

Can Deep Sea Water Be Processed into Potable Water and Distributed into the Middle East?

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A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree, Doctor of Artificial Intelligence

CAPITOL TECHNOLOGY UNIVERSITY

September 8, 2022

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Citation: Weinert RD (2023) Can Deep Sea Water Be Processed into Potable Water and Distributed into the Middle East? J Civ Engi Tech Constr: JCETC -105.

Received Date: December 09th, 2022; **Accepted Date:** March 04th, 2023; **Published Date:** March 10th, 2023

Keywords

Artificial Intelligence, Synthetic Intelligence, Computational Intelligence, Water Twin, Flow Sensors, Meter, Energy, Performance, Global, Data, Networking, Platforms, Sovereign Wealth, Swarm Intelligence, Smart Technology, IoT, Foreign Intelligence, Evolutionary Computation, History, Energy Renewable Oil & Gas, Business Development, Reservoir Operation, and Co-Investment.

Dedication

This study is dedicated in memory of Fredrich Weinert, my father. I enjoyed my time learning. A sincere thanks to my interviewers and staff members at my research setting for participation and assistance.

The undetectable planes fly from the contribution of partners and scientists. The Arab from oil and gas was very sorry for hearing of Fredrick Weinert's passing. Frederick Weinert, dedicated worked in science while working with the US Surgeon General and the Russian Ambassador.

He went from designing and keeping intact Navy ships to consulting with 25 US patents. He had strong values for society, family and exceptional health. My father fought in

the French Foreign legion war at the age of 14, I have my first patent at the age of 9 years old.

My mother Dagmar Roessler before two years of age leaving for the Komitet Gosudarstvennoy Bezopasnosti (KGB), taught me how to walk with honor. The two of them gave me the characteristics to walk through the fire. My father contributed to science with cleaning the ocean, undetectable planes and in celebration the cigar can self-ignite to mention a few.

Frederick Weinert, left this earth with maybe under \$1million left to one wife (Monica Nyman) out of the three (Monica Nyman, Dagmar Roessler, and Ursula Becker Tison and 5 children (Bettina Tison, Daniela Weinert, Vanessa Weinert, Diane Roessler Weinert and Jerome Weinert) and the world made billions. Dagmar and Freddy are my parents. A dedication was by flying jets flying into Virginia and California undetected.

The birds flew up as the planes approached. Professor Dennis raised awareness of achieving quality there must be a blueprint. A special thanks to the International University of Monaco (IUM), for my first scholarship and my first experience into a foreign institution.

It was everything I expected and more. Professor Anderson, for believing in me to put my studies to work, “time to execute”. Professor Anderson- “I am still trying to figure out the roadblocks”.

My partners are Middle East investor (confidential), Gary Geschwind, from Scores, Kevin Jenkins, from Portfolio Consulting. The Royal Society and International University of Monaco, (IUM) had me work on reviews. I wrote the methodology.

Artificial Intelligence eliminated many biases. I live by Artificial and Synthetic Intelligence and computational. I am sorry the Taliban hit.

Education allowed me the opportunity to move forward in an academic way. I outsmarted Matt, Hebrew International. Goodbye Dad, I love you.

Acknowledgement

The author acknowledges the support of federal funding, the association for the advancement of Artificial Intelligence, Old Dominion University, ODU, Strayer, Jack Welch

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Management, The Adult Learning Center, University of Monaco, and Capitol Technology. The San Francisco Airport for contributions with the development of security and transportation. With the support of these enterprises, scientific advancement can grow even for the displaced.

The author started a career in aviation in 1986 with Flexible Solar in Combination with an Airplane. I like to thank Dean Ian and Professor Dennis for professional direction. I like to extend special thanks to those engaged in the surveys in quantitative research.

Dean Ian, Professor Dennis and the staff at Capitol Technology contributed guidance for me to achieve my doctorate degree. Capitol Technology has ensured continued higher education with Artificial and Synthetic intelligence. A special thanks to the State of California and the President’s circle for allowing opportunities might not otherwise have developed.

Gary from Scores for accurate analysis. Kevin Jenkins from Portfolio Counselling Services for advisement. A special thanks to the Middle East for a safe environment to study.

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Introduction

Artificial Intelligence, Synthetic Intelligence and Computational Simulations are integrated for water distribution throughout the Middle East; in real time, predicting the volume percentage, flow pattern in scaled oil pipelines, based on a non-invasive method with a creative structure and based on gamma radiation to detect wave intensity [1]. Computational Intelligence (CI) optimization methods, such as Swarm Intelligence (SI) and Evolutionary Computation (EC) are conventional gradient-based algorithms [2]. Influencers of government officials plays a key role in forming stereotypes and biases of a certain country [3].

Iraq Kurdistan Water is a geopolitical resource on which the demand is growing daily [4]. The United States Agency for International Development (USAID) is allocating \$65 mm over 5 years towards increasing resilience to water security risks [5]. Security is a secondary threat nation's attempt to improve water security through the construction of dams, desalination plants and infrastructure projects [5].

Intelligence assessments have determined water security infrastructure projects will provide attractive targets to terrorist groups and hostile nations, given the fact high-profile targets, and destruction potentially may have catastrophic impacts [5]. Plan to decarbonize the economy, energy prices soaring, and demand for nationally secure

energy sources are growing, and the latest scientific evidence suggesting time to reduce carbon emissions to limit global warming [6]. The oil and energy subsidy removal in the Kingdom of Saudi Arabia (KSA) connecting this study, which aim to determine optimal patterns under soaring oil and energy prices to compute the comparative and competitive efficiencies of crop production [7].

To accelerate the deployment of technologies such as wind, solar and nuclear plants, deployment of Artificial Intelligence, (AI) alone will not solve the problem of energy security and decolonization [6]. Monte Carlo code, a dual-energy source was simulated on one side of the oil transfer pipe and a detector on the side to model the thickness and to measure the volume percentages [1]. North Atlantic Treaty Organization (NATO) is committed to ensuring the Artificial Intelligence (AI) applications developed for deployment will be in accordance with the following six principles: lawfulness, responsibility and accountability, explainable and traceability, reliability governability, and bias mitigation [8].

Background of the Study

The banking environment requires updated approaches and since Saudi companies with notable exceptions do not borrow abroad, the domestic banking system is a critical source for funding 2030 [9]. The costs of municipal water supply in Bahrain, revising Bahrain's municipal water tariff

structure help conserve water, enhance cost recovery, and contribute to achieving social equity among water consumers 10]. Sabotage game, developed by Johan Van

Bentham used to analyze graph algorithms in adverse circumstances [11].

Table 2: ALTERNATIVE METHODS OF TECHNOLOGY

The implemented pilot plant is capable of producing 25 m3/Day of drinking water with operating costs at US\$0.75/m3 [12]. Designs of articles on water processes

roadmaps and methods are integrated [12]. In the exploratory project integrates, Smart Water Control, scientific fundamentals for the successful implementation of innovative and intelligent sensor and control networks in the field of urban water management [13].

A Battery Storage System
Bottling-Plant Construction
Brackish Water
Captive Deionization
Collecting Water from Air-Extracted by Condensation
Desalination-Reverse Osmosis
Drilling into the Ground
Extracting Water from the Air
Infrastructure & Facilities
Logistics-Packaging Distribution
Marine-Ships
Mineralizing Rivers
Municipal and Solid Waste Plant
Onshore
Offshore
Primary Networks/Hubs
Pumping-Pipeline
Sewage
Solar Power
Supply-Chain
Underground Reservoirs
Vessel
Wind Power Plant Mangroves

Table 3: CHARACTERISTICS OF WATER

Smart monitoring of individual subsystems and the gathering of real-time sensor data and optimal control process is to improve the water cycle with regard to efficiency, optimizations, conservation and resources [13]. The reverse osmosis process utilizes a large amount of

energy of electricity but photovoltaic panels can reduce the cost of electricity to be cost effective to operate the system which is designed to produce 32 tonnes of fresh water per day (8 hours) using 56 kilowatts of electricity [14]. The city of Abu Dhabi is the capital and the federal seat of the government of the United Arab Emirates (UAE) [15].

Agriculture
Drinking
Bathing
Oil & Gas
Food
Pharmaceutical

The population consists of Emirati citizens working in professional, managerial, and senior level occupations in the private and public sectors [15]. Expatriates work in a broad spectrum of professional, industrial and labor occupations in the private and public sectors [15]. Dubai is home to global engineering, financial and commercial operations [15].

Table 4: CONCEPTUAL MODEL

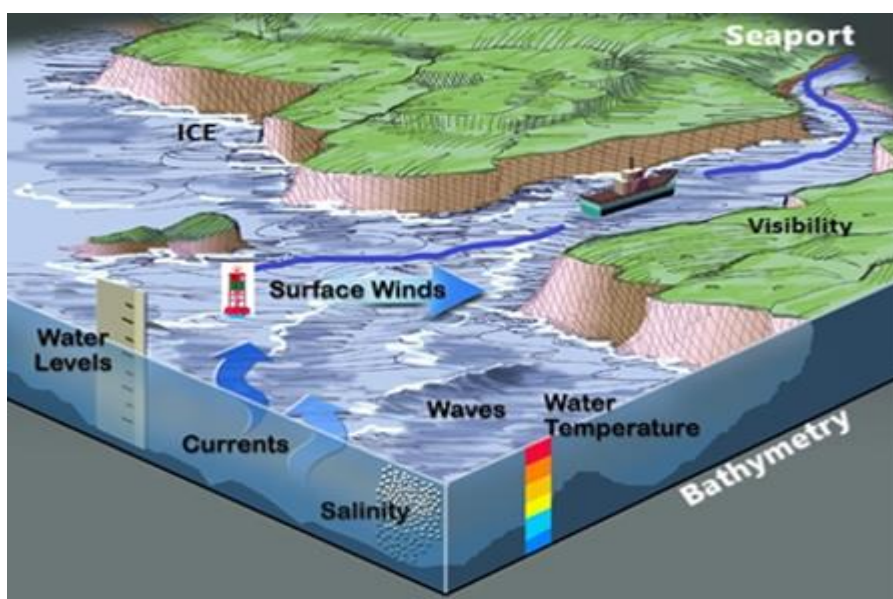
Dubai has posted targets in Emirate aims to cover 25% of its energy consumption with renewable energy sources (exclusively solar) by 2030 and to reach 74% of clean energy sources by 2050, which aims at attracting R&D centers and make the emirate a global center for renewables [16]. A U.S.bn Dubai Green Fund will be established to provide soft loans for investments in the clean energy sector [16]. The UAE Energy Strategy 2050 aims at improving energy efficiency by 40% by 2050 [16].

Population	Income	Economic Growth	Male Population	Fe-male	Life Expediency	Illiterate
1.67	\$58,000.	5.6%	65%	35%	75 and above	6.4%
(Kashef, 2022.p.1) [16].						

With The National Aeronautics and Space Administration (NASA) and National Oceanic and Atmospheric Administration (NOAA), Artificial Intelligence (AI) can improve the wealth of a nation. The pertinent information of surface winds, water levels, current frequencies, visibility, quality and low water levels can be detected [17]. The images are captured in real time with satellite [17].

National Geographic Information System (GIS) Map Viewer, The National Weather Service data sets are available in formats are able to be imported directly into Geographic information systems (GIS) or custom map viewers are web pages [17]. Data formats include downloadable shape files and KML formats web services, and our base maps in shape file format [17]. NOAA formed in 1970, the agencies came together at times are among the oldest in the Federal Government [17].

Table 5: Variables.



The UAE targets for renewable energy is to cover 40% of its energy consumption with renewables by 2050 [16]. Abu Dhabi has set a goal of generating 7% of its electricity from renewables by 2050 while the share of renewables in Dubai’s power mix is expected to reach 15% in 2030 [16]. The UAE plan 2050 was approved with the aim of increasing the use of non-fossil energy sources to 50% of the energy consumption of which 44% renewables and 6% nuclear, and increasing energy independence overall, for a planned investment of US \$163.3bn [16].

The UAE plans to invest in solar energy to meet objectives regarding the development of renewables [16]. The third phase of 800 MW of Dewa’s Mohammed Bin Rashid Al Maktown Solar Park is expected to be completed by 2020 [16]. In 2018, DEWA signed an EPC contract with Saudi Arabia’s ALWA power and China’s Shanghai Electric [16].

Qatar strives to meet 20% of its energy demand from renewable sources by 2030 [16]. It aims to reach a solar power capacity of 1800 MW by 2020, for a cost estimated between US \$10bn and US \$20bn [16]. Qatar submitted an Intended Nationally Determined Contribution (INDC) in preparation of the COP21 and ratified the Paris agreement

in April 2016, no firm commitments were made to reduce its GHG emissions [16].

Red Sea Case Study

The case study presented is the Red Sea project and an investigation into the Dead Red Sea. The Red Sea project and Amaacla are expected to create more partnerships and break new ground [18]. Embracing nature-based solutions in addition to technical approaches for carbon sequestration, including growing more mangroves and seagrasses, and even mechanical trees, which will help us to achieve 100 percent carbon neutrality [18].

No Project Results

If the water is not distributed there will be

- Increased platform costs.
- Increased number of vessels needed.
- Poor Drilling performance.
- Unsafe sites.
- Compromised quality and reliability.
- Poor leak detection.
- Overflows.
- Poor quality.
- Commercial issues.

Unified management, the creation of a digital twin and the control of field work have increased operational efficiency by more than 15% over the last 10 years [19]. Water losses reduced by 18% on average, thanks to near real-time water balances, the integration of remote reading systems with flow measurement systems in the network, and the use of AI algorithms for pinpointing leak locations [19]. The new method to optimize hydraulic performance, which included advanced pressure monitoring, boosted the system's efficiency by an average of 25% [19].

Problem Statement

The growth of population in, industrialization, environmental deterioration, and economic evolution in the world has resulted in increased demand for accessing fresh water [20]. Growing water scarcity, depletion of freshwater sources, coupled with the rapid urbanization and industrialization are driving the water desalination equipment market [21]. AI industry is in an infinite stage and governmental initiatives of AI make it a jurisdiction to consider.

There is an issue of acquiring funding for many areas in order to be able to distribute quality water. Within the database, informant's networks cannot overlap, the respondents cannot belong to several networks, or this phenomenon is negligible: furthermore, the informants cannot also be responsible in another network except as a small part [22]. The aim here is not to sample individuals but to sample personal networks, and reproduce, within the database, the structure of the relationships between members of a group [22].

The problem is the power of the pumps to process a given amount of water per hour and the size and power of the RO system [23]. The pumps need to be scaled to handle 2,000,000 gallons of water an hour [23]. There is not one single RO system will handle this much a number of them is needed to set up a parallel system to process the water [23].

Purpose of Dissertation Study

The author, began a study of eczema when testing cures hydration was a factor for curing eczema. Testing on one patient, the eczema was cured. The results of the research trumped the impossible.

When searching for details, the author wanted the le crème' de, le crème of everything needed to be implemented. The phenomena were reached, and the research expanded. The author was elated when Capitol Technology University accepted the proposal for the water project.

The Middle East was the chosen geographical location as when the author was investigating areas the author came across "Vision 2030". The author has learned a lot in academic years and one thing stands out must have focus and be specialized and if deviate or go one million directions it will not work is why the Middle East is selected. Chi-square

and meta-analytical are the methods synthesized in the study.

Empirical evidence has been chosen over conventional theory. Desalination is a successful process; however, it is geographical. The satellite data includes relevant data about water availability and scarcity in the immediate area in the Middle East with metrics of limited rainfall, groundwater, rather than approximating measurements [24].

Significance of This Study

In the end, cooperation between scholars with different theoretical and methodological approaches is key to study, and address, intertwined global problems such as exclusion, poverty, climate change, and conflict [25]. The purpose of this quantitative phenomenological study is to complete a feasibility study of extensive data of deep-sea water, technology such as hydro panels, and desalination to eliminate quality water scarcity and improve health for displaced people in the Red Sea such areas as Jordan. The deprived areas must be included in the mapping and budget allocation to meet the basic needs they are significant because they embody inequality and power differential [26].

Nature of Study

The research of "Can Deep Sea water Be processed into Potable Water and Distributed into the Middle East" study will contribute to the field with knowledge about drought areas in the Middle East and present available options to improve the best and low-cost alternatives and how these will influence specific research questions [27]. The Dubai International Financial Center is a financial hub with an English common law-based legal framework is separate from the rest of the Emirates [28]. Time of market uncertainty, oil price volatility and energy transition, as the world moves to a lower-carbon system to tackle climate change [29].

Research Study

The research questions guiding this study are geared to understand how the water is processed and to see if the recipients may have a recommendation. The key components are (a) a rationale for conducting the review: (b) research questions or hypothesis guide the research, (c) an explicit plan for collecting data, including how units will be chosen; (d) an explicit plan for analyzing data, and (e) a plan for presenting data [30]. The research will show results of specific direction of investigating pricing for the alternatives of water and proposes a recommended solution.

