarked for investment, despite prolonged negotiations with the support of the Zambia Development Agency (ZDA), with in the end had to redirect the investor. Similarly, an Indian company operating in Mumbwa encountered a situation where, following the local chief's consent to the conversion, another chief claimed authority over the land. To resolve this issue and continue operations, the company in Mumbwa opted to compensate the opposing chief. Notably, the borders between chiefdoms are delineated in a map established by the colonial government in 1958. However, these borders are consistently contested, considered outdated, and imprecise. In the context of land investments, chiefs grasp the potential value of land, reigniting conflicts over borders. This contestation of authority may lead to delays in investments or necessitate additional payments to resolve conflicts.⁷¹ Another Sub-Saharan African country subjected to grabbing is Tanzania. Alterations in local land tenure and Large-Scale Land Acquisitions (LSLAs) encompass either the leasing of public land or the reclassification of customary land followed by new leasing arrangement, as previously seen for Zambia. Tanzania fecund territories have attracted substantial agricultural investments totalling to around 1 billion USD. This financial influx aligns with an estimated 42 cases of LSLAs,

⁷⁰ Baldarelli, M. (2018).

⁷¹ Ibid.

covering an approximate area of 350,000 hectares.⁷² Tanzania stands out among the favourite targets for Large Scale Land Acquisitions, and in a context where approximately 73 to 82 percent of the population relies on agriculture for both income and sustenance, these phenomena have a significant relevance. The Tanzanian government, similarly, to what has been said for the Zambian government, started adopting international and domestic policies aiming at the enhancement of the economy through private investments targeting the agricultural sector. Among the most important policy implemented there are: the New Alliance for Food Security and Nutrition, the Southern Agricultural Growth Corridor of Tanzania, Kilimo Kwanza (Agriculture First), and Big Results Now. All these projects were implemented between the years 2006 and 2013, there might be a direct connection between their establishment and the steep spike in the number of land deals both made by foreign and national actors. The fecundity of the soil is not the unique reason Africa is an appealing target for grabs. adding up to that the proximity there are other elements which makes Africa an excellent target, firstly, its proximity to the European market, secondly, the low person/land ratio leaving extensive portion of lands unused and available. Thirdly, the vulnerability of the land users, often lacking an efficient safeguard through the national legal system. Lastly, the fragmented land governance and the substantial struggle to cope with corruption in the land sector.

Ukraine has been touched by the same destiny, here Land Grabbing takes the shape of *de facto* control of the land, and also of the formal ownership change. Almost 57 percent of Ukrainian soil is arable land, constituting the second biggest shared of arable land in Europe, second only to Denmark, thus its attractiveness for investors.⁷³ Following the dissolution of the Soviet Union, Ukraine initiated a transition from public to private ownership. Throughout the 1990s, land distribution occurred formally among individuals employed on collective and state farms, with an average allocation of 4 hectares per recipient. The land-share certificates allocated to the rural populace lacked specific area assignments initially. It was only in December 1999, with the enactment of a presidential decree, that land was officially granted to approximately 7 million rural inhabitants, marking the commencement of land leasing. In 2001, the Land Code was implemented, officially ensuring land titles. However, concurrently, a moratorium on the sale and purchase of farmland was instituted. Ukraine's land reform unfolded as a protracted

⁷² Sullivan, J. A., Samii, C., Brown, D. G., Moyo, F., & Agrawal, A. (2023). *Large-scale land acquisitions exacerbate local farmland inequalities in Tanzania*. Proceedings of the National Academy of Sciences, 120(32), e2207398120.

⁷³ The Global Economy.com (2021). *Arable land, percent of land area in Europe*. Retrieved October 25, 2023, https://www.theglobaleconomy.com/rankings/arable_land_percent/Europe/

process, presenting significant challenges for the rural community. Over a decade, farmers faced impediments in cultivating their land for assorted reasons. Primary among these was the uncertainty regarding the location of their land shares. Additionally, a deficiency in technical equipment persisted, as it remained under the ownership of collective agricultural enterprises. Access to financial resources was also constrained (Allina-Pisano, 2008). Faced with limited prospects, many individuals relocated to urban areas or emigrated. To date, agricultural policies in Ukraine have offered minimal state support to small and medium farmers, and there appears to be a lack of government comprehension regarding the facilitation of rural development. In both instances, although policies may be articulated on paper, their effective implementation is notably lacking.⁷⁴ Furthermore, the imperialist project of Russia, which triggered the world started exactly from Donbass reclaiming the old USSR territorial property. The illegitimate territorial acquisition of Ukraine through armed conflict could be seen as a strategic move for the exploitation of its resources, increasing the economic and commercial strength of the country. The country has also been one of the main producer and exporters of crops, wheat, both in Europe but also outside. The Russian territorial occupation created a significant shock in the economy of several countries, due to Ukraine's connection with the external markets. Ukrainian extreme damages are quite known, among which economic collapse, massive population displacement, and the soar of poverty rate, cancelling almost fifteen years of the county's progress.⁷⁵

This case of grab remains mostly neglected by literature, although considering the definitions of grabs provided, violent and illegal means of appropriation should be encompassed as well as the legal and peaceful ones. With regards to the other forms of LSLAs mentioned before, there are both proponents and supporters. Proponents those who are in favour of these land investments present them as mutually advantageous solutions, fostering national economies, rural development, and food security concurrently. Conversely, sceptics perceive large-scale land acquisitions as a form of "Land Grabbing," a phenomenon undermining local land rights. This process disproportionately impacts socially and economically vulnerable populations, subjecting them to the majority of the costs while affording them minimal benefits from the

⁷⁴ Plank, C. (2013). 184. *Land grabs in the black earth: Ukrainian oligarchs and international investors*. Land concentration, 184.

⁷⁵ Economics Observatory (2023, December 7). *Ukraine: What's The Global Economic Impact of Russia's invasion?*. Retrieved October 25, 2023, <https://www.economicsobservatory.com/ukraine-whats-the-global-economic-impact-of-russias-invasion#:~:text=Poverty%20and%20food%20insecurity,undoing%2015%20years%20of%20progress.>

transactions. Studies have found that such practices can lead to increased deforestation of tropical forests in certain areas,⁷⁶ displacement of the local populations, dispossession, climate change-related migration, conflicts, and Loss of access to land and water rights.⁷⁷

1.5 Triggering factors

From the definition of Water Grabbing and Land Grabbing a connection can be grasped between the intrinsic need of human beings for natural resources for the subsistence, prolific territory in terms of quantity of resources, and water availability nurturing those soil resources. The humankind needs have been evolving together with social transformation. From the pure need of goods of basic need, to a more comprehensive demand of a wide range of products ensuring not only survival, but a higher lifestyle standard. A strong positive impact on societal evolution is attributed to the improvements in the agricultural field favoured by infrastructure, research, and services advancements.⁷⁸ In this respect, agriculture has advanced human evolution in a remarkable way over the ages, influencing our history and survival to a greater extent than we often realize. Agriculture has grown in scope, value, and relevance in the modern day. The trend of large-scale land and water acquisitions have gained momentum in recent times because of combined pressures from different directions. The main drivers pushing governments and private investors to engage in land and water related deals are of social, economic, and environmental change nature⁷⁹. The growing demand for natural resources and the ran to land and water grab have increased because of a combination of factors, e.g.: population growth and change in diet habits, leading to scarcity of food and water resources, the increase in oil prices, due to policy changes and rise in global demand for biofuel production.

⁷⁶ Davis, K. F., Koo, H. I., Dell'Angelo, J., D'Odorico, P., Estes, L., Kehoe, L. J., ... & Tatlhego, M. (2020). *Tropical forest loss enhanced by large-scale land acquisitions*. *Nature Geoscience*, 13(7), 482-488.

⁷⁷ Roth, M. (2012). *Large Scale Acquisition of Land for Commercial Investment*. US AID From the American People. Retrieved: January 29 2024, from <https://www.land-links.org/wp-content/uploads/2016/09/Module-5-Large-Scale-Land-Acquisitions-Roth.pdf>

⁷⁸ UNDP, H. (2007). *Uganda human development report 2007: Rediscovering agriculture for human development*. Kampala, Uganda.

⁷⁹ Rulli, Savioli, & D'Odorico, (2013).

1.5.1. Population growth and social pattern changes

Global food security is one of the most challenging issues to tackle in global governance. Targeted at the UN level, food security and accessibility are among the objectives to reach Zero Hunger, the second goal of the Sustainable Development Goals⁸⁰. The combination of several driving forces pushing on both the supply and demand sides determines the complexity of the global food security issue. A major agricultural transformation has been occurring because of the world's population's fast growth e.g.: intensification, diversification, and extensification.⁸¹ One of the primary causes of environmental deterioration and ecological imbalance is agricultural extensification, which involves converting arable, range, and marginal land into agricultural fields. This led to a decrease in soil fertility, a shift in the climate that increased the frequency and severity of droughts as well as the unpredictability of rainfall, as well as a decrease in water supplies and vegetative cover.

Figure 4 illustrates the variation in the number of the world population, expressed in billions, over a fifty years' period.⁸² Demography estimates that on average the population marginally incremented from 10000 BCE to 1700, with a growth rate of 0.04%. As the line graph shows, the population climbed steeply in the last fifty years. On 15 November 2022, a record was scored with the global population hitting eight billion people.⁸³ Our earth has supported 108 billion people at one point in time. Accordingly, 6.5% of all persons who have ever been born are represented in the population as it is today. Moreover, demographic assessments report that the growing rate is supposed to decelerate in the next decades, reaching an increment of only 15 million people per year, against the current absolute annual increment of 80 million people.⁸⁴ Patterns of growth are likely to be differ for high-income countries and medium or low-income

⁸⁰ United Nations. (n.d.). *Goal 2: Zero Hunger - United Nations Sustainable Development*. United Nations. Retrieved February 4, 2023, from <https://www.un.org/sustainabledevelopment/hunger/>

⁸¹ Feyissa, G. S., & Ranjan, R. (2012). *Growing vulnerability: population pressure, food insecurity and environmental degradation, Central Rift Valley*, Ethiopia. *Journal of Biodiversity and Environmental Sciences*, 2, 33-41.

⁸² Roser, M., Ritchie, H., Ortiz-Ospina, E., & Rodés-Guirao, L. (2013, May 9). *World population growth*. Our World in Data. Retrieved February 6, 2023, from <https://ourworldindata.org/world-population-growth>

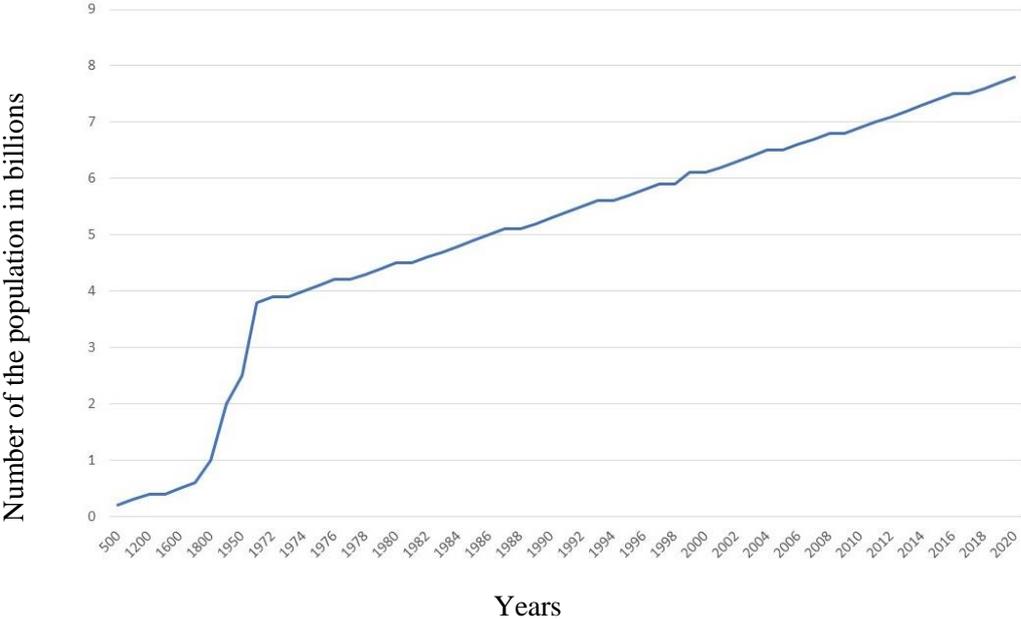
⁸³ United Nations. (n.d.). *Day of 8 Billion*. United Nations. Retrieved February 4, 2023, from <https://www.un.org/en/dayof8billion#:~:text=Day%20of%20Eight%20Billion,a%20milestone%20in%20human%20development.>

⁸⁴ Food and Agriculture Organization of the United Nations (2017). *The future of food and agriculture - trends and challenges*. Retrieved February 4, 2023, from <https://www.fao.org/3/i6583e/i6583e.pdf>

countries, however the overall prediction reports that by adding together these increases, the world's population will reach 9.73 billion by 2050 and 11.2 billion by 2100.⁸⁵

Figure 1.4

Population's increase overtime



Societal changes brought by urbanisation brought a change in the consumption and in the demand of food. As part of a general dietary shift, more urban affluence tends to boost demand for processed foods as well as food derived from animals, fruits, and vegetables. Higher urban salaries also frequently lead to higher opportunity costs associated with food preparation and a preference for food products with high labour content, such as fast food, convenience meals purchased at stores, and foods produced and sold by street vendors. The nutritional composition of diets is shifting because of these modifications. Diets are often growing more calorie-dense and heavier in salt, fat, and sugar. Less people work in agriculture and more work in transportation, wholesaling, retailing, food processing, and vending because of this change in consumption habits. Overall, the growing demand and the switch in the basket of goods desired by the global population, do not meet the output of agricultural product causing a shortage of food available, thus jeopardizing the possibility to reach food security globally.

⁸⁵ a) Roser, M., Ritchie, H., Ortiz-Ospina, E., & Rodés-Guirao, L. (2013, May 9). *World population growth*. Our World in Data. Retrieved February 6, 2023, from <https://ourworldindata.org/world-population-growth>
 b) United Nations (2022). *The 2022 Revision of World Population Prospects*. Department of Economic and Social Affairs. <https://population.un.org/wpp/>

1.5.2. Increase in oil prices and growing demand for biofuels

Another factor driver of the run to land and water is surely found in oil and biofuel. A connection is found between the fluctuation of oil price, fluctuation of food price, demand for biofuels as oil fuels substitute and land grabs. One among the numerous studies highlighting this link demonstrates the connection between crude oil price variation, food production index (FPI), and consumer price index (CPI), considering world food prices of major products, e.g., eggs, meat, milk, oilseeds, rice, sugar, and wheat⁸⁶. The unidirectional influence that crude oil price variation has increase food production expenditure, therefore increasing food prices around the world. Oil's price spike in 2008 and its role in the food crisis of 1974 are both widely known, but other energy costs have lately increased by 80–120%, along with the costs of metals and minerals. Fertilizer costs have almost quadrupled throughout both crises.⁸⁷ The most dramatic price increases in both crises occurred with rice (200% in the 1974 crisis and 255% in the most recent crisis), although wheat prices jumped dramatically in 1974 (160%), while maize and soybean prices both saw strong price spikes of between 50 and 90%.⁸⁸ Therefore, alternative energy sources become necessary to moderate production prices and food price augmentation, thus leading to biofuel option appetibility increase.⁸⁹ As an alternative for gasoline and diesel, biofuels are more in demand as oil prices rise. They are considered renewable sources of energy as they are produced from renewable raw materials and their carbon footprint is lower compared to fossil fuels.⁹⁰ Biofuels can be used as substitutes for traditional fossil fuels in transportation and energy generation. Overall, biofuels have been promoted to reduce dependence on fossil fuels and to lower greenhouse gas emissions, although their sustainability and environmental impact have been the subject of debate and research. There are three main types of biofuels: first-generation biofuels, which are produced from food crops such as sugarcane, corn, and soybeans, and second-generation biofuels, which are produced from non-food crops, such as switchgrass, wood chips, and agricultural waste.⁹¹ Thirdly an algae-based biofuels have been developed, being the most promising renewable fuel

⁸⁶ Esmaeili, A., & Shokoohi, Z. (2011). *Assessing the effect of oil price on world food prices: Application of principal component analysis*. *Energy Policy*, 39(2), 1022-1025.

⁸⁷ Headey, D., & Fan, S. (2008). *Anatomy of a crisis: the causes and consequences of surging food prices*. *Agricultural economics*, 39, 375-391.

⁸⁸ Ibid.

⁸⁹ Rulli, Savori, & D'Odorico, (2013).

⁹⁰ Eisentraut, A. (2010). Sustainable production of second-generation biofuels: potential and perspectives in major economies and developing countries.

⁹¹ Ibid.

feedstock, its state of the art is too poor to make this biofuel a replacement for fossil fuels.⁹² Biofuel production frequently necessitates extensive irrigation, increasing competition for water resources in areas where water is already in short supply. When oil prices rise, there is an increased demand for biofuels as a substitute for gasoline and diesel. Biofuel production often requires substantial amounts of water for irrigation, leading to increased competition for water resources in regions where water is already scarce. The increase of agriculture, particularly crops grown for the manufacture of biofuels, can result in the conversion of land and the depletion of groundwater supplies because of higher oil costs. In general, the rise in oil prices may generate economic incentives for the use of water resources for energy production, encouraging Water Grabbing and even escalating issues with water shortage in areas where it already exists. As demand for biofuels increases, companies and governments are looking for ways to secure access to water resources to meet this demand. This can involve the acquisition of water rights, the construction of dams and other water infrastructure, or the leasing or purchasing of land in areas with abundant water resources.

1.5.3. The 2009 EU Renewable Energy Directive, the Fuel Quality Directive, and the United States 2007 policy drift on bioethanol use

An incentive in the use of lands to produce biofuels has been brought by new policies, e.g.: The 2009 EU Renewable Energy Directive in the EU, and the 2007 policy drift on bioethanol use in the US. Considering only EU and American policymaking in the renewables sector seems a Eurocentric approach. However, the choice of analysing only this two here is since most grabs are conducted by the EU and the US as will be seen in the next chapters. The Renewable Energy Directive is a legal framework which was established by the EU in 2009, for the development of renewable energy across all sectors of the EU economy through national binding targets. The ambitious goal that the was to help member states to cut carbon emissions, thus reaching the goal of 55% reduction of carbon footprint within the European Union by 2030.⁹³ In its first version, the directive established that 20% of energy production had to come from renewable sources of energy by 2020. It arranged guidelines to ensure the adoption of renewables in the

⁹² Alam, F., Mobin, S., & Chowdhury, H. (2015). *Third generation biofuel from algae*. *Procedia Engineering*, 105, 763-768.

