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Research Article

**STUDY TO DETERMINE THE WATER ASSOCIATED  
EFFECTS ON CLIMATE CHANGE IN PAKISTAN****Dr Jabbar Hussain Bali, Dr Zahra Tanveer, Dr Saba Sarfraz**

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**Article Received:** April 2020**Accepted:** May 2020**Published:** June 2020**Abstract:**

*The impact on water ranges from a lack of water to severe floods and storms such as climate in developing countries such as Pakistan. The excellence of water and water-borne diseases for example cholera, typhoid fever, liver disease, protozoal infection & bone fever increase significantly in industrialization, chaotic urbanization and poor hygienic environments & inadequate management of water resources. This document dangerously reviews scientific research and benefits from generals who deal with environmental and public health issues at national and global levels. The article emphasizes the need to develop mitigation measures to protect, manage risk, and thus the impact of water associated global environment transformation on agriculture and then on community health.*

**Keywords:** Water, Associated, Effects, Climate Change, Pakistan.

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**INTRODUCTION:**

Water-related tragedies such as changes in rainfall patterns, floods and droughts and rising temperatures are serious challenges & their impact on water excellence and eventually on public health should be considered. and control 1. Around 60% of documented tragedies are usually caused by floods, and about 20% due to high-temperatures or hot weather<sup>2</sup>. Climate change and environmental degradation up to around 30% of all diseases, such as symptoms, malaria and infections, eg waterway pollution due to clean agricultural surplus 3. Difficulties are enormous in emerging states. For instance, due to the decline and recovery of the global crisis fund, the inhabitants of Karachi lack fresh water and healthiness services<sup>4</sup>. Water has a pleasant effect on agriculture and health in dynamic climatic environments such as rain, humidity and temperature. Ease of use and excellence in water consumption fail, and waterborne diseases are growing and affecting every sector. Worldwide weather change has not been fully explored, in particular to ensure the excellent influence of global environmental change on water-related (both vector-related and water-related) diseases 5-6. Waterborne diseases such as Asian cholera and dengue and protozoal infections, dynamic rainfall, temperature, humidity, etc. In Pakistan. Vectors-transmitted diseases. The availability of water for agriculture is essential because about ninety percent of water is consumed for irrigation in various republics. 7. The presence of water in ever-changing weather conditions can affect agriculture and production. There is a great need to study these effects in ever-changing environmental conditions. As a result, policymakers must be informed about the impact of temperature changes in developing countries on agriculture and then on community health related to water. A wide range of qualified environments in the field of public health environment. There are several organizations at government and private sector level, each of which is acting on the effects of global environment change, natural tragedies and their direct impact on human healthiness. NGOs and administration officials are also working on water excellence and various water related issues. There is presently no logical framework or research showing the exact state of water management, agriculture, water quality and public health related to global climate change in Pakistan. Therefore, this document aims to critically examine scientific research to develop support measures to assess the needs for protection, risk management and consideration of the impact of global climate change on agriculture on water. This is important for Pakistan from a public health point of view. New solutions and techniques will be presented that will benefit a wide range of experts and stakeholders in

the organization of environmental pollution and commercialization of public awareness, as well as a pioneering abstract structure to assess current and future opportunities.

**METHODOLOGY:**

A full literature review was carried out among August 2018 and April 2019. References to the victimization of Google Scholar (in addition to the excellent Google search engine) were known on the Internet from Science, Scopus and Science Direct. Keywords and phrases related to global climate change, its impact on water, agricultural pollution, vector diseases, water diseases, flood effect, water perfection, important event, community health, public services Water, pollution management, water quality and Asian country in numerous mixtures used. The cited literature has chosen and supported the review article for publications containing the most links with Asian countries and countries with alike environmental status. Alternative measures such as type of publication, publication date and author (or institution) compete with minor roles in the selection of literature.