The Middle East through this study has been categorized as "high risk" due to geopolitical. The Middle East and North Africa (MENA), region has the world's highest levels of forced displacement with an estimated 7.6 million refugees (about twice the population of Oklahoma), of whom 2.7 million are hosted in the region, and 12.4 million displaced fleeing protected conflicts [31]. Putin has argued the export of liberal values to the region crushed domestic traditions and destabilized whole societies [32].

Table 6: Research Stage.

<i>Research Stage</i>					
Stage Characteristics	Problem formation	Data Collection	Data Evaluation	Analysis and interpretation	Public Presentation
Research questions asked	<i>What evidence is included in the review?</i>	<i>What procedures be used to find relevant evidence?</i>	<i>What retrieved evidence be included in the review?</i>	<i>What procedures be used to make inferences about literature as a whole?</i>	<i>What information be included in the review report?</i>
The primary function in Review	Constructing definitions to distinguish relevant from irrelevant studies.	Determining in the research contained potentially relevant sources to examine.	Applying criteria to separate “valid” from “invalid” studies.	Synthesizing valid retrieved studies.	Applying editorial criteria to separate important from unimportant information.
Procedural differences create variation in review conclusion	Differences included operational definitions. Differences in operational detail.	Differences in the research contained in sources of information.	Differences in quality criteria. Differences in the influence of non-quality criteria.	Differences in the rules of inference.	Differences in guidelines for editorial judgment.
Sources of potential invalidity in review conclusions.	Narrow concepts might make review conclusions less definitive and robust. Superficial operational detail might obscure interacting variables.	Accessed studies might be qualitatively different from the target population of studies. People sampled in accessible studies might be different	Nonequality factors might cause improper weighting of study formation. Omissions in study reports might make conclusions unreliable.	Rules for distinguishing patterns from noise might be inappropriate. Review-based evidence might be used to infer casualty.	Omissions of review procedures might make conclusions irreproducible. Omission of review findings and study procedures might make conclusions obsolete.
[Randolph] [33].					

(1) Will having quality water available increase the revenue in improvised areas?

The problem of low coverage levels, particularly among poor and marginal communities is of particular concern in developing countries and those with rapid rates of population growth and migration [34].

(2) Who is purchasing the water?

Water is, of course, political and management decisions are subject to serious debates and anxieties at scales, but often with a sense of higher stakes in desert settings [35]. The cases analyzed have engaged the formal private sector (national, international) to invest in and operate large-scale projects [34]. Economic regulation refers to the laws, regulations, enforcement mechanisms, incentives, and processes are employed by governments to ensure essential services such as water supply and sanitation services (WSS) are available to the population at reasonable prices [34].

Industrialized nations agree under the convention to support climate change activities in developing countries by providing financial support for action on climate change – above and beyond any financial assistance already provide to these countries [36]. A system of grants and loans has been set up through the Convention and is managed by the Global Environment Facility [36]. Industrialized countries also agree to share technology with less advanced nations [36].

With the Paris Agreement, countries established an enhanced transparency framework (ETF). Under the ETF, starting 2024, countries will report on actions taken and progress in climate change mitigation, adaptation measures, and support provided or received.

(4) What are the dangers to marine life?

Regulatory framework refers to the enabling environment supports accountability, transparency, and achievement of regulatory objectives as well as the specific regulatory rules, mechanisms, and procedures are applied as part of the regulatory process [34].

(5) What are the dangers with the infrastructure?

Formal regulation of WSS became a topic of international interest in the late 1980s when the rising costs of infrastructure needed to serve expanding populations and protect the environment led policy makers to seek private investment [34].

(6) Can increasing wealth increase the availability of water resources?

Water resources management (WRM) aims to ensure the sustainability and quality of water resources, manage water shortages, and avoid the economic, political, and national security risks associated with water shortages [34].

(7) How is water information received?

What are some of the challenges encountered in leading a project of this scale since its interception [18]?

Approach to regenerative tourism to the fact, building infrastructure ensures off-grid 100 percent powered by renewable energy [18]. A lot of new development for water distribution is expected to increase [18]. Likewise, strict sustainability commitments mean for any development works, ensure the habitat and wildlife are protected at costs [18].

What is the vision of creating cooperation between The Red Sea Project and the Amaala project?

The Kingdom's Vision 2030 program lays out the framework to diversify the economy with three main themes: a vibrant society and thriving economy [18]. The Red Sea Project includes inland resorts but is a destination built a stunning archipelago of more than 90 islands [18]. Despite the difficult circumstances surrounding the pandemic, have more than 500 contracts worth over SR15 billion (\$4 Billion) to local and international partners [18].

An exciting year ahead of us at TRSDC (The Red Sea Development Company) [18]. Moving into a post-COVID world, are creating more partnerships, breaking new ground, and continuing to move forward with plans to welcome the first guests by 2022 [18]. Source water is produced using patented solar technology draws pure water vapor out of the air and converts it to premium, mineralized drinking water [37].

Water created from these hydro panels will be bottled at a plant also runs on solar energy, creating the largest solar-powered of its kind [37]. Located on-site at the Red Sea Project, the source facility will have a capacity of 2 million 330 ml bottles produce 300,000 bottles a year [37]. The reusable glass bottles will be refilled on-site as part of a circular sustainable distribution model [37].

Water harvesting and bottling will generate zero carbon and zero single-use plastic bottles (The Red Sea Development Company, 2021.p.1). Partnership with Global Source makes us the destination in the world with regenerative bottled water and reflects commitment to separate using renewable energy and free of single-use plastics [37]. TRSD serves the sustainable tourism market, which is poised to grow by the US \$130.12 billion (about \$400 per person in the US) between 2020-2024 [37].

The Red Sea Development Company will make Source water its exclusive water including the largest solar-powered facility of its kind ensure the use of glass over plastic has 0 impacts and produce 300,000 glass bottles per year [37]. Source Global, PBC's mission is to make drinking water an unlimited resource [37]. The theoretical framework selected is circular technology economy framework will include-quantitative synthesis, budget, historical, conceptually, methodology, geopolitical, quality, coverage, significance, and rhetoric [30].

Theoretical Framework

The scope is to integrate Artificial Intelligence for water distribution in order to eliminate biases and geopolitical in the Middle East, the author manipulated the questions to fit the industry. Literature analysis and discussions took place held at the 2021 Family Conference. There will be a thorough investigation of the issue of the Middle East's lack of water.

The frequency and hypothesis of water distribution in the Middle East are tested using meta-analysis and chi-square. The author wants to eliminate falsification and be able to present the truth. Investors are interested in knowing if the water distribution will make money.

Historically, hotels incorporated boilers fueled by word or fossil fuels for making hot water [38]. Solar water heating systems ("Solar water heating",n.d.) are also starting to attract interest for hotels [38]. As to be hoped about climate change issues, hotels are starting to put considerable efforts into reducing energy consumption, and these initiatives are achieving very reasonable returns on investment and decreasing (and not increasing) the operating costs [38].

Research Design

For the Foster Plot, the author searched the ISSN number on Google Scholar and recorded the number of citations.

Identified Research Variables

Independent Variable - **State-of-the-Art water innovation study**

Alternative equipment will be researched, and a feasibility study is given. The goal is to produce the best quality water and the lowest cost available.

Dependent Variables -

(1) **Population Growth-** the population is expected to increase with mitigation by 2050.

(2) **Risk-**Area studies research and forms of knowledge can often be "territorially trapped"- is, are bound by rigid spatial frames of the global map, which neglect the dynamic ways

people, ideas commodities, and power relations cross borders and unite places for removal from one another [35].

(3) **Historical**-The history of the antiquated rhetoric will be analyzed. Desalination is the preferred method.

(4) **Geopolitical** –A desert geopolitics framework is thus insofar as it refuses to take the “place out of the landscape” by detaching water as a separate category of analysis [35]. *Is strong-arming keeping one country ahead of another? Is lack of water due to affordability?*

(5) **Landowners**- This article shows how joint imaginaries of the desert have been enlisted in forged foreign relations and domestic state making in the US West and the Arabian Peninsula [35]. The best-known case today of desert agriculture imperialism is the Israeli settlements in Palestine, ranging from the earliest Zionist farming projects to more recent tree-planting campaigns and the state-led takeover of scientific water resources needed to sustain Palestinian and Bedouin farmers [35].

Definitions

Absolute Monarchy- “This is a fight to insist this country must be ruled by a system in which everyone is equal” [39].

Bell curve- is the normal distribution. The hump represents normal.

Chi-Square - Shows the relationship between categorical variables.

Cosmopolitan- The nebulous core shared by cosmopolitan views is the idea human beings, regardless of the political affiliation, are (or can) citizens in a single community [40].

Computational Theory- The effective deployment of simulation models depends on access to diverse datasets, the use of analytics capabilities the ability to visualize model outcomes, and to capture share and re-use simulations as evidence in research and policymakers [41].

Cosmopolitan Culture- serve as centers of economic development and value diversity, creativity, and equality [42].

Delphi Method- has been applied in various fields including healthcare, marketing, education, information systems, transportation, engineering, and finance [43]. As with any qualitative method on forecasts, the quality and accuracy of the generated forecast depend on the research design, as well as how it addresses human biases such as anchoring, framing, and desirability [43].

Desalination Plant- Desalination plants are taking out the seawater inland using marine intakes and utilizing substantial amounts of energy to remove salt while producing concentrated as a byproduct [44].

De-securitization- The process opposite of securitization which involves the return of an issue from an urgent, securitized situation to the area of normal negotiations in political sphere [45].

Double Mass Curve- A condition to be observed.

Empirical Models- Includes scientific methodology with measurements.

Enterprise Technology Framework- is a key in an enterprise-wide business and IT architecture, as part of enterprise architecture [46]. It also helps to define the specifics for a line of business may be required as well or in the case of a hybrid cloud mode- what system or application must stay in the datacenter at the corporation (i.e.” system of record”) vs what may be hosted in a SaaS public model or

accessed via a “system of agreement” via a mobile device [46].

Environmental Category- When providing governments with financing to invest in projects- such as building a road, connecting people to electricity, or treating wastewater- aim to ensure the people and the environment are protected from potential adverse impacts [47].

Exajoule- is a unit of energy, [48].

Flux coupling analysis (FCA) aims to describe the functional dependencies among reactions in a metabolic network [49]. Studies of coupling relations are qualitative in the sense identify pairs of reactions for which the activity of one reaction necessitates the activity of the one, but without giving any numerical bounds relating to the possible activity rates [49]. The potential applications of FCA are investigated, however apart from some trivial cases there is no clue of what bottleneck in the metabolic network causes each dependency [49].

Geopolitical – Failing to follow through on agreements of intent is costing some shared countries billions.

Holistic Approach- Looking at one's well-being.

Left & Right Wing-Level individual-level variation in people's physiological and attention responses to aversive and appetitive stimuli are correlated with broad political orientations [50]. Greater orientation to aversive stimuli tends to be associated with right of-centre and greater orientation to appetitive (pleasing) stimuli with left-of-centre political inclinations [50].

Life-cycle assessment- analyze the environmental impact from technologies, processes, and distribution.

Mangrove- Artificial systems can mimic chemistry.

Maritime Surveillance- has become a huge challenge, in regions where maritime traffic represents the major economic interest with threats or sources of illegal activities such as smuggling illegal immigration or maritime piracy [51].

Meta-analytical- The results are combined with multiple studies.

Percentages under the normal curve – Calculated between the upper and lower numbers.

Preliminary Feasibility Study refers to the verification and evaluation of the validity of a new large-scale project conducted in advance under the supervision of the Ministry of Economy and Finance by Article 38 of the National Finance Act and Article 13 of the Enforcement Decree of Act to establish a valid budget allocation and fund management plan for new projects [52].

Regulatory Framework- Refers broadly to the enabling environment supports accountability, transparency, and the achievement of regulatory objectives as well as the specific regulatory rules, mechanisms, and procedures are applied as part of the regulatory process [34].

Rentier regime- is a particular regime with its mode of regulation [53]. The word renter refers to the social position of the individual who owns lands and earns revenues of its properties without working- which means without creating value [53].

Sharia bank- Islamic banking integrates an operational system of Islamic banks and closely tied to God's law, Sharia banking uses a profit-sharing investment mechanism to fulfill capital needs (equity sharing) and investment based on costs [54].

Sentiments- Different tools and metrics be adopted to measure each of the dimensions of an opinion [55].

Snowball- Snowball sampling is a survey method relevant for identifying a set of relations and taking into consideration the impact of context in the analysis [22]. The snowball effect is also used to measure wealth when money is invested and the import and export of technology.

Specs- Measure of Performance. The specifications.

Standard Deviation-The measurement between numbers.

Synergy- Businesses are facing new and tougher chemistry-based challenges often affecting multiple industries and supply chains [56]. Through Synergy, businesses develop new ways of working to reduce risks, cut costs and bring solutions to market faster [56].

The LUT Energy System Transition Model was applied to examine a transition pathway for the Pakistan's energy system [57]. The model optimizes the energy system with the applied constraints in 5-year time steps between 2015-2050 [57]. For every 5-year step the model optimizes and applies a cost optimal solution in full hourly resolution over the whole year [57].

Topography-Integrating artificial and natural.

Value-Empirical and theoretical work indicates a good reputation is valuable in it increases one's expected payoff in the future [58]. Trading can have a positive or a negative effect on the overall frequency of cooperation [58].

Variance- The distance between the measurements is spread out from the average value.

White Space- A white paper is an authoritative report or guide often addresses issues and how to solve the issues [59]. The term originated when government papers were coded by color to indicate distribution, with white designated for public access [59].

Assumptions

People action rationally: they act rationally, consequently, they do so of the time [26]. People so not act in a vacuum; they operate in a particular context or situation [26]. Social action is to a large extent to be explained in terms of the situation in which it emerges, people will act differently in different situations due to every situation sets its own constraints and possibilities, zero method [26].

With the continuous iteration of this algorithm, the entire population will gather the individuals with the highest quality will be found us the global optimal solution [60]. The research takes on a scientific approach by assuming artificial, synthetic and computational are going to streamline and reduce costs for quality water distribution. The summary concludes with no-project results. The tests are to eliminate biases and de-risk geopolitical. Research questions are selected implementing epistemological, ontological positioning [61].

The coverage of research strategies of inquiry is limited to surveys and experiments in quantitative research; phenomenology, ethnography, grounded theory, case studies, and narrative research in qualitative research, and concurrent, sequential, and transformation designs in mixed methods research [61]. Critical realists tend to pay particular attention to 'internally related': as opposed to 'externally related' relations [26]. The solar thermal system

continues to perform to expectations, it has significant implications for future similar hotel developments [38].

Scope, Limitations, and Delimitations

Moreover, the modular nature of solar thermal systems means can be distributed through the property to increase resilience and reliability while simplifying piping networks and maintenance [38]. The commercial laundries provide cleaning services to hotels are prime candidates for solar hot water systems [38]. It is a perception SOURCE water can reduce costs.

Research Methods

This is a quantitative, analytical model, in-depth- analysis, grounded theory meta-analysis study including primary and secondary research. A holistic environmental approach is taken with indicators which include vibrant society, thriving economy, ambitious nation, higher-education, innovation, sovereign wealth with a frequency of occurrence. The indicators chosen to detect the market for productivity are high conversion rates, large consistent deposits, and engagement with education.

"Can Deep Sea Water be Processed into Potable Water and Distributed into the Middle East" will include past methods implemented and compare with the results of methodological flaws of those methods presented. Peer-Reviewed articles from to A journals are selected. I indexed with ProQuest, Publons, Google Scholar, Royal Society, Stanford, Elsevier SSRN, ResearchID, Crossref, Research Gate, Scilit, Mendeley WorldCat, Slide Share, Academia.edu, DRJI, ORCID, Issuu, Inc., Cosmos, International Sci, Indexing, Road, Google LLC, CiteSeerX and Citefactor, Web of Science, Middle Eastern Studies, Middle East Journal of Applied Science & Technology, Journal of Earth & Environmental Science Research & Review, Journal of Civil Engineering Research and Technology, Research American Society of Civil Engineers are used.

On September 19, 2018, the Water Environment Federation published an article on storm water report blog focused on WRAP's collaboration with NASA Develop to use satellite data to assist with identifying the suitable locations for rain harvesting systems [24]. The research implements the methods of chi-square to connect the relationships between categorical variables. Rentier Regime to implement regulation and investigate to conclude who owns the land.

White Space is designed for the public. Construction theory implements the philosophy of law. Artificial Intelligence is a critical role to the lifecycle of offshore wind, infrastructure, logistics and WAVEWATCH-111 [62].

Accounts related to the water desalination industry,

- Vessel
- Solar Power Plant
- Wind Power Plant
- A Battery Storage System
- Sewage Treatment Plants
- Collecting Water from Air-Extracted by Condensation
- Pumping-Pipeline
- Marine-Ships

- Desalination – Reverse Osmosis
- Bottling-Plant Construction
- Supply-Chain
- Logistics-Packaging Distribution
- Mineralizing Rivers
- Drilling into the Ground
- Underground Reservoirs
- Extracting Water from the Air
- Onshore
- Offshore
- Municipal and Solid Waste Plant
- Primary Networks/Hubs
- Infrastructure & Facilities
- Brackish Water
- Captive Deionization
- Mangroves (Dunn.2021).