⁹³ Renewable energy directive. Energy. (n.d.). Retrieved February 13, 2023, from https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules/renewable-energy-directive_en

transportation and heating and cooling sectors, as well as common principles and guidelines for renewables support schemes, the rights to produce, consume, and establish renewable energy communities, and sustainability standards for biomass. The directive also created guidelines to lower costs, encourage investments, and eliminate barriers in renewable energy technology, while also enabling enterprises, consumers, and citizens to take part in the transition to clean energy.⁹⁴ In 2018 the commission issued a revision of the 2009 directive, Renewable Energy Directive (EU) 2018/2001 (RED II), which became binding three years later. According to this version, a new goal was fixed at 32% renewable energy sources for 2030. A second revision has been formulated by the Commission in 2021, furtherly reformulated in 2022 within the REPowerEU Plan, raising the renewable usage target from 40% to 45%.⁹⁵ The adoption of this last version will be adopted allegedly by the first quarter of 2023, To guarantee that all potentials for the growth of renewable energy are fully used, the directive amendment adds additional measures to the current building blocks created by the 2009 and 2018 directives. Along with the other pieces of legislation intended to be delivered on the European Green Deal, the Council and the European Parliament will be debating the proposed amendment of the directive. These are all supposed to be adopted in the first quarter of 2023, at the end of an extensive consultation process involving not only the Parliament and the Commission, but also stakeholder inputs and public's consultation. This comprises responses to a roadmap that the Commission released in August 2020, a public consultation that began in November 2020 (a summary of which was published in March 2021), and two stakeholder meetings that were held in December 2020 and March 2021 to solicit input from stakeholders. To implement some of the ideas contained in the energy system integration and hydrogen plans, announced in 2020, into EU law, these new measures include stronger ones to assist the use of renewables in transportation, heating, and cooling. These ideas seek to develop a renewable energy-based, energy-efficient, circular energy system that supports electrification based on renewable sources and encourages the use of renewable and low-carbon fuels, including hydrogen, in areas where electrification is not yet a practical alternative. Furthermore, in April 2015 the Council approved another directive, which, together with the RED aimed at reducing GHG emissions by incentivizing renewable sources of energy, the Fuel Quality Directive (FQD). The EU set the target to 6% of reduction of emissions by transport fuels by 2020 compared to 2010 levels. This Directive targets fossil

⁹⁴ Renewable energy directive. Energy. (n.d.). Retrieved February 13, 2023, from https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules/renewable-energy-directive_en

⁹⁵ Ibid.

fuels and promotes the substitution of those with low carbon and biofuels. Furthermore, the FQD sets the criteria to reach those greenhouse gas emission reduction to ensure that biofuels are produced in a sustainable manner, which does not contribute to deforestation or other negative environmental impacts. E.g.: biofuels must reduce GHG 35% more than fossil fuels, biofuels must not be produced from land with high carbon stocks such as forests, wetlands, and peatlands.⁹⁶ Biofuels are considered to be able to provide a relevant contribution to the GHG reduction in the transportation sector, particularly when produced from waste and residues rather than dedicated crops. However, there are environmental and social impacts to biofuel production, particularly in developing countries. This is because the production of those is realised on croplands which were used for agricultural production, indirect land use change (ILUC), or it might be displaced onto those non-crop lands.⁹⁷ Overall, the Fuel Quality Directive represents an important policy tool for reducing the GHG emissions of transport fuels in the EU. By setting clear standards and sustainability criteria for biofuels, the directive helps to ensure that biofuels are produced and used in a sustainable manner that supports the transition to a low-carbon economy.

The creation of policies on renewables in the United States under the Energy Policy Act (EPA) entered into force in 2005, bringing the European Union policies forward by a couple of years. The American Congress firstly created the Renewable Fuel Standard (RFS) in 2005, in 2007 it was expanded under the Energy Independence and Security Act (EISA), these both amended the original American policy, the Clean Air Act (CAA).⁹⁸ The RFS regulates four categories of renewables: biomass-based diesel, cellulosic biofuel, advanced, biofuel, and total renewable fuel. Those are expected to replace in a certain quantity, the petroleum-based transportation fuels. EISA set a long-term goal to 36 billion gallons of renewable fuel by 2022, and to foster this goal it also set requirements for fuels to qualify as such, monitoring mechanisms, and additional annual rule processes. The Energy Policy Act establishes pathways for all four categories of fuels covered by the Renewable Fuel Standard. Advanced biofuels and Biomass-based diesel must reduce by half greenhouse gas emissions. Whereas cellulosic biofuel and ethanol derived from corn starch must meet respectively a 20% and a 60% greenhouse gas emission reduction. The EPA is still reviewing and approving new routes, including those for

⁹⁶ Fuel quality. Climate Action. (n.d.). Retrieved February 15, 2023, from https://climate.ec.europa.eu/eu-action/transport-emissions/fuel-quality_en

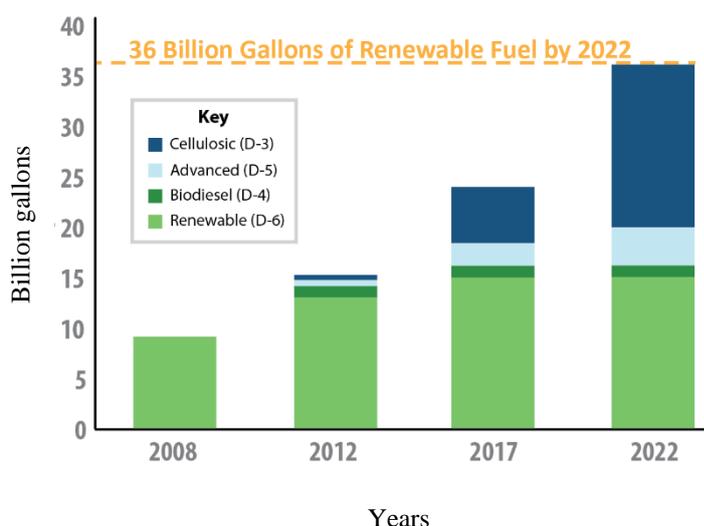
⁹⁷ Scarlet, N., & Dallemand, J. F. (2019). *Future role of bioenergy. In The role of bioenergy in the bioeconomy* (pp. 435-547). Academic Press.

⁹⁸ Environmental Protection Agency. (n.d.). EPA. Retrieved February 15, 2023, from <https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard>

fuels produced using innovative technology or novel feedstocks. Certain biofuels may be "dropped in" to existing petroleum-based fuels without needing to be mixed because they are sufficiently comparable to gasoline or diesel. These biofuels that may be added in place of petroleum-based fuels are particularly promising for the future. Supporting views to this policy shift argue that the RFS helps decreasing the investment risk associated to biofuels by granting their demand, and it also boost the US independence from fossil fuels imports. It is also claimed that the increasing use of renewables represents a considerable source of income, positively impacting the country's economy and creating new job places.⁹⁹

Figure 1.5

Congressional volume target for renewable fuel



This figure illustrates the US target to boost the implementation and the use of renewable sources of energy. Different goals are established for categories of renewables. Here each fuel type is given a "D-code" that designates the renewable fuel type, the categorisation is based on the feedstock utilized, fuel type generated, energy inputs, and GHG reduction targets.¹⁰⁰ A massive growth in biofuel production has been registered in the last thirty years. This dramatic

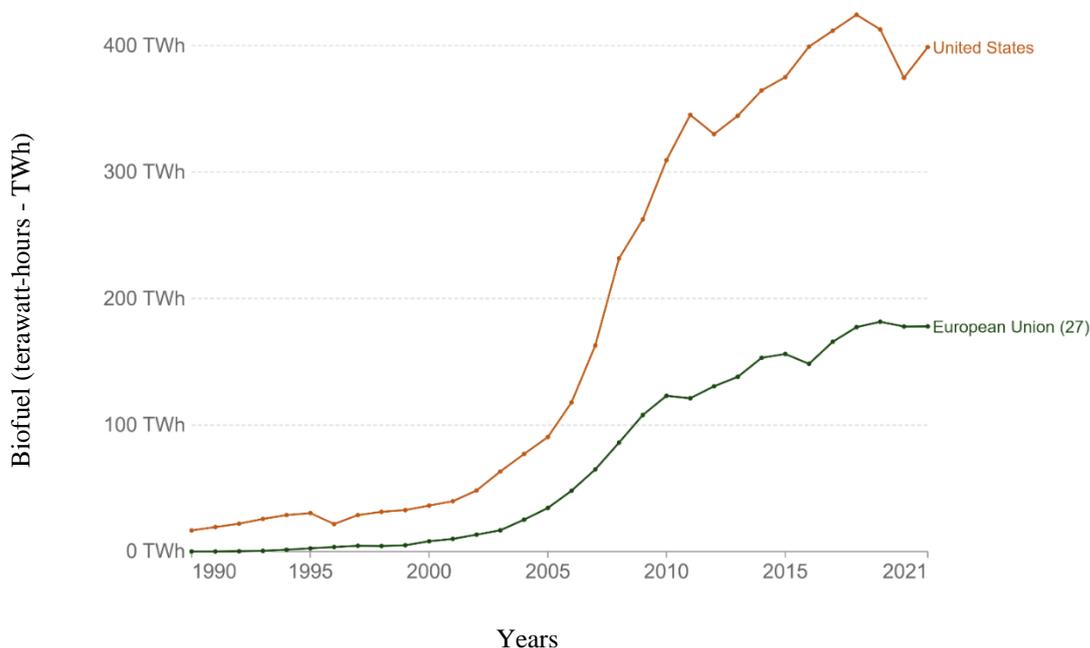
⁹⁹ FE974/FE974: *United states biofuel policies: Overview and discussion*. (n.d.). Retrieved February 20, 2023, from <https://edis.ifas.ufl.edu/publication/FE974>

¹⁰⁰ Environmental Protection Agency. (n.d.). EPA. Retrieved February 15, 2023, from <https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard>

surge is likely to be the result of a combination of favourable conditions. However, the RED, FQD and the RFS are acknowledged as the principal driver of the remaining expansion.¹⁰¹

Figure 1.6

Biofuel production



The line graph in the figure above shows the growth of the total biofuel production, measured in terawatt, over approximately 30 years. Bioethanol and biodiesel are the sample fuels used in this data collection.¹⁰² Another relevant influencing factor could also be the farmers desire of additional sources of income, obtained by transforming leftover crops and agricultural waste as feedstock for biofuels. And the volatility of the oil prices, which makes the use of a more stable alternative more appealing to companies.¹⁰³ Although these are relevant influences, the reinforcement of the sustainability criteria, through the EU directives and the US policy gave a solid push to the increase the production of biofuels. This can be seen in the graph, between 2005 and 2010, which were the most prolific years for the renewables policies, the biofuel production surged dramatically, both in the United States and in Europe. With biofuel demand

¹⁰¹ Iea. (n.d.). *Biofuels – renewables 2021 – analysis*. IEA. Retrieved February 20, 2023, from <https://www.iea.org/reports/renewables-2021/biofuels?mode=market®ion=World&publication=2021&product=Bioenergy>

¹⁰² *Biofuel energy production*. Our World in Data. (n.d.). Retrieved February 20, 2023, from <https://ourworldindata.org/grapher/biofuel-production>

¹⁰³ Iea. (n.d.).

remaining robust the trend in biofuel energy production is expected to remain positive in the next few years.¹⁰⁴ Although biofuels are crucial to the EU's efforts to reduce greenhouse gas emissions, they are often produced on cropland that was formerly used for agriculture, including the production of food and livestock. For this reason, governments and private companies are driven to either acquire new lands in other countries, Land Grabbing¹⁰⁵, or to the indirect land use change (ILUC)¹⁰⁶.

1.6. Indirect Land Use Change (ILUC)

In this thesis the phenomena of Land Grabbing and Water Grabbing are going to be analyzed, and their impacts are going to be assessed. As explained in the paragraphs above one of the drivers leading to land grabs and water grabs is the increasing use of biofuels. Those grabs are not the only consequence of biofuel production, the policies drift in the EU and the US led also to the indirect land use change (ILUC).¹⁰⁷ ILUC is defined as “the rippling effect that an increasing demand for biofuels feedstock can have on global agriculture”¹⁰⁸. This is a relevant phenomenon, it is to consider because it triggers land expansion and deforestation, thus pushing an increment on CO2 emissions. Ecofys, Guidehouse, and the International Institute for Applied Systems Analysis (IIASA) worked under the European Commission mandate, between 2015 and 2016, to analyze the competition for lands. The use of the Global Biosphere Management Model tool, which was used by the companies, studied the rational production of food, for his fiber, and bioenergy.¹⁰⁹ However, ILUC remains challenging to measure because of the complex economic transactions involved and due to several variables.¹¹⁰ The extent of land use change is largely dependent on few factors, one being the type of biofuel produced, the venue of the production and the row materials used. There are some feedstocks having a more severe impact than others, e.g., corn-based ethanol produced in the US has higher footprint on land use

¹⁰⁴ Iea. (n.d.).

¹⁰⁵ Rulli, Savioli, & D’Odorico, (2013).

¹⁰⁶ *Land use changes and biofuels*. Union of Concerned Scientists. (n.d.). Retrieved December 9, 2023, from <https://www.ucsusa.org/resources/land-use-changes-and-biofuels>

¹⁰⁷ Ibid.

¹⁰⁸ C. Hamelinck (2017). *Indirect land use change from biofuels explained*. Guidehouse Insights. Lastly updated December 27, 2017. Retrieved December 10, 2023, <https://guidehouseinsights.com/news-and-views/indirect-land-use-change-from-biofuels-explained>

¹⁰⁹ *Global Biosphere Management Model (GLOBIOM)*. IIASA. (n.d.). Retrieved December 10, 2023, from <https://iiasa.ac.at/models-tools-data/globiom>

¹¹⁰ C. Hamelinck (2017).

than sugar-cane ethanol produced in Brazil, and starch-based ethanol.¹¹¹ This is due to the fact that sugarcane is produced on land that was formerly used for grazing, whereas, corn-based ethanol production in the US competes with food production. According to a study, the increase in biofuel production in the US has resulted in the shift of land from non-agricultural to agricultural uses, such as grasslands and forests. Significant environmental effects from this land use shift may include soil degradation, loss of biodiversity, and an increase in greenhouse gas emissions. The scientists also discovered that the substitution of biofuel crops for food crops has resulted in increased food and feed prices, which can have societal repercussions, particularly for low-income groups.¹¹² Another backlash of this phenomenon, highlighted in this research, is the surge of food and feed prices. Food and feed prices have increased as a result of food crops being replaced by biofuel crops, especially in low-income nations where food prices are already a considerable burden. This is because farmers' production of food crops declines when they switch to biofuel crops, pushing up food costs. Also, the rising cost of animal feed may have an impact on the whole food supply chain due to the increased demand for biofuel feedstocks such as maize, soybeans, and palm oil. The direct replacement of food crops by biofuel crops is only one effect of ILUC on food and feed prices. Higher pricing for animal feed may result from the rise in demand for biofuel feedstocks, which might have repercussions across the whole food supply chain. The authors point out that when the cost of maize and soybeans, which are used as animal feed, rises because of the production of biofuel, the price of meat and dairy products also rises. This is because farmers charge customers more for animal goods due to the rising cost of feed. This section highlights that besides Water Grabbing and Land Grabbing there is a constellation of other phenomena that are altering the configuration of the lands, the way resources are used and acquired. This adds up to the context of grabs, increasing the complexity of the phenomenon. This surely represents quite a limitation to the analysis which is carried out in this thesis, the multiplicity of influencing factors makes it difficult to understand whether a shift in food price or food security is mainly halted by one phenomenon or another.

¹¹¹ K.G. Austin, J.P.H. Jones, C.M. Clark, (2022). *A review of domestic land use change attributable to U.S. biofuel policy*. Renewable and Sustainable Energy Reviews, Volume 159, 112181, ISSN 1364-0321, <https://www.sciencedirect.com/science/article/pii/S136403212200106X>

¹¹² Ibid.

Chapter Two

International regulation: the current legal framework and its weaknesses

2.1 The subjects of international law: State and Non-State Actors - 2.1.1 The centrality of the State - 2.1.2. Transnational corporations (TNCs) - 2.1.3. Non-governmental Organisations (NGOs) and International Organisations (IOGs) - 2.2. Land Grabbing framework - 2.2.1. The right to food and food security - 2.2.2. Global land Policies - 2.2.3 The European Union Policy Guidelines. - 2.2.4. The WBG's RAI Principles – 2.2.5 The African Union Framework and Guidelines on Land Policy - 2.3. Water Grabbing regulation - 2.3.1 The right to water and water security - 2.3.2. FAO Voluntary Guidelines on the Governance of Tenure of Land, Fisheries and Forests - 2.4. The SDGs and the MDGs - 2.5. Free, Prior, and Informed Consent (FPIC) of Indigenous populations - 2.6. Limitation of the current legal system

International law is defined as “the system of law regulating the relationship of sovereign states and their rights and duties with regard to one another.”¹¹³. In the realm of international relations, international law is a complex system which is composed of legal principles, norms, and rules that govern the conduct and the interactions among states and other international actors as well. International jurisprudence extends beyond the relations between states, in also encompasses interactions with international organizations, non-state entities, and individuals. It operates by constantly seeking a balance between granting the autonomy to the sovereign states, and the imperative of addressing common challenges that transcend national borders. Rooted in customary practices, treaties, conventions, and recognized principles of justice, international law seeks to regulate various aspects of the states' behaviors, encompassing fields such as human rights, armed conflicts, environmental protection, diplomatic relations, trade, and other cross-border engagements. It serves as a framework for maintaining stability, fostering cooperation, and resolving disputes on the global stage. The foundation of international law lies on the consent of states to be bound by legal obligations, which are voluntarily accepted through signing treaties and agreements. While customary international law evolves from state practices accepted as legally binding, treaties negotiated among states constitute explicit an expression

¹¹³ *International law*. Oxford Reference. (n.d.). Retrieved December 10, 2023.
<https://www.oxfordreference.com/display/10.1093/oi/authority.20110803100007690>

of their consent to be governed supranationally by a third part. International law incorporates principles of fairness, reciprocity, and the peaceful settlement of disputes, aiming at the promotion of order, justice, and at the protection of shared global interests. The enforcement mechanisms of international law vary, ranging from diplomatic means and international tribunals to the role of international organizations in facilitating compliance, and, or monitoring. Before diving deeper into the legal framework of land and Water Grabbing it is also worth to clarify a few specificities on the matters. Firstly, it is to say that the intrinsic different nature of the two subjects, land, and water, indeed influence the way they are dealt with from a legal perspective. As it has already been explained in **Chapter 1**, the principal discrepancy lies in intrinsic characteristics, static, for land, and volatile, for water. Fundamentally, the administration and governance of water entail pivotal choices that dictate the direction, manner, and beneficiaries of water flow. The determination of water distribution priorities transcends formal decision-making mechanisms characterized by transparent procedures; it is also inherently influenced by infrastructural frameworks, technological designs, and methodologies employed in the measurement and accountability of water resources. Secondly, the progressive exacerbation of the commodification of these natural resources can undermine the population enjoyment of the goods, thus leading to entire populations living in distress. All the sources of law which are going to be analyzed are a trying to compensate, prevent, and mitigate the threatens to the full enjoyment of fundamental rights of people living in grabbed areas. Considering all the societal and economic distress the world is already living under, grabbing practices could worsen the situation of already precarious settings. Another relevant issue connected with the regulation is the interconnectedness of natural resources and their employment. The agricultural sector's heavy reliance on this resource further complicates efforts to alter the prevailing status quo. Issues of equitable distribution and utilization have arisen, aggravated by the appropriation of water rights by influential individuals. Furthermore, as groundwater is drawn from a communal reservoir, this has instigated competition among users engaged in a race to extract water, potentially resulting in excessive pumping. The unchecked proliferation of groundwater utilization in an unregulated setting poses a formidable challenge to control. The lack of incentives for resource preservation has led to a deterioration in water quality and will continue to aggravate with a concurrent rise.¹¹⁴ The concept of tenure is grounded in the acknowledgment that both land and water tenure represent social constructs, necessitating the recognition of the rights vested in individuals and groups. As the current

