WATER RESOURCES PRESERVATION IN PAKISTAN: (A CASE STUDY OF MANGLA DAM)

Submitted by:

Iram Abid

Faculty of Social Sciences

Department of Pakistan Studies

National University of Modern Languages

Islamabad

March 2021

WATER RESOURCES PRESERVATION IN PAKISTAN: (A CASE STUDY OF MANGLA DAM)

By

Iram Abid

M.Phil. Pakistan Studies National University of Modern Languages, 2021

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF PHILOSOPHY

In

PAKISTAN STUDIES

To

FACULTY OF SOCIAL SCIENCES

NATIONAL UNIVERSITY OF MODERN LANGUAGES, ISLAMABAD

Department of Pakistan Studies

March 2021

NATIONAL UNIVERSITY OF MODERN LANGUAGES

DEPARTMENT OF PAKSITAN STUDIES

FACULTY OF SOCIAL SCIENCES

THESIS/DISSERTATION AND DEFENSE APPROVAL FORM

The undersigned certify that they have read the following thesis, examined the defense, are satisfied with the overall exam performance, and recommend the thesis to the Faculty of Social Sciences for acceptance:

Thesis/ Dissertation Title:

WATER RESOURCES PRESERVATION IN PAKISTAN: (A CASE STUDY OF MANGLA DAM)

Submitted By: Iram Abid **Registration #: 1431 M.Phil/PS/F17**

Name of the Student

Master of Philosophy

Pakistan Studies

Syed Hamid Mehmood Bukhari _____

Name of Research Supervisor Signature of Research Supervisor

Prof Dr. Shahid Siddiqui _____

Name of Dean (FSS) Signature of Dean (FSS)

Prof. Dr. Muhammad Safeer Awan _____

Name of Pro-Rector Academics Signature of Pro-Rector Academics

_____

Date

CANDIDATE DECLARATION FORM

(Declaration Form to be filled in by Candidate at the time of Submission of Thesis to the Supervisor for Internal and External Evaluation. Follow this pattern strictly, and also let the dotted lines appear on the page)

I **Iram Abid**

Daughterof: **Ch. Abid Hussain**

Registration # **1431 Mphil/PS/F17**

Discipline **Pakistan Studies**

Candidate of **M.Phil Pakistan Studies** at the National University of Modern Languages do hereby declare that the thesis (Title): **WATER RESOURCES PRESERVATION IN PAKISTAN :(A CASE STUDY OF MANGLA DAM)**

Submitted by me in partial fulfillment of M.Phil./ PhD degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

I also understand that if evidence of plagiarism is found in my thesis/dissertation at any stage, even after the award of a degree, the work may be cancelled and the degree revoked.

_____
Date

Signature of Candidate: _____
Iram Abid
Name of Candidate

Dedication

To my Beloved & Respected

Parents, Caring **Husband** and

Loving **Children**

Acknowledgement

All praises for the **All Mighty ALLAH** who is most Beneficent and the Most Merciful. I would like to give my thankfulness to my supervisor **Hamid Mehmood Bhukari** who due to his kind support, motivation, experience and knowledge made me complete this research thesis. I also thank to my parents, husband and children for their sincere and continuous support during my studies. The completion of the thesis would have had not been possible without the motivation they were sourcing out. I would further extend my gratitude to my lovely sister, Amna Abid for her availability as required, moreover, I thank my cousin, Mr. Taimoor Akbar, Lecturer International Relations, MUST for his support and guidance where and when required.

Iram Abid
M.Phil Pakistan Studies

TABLE OF CONTENTS

ABSTRACT

Water is one of the greatest bounties of God, says in the Holy Quran "and we made from water everything living". Water is one of the most essentials for livings. Its scarcity has developed a number of management issues in many parts of the world. Pakistan once water surplus country has approached the water scarce country. Agriculture is the prime user of water and Pakistan economy is Agriculture based. In this research, the researcher has worked on the need of natural resources preservation in Pakistan, followed by the impact of Global Warming and Climatic Changes within Pakistan and the strategies to implement SDGs in Pakistan. Moreover the research has addressed the case study of Mangla Dam and provision of clean energy to the indigenous people of Azad Jammu and Kashmir. This study is qualitative research which has attempted to have a detailed discussion on the role of Pakistan and how effective has Pakistan been in the implementation of these goals dealing with the international institutions such as the IMF, the World Bank and the UN for Millennium Development Goals (MDGs) followed by the post 2015 agenda and now the Sustainable Development Goals (SDGs) for water preservation in Pakistan especially in Mangla Dam.Water caused large-scale conflicts between provinces and nations. The confusion exists for allocation and sharing of resources between provinces and the federal government. Distribution of water among provinces is to be resolved by the federal government, whereas the allocation of water for irrigation and agriculture purposes falls in provincial domains. These problems have increased due to repeated Indian insolence of the Indus Basin Water Treaty. Hence, comprehensive water management policy remains one of the most important challenges faced by the government. Government has to fix priority areas for national water policy to deal with the water issue properly. The researcher has used secondary sources in the research, such as journals, books, articles, newspapers, documentaries and magazines. The study found wide gaps between the local people's needs, desires and expectations and the government policies and possible solutions; between people's practices and historical and proposed institutions; and between local people's and policy-makers' understanding of the issues. Water supply projects need to result in improved water services, but with solutions tailor-made to the local culture, together with local actors, rather than being imposed on them. Pakistan is running short of good quality water for irrigation as well as domestic use.

Keywords: MDGs, SDGs, Water Scarcity, Water Management, Preservation, Resources, Mangla Dam

CHAPTER 1

Water Preservation in Pakistan

1.1 Introduction

Water is the greatest blessing from God, as it says in the Holy Qur'an: "We created all living things out of water." It has been a valuable resource for centuries, and has been used in various civilizations to develop, manage and sustain water resources. Throughout history, water scarcity forced people to migrate on a large scale, or even a long period of severe water scarcity wiped out modern civilizations such as the Mohinjodaro, Harrappa and Hakara valleys. The Thar Desert adopts a traditional system of collecting ancient water, stone walls, reservoirs, dams, water wells, and reservoirs that absorb rainwater to stay in the desert.[1]

Historical information on water management for policy making; Demand for modern supply and water management must be addressed. Water efficiency has increased recently due to population growth. Using the PEDA model, Saber worked on the population's impact on water and agriculture. Indeed, even though the supply chain has failed to meet the growing demand in many areas, Brooks and Gulk have supported global thinking. Researchers are developing new ways to reduce modern water consumption. This declaration was developed and implemented in many parts of the world.

Alternatives must be carefully studied to find possible solutions to water management problems. As the grave digger and others pointed to all the sub-reservoirs of water resources; inadequate management and maintenance of infrastructure has destroyed the infrastructure. Pollution of money, water and energy; Pollution threatens human health and safety"

Lack of fresh water is a problem in some parts of the world. Disputes have arisen over water disputes and disease has spread in many regions on the globe. The demand for water is increasing all over the world and it is a big challenge in current scenario. Worldwide water consumption increased six times between 1900 and 1995. It is growing with the increasing demand for agriculture, industry and housing. Globally, water is available in large quantities, but it is unevenly distributed in many countries in the region.

In 1997, the United Nations examined the freshwater resources. A 3rd of the world's population suffers from water scarcity, with more than 20 percent of them having access to water. This rapid

[1] Water and Power Development Authority. Archived from the original on 10 June 2012

population growth, socio-economic growth, and industrial demand are likely to increase. By 2025, industrial needs are expected to double, and by 2035, there will be three billion people under pressure.

Clean water is the most important resource for any human civilization. The global economy depends on these resources due to the dire need for water in all aspects of life. Dams and human resources have been a source of clean and healthy water. It is said that 50,000 large dams (over 15 feet high) used worldwide. Due to the limited energy resources; Pakistan is amongst the driest countries; The agri-sector is the backbone of the Pakistani economy.

However, weirs have traditionally been designed as a renewable resource. The useful life decreases slightly as the river again receives water from the well, which affects its storage capacity. 6. The average annual loss of underground storage areas is around 1%, but the base is between 0 and 2.3. Cover the various uses of the land. As well as other geological conditions; For example, Wild Beach, located on the Caledonian River in South Africa, has lost a major source of water 86% of its original reserves since its inception in 1973, the first since then. This is the third loss in seven years.[2]

In Pakistan, since construction began in 1967, The Tarbela depot lost 30% of its total capacity in 1974, and Bahar lost about 43% of its last capacity in 23 years. Pakistan's army chief Nasrullah Khan first revealed in 2003 that the project was set up by Benny and Associates (a group led by his colleague Jeffrey Bonnie) in London and Mangla. The dam was built by contractors. This is the American Construction Organization; Companies in South San Francisco in partnership with JF Atkinson. The Mangla Dam project in northern Pakistan is considered one of the greatest construction of the twentieth century. Construction began in 1957.

Pakistan's water comes from many sources that continue to be suppressed, including rainfall, ice runoff, rivers and groundwater. While about 60 percent of the rain comes from the rainy season, the vast majority still spread in winter (December to March) weather patterns. Due to Pakistan's diversity, rainfall varies greatly from region to region. Most of the country is dry or arid, and the two miles [3 km] of Pakistan receive less than 250 inches [250 mm] of rain a year and droughts are common in many places. In Sindh and Balochistan, severe drought conditions are caused by a lack of rain during the heavy winter rains.

An analysis of the United Nations Development Program suggests that ;a 30- to 50-year trend indicates that rainfall has decreased in Balochistan and coastal areas (albeit a moderate

[2] Muir Wood, Sir Alan (1990). Biographical Memoirs of Fellows of the Royal Society: Geoffrey Morse Binnie

increase in some parts of the country). The melting point of the ice has also been affected by climate change, resulting in greater risk of flooding and fluctuations in excess water cycles. Ice flow and snow runoff also contribute between 35 to 40 per cent to 25 to 35 per cent to the flow of the Indus Basin, respectively, making its contribution to Pakistan's energy cycle.

The Indus River system contains most of Pakistan's underground resources and groundwater resources. In 1951, the available water above each capita was 5,260 cubic meters per person. By 2016, that had dropped to about 1,000m³, a trend that is expected to continue. Groundwater extraction rates are also related. Pakistan currently discharges approximately 61 cubic kilometers of water from its seawater each year, far exceeding the ongoing limit. As a result, Pakistan is generally considered to be both under water pressure (high water availability related to availability) and water shortages (low water availability per capita). The situation is exacerbated by Pakistan's water use rate - the fourth-highest in the world - while the average energy consumption (per unit of water used per unit of GDP) is the highest in the world. This suggests that the Pakistani economy is more watery than any other[3].

To combat these levels of water stress and scarcity, the Pakistani Government has recently done much to address the current shortage of dams and storage facilities in the country. While the measures to rehabilitate the masses by the government to build new dams are irrational, limited storage capacity has also contributed to the increase in water shortages. Pakistan has a minimum limit of 30 days, which not only limits the amount of water available during the dry season, but also contributes to erosion during the rainy season, as there are few overflowing dams.[4]

Pakistan's high water use comes from its agricultural economy; directly or indirectly in the agricultural sector, which makes up 26 percent of their total domestic production. Pakistani farmers cultivate 21.2 million hectares of land, of which more than 80 percent are irrigated. Farming is dominated by four water-intensive crops: wheat, sugarcane, rice and cotton. As a result, 93 percent (global average is close to 70 percent). While Pakistan’s irrigation system is large, outdated and poorly maintained; In particular, much of Pakistan's agriculture depends on flood irrigation methods, which include flood fields using canals or tube sources. Many of the

[3] Two Years of Mangla Dam Project. Trade and Industry: The International Monthly Economic Journal of Pakistan

[4] Water Dams: Mangla , Water & Power Development Authority.this project included Mr Iqbal Hussein and some other workers who did this work with much hardworking.

roads that carry water from the rivers for this irrigation system have not been properly lined up, resulting in some access to up to 40 percent.

The Mangla project has increased the amount of water that can be used to irrigate the Jhelum River and its surroundings. One of her tasks was to extract electricity from the irrigation system in the last power plant. The river and its surroundings are naturally beautiful. Due to the lack of proper rehabilitation plans and appropriate soil conservation measures, some methods have been developed in reservoirs belonging to the river system.; As mentioned, floods caused by heavy rains cause soil to expand beyond the natural course of the river.

Global warming is increasing the global and regional energy cycle, and floods are becoming more common in many areas. However, the extent of each climate change is unclear. Therefore, it is important for Pakistan to assess the effects of climate change and the intensity of river flow over time. As a result, globalization in the 1990's helped many people connect to the network, raise awareness, and ensure that global challenges such as investing in a sustainable future are major challenges to human development. These SDGs reflect the global response. As community has to achieve maximum and balanced progress in the lives of the people; the goals focus on reducing and alleviating poverty in every way. Finally, it is an international collaboration on development strategies.

They set minimum standards for poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women. The International Monetary Fund and the World Bank review progress in achieving the Sustainable Development Goals in their annual International Monitoring Report.[5]

Through the Poverty Strategy Papers, the International Monetary Fund and the World Bank led a comprehensive poverty reduction program across the country. The goal of the Poverty Strategy Papers is to provide a significant link between national public initiatives, donor support, and the development outcomes needed to reach the United Nations. The Poverty Reduction Strategy Papers (PRSPs) help manage money and bank lending policies and credit benefits the Highly Effective Poor Countries (HIPC) initiative.

The participation of financial institutions has been violated by the weakening of external institutions such as civil society. The pressure to achieve SDGs has focused on IMF efforts to help countries assess small fiscal outcomes that enhance their policy and foreign aid efforts. In this

[5] Pakistan Water Gateway: Mangla Dam (PDF). IUCN Pakistan .

regard, the IMF encourages countries to develop and analyze other frameworks for achieving sustainable development goals, and these programs support their poverty reduction strategies.

In this research, the researcher has worked on the need of natural resources preservation in Pakistan, followed by the impact of Global Warming and Climatic Changes within Pakistan and the strategies to implement SDGs in Pakistan. Moreover the research has addressed the case study of Mangla Dam and provision of clean energy to the indigenous people of Azad Jammu and Kashmir.

1.2 Statement of the Problem:

Water is the most important thing in life. Scarcity has caused many administrative problems in many parts of the world. Pakistan; where the rest of the country is close to water scarcity. The differences in policies, population growth, political and statistical failure, deteriorating water quality and climate change, especially the recent rise in global warming, have posed many challenges to water management.

It also challenged the country's economy. Agriculture is the main consumer of water and the Pakistani economy is agriculture. The study illustrates the role and success of Pakistan in working with international organizations such as the International Monetary Fund and the World Bank and the United Nations Millennium Development Goals. SDG targets in Pakistan, especially in the Mangla Dam.

1.3 Importance of the Study

In the context of the Stockholm Declaration, the Rio Conference and the recent Paris Agreement, the importance of conservation of natural resources has become an important part of the global social agenda. This is evidenced by the adoption of the United Nations, the World Bank and the International Monetary Fund for the purpose of developing and maintaining existing resources, especially through the MDGs and the SDGs. Pakistan is a member of all international organizations, and most importantly, Pakistan will be negatively affected by climate change and global warming in the top 10 countries. Therefore, it is important for Pakistan to address its environmental issues and share its natural resources with the sustainable development goals[6].

Water is an important source of human survival. It has been a valuable resource for centuries, and has been used in various civilizations to develop, manage and sustain water resources. The

[6] Butt, M. J., Waqas, A., and Mahmood, R. 2010, The combined effect of Vegetation and Soil Erosion in the Water Resource Management. *Water Resource Management*. 24(13)

Thar Desert adopts a traditional system of collecting ancient water, stone walls, reservoirs, dams, water wells, and reservoirs that absorb rainwater to stay in the desert.

Historical information on water management for policy making; Demand for modern supply and water management must be addressed. Water efficiency has increased recently due to population growth. At the same time, the supply of these valuable assets is very low; The waters created a complete conflict between the provinces and regions; There is confusion which still distributes water among the rulers, while irrigation and agricultural water are available in the area; These problems were exacerbated by the repeated insults of the Indians in the Indus Water Convention; To effectively address the water crisis, the government must change the most important areas of national water policy[7].

1.4 Aims and Objectives:

I. 1. To highlight the steps taken by Pakistan for preservation of natural resources and the protection of the environmental/climatic concerns

II. 2. To explain the changing climate/ environment around the globe with emphasis on Pakistan

3. To finding a solution into successfully achieving and implanting the UN Sustainable Development Goals (SDGs) within Pakistan

1.5 Research Questions:

Q1.What is need of natural resources preservation in Pakistan?

Q2.What is the impact of global warming and climatic changes within Pakistan and how can Pakistan overcome the climatic concerns by the implementation of the SDGs?"

Q3. How can the case study of Mangla Dam and the use of land belonging to indigenous people of Azad Kashmir help in achieving affordable and clean energy and water resources?"

1.6 Limitations:

Qualitative study, overviewing role of Sustainable Development Goals (SDGs) in Pakistan;with the collaboration of the Government of Pakistan with international institutions and protection of

[7] Terminski, Bogumil Development-Induced Displacement and Resettlement: Theoretical Frameworks and Current Challenges , Indiana University, 2013

all environmental and economic concerns within Pakistan especially with the case of Mangla dam .

1.7 Research Methodology:

In Pakistan, this research prevents us from solving the problem and due to uncertainty, not a single method of action can work to get the exact results; The study covers a wide range of environmental, administrative, technical and political issues; The purpose of this multifaceted approach is to lay out a complete and complete picture; The research approach is designed to predict a better understanding of policy matters and the decision-making process

The researcher has looked at the deep links between the factors that change the concept of water management or the factors that cause growth, and uses an explanatory approach to present the past and the present. The researcher relied on published resources, government documents, publications of various national and international organizations, various investigative journals, and newspaper articles. Other sources and comments are accompanied by expert advice and interviews.

1.8 Literature Review:

From the Summit to the Solution: Raj M. Desai, Hiroshi Katu, Homi Kharas, John W-MacArthur's Initial Strategies for Achieving Development Goals; Provides guidance, including the challenge of integrating oceans, rural areas, fast-growing cities, and data systems, including satellite-generated satellite information; It also focuses on restoring governance, as described in detail. Challenges include how society can meet the SDG challenge as a developed economy like Canada can reach its goals at home and abroad; [8]What needs to be done to promote new ways of working globally and how to develop global health and development financial institutions?

Atlas Sustainable Development Goals 2018- Global Development Sector (World Bank Atlas) From Postcard - June 27, 2018 By World Bank; Atlas of Sustainable Development Goals 2018 is a visual guide on how to address the current 17 challenges and measurement issues; available; Development Goals Atlas includes maps and data mapping, highlighted primarily in the World Development Indicators (WDI) - the World Bank's compilation of comparative international statistics on global development and human health [10]

[8] An Introduction to the Human Development and Capability Approach: Freedom and Agency'

[10] The Political Economy of the MDGs: Retrospect and Prospect for the World's Biggest Promise

Development Priorities- A Cost-Benefit Analysis of the United Nations Sustainable Development Goals By Bjorn Lomborg-

In this book, experts provide a critical look at the United Nations' sustainable development agenda, also known as global goals, which will affect the flow of $ 2.5 trillion in development assistance until 2030; Economists The famous, led by Björn Lomborg, determine what it will cost to achieve the various goals and achieve them in social, environmental and economic benefits; There are 169 goals, covering every area of international development - from health to education and sanitation to conflict; Together, these analyzes make it a priority to identify the most effective development investments; A panel of Nobel laureates economists has set a set of 19 massive development goals, and have argued that this will achieve up to four times the global aid budget

Andreas Lauenfeld, International Economic Law (OUP): Lauenfield commonly dealt with the international economic law system to cover a variety of materials while maintaining depth and sophistication; In addition to the traditional focus of international economic law on trade and WTO law, investment is included in bilateral investment treaties and the work of the International Center for Settlement of Investment Disputes (ICSID), monetary relations through the International Monetary Fund (IMF), the book also devotes chapters to environmental law, sanctions Economic, Competition and Intellectual Property Law, as well as about the activities of the World Bank and the United Nations

Accelerating lessons for implementing the SDGs from Pakistan 2016-2017 by Leadership for Environment and Development (LEAD) Pakistan; This report provides analysis and assessment of efforts in Pakistan to achieve the SDGs since the official adoption of the agenda in September 2015; An overview of the MDGs and sub-Pakistani performance reasons point to the late resettlement and ownership of the MDG agenda at the subnational level, insufficient financial resources, ineffective monitoring systems, weak accountability systems, and natural disasters were some bottlenecks; This made development efforts geared towards achieving the Millennium Development Goals largely unsuccessful; The results of this research indicate that although this time the government created SDG support units at the federal and provincial levels and established the SDG Secretariat within Parliament, but given the broader scope of the SDGs, more active participation is needed

[11] The Millennium Development Goals Report 2008

In addition, there is a need for action by relevant government agencies to ensure that the policies initiated in Pakistan reflect the relationship between economic, social and environmental factors for sustainable development. Since much of the implementation of the SDG agenda will take place at the local and subnational levels, efforts must be made to ensure that local governments are not seen as merely implementing the agenda but as actual catalysts of change, and there is a need to enhance the financial allocation of local governments. The report's findings also show that, unlike the situation with the MDGs, the government is making good efforts to put the SDG agenda high on the front. This is done in partnership with international development partners and civil society organizations to work together to raise the profile of the sustainable development goals through a number of awareness events, workshops and consultations. The report's findings also indicate that there will be some serious challenges related to data collection and monitoring.