A database has been designed and coded for the articles selected. The results are examined at conferences and by experts within the water industry. The process of discovering phenomena is documented.

The process begins with an electric search of qualified articles have high citation numbers (Randolph, 2009, p.1). Databases are searched by keywords [33]. The research is complete when a point of saturation has been reached [33].

The relevant information was separated from the irrelevant information [33]. The authors' citations from articles are verified, not implemented in future research as the author finds outdated. The author uses a five-category Rubicon for evaluating the literature review, coverage, synthesis, methodology, significance, and rhetoric [33].

Like oceans, deserts represent an environmental imaginary is hoped by certain physical traits [35]. Humans filter these traits through social, cultural, and political lenses-sometimes the unique features are deemed (e.g, emphasizing the differences between deserts in Arizona and Arabia), and times are ignored (e.g., emphasizing a more global desert experience) [35]. Just as one never thinks to detach “water” from the story of oceans in the maritime response to the territorial trap and arid-lands response does not treat “water” as a separate category of analysis [35].

Hypothesis- Self-actualization enhances and influences the quality of life because is a significant association between the predictions of Maslow’s theory and the quality of life [63]. No psychological health is possible unless the indispensable central and core of the person is vitally recognized, respected, esteemed and valued by oneself [63]. Abraham Maslow’s theory of “self-actualization” can be an instrument to stimulate people to become healthy and to attain a better quality of life because a person is and never remains static: in self-actualization, a person comes to find a meaning to life when it is [63]. In a contribution to the field of knowledge “quality water will not deliver peace”, an example of perception. This study will lead an investigation into the truth or falsification, “*quality water will deliver peace*”. This leads to the question, “*can quality water improve peace*”?

Gaps- Clear transparency on water processing alternatives. It has been difficult to complete a feasibility study as the author was unable to substantiate the pricing alternatives. The journals have produced enough evidence are definitive issues with geopolitical issues of water distribution. RO remains a limited physical process needs more research in terms of design and construction to increase its performance [64].

Chapter Summary

Washington’s “red lines,” - is an urgent need for an end to ambiguity about what the US leadership is willing to tolerate before the military, diplomatic or economic sanctions are applied [32]. Transparency enhanced public approval of decisions need to be transparent [33]. America has a lot of influence from the Elite [32].

A roadmap needs to include smart technology and will need to track renewable energy. Historical overview and journals cited America lacks the capacity for symmetrical retaliation because in Russia, unlike the United States, the result of a presidential election is known in advance and immune to external influence [32]. The instruments of IT power are available [32].

Jordon signed an agreement in 2013 to join the water shared program which has now changed. Syria has decided not to go through with sharing water. The countries are fighting for independence and do not want to work.

Geotourism is a rising concept for sustainable development in rural areas [65]. Since 2015, the label, UNESCO Global Geopark (UGGp), expresses recognition of unified geographical areas with international geological significance and sponsors through protection, education, and sustainable development in a holistic manner, in a bottom-up approach [65]. By the end of 2021, worldwide 169 places were designated as UGGps and are part of the Global Geopark Network (GGN); the number of the is rising [65].

A new initiative has started at the end of 2021 to develop a Geopark in Jordon the first on the Arabian tectonic plate and the fourth in the Middle East; the closest ones Queshm Island (Iran), Troodos (Cyprus), and Kula-Salihli (Turkey) [65]. The world's biggest owner of publicly traded stocks, the Norway sovereign wealth fund, is about to get the political go-ahead to insist companies in its portfolio have clear targets for cutting carbon dioxide emissions [66]. It's a goal was enshrined in the 2015 Paris agreement as an essential step toward preventing catastrophic temperature rises [66].

"It's not practical to embark on something 's not coordinated," [66] ". The biggest gains are tied to coordinated action when investors team up [66]. It finds effective cooperation between Israel and Palestine is parties with the business-as-usual approach [67].

What constraints the two parties from achieving consensual agreement are political tensions, the constraints of technology, the different perceptions of the value of the shared water, the mistrust between the two parties, the lack

of external enforcement mechanisms, and the impacts of the domestic political environment [67]. Israel uses the water governance approach [67]. Israel and Palestine in the water sector has been analyzed in a rich body of literature and interpreted through different disciplines, for example, legal, international relations and politics, engineering, and economics, and different perspectives such as climate change, water management, socioenvironmental relationship, cultural, and human rights [67].

The 10 building blocks framework, the OECD Water Governance Indicator Framework, the Governance Capacity Framework, the Operational Framework for Water Governance, and frameworks focus on the conditions of good governance, and the individual Governance criteria such as effectivity, efficiency, and legitimacy [67]. These frameworks demonstrate one of the more general conditions, such as the importance of indicators, the interconnectivity capacity of governance, and the conditions for Governance from a broad perspective [67]. Dai's study proposes to examine the implementation constraints on Israel-Palestine water cooperation [67].

To do so, the author chose the 10 Building Blocks framework as the analytical framework [67]. This is because, compared to frameworks, the building blocks Framework distinguishes water governance conditions related to content (characterization of water in terms of issues, drivers, and values), organizations (the role of stakeholders, trade-offs, and regulations), implementation financing, enforcement, and conflict resolution) [67]. The 10 Building Blocks Framework was developed by van Rijswijk etc. al. to identify the strengths and weaknesses in water governance capacity from a holistic perspective [67].

Chapter 2

In Chapter 2 the author will present the results of the research with a literature review map in the appendix [68]. Historical overview explaining research journals were included along with research documents and findings [68]. Reverse Osmosis can remove toxins and deliver purified water, the alternatives are not as transparent.

Chapter 2 will delve more into the investigation of the gaps, water set aside for agriculture, white space, and transparency. The UNFCCC borrowed a line from one of the successful multilateral environment treaties in history it bound member states to act in the interests of human safety even in the face of scientific uncertainty [36]. An alternative solution would be to build a custom system to process much larger quantities of water and like any custom systems this will be very expensive [23].

Literature Review

Introduction

The author undertook a meta-analysis approach and investigated scorched earth to evaluate the relative impact of the water equipment process. In the Middle East identified reported long-term benefits showing a surplus in water distribution with desalination. The water industry is

interested in desalination of the sea, ocean and brackish water [69].

The water distribution study is a needed commodity in the field of journalism. The research defends by increasing and adding another variable the independent variable will increase in size. Through hypothesis test education with novel innovation increases the distribution of quality water without interruption to a level of surplus.

The variables include algorithms, logistics and 3-fold cross validation. Included are no-project results along with implementing the study. Red Sea consists of the coasts of Saudi Arabia, Yemen, Egypt, Sudan and Eritrea [70].

UAE residents use up to 550 Liters of water per day (The international average is 170-300 per day making it 82 percent higher than the world average [71]. The UAE has the highest bottled water consumption per capita (265 Liters per year). The UAE accounts for 14 percent of the world's desalinated water [71].

The purpose of this funnel plot is to detect any risks and improve the quality and profitability of quality water. An exorbitant number of biases exist. In this chapter, the author shares findings and a couple of lessons learned on the history of water distribution in the Middle East.

The Chapter will list the results of renewable energy and categorize the indicators for measures to compare. Until a more reliable source can be discovered, the World Bank is the one referenced for measures and scales. Top journals introduces a tangible paper to sum the industry up.

The author works with A & E companies to get the costs for the feasibility study. Investors like to see a pattern of success before investing. "Vision 2030" and Global Networking will be used as a case study.

Global Networking helped build the pathway for Artificial Intelligence with Japan and the cure for eczema increased revenue by \$8. Trillion dollars. Global Networking created the discovery and design for higher education internationally internally. Commonality and interest can be reached it can improve the wealth of the displaced areas desperate for quality water.

This will generate a more pleasant lifestyle for what are used to and allow for peace amongst rivals. Once areas are developed with infrastructure and wealth increases it takes a utilitarian approach and will improve physical and mental health. Geopolitical risk will be examined and tested for validation of hindering water distribution.

The investigation was completed using an A journal and an expert, Jack Woo. Jack is a successful attorney family-oriented person putting his kids through college and one earns over \$1MM a year with his first job earning \$100,000. a year. Jack explains investing with no emotional attachment, where people are controlling the distribution such as bottled water versus municipal water.

As Jack mentions, taxing the wealthy is what the US has in its strategy. The wealthy are not dumb and no way will just transfer the money. Jordon is showing depletion of the Middle Class.

Some believe the size of the Middle Class was decreased, after the Jordanian family the deterioration of economic conditions resulting from low economic growth rates and high unemployment rates. The goal of this chapter is to complete a feasibility study with a cost analysis explaining the opportunities, benefits, and risks. The author will cover different theories and methodologies being implemented throughout history and today.

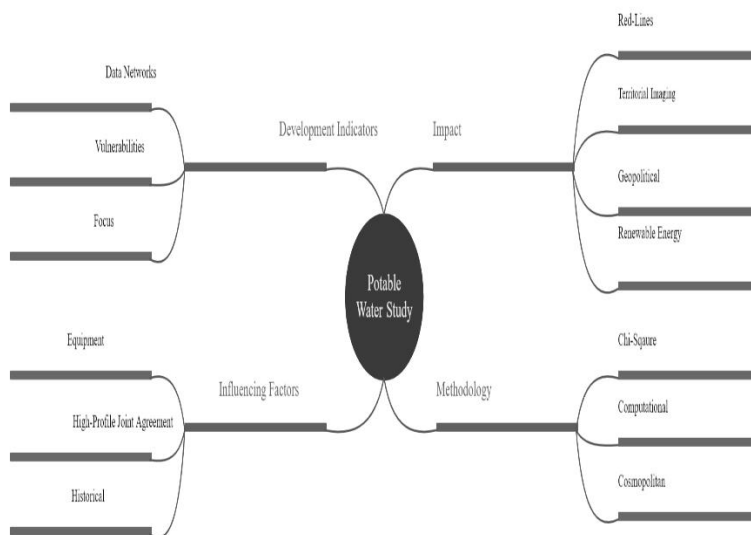
Geopolitical, historical, governance, bureaucracy, water inequality, to create quality water distribution will be

measured. White spacing and gaps are explored. Conflict resolution and transformation are analyzed by investigating geopolitical.

The hypothesis is being implemented to test findings. Journals will be presented showing the results of which disruptions present threats. Water scarcity will no longer be an issue for deprived areas and increased wealth will be a result.

De-securitization will be employed to get to the root of the issues. "Vision 2030", and investigate the common vision with the cross-border environment and peace building. Who is influencing the decisions will be included.

Table 6: Framework



According to the United Nations, a country is defined as 'water scarce' if it has 1000 cubic meters or less of water available per capita per year [72]. One of it is populous cities with more than three million people, Dubai relies on the desalination plants, which consists of 98.8 percent of its water supply [72]. The UAE is the world's third-largest consumer of water, despite its arid climate and lack of renewable water sources [72].

Title Searches, Articles, Research Documents, and Journals Researched

A robust methodology is essential to process the heterogeneous data inputs efficiently and accurately, particularly the high-resolution remote censoring imagery acquired for automatic generation of available water to everyone [72]. A flowchart is shown showing the overall design of methodology and statistics on water usage, in the last phase, the ModelflowMap solution was used to analyze the groundwater and soil data to produce an atlas of aquifers in Dubai [72]. Tools to advance automation are implemented such as the design, collection, geospatial analysis, and the cartography of thematic maps and charts through advanced geoprocessing python scripts, including the desktop, web and mobile modules [72].

The article," Understanding Stakeholder Synergies Through System Dynamics, Integrating Multi-Sectoral Stakeholder Narratives into Quantitative Environmental Models," found on Research Gate, illustrates stakeholders and explains how one variable will affect variable [73]. The Ad Hoc approach builds the relationships of data, networks, co-sharing, partnerships, experts, and wealth to ensure quality water is available to everyone. Plentiful of cited articles lackluster and less impactful with attention towards agriculture and chemical processing.

The article is a blueprint identifies the main methodologies and research techniques for the framework. The goal of the article is to design a comprehensive scope with value and synergy with delivering a new approach with Artificial Intelligence and adding historical context. The article assists in answering the question, "Are any links missing and is the strength of relations correctly represented" [73]?

Emphasis is on the progression of the research methods, theories, and a change in practice over time [30]. This is a methodologically and empirical paper (introduction, method, results, and discussion) [30]. The author begins with an introduction, defines the method, and historically the results move on to discussion formats [30].

China is inching strongly towards the top of the global order by a vision adopted by the Communist Party to turn China into a middle-level advanced country by 2035 and a superpower matching the United States by 2050 [74]. The United States maintains a strategic military presence in the Middle East to protect its interests [74]. It partnered with the Gulf states to extract and export oil in the past it is among the biggest trading and investment partners to countries in the region [74].

The region depends on it to provide high-tech services and products such as industrial, medical, technological, and consumer equipment as well as machinery, transportation, and spare parts [74]. Meanwhile, US investments in the Middle East reached \$75 billion (about \$230 per person in the US) during the period from 2009 to 2019 [74]. This is classed by some as a form of a “soft military presence” to protect its trade movements within key strategic corridors [74].

Chinese investments in the Middle East and North Africa reached \$197 billion (about \$610 per person in the US) during the period from 2005 to 2020 [74]. Along with this growing technological influence, China’s influence is growing via its Belt and Road Initiative, which strengthens its presence on the ground in the region [74]. Owing to its geostrategic location and its rich energy resources, the

Middle East receives much attention from global powers, despite the divergent visions and political ideologies [74].

The funds for water distribution are through indicators is from UAE Sovereign wealth funds, capital from Gulf equity partners, family offices, The World Bank, Bank of Bahrain, institutional investors, pensions, charities, insurance companies, and endowment funds. Putin has become a player in the Middle East. The goal is to the growing role of the Russian Federation in the Middle East using data and explore the role of economic and energy investments in this process. Results were mixed on the efficiency of sanitation delivery since political factors and administrative characteristics vary across locations [75].

Conceptual or Theoretical Framework

In this chapter, the author explores problem formation, data collection, data evaluation, analysis, interpretation, and public presentation [30]. With a few modifications, what one knows about conducting primary research applies to conducting secondary research (literature review) [30]. The key components are (a) a rationale for conducting the review, (b) research questions or hypothesis guide the research, an explicit plan for collecting data, including how units will be chosen, (d) an explicit plan for analyzing data, and (e) a plan for presenting data [30].

Table 7: Energy Supply.

<i>ENERGY SUPPLY</i>					
Stage Characteristics	Problem Formulation	Data Collection	Data Evaluation	Analysis and Interpretation	Public Presentation
Research questions asked	<i>What evidence will be included in the review?</i>	<i>What procedures will be used to find relevant evidence?</i>	<i>What retrieved evidence will be included in the review?</i>	<i>What procedures will be used to make inferences about literature as a whole?</i>	<i>What information will be included in the review report?</i>
The primary function in review	Constructing definitions distinguish relevant from irrelevant studies.	Determining which sources of potentially relevant sources to examine.	Applying criteria to separate “valid” from “invalid” studies.	Synthesizing valid retrieved studies.	Applying editorial criteria to separate important from unimportant information.
Procedural differences create variation in review conclusion	Narrow concepts might make review conclusions less definitive and robust. Differences in operational detail.	Differences in the research contained in sources of information.	Differences in quality criteria. Differences in the influence of non-quality criteria.	Differences in the rules of inference.	Differences in guidelines for editorial judgment.
(Randolph) [30].					

Table 8: Contract Awarded Blueprint

NTPC Ltd e-bid behalf of International Solar Alliance (ISA)
 NTPC Ltd invites e-bid on behalf of International Solar Alliance (ISA) from eligible bidders from ISA member/signatories countries for supply, installation and commissioning for solarization of buildings at Fiji, Comoros,

Malawi, Uganda and Mauritius shall be considered acceptable [76]. "Holding Company" and "Subsidiary" shall have the meaning ascribed to Companies Act of domicile country of the bidder [76].

IFB	30.06.2022
Last Date for receipt of queries from prospective Bidders.	11.07.2022
Last date and time for receipt of bids comprising both Techno-Commercial Bid and Price Bid	01.08.2022
Date & Time of opening of Techno-Commercial Bid (Envelop-1)	02.08.2022
Date & Time for opening of Price bid (Envelop-11)	Shall be intimated after opening of Techno-Commercial bid.
Cost of Bidding and Bid Security are NIL [76].	

Research Comparison

Conceptual maps were designed from each sectoral causal loop diagram, capturing the system feedback structures across the sectors [73]. Today, a meta-analytical review has taken the forefront [33]. In a meta-analytical review, the reviewer (a) collects a representative or a comprehensive sample of articles, (b) codes those articles according to aspects (study quality, type of intervention used, type of measure used, study outcomes), finds a common metric (standardized mean difference effect size) allows outcomes to be synthesized, and (d) examines how the characteristics of a study convey with study outcomes [33].