¹¹⁴ FAO (2019). *Land and water governance to achieve the SDGs in fragile systems*. Rome. Retrieved December 16, 2023 from <https://www.fao.org/3/ca5172en/CA5172EN.pdf>

framework prescribes, land tenure goes beyond abstract ideation, centering on claims of ownership or rights pertaining to specific parcels of land. Similarly, water tenure concerns assertions over precise water resources, encompassing water within its natural environment, i.e.: rivers, lakes, streams, and groundwater aquifers. Consequently, land tenure revolves around delimited land areas, parcels of lands, whereas water tenure pertains to the stewardship of water contained in specified sources.¹¹⁵ Historically, the first occupier has been the principle establishing the right of ownership and use of both land and water.¹¹⁶ Nowadays the regulation has change, and here it is going to be analyze what are the current legal instrument at the international level, that can be used to regulate Water Grabbing and Land Grabbing. Understanding the legal framework that governs these complex phenomena is indispensable for comprehending the dynamics of resource allocation, power disparities, and sustainable development on a global scale. Water Grabbing and Land Grabbing represent distinctive but interconnected issues, involving the acquisition and exploitation of land and water resources, often by powerful actors, at the expense of local communities. Although the international legal landscape primarily addresses these matters separately, they share underlying themes of resource exploitation, vulnerability of marginalized communities, and the imperative of sustainable development. This chapter will firstly study how different actors of international law are involved in grabbing practices, specifically it will analyze what are the main legal frameworks revolving around these actors' participation in the land and water grabs. Proceeding deeper into the analysis, a report will be carried out on the current sources of law, firstly, specifically with regards to land, and secondly, with regards to water. Then a couple regulation which can be applied both to land and water grabs will be studied. Finally, to conclude this chapter a few considerations will be made on the effectiveness of nowadays jurisprudence in the matters, and the limitation that are encountered under it.

2.1. The subjects of international law: State and Non-State Actors

As the world goes through multiple societal changes, law adapts to the new scenarios if necessary. According to Oscar Schachter and many other experts in the field, one particular aspect has changed through centuries is the subject of international law: the concept of its

¹¹⁵ FAO (2019).

¹¹⁶ Cuadrado-Quesada, G. (2022). *Governing Groundwater: Between Law and Practice*. Springer Nature.

subject or subjects.¹¹⁷ Traditionally, states were the sole legal entities conceived within international law, and their standing remains unquestioned until this day. However, already in the Eighteenth and Nineteenth centuries several new and atypical subjects of international law were gradually introduced. During the Twentieth century, an even more consistent diversification of entities within international law occurred, encompassing international organizations, non-self-governing peoples, insurgents, movements of national liberation, mandated territories, trusteeship territories, and internationalized territories. This transition marked a departure from an actor-centered framework to a subject-oriented paradigm, signaling a shift from the centrality of international legal personality to the concept of an international law relationship.¹¹⁸ The integration of all this new subject triggers the topic of how to manage them, for this reason this chapter is going to encompass the instruments international law provides to regulate the new legal entities' activities. Thus, the new subjects are characterized by legal capacity meaning that they possess duties and right under international law.

2.1.1. The centrality of the State

The national government's role continues to play as a principal part in the Land Grabbing debate even if, nowadays, they are not the unique actors in the international arena. The addition to the picture of other entities push to a reconsideration of the balance of power and responsibilities, while the relevance of the State remains unambiguously important. Said actors are Non-Governmental Organisations (NGOs), Transnational Corporations (TNCs) and International Organisations (IOGs). As demonstrated by the cases in **Chapter 1**, even though the government may not be physically or solely responsible of the internal takeover by other actors, there is still implicit responsibility on the part of the government, which may be found, for example, in national economic and land regulation policies as well as laws. The way national governments envision and plan their policies for managing and governing lands might significantly impact the situation. Both internal and external economic policy are important, for example, developing economies run the risk of becoming more susceptible to land, water, and green grabbing if they opt for an external economic strategy that relies on increasing foreign investment within their borders. On the case of the green grabbing of Patagonia, the phenomena

¹¹⁷ Chinkin, C., Otto, D., Jackson, J., Janis, M., & Leary, V. (1998). *Wrap-Up: Non-State Actors and their Influence on International Law*. Proceedings of the Annual Meeting (American Society of International Law), 92, 380–387. <http://www.jstor.org/stable/25659247>

¹¹⁸ Walter, C. (2007). *Subjects of international law*. Max Planck Encyclopedia of Public International Law, 9, 634-43.

would not exist, or at least would not be as impressive in terms of size or be particularly harsh for those who suffer the consequences, such as the Mapuche people, if Argentina's national land policy followed what is stated in their own Constitutions by the book. Another instance in which the national government was decisive for the worst is the land reform implemented by the Russian Federation. Being part of the BRICS countries, Russia set the stage for the spread of Land Grabbing throughout the nation due to lax regulations and imprecise delineation of land rights, owners, and territories. Economic progress continued subsequently raising aspirations to draw in foreign capital to strengthen the Federation's economy, with insufficient consideration given to the paths that this development would have undertaken. Because of this, the trend of viewing property solely as an economic asset (in many instances, the acquired land is just confiscated rather than being used for any purpose) has encouraged the growth of Land Grabbing across the nation. Naturally, a nation must have a strong economy in order to maintain its internal structure, define its identity as a state, remain competitive, and forge international ties. But given the grab-rush that society is experiencing, a more thoughtful and forward-looking view of the implications should be adopted, beginning right at the borders of each nation. This includes reconsidering the value of natural resources like land and water in general as well as the adoption of customized solutions that take into account the unique, frequently complex, human and social realities that coexist in each nation. Governments can either function as proponents, promoting investment and development through land and water acquisition, or as safeguards, ensuring equitable distribution, sustainable usage, and protection of the rights of local communities. The power dynamics between national governments, private investors, and local communities contribute to the complexity of this issue. Striking a balance between fostering economic growth and safeguarding the interests of marginalized groups requires nuanced policymaking. National governments should navigate competing demands, considering the socio-economic and environmental implications of land, and Water Grabbing to promote responsible and sustainable resource management.

2.1.2. Transnational corporations (TNCs)

A transnational corporation, often referred to as a global corporations or multinational corporation (MNC), is a large-scale corporate entity characterized by its extensive operations across multiple national jurisdictions. TNCs represent a pivotal component of the global economic landscape, demonstrating a distinctive organizational structure wherein a central headquarters or parent company orchestrates business activities conducted by subsidiaries,

affiliates, or branches situated in various countries. This organizational model enables TNCs to engage in diverse economic sectors, such as manufacturing, services, finance, and trade, on an international scale. They are distinguished by their capacity for cross-border coordination and integration of their activities, as well as by their frequent possession of substantial political and economic clout.¹¹⁹ As said in the previous section, the responsibility is given to national governments in the first place, as the actors which should be responsible for their own land management, land rights, and ownership. Corporations tend to minimize the part they play concerning Land Grabbing and Water Grabbing, readdressing the issue to the State's policies and the national laws as well as to the single citizens, depicting these actors as noncaring of their environment or lands ('lack of due diligence'). TNCs participate in a wide range of industries, including manufacturing, finance, technology, and services. Due to their size, their autonomy and power over nation-states and the international system, they play such a significant role in shaping the global economy and international relations that they must be considered in the matter of grabs. TNCs possess considerable potential power over both nation-states and the international system, and that their anonymous, structural power is probably more important and deserves more attention. In the case of Transnational Corporation, the Code of Conduct and Social Responsibility is the main regulatory system existing, and it is not even binding. Codes of corporate conduct are voluntary initiatives issued by companies themselves, which help them to respond to societal concerns about the economic, social, and environmental impacts of their activities. These codes represent a commitment by companies to behavioural norms in a variety of areas of business ethics, such as anti-corruption, environment, and labour practices. The codes are designed also to foster companies in managing their compliance with legal or regulatory requirements and their response to soft forms of social control of business. The creation of codes of conduct is frequently an initial phase in the enhancement of management procedures to uphold legal and ethical compliance. Organizations often reinforce their codes by instituting management systems tailored to assist in adhering to their established commitments. Such codes may encompass segments devoted to training programs aimed at ensuring compliance, the surveillance of suppliers, periodic assessments overseen by managerial personnel, and explicit mention of potential disciplinary measures. Various companies, spanning from large multinational corporations with an extensive workforce across numerous countries to retailers and enterprises in primary production, industry, manufacturing, and services sectors, have issued codes of conduct. These codes, often endorsed by high-ranking

¹¹⁹ Uhlin, A. (1988). *Transnational corporations as global political actors: A literature review*. *Cooperation and conflict*, 23(2), 231-247.

officials such as the board of directors, the chairperson, the president, or other top executives, serve as a crucial instrument for companies to showcase their dedication to ethical business practices. Additionally, these codes play a pivotal role in enabling companies to oversee and regulate their social and environmental influences.¹²⁰ Frequently, companies publish their code of conduct and social responsibility, even when adherence to it is lacking. In instances where a company asserts its commitment to sustainability, the issuance of false declarations is characterized as "greenwashing." This practice is not limited to environmental concerns and can be observed in various areas of interest. For instance, Benetton, following allegations related to the Mapuche population, proclaimed itself as a responsible entity, emphasizing its respect for other cultures and the promotion of diversity, as indicated on their official website.¹²¹ In such scenarios, where a company's actions deviate from its proclaimed principles, the aim is to manipulate public perception, fostering the belief that the company is ethically sound. This strategic manoeuvre safeguards the company's reputation, preventing any negative conduct from adversely impacting its economic standing. The challenges confronted by businesses in establishing credibility across various realms of corporate responsibility are evident. The absence of a well-designed, generally recognized framework of intangible infrastructure support, specifically, standards for behaviour, auditing, and reporting, is one of the root causes of the issue. The development of such infrastructure, once accomplished, would serve as a deterrent against potential deception by firms, auditors, or even non-governmental organizations (NGOs) in the field. Effectively, well-structured standards, encapsulating widely acknowledged norms for behaviour, management systems, audit practices, and reporting, reduce the latitude available for companies and their auditors (whether in social, environmental, or financial contexts) to engage in strategic misrepresentation. However, these standards also provide corporations with the necessary flexibility to adapt to changing business, ethical, and legal circumstances.¹²²

¹²⁰ OECD (2001), "Making Codes of Corporate Conduct Work: Management Control Systems and Corporate Responsibility", OECD Working Papers on International Investment, 2001/03, OECD Publishing. Retrieved December 17, 2023 from <http://dx.doi.org/10.1787/525708844763>

¹²¹ Approccio del Gruppo. Benetton Group. (n.d.). Retrieved December 17, 2023 from <https://www.benettongroup.com/it/sostenibilita/approccio-gruppo/>

¹²² OECD (2001)

2.1.3. Non-governmental Organisations (NGOs) and International Organisations (IOGs)

Non-Governmental Organizations are private, non-profit entities distinct from government agencies (e.g. FAO) or commercial enterprises. These organizations operate independently, aiming at addressing various social, environmental, or humanitarian concerns globally. NGOs play a vital role in advocacy, humanitarian aid, development initiatives, and policy influence. They often rely on voluntary contributions, grants, and fundraising for financial sustenance. NGOs contribute significantly to civil society's vibrancy, providing a platform for citizens to engage in social issues and exert influence on public policy. Their diverse functions encompass promoting human rights, environmental conservation, health care, education, and socio-economic development.¹²³ Among the most well-known Non-Governmental Organizations are, to mention a few: Greenpeace, Oxfam, Save the Children, the World Wide Fund for Nature (WWF), and Amnesty International. Said organisation typically take on the role of the defenders in the land-grabbing debate, at least to the extent that they can. They often take a stand on behalf of the people and the environment who are being negatively impacted by the land grab rush, in the discussion over land grabs. They aim to give voice to these incidents and support those who are suffering from the bad repercussions that Land Grabbing produces. Since NGOs are not able to take a firm stand or prevail in disputes involving grabbing, they nevertheless play a crucial role in conjunction with smaller local organizations, without which many cases of grabbing of land and water would remain hidden. Furthermore, within the field of international relations, IOGs have a significant impact on the development and management of the legal frameworks related to water and land grabs. Within the field of international relations, international organizations have a significant impact on the development and management of the legal frameworks related to water and land grabs. They have a significant contribution on the regulation of the matter, in fact their role extends to the promotion of global norms and guidelines that discourage exploitative practices associated with land and Water Grabbing. International organisations serve as platforms for knowledge exchange, capacity-building, and the development of best practices to address the challenges posed by large-scale resource appropriation.

¹²³ European Commission. Non-governmental organisations - Employment, Social Affairs & Inclusion, European Commission. (n.d.). Retrieved December 17, 2023 <https://ec.europa.eu/social/main.jsp?langId=en&catId=330>

2.2. Land Grabbing's legal framework

2.2.1. The right to food and food security

During the 1996 World Food Summit, which took place at the FAO headquarter in Rome, representatives from 185 countries and the European Community met to debate on solutions and strategies on the eradication of hunger. From that meeting the Rome Declaration on World Food Security and the World Food Summit Plan of Action were adopted, and a definition to food security was provided.¹²⁴ Thus food security has been defined to exist “when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”.¹²⁵ This definition not only encompasses the availability and accessibility of food but also factors such as food utilization, stability in access over time, and the resilience of food systems to external shocks. In a comprehensive academic understanding, food security extends beyond mere caloric intake to address the broader dimensions of nutritional quality, cultural appropriateness, and the sustainability of food production and distribution, emphasizing the interconnectedness of economic, social, and environmental factors in shaping global and local food landscapes. Following the FAO definition, four dimensions of food security are identified, and they all they must be fulfilled simultaneously in order to achieve the objective. The first dimension is physical food availability, it tackles food supply and according to it, the achievement of food security is influenced by the level of food production, stock levels and net trade. Secondly, a satisfactory food supply level on a national or international scale does not ensure food security at the household level. Addressing inadequate access to food has prompted through specific policies focusing on incomes, expenditures, markets, and prices has proven to be an integral component in realizing food security, thus the second dimension is economic and physical accessibility to it. Food utilization and stability represent the third and fourth dimensions. The former deals with the nutritional status of individuals, which is highly impacted by the effective biological assimilation of ingested food, the feeding habits, the culinary practices, the dietary variety, and the equitable distribution of food within the household. The latter prescribes that

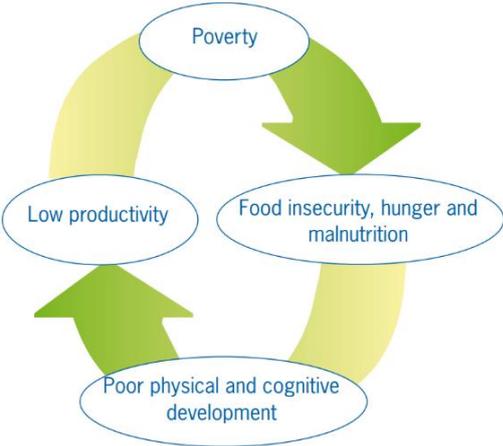
¹²⁴ United Nations. (n.d.). United Nations. Retrieved December 18, 2023 from <https://www.un.org/en/development/devagenda/food.shtml#:~:text=The%20World%20Food%20Summit%20too k,countries%20and%20the%20European%20Community>.

¹²⁵ World Bank Group. (2023, August 28). What is food security? there are four dimensions. World Bank. Retrieved December 18, 2023 from <https://www.worldbank.org/en/topic/agriculture/brief/food-security-update/what-is-food-security>

unfavorable meteorological circumstances, political unrest, or economic elements such as unemployment raise, and escalating food costs could influence one's food security status.¹²⁶ A series of indicators commonly serve as measurement for evaluating the severity of the impact of food insecurity on the population. Crude mortality rate, malnutrition prevalence, food access and availability, dietary diversity, coping strategies, and livelihood assets are most of the indicators used to study the conditions of a State regarding its food security. As represented in **Figure 2.1** displayed in this page, food security has a series of correlated phenomena.¹²⁷ The relevance of maintaining or reaching food security is linked to its consequences not only on the small scale, on human lives, but also on a larger scale: the state's economy. Food insecurity, hunger, and malnutrition, being inserted in an already in a chain reaction are proven to be deeply influenced by aggregate economic fluctuations.¹²⁸ As it appears from the figure, realised by FAO, food insecurity increases and strengthen the already existing economic pressures by causing inability to promote physical and cognitive development, thus increasing poverty and the reiteration of the cycle.

Figure 2.1

The cycle of food insecurity



The latest developments in agriculture and flex crops have been suggested as solutions to this problem in ongoing study. Even though it is already difficult to produce and distribute enough

¹²⁶ FAO (2008). Food Security Information for Action Practical Guides. An Introduction to the Basic Concepts of Food Security. Retrieved Decembre 18, 2023 from <https://www.fao.org/documents/card/en/c/2357d07c-b359-55d8-930a-13060cedd3e3/>

¹²⁷ Ibid.

¹²⁸ Bogmans, M. C., Osunsade, F. L., Pescatori, M. A., & Prifti, E. (2021). *Income versus prices: how does the business cycle affect food (In)-security?*. International Monetary Fund.

food for everyone, the challenge increases when people and societies encounter outside circumstances and factors that further threaten the food system. Examples of these include armed and unarmed conflicts, natural disasters, climate change, and the recent global spread of diseases like Covid-19. To combat hunger and famine, one must address all of the contributing elements as well as the actual food supply problem. In this regard, grabbing land and water is a significant factor in the decline of food security. Regarding the connection between resource grabbing and food security, the previously articulated rationalizing discourse regarding resource and land investments to address scarcity and poor management resurfaces. As a result, people in rural areas and their residents are perceived as being impoverished, in need, and lacking in resources and ability to grow. Considering the topic of food security also entails discussing the idea of the right to food, a human right that is seriously compromised by the practices of grabbing. A right-to-food based strategy emphasizes the value of dignity, accountability, transparency, and empowerment in tackling food insecurity, which complements other strategies to reduce hunger and malnutrition.¹²⁹ The concept of food security was developed in the 1970s. But for several decades, the public discourse focused more on food security than on the right to food, at least until the time was opportune to focus on individual rights. The phrase "food security" has acquired a variety of meanings over time. Some estimates suggest that there are roughly 200 definitions of food security and 450 indicators. According to international law, the right to food constitutes a legal obligation. Already in 1948, Universal Declaration of Human Rights (UDHR) recognized the right to food in Article 25, in which the right to food is considered in the broader context of human rights. Indeed, it is described as a functional component of the right to an adequate standard of living, in particular stating that:

“(1) Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.¹³⁰”

¹²⁹ Mechlem, K. (2004). Food Security and the Right to Food in the Discourse of the United Nations. *European Law Journal*, 10(5), 631-648.

