

Water Policy Analysis: Republican and Taliban periods

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Abstract

The research discuss on water policies in Afghanistan. This paper give a glance information on water resources in both surface and ground water. The method framework in Document Thematic and Statics Analysis, used both thematic analysis of qualitative and static approach of quantitative methods. The research include of 95 theme and 6 static data contain analysis of water policies in Afghanistan and show the differences of republic and Taliban periods. The research arguing about the water laws, policies, high policy maker attitudes, clean water access, water crisis, and water tension between Afghanistan and its neighbors.

Introduction

Afghanistan is suffering from drought, flood, less perception, and water shortage. In global ranking Afghanistan is Sixth County in Global Climate at Risk index 2019. Experienced flood and landslide 120000 affected, 75 people died, and 12000 people became homeless (Echisten, et al., 2022 p. 10). Afghanistan in 2012 had less pressure on water resource extracting (31%), and Pakistan (74%) (Moorthy, et al., 2023 p. 14)

The article discuss on water resource in Afghanistan in four types. Every type has its special aspects and role in water chain supplying for consumers. We well show also the sustainability of water resource and its condition beside of dimensions.

1. Surface water

Afghanistan is landlocked country, but has better location in surface water in the central Asian countries especially among its neighbors. Along with that, about 11.3% (72500 sq. km) of the territory of the country is a zone without surface runoff. Some study divided the Basin of Afghanistan Rivers in three regions, Amu, central and south (CAWaterInfo, 2023). Further studies divided in five Basin Areas, Amu River, Helmand River, Kabul River, Harirud-Murghab River, and Northern Rivers. According to the Watershed ATLAS of Afghanistan the surface water resources availability by basin show Kabul has 20.76 billion m³, Helmand 9.3 billion m³, Amu 22 billion m³, Northern 1.88 billion m³, and Harirud-Murghab 3.06 billion m³ of surface water. (Fevre, et al., 2004)

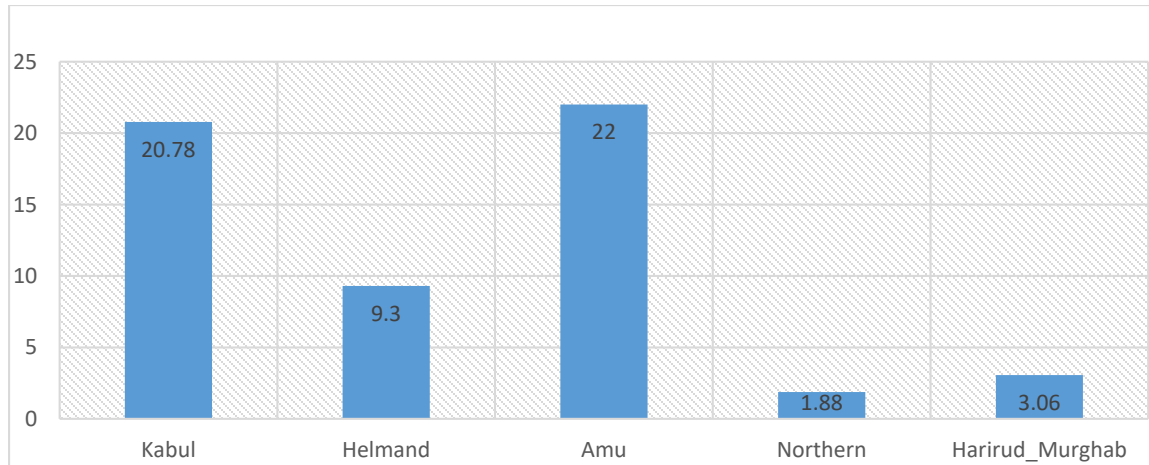


Figure1: Total capacity, recharging and usage of River Basins in Billion M³,resources: Watershed ATLAS Afghanistan, FOA & CAWaterInfo)