With oil prices dropping are seeking alternative investments. The participation of the private sector, through public-private partnerships (PPPs), has been considered an alternative effective method for increasing the efficiency and productivity of urban infrastructure development [77]. Per capita resource levels are political settlement tends to be more constrained –rulers are threatened by the private sector-autocrats tend to restrict private sector development to prompt or suppress threats from outsiders [77].

Results show technical and organizational barriers and risks were perceived as the to private sector participation, followed by economic, financial barriers, risks, and political and legal barriers [77]. The top 12 development journals published 18, 329 papers during the period 2000-2020 (Revilla, Seetharam, Rao,2021. p.2) [75]. The data evaluation findings proved The World Bank has a reliable, significant, and accurate database [33]

The data was extracted for population growth and funding. The information entered the main body of the dissertation [33]. The literature review, is the extraction of additional types of data to identify the factors may influence research outcomes [33].

In the experimental research, the reviewer's coding book will extract from each article the measurement instruments used: the independent, dependent, and mediating/moderating variables investigated; the data analysis procedures; the types of experience controls; and data [33]. High-quality and low-quality studies and

reporting the difference between the two [33]. The goal of reviews is to synthesize research outcomes [33].

The literature review, combined with the research problem will lead to the formulation of an empirical research question, "Can Deep Sea Water Be Processed into Potable Water and Distributed into the Middle East?" [33]. There is a meaningful contribution to knowledge in the field [33]. Meta-Analysis is used to synthesize and analyze a body of quantitative research [33].

Independent variable:

- State-of-the-art water innovation study.

Dependent Variables:

- Financial and Environmental Risks-** Managing financial risks encompasses the identification, assessment allocation, and practical controls designed and implemented by the project manager together with the relevant stakeholders of the project [78].
- Indicators-** The indicator tracks hostile volatility in inflation, shortages of investment capital, high-interest charges, ever-increasing construction material costs, and huge cost overrun from delays in completion for the project [78]. Financial risks are assessed based on the occurrence and severity of consequences with statistical and nonstatistical tools [78].
- Geopolitical-** A debate raised during the severe drought recorded in the region in the long term [79]. This debate was raised during the severe drought recorded in the region in the late nineties, when Israel claimed rainfall was not sufficient to provide Jordan with the amount of water as stated in the water agreement between Jordan and Israel, as a component of the Peace Treaty signed in 1994 [79]. People believe water is a 'human right' and a commodity to be provided or granted [79].

Historical Overview

The expertise US scientists, farmers resource managers, and experts had developed over decades of intensive colonial expansion and settlement in the desert Southwest was essential to how and the political allies narrated the special fit with the needs and interests of State builders in the Arabian Peninsula [35]. Among these skills were how to build elaborate irrigation and pumping networks, and a

keen understanding of the political and symbolic power of water in the desert (Koch, 2021. P.90) [35]. Electricity generation from marine technologies increased an

estimated 13% in 2019, which above is the levels of the previous three years (IEA,2021. p.1) [80].

Table 8

<i>ENERGY SUPPLY, 2018</i>	
Middle East	31 375 235
Islamic Republic of Iran	11 444 635
Saudi Arabia	8 945 734
United Arab Emirates	2 650 753
Qatar	1 635 785
Kuwait	1 477 439
Oman	1067169
Bahrain	599 946
(IEA,2021. p.1) [802].	

More advanced, and an investigation will be done to evaluate the results of the theory. The authors investigate approaches by Rice University. Air conditioning systems provide a constant source of clean, cold water is well-suited for reuse [81].

In the fall of 2008, Rice began capturing condensate water from the air conditioning systems of the Biosciences Research Collaborative to use as make-up water in the cooling towers of the South Plant [81].

This is a free source of water Rice otherwise buys from the City of Houston [81]. Combined, these systems are estimated to save at least 12 million gallons of water per year, which is equivalent to about 5 to 6 percent of Rice's annual water consumption in a typical year [81]. This argument causes people to react in cases of water shortages or a decrease in the supply and justify the actions by claiming securing water is a right [79].

Chapter Conclusion

The Paris Agreement and the Middle East Vision 2030 Agenda on Sustainable Development, encompasses the 17 Sustainable Goals (SDGs), were both acquired in 2015 [82]. Pledges in Nationally Determined Contributions (NDCs) of parties are still for from the Paris Agreement goal of limiting global temperature increases to well below 2' and striving for 1.5'C, on the international stage, countries agreed to mobilize US \$100 billion annually by 2025 [82]. The 2030 agenda for sustainable development worldwide requires an estimated US \$5-7 trillion annually [82].

Increasing financial effectiveness and ownership of climate and sustainable development actions requires alignment between donor countries finance and recipient countries, priorities, including focus on mitigation verses adaption [82]. Green humanitarian project of distributing & consumption of water and renewable energy throughout the Middle East will be evaluated. Creating a new balance of power and removing the restrictions placed by the unipolar world order: it is in the interest of middle powers and small states is a shift from a unipolar world order to a multipolar one [74].

Advancing the strategic independence of Middle Eastern countries: considering what analysts describe as a new world order taking shape- the emergence of US and Chinese camps- is an opportunity for regional countries to advance the strategic independence and to boost the strategic partnerships so are not compelled to choose between the two camps or pay part of the price amid a possible cold war [74]. Problems have been encountered on PPP initiatives in Nigeria, in the North Central region where PPP infrastructure projects have experienced challenges and failures as a result of stakeholders' opposition and disagreements arising from the neglect of stakeholder's interest. Intrastate tension takes place which increases dispute between riparian countries and expands interstate conflict.

Chapter Summary

The data on the water demand and supply from water rights to the Jordon River Basin is meant to provide an empirical dimension to the ongoing political dispute [83]. Different plans have been proposed to allocate the river Jordon water among the riparian states [83]. Develop a conceptual framework upon which an effective strategy to minimize PPP infrastructure projects failure through effective stakeholders' management amidst well designed institutional and regulatory framework and a conducive investment climate.

Questions,

- *What is the size of the contract?*
- *What is the duration of the contract?*
- *What is the deal for obtaining a letter of intent?*
- *Is strong societal license available to operate [29]?*
- *Are indicators more beneficial than the regulatory system?*
- *How many batches of data can be analyzed at what speed?*
- *How can more for each dollar spent [29]?*
- *“How much of the world's or a country's endowment of non-renewable resources is fair for the generation to use up, and how much will be left for generations to come who have no active voice in contemporary decisions [84]?”*

- *How can best include stakeholders in this mathematical modeling processes distanced from local realities, though, and ensure a higher probability of future compliance with top-down global decisions may have local consequences once implemented* [73]?
- *“How does one design and govern an SWF so it will achieve its objectives”* [84].
- *“Which governance practices, in particular, are crucial for success”* [84]?
- Available material has been saturated it is to recommend future research. The question, *“Are any links missing and if the strength of relations was correctly represented”*?
- The funding for water desalination through the Middle East is from,
 - Prestigious Development
 - Building High Tech Projects
 - ADB Loan
 - Asian Development
 - Ministry of Finance
 - Production Sharing Agreements
 - Exploration and Development
 - Cloud Funding
 - Blue Bonds
 - Bahrain
 - Sovereign Wealth Fund Institute
 - The World Bank

Updates to research are needed in situations of crisis such as the pandemic, oil and gas declining, Republican wealth pulling out. When these issues transpire it can destroy relevant intent. The resolution will be for everyone to have a common goal and express the urgency on such a critical issue.

“Can anyone live without water”? Much of Vision 2030 revolves the idea of building Saudi Arabia into a global transportation and tourism hub, connecting Europe, Africa, and Asia (World Finance, 2020.p.1) [85]. The spread of SARS Co V-2 has blighted the transport industry: air travel, for example, is not expected to return to 2019 levels until at least 2023, according to the International Air Transport Association [85].

22. Research Methods

23. Research Method and Design Appropriateness

Hypothesis, found in the operations research and computer science communities, is with the wide availability of data and advances in computing technology, algorithmic forecasts offer the opportunity to support humans by mining large data sets and learning patterns and trends from data [43]. Popper’s methodological prescriptions are opposed to “naïve collectivism” and the conspiracy theory of society, the main task of the social sciences is to trace the unintended effects of purpose actions” [26]. Naïve collectivism assumes the social sciences study social wholes such as social classes on nations [26].

24. Research Method

The investigation incorporates revenue driven, holistic approach, time series analysis, and integrating simulations. Some funds are challenging to analyze as they combine the functions of SWF and the central banks into one foundation [86]. The revenue driven approach indicators are intended to alert for,

- High interest
- Renewable energy
- Manage risks
- High portfolio debt
- Regulation
- Sovereign wealth funds
- Technology deployment

Contracts are analyzed mega projects, free trade agreement, and trade and investment framework agreement. Saudi Arabia takes on a conservative approach due to the Gulf War [86]. Technology focused on is,

- Computer science
- Artificial Intelligence
- Synthetic Intelligence
- Network Databases
- Computational
- Operational research

The geopolitical areas are Golden Triangle, Economic Zone and the Red Sea. Information is shared with Saudi-US CEO Forum-Create Partnerships. Results show an almost 10-fold increase in the application-focused forecasting literature between the 1900s and the decade, with a clear rise of quantitative, data-driven forecasting models [43]. Cooperative studies of quantitative methods and human judgment show (1) neither method is universally super, and (2) the better method varies as a function of factors such as availability, quality, extent, and format of data, suggest (3) the two approaches can complement each to yield more accurate modes [43].

25. Design Appropriateness

The design has been implemented to achieve financing integrating revenue driven and the holistic approach.

The models investigated,

- Building Information Modelling (BIM)
- Augmented Realty (A/R)
- LoT Data Applications
- Digital Orientation
- Internet of Things
- International Investment
- Free Trade Agreement
- Mega Projects
- Transportation Network
- Population
- Class of people, low caliber to professional
- Incomes
- Digital Platforms
- International Trade Administration
- Drones in Construction Fitted with Radio Frequency Identifications RFID
- 360. Video Capturing Technologies
- 3D Scanning Technology
- 3D Printing

• **TAM**

(Zaia, 2022.p.1) [87].

The indicators are investment, growth rate, landowners, technology, and unemployment. A concentration on sovereign wealth funds, phenomenology, ethnography, grounded theory of case studies, gaps, data networks, high-profile joint agreement, geopolitical, renewable energy, chi-square, and cosmopolitan. The goal of the article is to design a comprehensive scope with value, synergy, computation, and deliver an innovative approach with artificial intelligence.

Machine learning is the form of narrow Artificial Intelligence which allows machines to learn from data has enormous potential to transform urban life [88]. Machine learning is already being used in the energy sector to optimize power grids and will support decarbonization by providing utilities [88]. Machine learning will track waste levels in recycling bins and tailor collection services based and waste predictions [88].

- Blueprint for methodology and framework.
- Background of the study.
- Problem statement.
- Purpose of the dissertation study.
- Significance of the study.
- Nature of the study [27].
- Denoting excellence.
- Potential for publishing.
- Organization of the dissertation.

26. Population, Data Collection Procedures, and Rationale

The Middle East partnered with a team from the U.S. National Aeronautics and Space Administration (NASA) DEVELOP program in 2016 to enlist satellite data as consider where and what to build next [24]. To find these rainy spots, the team considered such factors as historical precipitation, availability of groundwater, and evapotranspiration- the amount of water evaporating from surface-level vegetation increases moisture in the atmosphere [24]. China’s positions are based on respecting national sovereignty and not interfering in internal affairs [74].

Table 9: Allocation of Different Plans & Resources.

<i>ALLOCATION of DIFFERENT PLANS & RESOURCES</i>						
Visión 2030 red sea Dead Sea						
The Water Action Project, Inc Wrap (WRAP)						
Tropical Rainfall Measurement Mission (TRMM)						
Global Precipitation Measurement (GPM)						
Table 1: Ratio of Water Demand to Supply, Per Capita Water Availability in 1990, 2000, and in 2025, and Population in 2000 and 2010 in Jordon & Israel [83].						
Country	The ratio of Water Demand to Supply				Total Population (Millions)	Population Growth Rate (annual %)
Jordon	110	260	143	80	3	3
Israel	110	470	449	310	2	2
[83].						

TABLE 10: Contract Awarded Blueprint.

<i>CONTRACT AWARDED BLUEPRINT</i>				
Contract Awarded				
Blueprint	Company	Alliances	Terms	Geography
	Saudi PIF (Public Investment Fund)_ owned National Water Company (NWC)	Al-Khorayef Alliance French Veolia Saudi Miahona Alliance French Group Saur Philippine Company Manilawater	SR 579 million/ 7 Years	Riyadh [89].
The Red Sea/Dead Sea		Source Water Company	Budget Cut from \$50.M to	Saudi Arabia [85].

			\$8.M/% Years	
Schlumberger		Saudi Armaco		[90]
UAE Net-Zero Emissions by 2050		UAE Energy Strategy 2050		
UAE Water Security Strategy 2036				
Korean Company Prosave		Oman Solar Powered Water Desalination Pilot Project		Middle East
Red Sea Farms	Research Product development Company (RPDC)	Kaust Innovation Fund		

WEC type	Capacity factor (CF) (%)	Location	Reference
10 kW point absorber	~30 (utility factor)	Baltic Sea	[104]
AquaBuOY	3.65–8.39	Italy	[80]
	3.7–8.7	Italy	[81]
	1.33–8.44	Italy	[28]
	~2–2.5*	Italy	[42]
	~5	Lebanon	[76]
	8.2–9.1	Spain	[77]
	6–9	Greece	[133]
	0.44–2.48	Mediterranean/Black Sea	[134]
	8.4–9.5 (winter)	Black Sea	[124]
	31-33 (downscaled)	Mediterranean	[78]
6.8 and 26.2 (downscaled)	Turkey	[127]	
AWS	1.6–4.5	Italy	[80]
	0.37–4.96	Italy	[28]
	~1–1.2*	Italy	[42]
	2.1–21.1 (downscaled)	Italy	[79]
	0.72–2.77	Mediterranean/Black Sea	[134]
	24-28 (downscaled)	Mediterranean	[78]
	2.4 and 21.4 (downscaled)	Turkey	[127]
BOF	5–9	Greece	[133]
Ceto	1.38–3.63	Mediterranean/Black Sea	[134]
F2HB	6–9	Greece	[133]
HeaveBuoy	0.95–4.55	Turkey	[126]
	3.5 and 20.6 (downscaled)	Turkey	[127]
ISWEC	~14–15.5*	Italy	[42]

WEC type	Capacity factor (CF) (%)	Location	Reference
Langlee	~2–2.1*	Italy	[42]
	12-13 (downscaled)	Mediterranean	[78]
	4.9 and 9.4 (downscaled)	Turkey	[127]
Langlee Robusto	~19.5*	Italy	[42]
Oceantec	~7.5–8*	Italy	[42]
	~0–15*	France	[132]
	3.62–11	Mediterranean/Black Sea	[134]
	14.4–25	Turkey	[126]
	21.9 and 41.8 (downscaled)	Turkey	[127]
OE Buoy	~2–2.2*	Italy	[42]
	19-21 (downscaled)	Mediterranean	[78]
	4.1 and 17.5 (downscaled)	Turkey	[127]
	1.27–3.63	Mediterranean/Black Sea	[134]
Oyster	10.99 (upscaled)-19.58	Italy	[79]
	3.44–16.93	Turkey	[126]
	12.5 and 44.1 (downscaled)	Turkey	[127]
Oyster 2	7	Turkey	[126]
	4.2 and 26.3 (downscaled)	Turkey	[127]
Pelamis	4.5–8.46	Italy	[80]
	4.2–9.4	Italy	[81]
	0.87–8.66	Italy	[28]
	~6	Lebanon	[76]
	9.7–10.4	Spain	[77]
	~3–3.5*	Italy	[42]
	~4–11.5 (downscaled)*	Greece	[23]
	8–16	Greece	[133]
	1.41–6.34	Mediterranean/Black Sea	[134]
	11.9–13.07 (winter)	Black Sea	[124]
	39-42 (downscaled)	Mediterranean	[78]
	7.5 and 33.7 (downscaled)	Turkey	[127]
Pontoon	5.84–14.5	Mediterranean/Black Sea	[134]
	~2.5–2.7*	Italy	[42]
	15-17 (downscaled)	Mediterranean	[78]
	6.0 and 12.1 (downscaled)	Turkey	[127]
Seabased	~4–4.5*	Italy	[42]
	~0–7.5*	France	[132]
	3.25–10.03	Turkey	[126]
	10 and 23.2 (downscaled)	Turkey	[127]

WEC type	Capacity factor (CF) (%)	Location	Reference
SeaPower	20-21 (downscaled)	Mediterranean	[78]
SSG	0.89-4.25	Turkey	[126]
	2.9 and 14.9 (downscaled)	Turkey	[127]
Wavebob	~7.5-8*	Italy	[42]
	~0-3*	France	[132]
	1.37-3.51	Mediterranean/Black Sea	[134]
	32-34 (downscaled)	Mediterranean	[78]
	6.8 and 28.3 (downscaled)	Turkey	[127]
Wave Dragon	3.9-8.8	Italy	[81]
	3.24-7.72	Italy	[28]
	~4	Lebanon	[76]
	10.2-10.8	Spain	[77]
	~2-3*	Italy	[42]
	13.11-44.17 (downscaled)	Italy	[79]
	~0-7.5*	France	[132]
	11-16	Greece	[133]
	1.96-6.77	Mediterranean/Black Sea	[134]
	8.2-27.8 (winter)	Black Sea	[124]
	6.4 and 38.7 (downscaled)	Turkey	[127]
Wavestar	16.6 (upscaled)-23.65 (600 kW)	Italy	[79]
	~12.5-18 (downscaled)*	Greece	[23]
	13-20	Greece	[133]
	1.26-4.86	Mediterranean/Black Sea	[134]
	1.31-3.73	Turkey	[126]
	3.8 and 6.6 (downscaled)	Turkey	[127]

[91].