¹³⁰ United Nations Universal Declaration of Human Rights (1948), Article 25 (1).

Later in 1966, the International Covenant on Economic, Social, and Cultural Rights (ICESCR) enshrined its normative content in Article 11, which adds the obligation of states to take action, hence:

“1. The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions. The States Parties will take appropriate steps to ensure the realization of this right, recognizing to this effect the essential importance of international cooperation based on free consent.

2. The States Parties to the present Covenant, recognizing the fundamental right of everyone to be free from hunger, shall take, individually and through international co-operation, the measures, including specific programmes, which are needed:

(a) To improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources;

(b) Taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need.¹³¹”

Furthermore, Committee on Economic, Social, and Cultural Rights (CESCR) General Comment No. 12 outlined the normative elements of the right. The entitlement to the right to food has been incorporated into international and regional instruments, including the Plan of Implementation of the World Summit on Sustainable Development and the 2003 Protocol on the Rights of Women to the African Charter on Human and Peoples’ Rights. Moreover, expert consultations on the right to food were convened by the High Commissioner for Human Rights. These right finds expression in numerous constitutions, with both international and national

¹³¹ United Nation General Assembly, (1966). International Covenant on Economic, Social and Cultural Rights

jurisprudence evolving on the matter. Some countries have conducted national seminars to enhance awareness of this right and deliberate on methods of implementation. A handful of states are contemplating the enactment of dedicated food security laws. Notably, in October 2002, the FAO Council established an Intergovernmental Working Group (IGWG) tasked with developing a set of voluntary guidelines to support Member Nations in their pursuit of the progressive realization of the right to adequate food within the context of national food security.¹³² A comprehensive approach is required to adequately address the underlying causes of hunger and malnutrition, such as poverty, inequality, and discrimination. This is what a right-to-food based approach does, this strategy acknowledges that food insecurity is a intricate issue that calls for a multidirectional solution, such as social protection, healthcare, education, and other initiatives. Furthermore, a solid international framework which protects the right to food underscores the significance of a participatory approach in tackling food insecurity. Its execution is also highly dependent on concepts like accountability, transparency, public engagement, judicial independence, and the rule of law. This entails engaging States, with all governmental activities and decisions, including laws, policies, and programs, regions, individuals, and communities in actively contribute to the formulation and execution of food security policies and programs.¹³³

2.2.2. Global land policies

In response to the challenges posed by Large Scale Land Acquisition (LSLA), several international organizations have been involved in the creation of Global Land Policies (GLP) in the attempt of controlling the Land Grabbing because of the issues raised by LSLA. The European Union created Guidelines, in 2004, to foster developing nations' land policy reform and design procedures. Cooperating with FAO, the International Fund for Agricultural Development (IFAD), and the United Nations Conference on Trade and Development (UNCTAD), the World Bank Group (WBG) created the RAI Principles for Responsible Agricultural Investments in 2009. These principles were based on an earlier framework for foreign land acquisition, the International Food Policy Research Institute's (IFPRI) Code of Conduct. Furthermore, in 2009, the African Union, in conjunction with the African Development Bank (AfDB) and the UN Economic Commission for Africa (ECA), introduced the Framework and Guidelines on Land Policy to bolster land rights, enhance productivity, and

¹³² Mechlem, K. (2004)

¹³³ Ibid.

secure livelihoods. Other initiatives at the regional levels began to surface in response to this new global land policy dialogue of the beginning of the 21st century.¹³⁴ One example of regional response to the discussion was the AESAN's first study on business and Human Rights in compliance with the EU Guidelines, carried out by the AESAN's Intergovernmental Commission on Human Rights. Addressing the global discourse on land policy, regional and national initiatives have surfaced.¹³⁵ As mentioned in the introduction to this chapter, the absence of conventions or other such legally enforceable mechanisms specifically addressing these concerns is undoubtedly a limitation in fighting the battle against land and water grabs. Another strong limit that has been encountered in this picture is that the international land policies that have been examined so far are predicated on voluntary, non-binding agreements, also referred to as "soft law." Finally, the absence of a designated international or supranational body authorized to oversee adherence to norms places the responsibility on individual states, thereby impeding advancements in the subject matter.

2.2.3. The European Union Policy Guidelines

The European Union Policy Guidelines, established in 2004, constitute a strategic framework designed to address the complex challenges associated with Land Grabbing in developing countries. Focusing primarily on land policy reforms, these guidelines serve as a comprehensive approach to mitigate the adverse impacts of large-scale land acquisitions. The EU recognizes that effective land policy reform is pivotal for poverty reduction by removing barriers to land access for marginalized populations. Recognizing that these reforms can significantly contribute to poverty reduction, the objective is to eliminate barriers to land access for the impoverished. The reforms aim to grant legal rights and access to credit through collateral, offering individuals access to assets and economic opportunities associated with agriculture or natural resources. Moreover, the EU Policy Guidelines play a crucial role in preventing Land Grabbing, encroachment, and exclusionary practices. The comprehensive scope of these guidelines is highlighted by their relationship with other policy domains, including poverty reduction, citizenship, human rights and social justice, gender equality, agricultural development, conflicts and post-conflict recovery, land administration and governance, local government and decentralization, taxation, environment, and land use planning. This integrated

¹³⁴ Verhoog, S. M., 26 Mar 2013, *The Politics of Land Deals: A Comparative Analysis of Global Land Policies on Large-Scale Land Acquisition*. University of Cape Town, p. 1-32 32 p.

¹³⁵ Carter, C., & Harding, A. (Eds.). (2015). *Land grabs in Asia: what role for the law?*. Routledge.

approach acknowledges the multifaceted nature of the challenges associated with Land Grabbing and positions the European Union as a key player in fostering sustainable and equitable land policies. Furthermore, the guidelines recognize the diverse roles played by different stakeholders, such as central and local government, the private sector, civil society groups, local communities, and donors, emphasizing collaborative efforts to ensure the effective implementation of these policies.¹³⁶

2.2.4. The WBG's RAI Principles

The World Bank Group's (WBG) Principles of Responsible Agricultural Investments (RAI) constitute another pivotal framework aimed at addressing the challenges associated with Land Grabbing. Instituted in 2009 in collaboration with the international organizations, the RAI principles provide a comprehensive guide for responsible and sustainable agricultural investments. It establishes a set of guidelines that prioritize responsible conduct in agricultural investments, emphasizing the importance of respecting land tenure rights, ensuring the inclusion of local communities in decision-making processes, and promoting environmental sustainability. By doing so, the RAI also tries to protect vulnerable populations, involved in grabbing practices, from adverse impacts e.g., displacement and exploitation. Furthermore, the principles underscore the significance of transparent and inclusive processes in agricultural investments. Advocating consultation with local communities through a collaborative approach. This initiative-taking engagement helps to address power imbalances, promote social equity, and mitigate the risks of Land Grabbing. RAI Principles' strength relies on their applicability across diverse contexts, fostering a global standard for responsible agricultural investments, thus being a fundamental framework for the construction of a land grab regulation.¹³⁷

2.2.5. The African Union Framework and Guidelines on Land Policy

Africa is often in the target of LSLA, which is particularly negative due to the economic status of the continent. To increase the severity of the situation there is a lacking regulatory system and institutional coordination, and prominent State ownership of the lands. These specific conditions are all attributable to Africa's colonial history which was constructed on the strong

¹³⁶ Verhoog, S. M., (2013).

¹³⁷ Ibid.

power asymmetry to the favour of the colonial government. The main objective of the Framework is to promote Africa's socioeconomic development, through *inter alia*, agricultural transformation and modernization. Furthermore, this framework which provides guidelines on the tenure system of the Union. Recognizing the significance of customary land tenure practices, this framework seeks the mitigation of the connected risks, and aims at increasing the protection of vulnerable populations from displacement. Land reform appears to yield favourable results for rural communities in specific countries, such as Benin, Burkina Faso, and Tanzania. In these nations, community-level land entities exhibit a dual characteristic of democratic election and substantial authority. These bodies possess significant powers, encompassing the regulation of local land disposition and the issuance of land title certificates to individual landholders.¹³⁸

2.3. Water Grabbing's legal framework

Addressing Water Grabbing is rather complex, that is due to several factors. Firstly, the absence of a treaty, convention, or any other legal instrument tailored to address water appropriations in a specific manner, results in a highly fragmented and incoherent jurisdictional framework. A set of rules which imposes serious constraints on this phenomenon does not exist, thus the system being strongly limited, considering the serious backlashes of water grabs, shifting from of human rights limitations and environmental harm or degradation.¹³⁹ Despite the adverse effects produced by resource grabbing on the Human Rights of affected communities, national governments, especially those of developing countries, have frequently demonstrated an unwillingness or inability to safeguard or uphold Human Rights domestically. This is often motivated by the imperative to attract foreign investments. One of the reasons why this phenomenon is extremely sensitive to state interactions dynamics is transboundary nature of water resources. Rivers, aquifers, and other water sources often traverse multiple jurisdictions, creating complexities in legal governance. The principle of Permanent Sovereignty over Natural Resources (PSNR), derived from the notion of territorial sovereignty, gives states the power to determine autonomously the management of their natural resources. The PSNR grants states exclusive authority to exploit and control goods and resources within their territorial

¹³⁸ Verhoog, S. M., (2013).

¹³⁹ Bordignon, M., Greco, R., & Lepore, G. (2016). Water Grabbing and Water Rights: Indigenous 'Sovereignty' v. State Sovereignty?. In *Natural Resources Grabbing: An International Law Perspective* (pp. 93-115). Brill Nijhoff.

boundaries. This principle finds its foundation in the rights of self-determination, encompassing economic self-determination, and the right to development, providing the foundation for its recognition.¹⁴⁰ But not all water sources are state property, nor they are all within the borders of a State. Unlike land, which is more clearly delineated by national borders, water flows across boundaries, necessitating international cooperation and legal frameworks to manage shared watercourses effectively. Existing international agreements, such as the FAO Voluntary Guidelines on the Governance of Tenure of Land, Fisheries and Forests, or the SDGs have been established to offer guidance. However, as it has already said, the specificities of Water Grabbing are still notably lacking. While various international conventions touch upon water-related issues, a unified and comprehensive legal instrument specifically targeting the phenomenon of Water Grabbing is yet to be established. This gap hinders the development of a cohesive set of norms, principles, and mechanisms tailored to address the unique challenges posed by the large-scale appropriation of water resources. Moreover, the legal framework of Water Grabbing intersects with broader considerations related to human rights and environmental sustainability. Water is not merely an economic commodity but a fundamental human right essential for life and well-being. The legal discourse on Water Grabbing must grapple with balancing economic interests against the imperative to safeguard access to clean and sufficient water for all, as articulated in international human rights instruments. Similarly, depletion and degradation of water resources, which are often associated with large-scale extraction, are risks which should be included in the comprehensive framework. Considering the previous consideration in the following section the useful juridical tool available on water grabs are going to be illustrated.

2.3.1. The right to water and water security

The right to water, which is in full the right to water and sanitation has been recognized as a fundamental right for the enjoyment of all other human rights by the United Nation on 28 July 2010, through Resolution 64/292.¹⁴¹ Nevertheless, billions of people still lack access to properly managed water and sanitary facilities. The entitlement to water implies that every individual should have the right to access a sufficient, safe, acceptable, physically accessible, and economically viable water supply for both personal and domestic use. It's crucial to distinguish

¹⁴⁰ Bordignon, M., Greco, R., & Lepore, G. (2016).

¹⁴¹ United Nations, (2015). International Decade for Action “Water For Life” 2005-2015. Retrieved December 20, 2023 from https://www.un.org/waterforlifedecade/human_right_to_water.shtml

between physical presence and genuine access, as a water or sanitation service doesn't fulfill its purpose if it is prohibitively expensive, unreliable, unhygienic, poorly located, inaccessible to specific groups, or lacks gender-segregation in the case of toilets and washing facilities. The right to water and sanitation extends to all individuals without discrimination. Nevertheless, marginalized groups, encompassing women, children, refugees, indigenous peoples, disabled individuals, and others, are frequently overlooked, or actively discriminated against by those involved in planning and governing water and sanitation improvements and services, as well as by other service users. Together with sanitation, the right to water is indispensable to the fulfilment of humans' health, dignity, and prosperity, thus they are often studied together.¹⁴² The Committee on Economic, Social and Cultural Rights in 2002 issued General Comment No. 15, emphasizing the denial of the right to water in both developed and developing countries. The Comment underscores the obligations of States parties to undertake necessary measures for the realization of the right to water. Article 11, paragraph 1, of the Covenant delineates various rights that derive from and are crucial for achieving the right to an adequate standard of living, encompassing aspects such as adequate food, clothing, and housing. Within the terminology of the article, the use of the term "including" is relevant in this context, because it suggests that the included list of rights was not meant to be exhaustive. The right to water unmistakably falls within the realm of protections necessary for ensuring an adequate standard of living, given its status as one of the most fundamental prerequisites for survival, however, it is not mentioned in Article 11. General Comment No. 15 attempts at filling this gap, overall, it delves deep in the denial of right to water across developing and developed nations. It also draws attention to the disproportionate burden which falls upon women with regards to practices of water collection, thus recalling fairness and gender equality. Moreover, it highlights the significance of providing adequate water to educational institutions, addressing water access issues in rural and deprived urban areas, safeguarding indigenous peoples' access to water resources, and ensuring access to sufficient water for refugees, asylum-seekers, internally displaced persons, and returnees. The Comment also stresses the responsibility of economically developed States parties to assist less affluent developing States in achieving the realization of the right to water.¹⁴³ It accentuates the responsibilities of States parties, underscores the involvement of international financial institutions, and emphasizes the imperative of

¹⁴² Human rights to water and sanitation: UN-water. UN. (n.d.). Retrieved December 20, 2023 from <https://www.unwater.org/water-facts/human-rights-water-and-sanitation>

¹⁴³ UN Committee on Economic, Social and Cultural Rights (2002), 'General Comment No.15, The right to water, Articles 11 and 12 of the International Covenant on Economic, Social and Cultural Rights.

international aid to guarantee the fulfilment of the right to water. General Comment No. 15 articulates the right to water as the entitlement of every individual to an adequate, safe, acceptable, physically accessible, and affordable water supply for personal and domestic purposes. The provision of water to individuals must be sufficient and continuous, catering to personal and domestic needs. The World Health Organization (WHO) stipulates that an estimated 50 to 100 litres of water per person per day are necessary to ensure the full realisation of the right and to mitigate health risks. The water designated for each personal or domestic purpose must be safe, devoid of micro-organisms, chemical substances, and radiological hazards that could pose health threats. Standards for drinking-water safety are commonly established by national or local regulations governing water quality. The WHO guidelines for drinking-water quality serve as a foundational reference for the formulation of national standards, ensuring the safety of drinking-water when effectively implemented. Additionally, water should exhibit acceptable characteristics in terms of colour, odour, and taste for each personal or domestic application. All water-related facilities and services must align with cultural norms and consider gender-specific, lifecycle-related, and privacy requirements. Every individual possesses the entitlement to water and sanitation services that are physically accessible within, or near residences, educational institutions, workplaces, or healthcare establishments. According to WHO, the water source should be within 1,000 meters of the home, and the time required for water collection should not surpass thirty minutes.¹⁴⁴ Moreover, water accessibility, along with related facilities and services, must be economically viable for all, without exceeding three percent of household.¹⁴⁵ Eight years later than the General Comment No. 15 being issued, on 28 July 2010, the United Nations General Assembly adopted a historical act, the Resolution 64/292 “The human right to water and sanitation”. The Resolution recognises the right to safe and clean drinking water and sanitation as an essential human right for the full enjoyment of life and all other human rights. The importance of the ability to access to clean water and sanitation is emphasized in Resolution 64/292 manifests in several key aspects. Primarily, the Resolution explicitly recognises the right to safe and clean drinking water and sanitation as a fundamental human right. Secondly, it references various international agreements and declarations which affirm the right to water and sanitation, e.g.,

¹⁴⁴ United Nations. (n.d.). International Decade for Action “WATER FOR LIFE” (2005- 2015). Retrieved December 21, 2023 from https://www.un.org/waterforlifedecade/human_right_to_water.shtml

¹⁴⁵ United Nations. (n.d.). Pace, dignity and equality on a healthy planet. Retrieved December 21, 2023 from <https://www.un.org/en/global-issues/water#:~:text=The%20right%20to%20water&text=The%20water%20must%20be%20safe,should%20not%20exceed%2030%20minutes.>

the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, and the Convention on the Rights of the Child. Thirdly, the Resolution acknowledges the impact of lack of access to clean water and sanitation on human health and well-being, including the alarming statistics of children's deaths and lost school days due to water and sanitation-related diseases. Lastly, it contains a call for action, it calls upon states and International Organizations to provide financial resources, capacity-building, and technology transfer to scale up efforts to provide safe, clean, accessible, and affordable drinking water and sanitation for all, particularly in developing countries.¹⁴⁶

Both the United Nation Resolution and the General Comment of the Committee to the Covenant on Economic, Social and Cultural Rights are defined as soft law's instrument of international law. Resolutions of the UN General Assembly, e.g.: Resolution 64/292, but also of the UN Security Council's Resolutions are sources of law which can be binding or not depending on the utilised language. In the case of Resolution 64/292 the use of expressions such as *calls upon*, *recommends*, entails that there is no legal obligation. Whereas when the Resolution is meant to be binding, more authoritative language is employed, e.g.: *decides*, *authorises*, thus the resolution entails a legal obligation. General comments of the UN treaty bodies are interpretations of determined parts of treaties that are provided by UN treaty bodies, e.g.: the Committee of Economic, Social and Cultural Rights, or the Human Rights Committee. They are not literally sources of law, but they are useful to interpret it. Resolution 64/292 and the General Comment No. 15 both being soft laws are non-binding acts which do not create legal obligation to states. The non-binding nature of said acts poses obvious limits in their enforcement, however, this does not discard their value. Soft law has demonstrated to be a useful resource to implement new norms quickly and more easily than binding legal acts. That is because time consuming procedures of approval are avoided, and because the lack of mandatory compliance for states reduces the number of hard objections. Moreover, soft law can contribute to the affirmation of new general principles of customary law and can also anticipate the treaty-making process creating the foundations for it. It is also a persuasive tool, because it creates peer pressure pushing states to comply to follow the pace of other States. Furthermore, soft law is useful for creating a quick and efficient response to crisis, a good example is the creation of the Financial Stability Board (FSB) to respond to the 2008 financial crisis. The Financial Stability Board existed before in another form, it is a soft organisation without a

¹⁴⁶ United Nations General Assembly, Res. 64/292 (2010). Sixty-fourth session Agenda item 48

proper mandate without a treaty, it adopted a series of soft law acts, standards on the management of those financial institutions. The FSB was indeed more efficient and effective in producing results than the initial project of the Lehman Brothers, which was too big to fail, however required too long of a time to produce the desired outcome. In 1989, the same happened with the creation of the Financial Action Task Force (FATF) is another example and indeed there was the same idea. The mandate is periodically renewed, it has a very loose mandate, and it was created by the G7 at the end of the 1980s to respond to the increasing and worrying phenomenon of money laundering. Soft Law and soft organisation have worked tremendously well for the financial sector, because it was a practical situation, in other sectors it can be less easy but, in these cases, there were very good achievements.¹⁴⁷ Scholars often envision soft law as a superior form of regulation seeing that as the voluntary expression of cooperation between the heterogeneous members of the international community. Soft law instruments exhibit a spectrum of abstraction, dependent on their applicability. They may possess a high degree of abstraction and generality, or, alternatively, they can be highly specific, characterized by being "extremely narrow in subject matter." The effectiveness of these instruments appears to be more pronounced in the latter case. Specific codes offer better measurability, facilitating enhanced monitoring. Conversely, monitoring is anticipated to contribute to the overall comprehensiveness of codes and increase the likelihood of compliance.¹⁴⁸

2.3.2. FAO Voluntary Guidelines on the Governance of Tenure of Land, Fisheries and Forests

The Committee on World Food Security (CFS) functions as one of the governing bodies within the UN FAO and is dedicated to coordinating a comprehensive global approach to food security. The Voluntary Guidelines on the Governance of Tenure of Land, Fisheries and Forests were created, in 2009, by the CFS aiming at the enhancement of the governance of land tenure, fisheries, and forests, with a particular emphasis on vulnerable and marginalized populations.¹⁴⁹

¹⁴⁷ Carreau, D., & Marrella, F. (2021). In *Diritto internazionale* (pp. 210–215). essay, Giuffrè.