Data for many of the SDGs are not available either at the district or local level and Pakistan will not be able to adopt the entire global framework, but will have to develop a local version that better reflects the facts of Pakistan's national data. The report concludes with the following main recommendations on how to address the challenges posed by the implementation of the SDG agenda

Mangla Reservoir, Pakistan (50 years of operation); John Ackers and Michael Height

In the first issue, May 1967, the National Large Dams Commission, now of the British Dams Association, has a brief outline of the Mangla Dam, Pakistan: 'These dams were implemented in March 1967. Dam was planned. At present; The Park, which covers an area of260 sq km, consists of three large dams. The original plans include the provision of 12-meter-long dams for debris removal. In 2000, the Pakistani government decided to scrap food rations to save floodwaters that would be drained regularly. Clean water is the most important resource for any human civilization. The global economy depends on these resources due to the dire need for water in all aspects of life. Dams and human resources have been a source of clean and healthy water. It is said that 50,000 large dams (over 15 feet high) used worldwide. Due to the limited energy resources; Pakistan is amongst the driest countries; The agri-sector is the backbone of the Pakistani economy.

However, weirs have traditionally been designed as a renewable resource. The useful life decreases slightly as the river again receives water from the well, which affects its storage capacity. 6. The average annual loss of underground storage areas is around 1%, but the base is between 0 and 2.3. Cover the various uses of the land. As well as other geological conditions; For

example, Wild Beach, located on the Caledonian River in South Africa, has lost a major source of water 86% of its original reserves since its inception in 1973, the first since then. This is the third loss in seven years.

In Pakistan, since construction began in 1967, The Tarbela depot lost 30% of its total capacity in 1974, and Bahar lost about 43% of its last capacity in 23 years. Pakistan's army chief Nasrullah Khan first revealed in 2003 that the project was set up by Benny and Associates (a group led by his colleague Jeffrey Bonnie) in London and Mangla. The dam was built by contractors. This is the American Construction Organization; Companies in South San Francisco in partnership with JF Atkinson. The Mangla Dam project in northern Pakistan is considered one of the greatest monuments of the twentieth century. Research and development began in 1957.

The Mangla project has increased the amount of water that can be used to irrigate the Jhelum River and its surroundings. One of her tasks was to extract electricity from the irrigation system in the last power plant. The river and its surroundings are naturally beautiful. Due to the lack of proper rehabilitation plans and appropriate soil conservation measures, some methods have been developed in reservoirs belonging to the river system.; As mentioned, floods caused by heavy rains cause soil to expand beyond the natural course of the river.[12]

New Delhi: The Diamer Bhasha Dam (DBD)

It has been built on Gilgit-Baltistan in Pakistan-occupied Kashmir is once again showing signs of depression. Pakistan is doing. In the November 2017 decision not to return the project to China under the China-Pakistan Economic Corridor (CPEC). The most significant challenge is the lack of funds to estimate 14 billion fake construction cost over the years. Since its inception, the project as part of WAPDA Water Vision 2025 on the Indus has been delayed due to a number of material issues.

1.10. Conclusion

Following the United Nations Conference on Sustainable Development (REO + 20), in June 2012, UN member states developed the Sustainable Development Goals (SDGs) to achieve the developing goals. SDGs have been at the center of development and financing policy since 2015.

The goal of sustainable development is to strike a balance between economic, environmental and social needs, so that the next generation can thrive; Sustainable development means economic growth and environmental protection, mutually reinforcing each other; Sustainable development

[12] *United Nations Millennium Development Goals . Un.org. 20 May 2008.*

involves an integrated, long-term approach to developing and achieving a healthy community by addressing economic, environmental and social issues, while avoiding overuse of vital natural resources

Environmental concerns and exploitation of natural resources are a major problem for Pakistan. Recent efforts, which have strengthened countries to be concerned about such issues, include the issue of the Ricoh Deck Mine and the construction of the Youth Dam. These concerns are also reflected in the Millennium Development Goal 7 policy, which identifies economic insurance and its definition 9, which is intended to address sustainable development, and aims to provide access to safe drinking water. Is related to But due to poor governance and abuse, Pakistan has failed to achieve the Millennium Development Goals despite spending on republican austerity. 4.06 trillion

Among other things, Pakistan focuses on the United Nations' next commitment, announces the SDGs, focuses on 6 issues of clean water and sanitation, 7 on clean energy at affordable prices. Goal 11 focuses on sustainable cities and communities, sustainable use and sustainable production, and goal 13 focuses on natural disasters. As in the case of the eighth Millennium Development Goal, the Sustainable Development Goals use the same language in their seventeenth goal, focusing on global cooperation for development, which puts the IMF and the World Bank in the picture.

1.11 Overview

Economic Survey 2007-08 to 2012-13, project recent developments in water sector. PES 2007-08 shows the poor agricultural performance, growing at 1.5 percent against the target 4.8 in 2007-08. Fast track mega canals are discussed as priority stance. In the Indus River Water Treaty; The watersheds covered the historical vision of the treaty. In facing the challenges of water management in Pakistan, one of the main challenges has been strengthening India's position on water division. As per author, although India has started diplomatic talks to not only buy time for diplomatic talks, it still needs to do research to uncover the water crisis. And treatment must be used.

Several articles of the treaty are mentioned. Indo-Pakistani governments released the report. In his book "As a Catalyst for Water Peace, Water Management and Conflict Resolution," by Rutledge, New York resolves disputes through water treaties. Water management policies for managing water can be used as a solution to conflict. Evidence was collected from the highlands of the Middle East and Lesotho in Africa. These bilateral agreements are analyzed, progress made,

and the final outcome of the analysis. The complementarity of operations and the equivalence of results are distinguished from their impact on achieving security, peace and water stability.

In the "International Conflict over Water Resources in Himalayan Asia" have discussed the dilemma of fresh water in different Himalayan Asian countries. Rapid population growth, industrialization and improvement in living standards have resulted in a conspicuous reduction of water in these countries. This has intensified conflicts over trans boundary rivers waters. An infrastructure engineer has discussed water resource management, principles, cases and regulations in his work. It puts forward technical, financial, legal, political and administrative matters in today's complex water management.

An infrastructure engineer has discussed water resource management, principles, cases and regulations in his work. It puts forward technical, financial, legal, political and administrative matters in today's complex water management. In this literature review, different matters regarding Pakistan's water management need to be considered with local environment so that the case studies discussed [13]

In "Sustainable Management of Water Resources: An Integrated Approach" published by Edward Elgar Publishing, have provided insight of integrated water resource management practices that support the sustainable development through a series of international case studies and theoretical frameworks. On the other hand, water supplies are insufficient. So this 300 million Muslims need to develop an understanding on Islamic perspective on proposed water management policies. This perspective can also benefit the policy makers in water management in Pakistan with about 190 million Muslim population interested Islamic practices.

In "Water Policy in the Nederland: it develops to an integral water management. The different contributions in the book show that how social and technical sciences play role in making policy for different challenging aspects related to water management. Different developing countries having deltaic problems may benefit these experiences. Multiple water management issues in Pakistan also include downstream kotri deltaic degradation. Unique solutions adopted by Netherland can help Pakistan for framing compatible policy for maintaining her delta.[14]

---

[13] *Water level in Mangla Dam reaches to record height of 1237.15 feet . Radio Pakistan. 1 September 2013.*

[14] Daniel C. Taylor, Carl E. Taylor, Jesse O. Taylor, ''Empowerment on an Unstable Planet: From Seeds of Human Energy to a Scale of Global Change'' (New York: Oxford University Press, 2012) pp. 25–33.

Support policymakers and researchers working on water resources on a large scale. However, Calder did not analyze water management in different scenarios at different levels. Meanwhile, water scarcity has not been discussed. In "Water Resources of Pakistan", In the IWMI research report established two fundamental factors for low productivity in the province of Sindh, i.e. lower Indus plain; shortage of irrigation water in some canals and poor land quality in others. Reallocation of water across the canal commands can improve productivity in short terms. However, for long term sustained productivity, effective management along with additional investment in land and water is inevitable.

In their article "Ground Water Levels Susceptibility to Degradation in Lahore Metropolitan" have established that the ground water condition has worsened in Lahore. is used to calculate the depression zone, which is accepted for planning and management because of its capacity to easily link different disciplines like resource management and natural hazards, etc.

During the first decades of its existence, Pakistan is now a country suffering from water scarcity with an output of 1050 cubic meters per year. IWMI studied water scarcity in 118 countries between 1990 and 2025. Rain system failure causes droughts. The demand for water is increasing for agriculture, housing and industry. New technologies should be used as a priority in government programs to protect water resources. He added that the area must grow by 29% to meet the nutritional and nutritional needs of the world since 1995. However, great progress has been made by Reducing 2.4 billion People not receiving adequate health care until 2015.
This region connects the mountainous climate of Pakistan with the mountainous climate of the region. Rainfall is associated with altitude. In mountainous climates, heavy rainfall occurs in the northern mountains, while western mountains have the lowest rainfall. With the exception of the coastal areas, the low climatic zone includes a complete river basin. [15]

1.11.1 The relationship between international environmental law and foreign economic law

International economic law is covering very vast area by work; fast-growing and consistently changing. It seeks to control all aspects of international economic relations between countries in some way. International economic law emerged after World War II as part of a separate legal

[15] Mangla Dam becomes largest water reservoir of Pakistan . Daily Times (Pakistan). 26 August 2013.

system. Previously, the law on foreign economic activity (such as the protection of foreign investment) was in its infancy and was considered part of international law. The Bretton Woods Institute was founded in 1944 by the World Bank and the International Monetary Fund.

After the establishment of the Bretton Woods Centers, the 1948 Revenue and Trade Agreement abolished effective trade security, abolished taxes, promoted international trade, and restored global economic health in the aftermath of a global health crisis; The purpose was established. However, in 1995 the GATT was replaced by the powerful WTO (World Trade Organization).[16]

1.11.2 Sources of National Economic Law

The sources of international economic law are also the sources of international law, as stated in Article 38 of the ICJ Constitution. This document is often presented as the most authoritative list of international legal sources.

1) agreement;

2) International rituals.

3) General rules of law.

4) Judicial decisions issued by international courts

The courts and the international lawyers who have been trained as advocacy means setting the rules. These agreements play an important role in the development of foreign economic policies, as is the case in other countries. The state government acquires the character of legal rights when a particular act meets the criteria of distribution, uniformity, and consent, and is punished by the states because they acted in accordance with the law.

1.11.3 Archeology from the State

The word ancient means "ancient", especially in reference to the ancient civilization and the prehistoric period of other human civilizations. The term "government" usually means "a large group of countries or states under joint authority or a large business organization owned or controlled by one person or group." . From the beginning, the main purpose of this law was to maintain peace and order in the society. Although their predecessors began to organize themselves

[16] *MANGLA DAM RAISING PROJECT (PDF). Pakistan Electric Power Company. Archived from the original (PDF) on 4 March 2011.*

as societies based on specific principles governing the activities of their community members, their main function was to maintain order in the community.

Since its inception, the social justice system has improved civilization by establishing dispute resolution mechanisms, maintaining discipline and involving third parties. This has prevented ordinary people from taking justice into their own hands and avenging crimes committed by other members of society.

Since its inception, the legal order of civilization has been developed with the participation of third parties, with the establishment of restoration order and dispute resolution mechanisms. This has prevented community members from respecting the law and retaliating against other members of the community for making false claims. People who are dissatisfied with this basic purpose of the law have used it in social engineering to promote civilization and justice.

For a better life, prosperity and happiness for older generations. As a result, some people are forced to leave their community to connect and work with other communities. The level of interaction with science and technology has improved. The new travel routes make it easier for researchers and adventurers to travel to remote areas.

With the wealth gained, the imperial rulers undertook various projects in various fields of human activity, from palaces, palaces, buildings, roads and bridges to the promotion of art and culture. However, when these realms start to lose weight, implants usually shrink with force.

1.11.4 From Empires to Modern Nation States

When these states were formed, they also saw whether the world beyond its borders was an opportunity to create wealth and improve the lives of its people. In the missions of these countries, various missions were commissioned to determine the direction of east, west and south behind the vast ocean waters. Explorers and adventurers traveling from these European lands to unknown lands must return to remote lands to collect the foreign goods used by these rulers during their missions. . He urged the people of the country. Do not start large missions abroad. This is the beginning of the second phase of globalization and empire formation by world governments.

1.11.5 Impact of the Colonial period and Decolonization

During the colonial period, international law began to transform itself into the law that governs relations between states. The same is true for the war period between various capitalist states and another between capitalist states and new independent states. The outbreak of World

War II in Europe dealt a severe blow to the spirit of the League of Nations. Furthermore, during and before hostility spread to Europe, colonial powers elsewhere fought for independence. Just as the countries of the former European empires demanded the independence of the rulers of their empire, the colonial countries began to assert their independence from this law

1.11.6 The Aspirations of Newly Independent States

To seek assistance in competing for equality and benefiting from the GATT government; It is rebuilding the entire international economic system for international justice. This is a goal worthy of the international community as stipulated in the United Nations Charter.

As a result, the period of secession in the 1950's and 1960's was marked by conflicts between developed and developing countries on the economic and political fronts. When the newly independent nations of Asia and Africa began to cooperate with Latin American countries, he proposed the reorganization of international economic relations and the policy of achieving economic equality between states.[17]

1.11.7 The Idea of Sustainable Economic Growth

In an attempt to define the nature of the legal relationship between a host country and a foreign company at the United Nations in the 1960's and 1970's, an independent country regulates the foreign companies that operate there. An attempt was made to define its jurisdiction. They have not attempted to control the continued exploitation of natural resources by the countries themselves. With the exception of UN Resolution 1962, designed to approve UNESCO's request for local regulations to protect natural resources, it has been firmly stated that it must be recognized internationally. Development policies In addition to the various instruments of international economic law, from the 1960's to the 1980's, many human rights instruments sought to establish and promote the right of states and nations to freely access their natural resources.

The Charter of the United Nations (the "Global Constitution") gives the United Nations full responsibility for the formulation of the policies for which it is designed:

1) Achieving a high quality life for the peoples of the world;

---

[17] Daniel C. Taylor, Carl E. Taylor, Jesse O. Taylor, ''Empowerment on an Unstable Planet: From Seeds of Human Energy to a Scale of Global Change'' (New York: Oxford University Press, 2012) pp. 25–33.

2) Solve the problems of the economic role.

As a result, the United Nations has worked from the outset for the economic development of developing countries. Not only did it react to economic events, but it also actively participated in the formulation of policies aimed at addressing the underdeveloped problem.

The basis of international economic law

International economic law is based on traditional principles of international law, such as:

1) Pacta sunt servanda

2) Freedom;

3) Independent equality.

4) Wages;

5) Economic independence.

Even for modern and advanced principles such as:

1) The task of cooperation;

2) Permanent independence of natural resources.

3) The priority of developing countries in general and least developed countries in particular.

The sources of international economic law are the sources of international law as generally defined in article 38 of the constitution of the IGC: to which contradictions arise and apply:

1) Public or private international agreements establish laws expressly recognized by competing countries.

2) Proof of international standards generally accepted as law.

3) General principles of law recognized by civilized countries.

4) Includes articles on judicial and judicial decisions and on the promotion of higher education teaching in different countries, because the subsidiary has an effective role in defining legal norms

Economic Sovereignty

When governments functioned as independent and sovereign political institutions, they realized that the most important characteristic of a nation's independence is economic independence. Without it, political law would not be complete. The claims of economic independence mean that they control the economic activities of the corporate entities and organizations in the state, whether they are citizens or foreigners. For various historical reasons, many countries inherited a post-inheritance situation wherein foreign individuals or companies enjoy special privileges or discuss the country's economic activities.

Sovereignty over Natural Resources (PSNR)

In order to describe, develop and eliminate these resources, the import of foreign capital required for these purposes must be in accordance with laws and regulations that the people and nations independently deem necessary or desirable in the following matters. :

Permission

Prohibition

As a result, it was decided to clarify the rights of governments to confiscate and nationalize the assets of a foreign company. Inevitably, the private sector, domestic and foreign, will be compensated for these issues in accordance with the existing laws and regulations of the country, in accordance with international governance and laws.

In any case, they have seized the opportunity, despite obstacles that are hard to imagine. "It has lost its national capacity to act. But, once an agreement has been reached between the independent states and other partners, the dispute must be resolved through stability or international mediation. These commitments must be made in good faith with independent states or Execute free foreign investment agreements

Stockholm Declaration

In 1972, the United Nations held its first conference on the human environment in Stockholm, the capital of Sweden, with the solemn declaration known as the 1972 Stockholm Declaration. Each country calls for implementing regulations to protect the country's wildlife and natural resources, and make recommendations on national population policies, as most people put

pressure. The increase in the Stockholm Declaration paved the way for a number of environmental policies in the 113 participating countries. In addition, the principles contained in the declaration were developed and subsequently discussed by the United Nations Environment Program (UNEP) and then specific protocols to protect the environment.[18]

Labels:

i. air pollution

ii. The environment

Iii Global Politics

iv diseases of the nation

vi. Approach through soil pollution

Vii United Nations

Viii pollution

Threads:

I . Environmental knowledge

ii. Environmental policy

iii. Change in lanscape

iv. Rio Conference

v. Summit

In 1972, Stockholm, Sweden hosted the first United Nations Conference on the Human Environment, which was attended by 113 delegates and Heads of State (Olivia Palm from Sweden and Indira Gandhi from India). The conference raised awareness of race, which is rarely seen in the global environment. The Stockholm Conference strengthened the environment through international consensus and led to the formation of the United Nations Environment Program. The conference and its implications recognized the global nature of the environment and the theory of the relationship between development and the environment. It has been said that the only way to

[18] UNEP. "Stockholm 1972 - Declaration of the United Nations Conference on the Human Environment - United Nations Environment Programme (UNEP)". *www.unep.org*.

unite the nations of the world is to confront their common enemy. Environmental disaster could be the enemy.

Since the 1972 conference, several international environmental agreements have been signed, one of which has been ratified by Canada. This includes the 1978 Great Lakes Water Quality Convention. This is the kind of international cooperation that the Rio Conference requires in 1992, but on a grand scale.

In 1983, the United Nations General Assembly established the International Commission on Environment and Development, chaired by Norwegian Prime Minister Guru Harlem Brand. The aim was to link environmental issues to the findings of the 1980 Trademarks Report on North-South relations. The Borneoland Report, published in 1987 as Our Common Future, notes that the economy has now reached an environmental compromise and has used the term "sustainable development" to ensure this. To be sure, economic growth does not threaten future potential. Enjoy the fruits of the earth.

To mark the 20th anniversary of the Stockholm Conference on the Human Environment, 178 countries, NGOs and other partners (about 30,000) gathered in Rio de Janeiro to discuss the global environment. Media representatives, including members of the media, are key to implementing the policy. The conference agreed on concrete measures to reconcile economic activities to help the planet ensure a stable future for all people. This is the first United Nations conference on environment and development.

It provides guidance, including the challenge of integrating oceans, rural areas, fast-growing cities, and data systems, including satellite-generated satellite information; It also focuses on restoring governance, as described in detail. Atlas of Sustainable Development Goals 2018 is a visual guide on how to address the current 17 challenges and measurement issues; available; Development Goals Atlas includes maps and data mapping, highlighted primarily in the World Development Indicators (WDI) - the World Bank's compilation of comparative international statistics on global development and human health .