Dubai Climate Summit, will be doubling the funding commitment from \$4 billion to \$8 billion, AIM announced another six countries (Chile, Costa Rica, Egypt, Guyana, Mozambique and Turkey) have joined the initiative already boosts 140 government and non-governmental partners, making it the world's leading effort to clean up agriculture [92]. Chairing the agriculture innovation mission for Climate's (AIM for climate) first ministerial meeting in Dubai on Monday (21 February), U.S. Secretary of Agriculture, Tom Vilsack, said much of the funding will go towards cutting edge areas of "agritech" such as "nanotechnologies, biotechnologies, robotics and AI" [92]. Korean-Omani pilot project for solar-powered water desalination is being implemented by the Korean company Prosave in a farm owned by a citizen in the village of Al Nabra in the Suwaiq Wilayat in the North Al Batinah Governorate [14].

United Arab Emirates –Federal Absolute Monarchy

The overall strategy is to reduce the demand for water resources by 21 percent, increase the water productivity index to USD 110 per cubic meter, reduce the water scarcity index by three degrees, increase the reuse of treated water to 95 percent and increase national water storage capacity up to two days [93]. In September 2017, Ministry of Energy and Infrastructure unveiled the UAE water security strategy 2036, which aims to ensure sustainable access to water during normal and emergency conditions in line with local, regulation, standards of the World Health Organization, and the UAE's vision to achieve prosperity and sustainability [93]. The strategy includes the establishment of 6 connecting networks between water and electricity entities across the UAE [93].

Water networks will be able to provide 91 liters of water per person per day in cases of emergency, or 30 litres per person per day in cases of extreme emergencies [93]. Once implemented, the water security strategy 2036 will achieve savings of AED 74 Billion and reduce the emissions of carbon dioxide (CO₂) associated with water desalination process by

100 million metric tons [93]. The project which is sponsored by the Korean Ministry of Environment, is one of the pioneering projects abroad being supported by KISA's and the KOTRA global green initiative, and aims to solve water shortage problems in countries suffering from water crisis, especially in the Middle East [14].

Table 10: MAP



[94].

Table 11: Water Usage

	PER CAPITA ANNUAL RENEWABLE FRESH WATER (M2)			% OF FRESHWATER USE, BY SECTOR	
	1970	2001	2025	DOMESTIC	INDUSTRIAL
MENA ^a	3,645	1,640	1,113	8	5
Algeria	1,040	462	331	25	15
Bahrain	455	140	97	39	4
Egypt	2,460	1,243	903	6	8
Iran	4,770	2,079	1,555	6	2
Iraq	10,304	4,087	2,392	3	5
Israel	740	342	247	16	5
Jordan	555	174	103	22	3

	PER CAPITA ANNUAL RENEWABLE FRESH WATER (M2)			% OF FRESHWATER USE, BY SECTOR	
	1970	2001	2025	DOMESTIC	INDUSTRIAL
Kuwait	27	9	5	37	2
Lebanon	1,944	1,120	896	28	4
Libya	302	114	72	11	2
Morocco	1,960	1,027	741	5	3
Oman	416	206	5	2	94
Qatar	901	170	129	23	3
Saudi Arabia	418	114	59	9	1
Syria	7,367	2,700	1,701	4	2
Tunisia	800	422	327	9	3
Turkey	5,682	3,029	2,356	16	11
United Arab Emirates	897	60	44	24	9
Yemen	648	228	103	7	1

Figure 1

Water-Scarce Countries in the Middle East and North Africa

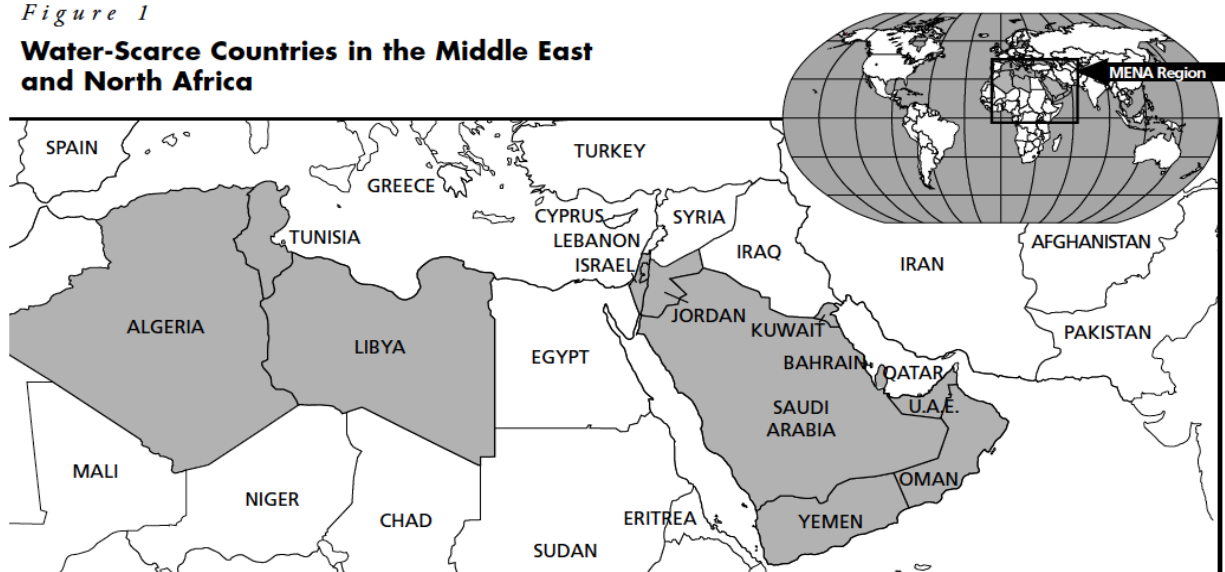
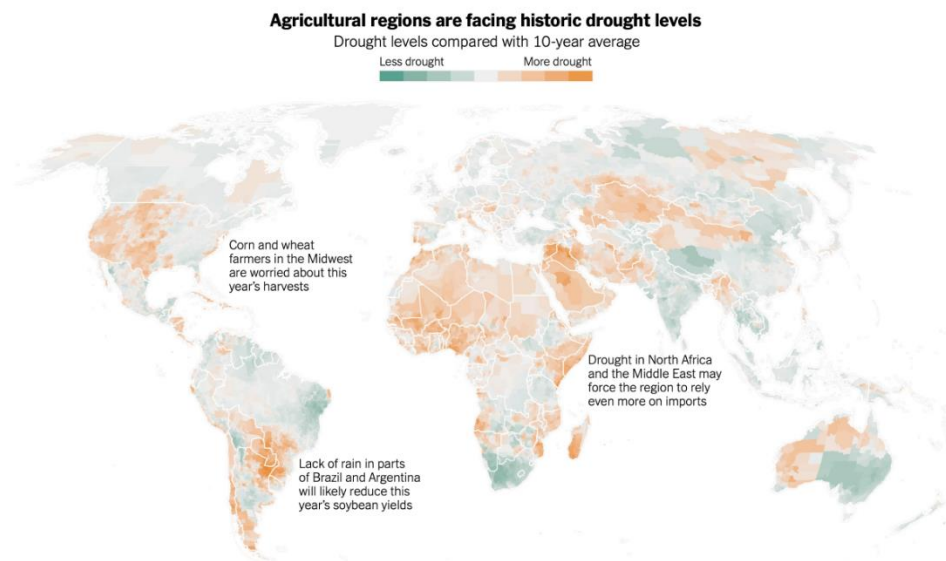


Table 10. Water Scarce Countries in the Middle East and North Africa (Population Reference Bureau, 2022.p.1) [95].

Figure 12: Agricultural Regions



[23].

Table 13: Population.

	% OF POPULATION WITH ACCESS TO SAFE WATER			% OF POPULATION WITH ACCESS TO ADEQUATE SANITATION	
	TOTAL	URBAN	RURAL	TOTAL	URBAN
MENA ^a	84	93	79	86	95
Algeria	89	94	82	92	99
Bahrain	–	–	–	–	–
Egypt	97	99	96	98	100
Iran	92	98	83	83	86
Iraq	85	96	48	79	93
Israel	–	–	–	–	–
Jordan	96	100	84	99	100
Kuwait	–	–	–	–	–
Lebanon	100	100	100	99	100
Libya	72	72	68	97	97
Morocco	80	98	56	68	86
Oman	41	30	92	98	61
Qatar	–	–	–	–	–
Saudi Arabia	95	100	64	100	100
Syria	80	94	64	90	98
Tunisia	80	92	58	84	96
Turkey	82	82	84	91	98

	% OF POPULATION WITH ACCESS TO SAFE WATER			% OF POPULATION WITH ACCESS TO ADEQUATE SANITATION	
	TOTAL	URBAN	RURAL	TOTAL	URBAN
United Arab Emirates	-	-	-	-	-
Yemen	69	74	68	38	89

[Population Reference Bureau, 2022.p.1] [95].

27. Population

Table 14. Population

The World Bank reports the population in Israel at 4,587,522 in 2020 (The World Bank ,2021).

Afghanistan	2020	19,976.26
Bahrain	2020	1,100,47
Kuwait	2020	2,614,45
Lebanon	2020	3,435,75
United Arab Emirates	2020	6,836,35
Middle East & North Africa	2020	240,679,66
The Middle East & North Africa (excluding high income)		199,610,78. [31].

Table 15. Sovereign Wealth Funds' Property Holdings, London Metropolitan Area, March 2021

Company	Country	Hotel	Total
QIA	Qatar	\$3,497,799,566	\$16,529,104,908
GIC	Singapore	\$114,621,535	\$6,990,380,173
ADIA	United Arab Emirates	\$895,195,956	\$4,998,271,588
NBIM	Norway		\$4,996,385,240
Kuwait Investment Authority	Kuwait		\$4,769,841,932
CIC	China		\$2,132,623,966
PNB	Malaysia		\$2,069,431,985
Tamasek	Singapore		\$1,975,420,196
Safe	China		\$1,876,667,297
HKMA	Hong Kong, SAR, China		\$812,667,297
Libyan Investment Authority	Libya		\$740,518,294
Mubadala Investment	United Arab Emirates		\$440,171,161
Lembaga Tabung Haji	Malaysia		\$398,669,981
SOFAZ	Azerbaijan		\$326,162,455
Dubai World	United Arab Emirates		\$270,835,987

[96].

Islamic banks becoming a sleeping partner in the business of a client under a contractual partnership (*shirkat-ul-'aqd*) which wealth is in the hands of a corporate class who invest less of their capital but get more profit. Running Musharakah

(RM) was introduced in Islamic banking in Pakistan. Running Musharakah RM facility is valid for one year or another agreed term, from the day on which the facility is approved.

Table 16. Statistics from Islamic Banks.

Islamic Ban Rank 2020	Bank Name	Country	Assets US \$ Million
1	Al Rajhi Bank	Saudi Arabia	111,338
2	Dubai Islamic Bank	UAE	80,261
3	Kuwait Finance House	Kuwait	66,783
4	Maybank Islamic	Malaysia	57,951
5	Qatar Islamic Bank	Qatar	45,540
6	Alinma Bank	Saudi Arabia	37,904
7	Abu Dhabi Islamic Bank	UAE	33,874
8	Masraf Al Rayan	Qatar	45,540
9	Al Baraka Banking Group	Bahrain	37,904
10	CIMB Islamic Bank	Malaysia	26,068

[97].

Currently the Saudi Arabia economy is run by oil wealth. The wealth of the nation depends on the business sector and decisions of diversifying are based and economic growth. The Saudi Arabia's economy inspires to reduce dependence on oil [86].

Table 17. The Holdings in Domestic Markets of the GCC Countries SWFs.

Country	SWFs Amount	Number of Holding Firms	Worldwide investment (\$ billions)	Domestic Investment (\$ billions)	Proportion in GCC capital market
Saudi Arabia	5	27	101	166,713	57
UAE	7	27	102	61,002	21
Qatar	6	9	40	28,744	10
Kuwait	5	33	180	25,054	9
Oman	9	21	128	5,998	2
Bahrain	4	14	43	5,045	2
Total	36	131	594	292,557	100

[86].

Table 18. Ten largest funds of SWFs in Feb 2019, (Value \$Billions).

Country	Fund Name	2019 Assets (US\$ billion)	Inception Year	Source of Funds	Transparency
Norway	Government Pension Fund Global	1074.60	1996	Oil	10
China	China Investment Corporation	941.4	2007	Other	8
UAE	ADIA	697	1976	Oil	6
Kuwait	Reserve Fund for Future Generations	592	1953	Oil	8
China-Hong Kong	Hong Kong Monetary Authority Investment Portfolio	522.6	1993	Other	8
Saudi Arabia	SAMA Foreign Holding	515.6	1952	Oil	4
China	SAFE Investment Company	441	1997	Other	4
Singapore	Government of Singapore Investment Corp.	390	1981	Other	6

Singapore	Temasek Holdings	375	1974	Other	10
Saudi Arabia	Public Investment Fund	360	2008	Oil	5
Qatar	Qatar Investment Authority	320	2005	Oil,Gas	5
Total of SWFs		\$8,144.71			
Total oil & gas-related funds		\$4,332.43			
Total non-oil related funds		\$3,712.28			

[86].

Measures are analyzed to evaluate the impact return if it is negative or positive. Sovereign wealth funds have been increasing. As Saudi Arabia aims to be the world's largest sovereign fund, the existing largest fund according to the socioeconomic Index of international organizations (such as the United Nations, the World Bank, and the Organization of Economic Co-operation and Development-OECD), Norway is considered to be one of the most developed countries in the world [86].

Clients can redeposit the amount withdrawn, until the maturity date of the contract. The running finance the client only pays the interest on the amount used verses the entire loan. Islamic banks agree to reduce their profit share to as little as 0.00001 percent whereas the remainder of the profit,99.99999 percent, goes to the client- and amount that usually exceeds the profit dividend between the bank and the client at the first level.

The unequal wealth distribution to the economy deducts its share from the profit obtained from corporate clients, the bank distributes the remaining small amount of profit to its depositors. Under the terms And conditions of a contractual partnership (shirkat-ul-'adq), Islamic banks become non-active (sleeping) partners in Khalid's business for a specific period, for example, one year.

The profit ceiling is calculated as per their agreement: \$280,000 (=14% of \$2 million). \$280,000 out of the total net profit of \$2 million is distributed between the Islamic bank and Khalid according to their investment shares: 71 percent and 29 percent. The Islamic bank received only 0.172 cents (0.00001% of \$1,720,000) from \$1,720,000, but the remaining \$1,719,999.828 is given to Khalid.

Since 1946, the United States has provided an estimated of \$346 billion (about \$1,100 per person in the US) (obligations in dollars) in foreign assistance to the Middle East and North Africa (MENA) region [98]. For FY2021, overall bilateral aid requested for MENA countries amounts to \$6.6 billion (about \$20 per person in the US), or about 15% of the State Department's International Affairs budget request [98]. The State Department estimates the Middle East stands to receive 42% of the geographical specific assistance in the budget request, more than any region [98].

As in the previous years, more than 90% support assistance for Israel, Egypt, and Jordan [98]. The region also received a sizable portion of annual emergency humanitarian assistance appropriate, which is not included in region-

specific aid figures [98]. The metrics are green power, climate change, and renewable energy.

The agreements with no real terms. Sukuk is being analyzed for financial stability with industrial investing [99]. GDP per-capita, exchange rate, and inflation as the proxies for macroeconomic stability sourced from The World Development index, and dimensions of worldwide governance indicators (WGI) as institutional proxies' source from WGI- World Bank [99]. (POP) variable is included as a control variable [99].