¹⁴⁸ Verhoog, S. M., 26 Mar 2013, *The Politics of Land Deals: A Comparative Analysis of Global Land Policies on Large-Scale Land Acquisition*. University of Cape Town, p. 1-32 32 p.

¹⁴⁹ FAO (n.d.). *Voluntary guidelines on the responsible governance of tenure of land, fisheries, and forests in the context of National Food Security*. Committee on World Food Security. Retrieved December 21, 2023 from <https://www.fao.org/cfs/cfs-old/home/activities/vggt/en/#:~:text=The%20Voluntary%20Guidelines%20on%20the,poverly%2C%20supporting%20sustainable%20development%20and>

The VG are organized into seven principal sections, serving as practical guidelines, derived from five General Principles for Responsible Governance of Land Tenure: acknowledgment and respect for all legitimate tenure right holders and their rights, protection of legitimate tenure rights against threats and violations, facilitation of the enjoyment of legitimate tenure rights, provision of access to justice for addressing violations of legitimate tenure rights, and prevention of tenure disputes, violent conflicts, and corruption. Land, fisheries, and forests indeed emerge as the most pivotal domains concerning tenure governance. These three domains significantly underpin the intricate relationship between nature and food security. Land, far beyond serving as a mere habitat, assumes paramount importance by offering a platform for engaging in agricultural and farming practices, an age-old and still the most secure means of food production. Fisheries, constituting not only a vital water security component but also a crucial source of sustenance and income for communities heavily reliant on fish resources, hold a pivotal role in ensuring food security.¹⁵⁰ Forest-based ecosystems contribute significantly to the realm of food security, given their climatic significance in capturing CO2 emissions and their role as influential settings for food procurement through activities like fishing, hunting, or gathering wild fruits and vegetables. Consider, for instance, the Amazon rainforest, which plays a crucial role in fulfilling these dual objectives when not under threat from incidents like arson, fires, or deforestation. FAO and CFS expressly acknowledge the significance of implementing these principles, notwithstanding their voluntary nature and parallel relationship to national and international legal instruments. Considering the requirements now imposed by both national and international law as well as human rights-related activities, this soft-law tool has a positive feature in that it aims to promote housing rights, social development, and sustainable development in general, in addition to ensuring food security. It is acknowledged that these objectives cannot be met without considering a larger range of factors and situations that both directly and indirectly support them.¹⁵¹ One such example is tenure governance, which is central to these guidelines and is thought to be necessary to prevent unfavourable effects. Another important feature of the VGGT is the recognition of TNCs as main actors in the grabbing discourse, together with the claim of the fundamental role of States in assisting, supporting, and monitoring the transactions, to foster the protection of human rights.¹⁵² The VGGT which

¹⁵⁰ Belton, B., & Thilsted, S. H. (2014). Fisheries in transition: Food and nutrition security implications for the global South. *Global Food Security*, 3(1), 59-66.

¹⁵¹ Food and Agriculture Organization (2012), Committee on World Food Security (CFS). 'Voluntary Guidelines on the Responsible Tenure of land, fisheries and forests in the context of national food security,' pp. 3-4. Retrieved December 22, 2023 from <http://www.fao.org/3/i2801e/i2801e.pdf>

¹⁵² Ibid.

addresses theoretically the hazy dynamics of grabbing practices, represent an outstanding source of law, particularly because of its comprehensive approach to the matter.

2.4. The SDGs and the MDGs

Understanding the need for the improvement of living standards to ensure the fulfilment of basic human right across the globe, the United Nations established some common international goals. Considering Water Grabbing and Land Grabbing as phenomena contributing to the worsening of the human living condition as specified in **Chapter 1** it is interesting to evaluate the efficacy of the efforts of the international community in countering the trend. For the aim of improving the global quality of life, The United Nation created both the Millennium Development Goals (MDGs) and successively the Sustainable Development Goals (SDGs). The UN strongly prioritizes land and water governance, as the successful management of the two supports the fulfilment of the many other goals the organization strives to achieve. Adopted in September 2000, the United Nations Millennium Development Goals (MDGs) represent a comprehensive framework of eight interlinked objectives that member states of the United Nations committed to achieve by the year 2015. Formulated as a response to the pressing global challenges, the MDGs encapsulate an array of ambitious targets addressing multifaceted issues. Aligned with the broader development agenda, the MDGs aim to elevate the quality of life for the global population, emphasizing social equity, environmental stewardship, and international cooperation. Bounding global leaders to shared challenges, the MDGs aim at eradicating extreme poverty and hunger, achieving universal primary education, promoting gender equality, reducing child mortality, improving maternal health, combating major diseases, ensuring environmental sustainability, and fostering global partnerships for development. The MDGs, originating from the United Nations Millennium Declaration, delineated specific targets for 2015 with corresponding indicators to assess advancements from 1990 benchmarks, numerous MDGs were directly associated with health.¹⁵³ Despite the target timeline of 2015 having elapsed, the MDGs laid a foundational precedent for subsequent global development initiatives, guiding policy frameworks and catalysing efforts toward a more equitable and sustainable future. The MDGs consisted of eight overarching goals, each delineated by

¹⁵³ World Health Organization. (n.d.). *Millennium development goals (MDGs)*. World Health Organization. Retrieved December 22, 2023 from [https://www.who.int/news-room/fact-sheets/detail/millennium-development-goals-\(mdgs\)](https://www.who.int/news-room/fact-sheets/detail/millennium-development-goals-(mdgs))

eighteen specific targets. The tabulated presentation below encapsulates the historical performance of the 14 targets amenable to quantitative evaluation.¹⁵⁴ What is evident is that the majority of the UN's development objectives were unmet: out of the 18 targets, 12 are depicted in red, signifying a spectrum of outcomes ranging from narrowly missed goals to a few instances of glaring and alarming failures. The environmental targets within MDG 7, specifically those advocating for the "reversal of the loss of environmental resources" and a "reduction of biodiversity loss," witnessed the most pronounced shortcomings. While some positive strides were made, such as a noteworthy decline in substances depleting the ozone layer, the global data indicates regression in most environmental indicators. Global carbon dioxide (CO₂) emissions surged by approximately 50%, global forest area continued its decline, overexploitation of fish stocks intensified, and the Red List Index reported a substantial decline in population and distribution across various species. Despite falling short of achieving several targets, progress was discernible in various global living conditions. The narrative often revolves around the world making advancements, however, not at the pace necessary to fulfil the MDGs. Notable achievements include a reduction in the percentage of people facing hunger, a significant increase in children attending school, improved access to reproductive health and contraceptives for women, nearly halved maternal mortality, and a reduction of more than half in the global child mortality rate. Substantial progress was indeed made in the initial 15 years of the new millennium, although, in most aspects, it fell short of the pace mandated by the MDGs.¹⁵⁵

¹⁵⁴ Ritchie, H., & Roser, M. (2018, September 20). *Now it is possible to take stock – did the world achieve the millennium development goals?*. Our World in Data. Retrieved December 22, 2023 from <https://ourworldindata.org/millennium-development-goals>

¹⁵⁵ Ritchie, H., & Roser, M. (2018).

Figure 2.2

Did we achieve the MDGs?

Millennium Development Goal (MDG) Target	Baseline level	Target level	Achieved final level
MDG1.A: halve share of people living in extreme poverty (<\$1.25 per day)	47% in developing regions	Reduce to 23.5%	Fell to 14%
MDG1.B: achieve full and productive employment, as well as decent work for all, including young people and women	62% global working-age population in employment	Full (100%)	Fell to 60%
MDG1.C: halve the proportion of individuals suffering from hunger	23.3% in developing regions	Reduce to 11.5%	Fell to 12.9%
MDG2.A: ensure that children universally – including both boys and girls – will be able to complete a full course of primary education	83% in developing regions	Universal (100%)	Increased to 91%
MDG3.A: eliminate gender disparity at all education levels	Developing regions: 0.87 in primary 0.77 in secondary 0.71 in tertiary	Gender parity index (GPI) between 0.97-1.03	Developing regions: 0.98 in primary 0.98 in secondary 1.01 in tertiary
MDG4.A: reduce the under-five mortality rate by two-thirds	90 per 1,000 live births	Reduce to 30 per 1,000	Fell to 43 per 1,000
MDG5.A: reduce the maternal mortality ratio by 75 percent	380 per 100,000 births	Reduce to 95 per 100,000	Fell to 210 per 100,000
MDG5.B: achieve universal access to reproductive health. <i>Pregnant women receiving adequate antenatal care visits</i>	35% in developing regions	Universal (100%)	Increased to 52%
MDG5.B: achieve universal access to reproductive health. <i>Women aged 15 – 49 in marriage/union, using contraceptives</i>	55% in developing regions	Universal (100%)	Increased to 64%
MDG6.A: halt and have started to reverse the spread of HIV/AIDS	3.5M new cases per year	0 new cases	2.1M new cases per year
MDG6.B: achieve global access to treatment for HIV/AIDS for those who need it by 2010	3% of people with HIV	100% of people with HIV	23% of people with HIV (2010) 45% of people with HIV (2015)
MDG6.C: ceased & started reversal of incidence of malaria & TB. <i>Incidence of malaria</i>	158 new cases per 1,000 at risk	Fewer than 158 new cases per 1,000 at risk	Fell to 94 new cases per 1,000 at risk
MDG6.C: ceased & started reversal of incidence of malaria & TB. <i>Incidence of tuberculosis (TB)</i>	172 new cases per 100,000 people	Fewer than 172 new cases per 100,000 people	Fell to 142 new cases per 100,000 people
MDG7.A: integrate principles of sustainable development into country policies & reverse loss of environmental resources			Multiple metrics (nearly all deteriorating)
MDG7.B: reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss			Red List Index shows continued biodiversity loss
MDG7.C: halve the proportion of the population without sustainable access to <i>safe drinking water</i>	24% without access to improved water source	Reduce to 12% without access	Fell to 9% without access
MDG7.C: halve the proportion of the population without sustainable access to <i>sanitation</i>	46% without access to improved sanitation	Reduce to 23% without access	Fell to 32% without access

In 2015, all the United Nations member states embraced a new collective framework the 2030 Agenda for Sustainable Development, that similarly to the United Nations Millennium Declaration, guiding efforts toward global peace and prosperity for present and future generations. To the core of this agenda there are the 17 Sustainable Development Goals (SDGs), each one of them representing a pressing issue which necessitate to be improved through collective action by the due year, 2030. This UN project acknowledges the imperative of addressing poverty and various forms of deprivation, alongside implementing strategies geared towards enhancing health and education, mitigating inequality, and fostering economic growth. All these efforts are to be conducted while considering environmental sustainability concerns, which implies also targeting clean water and sanitation, affordable and clean energy, life below water, and life on land, and all other measure contrasting climate change. The SDGs underscore the interconnectedness of global issues and advocate for a holistic approach to development that leaves no one behind. The success in the achievement of the goals relies on collaboration among governments, businesses, civil society, and individuals, emphasizing the importance of partnerships in implementing transformative changes. The SDGs encapsulate the collective

vision for a more equitable, resilient, and sustainable world, reflecting the shared responsibility of the international community to secure a better future for present and coming generations.¹⁵⁶ Monitoring progress is a key aspect, with a commitment to data-driven decision-making to assess advancements and identify areas that require intensified efforts. Each of the seventeen SDGs is accompanied by a specific set of targets and indicators, intricately designed to measure progress, and guide the assessment of goal attainment. For instance, SDG 1, focused on eradicating poverty, comprises seven distinct targets, each with its corresponding indicators, ensuring a comprehensive evaluation of poverty-related endeavours. Similarly, SDG 2, centred on zero hunger, features eight targets accompanied by thirteen indicators, facilitating a nuanced understanding of global efforts to address food security. This pattern continues across all SDGs, with varying numbers of targets and indicators tailored to the unique dimensions of each goal. Alongside these two, considering the purposes of this thesis, it is interesting to deem the Sustainable Development Goal number 6 which aims at ensuring universal access to safe drinking water and sanitation. This goal is articulated through eight specific targets and eleven indicators. In 2023, at the midpoint on the journey to 2030, the United Nation Sustainable Development Goals face substantial challenges, warranting urgent attention. The assessment of the approximately 140 targets found that, despite the early and significant positive advancement, the unfolding of the coronavirus disease (COVID-19) pandemic, the conflict in Ukraine, and climate-related calamities have exacerbated the already faltering trajectory in the past three years. Thus, more than 30% of the targets have regressed below the 2015 baseline. Among the positive developments there are the declines in extreme poverty, child mortality rates and in the spread of contagious mortal diseases e.g.: HIV and hepatitis. Encouraging outcomes are also evident in specific targets related to gender equality, and accessibility of electricity in the least developed nations is expanding, accompanied by a rising proportion of renewables in the energy composition.

2.5. Free, Prior, and Informed Consent (FPIC) of Indigenous populations

In the public eye, Indigenous communities are mostly considered outsiders of nowadays society. This is mainly because of their lack of resource and expertise to access the competitive

¹⁵⁶ United Nations. (n.d.-b). The 17 goals | sustainable development. United Nations. Retrieved December 22, 2023 from <https://sdgs.un.org/goals>

global market and the fact that they lived in isolated areas. Despite the social label which has been given to them, these groups are some of the few populations which have still the rare benefit of enjoying living in uncontaminated nature. In fact, Indigenous groups all around the world are often located in areas which are abundant with natural resources. For this reason, they are frequently the target of national governments and international businesses, which take advantage of natural resources found in those areas in which the Indigenous tribes reside. In the scenarios in which the grabs concern Indigenous population, the principle of Free, Prior, and Informed Consent (FPIC) could be applicable. For example, in the case of the Mapuche tribe in Patagonia, protesters often recalled the national government to respect it. Rooted in the United Nations Declaration on the Rights of Indigenous Peoples the FPIC is a comprehensive framework which guarantees the Indigenous populations the right of autonomy to decide how to utilize their land and water resources. By requiring the engagement of organizations, governments, and companies, the United Nations Declaration on the Rights of Indigenous Peoples called upon these actors specifically to have meaningful discussions with the impacted communities prior to commencing any projects, thus FPIC creates a procedure that upholds the rights, customs, and local context of the indigenous and local inhabitants.

“Indigenous peoples shall not be forcibly removed from their lands or territories. No relocation shall take place without the free, prior, and informed consent of the Indigenous peoples concerned and after agreement on just and fair compensation and, where possible, with the option of return.”¹⁵⁷

Fundamentally, without first consulting and receiving approval from the Indigenous community, governments are not permitted to conduct policies or programs on or pertaining to the territory of Indigenous Peoples. This covers any state initiative or policy that aims to provide a business authorization to conduct any kind of activity on such lands. They are free to revoke their permission at any time once they have granted it. They may also bargain over the terms under which the project will be planned, conducted, overseen, and assessed thanks to FPIC. On the other hand, Free, Prior, and Informed Consent does not come without flaws, there are a lot of serious shortcomings related to it, it is the case of the UN REDD+ project.¹⁵⁸ The FPIC has

¹⁵⁷ United Nations General Assembly (2007). Resolution 61/295 of the United Nations Declaration on the Rights of Indigenous Peoples, Article 10. Retrieved December 23, 2023
https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

¹⁵⁸ The member states of the United Nations Framework Convention on Climate Change (UNFCCC) established REDD+ as a climate change mitigation strategy. REDD+ extends its scope beyond mere deforestation and forest

been highly criticised with regards to the UN REDD+ project, mainly for issues related to poor project certification, monitoring, and decision-making processes, as well as a generalized disregard for Indigenous populations by governments and multinational corporations.¹⁵⁹

2.6. Notes on the limitations of the current legal system

Chapter 2 of this thesis critically examined the current legal jurisprudence governing Land Grabbing and Water Grabbing, uncovering a multitude of limitations that obstacle its efficacy. A primary shortcoming which has been underlined multiple times lies in the absence of dedicated legal instruments directly addressing these phenomena, leaving a regulatory void, and fostering an environment where such practices can persist. Compounding this deficiency is the lack of a holistic international governance structure capable of effectively overseeing and controlling these complex issues, and eventually monitor and enforce the regulation. The intricate nature of land and Water Grabbing, involving diverse actors and manifesting as an intricate global scenario, further impeding the challenge of formulating a unified and enforceable legal framework. The involvement of multiple stakeholders, often operating within the confines of existing laws, presents an additional obstacle. The legal framework finds it difficult to address situations in which grabbing activities are conducted seemingly legally, underscoring a critical limitation. A further complication arises from the absence of a universally accepted definition of Land Grabbing and Water Grabbing, allowing for a variety of interpretations based on divergent interests and perspectives. Moreover, the lack of specialized legal tools tailored to the nuanced dynamics of these practices poses a substantial barrier. Without instruments crafted to specifically address the complexities inherent in land and Water Grabbing, the regulatory framework remains insufficient and struggles to effectively regulate and mitigate these issues. The limitations identified in this chapter coalesce around the absence of dedicated legal instruments, the intricate nature of the problems, the involvement of diverse actors, and the inadequacy of a comprehensive international governance structure. Addressing these limitations is crucial for developing a robust and adaptive legal framework capable of effectively tackling the challenges posed by Land Grabbing and Water Grabbing on

degradation, encompassing conservation, sustainable forest management, and the augmentation of forest carbon stocks.