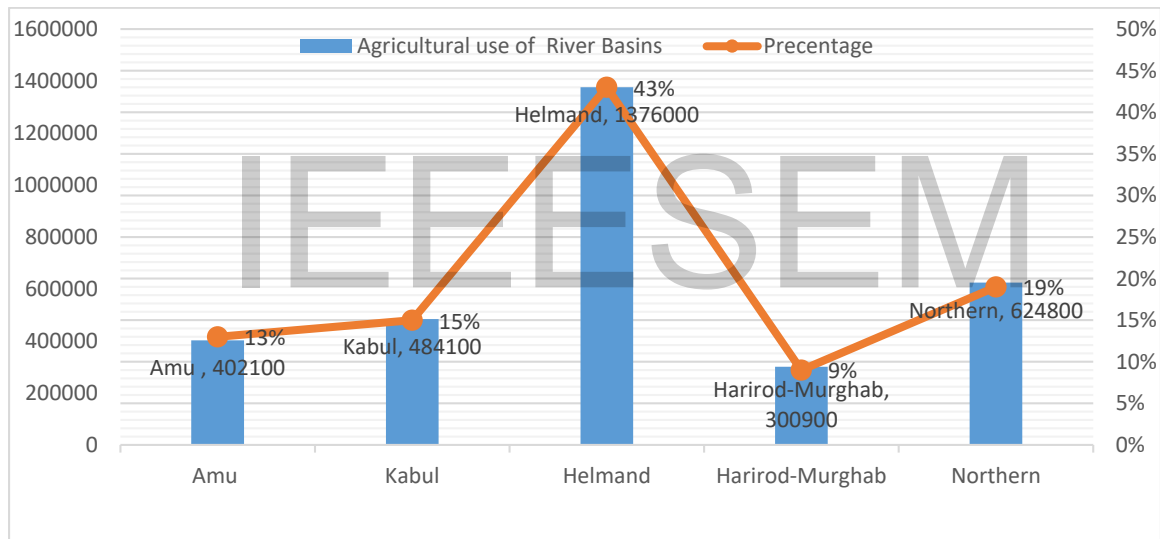


Figure 2: Land Usage of Basin in Hectares, source: allocated from FAO

2. Ground water

Ground water is second resource of water in Afghanistan. According to the studies 80% of irrigation water supplying by surface water, 15% of agriculture water supplying by ground water and 5-8% supplying by rainfall water. From 20 Billion M³ of Ground water, Afghanistan using just about 3 Billion M³ of that resource ((Qureshi, 2002 p. 8)

According to the Uhl 10.6 billion m³ of the ground water resource recharging and it's about the half of the total ground water resource which estimated 20billion m³.

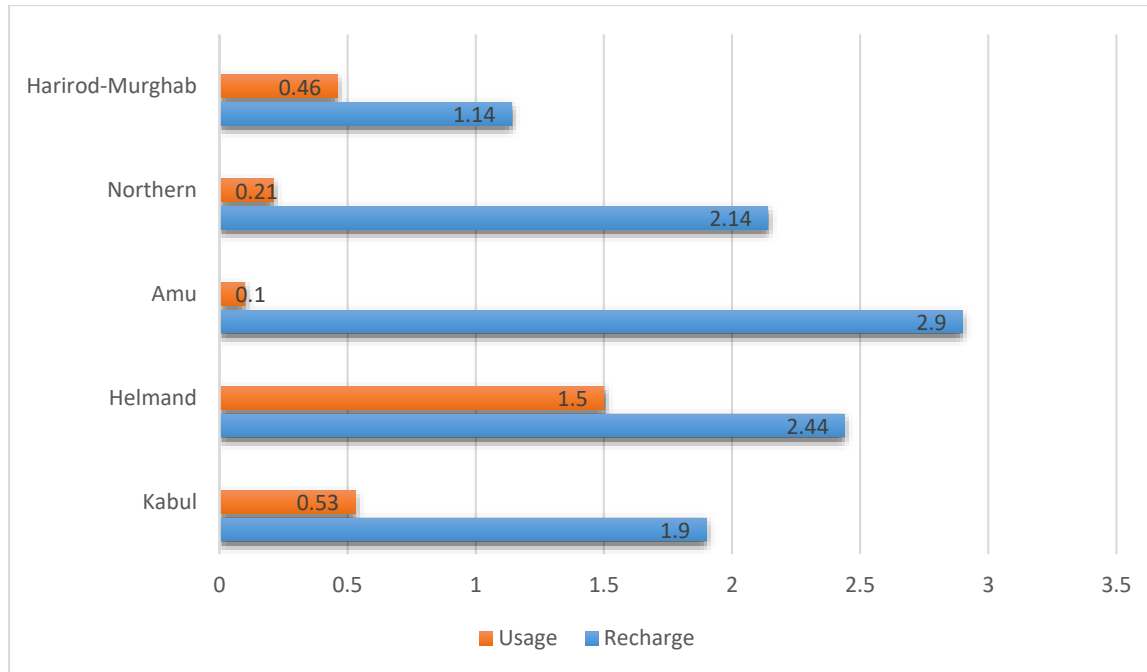


Figure 3: The Usage and Recharge of Aquifer in Billion M3 Source: (Uhl, 2003)