A panel of Nobel laureates economists has set a set of 19 massive development goals, and have argued that this will achieve up to four times the global aid budget. In addition to the traditional focus of international economic law on trade and WTO law, investment is included in bilateral investment treaties and the work of the International Center for Settlement of Investment Disputes (ICSID), monetary relations through the International Monetary Fund (IMF), the book also

devotes chapters to environmental law, sanctions Economic, Competition and Intellectual Property Law, as well as about the activities of the World Bank and the United Nations

An overview of the MDGs and sub-Pakistani performance reasons point to the late resettlement and ownership of the MDG agenda at the subnational level, insufficient financial resources, ineffective monitoring systems, weak accountability systems, and natural disasters were some bottlenecks; This made development efforts geared towards achieving the Millennium Development Goals largely unsuccessful; The results of this research indicate that although this time the government created SDG support units at the federal and provincial levels and established the SDG Secretariat within Parliament, but given the broader scope of the SDGs, more active participation is needed.

B. Canada Prepares for the Summit

Canada is preparing for the ground meeting in cooperation with the Canadian National Secretariat for the Environment, the Canadian Ministry of Foreign Affairs and International Trade and the Canadian International Development Agency (CIDA). These organizations received from a wide range of participants, including environment, development, business, industry, labor, churches, universities, women, citizens and youth, as well as all levels of government.

The United Nations Conference on Environment and Development chaired the Canadian International Committee, chaired by the Ministry of Environment, with 20 delegates and federal agencies. The group was responsible for coordinating the federal government's preparations for the United Nations Conference on Environment and Development and pre-action meetings. Under Agenda 21, groups were formed to address each of the 21 issues, the interest of the Ministry of Foreign Affairs in shaping Canada's position and the desired outcome.

The United Nations Conference on Environment and Development focused on environmental issues, including air, soil and water conservation. Conservation of biological diversity, forests and natural resources; Sound management of waste and technology; This is a unique opportunity for world leaders to stop human activities that harm our planet and tackle global pollution, crises, the

environment, drought and deserts through soil degradation and ozone layer depletion. With existence, the level rises and the risk of extinction of plants and animals increases.[19]

There are also concerns that have created sharp inequalities between the North and the South: growth patterns stress the environment, poverty in developing countries, economic growth, consumer instability, demographic pressures, and globalization.

Climate change agreement review

The ultimate goal of this agreement and the other relevant legal tools that the parties can choose at this conference is to comply with the provisions of this Convention by stabilizing the concentration of greenhouse gases in the atmosphere and preventing such dangerous human activities. Is. This level must be achieved through climate change to achieve a natural ecosystem so as not to threaten food production and the potential for sustainable economic growth.

The basic principles of this agreement state that the developed world must play a key role in combating climate change and its negative effects. By reducing greenhouse gas emissions from 1990 to 2000, Canada could take the lead in fulfilling its obligations under the agreement. It should be noted that the principles of the agreement state: "Any policy or action aimed at addressing climate change must use the lowest possible cost to reduce global interest. The costs are possible."

Discussions on the situation began in February 1991 in May 1992 and a framework agreement was reached for more than 130 countries. The main elements of this agreement are as follows: New and additional financial resources to achieve the objectives of the agreement; Encouraging technology transfer in developed countries; Administrative framework for the international community to work with the international government on climate change to address the issue of long-term climate change.

Unfortunately, the climate change agreement lacked the goals and timelines for achieving CO2 stability that many industrialized countries wanted. This includes instructions and target dates “as soon as possible”. The United States has called for a delay in setting a date or level, saying

---

[19] Kabeer, Naila. 2003. *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A Handbook for Policy-Makers and Other Stakeholders*. Commonwealth Secretariat.

countries that support the program do not have credible programs. The U.S. government has also said it has already committed to an action plan to reduce greenhouse gas emissions by 7-10 percent, otherwise it will happen in 2000.

The United States and President Bush have been widely criticized for failing to curb global warming. According to some reports, the US position on the causes of global warming is still unknown. "The effects of carbon dioxide, CFCs and other fossil fuels on the atmosphere are still evident," said an American author.

Saudi Arabia and other oil-producing countries strongly oppose the use of fossil fuels, saying they will work hard to maintain their status as the world's main source of energy.

Millennium Development Goals (MDGs)

These are the eight global development goals for 2015 that were adopted after the adoption of the United Nations Millennium Declaration in 2000 after the United Nations Millennium Summit. Currently, all 191 UN member states and at least 22 international organizations are committed to achieving the Millennium Development Goals in 2015:

1. The eradication of poverty and extreme poverty

2. Access to comprehensive public education

Gender (gender equality and women's empowerment

Reducing child mortality

Mothers - improve maternal health

6. Combating HIV / AIDS, malaria and other diseases

7. Ensure environmental sustainability

Establishing international cooperation for development

The Millennium Development Goals are an initiative of the United Nations.

Critics of the Millennium Development Goals complained about the analysis and justification of set goals, problems measuring targets, and unsustainable progress. Although developed countries increased their aid to the Millennium Development Goals during the challenge, more than half of them had paid their debts, and the rest went to natural disasters.

Raj M. Desai, Hiroshi Katu, Homi Kharas, John W-MacArthur's Initial Strategies for Achieving Development Goals; Provides guidance, including the challenge of integrating oceans, rural areas, fast-growing cities, and data systems, including satellite-generated satellite information;

From Postcard - June 27, 2018 By World Bank; Atlas of Sustainable Development Goals 2018 is a visual guide on how to address the current 17 challenges and measurement issues; available; Development Goals Atlas includes maps and data mapping, highlighted primarily in the World Development Indicators (WDI) - the World Bank's compilation of comparative international statistics on global development and human health .

In this book, experts provide a critical look at the United Nations' sustainable development agenda, also known as global goals, which will affect the flow of $ 2.5 trillion in development assistance until 2030; Economists The famous, led by Björn Lomborg, determine what it will cost to achieve the various goals and achieve them in social, environmental and economic benefits; There are 169 goals, covering every area of international development - from health to education and sanitation to conflict; Together, these analyzes make it a priority to identify the most effective development investments;

Lauenfield commonly dealt with the international economic law system to cover a variety of materials while maintaining depth and sophistication; In addition to the traditional focus of international economic law on trade and WTO law, investment is included in bilateral investment treaties and the work of the International Center for Settlement of Investment Disputes (ICSID), monetary relations through the International Monetary Fund (IMF), the book also devotes chapters to environmental law, sanctions Economic, Competition and Intellectual Property Law, as well as about the activities of the World Bank and the United Nations[20],[21]

---

[20] MDGs and the humanitarian-development divide . ODI Briefing Paper. Overseas Development Institute. Retrieved 7 July 2011.

[21] ibid

A report of 2016-2017 by Leadership for Environment and Development (LEAD) Pakistan; This report provides analysis and assessment of efforts in Pakistan to achieve the SDGs since the official adoption of the agenda in September 2015; An overview of the MDGs and sub-Pakistani performance reasons point to the late resettlement and ownership of the MDGs agenda at the subnational level, insufficient financial resources, ineffective monitoring systems, weak accountability systems, and natural disasters were some bottlenecks; This made development efforts geared towards achieving the Millennium Development Goals largely unsuccessful; The results of this research indicate that although this time the government created SDG support units at the federal and provincial levels.

Millennium Summit

The Brahmi Report laid the foundation for the goals of peace and security. However, the Millennium Summit Declaration was part of the beginning of the Millennium Development Goals. Other ideas came from the Organization for Economic Cooperation and Development (OECD), the World Bank and the International Monetary Fund, Adam Figueroa. In the 1990s, UN-led conferences focused on children's rights, nutrition, women's and human rights. The Organization for Economic Cooperation and Development (OECD) has criticized major donors for reducing the level of ODA.

Human capital, infrastructure and human rights

The Millennium Development Goals focus on three areas: human capital, infrastructure and human rights (social, economic and political), with the aim of raising the standard of living. Humanitarian goals include nutrition, medical care (including infant mortality, HIV / AIDS, tuberculosis, malaria, and reproductive health) and education. The infrastructure goals include access to clean water, energy, and modern information and communication technology. Increase of agricultural crops in a sustainable way. Human rights goals include promoting women's empowerment, reducing violence, increasing political voice, ensuring equitable access to public services, and protecting property rights. Its purpose was to enhance the human capacity of the individual and "create productive means of life." The Millennium Development Goals (MDGs) focus on adapting each country's policies to the country's needs. Therefore, most of the policy proposals are general.

CHAPTER 2

Global Partnership for the Implementation of Sustainable Development

After 2015, are being addressed by consensus in September 2015, at a higher level than ever before. In addition, partnerships at the national and vertical (thematic or objective) levels are essential to ensure implementation. This footnote provides an overview of what should be captured in the Ideal Sustainable Development (GPSD) Global Partnership, and look at:

Partnership for Supporting and Promoting Development The idea of global partnership is not new: Millennium Development Goal 8 also focused on this area and was unique in MDGs that focus on success rather than results. Progress has also been made in these areas, particularly in the areas of financing that enhance the flow of credit and aid. Debt forgiveness is a big success story, the debt service ratio has now reached its fourth level in 20001. A clear understanding of the problem; the result of clear words, and a strong sense of the consequences of not paying attention to it. Strong and timely commitment to the High Level Poor Countries initiative, which involves many activists at the World Bank and develops the country's governments; As a strong accountability framework from donors and operational projects that include regular reporting.

At the same time, the support flow of the OECD DAC GNI dropped from 0.22 in 2000 to their GNI in 2010 to 0.32. Aid is reduced in the least developed countries (PMS) and in absolute terms. The least developed countries reached OECD GNI 0.09 in 2013. Progress has also been made in these areas, particularly in the areas of financing that enhance the flow of credit and aid. Debt forgiveness is a big success story, the debt service ratio has now reached its fourth level in 20001. - A clear understanding of the problem, the result of clear words.

Although developments in Doha have failed for most of the MDG period, trade conditions in developing countries have also improved, thanks to the reduction of major tariff barriers. (Regulations such as non-tariff barriers have gradually become barriers to exports, especially to the least developed countries, and this remains an important issue in the WTO.) Developing countries now trade 43 of the world's trade. [22]

[22] The Political Economy of the MDGs: Retrospect and Prospect for the World's Biggest Promise

Much of this is Southern trade. As far as technology is concerned, access to electronic information and communication technology has grown exponentially, although it is not clear if OSM 8 was a major factor. For example, mobile phone partnerships have grown from 80% to 80% today at the turn of the century, and this has led to a rapid increase in Internet access as 3G and 4G networks have seen moderate growth. . It is also common in cities (at least in urban areas).

Only the role of the private sector in obtaining medicines is discussed. Neither the Eighth Phase nor the Millennium Development Goals focused on their role in productive sectors and prosperity, such as agriculture, manufacturing and energy. Although the technology has been identified in specific areas of medicine and information and communication technology, it is not covered in other areas such as energy, agriculture or development. As an important place; In other sectors, such as remittances and payments, taxes and irregularities, grants and debt relief, as well as financial support for resource development.

The seventh part of the Millennium Development Goals (on environmental protection) failed to say anything about the level of consumption of developed countries, and this apparently means that sustainability is very important for developing countries, and it is on a cell. Is fundamental and it reflects a view that does not recognize the focus on sustainability concerns.

The context for a Global Partnership for Sustainable Development

As a result, many actors share the responsibility of introducing a new global partnership through various programs. In discussing the new global partnership, five major directions are of particular importance.

1- Geography of Poverty and Insecurity;

Millennium Development Goal

In the future there will be a high concentration of poverty in Africa, the scenario shows that by 2030 89-69% of the poor will live there and if the world goes to poverty, progress will be needed. . In many countries, instead of focusing on success stories in large-scale emerging economies (in the time of the MDGs), many are fragile or involved. In addition, protecting countries from poverty is a growing challenge. [23]

---

[23] Goal :: Ensure Environmental Sustainability . Mdg Monitor. Retrieved 18 October 2012.

2- Global Inequality Change.

During the Millennium Development Goals, the level of turmoil in countries has decreased, while the incomes of most people in developing countries have actually increased significantly, even with declining average incomes in developed countries.

3- Continuation of the negative stability process.

Greenhouse gas emissions increased by 46 units from 1990 to 2012, and the world is almost unaware of the opportunity to halve global warming. The world is beyond biodiversity and beyond the planetary boundaries protected by the global nitrogen era, and the region is at risk of ocean acidification, deforestation, other changes in land use, and the availability of fresh water. These trends will be further strengthened as per capita deficit consumption continues to rise in developed countries, and the world's largest "global middle class" population is growing. The lack of different types and business relationships between different consumer groups will become increasingly controversial, as the protection of the “green space” will be essential for the worlds’ poor population.

Globalization is under increasing pressure.

Although the world has not entered into tariff barriers since the 2008 financial crisis as it did in the 1930’s, G20 members called for 1,500 measures of "secret security" (tariffs or quotas in hard-to-find areas). Since in 2009 it would not be so. For the first time in 30 years, trade is growing much slower than GDP. Growth is slowing in most developed economies and weakening in the more developed world as globalization slows as middle-income people face higher levels of unemployment and lower wages. There is a danger that globalization will slow down if political support is insufficient in both developing and emerging economies.

However, the Millennium Development Goals were a period of multifaceted and collective action that became increasingly difficult to meet with global challenges. The Copenhagen Climate Summit in 2009, the Rio Summit on Sustainable Development in 2012 and the Doha Period have made little progress for nearly a decade and a half. Hopes for powerful, action-oriented groups in the G8 and G20 have raised growing concerns about the dangers of a "G-Zero" world, where no country is ready to show true global leadership. . Many developing countries are frustrated by the failure of OECD countries to deliver on their promises, while emerging economies often miss out on global leadership opportunities. The G-20 did not emerge as a global engine of action when expected at the leadership level in 2009. At the same time, social

action on global issues is more important than ever. Above all, it is agreed that the new goals will be global, which means that the new partnership, as an alternative, will be seen as a means of reviving global governance in a world of new forces and common challenges.

The Role of the United Nations

A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. These principles are essential at the global, regional, national and regional levels based on the principles and values of partnership, shared vision and shared goals that keep people and the planet at the center. Achieving the Sustainable Development Goals requires immediate action to mobilize, rehabilitate, and implement the multi-billion dollar transformation power in private resources. These include sustainable energy, infrastructure, transportation, and information and communication technology. The public sector needs to set clear guidelines. Review and monitor frameworks, regulations and incentive structures that can attract investment and promote sustainable development. National oversight mechanisms, such as oversight bodies and legislative oversight functions, should be strengthened.

Facts and Figures

- Government development assistance in 2017 reached 6 146.6 billion in 2017. This represents a decrease of 0.6 decrease compared to 2016.
- developing Advanced imports from developing countries enter customs-exempt countries
- Exports of debt to developing countries remained stable at around 3 per cent.
- Africa The number of Internet users in Africa has nearly doubled in the last four years.
- The world’s 30 youngest teens are digital citizens who have been online for at least five years.
- More than four billion people do not use the Internet and 90% of them come from developed countries.

Goal 17 Targets

Finance

17.1 Strengthen the mobilization of domestic resources, including through international aid to developing countries, strengthening the national capacity to collect taxes and other revenues.

17.2 Developed countries must fully implement ODA commitments, including most developed countries committing to meet the 0.7% ODA / GNI target for developing countries and 0.15-0.20. GNP for ODA Providers in Least Developed Countries Consider Targeting for Provision of at least Advanced 0.20

17.3. Developing; additional funding from various sources for developing countries

17.4 Achieve long-term debt sustainability in developing countries through coordinated policies aimed at debt financing, debt regulation and debt regulation, if necessary, and identifying external debt of HIPC countries to repay debt. To reduce

17.5 Implementation of Investment Promotion Systems for Least Developed Countries[24],[25]

Technology

17.6 Promoting North-South and South-South regional and international cooperation and triangular cooperation in the fields of science, technology and innovation and access to it, and exchange of knowledge within the framework of mutual agreements. Through the International Technology Facilitation Mechanism

17.7 Development, transfer, dissemination and dissemination of appropriate environmental technologies to developing countries under appropriate conditions under mutually agreed upon conditions.

[24] Pakistan Water Gateway: Mangla Dam" (PDF). *IUCN Pakistan*. Archived from the original (PDF) on 22 October 2013.
[25] Alvi, Hamid. "Two Years of Mangla Dam Project." *Trade and Industry: The International Monthly Economic Journal of Pakistan*. Spec. issue on Mangla Dam VIII.5 (1964): 633.

17.8 Fully strengthen the technology bank and capacity building mechanisms in science, technology and innovation for the least developed countries by 2017 and use powerful technologies, especially information and communication technology.

Building skills

17.9 Increase international assistance for effective and meaningful capacity building in developed countries to support national programs to implement all development objectives through North-South and South-South cooperation and the Triangle.

Business

17.10 Promote a law-free, non-discriminatory and equitable multilateral trading system within the framework of the WTO, including the outcome of negotiations under the Doha Development Plan.

17.11 Significant increase in exports of developing countries, especially doubling the share of least developed countries in world exports by 2020

17.12 Customs-free access and permanent market access for LDCs is in line with WTO resolutions, ensuring that resource rules can be applied to imports from LDCs. They are right. And helps facilitate market access

Systemic problems

Administrative and political unity

17.13 Promoting the stability of the global macro-economy, including policy coordination and coordination

17.14 Improving policy coherence for sustainable development

17.15 Respect each country's political and leadership environment to formulate and implement policies to eradicate poverty and sustainable development

Multi-stakeholder partnerships

17.16 "Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries"

17.17 "Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships"

Data, monitoring and accountability

17.18 Enhance capacity-building support for developing countries by 2020, including least developed countries and island small developing countries, to ensure the provision of high-quality, timely and reliable data. Income, gender, age, race, ethnic origin, immigration status, disability, geographic location, and other relevant characteristics[26]

The Role of the World Bank

The World Bank launches a series of sustainable development safeguards to raise awareness of the important role of water and marine resources. The ban raises at least $ 3 billion and provides an opportunity for investors to voice their support for the Sustainable Development Goals (SDGs) related to water, wastewater and marine conservation. The bond series, which supports the World Bank's strategic focus on conserving and sustainably; using fresh and saltwater resources, provides part of the Bank's issuance strategy to engage investors around the Development Goals;

Goal 6 (Drinking Water and Wastewater) and Goal 14 (Life Underwater) follow a series of transitions earlier this year that focus on gender, health and nutrition.

Kristalina Georgieva, World Bank Chief Executive Officer, said: "Seventy percent of the planet's surface is water, yet degraded ocean resources and lack of access to safe water negatively affect the lives of hundreds of millions of people. Through this bond series we will remind investors and the markets that we must protect our water and

[26] Deneulin, Séverine; Shahani, Lila (2009). *An introduction to the human development and capability approach freedom and agency*. Sterling, Virginia Ottawa, Ontario: Earthscan International Development Research Centre. ISBN 978-1844078066.

marine resources today for the generations of tomorrow. As the world's leading issuer of sustainable development bonds, we also offer an excellent opportunity to invest capital towards global public goods."

The World Bank focuses on conservation and sustainable use of water through two lenses and will look to harness the support of investors that prioritize these areas: first, sustainable water management to ensure access to safe water and water security; and second, sustainable use of ocean and marine resources. The bond series is framed by World Water Week currently underway, and the "Our Ocean" conference in Bali in October.

Arunma Oteh, World Bank Vice President and Treasurer, said: "World Bank Sustainable Development Bonds are an opportunity for investors to invest in safe and liquid product as they become more engaged in the purpose of their investment. They are an important contributor in the journey towards sustainable capital markets. Following bonds issued earlier this year to raise awareness for gender and health and nutrition, we are pleased to launch this new initiative and engage with investors around another critical topic – clean water and healthy oceans, lifelines for people and economies the world over."

The World Bank is the largest multilateral source of water funding in developing countries, with a water investment of 37 billion. This includes 170 projects worth .7 26.7 billion in the World Bank's water portfolio, as well as in the water sector worth 10 10 billion.

The World Bank is also working with countries to support sustainable fishing and fishing, make the coastline more resilient, create coastal and marine protected areas, and promote robust management of marine and coastal resources to reduce pollution. ده. This "blue economy" approach supports economic growth, social integration, and the preservation or growth of the economy while ensuring environmental stability in the seas and coastal areas. The World Bank's active blue economy portfolio is 7. 7.3 billion.[27]

World Bank bonds are related to stability bonds issued by the International Capital Markets Association (ICMA). The World Bank is also a member of the Executive Committee on Green Bond Principles. One of the World Bank's priorities for investment market engagement is to

[27] Ibid

establish strategic partnerships with investors to raise awareness of the role of private sector financing in growth.