¹⁵⁹ Dunlap, A., (2018) “A Bureaucratic Trap:” *Free, Prior and Informed Consent (FPIC) and Wind Energy Development in Juchitán, Mexico, Capitalism Nature Socialism*, 29:4, 88-108, DOI: 10.1080/10455752.2017.1334219

a global scale. Another limitation is due to the relevant jurisprudence which has been mentioned so far, indeed there could be additional sources of international law that might be useful to address the issue, but they might not have been considered here. Although the picture might not be exhaustive as it could, the mentioned sources represent an already significant starting point for the international legal system to build up on Water Grabbing and Land Grabbing.

Chapter Three

The Case study of Egypt and the Aswan High Dam on the River Nile

3.1. Methodology and justification – 3.2. Variable 1: food security – 3.3. Variable 2: Affordable and clean energy - 3.4. Final evaluation and recommendations

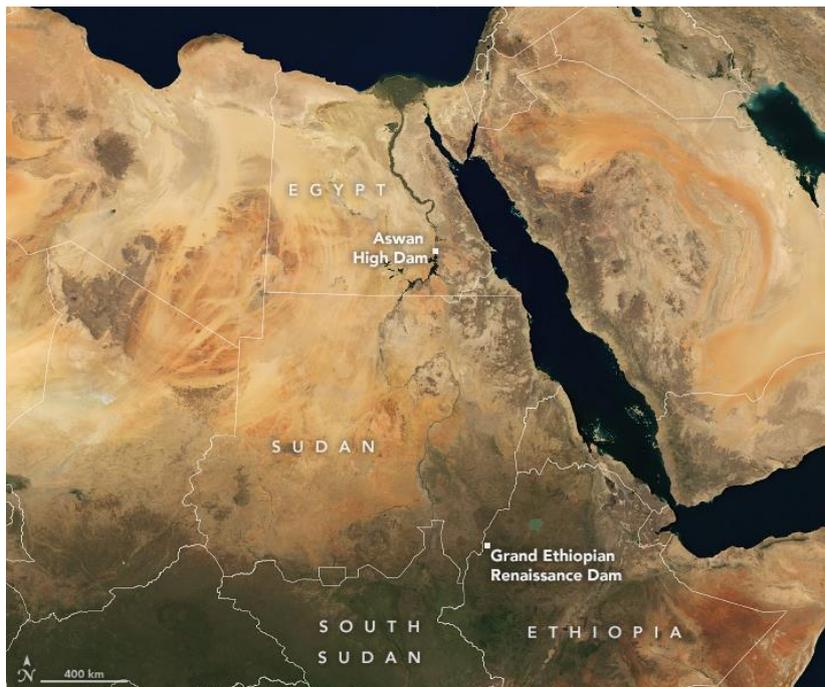
In the vision of this thesis, a case study becomes useful to access a deeper understanding of a specific grabbing dynamic: the overtime development, the geopolitical implications, and the repercussions on the involved territories. The choice of analysing the River Nile is primarily driven by a forced process of exclusion, but also by personal interest of the author. The exclusion process starts from the research of all the cases which have been mentioned in the previous chapters. The case of Land Grabbing affecting indigenous populations is extremely difficult to assess, especially quantitatively. Considering the population wellbeing, through the assessment of the fulfillment of their basic needs and rights becomes particularly complicated in the case of indigenous groups. The peculiar customs characterizing the way of living of these populations makes it difficult to carry out an assessment on their living conditions the conventional way. Commonly an evaluation on the wealth of a group of people is fostered by the analysis of indicators such as the GDP, associating economic thrive to wealth, which purposely helps in simplifying the concept. The Benetton's Land Grabbing practice in Patagonia, is one of the cases in which limitations have been encountered in data analysis, together with other cases of grabs, in which indigenous populations are the involved. Other forced exclusions are cases of grabs happening in large States. A grab can be of a significant dimension and have severe consequences for the land and the local population, however, if it is considered in the scale of a large country, its effects are muted, becoming difficult to identify quantitatively. An example of that can be the Three Gorges Dam in China, one dam driven flood can be a catastrophic event for the western region, but, at the same time, a completely negligible event for China's economy, water and food security, etc.¹⁶⁰ This leads to the choice of a narrower state, which has a higher possible impact of the grab on the whole country and population. The River

¹⁶⁰ The Yangtze River flows from west to east, for this reason a wrongfully managed river flow through the dam could cause flooding in the western side of the dam on the sides of the river.

Nile is one of the most precious natural resources for some northern African countries, since the Egyptian civilization the river has been used for societal development, and it still is. It is calculated that more than 90 percent of the population in Egypt lives alongside the river, being a subsistence source of utmost importance in such an arid region of the world.¹⁶¹ Flowing from south to north the Nile is one of the longest rivers in the world originating in the Ruvyironza River, one of the tributaries, and ending in the Mediterranean Sea in Egypt. It is composed of three main tributaries, the Blue Nile, and the White Nile, meeting in Khartoum, the Sudanese capital, then to be joined by the third, the river Atbarah. Its flow passes through 11 countries, e.g.: Burundi, Rwanda, Tanzania, Kenya, the Democratic Republic of the Congo, Uganda, Ethiopia, Eritrea, South Sudan, Sudan and Egypt, flowing for approximately 6,600 kilometers. Over 280 million people live in 11 nations around the Nile Basin, which is a vital source of subsistence for many. With a surface area of around 10% of the whole African continent, the basin is among the biggest in the world.¹⁶² In spite of this, a water deficit affects several of the region's nations.¹⁶³

Figure 3.1

The Nile



¹⁶¹ National Geographic. (2023, October 19). Nile River. Education. Retrieved January 2, 2023 from <https://education.nationalgeographic.org/resource/nile-river/>

¹⁶² Dauphin, L. (2022). *A Grand New Dam on the Nile*. NASA Earth Observatory images. Accessed January 31 2024. Available at: <https://visibleearth.nasa.gov/images/149691/a-grand-new-dam-on-the-nile/149694w>

¹⁶³ Haddad, M. (2020, January 23). Could mega-dams kill the mighty river Nile?. Al Jazeera. <https://interactive.aljazeera.com/aje/2020/saving-the-nile/index.html>

The distribution of the Nile River water rights has been a longtime issues of contention dispute. With the involvement of water infrastructures the topic has become increasingly delicate, dams can potentially disrupt the water course, altering the balance in the distribution of the river's water resources between States. while the downstream countries (in the north) strive to maintain the their historical water rights, the upstream countries, especially Ethiopia, are demanding more control over the water resources of the Nile River. In 1959, during the colonial era, one main treaty was signed, establishing the water distribution of the Nile, it is the *Agreement for the full utilization of the Nile waters* (No. 6519).¹⁶⁴ This bilateral agreement designated the shares of water between Egypt, former United Arab Republic (U.A.R.), and Sudan, granting Egypt the entitlement to utilize 55.5 billion cubic meters and Sudan 18.5 billion cubic meters, losses due to yearly evaporation were also considered. The agreement authorized Sudan to construct the much-anticipated reservoir at Roseires and essential accompanying infrastructure for the utilization of its allotted share of Nile waters. It also delved into matters like reparation for displaced individuals and the formation of a Permanent Joint Technical Committee, aiming at fostering collaboration on mutually agreed-upon projects. Egypt has long refused to re-negotiate the colonial-era treaties and has alway tried to maintain its original water share, which in the last decades has been threatened by climate's condition and new infrastructures in the southern countries of the Nile.¹⁶⁵ More recently a big step has been made, Nile Basin Initiative (NBI) was created in 1999, and it signed a mileston fo the cooperation between riparian states, thus the eras of the Nile diplomatic history can be divided into three phases: the Pre-NBI, the NBI and the Post-NBI cooperation.¹⁶⁶ In the priod leading to the creation of the NBI the riparian states of the bassin made a firt attempt of establishing coordination throught the creation of thr Hydromet (1967). Following a flooding disaster this initiative was established to gather data to obtain a better understanding of the hydrological funtionning of the equatorial lakes, to better deal with catastrophic floodings. All the River Nile bassin's states participated to the inditiative, exception made for Ethiopia and the Democratic Republic of the Congo (DRC) which held observer status. Expanding the scope of the Hydromet the riparian states created the Udungu group in 1983, it laid the groundwork for further collaborative efforts expanding its competence also to addittional areas e.g.:

¹⁶⁴ Agreement for the full utilization of the Nile waters. United Arab Republic (U.A.R.) and Sudan. Signed at Cairo, on 8 November 1959, Registered by the United Arab Republic on 7 February 1963.

¹⁶⁵ Swain, A. (1997). *Ethiopia, the Sudan, and Egypt: the Nile river dispute*. The Journal of Modern African Studies, 35(4), 675-694.

¹⁶⁶ Seide, W. M. (2014, May). *Dividends of Cooperation: The Case of the Nile River*. In Workshop Counting Our Gains: Sharing Experiences on Identifying, Assessing and Communicating the Benefits of Transboundary Water Cooperation (pp. 22-23).

environment, infrastructure, trade, and culture in the Nile Basin region. Partial involvement was showed by Ethiopia, Kenya, and Tanzania, which chose to maintain observer status. Ten years later the Undugu was reorganised, leading to the establishment of the Technical Cooperation Commission for the Promotion and Development of the Nile (TECCONILE). Among the achievements of TECCONILE the establishment of the Nile River Basin Action Plan (NRBAP) stands out. Through the NRBAP the Policy Guidelines of the Nile Basin Initiative (NBI) were created and the initiation of a "Cooperative Framework Agreement (CFA)" to address equitable water sharing was established. Before the NBI all of the efforts were weak insufficient, bordering on non-cooperation, lacking legal frameworks and collective consensus. The Pre-NBI was characterised by one-sided advancements in water resource development, deeply ingrained distrust, and explicit exchanges of water war language, particularly in the interactions between Ethiopia and Egypt. The NBI represented a turning point, the parties common goal was achieving socio-economic development through the equitable utilization of the common Nile basin, benefitting from its water resources. The Cooperative Framework Agreement (CFA) procedures and the NBI Technical projects are the two strategic plans of collaboration established in the NBI, which are two distinct project that crossed paths many times. The CFA represents the legal framework in which principles, rights and obligations regarding the basin are delineated, whereas the NBI follows the proper projects development. Despite the NBI great accomplishment of fostering collective participation, the national preferences have many times prevailed over the common scheme. It is case of Ethiopia building the Grand Ethiopian Renaissance Dam (GERD), but also of Egypt with its New Valley project, the Al-Salaam Canal, and the Toshka Project. In 2010, the six upstream riparian nations established the Nile River Cooperative Framework (NRCF) signed in Entebbe. Egypt and Sudan opted not to endorse the agreement, expressing their dissent by suspending their participation in the NBI.¹⁶⁷ Egypt, Ethiopia, and Sudan created their own round table with Joint Multipurpose Program (JMP) in 2006, which was quickly dismantled six years later, due to Egypt-Ethiopian controversy over the Grand Ethiopian Renaissance Dam hydroelectric project. Today, the NBI has evolved to a water conflict prevention mechanism fostering regional cooperation, preaching "One River-One People-One vision." The NBI greatest opposer remains Egypt, especially after being left when even Sudan showed support to the Ethiopian hydroelectric project. Even though Egypt

¹⁶⁷ Schella, L. (2021, August 9). *Water and security in the Nile River Basin: An issue of future military conflict?*. Centro Studi Internazionali. Accessed January 31 2024. Available at: <http://www.csinternazionali.org/bulletin/water-and-security-in-the-nile-river-basin-an-issue-of-future-military-conflict>

assumed a countering position for decades, or other states showed their resistance, this does entail the complete failure of the collaboration instruments. It is important to note that not all collaborative efforts within the Nile Basin have succeeded in uniting the riparian nations under a single cooperative framework, have positively impacted countries behaviours.

As it can be seen in the Figure above, the two main dams on the Nile are the Aswan High Dam and the GERD, respectively built in 1971¹⁶⁸ and 2017.¹⁶⁹ Researchers have found that the Aswan High Dam has been detrimental to the ecosystem of the Nile, creating damage by impoverishing the soil of the banks and their surroundings. The delta is the part which has been suffered the most by the impoverishment and the water lack. The installment of the aswan river has many purposes, among which there is the regulation of the seasonal floods. This might seem as a positive project, preventing water dammages, however, it prevents the Nile from spreading loam to its banks. Loam is a precious source of extra nutrients for the soil and it makes the river banks, and the delta particularly rich and adapt for crop plantations. The majority of Egypt's population reside along the Nile. Thus, historically, the river's flow has determined whether there will be a famine or prosperity. For thousands of years, extraordinary floods and protracted droughts have resulted in property damage and fatalities. The river and the agricultural production of the delta are strongly connected for this reason, and that is one of the many reasons why the river Nile bears such a great importance con for Egypt as well Especially because this state benefits of the largest green area; the delta. Clearly, the Nile is highly relevant for the countries in which it flows as well, thus this transboundary water course is at the center of centurys-old political discussions. The implementation of this colossal dam initiated a gradual deterioration of the Delta's ecosystem balance. Dams, particularly those with expansive reservoirs, disrupt the natural flooding cycle that traditionally deposits nutrient-rich sediment on riverbanks, enhancing arable land and contributing to the original ecosystem's natural rhythms. The sediment retained by these vast reservoirs also plays a crucial role in Delta maintenance. In its absence, accelerated erosion has facilitated the encroachment of Mediterranean seawater into the Delta, resulting in the degradation of once-fertile agricultural land. The 1450 km long Blue Nile has a highly stochastic monthly and yearly discharge that starts in Ethiopia's Lake Tana. In the Ethiopian highlands, the rainy season lasts from July to

¹⁶⁸ Water Technology. (n.d.). *Grand Ethiopian Renaissance Dam Project, Benishangul-Gumuz*. Accessed January 31 2024. Available at: <https://www.water-technology.net/projects/grand-ethiopian-renaissance-dam-africa/>

¹⁶⁹ Water Technology. (n.d.). *Aswan High Dam, River Nile, Sudan, Egypt*. Accessed January 31 2024. Available at: <https://www.water-technology.net/projects/aswan-high-dam-nile-sudan-egypt/>

August, when more than 80% of the Blue Nile's discharge takes place. Variation from year to year varies greatly and has done so ever since the first records were recorded in ancient times. Using dams and other flow-augmentation devices, Ethiopia and all downstream countries have attempted to slow the flow to their favour for centuries.¹⁷⁰ Even though the dammegees to the ecosystem are tangible Governments favour the construction of dams for the immediate economic benefits. Presently, with the ongoing construction of the Ethiopian Renaissance Dam, experts are sounding alarms regarding the potential for additional disruption to the Nile's ecosystem, emphasizing the risk of damage to the downstream region.¹⁷¹

This chapter aims at answering one question: *how strong and perceivable are the riperussions of nature exploitation on Egypt?*

3.1. Methodology and justification

In this chapter Egypt's food security and affordable and clean energy will be analyzed as variables. Egypt have been selected as case study because it shows to have a stronger perceptions of the impoverishment brought by dams constructions. Compared to other riparian countries Egypt prosperity seems to be the one suffering the most from the alterations of the river flow. Data variation will be considered in the largest time frame possible, considering the constraints of data availability. This time frame has been selected to provide a sufficiently wide range to see a reliable and consistent trend over time, trying to cover the years before the construction of the Aswan High Dam to see how impactful its construction has been. To find data on the food and energy variables the following indicators have been selected.

With regard to the analysis on food security the first indicator study the size of agricultural lands. Secondly, the food inflation rate will be analysed, to see the overall change in purchasing power Egyptians face. The third indicator is the Prevalence of Undernourished people (PoU), to examine the extent to which a humanitarian crisis might be on the horizon due to the food price variations. Next, the focus shifts on the imports and exports of a the main crops in Egypt,

¹⁷⁰ Abd-El Monsef, H., Smith, S. E., & Darwish, K. (2015). *Impacts of the Aswan high dam after 50 years*. Water Resources Management, 29, 1873-1885.

¹⁷¹ Haddad, M. (2020, January 23). *Could mega-dams kill the mighty river Nile?*. Al Jazeera. Retrived February 2, 2024. Available at: <https://interactive.aljazeera.com/aje/2020/saving-the-nile/index.html>

to verify the development of the country's balance of trade over the year, for some of the most important products for the agricultural sector. Finally, Egypt's cereal import dependency will be analysed to better understand the level of impact on the market.

Hypothesis 1: *Egypt's food security is expected to benefit from the Aswan High Dam: agricultural lands should expand, and the strong cereal imports dependency should be mitigated.*

Afterwards the analysis will shift towards the affordable and clean energy variable assessment, through four indicators. The first major indicator that is relevant here is the amount of final energy use that comes from renewables. Paralelly, the trend in the market of fossil fuels' is observed for a complete framework, thought the import and exports trends. Next, as Egypt is a major oil & gas exporter it is significant to observe its efforts in the sustainable developement transition, toward the greener energy sources. This analysis will be carried out through an evaluation of the country's energy consumption, comparing both renewables and fossil fuels. To conclude, it is relevant to relate this to the effects on the domestic energy market, to translate a global trend to a domestic disruption and uncover whether there are larger domestic challenges faced. Therefore, the zoom on the Gross Domestic Product.