Methodology

This research used Mixed Method, in term of data collecting, data analysis, and interpreting (W. Creswell, et al., 2018 p. 279). Document Thematic -Statistic Analysis (DTSA) referring to analyzing of both approaches in mixed method. The Policy Document play a crucial role in Policy Analysis. If the nature of policy problem is complex, Document analysis can help to overcome in term of determining of problems root (Cardno, 2018 p. 624). In term of qualitative method, using document thematic analysis method look proper way. Approaches to qualitative data collection and analysis are numerous, representing a diverse range of epistemological, theoretical, and disciplinary perspectives. At a very basic level, TA is a method for developing, analyzing and interpreting patterns across a qualitative dataset, which involves systematic processes of data coding to develop themes – themes are your ultimate analytic purpose (Braun, et al., 2022 p. 13). Quantitative method part of research referring to using Statistics from officials, research, and data of internal or international studies, in term of data collecting, and analyzing, respectively (W. Creswell, et al., 2018 p. 299). Steps of doing research, happening most simultaneously.

Documents Chart of Water Policy					
1. National Development Plans (five years)					
1.Afghanistan National Development Strategy I	National	2003-2008	2.Afghanistan National Development Strategy II	National	2008-2013
3.Afghanistan National Peace and Development Framework			2017-2021		
1. Water Policies and Laws					
4.Water Sector Policy Framework		2004-2015	5.Iran-Afghanistan Treaty	Helmand	1972

6. Ground Water Recourse Act	2020	7. Water Resources Management Policy	2006
8. Water Law	2009	9. Regulation on bed and Surrounding of water Resources and water Infrastructures	2015
10. Water Sector Strategy	2006-2012	11. Water Affairs Management Law	2020
2. High Policy Makers Speeches			
12. Amir Mohammad Ismail Khan on Parliament	Minister of Energy, Water and Electricity		2010-1
13. Hamid Karzai on National Conference of Water 2	President of Afghanistan		2012-1-30
14. Ali Ahmad Osmani on Media Conference	Minister of Energy, Water and Electricity		2017
15. Ali Ahmad Osmani on Parliament	Minister of Energy, Water and Electricity		2017-8-7
16. Ashraf Ghani on Inaugural Ceremony of Salma Dam	President of Afghanistan		2016-5-3
17. Ashraf Ghani on National Conference of Water 3	President of Afghanistan		2017-3-5
18. Ashraf Ghani on Inaugural Ceremony of Kamal Khan Dam	President of Afghanistan		2021-3-24
19. Latif Mansour and Mujiburahman Omar	Acting Minister and Vice-minister of self-called Ematar –e-Islami		2022-8-13

(Figure 4: Documents Chart of Water Policy)

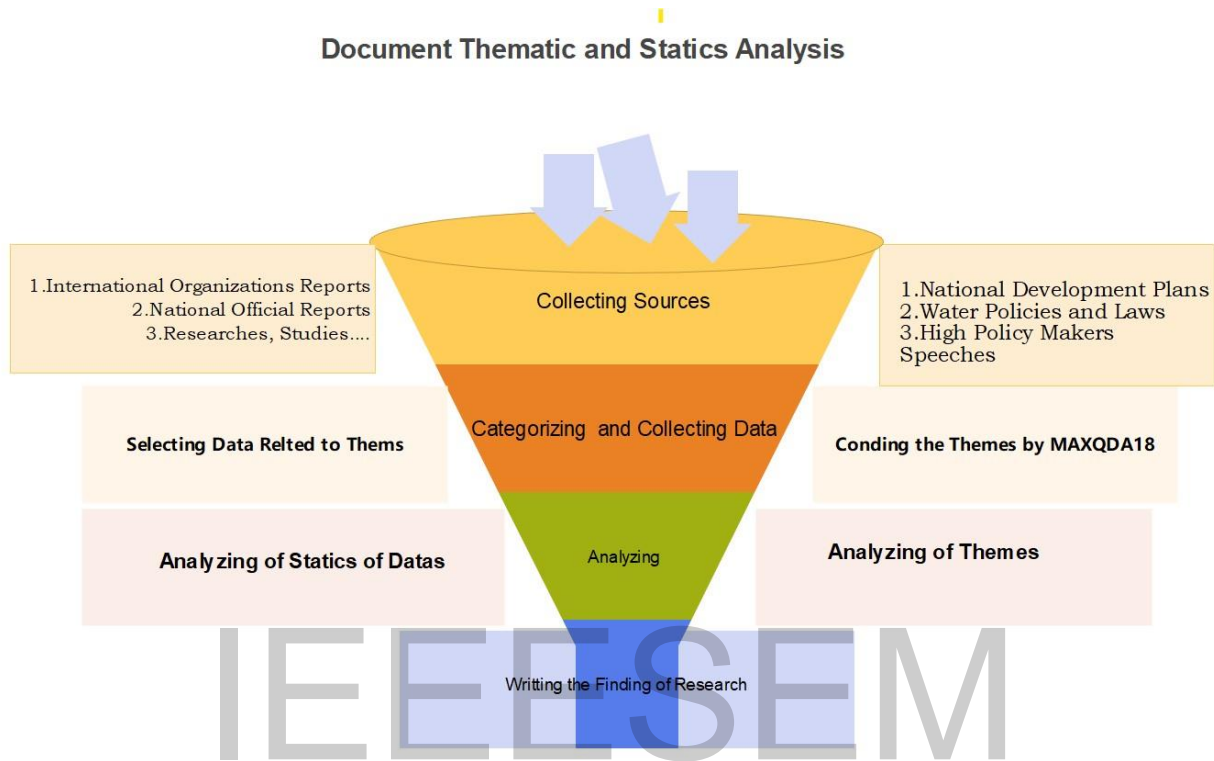
Methodic Framework: Document Thematic and Statistics Analysis (D TSA)