**3. Effects of floods and environmental pollution.**

Floods cause biological and chemical pollution that can eventually contaminate groundwater. Floods often cause erosion due to chemical contaminants such as inanimate and natural substances, as well as heavy polycyclic metals and odors that threaten groundwater resources and must be associated with plants and various plants. Both soils and fertilizers are a source of polycyclic aromatic hydrocarbons. Health and water infections can increase after floods. An increase in mold and an accidental decrease in the number of drug-resistant organisms has been observed after flood health care facilities. Real bacterial species other than gram-negative intestinal microorganisms (e.g. *Aeromonas* species), bacteria and tuberculosis have also been reported to be transmitted in hospital water supplies. The development of waterborne diseases such as Indian cholera and infectious diseases may increase if diarrhea occurs. Infectious diseases will increase after a flood infection 8. It can increase any height such as floods, bone fever and infectious diseases, as well as vector and aquatic diseases such as infectious diseases, typhoid fever, dysentery and protozoal infections<sup>9</sup>. Increased risk of infectious diseases associated with floods, metabolic and vector events 10. Flood intensity and drought have a negative impact on public health during and after each event. A change in temperature will increase the formation and intensity of droughts, floods and waves of hot air in rural or local areas, and their appearance is dangerous<sup>11</sup>. The first table summarizes the relatively new flood losses in western Pakistan.

**Table 1. Summary of projected flood-losses in Pakistan in recent years.**

Yrs	Expiries	House-damages	Population-affected
2014	600	16888600	9454000
2015	70990	747500	5850900
2016	440	47300	2490200
2017	480	208200	3513000
2018	250	5800	2,415,600

#### 4. Excellence in water and community health.

Water pollution and community health consequences are one of the main problems facing humanity. Contamination with chemicals (heavy metals such as iron, lead and arsenic), microorganisms (enteroviruses, hepatitis A and polio) and microorganisms (contaminated with coliforms and streptococci) have a significant impact on public health. However, various studies based on high concentrations of arsenic in eastern Pakistan, China and Pakistan, as well as significant metallic impurities such as chromium, nickel, lead, mercury and cadmium that directly affect public health in groundwater. The main source of water pollution is the removal of insufficient waste water. Any chemical pollution and microorganisms will affect aquatic life. Heavy metal contamination can pose a risk to fish and then to community health. Inadequate management of waste discharges and good effects of groundwater flow in coastal lagoons are responsible for some environmental and water problems. There is no access to approximately 35% of the planet's population living in developing countries. *E. coli* is considered the best indicator of starch contamination. Enteroviruses are used as indicators for assessing the water infectivity of an infectious agent. Contaminants can increase the variety of antibiotic-resistant bacteria in the aquatic environment. Excessive air and water pollution and a significant reduction in floods are responsible for outbreaks of water-borne diseases, which is a pleasant risk for all developed and developing countries.

#### 5. General definition of agricultural water pollution affecting human health.

This summary section is a somewhat broad introduction to the current matter. Knowledge of case studies often depends on local and local margins, in which global reader interest is less. For this reason, the authors did not provide numerical information, but together with the information they provided a good set of useful references for readers who needed additional data. Agriculture will have a negative impact on water quality, especially in the rural areas of all developing and developed countries. Crops are often irrigated with wastes containing serious metals that are contaminated with domestic and industrial wastewater, which will be

absorbed by alternative products and vegetables and eventually become part of the organic phenomenon. Conscious literature on the potential risks of serious metallic therapeutic agents for the general suffering of public health. Urban farming has a surprising impact on human health in terms of the spread of water-related diseases such as gas emissions and protozoal infections. Antonio-Nkondjio has discovered that urban agriculture plays an important role in spreading resistance to pesticides and protozoal infectious diseases. Chemical pollution is usually reduced by the use of natural fertilizers and general agricultural principles. Changes in temperature and decrease caused by global climate change can affect the development of fungi and the increase of mycotoxins in agricultural food products, which is a high risk to human health. A warm and humid climate is conducive to the development of flora, in which the typical annual temperature is about twenty-five computers, but varies depending on the season. South Asian and Asian countries are standard as sensitive areas exposed to the negative effects of temperature changes on public health. High growth rates, current water scarcity, soil degradation, urbanization, global climate change, and consequently animal diet degradation are global challenges threatening food safety. The growing demand for water from crops in the agricultural sector poses a serious threat to the neutral management of water funds. Some crops, such as wheat and barley, pose a challenge in terms of weather, especially in very variable weather conditions. Overall, in most countries, such as western Pakistan, the agricultural sector suffers from global climate change, which can lead to food shortages in 2040, leading to increased food costs. Changes in drought, floods, warming and precipitation will directly change plants. It can digest human life and cause disease and illness due to semi-permanent deficiency. A wheat production survey (Swat and Charsadda region, Pakistan) shows that mountain areas have a short duration due to warming and crop diversity [16]. Global climate change has a major impact on agriculture and health as a result of a text test, as indicated in Table 3, partly based on literature and partly on expert judgment. Case study associations show that manure and animal waste contain euphoric and developing

serious metals, pathogens, prescription veterinary drugs and nutrients in the atmosphere, causing all environmental hazards. human health. Many strong

storms that cause global climate change, release these pollutants and eventually introduce them into the human body.