About the World Bank

The World Bank (World Bank for Reconstruction and Development) is an international organization, rated on an AAA / AAA (Moody / S&P) basis. Founded in 1944, it is a full member of the World Bank Group and operates as an international development cooperative owned by 189 countries. The World Bank provides loans, guarantees, risk management products, and advisory services to middle-income and other trusted countries to support sustainable development goals, reduce extreme poverty, and promote shared well-being. The World Bank has been providing sustainable development bonds for 70 years to fund programs and activities in global capital markets that have had a positive impact.

Achieving the SDGs

The SDGs are more exciting than the Millennium Development Goals and appeal to the idea that development requires economic, social and environmental protection. Achieving the Sustainable Development Goals requires action to address a range of issues at the national and international level. At the national level, countries need a stable economic environment and strong and sustainable development. Efforts should focus on building a solid foundation for increasing investor confidence and strengthening public funding to maintain debt stability, while protecting effective and forward-looking government spending targets and infrastructure investments. Debt consolidation, maintaining debt stability and deepening and promoting financial markets while preserving financial stability. Governments will also define key development goals and sustainable funding sources.[28]

In a fast-paced world, with a high risk of espionage, national development also needs the support of economic stimuli. Globally, economic and financial stability, trade stability and financial flows are critical factors for development efforts in developing countries. Countries should cooperate in the formulation of mutual economic policies to ensure that financial regulations in major financial institutions are properly formulated, mutually agreed upon and

[28] Ibid

strictly enforced. This international cooperation is also essential to build a strong global financial safety net that gives confidence in the ability to meet volatile liquidity needs.

The International Monetary Fund and the Sustainable Development Goals

The International Monetary Fund remains committed to the international partnership for sustainable development. Following the Sustainable Development Goals, the International Monetary Fund has launched a series of initiatives to increase its assistance to member countries in key ways. In particular, the International Monetary Fund:

Extending low-aid financing to low-income developing countries, including: (1) a 50-50 increase in access criteria and restrictions on financial assistance provided by the International Monetary Fund. (2) 0% permanent interest on IMF loans under Fast Credit Factory; (3) greater access to emergency financial resources for countries affected by major natural disasters. And (4) extend interest rates to zero on all other concessional IMF loans, at least until the end of 2018.

Through a new platform for tax cooperation in cooperation with other international organizations, developing countries are helping to mobilize domestic revenues. The International Monetary Fund annually provides technical assistance to more than 100 countries in the area of tax policy and administration and provides assistance to developing countries, including international tax coverage if needed.[29]

Member countries are provided with support to promote public investment in infrastructure through the Support Infrastructure Policy Initiative. This move deepens the IMF advice on economic policy and capacity building to help countries jeopardize the stability of public debt. These pilot programs were found to be ongoing in most member countries. Furthermore, the IMF's new lending approach offers flexibility in managing financial needs to support growth and investment while maintaining loan levels. The International Monetary Fund is also reforming the debt consolidation framework for low-income developed countries so that they can better guide leading countries' debt decisions and keep public debt on the right track. .

Ile strengthens its support for weak and conflicted states to address their specific challenges and their broad and sustainable capacity development needs, including a new capacity development framework that supports the organization's goals. Improve tracking of results and

[29] Escobar, Arturo (1980). "Power and Visibility: Development and the Invention and Management of the Third World". *Cultural Anthropology*. **3** (4): 428–443.

try to increase coordination with other partners. Lyon delves into policy advice in the areas of inclusion and environmental sustainability and brings that advice to the operational work where the advice is found.

These include:

- Estimate the additional costs required by developing countries to obtain SDGs.
- Understanding the role of diversity and structural change in sustainable development in developed countries and the policies necessary to support this change. Key policies include stronger cost infrastructure, increased financial depth and increased agricultural productivity.
- Gender inequality and income inequality and job creation, promoting economic and financial inclusion, effectively reinforcing tax policy redistribution, and increasing access to financial services while maintaining financial stability Addressing financial inequality.
- Improving environmental sustainability by improving energy resilience and enthusiasm for environmental events.

Pakistan's Role

Pakistan was the 1st official state to adopt the 2030 SDG agenda through a unanimous decision. The Millennium Development Goals (MDGs) were then discussed. He said the consultation process had improved the national classification of SDGs, data collection and implementation of monitoring mechanisms.[30]

Pakistan has prioritized the Sustainable Development Goals which will enable us to join the league of upper middle class countries by 2030. Pakistan was the first country to adopt SDGs 2030 agenda through a unanimous resolution of parliament. The government conducted discussions on post-Millennium Development Goals (MDGs) with all stakeholders for coordinating and strengthening efforts at federal and provincial levels to achieve Pakistan's sustainable development and poverty reduction targets. The consultation process emphasized the

[30] www.pk.undp.org/content/pakistan/en/home/sustainable-development-goals.html

need for national categorization of SDGs, improved data collection and enforcement of monitoring mechanisms, he said[31].

The seven pillars of Vision-2025 are fully aligned with the SDGs, providing a comprehensive long-term strategy for achieving inclusive growth and sustainable development. At the federal level, a SDGs Monitoring and Coordination Unit, in coordination with UNDP, is being set up to serve as a national coordinating entity with similar units in the provinces

Projects in Pakistan

1. China Pak Economic Corridor
2. Development Communication
3. Peace and Development Unit
4. Young Development Fellows
5. URAAN
6. PSDP Releases
7. Center for Social Entrepreneurship
8. 8.National Endowment Scholarships for Talent (NEST)
9. Centre for Rural Economy (CRE)
10. Banao Pakistan

[31] *Pakistan: Quick Facts . MDG Monitor.*

CHAPTER No 3

Water Supply and Demand Management

Pakistan has a semi-arid climate that does not rain even when it is not distributed. The shortage of fresh water is dangerous in some parts of the world. There are conflicts and crises in all over the globe between neighboring countries. The demand for water is on the rise, which is a serious challenge of the twenty-first century. Global water consumption has decreased since the twentieth century. "It has quadrupled since 1995. The country's demand for agriculture, industry and housing is increasing all over the world, and water is abundant, but it is distributed in different parts of the world and even among the United Nations estimates," he said. "A third of the countries in the world are facing water pressure. For example, more than 20% of the water supply (in the United States) is a crisis caused by rapid population growth, economic development and increasing industrial demand.

View of the River Basin

Pakistan is located in a semi-arid climate zone and rain does not get even during the year. The national average is less than 375 mm, 60 districts receive less than 250 mm, while 16 regions receive less than 125 mm[32].During the monsoon season, heavy rains and large quantities of rainwater cause floods or are referred to the Arabian Sea without the need for equipment.

At the same time, monsoon faults occur for a variety of reasons. Even if this is not the case, about 30 surface water sources are released into the ocean from various sources. Pakistan is an agricultural country. Irrigation is vital and plays an important role in the Pakistani economy. The Indian river flows into Pakistan. The river and its basins make up the river basin. It is located on the right side of Kabul. The key bank branches are Jhelum, Chenab, Ravi, Sutlej, and Beas. Before entering Pakistan, these rivers are under Indian occupation in Kashmir or India. From the Himalayas to the Arabian Sea, the river is 662 square kilometers (1.8 miles long).

The total catchment area in Pakistan is 1 901.2 km2. Also, 75,110 square kilometers (29,000,000 square kilometers) are outside the river basin, but their supply is in the river. The coastal clergy and access to the desert covers an area of more than 349,650 square meters (135,000 miles), valleys and semi-desert deserts, invasive and dry mountains. In 1947-42, Pakistan had

[32] Uereyen, Soner; Kuenzer, Claudia (9 December 2019). "A Review of Earth Observation-Based Analyses for Major River Basins". *Remote Sensing*. **11** (24): 2951.

exchanged 62.64 billion cubic meters (67 million cubic meters) of water. Recent figures show that the river and its basins saved 181 billion cubic meters (147 million cubic meters) during the flood season and diverted 130.47 billion cubic meters (106 million cubic meters) to the canals.

Due to the rains, the storage capacity of large dams has currently been reduced by 5.6 billion cubic meters (4.6 million cubic meters). The availability of groundwater in Pakistan has also decreased significantly every year. The need to create new water tanks is very important to reduce water waste. Disputes can arise when rivers cross the international border. A decade later, on September 19, 1960, with the mediation of the World Bank, the River Water Treaty ended. In his opinion, India uses water as its high beach. In 1960 she proposed the construction of the seal problems, the Vilaar dam in 1985 and the Reims dam in 1992, in violation of the agreement on water problems.

According to the government's political program, scorpion programs were launched to control deforestation and water salinity. Khan (2002) solves this problem as the ultimate dual problem of water and salt. The SCRP program has cleared millions of hectares of land. Ground development was invaluable for the economic and social development of the country. Most of Pakistan's land resources are found in the vast Indus plain, from the Himalayas to the Arabian Sea. Groundwater complements the existing irrigation system and urban infrastructure to a great extent.

In the Indus Basin, groundwater recharge is estimated at 55.6 million m3 per year. The key to ground stability is that the crop should only be recharged to avoid wasting this precious resource. In the first five-year plan (605-60), water problems were correctly identified for the first time. WAPDA started construction projects that are generally heavy and heavy capital (WAPDA, 1968). Many dams are built for energy and irrigation purposes, while these are built for pure irrigation purposes. Although some of the proposed dams have still been suspended due to differences between different provinces, the Kalabagh Dam in particular has become a point of major conflict between the provinces. Extensive work has been done in the field of water management in Pakistan. Because water is an important asset for life, many national and international organizations are committed to resolving the water crisis.[33]

A variety of research reports are available. Today, the Internet provides access to literature around the world. "Water and Energy Resources in West Pakistan" was a three-volume book on sector

[33] Mariam Khan (30 November 2014). "Kalabagh Dam - A Pivotal Need for Pakistan?". HuffPost. TheHuffingtonPost Inc. Retrieved 29 March 2016

planning. The World Bank took over the mission on November 13, 1963, under an agreement reached between the President of Pakistan and the President of the World Bank. Lt. Col. Peter and his team worked hard to create various aspects of resource planning. Water and Energy This development covers water resources to overcome the consequences of the Indian Water Pact and the proposed future planning infrastructure. There is a wide range of technical disciplines supported by some scientific explanations.

Hydroelectric dams, despite their huge reserves, play a key role in many developments. At the IUCN meeting in April 1997, amid disagreements over the construction of large dams, the WCD (World Commission on Dams) was unanimously formed. The center attracted the attention of 53 public and private organizations and civil society organizations and sponsored the World Conference on Radio Communication. Upon completion of its work, the International Council of Women submitted its final report in 2000 and was subsequently dissolved. This report contains many valuable insights into different areas of water.

However, the main focus of this report is on the two main areas of water development, Future climate change risks for hydrology and crop output is analyzed using mathematical models. The outcome of the research provides policy makers option for investment in these sectors and improvement in water productivity.[34]

Climate Change and water Resources in South Asia, Taylor and Francis, have edited different essays for the topic on individual and collective basis. A sharp contrast is observed in water availability among different south Asian nations. Water scarcity is a serious problem in Pakistan; several parts of India are water stressed. Many parts of Bangladesh even during the monsoon period suffer water scarcity to drought. Agriculture is the largest contributor to GDP in South Asian countries, Nepal at highest 41 percent and Sri Lanka lowest at 20 percent. Population growth has both direct and indirect impacts on water resources. Water demand in the industrial sector is increasing in all the South Asian countries

In “Environmental Chemistry” published by Krishna Prakashan Media Meerut, discuss that El Nino also has an impact on global warming. Wang, Bin (2006) in “The Asian Monsoon” published by Springer, has benefitted from enhanced modern scientific

[34] "THE ISSUE OF KALABAGH DAM?". *Www.pakistaneconomist.com*. Retrieved 22 June2020.

knowledge regarding monsoon. Almost all sectors including hydrology, agriculture, economy, and society are seriously influenced by monsoon across Asia.

Also, in 1960, this irrigated area will exceed 24 million acres. Permanent limits are limited to coastal canals and Desert Rivers. Therefore, short duration floods require closed reservoirs, diversion structures and canals. Statistical data of different sectors including energy, agriculture and environment are presented. The author has benefitted for policy implementations in water related sectors under the auspices of government through government documents.

Economic Survey 2007-08 to 2012-13, project recent developments in water sector. PES 2007-08 shows the poor agricultural performance, growing at 1.5 percent against the target 4.8 in 2007-08. Fast track mega canals are discussed as priority stance. The data helps to access Millennium Development goals (MDGS). Climate change raises serious concerns for the country like the other developing countries. PES (2008-09) Pakistan agriculture depends on the availability of water, which has been less for 2005-06 by 2.5 percent and for 2004-05 by 20 percent.

Among the other environmental issues, Government of Pakistan (GOP) has pointed out declining per capita availability of water, which is affecting many fields. Melting glaciers warn serious impact of climate change on water availability, firstly water flow in the Indus Basin will increase followed by permanent reduction. A chain of check dams along with large dams are required to combat this worsening situation. Accelerated rise in sea level would increase saline intrusion in Sindh and Baluchistan coastal areas. Pakistan Economic Survey 2009-10 hints out critical investments in different agricultural fields, including water infrastructure are not being made so the gradual decline in agriculture is observed. PES (2010-11) has specified the damages of the July 2010 floods. On the other hand, enormous water flowed to Arabian Sea due to lack of storing capacity. PES (2012-13) government enhances concern in national food security and research.[35]

Many ongoing and future projects with tentative completion time period. General Manager P & D, WAPDA, in a personal meeting has shown concern regarding the provision of funds for completion of the vision 2025 projects. Economic Development of Pakistan, Lahore: United Limited deals in detail Water Resource Development in Pakistan. His knowledge is based on the documents published by Pakistan government. Economy

[35] Mulk, Shamsul (22 May 2012). "Need for early construction of Kalabagh Dam stressed". *The News International*

of Pakistan by (Saeed 2003 Ed) published by Khawaja Amjad Saeed, Lahore, gives concise knowledge on agriculture sector in Pakistan.

The Dependency ratio is 0.9, which is higher than different regional countries. On the other hand agricultural growth is because of the increase in agricultural land, otherwise yield per hectare have shown slight increase. Water charges cover less than 50% of O & M costs. Future agriculture growth will have to come through improvement in water productivity by efficient use of water and fertilizers. In World Bank Publication, "Strategic Reforms for Agriculture Growth in Pakistan" deals with major resource and policy constraints in current Pakistani agriculture. For better prospects in the agricultural yield increase and income of the producers is recommended.

In the Indus River Water Treaty; The watersheds covered the historical vision of the treaty. In facing the challenges of water management in Pakistan, one of the main challenges has been strengthening India's position on water division. As per author, although India has started diplomatic talks to not only buy time for diplomatic talks, it still needs to do research to uncover the water crisis. And treatment must be used.

Several articles of the treaty are mentioned. Indo-Pakistani governments released the report. In his book "As a Catalyst for Water Peace, Water Management and Conflict Resolution," by Routledge, New York resolves disputes through water treaties. Water management policies for managing water can be used as a solution to conflict. Evidence was collected from the highlands of the Middle East and Lesotho in Africa. These bilateral agreements are analyzed, progress made, and the final outcome of the analysis. The complementarity of operations and the equivalence of results are distinguished from their impact on achieving security, peace and water stability

In the "International Conflict over Water Resources in Himalayan Asia" have discussed the dilemma of fresh water in different Himalayan Asian countries. Rapid population growth, industrialization and improvement in living standards have resulted in a conspicuous reduction of water in these countries. This has intensified conflicts over trans boundary rivers waters[36].

An infrastructure engineer has discussed water resource management, principles, cases and regulations in his work. It puts forward technical, financial, legal, political and

[36] Pukhtunkhwa's Case Against Kalabagh Dam – Awami National Party". *Awaminationalparty.org*. Archived from the original on 25 December 2015. Retrieved 22 June 2020.

administrative matters in today's complex water management. In this literature review, different matters regarding Pakistan's water management need to be considered with local environment so that the case studies discussed

In "Sustainable Management of Water Resources: An Integrated Approach" published by Edward Elgar Publishing, have provided insight of integrated water resource management practices that support the sustainable development through a series of international case studies and theoretical frameworks. On the other hand, water supplies are insufficient. So this 300 million Muslims need to develop an understanding on Islamic perspective on proposed water management policies. This perspective can also benefit the policy makers in water management in Pakistan with about 190 million Muslim population interested Islamic practices.

In "Water Policy in the Nederland: it develops to an integral water management. The different contributions in the book show that how social and technical sciences play role in making policy for different challenging aspects related to water management. Different developing countries having deltaic problems may benefit these experiences. Multiple water management issues in Pakistan also include downstream kotri deltaic degradation. Unique solutions adopted by Netherland can help Pakistan for framing compatible policy for maintaining her delta.

Support policymakers and researchers working on water resources on a large scale. However, Calder did not analyze water management in different scenarios at different levels. Meanwhile, water scarcity has not been discussed. In "Water Resources of Pakistan", In the IWMI research report established two fundamental factors for low productivity in the province of Sindh, i.e. lower Indus plain; shortage of irrigation water in some canals and poor land quality in others. Reallocation of water across the canal commands can improve productivity in short terms. However, for long term sustained productivity, effective management along with additional investment in land and water is inevitable.

Indus Water flow in the delta has depleted during the last three decades due to divergence of water through link canals for agricultural purposes. The study is carried out to assess the degree of geomorphic degradation of the different deltaic phenomenon. Results show that the coastline is retreating, creek network is widening due to erosion, deltaic lakes are reducing, and food productivity in the deltaic plain is reducing due to seawater intrusion. It is also analyzed by the author that climate has changed from 1961 to 2004; he also narrates reduction of rainfall in the delta.

Managers in water management need to impart further research regarding deltaic problems. In the Water Apportionment Award (WAA) 1991 among different provinces of Pakistan, it was decided that 12.33 BCM (10 MAF) water flows to the Arabian Sea is allowed for environmental flow and to combat saline water intrusion to the inland. Water is available for a short monsoon period. To store this water is prerequisite for the development of agriculture and hydropower production. A study is recommended for the assessment, to what extent deltaic environmental uplift takes place during monsoon peak period of 60 days. Water stored in future upcoming dams as Basha and Kalabagh can develop much of the undeveloped land in almost all provinces of the country. Restoring already degraded delta is not economically gainful. In their article "Ground Water Levels Susceptibility to Degradation in Lahore Metropolitan" have established that the ground water condition has worsened in Lahore. is used to calculate the depression zone, which is accepted for planning and management because of its capacity to easily link different disciplines like resource management and natural hazards, etc. There are numerous causes like population growth, reduction of irrigative periphery and exclusion of River Ravi from the Indus system due to IBWT. The alarming condition needs to be addressed urgently as the depression zone is expanding about 24 Km2/ year.

Water Outlook

The troposphere contains colorless and odorless water vapor that can dissolve in clouds and fog. Along with rivers, lakes, ice and groundwater, these large reservoirs of water make up the Earth's hydroelectric power. The hydrological cycle is the continuous movement of water over land, above and below ground. In 1994, a study by the United Nations Development Program found that since 1970, the per capita share of the world's water supply had decreased by 60%. According to a 2002 report, 80 countries are facing severe water shortages. Sometimes they have problems with the water. On the other hand, countries that obtain renewable fresh water below this level often face water pressure problems; Less than 1000 m3 / year with severe reduction syndrome.[37]

During the first decades of its existence, Pakistan is now a country suffering from water scarcity with an output of 1050 cubic meters per year. IWMI studied water scarcity in 118 countries between 1990 and 2025. Rain system failure causes droughts. The demand for water is

[37] United Nations Educational, Scientific and Cultural Organization (March 2006). "The 2nd UN World Water Development Report: 'Water, a shared responsibility'" (PDF). New York: UNESCO. ISBN 92-3-104006-5. Retrieved 2008-05-28. , p. 134

increasing for agriculture, housing and industry. New technologies should be used as a priority in government programs to protect water resources. He added that the area must grow by 29% to meet the nutritional and nutritional needs of the world since 1995. However, great progress has been made by Reducing 2.4 billion People not receiving adequate health care until 2015.

Geographical Setting

With an area of 79,796,099 square kilometers, Pakistan has a population of 60 mountains, a mountainous population of 30% flat and the rest of the deserts and semi-deserts. Pakistan is located between latitude 23 degrees 30 to 36 degrees 45 degrees north and latitude 61 degrees and 75 degrees 31 east, 1600 km north to south and about 885 km east to west.

The northern and northwestern mountains are divided into three strong mountain peaks, the Himalayas, the Karakoram and the Hindu Kush. It is the highest concentration of mountains on earth, the second highest in the world, measuring K-2 8611m. According to their study, different authors have divided the country into different parts. The country is divided into six main physiographic regions. It includes the state in five physical areas, while Robinson combines it into three physical areas.