Focusing on analyzing of policies based on statistics or numerical data referring to mixed analysis. In mixed methods the combination start with data sources, in this research document of policies and statistical data from existed sources gathered (Thelwall, 2021 p. 10). This research nature need to understand both policies and statistics of water condition in Afghanistan. This research designed a mixed method approach by studying three type of policy document about water, National development Plans of five years as Mother of water Policy. Water laws as regulator of water issues in Afghanistan, beside of Policies in applying or operational stage. Final document type is High officials such president, minister or vice minister of ministry of energy, water and electricity perspectives that reflect the vision of government on water issues in Afghanistan (See Figure 4).

Firstly, data collected simultaneously from many documents for thematic analysis purpose. 19 document collected in three types; water regulatory and policies, National Development Plans, and High Policy Makers Speeches. In term of Statistic, Data collected from official administrations, international research organization reports, and academic research.

Secondly, the analyzing of data happened. At first step, by using MAXQDA18 application all themes coded, then by using of code analysis, visualizing and variables tools Data became analyzed. Numeric or Statistic Data related to the themes selected from documents.

Finally, the analysis of both thematic and statistic became interpreted in this paper by written down of results and research finding, simultaneously. Every global theme have been written, then the data of statistics analyzed and interpreted. If there was not proper statistic related to themes, the themes analysis occurred without statistics. As result, findings of research illustrated in proper way. (See figure 5)



(Figure 5: Document Thematic and Statistics Analysis Framework DTSA)

According to MAXQDA18 coding system, all three types of document had 93 themes, 5 of them are Global Themes, 16 of them are Organizer Themes, and 71 of them are Basic Themes. In some cause, the document contain numerical or statistics data to direct for analyzing.

1. Water Meaning

It is important to illustrate the idea, notion or meaning of water in Policy Documents. It show the vision and mind of policy maker about water in such context, respectively. This Global theme refer to the phrases or sentences from text of policy or speech that demonstrate the meaning of water. This global theme contain two organizer themes.

1.1. Legislative Meaning

This theme referring to the source of water regulation, water meaning in text of policies, speeches, and laws. In this theme paper discussing about how important measuring water in national or individual level for life.

Water Rights: this phrase referring the rights of human kind, in particular meaning access and use of water is a legal and global right. This is directly related to Human Rights.

“Afghanistan people have the right to have better life, we demand our right to utilize it, for that we are ready to discuss with neighbors friendly. Every eligible receive their rights. Our water rights usurped and denied. Afghanistan did not used the Amu River water, in some cases very less.”(Hamid Karzai, 13)

Fiq and Customs: This combine referring on two themes Fiq as water law source and customs as regulation of water affairs. In Islamic counties such as Afghanistan Fiq, the regulatory principles of Sharia play crucial role.

“Article 1: this law formed according article 9 of Afghanistan Constitution Law in order to protect water resources, regulating of water, water distribution, sufficient usage of water to support economic and rights of utilizer, regarding of Fiq principals, people custom.” (Water law, 8)

Legislative Documents: The theme refer that all of policies need to be regarding of legislative document. This theme means all policies need to be based on laws approved by Parliament.

“Article 2: in order to adjustment of act these principals regarded: 1. Islamic Fiq; 2. Legislative documents; 3. Exclusive water management” (Ground Water Recourse Act, 6)

1.2. Water Discourse

In order to explore water meaning, these organizer theme refer to the Nodal

Point and Elements of water discourse according to documents. It can show water is important to politics, life and economic.

Water as Identity: This theme is Nodal Point of water discourse. Refer to the notion that make a meaning the role of water in society, politics, economic and culture of Afghanistan.