**Table 2. Potentially strong relationships between exposure and health conditions.**

Health Conditions	Polluted Air	Excreta and Household Wastewater	Polluted Water or Deficiencies in Water Management	Polluted Food	Unsuitable Housing	Global Change of Environment
Acute respiratory Infection	X		X			
Other infections		X		X	X	
Diarrheal diseases		X	X	X		X
Malaria			X		X	X
Injuries	X	X	X	X	X	X
Mental health conditions						
Cancer	X					X

#### 6. Techniques for detecting and controlling water pollution.

This section follows the logic of the previous 3 sections: the third section combines global climate change with floods that affect the environment and generally increase pollution. The fourth section shows that water perfection meets public health. Finally, the fifth part concerns additional pollution of agriculture, especially for human health. This section describes rough and agricultural pollution and its impact on human health. Detection and detection techniques developed by scientists are often used to regulate existing problems and the need to extend new techniques in ever-changing atmospheric conditions. Bacterial systems will facilitate the deterioration of environmental pollution. Plant breeding removes toxic metals from waste. Experimental research has been reported regarding the use of plants to remove metals and serious paints from wastewater and soil. Among traditional technologies, various plant components are used as natural adsorbents and coagulants, but they are also used in advanced chemical reaction processes to remove tin nanoparticles. Contamination by toxic metals and microorganisms in wastewater 12. In addition to chemicals and biosensors, all cell detection systems are used to detect environmental pollutants such as metals. Recent progress has shown that harmful metals are transformed into beneficial gold nanoparticles due to the misuse of microorganisms<sup>13</sup>.

Animal waste, including bodies, causes infectious water sources. Anaerobic digestion Instead of selling in completely different locations (as in developing countries), animal waste will create environmental and public health problems. Animal waste

Alternative energy source. Therefore, anaerobic digestion of animal waste can be used for biogas assembly, and completely different methanogens will improve the fermentation method. To reduce environmental pollution, various nanotechnology and nanomaterial strategies with different physical and chemical properties were used. Silver and various silver nanoparticles (e.g. metal oxide) develop against water-borne pathogens<sup>14</sup>.

#### 7. Water pollution, climate change and population growth.

Climate change is expected to change the quantity and perfection of water and show inconsistencies between large and small pools. Potential changes in temperature and precipitation may not be systematically broken down into gigantic water collection areas, so any regional and local scale should be included in the study of global climate change. water resources protection. such as rivers, streams and lakes that offer clean water. To protect water resources, policy makers should consider the impact of global climate change on reducing pollution to improve water excellence. Industrial and human waste (including agriculture) is pollution that significantly pollutes water reservoirs during

floods. Contaminants from human microbes such as *E. coli*, *Salmonella* and *Eubacterium* come from completely different industries, resulting in pollution in addition to metals and serious carcinogens associated with pesticides; seriously threatens agricultural communities. All medical knowledge and chemical pollution of water have a negative impact on human health, but there is less data on the importance of constantly changing weather conditions on the market. Population growth and urbanization threaten golf water resources, enthusiastic public health, the economy, and thus the atmosphere. Extreme weather conditions, such as extreme temperatures and significant rainfall, play a role in increasing pollution. Urban flow to active rivers and polluted water streams. Completely different aqueous pathogens, such as mastigophore cysts and *Cryptosporidium* oocysts, are associated with rain. Vector-borne and water-borne diseases are growing due to the extreme weather conditions associated with El Niño. Serious weather events and temperature changes have a significant impact on the hydrological cycle<sup>15</sup>.