Today, the Sukuk market represents the economy's wheels and the second-largest Islamic finance industry component after Islamic banking [99]. The government is implementing regulations to force the upgrade into Vision 2030. The Asian Development Bank (2005) revealed among the essential factors for improving the investment climate are macroeconomic stability and government institutions [99]. Macroeconomic variable as the volatility factor is inflation hurts financial developments [99].

Stable-economic conditions will positively affect the development of the country's economy and finances [99]. Unstable macroeconomic conditions can be seen from high inflation and a weakening exchange rate will harm the development of the country's economy and finance [99]. Various measures are used as institutional indicators [99].

Kaufmann et.al. (2004) has designed the World Governance Indicator (WGI) by reporting aggregate and individual performance indicators; the six dimensions of governance have encountered been adopted by World Bank and, voice and accountability, Rule of Law, Regulatory Quality Political Stability and Absence [99]. The World Bank approved a US\$15 million grant to the Water Security Development-Gaza Central Desalination Program- Associated Works Phase 1 Project [31]. Donors have contributed US\$43 million and members of the Partnership for Infrastructure Development Multi-Donor Trust Fund administered by the Bank, and US60 million in parallel financing from the Kuwait Fund for Arab Economic Development [31].

The project will provide additional freshwater of 30 million cubic meters (MCM) per year to 16 municipalities in the southern and middle governorates of Gaza by supporting the construction and rehabilitation of necessary infrastructure [31]. "Almost everyone in Gaza is relying on water from expensive and unregulated small-scale private providers" [31]. The Abraham Accords- a joint declaration of the United

States, Israel, and the United Arab Emirates, was signed alongside a peace agreement, has never been a state of war or conflict between Israel and the UAE [100].

Geopolitical changes in the Middle East over the last decade have altered the threat perspective of the Arab monarchies [100]. Israel and the Arab states due to the ignorance of the Palestinians' interests, are weaknesses of the Accords due to its impatient timing, and its contradiction with the international community, such as the UN, and its disregard of the two-state solution [100]. Israel's security has been a building block in the United States '(US) foreign policy decisions with regards to the Middle East [100].

The Abraham Accords promotes the formation of a regional coalition of Israel and the Arab nations are close to the US, and to create a balance of power catalyst regional powers have sought to exert influence on the detriment of Western interests [100]. The World Bank supports programs and activities in its member countries designed to achieve a positive social and environmental impact in line with the World Bank's twin goals of eliminating extreme poverty and promoting shared prosperity (International Bank for

Reconstruction and Development [101]. These "twin goals" are aligned with the Sustainable Development Goals (SDGs) (International Bank for Reconstruction and Development [101].

World Bank bonds are consistent with the sustainability bond guidelines published by the International Capital Markets Association (International Bank for Reconstruction and Development [101]. A key priority for the capital markets is to build strategic partnerships with investors to raise awareness for the role of private sector financing in sustainable development [101]. The International REC Standard is built on a list of rules, regulations and best practices set by The International REC Standard Foundation [102].

28. Study Rationale

Artificial Intelligence, Synthetic Intelligence and computational alert in crisis and disasters and improve environment forecasts. The images below reveal hurricanes, wildfires, floods, glaciers, fire and deforestation. With surveillance the information is reported in real-time informing of rising sea levels and can cover large areas.

Table 14: Statistics

2016 Water Underground - Millions of Gallons	56,698.91
Fisheries 2015	12,215.00
Electricity Produced Energy (GwH)	17,067.78 [31].

Table 15: Methodology Conceptual Design

Planning Research	Research Design	A Journal Source	Data Collection
Accurate	Topography	Regulatory Framework	De-Securitization
State-of-the-Art Water Equipment	White Space	Population Growth	Historical Landowners
Relevant	Public	Mitigating Risk	Geopolitical
Roadmap	Private	Pro Quest	Geographical
Significance	Co-Sharing	Google Scholar	Theoretical Methods
	Defining Terms	Royal Society	Conflict
	Snowball	Stanford	Climate Change
	Mangrove		Conflict
	Synthesis		Political Stability
	Coding		Water Governance
	Hypothesis		Sensitive Political
	Maslow's Theory		Blocks Framework

Table 17: Table 5 Terms

Quantitative Analysis	Defending Proposal
Feasibility Study	Long-Term Profitability
De-Risking	Memorandum of Understanding
No- Project Results	Phenomenology
Analyzing	Next Literature Review
Chi-Square	Chi-square test can be valid and universally consistent for testing independence, and establish a testing power inequality with respect to the permutation test [103]. The statistical hypothesis for testing independence is

	H0 : FXY = FXY , HA : FXY 6= FXY . [103].
Meta-Analysis	A review technique in which the primary goal is to integrate quantitative outcomes across studies
Questions	The questions guide the literature review. The questions are influenced by the goal and focus of the review (Randolph,2009. p.3). "What are the central theories have been used to explain phenomenon X" [30]?
Rhetoric	Well-developed coherent structure [30].
Conservatism	
Bureaucracy	Recent proposals for a Foreign Influence Registration Scheme, for example, significantly hamper scientific collaboration between the UK countries [6].
Significance	Recognize, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity, supporting international collaboration, demonstrating the importance of science to everyone [6].
Probability	
Theory	
Epistemology	Strategies are able to partially mitigate reasonable doubt, can take a theory regarding the phenomena to be established by experiment [104]. Next generation of analogue experiments to provide genuine knowledge of unmanipulable and inaccessible phenomena such the relevant theories can be understood as well as supported [104].
Flux Coupling Analysis Influence	Identify pairs of reaction for which the activity of one reaction necessitates the activity [105].
Grounded Theory	[31].

Table 18: Literature Review Scoring

Category	Criterion	1	2	3
1. Coverage	World Bank, 2021, Verified exclusion and inclusion.	A portion of the information has been used. Transparency needed.	Discussed the funding of Vision 2030.	Explained project details and coverage.
2. Synthesis	ICI Global, (2021), explains de-securitization.	The information assisted in de-risking the Middle East.	Geopolitical and co-sharing have been investigated.	It put the Middle East at high risk due to geopolitical.
3. Methodology	Randolph, 2009, Recommended methodologies, graphs & tables.	Research and theoretical methods discussed.	A portion of research techniques was used.	Verified research methods.
	Academic Review Checklist	Guidelines for the dissertation, and institutional progress.	Research methods.	Writing Style and Composition.
4. Significance	The Development Sea Company, (2021), Sets new standards for infrastructure and sustainable water.	Quantitative significance to the research study.	Implemented the new findings to the research.	Appropriateness of the information and research methods to verify the relevance of the research
5. Rhetoric	Faudot, 2019, Explains a regime trap.	The new standard with regulation.	Obtainable results in commonality such as securing protected marines.	Explained the regulation in detail.

The Gulf Cooperation Council (GCC) countries, except for Kuwait, relied less on BITs [106]. This may reflect the fact as resource-rich countries, these states felt less compelled to enter into such binding agreements [106]. Some of the BITs

have been entered into by Arab countries refer to International Center for Settlement of Investment Disputes (ICSID) procedures [106].

In *Desert Line Projects LLC v Republic of Yemen*, which involved an Omani company, the basis of authority was an ICSID clause in the Oman-Yemen BIT 1998, which had been concluded in the Arabic language [106]. In case, the ICSID Tribunal held the conduct of Yemen is pressuring the Omani investor to accept and execute a settlement agreement, instead of a final and binding Yemeni award, accounted to a breach of a provision of the Oman – Yemen by impressing on Oman and Yemen a duty to ensure “fair and equitable treatment “for the investments of the contracting states investors, and to eschew “legally unjustified measures” [106]. The case was in any event discontinued because of a settlement reached between the parties during the proceedings [106].

Pakistan is in intensive care as US troops pulled out China increased investment and they became CERN status [107]. The President of the Republic of Uzbekistan designed a

decree,” strengthening their financial stability and reliability, promising investment projects and further expansion of lending to small businesses and private entrepreneurship” [107]. Economic Capacity Building Fund was established with the participation of the IDB [107].

Initial authorized capital of the fund is \$100 million, with the IDB’s share being \$20 million, the Uzbek government’s share being \$35 million and the share of Saudi Investors being \$45 million [107]. The IDB, \$615.9 million (that is 79.3%) of projects worth \$776.3 million in 2019, \$623.0 million (94.3%) of projects worth \$682., million in 2020 and the total cost of 2021 of the \$583.9 million projects, \$546.5 million (93.6%) will be financed by the bank [107]. IDB’s 46th annual meeting approved 30 agreements worth \$1.2 billion to revitalize the economies of Muslim countries in the post-pandemic period [107].

Ministry of Economy and Industry of the Republic of Uzbekistan
 Improvement of water supply, road transport and engineering communication infrastructure in Kashkadarya and Surkhandarya regions within the framework of the “Prosperous Village “program [107].

Validity: Internal and External

Data Analysis 87

Against the limited access to safe drinking water in Gaza, the World Bank today announced a US\$15 million grant to the Water Security Development- Gaza Central Desalination Program – Associated Works Phase 1Project [31]. The new project aims to improve the quality and quantity of water in Gaza will benefit from a coordinated aid of US\$42 million from donors' members of the Partnership for Infrastructure Development Multi-Donor Trust Fund (PID MDTF), administered by the Bank, and US60 million in parallel financing form the Kuwait Fund for Arab Economic Development [31]. The Associated Works project will construct a south water carrier, including storage reservoirs to convey and blend the above-mentioned desalination water along with water purchased from Mekorot (The Israeli national water company) and groundwater sources [31].

The article, “Desert geopolitics: Arizona, Arabia, and an arid –lands response to the territorial trap,” Lewis and Wigen’s article introduces a “maritime” response to these challenges,

stemming from a project supported by the Social Science Research Council called Oceans Connect 35]. The article takes inspiration from the oceans Connect approach to the challenges of area studies today, as well as the need to rethink the territorially trapped visions of geopolitics beyond the state system. Monitoring and understanding changes in Ecological indicators are needed to support decision-making during the project [108].

NEOM (short for Neo-Mustaqbal) is a \$500 billion (about \$1,500 per person in the US) coastal city megaproject, under construction in the northwestern part of the Red Sea, off the coast of Tabuk province in Saudi Arabia, and its success will rely on the preservation of biodiverse marine ecosystems [108]. Ecological indicators will be understood, quantified in standard units, have an immediate response to changes, measured at adequate frequencies and low costs, and applicable to locations to allow comparisons [108]. NEOM, which is short for the Ancient Greek-Arabic term Neo-Mustaqbal” (“New future”), is a \$500 by megaproject aims to build a automated city, operating as an independent economic zone in the NRS [108].

Champion in the Middle East.	Agents trying to run the market.
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The renters' structures forged by oil rent for decades are well established and difficult to displace [53]. Saudi implements the French Regulation Approach builds an accumulation regime. This approach is relevant to grasp the institutional arrangements of an economy as a whole and its contradiction [53].

The regulation approach was born in France in the 1970s, influenced by the Marxist theory of growth and capitalist accumulation [53]. One of the aims of the regulation theory is to describe [53]. Regulation theory matches with Marx’s claim a dynamic of accumulation is condemned to a crisis

(Marx,1996, p.455, Faudot.2019, p. 4), and a comprehensive economic analysis of a country includes the analysis of its crisis [53].

A set of social practices constitute the Saudi mode of regulation: " A large public sector employing Saudi natives [53]. Civil servants represent circa 40% of Saudi employees [109].

Public spending, the management of oil revenues between, on the one hand, accumulation of reserves in Central Bank accounts and sovereign wealth funds in a period of soaring

prices, and on the hand fiscal deficits each time it is necessary [53]. The peg of the Royal to the US dollar guarantees the economic integration to globalization [53]. The SAMA (Saudi Arabia Monetary Authority) intervenes on the exchange market to maintain the peg- which has remained the same since 1986 (1\$=3.75SAR); A reliance on contractual immigration for services and low paid jobs, mostly in the private sector [53].

The sector is weakened as soon as the government stops its grants (Faudot,2019. p.5) [53]. The mode of regulation is," the set of procedures and individual and collective behaviors serve to reproduce fundamental social relations through the mode of production in combination with historically determined institutional forms (Boyer and Saillard,2002, p.341, Faudot.2019, p.4) [53]. Support and 'steer' the prevailing regime of accumulation (Boyer and Saillard,2002, p.341, Faudot.2019, p.4) [53].

Ensure the compatibility over time of a set of decentralized decisions, without the economic actors themselves having to internalize the adjustment principles governing the overall system"(Boyer and Saillard,2002, p.341, Faudot.2019, p.4) [53]. "The social and economic patterns enable accumulation to occur in the long term between two structural crises [53]. These regular patterns are summarized by the notion of an accumulation regime" [53].

Before an investor can commit to a development project, must understand the culture. Geopolitical will reveal relevant and accurate knowledge having is. Such as are without water because it is a religious choice as find water unnatural? The research study has gone through transitions.

From average rating to escalating it to elevated risk due to geopolitical. The fun part of the research will be in the continuation such as for those Mormons not interested in the water to assign a protected private Island while developing the rest of the area? Analysis will focus on small-scale conflicts involving little or no physical violence, such as protection or demonstrations [25]. These nonviolent conflicts are politically relevant yet understudied in the literature on climate change and conflict, environmental security, and political stability [25].

The method of quantitative comparative analysis (QCA) to integrate quantitative and qualitative data at various scales (national, regional, local) for a sample of 34 cases (17 of which experienced conflict onset) [25]. Findings show pre-existing cleavages and either autocratic political systems or cuts of the water supply are relevant predictors of nonviolent, water-related conflict onset during droughts [25]. Conflict links are context-dependent even for nonviolent, local conflicts, hence challenging determinist narratives claim interlinkages between climate change, hydro-meteorological distances, and conflict [25].

Quantitative data on the regime type in power are obtained from Autocratic Regime Data, which is the accepted dataset on the presence or absence of autocratic regimes [25]. Renewables are the backbone of any energy transition to achieve net-zero [80]. As the world shifts away from carbon-

emitting fossil fuels, understanding the role renewables play in the decarbonization of multiple sectors is key to ensuring a pathway to net-zero [80].

Future research is recommended in analyzing storage, producing hydrogen from renewable electricity, stimulus packages, aviation biofuels, and residential heating [80]. As the world becomes digitalized, data centers and data transmission networks are emerging as a source of energy demand [80]. Government officials from Israel, Jordon, and the United Arab Emirates signed a letter of intent at the Dubai Expo on Monday, paving the way for the future export of Jordanian solar energy in exchange for Israeli desalinated water [110].

Water-starved Jordan, but it will also shift Israel's historic neighborhood status as an energy island and help the country meet climate targets [110]. Through partnership with prime contractor and Joint Venture partner contractor and joint venture partner Korea Electric Power Corporation (KEPCO), who continue to deliver the benefits of experience and expertise to the UAE program and through regular interactions with the global nuclear industry [111]. Abu Dhabi Investment Council invests, Strong focus on investing in Abu Dhabi's economy [112].

Some of its significant investments include substantial stakes in prominent organizations such as,

- First Abu Dhabi Bank
- Abu Dhabi Commercial Bank
- Al Hilal Bank
- Abu Dhabi National Insurance Company
- Abu Dhabi Aviation Company
- Abu Dhabi Investment Company (Investment AD) [112]. Active investment strategies aim to generate superior risk adjusted returns by investing in hedge funds and similar active trading mandates across different strategies [112].

Some of the Global strategies include the following,

- Relative Value Strategies
- Hedged Equity Strategies
- Macro Strategies
- Event-Driven Strategies
- Systematic CTA [112].

29. Chapter Summary

No country can solve these problems alone, and Americans cannot afford to be absent from the world stage [113]. Investigating in strengthening leadership abroad is also an investment in bolstering security and prosperity at home [113]. As President, the direction is to be determined to repair alliances, renew leadership in international institutions, reclaim creditability and equip the American middle class to succeed in a global economy [113].

For the Middle East to generate peace it is recommended cherish values: defending freedom, championing opportunity, upholding universal rights, respecting the rule of law, and treating every person with dignity [113].

Diplomacy to the center of foreign policy and are committed to meeting today's global challenges from a position of strength, working in close cooperation with allies and partners (President Biden, 2021) [113]. Stand with friends the world to protect values and to advance peace, security, and prosperity for all [113].

As part of the agreement, Jordan will export about 600 megawatts of electricity generated from solar energy, while Israel will evaluate the export of up to 200 million cubic meters of desalinated water to Jordan, a point news release from the Israeli Energy Ministry and the UAE Foreign Ministry said [110]. The collaboration was made possible due to the August 2020 Abraham Accords, which the countries described as "opening a new area of cooperation between the United Arab Emirates and Israel [110]. "This is a message to the universe about how countries can work together to combat the climate crises."

Israeli Energy Minister Karine Elharrar said in a statement, "Israel and Jordan are two countries with different needs and capabilities can help each cope with challenges in a greener [110]. One-third of Jordan's population is made up of refugees or non-citizens [65]. MIPCO incurs liabilities for failing to achieve targeted power and water availability, budgeted operating costs, and if fuel demand is greater than projected demand [115].