“Science revealed the new aspects of water role in life, and we are aware its role in life. We know clearly, water is our grace, protecting of our grace is national goal.”(Ashraf Ghani, 17)

“In term of Physic, Kamal Khan is Dam, its concrete and soil. From national perspective it is a symbol of national will to reborn our history and bright dignity” (Ashraf Ghani, 18)

Water as public asset: This theme is important element of water discourse, and find way to became part of rule in laws. This referring that water is not private asset, its particularly part of public or national asset.

“Water is public asset, government responsibility is to protect and regulate it.”(Water law, 8)

Water scarcity: It refer to the condition of water resource in Afghanistan, going toward scarcity. Drinking water in opposite side of salty water is obviously scarcity. In speeches and policies water scarcity repeated many times.

“Destroying of aquifers and reducing of ground water cause jungles and plants ruination lead to destroy environment. As a result, drought and flood arise.” (Ashraf Ghani, 18)

“Fresh water in Afghanistan is a vulnerable and limit resource which is important for life, development, and environment.” (Water Resources Management Policy, 7)

Water is life: According to coding, it is most repeated theme in lots of document. It mean water is equal to life is in public and individual level. In water discourse it paly a centric role after water identity in last two decade.

“The life source is water. It is instrument of agriculture, feeding, and cleaning, it is unfair to use Gift of God regardless.”(Ashraf Ghani, 18)

Food safety: It is other element of water discourse refer food safety depend of water in Afghanistan. The Water Sector Strategy mention under the strategic vision, water role in food safety.

“The goals: for obtaining of safe future of next generations; 1.Increasing water access, 2. increasing families food safety...”(Water Sector Strategy, 10)

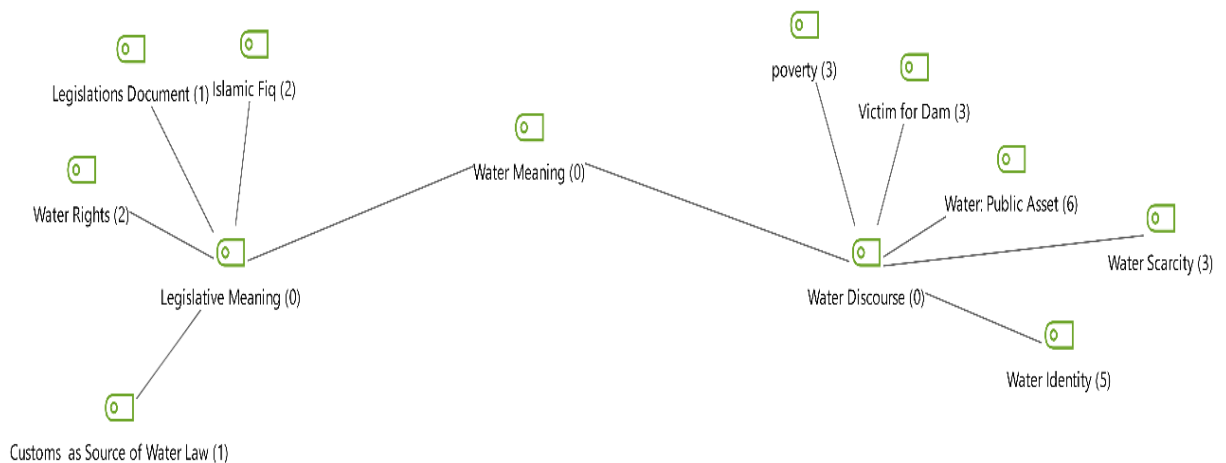
Dam victims: It is clear victims of dam referring to the martyrs according to national and Islamic believes. Around of water identity moving dam victims as a discursive element to pay respect for national succeed.

“We had 12 martyrs for dam of Bakhsh Abad, and 7 injured. They loss their life for nation, it we pay respect to them.” (Amir Mohammad Ismail Khan, 12)

“It is time to pay my pure respect for martyrs of Kamal Khan Dam, they sacrifice their life to protect the dam... victims have priority in distribution of Kamal Khan land project.” (Ashraf Ghani, 18)

Poverty: In most National development plans, the reduction of poverty is a centric goal. In water sector strategy among four main goals, the decline of poverty by managing of water resource is one of them.

“In economic system depend of agriculture same as Afghanistan, water access could decrease the poverty is society.” (Water sector Strategy, 10, p3)



(Figure 6: Water Meaning)

2. Water Crisis

This Global Theme discuss about the problems, challenges, and obstacles that come to make a situation of crisis. This theme include three major Organizer Themes, Drought Crisis, Water Access, and Water Conflicts.

2.1. Drought Crisis

From public policy perspective, the crisis come to make a new policy decision or revise existed policy. The crisis effect all aspect of public and private life, so Afghanistan faced drought crisis in last two decades, and in the past half century. The speech, law and policies reflected this condition intensively.