#### 8. Pollution and public health.

About one-sixth of the world's population (including people in Pakistan) struggle with water scarcity and water-borne diseases. The child dies every eight seconds due to waterborne illness<sup>16</sup>, about 44% of the world's population has no access to clean drinks. He conducted a survey in the geographical area of Huai (China). It was said that preventive measures and interventions should be taken to maintain hygiene and ensure surface water excellence. In West Pakistan, Nabeel *et al*. About 81% to 60% of rumors throughout the country are contaminated with coliform impurities and bacteria, resulting in 30-60 billion Ps Rs losses annually. Similarly, tail and dirty tail rumors in 77% of water samples analyzed in special classes in completely different parts of the city of Abbottabad. This study showed the presence of water related diseases such as loose bowels and infectious diseases.

#### 9. Approaches to reducing water related effects.

This section focuses on current health issues. The approaches that the authors consider to limit water impact, due to global climate change in Pakistan-like countries, are as follows:

1 Forms of education and protection, acquisition of rainwater, reduction of water scarcity and pollution thanks to the dynamic lifestyle of man through integrated management of real estate water resources, because global demand will increase by 60% in 3050 (Water availability in the Asian country 6.360 m<sup>3</sup> / person in 1951 r. Growth in cities, activity and phylogenesis,

2 Act on storage, saving water, managing water resources, building capacity and problems with

water scarcity and pollution, including assessment of lost water, excellent effects of surface waters through change, awareness and enforcement of related policies. Awareness raising should be optimistic, which should be inspired at many levels by imposing fines.

3 Development of new and improved irrigation techniques and methods (e.g. drip irrigation, website-specific irrigation, micro irrigation and irrigation), product rotation, introduction of the latest product types, selection of alternative products, pollution management, risk management, increased diversity, land and applying creative ideas in the field of grazing management, protection, cessation and rescue. Due to water management options and related socioeconomic effects, harmony of molds in water management, such as soil richness and plant management practices, was initiated. Alternative forms of water management in agriculture include tunnel agriculture, alternative or renewable energy sources, especially rapid-rate irrigation systems, closed pipe irrigation and leveling with equipment. Optometry.

4 Provide many funds for biotechnology analyzes supporting the promotion of high-yielding varieties of plants resistant to heat, floods (or drought); adaptation of better methods, such as water channels to protect water by minimizing evaporation and uptake of water, uses methods of building dams that replace the water tank when the water is overfilled or chased; minimizing the impact of water-related global climate change on agriculture and health; guarantees water and food safety. The following are inspired by funding to identify global climate change analysis centers in agricultural departments to support exceptionally cheap technologies, save a lot of work and increase productivity, and optimize pollution management in the agricultural sector. Changing climatic possibilities.

5 Active organization of meetings and donations during and during the participation of national agencies and major local actors and disasters such as floods, earthquakes, heat waves and storms. Training farmers after developing methods to increase tolerance to adverse weather conditions, such as temperature changes, floods and pattern changes, and longer running is also a great challenge. because social barriers can limit the use of possible measures by farmers.

## 10. RESULTS

Climate change can have a profound impact on public health, agriculture and the economy; in terms of water quality, in particular water-related effects, diseases and changes in precipitation and drought patterns in some parts of the world, such as Pakistan. There is a strong link between agricultural pollution and public health. The review highlights the development of adaptation and mitigation methods to address the effects of protection, risk management



and water-related temperature changes. The impact of water-related temperature changes on health and agriculture has completely different aspects. New improvements and biological improvement methods have been introduced to regulate environmental pollution and commercialize public health awareness among the scientific community. In addition, regional and national authorities, such as the Ministry of Global Climate Change and the Ministry of Science and Technology, as well as the organization operating under the Ministry of Food Safety, should be encouraged to respond and to formulate changes in policies and regulations, related to climate change affecting the water, health and agriculture sectors. Loans to provide farmers with conflicting political measures, such as electrical subsidies for tubular wells and sugar factories with more wells in various provinces of Pakistan (especially low mirror levels where it is difficult to draw water from aquifers), as well as more heat-resistant crops and floods (or droughts) and water-saving crops, drought-resistant pastures and plant promotion in urban areas (especially on roads) should be reconsidered. It is very important to save many Asian countries during construction there, drought and floods to improve higher roads, such as water channels to protect water and increase water storage. To limit the impact of global climate change on the impact of water on agriculture, water excellence and subsequent health problems, the transition to a "low fall strategy" for many products should be inspired.