Weather Adjustment

While we are talking about the climate of the study area, namely Pakistan, there are different types of climate in this country that show great differences between high mountains and vast plains. Climatic elements are very different.

Climate difference is due to the transition period.

- Change of height;
- High mountainous areas
- Variable distance from the sea.
- Desert environment
- Monsoon weather events
- The impact of Western corruption[38]

During the first decades of its existence, Pakistan is now a country suffering from water scarcity with an output of 1050 cubic meters per year. IWMI studied water scarcity in 118 countries between 1990 and 2025. Rain system failure causes droughts. The demand for water is

[38] Pakistan Water Gateway. "The Pakistan Water Situational Analysis" (PDF). Retrieved 2008-05-28., p. 4

increasing for agriculture, housing and industry. New technologies should be used as a priority in government programs to protect water resources. He added that the area must grow by 29% to meet the nutritional and nutritional needs of the world since 1995. However, great progress has been made by Reducing 2.4 billion People not receiving adequate health care until 2015.

This region connects the mountainous climate of Pakistan with the mountainous climate of the region. Rainfall is associated with altitude. In mountainous climates, heavy rainfall occurs in the northern mountains, while western mountains have the lowest rainfall. With the exception of the coastal areas, the low climatic zone includes a complete river basin. The interesting part is the hot weather, hot summers, monsoon rains and mild cold. Rainfall changes from north to south include coastal coastal climates and river nostalgia characterized by low temperatures. The arid season includes the deserts of Balochistan, Sindh and Punjab, where the average summer temperature is less than a millimeter by a millimeter.

Pakistan's climate is hot and dry near the coast and is slowly cooling towards the northeastern hills. The winter weather is generally cold and dry. And the wind is blowing. Temperatures can reach 49 degrees Celsius in early April. The northern part of the monsoon receives an average of 38 cm (15 inches) of rain in late July and late September. There are also differences in post-flood and post-drought methods. There are different types of cancer in the north of the country.

The western system forms along the Mediterranean or North Atlantic Ocean from November to April. They started moving east or northeast, causing rain in northern Pakistan. Wet monsoon enters the area from southeast to east, causing rain in the area. Wet and humid weather conditions north of Punjab and Attock in Khyber Pakhtunkhwa generate heat flow that gives rain to the region. Storms occur before spring (May) and after sunset (October-November). All irrigation methods are related to climatic activities and drought is due to the failure of the climate system.

Over the past century, the surface level has risen to an average of 17 x 17 cm, which was 4 cm in thermal expansion, 5 cm in mountain glaciers and 2 cm in Greenland and Antarctica, which also shows a global alarm. is being; However, the decade 1993-2003 saw an average annual growth rate of 3.1 mm. In the 20^{th} century, the total surface area increased by 0.17 meters

According to meteorological studies, temperatures in various cities in Pakistan have risen. Karachi is experiencing constant temperatures. Temperatures rise from 0.3 to 0.37% every ten years. Over the past 53 years, temperatures have risen by about 101 C. Temperatures in Nawabsha have been rising sharply since 1997, with an increase of 0.21% between 1971-2001. The average temperature in Jacobabad is very low. The maximum temperature in Hyderabad has not changed;

from 1947 to 1958 to 1984 Trends were few in Lahore, nothing had changed. Temperatures in Lahore are slowly rising. The growth rate is 1% every 50 years.[39]

The monsoon is most widely circulated in Pakistan (west) to Japan (east). Regular rainfall changes in the weather are frequent in this area. Numerous rains affect the economies of countries in the region. The situation is like the weather, i.e. there is flood in one part and drought in the other part. The three-month summer monsoon contributes to the maximum annual rainfall in key areas of the country. During the winter, western storms also bring rain and snow. Located four and a half kilometers above sea level, the Tibetan Plateau has a powerful body that plays an important role in Asia's climate. This is an excellent source of mechanical and heat barrier. The most prominent trend in the summer monsoon season is the control of the Tibetan Plateau.

Pakistan Weather

This region connects the mountainous climate of Pakistan with the mountainous climate of the region. Rainfall is associated with altitude. In mountainous climates, heavy rainfall occurs in the northern mountains, while western mountains have the lowest rainfall. With the exception of the coastal areas, the low climatic zone includes a complete river basin. The interesting part is the hot weather, hot summers, monsoon rains and mild cold. Rainfall changes from north to south include coastal coastal climates and river nostalgia characterized by low temperatures. The arid season includes the deserts of Balochistan, Sindh and Punjab, where the average summer temperature is less than a millimeter by a millimeter.[40]

Pakistan's climate is hot and dry near the coast and is slowly cooling towards the northeastern hills. The winter weather is generally cold and dry. And the wind is blowing. Temperatures can reach 49 degrees Celsius in early April. The northern part of the monsoon receives an average of 38 cm (15 inches) of rain in late July and late September. There are also differences in post-flood and post-drought methods. There are different types of cancer in the north of the country.

Climate Diversity

The Great Wall of the Himalayas has cold winds that blow across the Mediterranean to Central Asia, keeping Pakistan's climate very warm. On the one hand, there is snow and blizzard in different climatic regions of Pakistan in the north and northwest of the country. The country has

[39] Pakistan crafts plan to cut carbon emissions 30% by 2025". *The Express Tribune*. 10 June 2015.
[40] Pakistan National Policy on Climate Change". Archived from the original on 2016-03-05.

latitude (23 ° 30'N to 36 ° -45'N). In winter, the western belt moves toward the equator, where it rains in most areas, while in summer it rotates only north. The northern part of the country gets it. The monsoon system moves east of the country, providing rain for northeastern Kashmir, northeastern Punjab and eastern KPK.

The four main climate systems control the region's water resources

(I) Western uprisings;

(2) monsoon system;

(3) Local transmission line development.

(4) Tropical storms;

The western system forms along the Mediterranean or North Atlantic Ocean from November to April. They started moving east or northeast, causing rain in northern Pakistan. Wet monsoon enters the area from southeast to east, causing rain in the area. Wet and humid weather conditions north of Punjab and Attock in Khyber Pakhtunkhwa generate heat flow that gives rain to the region. Storms occur before spring (May) and after sunset (October-November). All irrigation methods are related to climatic activities and drought is due to the failure of the climate system.

Climatic Change

It states that climate is as variable as climate. The climate of any region does not change year by year. As per discussion about climate change, which can be determined using statistical methods. For future planning, it is important to look at the effects of climate change on the surface, patterns of rainfall and poverty, and changes in land, forestry, agriculture and water use. Global climate change affects many aspects of life. According to the fourth report of the Intergovernmental Panel on Climate Change, when global air temperatures rose by 0.74 ° C ± 0.18 ° C last year (1906-2005), a linear trend was expected.[41]

In the last 50 years, the heat rate has doubled in the last 100 years (approximately 0.17 ° C ± 0.03 ° C vs. 0.07 ° C ± 0.02 ° C per decade). The warmest years in the world are 1998 and 2005. This great change cannot be controlled. Mountainous areas were affected, while the tropics were generally affected. Backward or developing countries like Pakistan will suffer the most from this uncertainty.

[41] Zaheer, Khadija; Colom, Anna. "Pakistan, How the people of Pakistan live with climate change and what communication can do" (PDF). *www.bbc.co.uk/climateasia*. BBC Media Action.

Some pollutants, through various human activities, increase the rate of greenhouse gas emissions into the atmosphere, such as carbon dioxide, methane, nitrous oxide, CFCs, water vapor and other industrial gases. Human activity is the main reason for the increase in greenhouse gases. The Industrial Revolution of the 18th century has led to the emission of greenhouse gases into this atmosphere in recent decades. Global warming is causing snow and ice to melt, sea levels to rise and climate change. The summary of the fourth evaluation report of the Intergovernmental Panel on Climate Change indicates further growth.

Global warming, at 11 years, calls 1995-2006 the warmest year. In the third evaluation report of the Intergovernmental Panel on Climate Change, the issue of climate change represents the biggest challenge to sustainable development. This is because the impact of climate change, climate policy, environmental policy and the response to related social and economic development will affect countries' ability to achieve SDGs.

Climate change is a key challenge for sustainable development. Climate policies can be most effective when they are consistently designed to achieve national and regional sustainable development goals. The central thinking of the intergovernmental group on climate change for sustainable development can be used with a community response at a theoretical level, but further efforts are needed to understand and evaluate its ability to implement it.

Sea level rise

Over the past century, the surface level has risen to an average of 17 x 17 cm, which was 4 cm in thermal expansion, 5 cm in mountain glaciers and 2 cm in Greenland and Antarctica, which also shows a global alarm. is being; However, the decade 1993-2003 saw an average annual growth rate of 3.1 mm. In the 20th century, the total surface area increased by 0.17 meters[42]

Retreating Mountain Glaciers

Glaciers have been found retreating worldwide considerably from the mid-80s to to date. Many of Himalayan glaciers are retreating more rapidly than the world average .

Temperature Rise

According to meteorological studies, temperatures in various cities in Pakistan have risen. Karachi is experiencing constant temperatures. Temperatures rise from 0.3 to 0.37% every ten

[42] ibid

years. Over the past 53 years, temperatures have risen by about 101 C. Temperatures in Nawabsha have been rising sharply since 1997, with an increase of 0.21% between 1971-2001. The average temperature in Jacobabad is very low. The maximum temperature in Hyderabad has not changed; from 1947 to 1958 to 1984 Trends were few in Lahore, nothing had changed. Temperatures in Lahore are slowly rising. The growth rate is 1% every 50 years.

Mirror Medium and maximum temperatures have not changed in a long time. Temperatures in Rawalpindi were declining between 1947-71. Since then, there has been a growing trend. Bahawalpur It had a high temperature during the 1976-2001 season and a high temperature of 731.77% by 2025. In 1973-1983, the Peshawar average was the lowest. .

Over the past two decades, Pashin's temperature has risen sharply, and the city's temperature has risen by 0.4% over the past 50 years. Quetta, Zehob, Dalbandin and Panjgur showed significant increases in average and low temperatures.

Temperatures rose in several Pakistani cities, according to the Meteorological Agency. Karachi is experiencing a steady high temperature. Temperatures are rising from 0.3 to 0.37 percent per decade. Over the past 53 years, the temperature has risen from 1.0 to 1.01 percent. Temperatures in Nawabshah have risen rapidly since 1997, rising by 0.21% during the years 1971-2001. The average temperature in Jacobabad has changed little. There are no differences in average temperatures in Hyderabad, but this means that the minimum temperature has increased since 1984. From 1947-1958, and from 1958 to 1984, the trend in Lahore has been downward. After 1984, an upward trend meant maximum temperature. The temperature in Lahore is rising slowly.[43]

The average temperature of Multan has not changed. The temperatures in Rawalpindi are declining and the maximum and minimum temperatures are expected to decrease during 1947-1947. Bahawalpur will increase dramatically in the years 1976-2001, while by 2025 the maximum temperature could rise by 2.1%. Temperatures in Peshawar have risen rapidly over the past two decades and over the past 50 years, the temperature in the city has increased by 0.4%. The regions of Quetta, Zob, Dalbenden and Panjgur witnessed a remarkable increase in the maximum and minimum temperatures of the universe

[43] Ahmadani A (August 19, 2010). "Heavily Funded FFC Fails to Deliver". The Nation. Archived from the original on July 6, 2011.

Monsoon and Winter Westerlies

The monsoon is most widely circulated in Pakistan (west) to Japan (east). Regular rainfall changes in the weather are frequent in this area. Numerous rains affect the economies of countries in the region. The situation is like the weather, i.e. there is flood in one part and drought in the other part. The three-month summer monsoon contributes to the maximum annual rainfall in key areas of the country.

During the winter, western storms also bring rain and snow. Located four and a half kilometers above sea level, the Tibetan Plateau has a powerful body that plays an important role in Asia's climate. This is an excellent source of mechanical and heat barrier. The most prominent trend in the summer monsoon season is the control of the Tibetan Plateau. The main reason for the monsoon cycle is the same interpretation and difference between land and water resources in the region, which has different climatic characteristics.

He talks about the Indus irrigation system in Pakistan, study shows that rain is reliable and crops can grow. L Good harvest. Much of the rainfall (approximately 70%) is not enough to irrigate the area or go to sea without amenities, causing floods and chaos in cities and towns. Rainfall increases in the Indus Plains from the coast to the middle of the Indus River from July to August. At an average of 152 mm per year, southern Punjab and Northern Sindh rainfall decreases throughout the year. There are areas above the salt average of 635 mm, which include Jhelum, Rawalpindi, Attock, and Mianwali (P11).[44]

The water content of the Indus and Peshawar valleys is 32 billion cubic meters (26 million cubic meters), but the proportion of crops is about 77 billion cubic meters (6 million cubic meters). It experienced an average rainfall of 10 mm to 1000 mm. He estimated the flow losses of about 7 billion cubic meters (6 cubic meters) of rain. If water losses from meadows and forest areas are included, these losses increase to about 22 billion cubic meters (18 MAF), and if 25% of these losses are maintained. That is 5.5 billion cubic meters (4.5 liquids). It is convenient and can also be overcome. In the field of agriculture and energy, rainwater makes a significant difference in the population of the region.

During the winter, western turbulence brings snow and mountains to neighboring India and Pakistan to the north and northwest. Many rainfall events occur in different years due to severe weather conditions and floods. Strong winds have caused heavy rain as well as rain in the narrow belt.

[44] Floods in Pakistan worse than tsunami, Haiti". gulfnews. Retrieved 12 August 2010

CHAPTER No. 4

WATER DEVELOPMENT

Indus River System

The source of the Indus River is across the Himalayas, northwest of Lake Mansour, on the Tibetan Plateau. It rises 4,900 meters (16,000 feet) in southwestern Tibet and flows through the Himalayan slopes It enters Hel 10 Indian in the Rupsho district of Indian-administered Kashmir. It is one of the largest rivers in the world, with a length of 2,900 km (1,800 miles). An area of 1,165,500 square kilometers (450,000 square miles) is arid by the Indus River.

The Indus River has its tributaries, the Ravi, the Persian Gulf, and its bay, including the Sutlaj, Jelum, and Chenab, while the Kabul River joins the Attock, south of Peshawar. The main cities east of the Sutlaj River are Ravi and Chenab. Jhelum rises in the Himalayas, crosses Kashmir and enters Pakistan under Indian rule. The Bias River meets the Sotheby's River in each of the Indian subcontinent. The river system consists of 13 provinces in the western hills and 14 provinces in the basins.[45]

The Swat, Kabul, Toshi, Karam, Gomal and Bolan rivers converge to the west. During the summer, due to irrigation, the flow of these small rivers is sufficient, but in winter, due to melon, the water flow decreases. In terms of basin water, the Bea, Ravi and Sutlej rivers are the eastern rivers, while the Jhelum, Chenab and Hindu rivers are the western rivers. The Zaskar, Shivak, Shigar, Hunza, Gilgit, Store, and other canals bring ice and snow from the Himalayas, the Karakoram Mountains, the Nanga Bart Ranges, and the mountain ranges.

The Indus River flows 42066 meters (13,800 feet) southeast of Jammu and Kashmir. Below Lee, the capital of Ladakh, Zaskar, which receives the Nobra waters, joins the river, which is one of the largest rivers, and the Kech joins the Indus Skardu. After the rapid fall of the Skardu Basin, the Gilgit Coast, 25 km 40 km south, joins the Main River west of the Gilgit River. Via Chilas, Gail Kot goes to the area where Pasha Diamer Dam is proposed. At the end of Tarbala, Peshawar separates from Attock, a region of Punjab. When the Kabul River receives water, the amount of water increases dramatically; The goods enter the valley area, miles below Attock, above Kala Bagh.

The river receives large swaths of land east of the Punjab, including Jelly, Chenab, Rafi and Bais. Then the river expands and as the color process decreases, its speed decreases. Due to

---

[45] Swain, Ashok (2004). *Managing Water Conflict: Asia, Africa and the Middle East*. Routledge. 46. ISBN 1135768838. 1,800 miles long river after flowing out of Tibet through the Himalayas enters Jammu and Kashmir in India and then moves into Pakistan

the stability of spring and summer, the river flows on average from June 30 to September. This shows that the amount of summer water varies depending on its size and height, the presence of the monsoon, the height of the ice line and the legacy of past mistakes.

This explains the complexity of the hydrological linkage system with the highest annual turnover and the unexpected potential of all major rivers in the world. Water levels in Ando, Jellum and Chenab increased after March, but later in Zinc and Sutlej.

The source of the river is beyond the Himalayas, on the Tibetan Plateau, northwest of Lake Mansour. In southwestern Tibet, it rises 4,900 meters (16,000 feet) and crosses the Himalayas. It entered the Rupshu area of Indian-administered Kashmir with a temperature of 79 ° C. An area of 1165,500 square kilometers (450,000 miles 2) is irrigated by the river. The annual flow of the Nile River doubles, but varies throughout the year, at least during the winter months and during the summer, with maximum snowfall and monsoon in alluvial areas. The rivers Zaskar, Shivak, Shiger, Hunza, Gilgit, Easter and other rivers bring snow and fresh water from the Himalayas, Karakoram, Nanga and the mountains.[46]

The river runs through Jammu and Kashmir at 4,206 meters (13,800 feet) in the northwest. In the time of Ladakh, the capital of Ladakh, Jaskar joined the river, after receiving the waters of the Noba, the great teacher, the Sheikh, joined the river with a group. After the Skardu Basin Express, Gilgit suddenly turns 40 kilometers (25 miles) south, where it meets the main river west of the Gilgit River. Via Galkot, head to the place where the Pasha Diamer dam is proposed. At the Tarbela Bridge, Peshawar is separated from the Attock district of Punjab. When the water reaches the Kabul river The volume of water increases significantly. This determines the complexity of the river's hydrological system with its variability and the high annual forecast between the main rivers of the world.

Jhelum River

It is the westernmost river of the Panjnad River in Punjab. This deep source of Farnaq is administered in Kashmir. After crossing Anantnag, Antipur, and Srinagar, he joins Lake Wolverine and then crosses Wolverine to control its flow. The Kish Ganga Colony, also known as Neelam in Pakistan, is the main part of the lake from the lake in the Kashmir Basin to Muzaffarabad. Under the pseudonym, Muzaffarabad Konhar joins Jhelum and dries Keegan's millennial flower branch. Couch a Mofa on the border between Pakistan and Azad Kashmir. It

[46] Mirza, M.R.; Mirza, Z.S. (2014). "Longitudinal Zonation in the Fish Fauna of the Indus River in Pakistan". *Biologia (Pakistan)*. **60** (1): 149–152.

divides the provinces of AJK passes through the provinces of Shahpur and Jang and finally reaches Travis in Chenab.

Chenab River

The Chenab River flows through Bangui and Champa (Himachal Pradesh, India) to Paisal Paralha and reaches Kashmir from the southeast. It then enters the Sindhkot area, which is part of two rivers in Indian-controlled Kashmir, and joins the Chenab about a kilometer west of the international border. In Pakistan, Chenab separates Gujarat from Sialkot and Gujranwala on the right and Shahpur on the right. It crosses the Zhang, joins Lake Treemo, joins Ravi in North Multan and Sutlej in South Multan.[47]

Sutlaj River

It is the longest river in the east; near Lake Mankarshil in Tibet. It enters India from the northwest, Himachal Pradesh, then flows west to the Punjab River through Zaskar and Himalaya , where the Beas River meets south of the Sutlej River, which flows into India . And it shares a border with Pakistan. It is in process. Its length is 1400 km.

Beaz River

The Himalayan coast is 1,361 meters (14,408 feet) high at the Rohtang Pass in the Kalu region of Himachal Pradesh in northwestern India. It originates three kilometers south of Kilo and then heads west, entering Congress Valley when the market empties. After crossing Kangri's wedding, enter India and arrive at Stilj in Harki. This route covers 470 km (290 miles).

Ravi River

The Ravi River in the Himalayas originates from the state of Himachal Pradesh, a state in northwestern India. It passes through the northwest of Himachal Pradesh. It borders Jammu and Kashmir and extends to the southwest. Before entering Pakistan, you travel about 50 miles (80 km) along the Pakistan-India border. After passing Lahore, head west towards Kamalia and join Chenab in rival south of Ahmadpur. The city covers 725 km (450 miles). The water of history irrigates the vast lands of the earth. In 1877-1877, the Upper Bori Dub Canal in Madhya Pradesh, India, was completed with major works to irrigate a large tract of land on the east coast and expand

[47] Oldham, R. D. (1893). "The Saraswati and the Lost River of the Indian Desert". *Journal of the Royal Asiatic Society*: 49–76.

the distribution channels to Pakistan. The High Doab debris canal is located entirely in Pakistan and was completed in 1971.[48]

Underground water

As the world's population grows, so will the demand for fresh water. The world's water resources are only 2.5 freshwater. In this fresh water, about 30% of the water on the earth and three and a half million rivers are stored as rivers and lakes, while the rest is stored in glaciers covered with ice, soil moisture and water vapor. Seawater intrusion and industrial pollution damaged groundwater quality. Due to physical factors, human health and the environment, the growing demand for groundwater is approaching. Water pollution is a sign of deteriorating water quality, whether it is due to fungi or human causes.