30. Research Results

31. Study 94

32. Results

Remote sensing through satellite imagery is an effective method to identify flooded areas [57]. This paper explores the integration of remote sensing and social sensing data to derive informed flood extent maps [57]. The advantage of acquiring information in real-time, there comes the drawback of requiring verification and this weakness is actually the strength of remote sensing, where satellite imagery is usually reliable and accurate [57].

Financial decisions are more successful going through the proper channels. The Gulf Corporation Council (GCC), the organization was established on 25 May 1981 by six Arab states, all monarchies with petroleum-based economics [115]. The commission for the settlement of disputes is covered by the Supreme Council. On an ad hoc basis, as provided for in the GCC charter, to address altercations between member states as they arise [115].

China National Offshore Oil Corporation

Baker Hughes (GE) - The Renaissance itself unfolded over years, decades, centuries, took more than 100 years to complete and will not have risen without building on strong foundations and metaphorically [29]. Method- The neighboring Olympus tension-leg platform learnt from with the capital efficiency approach [29]. As well as competitive scoping and efficient execution, transformed how interacted with supply-chain [29].

The transformation emphasizes the importance of partnership and collaboration with contractors [29]. Digitalization as one of key drivers for improving capital

efficiency and boosting operational excellence [29]. Sensors work in the deepest waters, drones work in the deepest waters, drones patrol distant oil and gas fields and computerized tools make use the smallest pieces of data [29].

Implemented the Vero app [29]. These fluctuations can be picked up by Veros sensors wherever the power cable happens to be, which might be in a far more accessible location than the motor [29]. Veros will deliver an additional \$300 million a year of production will otherwise have been lost by unplanned shutdowns [29].

Royal Dutch Shell Plc- In Iraq, small and medium-sized enterprises (SMEs) have struggled to develop due to political instability, insufficient infrastructure, and lack of access to finance and institutional support [116]. Basrah, the second largest city in Iraq known for its wealth in oil production, economic life continues to lag due to outdated production methods and machinery in industries and ongoing significant social and political instability [116]. Shell has a 34% interest in Petroleum Development Oman (PDO): The Omani government has a 60% interest.

PDO is the operator of more than 200 oil fields, located in central and southern Oman, over in area of 90,874 square kilometers. The concession expires in 2044. Signed an Exploration & Production Sharing Agreement for Block 55 in the south-east of the Sultanate.

Oman Shell now has a 100% working interest in and operatorship of Block 55 with an area of 7,564 square kilometers. The agreement includes a work programme of regional studies, seismic acquisition and potential exploration activities (Shell, 2022.p.1). This agreement is awaiting ratification via Royal Decree.

Middle East Investment Initiative (MENA 11)-Iraq partnered with The Shell Foundation, implemented by GROFin in collaboration with the Nomou Fund Osool [116]. Locations- Basrah, Ninewa Plain, and Northern Iraq [116]. Budget: \$21 million [116].

Schlumberger Ltd- Agreement reinforces In-Kingdom Value Add program and confirms long-term commitment to the kingdom of Saudi Arabia [90]. In 1964, the Arabian Drilling Company was established as a partnership between the General Petroleum and Minerals Organization (Petromin) and Schlumberger affiliate companies [90]. Later in 2006, Schlumberger pioneered its Dhahran Carbonate Research Center, located close to King Fahd University with a focus on Geology and Rock Physics and Production Completion and Recovery projects in the Middle East Region [90].

34. Summary

Today's agreement is a welcome example of how cooperation can accelerate the energy transition and build greater resilience [116]. Algorithm can be a possible solution to distribute quality water [105]. If a system works it is possible it can work within another environment geographically with a step-by-step process.

35. Analysis and Conclusions 97

"This declaration is just one of the positive outcomes of the Abraham Accords is serving to reinforce regional peace, stability, and prosperity while improving the lives and the prospects of the people of the region," Zayed said in a statement [110]. Models are developed based on quantitative statistical data sources from databases on environmental indicators or economics to assess how a given SDG (sustainable development goals) can be achieved [73]. The desalination process removes the local realities from the equations [73].

33. Limitations

Risks-

Not able to execute the original plan depends on the rapid and international expansion [117].

- Unable to attract qualified investors [117].
- Unable to develop new offerings [117].
- The difficulty of obtaining required registrations, licenses, permits, or approvals [117].
- Operates in and intends to expand into jurisdictions are, or have been, characterized by political instability, may have inadequate or limited regulatory legal frameworks, and may have limited if any. treaties or arrangements in place to protect a foreign investment or involvement [117].
- An elevated level of corruption [117].
- Unknown risks [117].

Data accessibility issues of smart cities, utilities, and transport [6]. Data alone is not enough [6]. Big data does not mean extensive knowledge: public bodies and private companies need to formulate useful questions to interrogate data, to generate the desired outcome [6]

36. Findings and Interpretations

On September 15th, representatives of the United States, Israel, Bahrain, and the United Arab Emirates, signed the Abraham Accords at the White House [109]. The Accords is a significant political document [109]. Oil-dependent Arab nations are now looking to Israeli innovation to diversify economies, and pursue a new path to prosperity [109].

Israel Investment Fund Group (IIFG) is Los Angeles-based Venture Capital and Private Equity firm invests in Israeli companies [109]. While every measure Israeli is a fertile investment environment, investment capital brings valuable ideas to reality [109]. Israel is a beacon of technological wealth in the Middle East, [109].

Water Companies

Baraka Nuclear Energy Plant

Noor Abu Dhabi

MIPCO

Shams 1

Masdar PV

Umm AL Nar

EWEC - EWEC partners with 16 plants for the supply of water and electricity across the UAE [102].

Fujita Water and Electricity

Generation Complex

ADQ

Al Shuweihat Power and Water Complex

Al Taweelah Power and Desalination Complex

37. Assessment of Project Plan

If necessary, The Minister of Economy and Finance review the appropriate project scale, project costs, and efficient alternatives of the projects exempted from the Preliminary Feasibility Study based on the methods of Preliminary Feasibility Study and reflect the result in the budget proposal and the establishment of a fund management plan. The objective of the Red Sea and Gulf of Aden Ecosystem Management Project for the Middle East and North Africa is to improve management in the marine resources in the Red Sea and the Gulf of Aden building on resources protection and incentive systems for communities and the harmonization of the knowledge base on marine resources among Regional Organization for the Conservation of the Environment of the Red Sea and the Gulf of Aden, or PERSGA member countries [31]. Vision 2030 is a plan for peace and overcoming dropped oil prices [53].

The feasibility study is intending to show the no-project results as well as the projected results if adoption takes place. The oil prices drop which occurred in international markets in 2014 has renewed concerns about the economic situation of Saudi Arabia [53]. Saudi Arabia is the biggest oil exporter in the world, and its oil production costs are among the cheapest in the world [53].

Saudi Gross Domestic Product (GDP), depends on oil export revenues [53]. The enormous wealth accumulated by the Royal family and by the Saudi elites who have privileged access to the oil rent does not make capitalist entrepreneurs. Dependency on the state has rendered a large segment of the Saudi population unwilling even to consider employment beyond the public sector [53].

Saudi Arabia is a pre-capitalist economy contrary to what Karl Max described as the process of primitive accumulation [53]. Geopolitical and contractual are imperative in the adoption process." Memorandum of Understanding," needs to be investigated. SOURCE Hydro panels are an expensive way of making water and a small volume of water produced is another determinant [118].

It's feasible to consider a "contingency resource [118]. Desalination continues to win on production as there is an unlimited source of water available from the sea. In the Middle East, thermal desalination remains the primary technology of choice, but membrane processes, for example reverse osmosis (RO), have evolved and in many parts of the world are even surpassing thermal processes [69]. It needs further investigation but what is a possibility is delivering the water to Jordan with the highest security and coming back with retail. Aquila's network of caravan trade was crucial in establishing motorized connections across the territories had been parts of the Ottoman Emon Empire.

Private and public are working to achieve the desired results. Co-sharing reduces the burden of elaborate costs and keeps the price affordable for the desalination plants in the Middle East showing the surplus. In the Middle East and North Africa, the region with the highest levels of forced

displacement, water resilience is key to long-term growth [31].

The report anticipates the world's cities, which receive migrate and are now 55% of the global population, will face an arising number of "day-zero" events- when taps run dry [31]. The report, Ebb and Flow provides the first-ever global assessment of the impact of water on migration ever assembled, covering half a billion people from 189 population census in 64 countries, from 189 censuses [31]. Yet it is often the poor cannot afford to leave [31].

Resolution Opportunities

Integrate state-of-the-art innovation, partnerships, private investing, co-sharing shipments, and knowledge for informed decision-making.

- Ecological Partnerships
- Import & Export Arrangements
- Proper Licensing
- Proper Disposition of discharge.
- Maintaining records.
- Achieving the highest quality water with maintain quality.
- Analyzing key performance.
- Cooperative Management for shared water resources.
- Expand on keeping the peace.

Conclusions

A thorough investigation is into financing mega projects is a priority. Companies that fund may purchase football leagues, ministries, International Monetary Fund, and have other partners that an investor must have knowledge of. Palestinian's may have a more difficult time due to the refugee camp.

Dubai has a large success rate they are federal verses average like Lebanon. The regulation will be evaluated in order to determine how registrations are processed. Dubai is a major jurisdiction for arbitration [119].

At the federal level, the legislator enacted a new arbitration law that mirrors international standards in the drive to make the United Arab Emirates a major hub for arbitration [119]. Strategic leadership plays a significant role [120]. Gathered data from one prominent federal institution of the United Arab Emirates and employed close-ended, self-administered questionnaires [120].

Institutional Excellence, Strategic Organizational Excellence, Strategic Organizational processes, Leading & Developing People, Culture & Value Systems, Distinct Competencies, and Effective Networking Competencies are the basic tactics that help a strategic leader top attain institutional excellence [120]. In this study new innovative technologies in infancy stage are tested such as Artificial Intelligence, Synthetic Intelligence and computational intelligence in order to increase quality water distribution. A different approach implementing the snowball theory as the literature available focus is to conserve water.

This study wants to produce an infinite source with retaining instead of losing not using less when needed instead ensuring proper security measures so is no water

loss. The technology is tested with the snowball effect in order to discover the largest percentages of water needed and detect when are issues in real-time. The methodology enables us to interpret participatory conceptual maps and identify problems, to develop practical and robust business road maps and strategic policy recommendations [73].

The process of using a mix of qualitative and quantitative methods to obtain some holistic result is not unproblematic, but it's also no longer unusual and is now an accepted methodological approach [73]. Snowball sampling presents several advantages compared to methods can fulfill similar objectives [22]. First it consists of an adaption of a sociometric approach to partial or incomplete networks, know neither the structure not the extent of the network.

In contrast, stoichiometry and social network analysis produce models and methods for complete networks, delaminated by specific borders. Nevertheless, when the object, these borders are opaque, and moving away delaminated networks can be valuable for drawing attention to complex or multiplex relationships, or for comparing the impact of relations from different groups [22]. Smart cities are melting pots of many complex and inter-dependent problems [6].

Think of the sculptures again the artist, not the clay is able to initiate activity but the kind of clay is being used affects the shape of what is being processed [26]. Empirical testing remains a central methodological theme, and from this critical realist would infer theories ought to be refutable [26]. The interests and resources constitute and "objective reality is bound to affect present future strategies" [26].

38. Recommendations

Future research is recommended to compare transporting containers from pipeline with trucks to water desalinating on-shore off-shore etc...Geopolitical and scorched earth policy is recommended for future research. Co-sharing and co-investing between private and public are evaluated and compared to alternatives, weak countries are not to be allies.

39. Recommendations for Future Research

The shorter the distance, the more balanced the power of the countries as have to coexist with one another [3]. However, the views of Han were subjective and biased, as Han's perspective was dependent on relationship with the region and own culture [3]. In qualitative primary research, review authors often decide to reveal own preexisting biases and discuss how those biases might have affected the review [30].

The example of Swift and Russia is evidence banking can change and delay or destroy a project. U.K. Prime Minister Boris Johnson called for Russia to be kicked off Swift while announcing London's package of sanctions on Russia's banks, and Czech President Milos Zeman also said Russia will be cut off from Swift [121]. Incorporating the novel scientific technology expands capability of acquiring accurate data. Volume 2 is recommended for future research in Artificial Intelligence, Synthetic Intelligence and computational.

This will allow for breaking news in real-time in order to detect disasters, crisis, and bidding opportunity and simulate infrastructure. It is recommended comparing journals of yesterday and today to discover patterns providing compliant and ethical practices. 2023 is when countries will review progress towards the Paris Agreement goals, including the goal of keeping global warming to well below 2.0C while pursuing efforts to limit it to 1.5C.

40. Chapter Summary

If the development and persistent dominance of the United States have taught us anything, it is technology and entrepreneurial spirit are the supreme source of geopolitical capital. Build on foundations, continue to work together and change to be ready for the future. Three main reports are Global Warming of 1.5C, Climate Change and Land, and Ocean and the Cryosphere in a changing climate.

41. List of Figures

According to the Economist, more than \$140 trillion dollars was transmitted across international borders in 2021, equal to 152% of global domestic product (GDP), 90% of those transfers went through SWIFT. Iran was removed from the system in 2012 and lost half of its oil export revenue and 30% of its foreign trade [121]. Players are asymmetric in powers [121].

The impact of the pandemic is testing economic and political developments in the Middle East and could further exacerbate regional instability and political fragility [122]. A global decline in foreign investment of at least 30% in 2020 compared to 2019 and the resulting demand and supply shocks, combined with lower oil prices and declining consumer confidence, as well as political instability exacerbated by the pandemic, could lead to a further decline in foreign investment in the Middle East and a further rise in unemployment in Middle Eastern countries or regions [122]. Saudis represented 94.6% of government sector employees in 2016 while represented 16.8% of private-sector employees [53].

42. Chapter Summary

One concern is giving appropriate credit, sharing data do not mean diminishing the originator [25]. Ensuring water is part of the broader humanitarian development policy discussion and plans is vital for stabilizing economies, rebuilding livelihoods, and forgoing a green, resilient, and inclusive future for [31]. To summarize, to increase productive employment in Iran, resolving the education conflict, the fertility conflict, and developing new energy technologies are three essential areas [122].

Prior to 1979, Iran's economy was one of the most developed economies in the Middle East, and since then, the country's economy has regressed under multiple influences [122]. Iran's oil exports were cut in 2018, which was a heavy economic blow to Iran, which relies on oil exports as the source of the country's economy, and the Iranian nation's economy fell into a continuous recession, which exacerbated the social burden and conflicts within a country [122]. The pandemic outbreak in 2020 increased the cost to the economy, both from negative demand and supply shocks, as well as from the plummeting price of oil [122].

See Appendix A-C for additional sample items.

Money moves the world because of Swift's Network. Operated by the Society for Worldwide Interbank Financial Telecommunication, this vast communications network facilitates international payments among thousands of banks and financial institutions worldwide [121]. The Swift network enables the transfer of money and securities among 11,000 member banks, via tens of millions of daily transactions [121].

43. Recommendations

This development of a broad epistemic community or "community of shared knowledge" "compasses the key shareholders in a given issue and geographical area, is key to achieving global aspirations such as the SDGs [73]. Developing methods for facilitating comparative analysis between different countries, local communities and socio-economic regions is to observe the proceedings toward reaching a global goal-made possible when epistemic communities are activated [73]. Banks must go from being disruptive and passive to developmental and active [9].

Epistemology is integrated to decipher fantasy from reality. The system has the capacity to produce photovoltaic energy of 350 kilowatt in 8 hours, so the excess electricity can be used for other purposes [14]. A pilot-scale facility in which a comprehensive evaluation of water quality and energy parameters can be done, facilitating a life cycle assessment and cost cycle assessment of a hybrid process, which will give essential information on the direction will be taken to develop robust low-cost water treatment hybrid systems to produce water [14].

State-of-the-art research, and garner national and international recognition for the author's research endeavors. To be successful in the water project it is imperative to have transparency and implement the time-series approach which implements data points in a sequence of time. A partner is desired as it is a playing field with disruptions and to be a dominant player a large force will need to be backing the project.

When searching for a partner these questions will be included. SOURCE water brings quality and sustainability together- no pipes, no grids, no electricity made possible with SOURCE Hydro panels [123]. Nothing is stranger the notion, held Russia is a newcomer to the Middle East [32].

Which projects are completed in the past?

Which location?

What terms did the contract have?

Has the work ever been in the gulf?

The Syrian military intervention which started in 2015 was a piece with this geopolitical strategy [32]. Financial Center launched a license for certified intelligence Artificial Intelligence (AI), and coding the license was launched in cooperation with the United Arab Emirates Artificial Intelligence Office to attract Artificial Pushing to remove Russia from SWIFT network was not part of the sanctions announced by the Biden Administration [121].