“War more than 22 years [before 2001], and continuation of four years drought affected thousands of people to migrate abroad and replace internally.”(Water Sector Policy Framework, 4, P6)

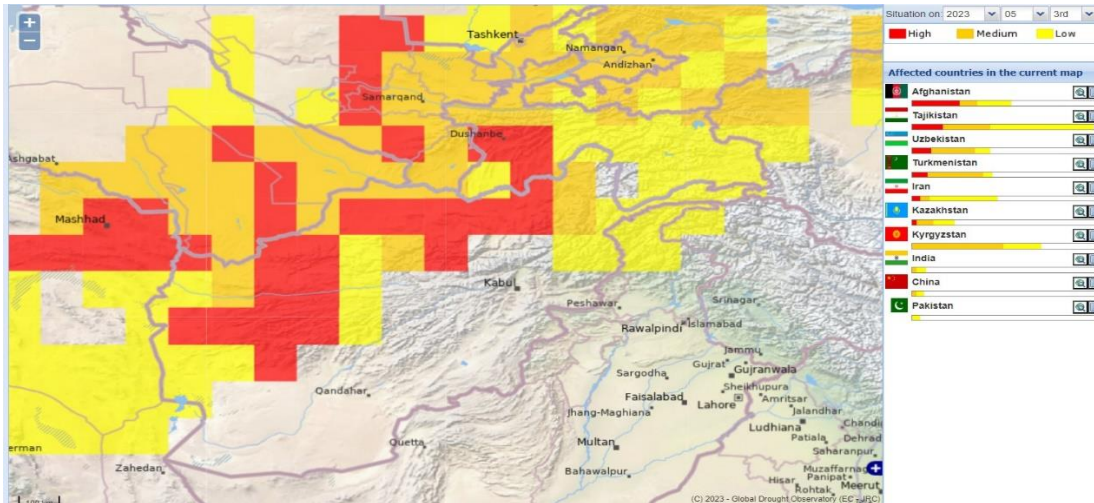
Drought as National Disaster: According to theme coding its repeated three time is document by detail. It mean drought effect more than diseases during the four years and then many times.

“Natural disasters, particularly droughts and floods are one of the major sources of vulnerability among the poor. The NRVA 2005 highlighted the destruction of crops due to droughts represents a higher poverty risk than sickness or loss of a working family members” (Afghanistan National Development Strategy II, 2, P36)

Wetland Drought: Hamon is a wetland in border of Afghanistan and Iran, but fed from Helmand River that come from central Hindu Kush Mountain. Now it is faced drought. Hamon is dry because of natural drought in central Asia and human activities, in Kabul Kole-Hashmat Khan affected to dry by mankind actions, it is environmental challenges to face in future.

“Management Plans and Implementation of management plans initiated for protected areas and national parks, including game reserves, wetlands and bird sanctuaries” (Afghanistan National Development Strategy II, 2, 217)

Statistic: According to European Drought Observation data, Afghanistan located at first level of suffering drought among the whole counties. Form the whole population 25% effected highly, 9% of population affected in medium scale, and 18% in low scale. (EU, 2023). In 2000 more than 12 million farmer affected, by insecurity and drought, 700000 people displaced because of drought. (Aawar, et al., 2019)



(Figure 7: Afghanistan Drought index in Global Drought Observatory, (EU, 2023))

2.2. Water Access

This organizer theme referring to the drinking water, irrigation, and water safety condition. Water access has a critic role in water policy study, as it is studied in research both is documents and statistics.

Access to Clean Water and Irrigation: Afghanistan has critical condition in water drinking access in whole world. The government intent to increase accessibility by enhancing of water safety and networks.

“More than 500,000 households (36 percent of villages) have benefited from small-scale irrigation projects. Currently, 32.5 percent of the rural population has access to safe drinking water and 4,285 improved sanitation facilities have been provided.”(Afghanistan National Development Strategy II, 2, p4)

Water Sector Strategy point out that water access in Afghanistan is in low level of access to show the importance of water in governance.

“Great majority of people are deprived from safe and healthy drinking water.” (Water Sector Strategy, 10, p4)

Improved Water Resources for Drinking and Irrigation (25-30%): Afghanistan National Development Strategy II stated that in term of water Access in both irrigation and drinking must take 25-30% by applying the plan. (Afghanistan National Development Strategy II, 2, p249)

War Reduced 50% Water Access: This theme refer that the main cause of low access to water in Afghanistan is conflict continuation.

“Before the war between 22-32% of water resources have been used. The numeric and information indicate that the usage of it 50% decreased during war until now [2004].”(Water Sector Policy Framework, 4, p6)

Water Wasting: This theme refer about water resource management insufficiency. It mean from the water resource to land, lots mount of water wasted. It shows another dimension of water crisis in Afghanistan.