Integrated combat hydrologists, water engineers, water planners, and engineers all need to spend their time saving water. Man is affected by natural ground water. Basic features of groundwater are essential for pollution management and identification. Under local hydrological, geological and biological control conditions, it is important to understand the local and short-term distribution of water quality. One of the hydrological concerns is whether the quality of groundwater is natural or affected by human activity, more or less.[49]

Dynamics of Ground water

One and a half lakh families in Pakistan depend on groundwater. The cost of private wells is around Rs 35 billion. The information available on private tube wells is insufficient in various areas, especially in remote rural areas. Most tubes were installed between 1995 and 2005, but not many.

An important feature of water resources in Pakistan is the availability of vast resources of land resources in the Indus River and some geographical areas. It has a large amount of water at its disposal and these reservoirs make regular annual payments, while most countries do not have this capacity for renewable annual payments. According to a report, Pakistan's groundwater capacity is about 69 billion cubic meters (56 million cubic meters), of which 51 billion cubic meters (42 million cubic meters).

---

[48] Agarwal, Vishal (2003). "A Reply to Michael ujhWitzel's 'Ein Fremdling im Rgveda'" (PDF). *Journal of Indo-European Studies*. **31** (1–2): 107–185. It may be noted that the Nara is still called the Sarasvati by rural Sindhis and its dried up delta in Kutch is still regarded as that of Sarasvati by the locals

[49] Alamgir, A., Khan, M. A., Schilling, J., Shaukat, S. S., and Shahab, S. (2016). Assessment of groundwater quality in the coastal area of Sindh province, Pakistan. Environmental Monitoring and Assessment, 188, 1–13.

Aquaculture is an important use of groundwater in Pakistan. Groundwater use helps farmers control the amount of water available for use during agricultural production. Dependence on groundwater is not the same. It varies according to climatic conditions, crop trends and the availability of surface water resources. According to the IWMI survey in Punjab, 26 farmers are relying heavily on groundwater to meet the water demand of their crops. More than 60 million farms are using groundwater to supply canals.

However, the Zone 50 standard is based on moderate to severe use. Another report states that groundwater meets Pakistan's agricultural needs. Thanks to its usefulness in agriculture, production increased by 70 to 150 percent, while production increased by 150 to 200 percent. As a result of the full development of surface water resources, the total groundwater capacity is 69 million m3 (56 million m3).[50]

Therefore, groundwater has been introduced into the system for best results. It represents 65 surface water and 35 groundwater. In recent centuries, groundwater flow has been affected by controlled water, gravity nets and irrigation systems. In the central part of the delta, the water level rose 15-18 meters (50-60 feet). The threat was in the vast underground and salt deposits in the plains of Sindh province, so the Pakistani government launched water scarcity, salt control and treatment projects.

Demand management

Crop-based water supplies present a major challenge to management. Effective water management means providing abundant water based on crop needs. This system is based on supply rather than demand, which means that available water is distributed according to the method of distribution. At the same time, attention must be paid to the effective water usage. Crop species that use less water per unit should be encouraged. Use irrigation techniques as less water is wasted. The water supply needs to be better managed to meet the waiting lists. To this end, the infrastructure must be improved. The impact on the region should not be above the law. A fair tail share margin will reduce dependence on groundwater. Nowadays, water economy has been advocated by various classifications.

Saving water based on crop demand is a huge management challenge. Effective water management means providing abundant water based on crop needs. This system is supplied on a demand-based basis, i.e. the available water is distributed according to the specified procedure. Types of crops that use a minimum amount of water per unit should be encouraged. Irrigation techniques that reduce water loss should be used. Those who reach the tail should have better

[50] ibid.

water management. To this end, the infrastructure needs to be improved. Those who have influence in the region shouldn't be above the law. An equal share of pesticides will reduce dependence on groundwater. Now the one-day water economy is underlining various classifications. Water Cost Farmers can use water efficiently through farmers.[51]

Salinity

Hydrolysis and human activity are secondary resources. One of the dominant methods of salt accumulation in the root zone of agri soil ;40% of the world's fibers are badly affected by soil salts.The world's irrigated agriculture and semi-arid areas are affected by deforestation and salinity. Since Pakistan is located in “arid/semi-arid” climate areas, irrigation is the largest source of water and thus the delimitation of water and salt water is largely dominant. Large-scale irrigation in the country is characterized by high risk of brackish water, as the starch in the drains is inadequate and inadequate due to the flat region. Irrigation canals, limited water supply, various mismanagement methods and low salt water use for crops exacerbate this problem.

[51] ibid

CHAPTER NO 5

Water Resources Issues of Pakistan

Discussion

Despite being heavier on glaciers and located more in the river basin than anywhere else in the world, Pakistan is at risk of severe water shortages. These surface and underground resources are under increasing pressure and severe drought conditions still prevail in some parts of the country due to lack of rainfall.

The problem is compounded by mismanagement and management in the water sector. While there are laws governing water management, they often contain monuments that date back to the colonial era. Other efforts to reform water management simply added new bureaucracy to the top of the current framework and created institutions with the necessary functions. While the adoption of the National Water Policy in 2018 generated optimism in Pakistan, its vague and sometimes contradictory rhetoric raises fears of a worsening water crisis in the country.

In "Sustainable Management of Water Resources: An Integrated Approach" published by Edward Elgar Publishing, have provided insight of integrated water resource management practices that support the sustainable development through a series of international case studies and theoretical frameworks. On the other hand, water supplies are insufficient. So this 300 million Muslims need to develop an understanding on Islamic perspective on proposed water management policies. This perspective can also benefit the policy makers in water management in Pakistan with about 190 million Muslim population interested Islamic practices.

In "Water Policy in the Nederland: it develops to an integral water management. The different contributions in the book show that how social and technical sciences play role in making policy for different challenging aspects related to water management. Different developing countries having deltaic problems may benefit these experiences. Multiple water management issues in Pakistan also include downstream kotri deltaic degradation. Unique solutions adopted by Netherland can help Pakistan for framing compatible policy for maintaining her delta.

Support policymakers and researchers working on water resources on a large scale. However, Calder did not analyze water management in different scenarios at different levels.

Meanwhile, water scarcity has not been discussed. In "Water Resources of Pakistan", In the IWMI research report established two fundamental factors for low productivity in the province of Sindh, i.e. lower Indus plain; shortage of irrigation water in some canals and poor land quality in others. Reallocation of water across the canal commands can improve productivity in short terms. However, for long term sustained productivity, effective management along with additional investment in land and water is inevitable.

In their article “Ground Water Levels Susceptibility to Degradation in Lahore Metropolitan” have established that the ground water condition has worsened in Lahore. is used to calculate the depression zone, which is accepted for planning and management because of its capacity to easily link different disciplines like resource management and natural hazards, etc.

During the first decades of its existence, Pakistan is now a country suffering from water scarcity with an output of 1050 cubic meters per year. IWMI studied water scarcity in 118 countries between 1990 and 2025. Rain system failure causes droughts. The demand for water is increasing for agriculture, housing and industry. New technologies should be used as a priority in government programs to protect water resources. He added that the area must grow by 29% to meet the nutritional and nutritional needs of the world since 1995. However, great progress has been made by Reducing 2.4 billion People not receiving adequate health care until 2015.

This region connects the mountainous climate of Pakistan with the mountainous climate of the region. Rainfall is associated with altitude. In mountainous climates, heavy rainfall occurs in the northern mountains, while western mountains have the lowest rainfall. With the exception of the coastal areas, the low climatic zone includes a complete river basin. The interesting part is the hot weather, hot summers, monsoon rains and mild cold. Rainfall changes from north to south include coastal coastal climates and river nostalgia characterized by low temperatures. The arid season includes the deserts of Balochistan, Sindh and Punjab, where the average summer temperature is less than a millimeter by a millimeter.

Pakistan's climate is hot and dry near the coast and is slowly cooling towards the northeastern hills. The winter weather is generally cold and dry. And the wind is blowing. Temperatures can reach 49 degrees Celsius in early April. The northern part of the monsoon receives an average of 38 cm (15 inches) of rain in late July and late September. There are also

differences in post-flood and post-drought methods. There are different types of cancer in the north of the country.[52]

The western system forms along the Mediterranean or North Atlantic Ocean from November to April. They started moving east or northeast, causing rain in northern Pakistan. Wet monsoon enters the area from southeast to east, causing rain in the area. Wet and humid weather conditions north of Punjab and Attock in Khyber Pakhtunkhwa generate heat flow that gives rain to the region. Storms occur before spring (May) and after sunset (October-November). All irrigation methods are related to climatic activities and drought is due to the failure of the climate system.

Over the past century, the surface level has risen to an average of 17 x 17 cm, which was 4 cm in thermal expansion, 5 cm in mountain glaciers and 2 cm in Greenland and Antarctica, which also shows a global alarm. However, the decade 1993-2003 saw an average annual growth rate of 3.1 mm. In the 20th century, the total surface area increased by 0.17 meters

According to meteorological studies, temperatures in various cities in Pakistan have risen. Karachi is experiencing constant temperatures. Temperatures rise from 0.3 to 0.37% every ten years. Over the past 53 years, temperatures have risen by about 101 C. Temperatures in Nawabsha have been rising sharply since 1997, with an increase of 0.21% between 1971-2001. The average temperature in Jacobabad is very low. The maximum temperature in Hyderabad has not changed; from 1947 to 1958 to 1984 Trends were few in Lahore, nothing had changed. Temperatures in Lahore are slowly rising. The growth rate is 1% every 50 years.

The monsoon is most widely circulated in Pakistan (west) to Japan (east). Regular rainfall changes in the weather are frequent in this area. Numerous rains affect the economies of countries in the region. The situation is like the weather, i.e. there is flood in one part and drought in the other part. The three-month summer monsoon contributes to the maximum annual rainfall in key areas of the country.

A recent study showed that it saves less than 1,000 square meters of water, making Pakistan a a country of high pressure. From 1299 cubic meters to 1101 cubic meters per capita in 2004-2005, the situation worsens day by day due to the increase in population, urbanization and industrialization. More groundwater is being drawn and, despite the drop in groundwater level, the annual growth rate for electric wells is estimated to be 6.7% and for pipeline wells around 7.4%. Also, pollution and salt water are high. The country's water resources are threatened.

[52] Ahmad, S., Ali, A., Ullah, I., Naz, N., Ali, A., and Ali, N. (2013). Bacteriological and biochemical evaluation of the spring's water of district Buner Khyber Pakhtunkhwa Pakistan. International Journal of Advancements in Research and Technology, 2, 452–460.

Sustainable water management

It cannot be achieved without a government policy plan. Water security requires the utmost attention of a senior state leader. This can be very successful if implemented with a strong knowledge base. The development of water resources can create persistent economic, social and environmental concerns.

Upcoming primary concerns about water

Many aspects of water demand management must be successfully considered. The efficient use of water for effective products is obvious, which is why some planners emphasize water rates. Change the growth pattern based on water need, demand and availability. During irrigation, seasonal irrigation requirements should be adjusted according to the water demand for the crops. Demand management also requires the integration of sources. Pakistan was semi-arid and dependent on air. Droughts and floods need to be addressed through the construction of temporary dams, development of irrigation systems, adjustment of cropping patterns and control of population growth priorities.

Integrated Water Resources Management (IWRM)

In integrated water resources management, all aspects related to water management have been considered. Increase production through water storage, control, irrigation water conservation and new collection techniques, water treatment and wastewater reuse, water recharge technologies, rural water purification, and so on, Represents IWRM for the future sustainability of water resources.[53]

Area

(A) **Low efficiency in water use**: Low efficiency in water use in river basin is calculated from 35 to percent percent.

(B) Water wastage:

It is common in all phases, agricultural, domestic, industrial and civil. Irrigation and water pollution threaten human health due to industrial influx and depletion of wastewater. All these problems may be due to the fact that we are not a source of water scarcity in Pakistan.

[53] Awais, M., Afzal, M., Granceri, M., and Saleem, M. (2016). Impact of urbanization on inflows and water quality of Rawal lake. Pakistan Journal of Scientific and Industrial Research Series A: Physical Sciences, 59, 167–172.

© Low water production / Improved water use efficiency: Water production in Pakistan is much lower than other countries, including our neighboring India which is 0.1kg / m3 less than 0. Increasing the ability to use water leads to more encouraging results in increasing water production. Farmers usually start floodwaters in the country for surface irrigation

Dams for Water Management and Development

Part of the essential management of water resources is the construction of reservoirs where water supply is maintained as per the need or demand or distributed through sectors, wastewater and floodplains. It is also organized in the system. However, in developing countries and countries that suffer from energy deficits. They have the benefit of cheap hydropower and water during times of water scarcity. River reservoirs do not use water, but they store and manage it accordingly. The reservoir regulates the flow of water between stations and rivers, which improves irrigated agriculture, low-cost hydropower water supply and at the same time reduces flood damage.

Mangla Dam

It is a multi-purpose dam named its village Mangla. Pakistani Army Chief of Staff Nasrullah Khan first revealed in 2003 that the project was designed by Benny & Company (led by Jeffrey Benny), a London and Mangla Dam contractor. A consortium of 8 American companies was formed, led by Gov. F. Atkinson, South San Francisco.

This problem is due to climatic changes in river flow and rainfall and lack of reservoirs to maintain high water reserves while crossing the upper river. The Mangla Dam was the first of two dams to bridge the deficit and strengthen the country's irrigation system as part of a river project. The other is the Tarbela Dam on the river. The reservoir regulates water flow between stations and rivers, which improves the water supply for irrigated agriculture, cheap hydraulic power and at the same time reduces flood damage.

Storage

Sections of Mangla Dam include the reservoir, the main dam, the water dam, the main stream, the emergency drainage, the power dams, five tunnels and the power dam. In addition to the main dam, at Ian 17., a foot-long dam called Skian and a small, short dam must be built to build the Jury Dam about 11 miles from the new city of Mirpur.

There was a total of 120 x 106 cubic feet (cubic feet) of excavation for storage while 142 x 106 cubic feet of concrete and 1.96 x 106 cubic feet of concrete respectively. The main land is the soil filled with soil as the central material. Gravel and sandstone are applied to the shoulders.

The maximum height over the main trench is 454 feet and length is 8,400 feet. The internal lattice structure is the ground filled type with B-sandstone as the main material. Pebbles are placed

on shoulders and the maximum height of the inner container over the central trench is 262 feet by 1,900 feet. The Scythian Dam is a mainland filled with type B rocks as the main material. Sandstone type is applied to the shoulders. The maximum height of the entrance plant over the main trench is 144 feet and 16,900 feet long.

Giri dam is also a kind of landfill that is filled with soil as main material. Gravel is placed on the dam's shoulders, and the dam over the central trench has a maximum height of 274 feet and 6,800 feet long. The main talisman is a submerged tropical variant with 9 radial doors, each by 36 x 40 ft; It has a high capacity of 1.1 million cusec. Emergency capacity

Power House

The power plant, which contains turbines, generators and transformers, is built on a ground level of 865 feet SPD at the toes of the BNT Group. Water is supplied to the power plant through five steel lines of 30/26 feet in diameter. Each tunnel is designed for two production units. The energy house chambers reach the new Pong canal, which is approximately 25,000 feet long, has a capacity of approximately 49,000 cubic feet, and automatically reaches the top of the automatic control gate 12km above the old channel. Bong Escape is located near the titles.

Hitachi in Japan supplied generators for turbines 1-4 and 7-8 while Coda generators connected turbines 5-6 and 9-10. These generators are in turn connected to three-phase transformers. The transformers connected to turbines 1, 4 and 7 were produced by Italian Sigiliani. The transformers for the fifth and sixth turbines were produced by Italorfo, another Italian company, while the other five inverters are supplied by Koda.

Processes

The project was originally designed to increase the amount of water that would be used for irrigation from Jhelum and its reservoirs. Its second function was to generate electricity by releasing water at the artificial tank head. Although the project was not initially conceived as one, it also functions as a flood control facility while retaining water during the seasonal flood season.

The dam was damaged on December 5, 1971 by bombings by the Indian Air Force during the 1971 Indo-Pakistani war. The failure to target large water tanks was contrary to the international agreement. As a result, the hydroelectric project temporarily stopped service.

As of 2009, the project has produced 183.551 billion units of low-cost hydel energy since its inception. During the years 2008-2009-2009, the annual production was 9 hours 97.425 MW, while the station shared a power load of 50 1150 MW under the startup system. "We have simply

come to our attention. On September 1, 2013, the water level at the Mangla Dam rose to 1,237.15 feet against the highest protection level of 1,232 feet."

Mangla Dam Raising Project

The power plant, which contains turbines, generators and transformers, is built on a ground level of 865 feet SPD at the toes of the BNT Group. The power plant is supplied with water by five steel lines 30/26 feet in diameter. Each tunnel is designed for two production units. The Energy House Room arrives at the new Canal Bong which is approximately 25,000 feet long and has a capacity of about 49,000 cubic feet, and automatically reaches the top of the automatic control gate 12 km from the old canal. Bong Escape is near directions.

Relocation and resettlement

The Pakistani government agreed to grant the government of Azad Jammu and Kashmir the right to use electricity from water production and dams. From Mirpur and 2 Towns and cities are inundated and the dam displaced more than 110 million people.

The Pakistani government had many detainees affected by the British arrest warrant, with the result that the majority of Pakistanis in various British cities were from the Didi Mirpur district in Azad Kashmir. He has 7,747,000 Mirpur photos in the UK, and the Mirpur community in the UK is part of the Pakistani community in the UK. Prices are higher in northern cities and towns. In Bradford, an industrial city in northwest England, it is estimated that about a quarter of the population comes from Mirpur, which also has a large population of Birmingham. At that time, due to severe shortages of workers in many parts of England, steel and textile mills began to operate.[54]

The project was originally designed to increase the water that will be used to irrigate Jhelum village and its reservoirs. His second art was to generate electricity by splashing water over an artificial reservoir. Although the project was not initially defined as such, it also functions as a flood control facility with water retention during the monsoon flood season. The dam is closed in December.

[54] Waseem, A., Arshad, J., Iqbal, F., Sajjad, A., Mehmood, Z., and Murtaza, G. (2014). Pollution status of Pakistan: A retrospective review on heavy metal contamination of water, soil, and vegetables. BioMed Research International, 29. https://doi.org/10.1155/2014/813206.

On 5 December, the Indian Air Force bombed India during the Indo-Pakistani War. Not targeting the large water tanks was in violation of the international agreement. As a result, the hydropower project was temporarily suspended.

Since the start of the project, the project has produced 18 billion units ... 551 billion units of low-cost hydraulic power. During the years 2008-2009-2009, the annual production reached 9 hours 97425 MW, while the plant shares 1150 MW of combined energy under the start-up system. “We caught our attention again. On September 1, 2013, the water level in the Mangla Dam rose to 1,237.15 feet against the highest protection level of 1,232 feet.” Radio Pakistan reported that the water level in the Mangla Dam has reached 1,237.1 feet and is continuing to rise[55]

[55] United Nations (UN). (2015). World water development report. World Water Assessment Program.

CHAPTER No 6

Critical Analysis

Water Resources and Scarcity

It has been a valuable resource for centuries, and has been used in various civilizations to develop, manage and sustain water resources. The Thar Desert adopts a traditional system of collecting ancient water, stone walls, reservoirs, dams, water wells, and reservoirs that absorb rainwater to stay in the desert. Historical information on water management for policy making; Demand for modern supply and water management must be addressed. Water efficiency has increased recently due to population growth. Due to the rains, the storage capacity of large dams is currently reduced by 5.6 billion cm. The availability of groundwater in Pakistan has also declined significantly every year. The need to build new water tanks is very important to reduce water loss. Conflicts can arise when rivers cross international borders.

According to the government's political program, scorpion programs were launched to control deforestation and water salinity. The SCRP program has cleared millions of hectares of land. Ground development was invaluable for the economic and social development of the country. Most of Pakistan's land resources are found in the vast Indus plain, from the Himalayas to the Arabian Sea. Groundwater complements the existing irrigation system and urban infrastructure to a great extent.