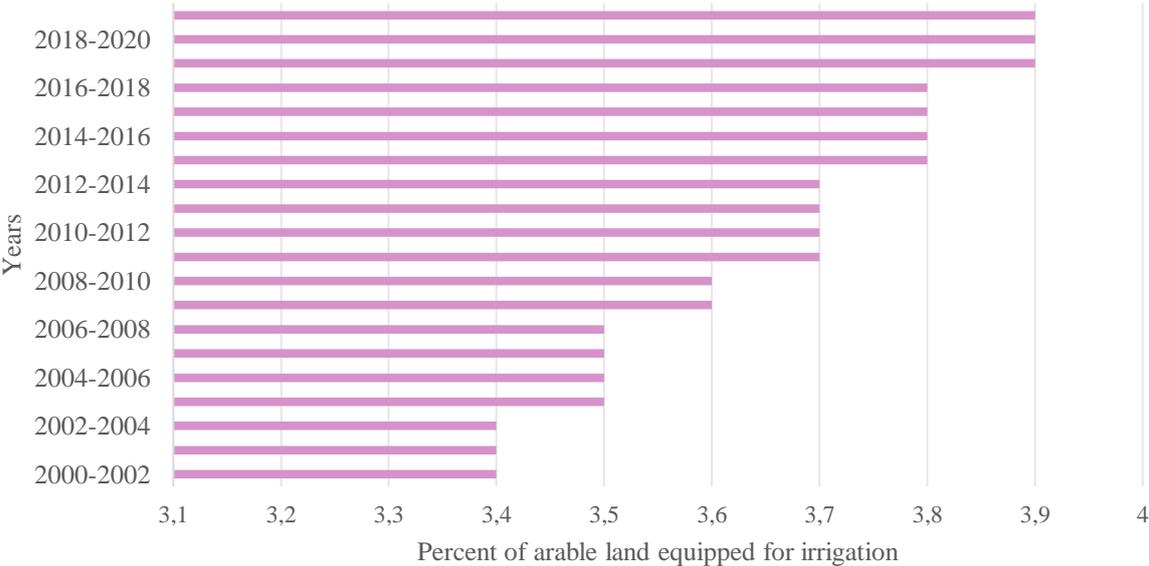
Hypothesis 2: *Fossil fuel is expected to maintain its main role in Egypts economy, however, a growth in the consumption of greener energy sources should be witnessed.*

3.2. Variable 1: Food Security

Considering the precarious economic situation of the country and the influence of the 2008 financial crisis, together with the war and the Covid-19 global pandemic, the prediction is to see a rise in the prices of food with negative impact on the welfare of the Egyptian population.

Figure 3.2

Percentage of arable land equipped for irrigation (3-year average)



Note: Author’s elaboration of data from: FAOSTAT (2023).

This line graph represents the percent of arable land equipped for irrigation, which is calculated through the ratio between arable land equipped for irrigation and total arable land.¹⁷² The following categories of land are classified as arable: land under market and kitchen gardens, land under temporary meadows for mowing or pasture, land under numerous crops (counted only once), and land that is temporarily fallow (less than five years). This does not include the abandoned land that arises from shifting farming. The area that can provide crops with water through irrigation is known as the total arable land equipped for irrigation. It consists of meadows, lowland areas, and places with spate irrigation as well as areas with full and partial control irrigation. This indicator measures Egypt’s dependency agriculture on irrigation, showing the county’s agricultural sector vulnerability to climatic shocks. Overtime, a steady

¹⁷² FAOSTAT (2023). *Percent of arable land equipped for irrigation*, Suite of Food Security Indicators. Retrieved February 6, 2024. Available at: <https://www.fao.org/faostat/en/#data/FS>

improvement is noticeable however, in the future this trend might be reversed due to the possibility of a highly infertile soil.

Figure 3.3

Inflation rate, end of period consumer prices (CPI) annual percent change

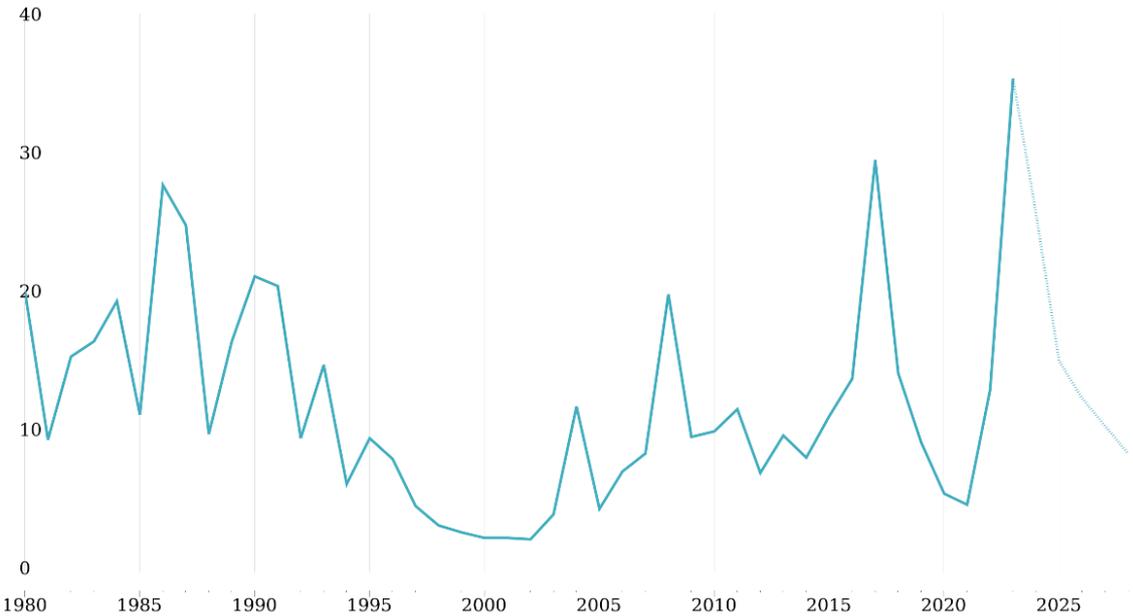


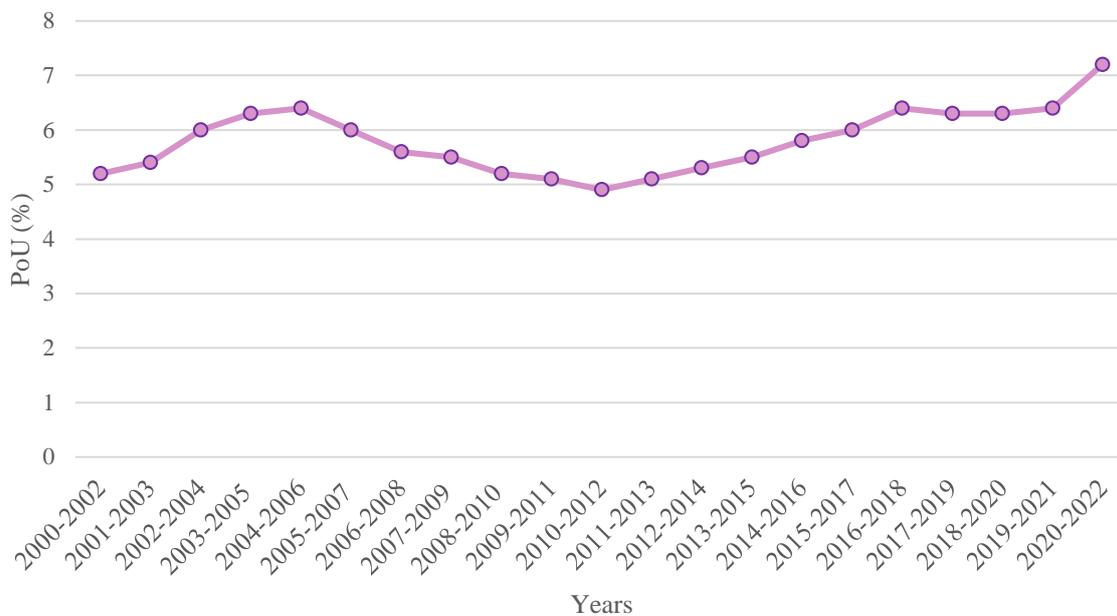
Figure 13 shows the inflation rate in Egypt for consumers.¹⁷³ The inflation is here expressed through the CPI, which is the Consumer price index and “reflects changes in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly.”¹⁷⁴ What can be noticed is that there are recurrent fluctuations in the CPI, normal to the current economy. However, a big spike can be noticed in 2017, and an even higher rise in the inflation rate in 2022, when the Russian-Ukrainian war started. In 2021 the CPI was at 4,9%, in two years it reached its highest point growing by approximatively seven times. The AHD plan contribution to CPI fluctuations is negligible, but considering the market inflation is relevant to understand the full spectrum.

¹⁷³ IMF (2023). *Inflation rate, end of period consumer prices*. Retrieved February 6, 2024. Available at: <https://www.imf.org/external/datamapper/PCPIEPCH@WEO/EGY?zoom=EGY&highlight=EGY>

¹⁷⁴ The World Bank (n.d.). *Consumer price index*, The World Bank Metadata Glossary Databank Retrieved February, 2024, from: <https://databank.worldbank.org/metadataglossary/world-development-indicators/series/FP.CPI.TOTL>

Figure 3.4

Prevalence of undernourishment (PoU %)



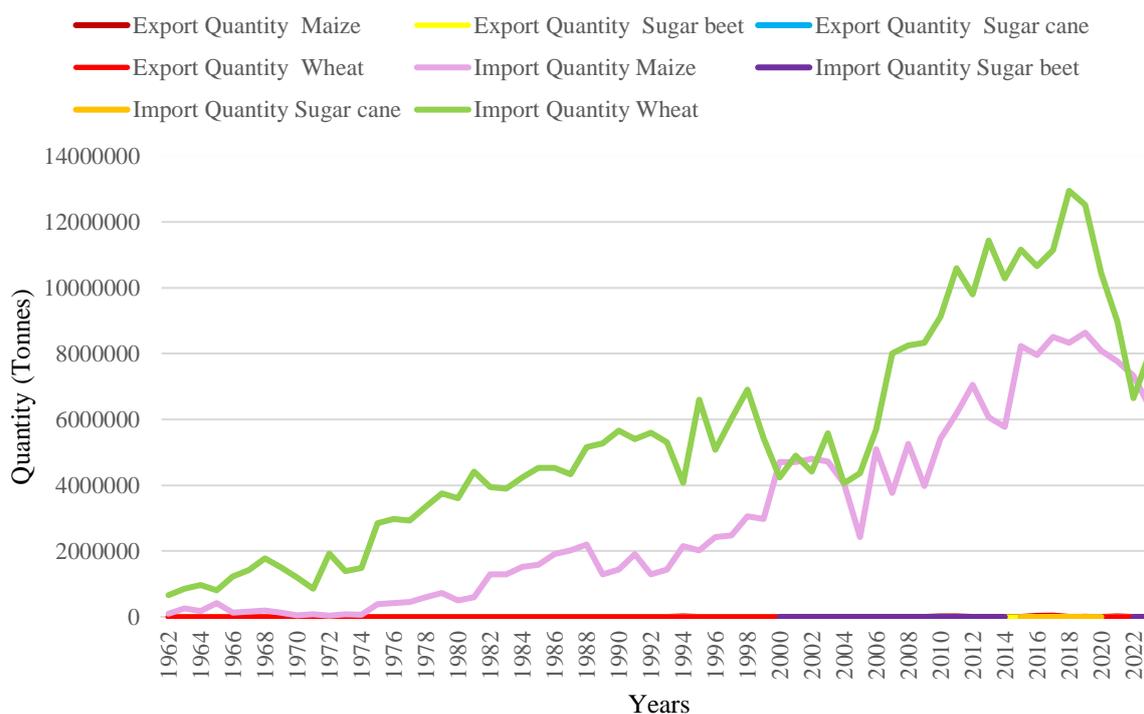
The indicator used here to address food security is PoU, expressed in percentage, which is a “measure to track progress made in stamping out hunger in a way consistent with the past”.¹⁷⁵ The lack of data from 1971, or other years before the construction of the dam, undermines validity of the hypothesis 2. However, extensive research published by FAO have shown a significant improvement of food security, through the measurement through a variety of indicators, excluding the one considered here.¹⁷⁶ One could assume that since homogeneous progress has been made for a series on indicators, that some progress could have been witnessed for the PoU as well, however, this currently remains unknown.

¹⁷⁵ FAO (2022). *2.1 food security indicators – latest updates and progress towards ending hunger and ensuring food security*. FAO. (n.d.). Retrieved February 6, 2024, from: <https://www.fao.org/3/cc0639en/online/sofi-2022/food-security-nutrition-indicators.html>

¹⁷⁶ Hassan, H., Moussa, W., & Ismail, I. (2006). *Assessment of dietary changes and their health implications in countries facing the double burden of malnutrition: Egypt, 1980 to 2005*. The double burden of malnutrition, p.43.

Figure 3.5

Agricultural products Imports & Exports



This line graph shows the trend of the the import and export of some of the main agricultural products which are pillars in the making diet all over the world.¹⁷⁷ It is relevant here to understand how strong is the presence of Egypt is on the agricultural market for such product, because that provides information on the country's ability to satisfy independently its population's dietary needs. The more a country is independent the less succettible it is to financial shocks, and therefore the more resilient it will be overtime. Throught the observation of the figure above it can be grasped that egypt is not a particularly prominent actor in the global market for such selected basket. The import quantity of wheat and the import quantity of maize trands stands out from the others, thus highliting Egypts strong reliance on others country production to satisfy the domestic demand. From 2018 a gradual increase in the importof both products can be notices, that might be have fostered by FAO's (2017) Technical Cooperation Programme which aimed at promoting Egypt's agricultural sector. By assuring technical conformity to specifications and lowering costs, FAO's technical audit and support with irrigation modernization improved sector investments. Furthermore, by removing a number of

¹⁷⁷ FAOSTAT (2023). *Imports and exports agricultural products*. Retrieved February 6, 2024. Available at: <https://www.fao.org/faostat/en/#data/FS>

obstacles and hazards in the grain trade, educating national institutions, and founding the Egyptian Grain Suppliers Association, the cooperative effort of FAO-EBRD on public-private policy dialogue increased the efficiency of the grain supply chain.¹⁷⁸ As it appears the collective efforts to boost agriculture through modern irrigation systems and through external assistance did not produced sufficiently satisfactory results.

Figure 3.6

Egypt's cereal import dependency

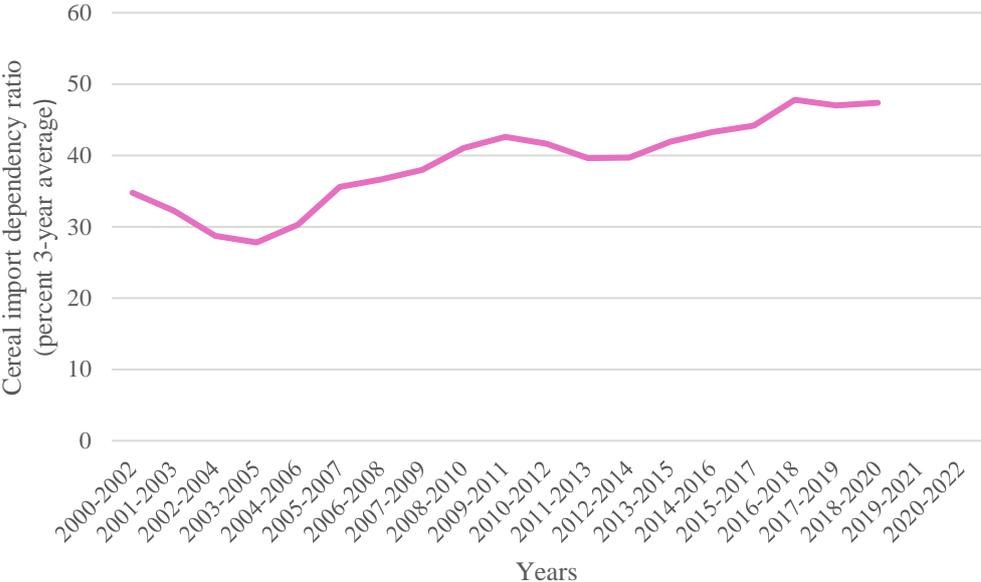


Figure 3.6 zooming into one specific branch of products, cereals, underlines Egypt import dependency.¹⁷⁹ The ratio of dependence on imports of cereals indicates the proportion of the country's total cereal food supply that is derived from imports and the remainder from domestic production. Despite systemic help data shows a steadily growing dependency confirming the assumptions based on data for the previous figure. To calculate the cereal import dependency FAO draws a relationship between cereal imports and cereal exports, for further information on the formula visit the website of the retrived data.

¹⁷⁸ FAO (2019). Egypt and FAO. Retrieved February 7, 2024. Available at <https://www.fao.org/documents/card/en?details=AZ570E/>

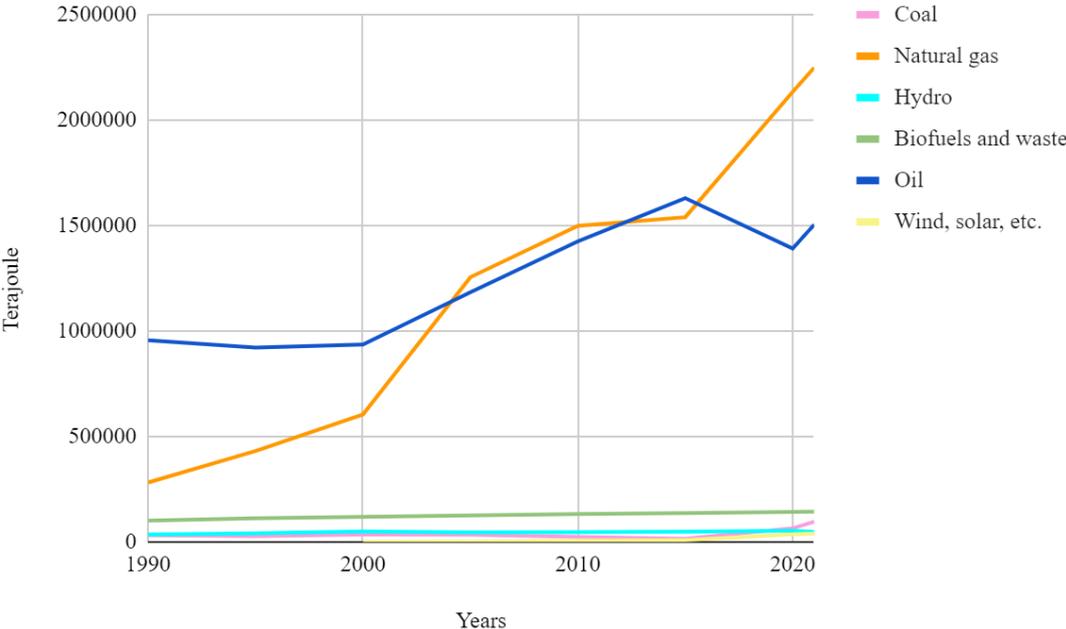
¹⁷⁹ FAOSTAT (2023). Cereal Dependency ratio. Retrieved February 6, 2024. Available at: <https://www.fao.org/faostat/en/#data/FS>

3.3. Variable 2. Affordable and clean energy

In order to encourage the development of renewable energy, Egypt has implemented feed-in tariffs and progressively reduced power subsidies, among other energy sector changes. The country's recent energy sector reforms have increased investments significantly, increasing the generation of power over the past five years and guaranteeing a steady supply nationwide. Egypt also intends to raise the proportion of renewable energy in the country's electrical mix to 42% by 2035.¹⁸⁰ Egypt is an important player in the global energy markets thanks to the Suez Canal and the Suez-Mediterranean (SUMED) pipeline. Since its expansion in 2015, the Suez Canal has played a significant role in the transportation of oil and LNG exports from North Africa, Europe, and North America to Asia. The Egyptian government receives a sizable portion of its income from the management of these two transit hubs.¹⁸¹

Figure 3.7

Total energy supply (TES)



The graph above collects all the data regarding Egypt's energy supply, comparing source types. As it can be observed from **Figure 3.7**, Egypt's production remains strongly centered towards natural gas (and liquefied natural gas) production.¹⁸² Despite the attempt to improve the

¹⁸⁰ IEA (2023). *Egypt*. Retrieved February 7, 2024. Available at: <https://www.iea.org/countries/egypt>
¹⁸¹ Bissada, D. (2022, August 8). *Egypt - oil and Gas Equipment*. International Trade Administration. Trade.gov. Retrieved February 7, 2024. Available at: <https://www.trade.gov/country-commercial-guides/egypt-oil-and-gas-equipment>
¹⁸² IEA (2023). *Egypt data explorer*. (2023). Retrieved February 7, 2024. Available at: <https://www.iea.org/countries/egypt>

production of renewable energy, to these days oil and gas are the largest single industrial products in Egypt. Carbon found in crude oil, natural gas, and coal are examples of fossil fuels constitutes by hydrocarbon. In Egypt, this organic compound production accounted for almost 24% of the GDP in the financial year (FY) 2019–2020, bearing the title of the national largest single industrial activity. From USD 9 billion in FY 2014/2015 to USD 47.8 billion in FY 2019/2020, foreign direct investment (FDI) has surged in the oil and gas industry. Among Egypt's economic sectors, oil refining grew at the fastest rate ever in FY 2019/2020, surpassing even construction, wholesale and retail commerce, and communication.