“From resource of water such as river, well, network, and fountain to land studies illustrate 50% of water wasted.”(Water Resource Management Policy, 7, p16)

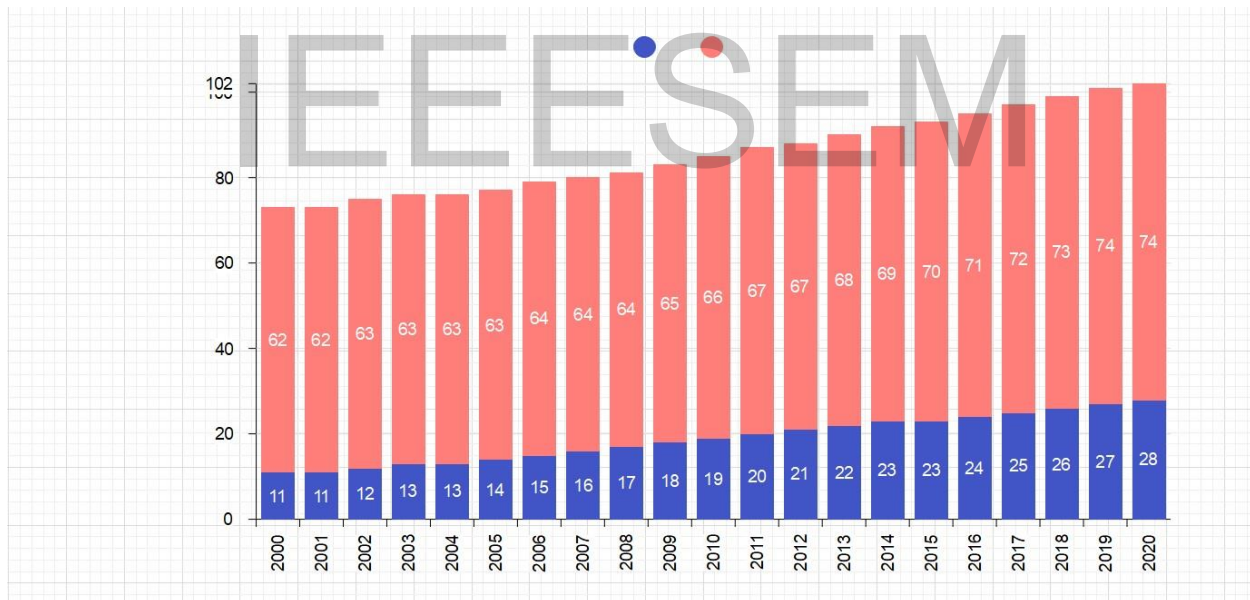
But an old policy document show more wasting water in irrigation system.

“The weakness of irrigation system is wasting up to 60% of water form resources to land.”(Water Sector Policy Framework, 4, p8)

Water Pollution: Policy document emphasis on water pollution as aspect of water crisis in Afghanistan.

“Water pollution and harmful duration of trash in water affected nature, environment, economic, and people life. All development programs must evaluated by measuring of impacts on environmental, on water pollution.” (Water Resources Policy Management, 7, p16)

Statistic: According to World Bank data, Afghanistan has low access to healthy and clean water for drinking. It increase from 11% at 2000 to 28% at 2020, in compare with global access 62% at 2000 to 74% at 2020.



(Figure 8: Percentage of Population using safely managed water service national and global average, (WoldBank, 2023))

2.3. Water Conflict

If a conflict, disruption, stress and pressure, and tension occur for water access in society, it called water conflict. The water law determined the duties of Water High Council, among them is solving water conflict.

“Article 14: The WHC has this duties: 6. solving conflict on water distribution and utilization in region...” (Water law, 8)

This theme refer to three basic theme, illustrate aspect of conflict. Behalf of conflict theme come the drivers of water conflict in society.

Destruction of Water System: It mean the stress and pressure on water allocating happen because of water system destruction in Afghanistan.

“Vulnerable security condition and violence affected southern, and south-eastern region lead to destruction of water system, in result tension arise.” (Water Sector Strategy, 10, p10)

Urbanization and Water: The theme convey the relation between water tension and urbanization in Afghanistan. It rise up in last two decades a speedy movement, so the water scarcity and tension flame in cities such as Kabul, Herat, Balkh, and Kandahar. Water Sector Strategy critic and suggest:

“The urbanization and economic growth must match with developing of water system, canalization, and recycle bin system.”(Water Sector Strategy, 10, p18)



(Figure 9: Themes Map of Water Crisis)