In the Indus Basin, groundwater recharge is estimated at 55.6 million m3 per year. The key to ground stability is that the crop should only be recharged to avoid wasting this precious resource. In the first five-year plan, water problems were correctly identified for the first time Pakistan's poor water supply received international attention in 2018 due to speculation that the country could be in short supply (when the country could not provide enough water due to physical shortage) by 2025, and a novel plan by newly elected Imran Khan Government to fund new dams entirely through most people. Last year, Pakistan's largest dams, the Taramela and Mangla Dams, both reached or approached their final level (where there is too little water for the dam to continue) at least twice, making another call.[56]

[56] Pakistan Water Gateway (2019). "The Pakistan Water Situational Analysis" (PDF)

Pakistan's water comes from many sources that continue to be suppressed, including rainfall, ice runoff, rivers and groundwater. While about 60 percent of the rain comes from the rainy season, the vast majority still spread in winter (December to March) weather patterns. Due to Pakistan's diversity, rainfall varies greatly from region to region. Most of the country is dry or arid, and the two miles [3 km] of Pakistan receive less than 250 inches [250 mm] of rain a year and droughts are common in many places. In Sindh and Balochistan, severe drought conditions are caused by a lack of rain during the heavy winter rains.

An analysis of the United Nations Development Program suggests that ;a 30- to 50-year trend indicates that rainfall has decreased in Balochistan and coastal areas (albeit a moderate increase in some parts of the country). The melting point of the ice has also been affected by climate change, resulting in greater risk of flooding and fluctuations in excess water cycles. Ice flow and snow runoff also contribute between 35 to 40 per cent to 25 to 35 per cent to the flow of the Indus Basin, respectively, making its contribution to Pakistan's energy cycle.

The Indus River system contains most of Pakistan's underground resources and groundwater resources. In 1951, the available water above each capita was 5,260 cubic meters per person. By 2016, that had dropped to about 1,000m^3, a trend that is expected to continue. Groundwater extraction rates are also related. Pakistan currently discharges approximately 61 cubic kilometers of water from its seawater each year, far exceeding the ongoing limit. As a result, Pakistan is generally considered to be both under water pressure (high water availability related to availability) and water shortages (low water availability per capita). The situation is exacerbated by Pakistan's water use rate - the fourth-highest in the world - while the average energy consumption (per unit of water used per unit of GDP) is the highest in the world. This suggests that the Pakistani economy is more watery than any other.

To combat these levels of water stress and scarcity, the Pakistani Government has recently done much to address the current shortage of dams and storage facilities in the country. While the measures to rehabilitate the masses by the government to build new dams are irrational, limited storage capacity has also contributed to the increase in water shortages. Pakistan has a minimum limit of 30 days, which not only limits the amount of water available during the dry season, but also contributes to erosion during the rainy season, as there are few overflowing dams.

Pakistan's high water use comes from its agricultural economy; directly or indirectly in the agricultural sector, which makes up 26 percent of their total domestic production. Pakistani

farmers cultivate 21.2 million hectares of land, of which more than 80 percent are irrigated. Farming is dominated by four water-intensive crops: wheat, sugarcane, rice and cotton. As a result, 93 percent (global average is close to 70 percent). While Pakistan's irrigation system is large, outdated and poorly maintained; In particular, much of Pakistan's agriculture depends on flood irrigation methods, which include flood fields using canals or tube sources. Many of the roads that carry water from the rivers for this irrigation system have not been properly lined up, resulting in some access to up to 40 percent.

Over-irrigation also contributes to Pakistan's low water supply, as the lack of available groundwater has made farmers more dependent on water reliability. Of the water used for irrigation, about half comes from the water, partly because it is not subject to seasonal availability. While it is a viable source of water, rising pumping in recent decades has led to a dramatic decline in groundwater tables, particularly in the Punjab and Sindh, where agriculture is more prevalent. Groundwater shortages have contributed to the Indus Basin aquifer being the second largest in the world, according to a study conducted between 2003 and 2013.

Water and Water Quality, Housing Transport and Health

The water crisis in Pakistan is not limited to slowing growth and poor water quality is a major problem. Water and surface resources are affected. Currently, about 56% of Pakistanis have access to safe water, and 30% of illnesses and 5 deaths are related to contaminated water. There is also great diversity between the rural and urban population. As for Pakistan, 70 rural rural villages do not have clean water. According to a World Bank report, bacterial contamination of water and soil has increased dramatically in the last 15 years. This water is not treated, it represents a great risk to health.

To protect foreign exchange, Pakistan is encouraging the development of key industries that may help protect polluted waterways by granting exemptions and lowering pricing regulations. The agriculture sector is also responsible for pollution of water resources in Pakistan due to the ban on chemical fertilizers and pesticides. While these accidents greatly affect surface waters, Pakistani aquifers have poor water quality. An unexpected groundwater extraction is also available with an excess of salt in the water.

Implications & the future Research

In addition to physical barriers to water security, the water policy has exacerbated the crisis. As a result of the colonial era water laws and the absence of meaningful governance, water policy in Pakistan falls under three main factors: Its reliance on increasingly outdated laws and frameworks; Strong preference for large-scale engineering projects to address water issues (in addition to concerns, the recent trend to build two major dams is a unique example); Water rights can be easily identified. In most cases, land ownership determines who has the right to water. Most of Pakistan's water infrastructure is in poor condition as well, due to the "build / neglect / rebuild" culture in the Public Works Department. This applies even to major engineering projects where Pakistan is investing heavily, including dams, where the failure can be massive.

After 2015, are being addressed by consensus in September 2015, at a higher level than ever before. In addition, partnerships at the national and vertical (thematic or objective) levels are essential to ensure implementation. This footnote provides an overview of what should be captured in the Ideal Sustainable Development (GPSD) Global Partnership, and look at:

Partnership for Supporting and Promoting Development The idea of global partnership is not new: Millennium Development Goal 8 also focused on this area and was unique in MDGs that focus on success rather than results. Progress has also been made in these areas, particularly in the areas of financing that enhance the flow of credit and aid. Debt forgiveness is a big success story, the debt service ratio has now reached its fourth level in 20001. - A clear understanding of the problem, the result of clear words, and a strong sense of the consequences of not paying attention to it. Strong and timely commitment to the High Level Poor Countries initiative, which involves many activists at the World Bank and develops the country's governments; As a strong accountability framework from donors and operational projects that include regular reporting.

Progress has also been made in these areas, particularly in the areas of financing that enhance the flow of credit and aid. Debt forgiveness is a big success story, the debt service ratio has now reached its fourth level in 20001. A clear understanding of the problem, the result of clear words.

Although developments in Doha have failed for most of the MDG period, trade conditions in developing countries have also improved, thanks to the reduction of major tariff barriers. (Regulations such as non-tariff barriers have gradually become barriers to exports, especially to the least developed countries, and this remains an important issue in the WTO.) Developing

countries now trade 43 of the world's trade. Only the role of the private sector in obtaining medicines is discussed. Neither the Eighth Phase nor the Millennium Development Goals focused on their role in productive sectors and prosperity, such as agriculture, manufacturing and energy. Although the technology has been identified in specific areas of medicine and information and communication technology, it is not covered in other areas such as energy, agriculture or development. As an important place; In other sectors, such as remittances and payments, taxes and irregularities, grants and debt relief, as well as financial support for resource development.

Water resources in Pakistan are managed at the provincial level, creating another obstacle to water management. Conflicts were discussed in the provinces over water reform. Although the 1991 Water Agreement alleviated some of the provinces' concerns (by allocating water to the provinces on a special formula), the enforcement system, administered by the River System Authority, was not in place and there was no way to monitor the flow. Not Found. Conflict happened.

The criticism of IRSA has grown over the past decade for its failure to manage the needs of all provinces, which has resulted in the steady decline in water flow. Other reform efforts have led to the creation of a number of institutions with duties and responsibilities, resulting in inadequate management and reducing the potential for good water management.

The criticism of IRSA has grown over the past decade for its failure to manage the needs of all provinces, which has resulted in the steady decline in water flow. Other reform efforts have led to the creation of a number of institutions with duties and responsibilities, resulting in inadequate management and reducing the potential for good water management.

So it highlights progress in water management, there are concerns that many simple proposals have been made through policy, rendering the sections contradictory and ambiguous. While the KPK helps improve water management and, without strong management or enforcement, reduces tensions between the provinces, little is likely to change, leaving water security in Pakistan in a bind.

Providing water technology

Based on the above review, available options and conservation techniques, we suggest the following techniques to improve water management and solve water problems in Pakistan. Available options include channel filtration, groundwater use, wastewater disposal, and increased water production. Conservation techniques for irrigated areas include stream improvement, agricultural planning, laser land classification, irrigation methods improvement, product patterns improvement, well drilling and wastewater use.

The water saving options are discussed below:

Irrigation water as a safe source of drinking water

Efforts by developing countries to supply drinking water to their rural communities have focused mainly on drilling deep wells and installing hand pumps to take advantage of bacteriologically safe groundwater. But groundwater in Pakistan is not an option due to high levels of arsenic, fluoride, iron, or salt. Irrigation water is often the only water in large areas where groundwater is highly saline for human use; Villagers divert irrigation water in the canal to small community tanks called Diggis for their household needs.

In order to improve both quantity and quality, it is suggested that allowing people to pump exhaust water into large storage tanks in their homes, thereby ensuring a constant supply of water for drinking, sanitation and hygiene, would significantly reduce the incidence of diarrhea, especially when combined with a campaign to promote personal hygiene. In addition, several pilot projects have been started to develop and test possible interventions, including chlorine water treatment for irrigation, low-cost water storage containers, and a sanitation plan.

Sustainable management of groundwater

Groundwater consumption has peaked in most of the country. Groundwater levels are declining in most freshwater regions, and therefore the potential for further groundwater exploitation is very limited. For example, in the western United States, surface irrigation systems have been modified to achieve high application efficiencies. Field experiments were carried out in Pakistan to compare continuous and elevated irrigation systems at different sites with different soil and field conditions. The results showed that water savings through rapid irrigation ranges between 60 and 22 percent compared to continuous irrigation

An important conclusion of the study was that the elevation is only useful for long land lengths and there is no benefit from the natural 61 m height in Pakistan. Also, the fast irrigation system is only suitable for long and flat irrigated areas of Pakistan. Improving agriculture can reduce water use by between 20% and 30%.

The most reliable options include:

1. Agricultural water rates improve this protection.
2. Development of computer monitoring and publication of water schedule for maximum efficiency
3. Use of improved irrigation systems, such as rapid irrigation systems.
4. Improving soil readiness for water use.

Improving technology

Connecting rainwater wastewater lines to reservoirs and rivers can greatly improve a city's water situation with little effort and maintenance.

Reduce water waste from pipes

Efforts have focused on reducing water waste from the urban pipeline system by replacing and maintaining pipes that experience repeated explosions and leaks. In developed countries, municipalities have implemented advanced irrigation techniques for lawns and parks, including night sprays.

Choosing normal pressure

Areas where agricultural land consolidation, water table and / or waste water levels have long been in poor condition of irrigation canals, and depleted due to water scarcity and in open canals Irrigation other problems have emerged and it is therefore difficult to implement large-scale crop cultivation on high ground based on the decline of rice and other crops.

Open channel waterproofing can be prevented from the following channels:

1. Without a natural pressure pipeline can be created under this pressure the height difference between the water basin and the rice surface is 20 cm or more. The experimental area is characterized by a low height of 20 cm between the surface of the irrigation canal and the

surface of the irrigation canal from the rice field, while the irrigation water supply can be obtained up to the maximum length of the plot (total length). 300 m) use of air valves.

2. Natural pressure pipeline can be constructed at the level of agricultural system according to the instructions of engineers.

3. This technology can be applied with agricultural machinery found in large scale agricultural systems. In addition, it helps in efficient utilization of poorly drained area and cultivation of residual land.

3. This technology allows the lands to change as it is difficult to diversify the crops due to the increase in water to create more fertile lands.

4. For areas where the groundwater level is high, it is difficult to prevent the accumulation of water by crossing the ground, so it is necessary to take a surface management system or other appropriate preventive measures.

Conclusion(s)

Pakistan has abundant natural resources, but has no plans to use it effectively. It is unfortunate that the management of the water line regulation has not yet been realized in its real intensity and that the necessary plans have not yet been implemented. Although drinking water is available to most urban residents in all seasons, there is still a shortage of drinking water throughout the year in remote areas and desert lands.

Clean water is the most important resource for any human civilization. The global economy depends on these resources due to the dire need for water in all aspects of life. Dams and human resources have been a source of clean and healthy water. It is said that 50,000 large dams (over 15 feet high) used worldwide. Due to the limited energy resources; Pakistan is amongst the driest countries; The agri-sector is the backbone of the Pakistani economy.

Due to the rains, the storage capacity of large dams has currently been reduced by 5.6 billion cm. The availability of groundwater in Pakistan has also decreased significantly every year. The need to create new water tanks is very important to reduce water waste. Disputes can arise when rivers cross the international border. A decade later, on September 19, 1960, with the mediation of the World Bank, the River Water Treaty ended. In the Indus Basin, groundwater recharge is estimated

at 55.6 million m3 per year. The key to ground stability is that the crop should only be recharged to avoid wasting this precious resource.

WAPDA started construction projects that are generally heavy and heavy capital (WAPDA, 1968). Many dams are built for energy and irrigation purposes, while these are built for pure irrigation purposes. Although some of the proposed dams have still been suspended due to differences between different provinces, the Kalabagh Dam in particular has become a point of major conflict between the provinces.

Hydroelectric dams, despite their huge reserves, play a key role in many developments. At the IUCN meeting in April 1997, amid disagreements over the construction of large dams, the WCD (World Commission on Dams) was unanimously formed. The center attracted the attention of 53 public and private organizations and civil society organizations and sponsored the World Conference on Radio Communication. Upon completion of its work, the International Council of Women submitted its final report in 2000 and was subsequently dissolved. This report contains many valuable insights into different areas of water. However, the main focus of this report is on the two main areas of water development, Future climate change risks for hydrology and crop output is analyzed using mathematical models. The outcome of the research provides policy makers option for investment in these sectors and improvement in water productivity.

In "Environmental Chemistry" published by Krishna Prakashan Media Meerut, discuss that El Nino also has an impact on global warming. Wang, Bin (2006) in "The Asian Monsoon" published by Springer, has benefitted from enhanced modern scientific knowledge regarding monsoon. Almost all sectors including hydrology, agriculture, economy, and society are seriously influenced by monsoon across Asia.

Also, in 1960, this irrigated area will exceed 24 million acres. Permanent limits are limited to coastal canals and Desert Rivers. Therefore, short duration floods require closed reservoirs, diversion structures and canals. Statistical data of different sectors including energy, agriculture and environment are presented. The author has benefitted for policy implementations in water related sectors under the auspices of government through government documents.

In the Indus River Water Treaty; the watersheds covered the historical vision of the treaty. In facing the challenges of water management in Pakistan, one of the main challenges has been strengthening India's position on water division. As per author, although India has started diplomatic talks to not only buy time for diplomatic talks, it still needs to do research to uncover the water crisis. And treatment must be used.

Several articles of the treaty are mentioned. Indo-Pakistani governments released the report. In his book "As a Catalyst for Water Peace, Water Management and Conflict Resolution," by Routledge, New York resolves disputes through water treaties. Water management policies for managing water can be used as a solution to conflict. Evidence was collected from the highlands of the Middle East and Lesotho in Africa. These bilateral agreements are analyzed, progress made, and the final outcome of the analysis. The complementarity of operations and the equivalence of results are distinguished from their impact on achieving security, peace and water stability

In the "International Conflict over Water Resources in Himalayan Asia" have discussed the dilemma of fresh water in different Himalayan Asian countries. Rapid population growth, industrialization and improvement in living standards have resulted in a conspicuous reduction of water in these countries. This has intensified conflicts over trans boundary rivers waters.

An infrastructure engineer has discussed water resource management, principles, cases and regulations in his work. It puts forward technical, financial, legal, political and administrative matters in today's complex water management.

An infrastructure engineer has discussed water resource management, principles, cases and regulations in his work. It puts forward technical, financial, legal, political and administrative matters in today's complex water management. In this literature review, different matters regarding Pakistan's water management need to be considered with local environment so that the case studies discussed

In "Sustainable Management of Water Resources: An Integrated Approach" published by Edward Elgar Publishing, have provided insight of integrated water resource management practices that support the sustainable development through a series of international case studies and theoretical frameworks. On the other hand, water supplies are insufficient. So this 300 million Muslims need to develop an understanding on Islamic perspective on proposed water management policies. This perspective can also benefit the policy makers in water management in Pakistan with about 190 million Muslim population interested Islamic practices.

In "Water Policy in the Nederland: it develops to an integral water management. The different contributions in the book show that how social and technical sciences play role in making policy for different challenging aspects related to water management. Different developing countries having deltaic problems may benefit these experiences. Multiple

water management issues in Pakistan also include downstream kotri deltaic degradation. Unique solutions adopted by Netherland can help Pakistan for framing compatible policy for maintaining her delta.

Support policymakers and researchers working on water resources on a large scale. However, Calder did not analyze water management in different scenarios at different levels. Meanwhile, water scarcity has not been discussed. In "Water Resources of Pakistan", In the IWMI research report established two fundamental factors for low productivity in the province of Sindh, i.e. lower Indus plain; shortage of irrigation water in some canals and poor land quality in others. Reallocation of water across the canal commands can improve productivity in short terms. However, for long term sustained productivity, effective management along with additional investment in land and water is inevitable.

During the first decades of its existence, Pakistan is now a country suffering from water scarcity with an output of 1050 cubic meters per year. IWMI studied water scarcity in 118 countries between 1990 and 2025. Rain system failure causes droughts. The demand for water is increasing for agriculture, housing and industry. New technologies should be used as a priority in government programs to protect water resources. He added that the area must grow by 29% to meet the nutritional and nutritional needs of the world since 1995. However, great progress has been made by Reducing 2.4 billion People not receiving adequate health care until 2015.

This region connects the mountainous climate of Pakistan with the mountainous climate of the region. Rainfall is associated with altitude. In mountainous climates, heavy rainfall occurs in the northern mountains, while western mountains have the lowest rainfall. With the exception of the coastal areas, the low climatic zone includes a complete river basin. The interesting part is the hot weather, hot summers, monsoon rains and mild cold. Rainfall changes from north to south include coastal coastal climates and river nostalgia characterized by low temperatures. The arid season includes the deserts of Balochistan, Sindh and Punjab, where the average summer temperature is less than a millimeter by a millimeter.

Pakistan's climate is hot and dry near the coast and is slowly cooling towards the northeastern hills. The winter weather is generally cold and dry. And the wind is blowing. Temperatures can reach 49 degrees Celsius in early April. The northern part of the monsoon receives an average of 38 cm (15 inches) of rain in late July and late September. There are also differences in post-flood and post-drought methods. There are different types of cancer in the north of the country.

The western system forms along the Mediterranean or North Atlantic Ocean from November to April. They started moving east or northeast, causing rain in northern Pakistan. Wet monsoon

enters the area from southeast to east, causing rain in the area. Wet and humid weather conditions north of Punjab and Attock in Khyber Pakhtunkhwa generate heat flow that gives rain to the region. Storms occur before spring (May) and after sunset (October-November). All irrigation methods are related to climatic activities and drought is due to the failure of the climate system.

Over the past century, the surface level has risen to an average of 17 x 17 cm, which was 4 cm in thermal expansion, 5 cm in mountain glaciers and 2 cm in Greenland and Antarctica, which also shows a global alarm. is being; However, the decade 1993-2003 saw an average annual growth rate of 3.1 mm. In the 20th century, the total surface area increased by 0.17 meters

According to meteorological studies, temperatures in various cities in Pakistan have risen. Karachi is experiencing constant temperatures. Temperatures rise from 0.3 to 0.37% every ten years. Over the past 53 years, temperatures have risen by about 101 C. Temperatures in Nawabsha have been rising sharply since 1997, with an increase of 0.21% between 1971-2001. The average temperature in Jacobabad is very low. The maximum temperature in Hyderabad has not changed; from 1947 to 1958 to 1984 Trends were few in Lahore, nothing had changed. Temperatures in Lahore are slowly rising. The growth rate is 1% every 50 years.

The monsoon is most widely circulated in Pakistan (west) to Japan (east). Regular rainfall changes in the weather are frequent in this area. Numerous rains affect the economies of countries in the region. The situation is like the weather, i.e. there is flood in one part and drought in the other part. The three-month summer monsoon contributes to the maximum annual rainfall in key areas of the country.