Table 19: Reference List

Minimum Number of References	168%
Number of Recent within 5 years References	99%
Publications Older than 5 Years.	1%
Founding theorists, empirical research, peer-reviewed, articles, journals.	99%
Images	17

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Acronyms

AI Ain Distribution Company, (AADC)

- Arab Fund for Economic and Social Development (AFESD)
- BlackRock Institutional Assets, Manhattan NY
- Crown Prince Muhammad bin Salman (MBS)
- Dubai Municipality, (DM)
- Dubai Nuclear Energy Committee, (DNEC)
- Emirates Global Aluminum, (EGA)
- Empresa General Valenciana del Agua (EGEVASA)
- Empresa Mixta Metropolitana (EMIMET)
- Entidad Publica de Saneamiento de Aguas Residuales (EPSAR)
- French Development Agency (AFD)
- Foreign Direct Investment (FDI)
- Global Water Intelligence (GWI)
- Gulf Cooperation Council (GCC)
- Joint Comprehensive Plan of Action (JCPOA)
- Kuwait National Petroleum Company (KNPC)
- Kuwait Oil Tanker Company
- Kuwait Petroleum International
- Renter State Theory (RST)
- Roads and Transport Authority, (RTA)
- Sea Water Reverse Osmosis (SWRO)
- The Middle East Desalination Research Center (MEDRC)
- The OPEL Fund for International Development (OFID)
- International Development Association- (IDA)
- International Groundwater Resources Assessment Centre, (IGRAC)
- Petrochemical Industries Company (PIC)
- Program, (UNDP)
- Reverse Osmosis (RO)
- The Gulf Cooperation Council (GCC)
- The Research Council (TRC)
- The World Bank- (WBG)
- United Arab Emirates, (UAE)

Partnerships

- Aby Dhabi Aviation
- Abu Dhabi Investment Authority- Sovereign Wealth Fund owned by the Emirate of Abu Dhabi-
- Abu Dhabi Aviation Company
- Advisory Board JP Morgan International Council
- Agriculture Bank of China
- Aguas de Calpe [19].
- Aigues de Sagunt [19].
- Aigues de Morella [19].
- Arab Times
- Asian Development
- Australian Research Council
- Bank
- Barclay's
- Barrons
- Biography
- Botswana Pula Fund
- Channel
- Chile Pension
- China Canada
- China Investment Corporation
- Croatia
- Delft
- Department of Biotechnology
- Disney
- Dhahran....Techno Valley Company

- Earth Observation Data Acquisition and Analysis Service (NEODAAS).
- Environmental Process Engineering Team
- Emirates
- Farmers from the Suwaig
- Fly Dubai
- Future Generations Fund
- FYI
- Geological Research Authority of Sudan (GRAS)
- GS Engineering & Construction
- Green and Safe Health Facility Development
- Hearst Corporation
- International Business Council
- Isreal
- Japanese Oil Refiner Cosmo Oil
- Jongno-gu
- Jodon
- King Abdullah University of Science and Technology
- Kingdom Natural Environment
- King Fahd University of Petroleum and Minerals
- King Fahd University of Petroleum and Minerals in Dhahran
- Kuwait Investment Authority
- Kuwait Investment Board
- Kuwait Investment Authority, Kuwait
- Kuwait Petroleum Company
- Libyan Investment Authority
- Lifetime
- LMN
- Massachusetts Institute of Technology
- Ministry of Education King Abdulaziz University DSR Jeddah Saudi Arabia
- Moderate Resolution Imaging Spectroradiometer (MODIS)
- Mubadala Investment
- National Human Rights Committee
- Ministry of Foreign Affairs
- Republic of Korea
- Research Council
- Sama Foreign Holdings, Saudi Arabia
- State General Reserve Fund, Oman
- The Netherlands
- The World Economic Forums
- Embassy of South Korea
- Energies de Portugal
- Faculty of Applied Sciences
- Member Society of Petroleum Engineers SPE
- Medium Resolution Imaging
- Ministry of Agricultural
- National Bank of Abu Dhabi
- Norway Government Pension
- Omani Agricultural Association
- Spectrometer (MERIS)
- SeaViewing Wide Field-of-View Sensor (SeaWiFS)
- SUE'S Lifetime Achievement Award
- Saudi Arabia Delft University
- Of Technology
- Saudi Aramco Austin Petrochemicals
- Sovereign Wealth Fund Institute
- Planning and Statistics Authority
- Reuse Center
- The Foreign Holdings of the Saudi Arabian Monetary Agency
- The General Reserve
- UN Department of Economic and Social Affairs

- United Nations Department of Economic and Social Affairs
- United Nations Development
- German Science Foundation
- Clusters of Excellence –CLiSAP, Ciccs, Exc2037
- Olympics
- The Digital Platform WIO
- The History
- The Hub 71 Fund
- Thuwal
- Qatar Investment Authority, Qatar
- The Kuwait Investment Authority
- Vice TV
- Vietnam Ministry
- Volkswagen
- Visible Infrared Imaging Radiometer Suite (VIIRS)
- Water Desalination
- Contributors
- Denmark, Netherlands, Norway, France, Israel, Finland, Croatia, Portugal, United Kingdom, Australia, Sweden, Emirates, and the United States.
- West Bank
- Wilayats

Funding

- Economic and Social Research Council UK
- Quatari Investment Fund QIA- Private Equity-Lender-Korean Engineering and Construction Company.
- Brookfield to the Canadian Multinational Investment Fund
- Brookfield Asset Management
- CIC China’s SWF China Investment Corporation
- Saudi Arabia Pension Fund

Appendix A: Key Literature Review Search Terms

Founded in 1890, Global Omnium has extensive expertise of the water sector and of digital transformation thanks to GoAigua’s smart solutions [19].

Drinking water solutions

- GoAigua Water Twin [19].
- Centralization of infrastructure monitoring and operations [19].
- Autonomy in designing and operating synoptic systems [19].

- Creation of operating rules and the development of advanced algorithms for complex process automation [19].
- GoAigua Flowsens
- Reduction of non-revenue water in over 2,500 DMAs [19].
- Monitoring of hydraulic performance through different types of analysis (water balance,MNF, trends, patterns, etc.) [19].
- Remote reading of household meters included in the water analysis [19].
- GoAigua Meter Insights
- Infrastructure management of over 700,000 remote meters [19].
- Automatic collection of readings, and communications and device management [19].
- Integration of the necessary algorithm to detect leakage patterns at household level [19].
- GoAigua Water Twin ACE
- Network management based on a hydraulic model updated in near-real time and connected to operational (SCADA,CMMS,etc) and commercial (Smart Metering) systems [19].
- Optimized decision-making for critical operations [19].
- Simulation of past and future states, maximizing future network efficiency [19].
- GoAigua WTP Twin
- Intelligent monitoring and operation of water treatment plants, including algorithms for automatic process optimization [19].
- GoAigua Billing
- Unification in a single platform of the billing, claims, collection, and customer service management processes [19].
- Integration with the customer management and remote meter-reading solution [19].
- GoAigua Work Orders
- Work order management and organization [19].
- Monitoring different operational and financial variables [19].
- GoAigua’s solutions were integrated into the utility’s main systems (ERP,CMMS,GIS,etc.), together with data obtained from its infrastructure thanks to GoAigua Smart Water Engine [19].

Appendix B: Study Instruments

November 30, 2021			
Dear	Ms.	Roessler	Weinert,
Thank you for writing to me about U.S. foreign policy. I appreciate the time you took to write, and I welcome the opportunity to respond.			
The challenges facing our world today demonstrate how interconnected we are and how the fates of all people are bound up together. The outbreak of a virus overseas can cause profound grief and suffer at home. Conflict a continent away can create unrest endangers our security. Economic downturns abroad can mean lost jobs and shuttered businesses in towns across America. Global climate change is already worsening hurricanes in the Gulf, floods in the heartland, and wildfires in the West. No country can solve these problems alone, and America cannot afford to be absent from the world stage. Investing in strengthening our leadership abroad is also an investment in bolstering our security and prosperity at home.			
As President, I am determined to repair our alliances, renew our leadership in international institutions, reclaim our credibility, and equip the American middle class to succeed in a global			

	<p>economy. I strongly believe our Nation is better positioned than any other to lead in the 21st century and to be the greatest force for good in the world. Under my Administration, American political and economic leadership will be rooted in our most cherished values: defending freedom, championing opportunity, upholding universal rights, respecting the rule of law, and treating every person with dignity.</p> <p>We have returned diplomacy to the center of our foreign policy and are committed to meeting today's global challenges from a position of strength, working in close cooperation with our allies and partners. I also want to be clear I will never hesitate to defend the American people or our vital interests, including through the use of force when necessary. We will always stand with our friends around the world to protect our values and to advance peace, security, and prosperity for all.</p> <p>I appreciate you sharing your views with me, and I will keep your perspective on these important issues in mind as we work to meet the challenges of our time. May God bless America, and may God protect our troops, our diplomats, our development experts, and all those serving in harm's way.</p> <p>Sincerely,</p> <p>Joe Biden</p>
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[113].

Appendix C

Statement- Published by EWEC and approved by the Abu Dhabi Department of Energy (DOE (Department of the Environment) [102]. Ottoman AL Ali, Chief Executive Officer of EWEC, said:" At the core of EWEC's business is sustainable, efficient water and electricity production as we continue to ensure supply security, and the Statement of Future Capacity Requirements Summary Report is a key reference for the likely future of water and electricity requirements. Combined with the addition of nuclear power to the grid, we can significantly reduce carbon emissions and make the UAE a beacon for sustainable, utility-scale water and energy production." [102].

Appendix D

Marubeni Corporation has Entered into a Power Purchase Agreement for Fujairah F3 Independent Power Project in the United Arab Emirates [124]. Marubeni Corporation (hereinafter, "Marubeni") is pleased to announce Marubeni has signed a Power Purchase Agreement (hereinafter," PPA) with Emirates Water and Electricity Company (hereinafter, "EWEC"), a leading company in the coordination, planning, and supply of water and electricity across the United Arab Emirates (hereinafter, "UAE), for the Fujairah F3 Independent Power Project, to be located in Qidfa, in the Emirate of Fujairah, in the UAE. The PPA is contracted for 25 years [124].

Mr.Othman AL Ali, Chief Executive Officer of EWEC, said:" The Fujairah F3 IPP project will apply one of the efficient and advanced CCGT technologies available in the region, producing more energy aligns with the UAE Energy Strategy 2050's CO2 emissions reduction targets [124]. Marveling has IPP projects assets with more than 12 5GW net generation capacity across 19 countries [124].

Appendix E

To provide secure, safe, and reliable supplies of water and electricity and to encourage private sector investment, in early 1998, ADWEA (now TAQA) embarked on the privatization of the water and power industry [125]. The privatization program will encourage private sector investment, create new employment opportunities, accelerate economic and social development [125]. This S3 Power Plant is operated by Shuweihit Asia O&M Company

which is a 55%: 45% joint venture by Korea Electric Power Corporation of Korea and Sumitomo Corporation of Japan respectfully [125].

Appendix F

Russia's Military Hit

Russia is an example of how unforeseen issues can have a devastating effect on the outcome of projects. The Task Force Team, has informed me of serious issues blocking travel to Russia. The unprovoked and unjustified attack by Russian military forces of Ukraine, the potential for harassment against U.S. citizen by Russian government security officials, the Embassy's limited ability to assist U.S. citizens in Russia, COVID-19 and related entry restrictions, terrorism, limited flights into and out of Russia, and the arbitrary enforcement of local law.

The Russian Embassy is limited in helping U.S. citizens, conditions, including transportation will change suddenly (Russian Task Force, 2022.p.1). U.S. citizens note some credit and debit cards may be declined as a result of sanctions imposed on Russian banks. U.S. citizens make an alternative plan for access to money and finances of remaining in Russia.

Numerous countries have closed airspace. Flights remain available, for example, through Middle East transit points on major airlines including Qatar Airways Gulf Air, Emirates and Etihad.

Enclosed email

U.S. Embassy Moscow, Russia

Appendix G

Branching Structure

Global Networking is headquartered in the US. The projects are contracted in Russia, Middle East and China. US applications are not accepted due to U.S. military biases and stolen work. The US military orders hits on scientists. The cases are documented and can be read online.

Siren De is a part of Global Networking and has awarded \$9 Trillion of investment dollars internationally from 2016-2022.

Global Networking specializes in Sovereign Wealth Funds, Platforms and Simulations. The primary focus is on engineers and investors. Siren De has only a limited number of clients due to the large investments required.

Siren De and Global Networking, are seeking funding from the Middle East to provide drinking water extracted from seawater [23]. To date there is a positive response of potential investment. The project will have three phases; the first phase will be a feasibility study, design for desalination plants, IoT and sensors and to look at alternative methods to desalinate water and distribute the drinking water either in bulk or through a local distribution system ; the second phase will be to build a prototype to determine if the preferred system meets the engineering criteria for cost and efficiency, the third phase will be to build a full-scale system in one of the countries on the Arabian peninsula [23].

To start this effort, we are seeking an architectural and engineering firm with a background in water purification to work with us on the first stage of the program. After selecting the architectural and engineering firm for the first phase of the project, we will complete the funding for the project from initial investor in Dubai or the UAE [23]. When the first two stages of this program have been completed successfully, we envision the system can be scaled to be placed anywhere there is a need for fresh water and accessibility to large quantities of salt water, such as the Red Sea [23].

Appendix H

Requested a feasibility study from SBM, Monaco. Zoi and Matt, IN disruptions of copying work and causing disruptions. Requesting A&E engineers to send a 1-2 page proposal with a letter of intent for the proposal. There should not be any cost in this and once approved payment can be made for the proposal.

Problem – The power of the pumps to process a given amount of water per hour and the size and power of the RO

system [23]. The pumps need to be scaled to handle approximately 2,000,000. gallons of water an hour [23]. There is not one single RO system will handle a number of them set up in a parallel to process the water [23].

SBM is requested to send a 2-page feasibility study. SBM is an A& E firm. SBM specializes in ocean exploration for oil and gas. Request for saltwater conversion to freshwater [23].

Appendix I

Hi Diane,

Thank you for coming back to us. We are pleased to partner with your business for unlimited opportunities in Saudi Arabia.

First step is that, if you have started the registration process with any of the PIF big companies in Saudi Arabia (NEOM, The Red Sea, Qiddiya or Amaala) please provide us with the email ID that you used to register. We will check with these clients to confirm your registration status or obtain your vendor number. Once we obtain your registration status, we will advise you if any further action is required. We won't charge you for this search.

After the search we will then discuss with you if you wish for us to do anything further then you will have to sign our agreement form and we will take it from there.

Kind Regards,
Gezina

(Gezina, 2022) [126].

The investors contracting future projects assist with water distribution as it brings more money in for tourism. Projects will increase your annual revenue turnover significantly [127]. The upcoming projects are,

Project	Approximate Cost
Neom	\$500 Billion
Qiddiya	\$8 Billion
The red sea development project	\$80 Billion
Amaala	\$40 Billion
Diriyah gate	\$50 Billion
Saudi housing program	\$1.5 Million Homes
Al ula project	\$20 Billion
Riyadh metro	\$23 Billion
Jedda metro	\$60 Billion
Jabal omar	\$4.6 Billion
Al widyan	\$3 Billion
King salman park	\$5 Billion
Jedda tower	\$1.5 Billion
Makkah public transport	\$3 Billion
Aseer development project	\$13 Billion

[121].

Appendix J

NEOM

Neom is a future mega-city 33 times the size of New York City [127]. The city is being built on clean energy sources which can be seen at <https://www.neon.com/en-us> [127].

Appendix K

QIDDIYA

Qiddiya is a mega entertainment development project including Sports & Wellness: Parks & Attractions: Motion & Mobility; and Arts & Culture, family-friendly theme parks, sports arena, concert and entertainment venues, racetracks for motorsport, Website link: Discover/Qiddiya [127].

Appendix L

The Red Sea Development Project

The Red Sea Development Project will be an exquisite destination built around an archipelago of more than 90 pristine islands, dramatic landscapes that include volcanoes, and canyons [127]. The development project includes state of the art airport, 48 hotels built on more than 22 islands, 2300 villas and condo units, and supporting infrastructure [127].

Appendix M

AMAALA

AMAALA will offer approximately 3,000 hotel rooms in around 25 hotels as well as 200 high-end retail establishments, fine, dining, wellness, and recreational facilities, set across three unique communities: Triple Bay, The Coastal Development and The Island [127].

Appendix N

Diriyah Gate

Appendix O

Saudi Housing Program

Appendix P

Al Ula Project

Appendix Q

Riyadh Metro

Appendix R

Jedda Metro

Appendix S

Jabal Omar

Appendix T

Al Widyan

Appendix U

King Salman Park

Appendix V

Jedda Metro

Appendix W

Jabal Omar

Appendix X

Al Widyan

Appendix Y

King Salman Park

Appendix Z

Jedda Tower

Appendix A

Jabal Omar

Appendix B

Al Widyan

Appendix C

King Salmon Park

Appendix D

Jedda Tower

Appendix E

Makkah Public Transport

Appendix F

Aseer Development Project