## REFERENCES:

1. Bakhsh, Khuda, and M. Asif Kamran. "Adaptation to climate change in rain-fed farming system in Punjab, Pakistan." *International Journal of the Commons* 13, no. 2 (2019).
2. Gadiwala, Muhammad Sohail, and Farkhunda Burke. "Climate change and precipitation in Pakistan-a meteorological prospect." *International Journal of Economic and Environmental Geology* (2019): 10-15.
3. Ahmed, Kamal, Shamsuddin Shahid, Nadeem Nawaz, and Najeebullah Khan. "Modeling climate change impacts on precipitation in arid regions of Pakistan: a non-local model output statistics downscaling approach." *Theoretical and Applied Climatology* 137, no. 1-2 (2019): 1347-1364.
4. Ado, Abdou Matsalabi, Jin Leshan, Patrice Savadogo, Li Bo, and Ashfaq Ahmad Shah. "Farmers' awareness and perception of climate change impacts: Case study of Aguié district in Niger." *Environment, Development and Sustainability* 21, no. 6 (2019): 2963-2977.
5. Khaliq, Tasneem, Donald S. Gaydon, M. J. M. Cheema, and Umair Gull. "Analyzing crop yield gaps and their causes using cropping systems modelling—a case study of the Punjab rice-wheat system, Pakistan." *Field crops research* 232 (2019): 119-130.
6. Mustafa, Ghulam, Ismail Abd Latif, Muhammad Khalid Bashir, Mad Nasir Shamsudin, and Wan Mohamed Noordin Wan Daud. "Determinants of farmers' awareness of climate change." *Applied Environmental Education & Communication* 18, no. 3 (2019): 219-233.
7. Ho, Thanh Tam, and Koji Shimada. "The effects of climate smart agriculture and climate change adaptation on the technical efficiency of rice farming—An empirical study in the Mekong Delta of Vietnam." *Agriculture* 9, no. 5 (2019): 99.
8. Mahfooz, Yusra, Abdullah Yasar, Muhammad Tayyab Sohail, Amtul Bari Tabinda, Rizwan Rasheed, Samina Irshad, and Balal Yousaf. "Investigating the drinking and surface water quality and associated health risks in a semi-arid multi-industrial metropolis (Faisalabad), Pakistan." *Environmental Science and Pollution Research* 26, no. 20 (2019): 20853-20865.
9. Ullah, Wahid, Muhammad Nafees, Muhammad Khurshid, and Takaaki Nihei. "Assessing farmers' perspectives on climate change for effective farm-level adaptation measures in Khyber Pakhtunkhwa, Pakistan." *Environmental monitoring and assessment* 191, no. 9 (2019): 547.
10. Shaheen, Aliya, Jinyong Sheng, Sadia Arshad, Shafaq Salam, and Muhammad Hafeez. "The Dynamic Linkage between Income, Energy Consumption, Urbanization and Carbon Emissions in Pakistan." *Polish Journal of Environmental Studies* 29, no. 1 (2020).
11. Ahmed, Fayyaz, Shahzada Adnan, and Muhammad Latif. "Impact of jet stream and associated mechanisms on winter precipitation in Pakistan." *Meteorology and Atmospheric Physics* 132, no. 2 (2020): 225-238.
12. Abid, Muhammad, Jürgen Scheffran, Uwe A. Schneider, and Ehsan Elahi. "Farmer perceptions of climate change, observed trends and adaptation of agriculture in Pakistan." *Environmental management* 63, no. 1 (2019): 110-123.
13. Chandio, Abbas Ali, Habibullah Magsi, and Ilhan Ozturk. "Examining the effects of climate change on rice production: case study of Pakistan." *Environmental Science and Pollution Research* 27, no. 8 (2020): 7812-7822.
14. Mubeen, Muhammad, Ashfaq Ahmad, Hafiz Mohkum Hammad, Muhammad Awais, Hafiz Umar Farid, Mazhar Saleem, Asad Amin, Amjed Ali, Shah Fahad, and Wajid Nasim. "Evaluating the climate change impact on water

- use efficiency of cotton-wheat in semi-arid conditions using DSSAT model." *Journal of Water and Climate Change* (2019).
15. SHAHID, RABIA, and IRFAN AHMAD BAIG. "Analysis of Reactive Adaptations by Rice Farmers Towards Climate Change—A Case Study of Rice-Wheat Zone of Punjab, Pakistan."