Figure 3.8

Fossil fuels Imports and Exports

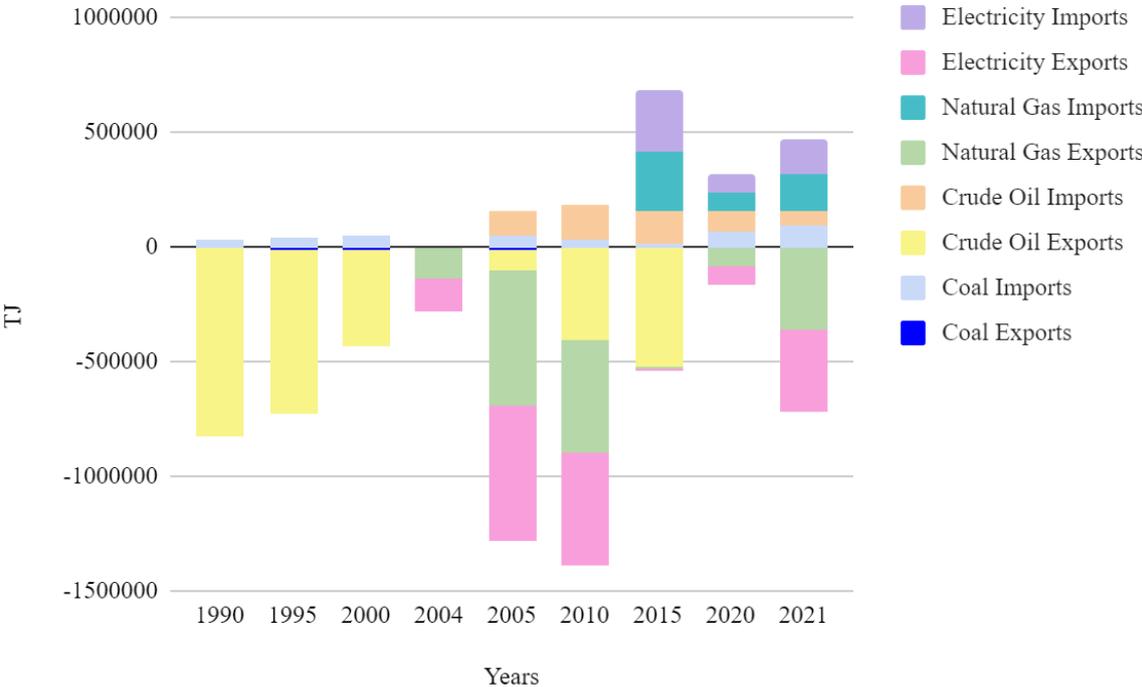


Figure 3.8 displays empirical data on a simplified sample of fossil fuels imports and exports.¹⁸³ For visualisation ease, the exports are expressed as negative values, so that they are separated from the imports at first glimpse, however, the absolute value is to be considered as the volume of trade. The overall trade balance for the fossil fuel sector is positive, especially strong sectors are visibly Crude Oil, Electricity and Natural Gas. There are two main diverging takes on the future of the energy markets. Some experts claim that the oil and gas sector is expected to grow in the foreseeable future as a deliberate strategy by the Egyptian government to create a gas surplus to

¹⁸³ IEA (2023).

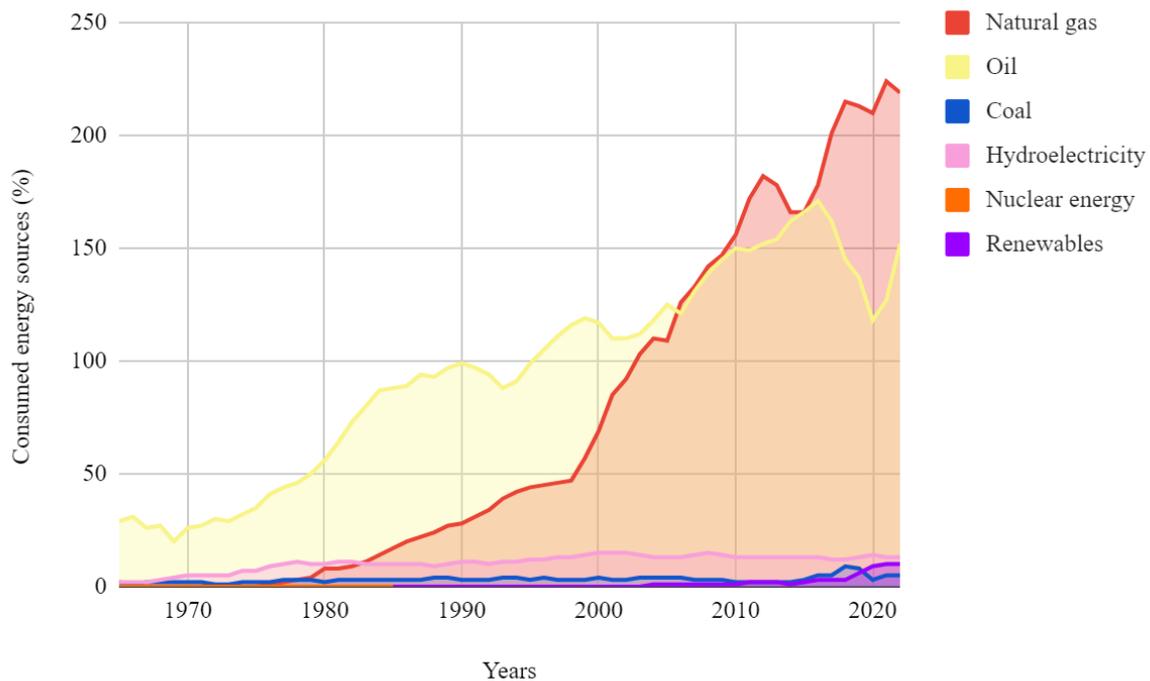
become Europe's key export partner as it scrambles to reduce dependence on Russia.¹⁸⁴ This theory is supported by the prominence of fossil fuels revenues on the Egyptian national market and the generous investments which have been made in last years for this types of products.¹⁸⁵ A second view envisage the progressive transition towards renewable energies to tackle then fossil fuels methan emissions. A signal of this shift has been registered with the asteblishment of a joint programme between Egypt and the International Energy Agency (IEA). Egypt's Minister of Petroleum and Mineral Resources Tarek El-Molla, IEA Executive Director Fatih Birol, and Egypt's Ambassador to France, Alaa Youssef, met and signed the agreement at the IEA's Paris offices. They also tackled the difficulties the area is currently facing considering the geopolitical unrest and how it is affecting the world's energy markets. Following Egypt's February 2022 admission to the IEA as an Association member, Minister El-Molla and Dr. Birol first investigated methods to strengthen institutional connections. Short and long-term energy goals for Egypt are the main topics of today's two-year collaborative work program, with a focus on clean energy transitions, energy security, and climate resilience. The program's workstreams cover hydrogen, renewable energy, oil and gas operations, and data collaboration in addition to emissions reduction. From the market trend and the importance of fossil fuels for the market one could deduce that the green transition will be a long progress not to dammage the economy. The green campaigns on the othe other hand are necessary but both to contrast the already harmed environment and to respond to the call toward sustainability of the international community.

¹⁸⁴ Reuters (2022, August 11). *Egypt to ration electricity to boost gas exports*. Accessed November 22, 2022, from: <https://www.reuters.com/business/energy/egypts-cabinet-approves-plan-ration-electricity-savegas-export-2022-08-11/>

¹⁸⁵ Bissada, D. (2022, August 8)

Figure 3.9

Egypt energy consumption per type of energy



From what can be grasped from the data in **Figure 3.9**, the consumption of renewables and other more sustainable sources is almost negligible compared to fossil fuels, especially Oil and Gas.¹⁸⁶ From the year of completion of the construction of the Aswan High Dam, an increase is registered in the consumption of Hydroelectricity. The slight growth is consistent for more than a decade, than the trend continues to remain steady. The energy production contribution of this hydropower plant is approximatively around 2.000 Megawatt, which is little to nothing compared to the other less sustainable sources.¹⁸⁷ To conclude the analysis of this case study, before providing considerations on the hypothesis, one last index is observed, the gross domestic product (GDP) per capita (expressed in US dollars).¹⁸⁸ This indicator is calculated through the sum of gross value added by all resident producers in the economy and any product taxes, minus any subsidies.

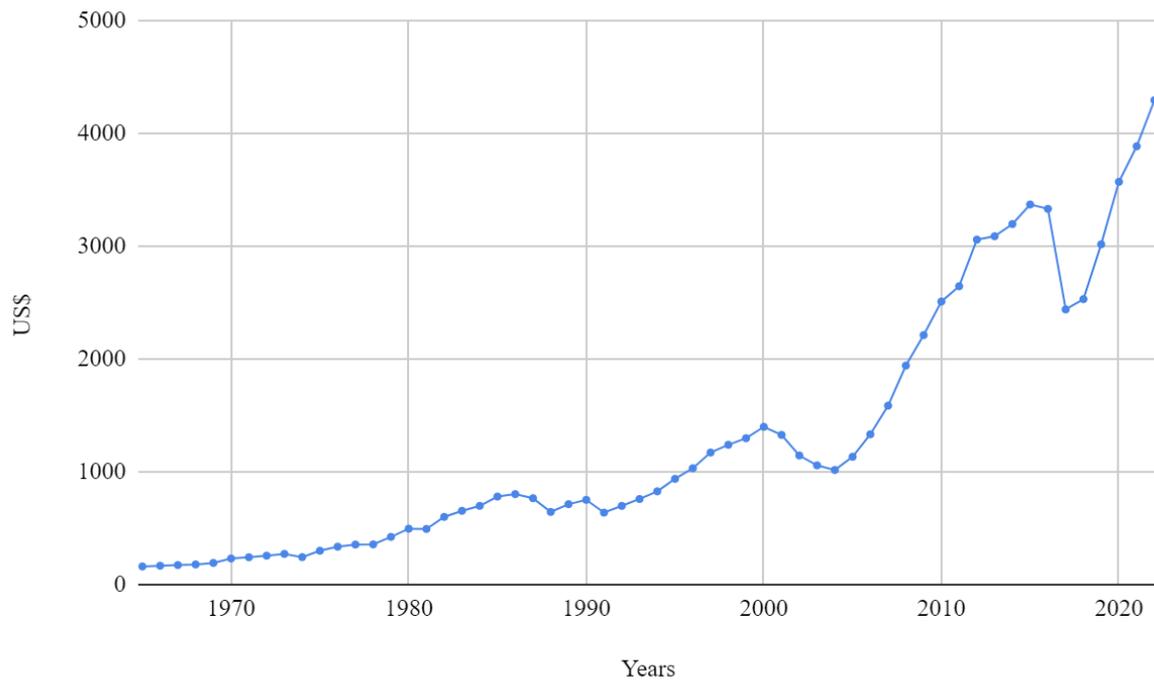
¹⁸⁶ Our World in Data (2023). *Renewable energy share in the total final energy consumption (%)*. Data from multiple sources compiled by the UN – processed by Our World in Data. August 16, 2023. Retrieved February 7, 2024. Available at: [Share of final energy use that comes from renewable sources, 2000 to 2020 \(ourworldindata.org\)](https://ourworldindata.org/share-of-final-energy-use-that-comes-from-renewable-sources-2000-to-2020)

¹⁸⁷ Power plant profile: Aswan high dam, Egypt. Power Technology. (2023, July 26). Lastly updated on 4 January 2024. Retrieved February 7, 2024. Available at: <https://www.power-technology.com/marketdata/power-plant-profile-aswan-high-dam-egypt/>

¹⁸⁸ Reuters (2022, August 11)

Figure 4.1

GDP per capita



The growth in the GDP is evident, and it is especially fast from 2005. The GDP's soar can be attributed to a rise in the country's revenues from oil and gas exports. Therefore, the export of Egypt's natural resources is mitigating the otherwise challenging economic situation. One way Egypt approaches the new electricity rationing connected with the war and the economic crisis, can be the increased the production and consumption of dirty oils to foster their independence, and boost the exports to build their leading role internationally in the sector. Form this figures an effecting coping strategy emerges, to the detriment of enviornmental preservation.

3.4. Final evaluation and recommendations

This case study underlines as comprehensively as possible the context in which the hydroelectric project of the Aswan High Dam operates. Considering the two main spheres connected to the dam, the energy and the agricultural sector, the study aims at an evaluation of the changes that the power plans have caused on the national level. Decision-makers should be encouraged to increase their investments in the renewable energy industry as a consequence, raising living standards. When considering the AHD contribution to food security one should remember that in this case study only a few indicators are analysed. A larger spectrum should be considered, and it would produce a more reliable outcome, however, the inavailability of open source data obstacles the research process. The Aswan High Dam which is not solely used for power generation but for irrigation purposes too brought positive results however, not sufficiently satisfying considering the data shown. In fact Egypt agricultural sector (cereal) after the 1970s has stayed consistently weak and dependent on exports. Moreover, the augmentation on the arable lands may or might not be connected to the improved irrigation system. The lack of data specifically related to the periods right before and right after the start of the AHD would have helped to strengthen the link between agricultural advancement and the dam. To conclude, all the observations tied with a soaring PoU %, leads to the assumption that the Aswan High Dam did not give a prominent contribution to the improvement of food security in Egypt.

Hypothesis 1 is not confirmed the Aswan High Dam seems not to have significantly improved some aspects connected to food security

The EU's carbon-neutral target, which Egypt has committed to pursuing, may be met by further advancements in currently available sustainable technology. Without burning fuel, energy or electricity may be produced using renewable energy sources. As a result, they may greatly aid in the reduction of dangerous emissions and particles and promote the wellbeing and health of all people, animals, and plants. The most promising option has been shown to be wind farms, which coupled with solar photovoltaics are expected to account for 43% of power generation in the EU by 2050.¹⁸⁹ Both the environment and the economy will benefit from the switch from conventional to renewable energy sources. In this scenario the Aswan High Dam have shown

¹⁸⁹ Salah, S. I., Eltaweel, M., & Abeykoon, C. (2022). *Towards a sustainable energy future for Egypt: A systematic review of renewable energy sources, technologies, challenges, and recommendations*. *Cleaner Engineering and Technology*, 8, 100497.

not to have a significant impact in the achievement of this goals. As precedently observed in the comments of the graphs the production, the consumption, and the export of fossil fuels constitutes a fundamental source of revenue for Egypt. The Aswan High Dam's energy production covers only a small piece of the cake of the population needs, fossil fuels to these days remain a pillar of the Egyptian economy.

To conclude, only a weak augmentation in the consumption of renewable sources is registered (Figure 3.9), for all these reasons **Hypothesis 2** has only been partially confirmed by the analysis.

Conclusion

Behind the idea of this thesis there was the attempted to collect and expand the information available on the topic of Land Grabbing and Water Grabbing. it aimed also at delivering a descriptive analysis of the gravity and extent of the grabbing practices involving land and water. If words truly do have meaning, then the difficulty in identifying, recognizing, and opposing these activities may stem from the fact that, despite their current worldwide prominence, they still lack a universal definition. the exploration of Land Grabbing and Water Grabbing within the realm of Comparative International Relations has unveiled a complex web of geopolitical dynamics, economic interests, and environmental concerns. Through the lens of case studies like the Aswan High Dam project in Egypt, the Tana Delta in East Africa, and other instances of resource exploitation, it becomes evident that these practices have far-reaching implications on both local communities and global systems. The interplay between power structures, economic incentives, and environmental degradation underscores the urgent need for comprehensive regulatory frameworks and ethical considerations in the realm of land and water management. The asymmetries in power and resources between actors involved in grabbing activities highlight the vulnerabilities of marginalized populations and the imperative of safeguarding their rights to land, water, and livelihoods. The topic has been analysed parallelly, underlining the similarities and differences. The drivers seem to be the main common element of the two phenomenas, being both fundamental natural resources for human subsistence and having both great energy production potential. The greatest differences, have been found in the legal frameworks and the modality of the grabs.

Throughout the reaserch process the main difficulties encountered have been related to lack of transparency of the deals. In fact, most of the publication share as an open limitation, the incomplete and murky pieces of information and data they have to relay their research on. For this reason the case study's selection has been tricky and some intresting grabs have been excluded from the possibilities. Moreover, the lack of transparency and accountability in many grabbing transactions reppresents a limitation not only in the academic discourse, in fact it poses a significant challenge to effective governance and sustainable development. Addressing these issues requires a multi-faceted approach that involves not only legal and regulatory measures but also social awareness, community empowerment, and international cooperation. As we

navigate the complexities of a globalized world where natural resources are increasingly commodified and exploited, it is crucial to prioritize the protection of vulnerable populations, the preservation of ecosystems, and the promotion of equitable and sustainable resource management practices. By fostering dialogue, collaboration, and knowledge-sharing among stakeholders at local, national, and international levels, we can work towards mitigating the negative impacts of land and Water Grabbing while promoting inclusive and environmentally responsible development.

In essence, the geopolitics of Land Grabbing and Water Grabbing serve as a stark reminder of the interconnectedness of our world and the shared responsibility we have in ensuring the well-being of present and future generations. By embracing principles of justice, equity, and environmental stewardship, we can strive towards a more just and sustainable future where the rights of all individuals and communities are respected, and the integrity of our natural resources is preserved for generations to come.

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