During the winter, western storms also bring rain and snow. Located four and a half kilometers above sea level, the Tibetan Plateau has a powerful body that plays an important role in Asia's climate. This is an excellent source of mechanical and heat barrier. The most prominent trend in the summer monsoon season is the control of the Tibetan Plateau.

The Indus River has its tributaries, the Ravi, the Persian Gulf, and its bay, including the Sutlaj, Jelum, and Chenab, while the Kabul River joins the Attock, south of Peshawar. The main cities east of the Sutlaj River are Ravi and Chenab. Jhelum rises in the Himalayas, crosses Kashmir and enters Pakistan under Indian rule. The Bias River meets the Sotheby's River in each of the Indian subcontinent. The river system consists of 13 provinces in the western hills and 14 provinces in the basins.

The Swat, Kabul, Toshi, Karam, Gomal and Bolan rivers converge to the west. During the summer, due to irrigation, the flow of these small rivers is sufficient, but in winter, due to melon,

the water flow decreases. In terms of basin water, the Bea, Ravi and Sutlej rivers are the eastern rivers, while the Jelum, Chenab and Hindu rivers are the western rivers. The Zaskar, Shivak, Shigar, Hunza, Gilgit, Store, and other canals bring ice and snow from the Himalayas, the Karakoram Mountains, the Nanga Bart Ranges, and the mountain ranges.

The river receives large swaths of land east of the Punjab, including Jelly, Chenab, Rafi and Bais. Then the river expands and as the color process decreases, its speed decreases. Due to the stability of spring and summer, the river flows on average from June 30 to September. This shows that the amount of summer water varies depending on its size and height, the presence of the monsoon, the height of the ice line and the legacy of past mistakes.

This explains the complexity of the hydrological linkage system with the highest annual turnover and the unexpected potential of all major rivers in the world. Water levels in Ando, Jellum and Chenab increased after March, but later in Zinc and Sutlej.

Crop-based water supplies present a major challenge to management. Effective water management means providing abundant water based on crop needs. This system is based on supply rather than demand, which means that available water is distributed according to the method of distribution. At the same time, attention must be paid to the effective water usage. Crop species that use less water per unit should be encouraged. Use irrigation techniques as less water is wasted. The water supply needs to be better managed to meet the waiting lists. To this end, the infrastructure must be improved. The impact on the region should not be above the law. A fair tail share margin will reduce dependence on groundwater. Nowadays, water economy has been advocated by various classifications.

Saving water based on crop demand is a huge management challenge. Effective water management means providing abundant water based on crop needs. This system is supplied on a demand-based basis, i.e. the available water is distributed according to the specified procedure. Types of crops that use a minimum amount of water per unit should be encouraged. Irrigation techniques that reduce water loss should be used. Those who reach the tail should have better water management.

Pakistan's water comes from many sources that continue to be suppressed, including rainfall, ice runoff, rivers and groundwater. While about 60 percent of the rain comes from the rainy season, the vast majority still spread in winter (December to March) weather patterns. Due to Pakistan's diversity, rainfall varies greatly from region to region. Most of the country is dry or arid, and the two miles [3 km] of Pakistan receive less than 250 inches [250 mm] of rain a year

and droughts are common in many places. In Sindh and Balochistan, severe drought conditions are caused by a lack of rain during the heavy winter rains.

An analysis of the United Nations Development Program suggests that ;a 30- to 50-year trend indicates that rainfall has decreased in Balochistan and coastal areas (albeit a moderate increase in some parts of the country). The melting point of the ice has also been affected by climate change, resulting in greater risk of flooding and fluctuations in excess water cycles. Ice flow and snow runoff also contribute between 35 to 40 per cent to 25 to 35 per cent to the flow of the Indus Basin, respectively, making its contribution to Pakistan's energy cycle.

The Mangla project has increased the amount of water that can be used to irrigate the Jhelum River and its surroundings. One of her tasks was to extract electricity from the irrigation system in the last power plant. The river and its surroundings are naturally beautiful. Due to the lack of proper rehabilitation plans and appropriate soil conservation measures, some methods have been developed in reservoirs belonging to the river system.; As mentioned, floods caused by heavy rains cause soil to expand beyond the natural course of the river.

The shortage of drinking water is not as severe in urban areas as it is in remote areas, with the exception of summers or winters. The high use of drinking water, pipes and taps is a major cause of water loss, which runs into millions of gallons per day. Cleaning toilets and using drinking water for terrestrial life also enhances drinking water waste. Drainage requires three to four gallons of water.

Progress has also been made in these areas, particularly in the areas of financing that enhance the flow of credit and aid. Debt forgiveness is a big success story, the debt service ratio has now reached its fourth level in 20001. - A clear understanding of the problem, the result of clear words, and a strong sense of the consequences of not paying attention to it.

Although developments in Doha have failed for most of the MDG period, trade conditions in developing countries have also improved, thanks to the reduction of major tariff barriers. (Regulations such as non-tariff barriers have gradually become barriers to exports, especially to the least developed countries, and this remains an important issue in the WTO.) Developing countries now trade 43 of the world's trade. . Much of this is Southern trade. As far as technology is concerned, access to electronic information and communication technology has grown exponentially, although it is not clear if OSM 8 was a major factor. For example, mobile phone

partnerships have grown from 80% to 80% today at the turn of the century, and this has led to a rapid increase in Internet access as 3G and 4G networks have seen moderate growth. . It is also common in cities (at least in urban areas).

Only the role of the private sector in obtaining medicines is discussed. Neither the Eighth Phase nor the Millennium Development Goals focused on their role in productive sectors and prosperity, such as agriculture, manufacturing and energy. Although the technology has been identified in specific areas of medicine and information and communication technology, it is not covered in other areas such as energy, agriculture or development. The need for developed countries to move towards sustainable use and production patterns has not been addressed at any stage of the Millennium Development Goals.

The seventh part of the Millennium Development Goals (on environmental protection) failed to say anything about the level of consumption of developed countries, and this apparently means that sustainability is very important for developing countries, and it is on a cell. Is fundamental and it reflects a view that does not recognize the focus on sustainability concerns. In all objectives and in all development projects

Drinking water or treated wastewater should be used as a substitute for drinking water for these purposes. Among the most serious problems related to water scarcity in the country are the mismanagement of wastewater from raw water, industrial waste, and agricultural growth that increases the pollution of natural freshwater resources.

The water crisis in Pakistan is not limited to slowing growth and poor water quality is a major problem. Water and surface resources are affected. Currently, about 56% of Pakistanis have access to safe water, and 30% of illnesses and 5 deaths are related to contaminated water. There is also great diversity between the rural and urban population. As for Pakistan, 70 rural rural villages do not have clean water. According to a World Bank report, bacterial contamination of water and soil has increased dramatically in the last 15 years. This water is not treated, it represents a great risk to health.

Therefore, wastewater should not be allowed to fall into the sea or rivers, but must be treated and stored properly outside cities or villages to return to the population for use. Cleaning sewage and keeping it away from cities will increase groundwater levels and treat solid waste as natural fertilizer. While wastewater recycling and storage can create water reservoirs in some

areas and increase soil salinity, in many cases (for example in Balochistan Province) the water level increases and the result will be fertile soil and salinity and water collection can be controlled through The use of modern scientific technology.

Studies have found a wide gap between the aspirations, demands and hopes of local people, government policies, and possible solutions. Between folk traditions and historical and proposed foundations; an understanding of the problems faced by local people and decision-makers. Water supply projects should lead to better water services, but with solutions tailored to the local culture, along with local players, rather than relying on them. Pakistan lacks good water for irrigation and domestic use.

Pakistan has a semi-arid climate that does not rain even when it is not distributed. The shortage of fresh water is dangerous in some parts of the world. There are conflicts and crises in all over the globe between neighboring countries. Global water consumption has decreased since the twentieth century. Due to the rains, the storage capacity of large dams has currently been reduced by 5.6 billion cm. The availability of groundwater in Pakistan has also decreased significantly every year. The need to create new water tanks is very important to reduce water waste. Disputes can arise when rivers cross the international border.

This perspective can also benefit the policy makers in water management in Pakistan with about 190 million Muslim population interested Islamic practices. Different developing countries having deltaic problems may benefit these experiences. Multiple water management issues in Pakistan also include downstream kotri deltaic degradation. Unique solutions adopted by Netherland can help Pakistan for framing compatible policy for maintaining her delta.

In "Water Resources of Pakistan", In the IWMI research report established two fundamental factors for low productivity in the province of Sindh, i.e. lower Indus plain; shortage of irrigation water in some canals and poor land quality in others. Reallocation of water across the canal commands can improve productivity in short terms. However, for long term sustained productivity, effective management along with additional investment in land and water is inevitable.

Rain system failure causes droughts. The demand for water is increasing for agriculture, housing and industry. New technologies should be used as a priority in government programs to protect water resources. He added that the area must grow by 29% to meet the nutritional and

nutritional needs of the world since 1995. However, great progress has been made by Reducing 2.4 billion People not receiving adequate health care until 2015.

In mountainous climates, heavy rainfall occurs in the northern mountains, while western mountains have the lowest rainfall. With the exception of the coastal areas, the low climatic zone includes a complete river basin. The interesting part is the hot weather, hot summers, monsoon rains and mild cold. Rainfall changes from north to south include coastal coastal climates and river nostalgia characterized by low temperatures. The arid season includes the deserts of Balochistan, Sindh and Punjab, where the average summer temperature is less than a millimeter by a millimeter.

Bibliography

1. Agarwal, Vishal (2003). "A Reply to Michael ujhWitzel's 'Ein Fremdling im Rgveda'" (PDF). *Journal of Indo-European Studies*. **31** (1–2): 107–185. It may be noted that the Nara is still called the Sarasvati by rural Sindhis and its dried up delta in Kutch is still regarded as that of Sarasvati by the locals.
2. Ahmad, S., Ali, A., Ullah, I., Naz, N., Ali, A., and Ali, N. (2013). Bacteriological and biochemical evaluation of the spring's water of district Buner Khyber Pakhtunkhwa Pakistan. International Journal of Advancements in Research and Technology, 2, 452–460.
3. Ahmadani A (August 19, 2010). "Heavily Funded FFC Fails to Deliver". The Nation. Archived from the original on July 6, 2011.
4. Alamgir, A., Khan, M. A., Schilling, J., Shaukat, S. S., and Shahab, S. (2016). Assessment of groundwater quality in the coastal area of Sindh province, Pakistan. Environmental Monitoring and Assessment, 188, 1–13.
5. Alvi, Hamid. "Two Years of Mangla Dam Project." *Trade and Industry: The International Monthly Economic Journal of Pakistan*. Spec. issue on Mangla Dam VIII.5 (1964): 633.
6. An Introduction to the Human Development and Capability Approach: Freedom and Agency'
7. Awais, M., Afzal, M., Granceri, M., and Saleem, M. (2016). Impact of urbanization on inflows and water quality of Rawal lake. Pakistan Journal of Scientific and Industrial Research Series A: Physical Sciences, 59, 167–172.
8. Butt, M. J., Waqas, A., and Mahmood, R. 2010, The combined effect of Vegetation and Soil Erosion in the Water Resource Management. *Water Resource Management*. 24(13)
9. Daniel C. Taylor, Carl E. Taylor, Jesse O. Taylor, ''Empowerment on an Unstable Planet: From Seeds of Human Energy to a Scale of Global Change'' (New York: Oxford University Press, 2012) pp. 25–33.
10. Deneulin, Séverine; Shahani, Lila (2009). *An introduction to the human development and capability approach freedom and agency*. Sterling, Virginia Ottawa, Ontario: Earthscan International Development Research Centre. ISBN 978-1844078066.
11. Escobar, Arturo (1980). "Power and Visibility: Development and the Invention and Management of the Third World". *Cultural Anthropology*. **3** (4): 428–443.

12. Floods in Pakistan worse than tsunami, Haiti". gulfnews. Retrieved 12 August 2010
13. Goal :: Ensure Environmental Sustainability . Mdg Monitor. Retrieved 18 October 2012.
14. Ibid
15. Kabeer, Naila. 2003. *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A Handbook for Policy-Makers and Other Stakeholders*. Commonwealth Secretariat.
16. Mangla Dam becomes largest water reservoir of Pakistan . Daily Times (Pakistan). 26 August 2013.
17. *MANGLA DAM RAISING PROJECT (PDF). Pakistan Electric Power Company. Archived from the original (PDF) on 4 March 2011.*
18. Mariam Khan (30 November 2014). "Kalabagh Dam - A Pivotal Need for Pakistan?". HuffPost. The HuffingtonPost Inc
19. MDGs and the humanitarian-development divide . ODI Briefing Paper. Overseas Development Institute. Retrieved 7 July 2011.
20. Mirza, M.R.; Mirza, Z.S. (2014). "Longitudinal Zonation in the Fish Fauna of the Indus River in Pakistan". *Biologia (Pakistan)*. **60** (1): 149–152
21. Muir Wood, Sir Alan (1990). Biographical Memoirs of Fellows of the Royal Society: Geoffrey Morse Binnie
22. Mulk, Shamsul (22 May 2012). "Need for early construction of Kalabagh Dam stressed". *The News International*
23. Oldham, R. D. (1893). "The Saraswati and the Lost River of the Indian Desert". *Journal of the Royal Asiatic Society*: 49–76.
24. Pakistan Water Gateway: Mangla Dam (PDF). IUCN Pakistan .
25. Pakistan Water Gateway: Mangla Dam" (PDF). *IUCN Pakistan*. Archived from the original (PDF) on 22 October 2013.
26. Pakistan Water Gateway. "The Pakistan Water Situational Analysis" (PDF). Retrieved 2008-05-28., p. 4
27. Pakistan crafts plan to cut carbon emissions 30% by 2025". *The Express Tribune*. 10 June 2015.
28. Pakistan National Policy on Climate Change". Archived from the original on 2016-03-05
29. Pakistan Water Gateway (2019). "The Pakistan Water Situational Analysis" (PDF)

30. Pukhtunkhwa's Case Against Kalabagh Dam – Awami National Party". *awaminationalparty.org*. Archived from the original on 25 December 2015.
31. Swain, Ashok (2004). *Managing Water Conflict: Asia, Africa and the Middle East*. Routledge. 46. ISBN 1135768838. 1,800 miles long river after flowing out of Tibet through the Himalayas enters Jammu and Kashmir in India and then moves into Pakistan
32. Terminski, Bogumil Development-Induced Displacement and Resettlement: Theoretical Frameworks and Current Challenges , Indiana University, 2013
33. "THE ISSUE OF KALABAGH DAM?". *www.pakistaneconomist.com*. Retrieved 22 June2020
34. The Millennium Development Goals Report 2008
35. The Political Economy of the MDGs: Retrospect and Prospect for the World's Biggest Promise
36. Two Years of Mangla Dam Project. Trade and Industry: The International Monthly Economic Journal of Pakistan
37. Uereyen, Soner; Kuenzer, Claudia (9 December 2019). "A Review of Earth Observation-Based Analyses for Major River Basins". *Remote Sensing*. **11** (24): 2951.
38. UNEP. "Stockholm 1972 - Declaration of the United Nations Conference on the Human Environment - United Nations Environment Programme (UNEP)"
39. *United Nations Educational, Scientific and Cultural Organization (March 2006). "The 2nd UN World Water Development Report: 'Water, a shared responsibility'" (PDF). New York: UNESCO. ISBN 92-3-104006-5. Retrieved 2008-05-28.* , p. 134
40. *United Nations Millennium Development Goals . Un.org. 20 May 2008.*
41. United Nations (UN). (2015). World water development report. World Water Assessment Program.
42. Waseem, A., Arshad, J., Iqbal, F., Sajjad, A., Mehmood, Z., and Murtaza, G. (2014). Pollution status of Pakistan: A retrospective review on heavy metal contamination of water, soil, and vegetables. BioMed Research International, 29. https://doi.org/10.1155/2014/813206
43. Water and Power Development Authority. Archived from the original on 10 June 2012
44. Water Dams: Mangla , Water & Power Development Authority.this project included Mr Iqbal Hussein and some other workers who did this work with much hardworking.
45. *Water level in Mangla Dam reaches to record height of 1237.15 feet . Radio Pakistan. 1 September 2013.*
46. www.pk.undp.org/content/pakistan/en/home/sustainable-development-goals.html

47. . www.unep.org.
48. Zaheer, Khadija; Colom, Anna. "Pakistan, How the people of Pakistan live with climate change and what communication can do" (PDF). *www.bbc.co.uk/climateasia*. BBC Media Action.

Notes

70% of cattle-breeders desert Banni; by Narandas Thacker, TNN, 14 February 2002; *The Times of India*

Bailey, H. W. (1975), Indian Sindhu-, Iranian Hindu- (Notes and Communications) , Bulletin of the School of Oriental and African Studies, ***38*** *(3): 610–611, doi:10.1017/S0041977X00048138, JSTOR 613711*: The word *sindhu-* is used of a 'mass of water' (*samudra-*), not therefore primarily 'flowing' water. Hence the second derivation of 'enclosed banks' is clearly preferable.

Boyce, Mary (1989), A History of Zoroastrianism: The Early Period, BRILL, pp. 136– , ISBN 978-90-04-08847-4: The word *hindu-* (Skt. *sindhu-*), used thus to mean a river-frontier of the inhabited world, was also applied generally, it seems, to any big river which, like the Indus, formed a natural frontier between peoples or lands.

Can the MDGs provide a pathway to social justice?: The challenge of intersecting inequalities. 2010. Naila Kabeer for Institute of Development Studies.

Charul Bharwada & Vinay Mahajan, Lost and forgotten: grasslands and pastoralists of Gujarat .

Climate change triggers widespread Pakistan migration . www.aa.com.tr. Retrieved 2020-04-29.

Climate change triggers widespread Pakistan migration . www.aa.com.tr. Retrieved 2020-04-29.

Goal :: Achieve Universal Primary Education . Mdg Monitor. 15 May 2011. Retrieved 18 October 2012.

Goal :: Combat HIV/AIDS, Malaria and Other Diseases . MDG Monitor. Retrieved 18 October 2012.

Goal:: Develop a Global Partnership for Development . Mdg Monitor. Retrieved 18 October 2012.

Goal :: Ensure Environmental Sustainability . Mdg Monitor. Retrieved 18 October 2012.

Goal :: Eradicate Extreme Poverty and Hunger . Mdg Monitor. Retrieved 18 October 2012.

Goal :: Improve Maternal Health . Mdg Monitor. Retrieved 18 October 2012.

Goal :: Promote Gender Equality and Empower Women . Mdg Monitor. 30 April 2011.

Goal :: Reduce Child Mortality . Mdg Monitor. 16 May 2011. Retrieved 18 October 2012.

Goal :: Tracking the Millennium Development Goals . Mdg Monitor. 1 November 2007. Archived from the original on 30 January 2012. Retrieved 14 October 2012.

Mukherjee, Bratindra Nath (2001), Nationhood and Statehood in India: A historical survey, Regency Publications, p. 3, ISBN 978-81-87498-26-1: Apparently the same territory was referred to as Hi(n)du(sh) in the Naqsh-i-Rustam inscription of Darius I as one of the countries in his empire.[10] The terms Hindu and India ('Indoi) indicate an original indigenous expression like Sindhu. The name Sindhu could have been pronounced by the Persians as Hindu (replacing s by h and dh by d) and the Greeks would have transformed the latter as Indo- (Indoi, Latin Indica, India) with h dropped...

Thieme, P. (1970), Sanskrit sindu-/Sindhu- and Old Iranian hindu-/Hindu- , in Mary Boyce; Ilya Gershevitch (eds.), W. B. Henning memorial volume, Lund Humphries, p. 450: As the great frontier river that represents the natural dividing line between India and Iran, the Indus could most easily and fittingly be called *Sindhu-* 'Frontier' by the Indians and *Hindu-* 'Frontier' by the Iranians.

Welle, Katherina (March 2008). Mapping as a basis for sanitation implementation in Pakistan: the case of the Orangi Pilot Project (PDF). Beyond Construction. Use by All. A Collection of Case Studies from Sanitation and Hygiene Promotion Practitioners in South Asia. London: WaterAid, IRC International Water and Sanitation Centre: 95–110. ISBN 978-9937-2-0472-9. Archived from the original (PDF) on 2008-09-12. Retrieved 2013-10-09.

World Health Organization; UNICEF. Joint Monitoring Program . Archived from the original on 2008-02-16. Retrieved 2008-05-16.

World Health Organization; UNICEF. Joint Monitoring Program . Retrieved 2019-12-26.

www.mocc.gov.pk http://www.mocc.gov.pk/frmDetails.aspx