3. Water Governance

Water governance convey the model, structure, values, management, policy type of water take government to deal with water issues in a complexes condition. Modern policy making in term of water governance referring to the two types. Nexus suggest the integration of energy, food, and water in policy making, but Integrate water resource management or (IWRM) focus on integration of water with other objects from energy to society capital. Nexus optimal governance is, integrate solutions, multi-tiered institutions, while IWRM is Good Governance Principals. Nexus scale focus on multi-scales, in other side IWRM focus on Basin-River scale. In participation stand, Nexus focus on public-private partnership and multi stakeholder platform, while IWRM believe in stakeholder involvement in decision making and women participation. The resource use in Nexus under the rule of economical rational decision making or costs recovery, but IWRM use under the efficient allocating and cost recovery. In

development element, Nexus focus on environment less than IWRM, which environment as value. (Benson, et al., 2015 p. 762)

Under this global theme research discussing on the aspect that water governance of Afghanistan have, based on the documents analyzed in research. Based on that elements of two type of water governance theme would be analyzed. According to Water Affairs Management Law in 2020 Afghanistan shifted it governance model to IWRM completely.

“Article 2: This law has following goals: 5. Setting of Good governance of water to regulate resources...”(Water Affairs Management Law, 11)

3.1. Structural model

In term of structural model we can see the aspects of both model in documents but we can find out final model structure of current water governance from the basic themes follow:

High Council of Water, Land and Environment: According the Water Affairs Management Law the highest Policy Maker organ is HCWLE.

“Article 9: 1. HCWLE is the highest organ of leading, policy making, and decision making of water sector and water resources regulating. 2. Members of HCWLE appointed by the president, the chief of council, from following institutions: Minister of water and energy, minister of foreign affairs, minister of mine and oil, minister of agriculture and livestock, minister of rural development, minister of economic, minister of justice, minister interior affairs, minister of finance, minister of land and urban development, chief of national statistic and information, chief of national protection of environment, chief of national standards, and chief of water supply, urban canalization.” (Water Affairs Management Law, 11)

Local Associations: In model of IWRM governance local associations have critical role in term of participation, so Afghanistan current governance and historical background show stakeholders involvement from local in decision -making. This theme mentioned in documents.

“In our history, Mirabs (the local regulator elected by stakeholders) managed fairly water for centuries. Regarding your experience it is an international norm now. Establishing of local water associations had been existed in our civilization millenniums years ago, so Mr. Minister and dear colleagues, in our policy we might integrate modern knowledge with great past cultural experiences.” (Ghani, 17)

Water Sector Policy Framework in 2004 suggested to policy makers: “Government might Support and develop of local, stakeholders, regional, provincial associations such as Mirabs councils” (Water Sector Policy Framework, 4, p10)

City- Governmental Water Supply: Water Law in 2009 indicate the ministry of urban development for water supply in cities. By this step government come up to monopoly the water regulating in the county.

“Article 8: 6. Preparing drinking water, livelihood water, and servicing such as construction of cleaning and transferring in the cities regarding international measures are the duty of ministry of urban development in corporate of ministry of energy, water, and electricity, ministry of mining

and oil, ministry of public health, ministry of irrigation and agriculture , and national authority of environment protection” (Water law, 8)

Structure Chart of Water Management: This theme referring to the organizations involvement in water resource management, according the document policy, this chart indicated in 2006, so the name of some ministries had been changed now. As IWRM model shown, the scale of governance is basin, Afghanistan started attempt toward this from 2006.

“Ministry of energy and water, ministry of mining and oil, ministry of public health, ministry of irrigation and agriculture, ministry of rural development, ministry urban development and national authority of environment protection, and High council of water in national level. Basin rivers organizations, sub-basin rivers organizations, catchment area organizations, local associations in Basin scale” (Water Resources Management Policy, 7, pp17-18)

3.2. Values

This organizer theme referring the set of themes that evaluate environment as value to be the center of planning and taking action. This mean environment protect is the main paradigm of policy making. In last 2 decades, Afghanistan water policy tended toward paying more attention on environmental issues than before 2001.

Environment: It has a centric role in today’s water policy making. Environmental evaluation before 2001, was not a principal or value in policy making, but in 2000 Water Sector Policy Framework determined every policy of water might be regarding environment.

“The environmental issues might regarded in water policies, adaptation with environment, evaluation of environmental impacts, emergency of biological diversity protection of animals and plants, decreasing of ground water level...” (Water Sector Policy Framework, 4, p9)

Water and Environment Protection: This phenomena argue water and environment are integrated system. Water can rebuild environment, environment can deal to protect water resources. Water Affairs Management Law discuss by titling article 23 Water for Environment Protect:

“Article 23: 1. Ministry of water and energy committed to design, build, and reconstruct water infrastructures for environment protection.”(Water Affairs Management Law, 11)

Sustainable Environment: According to the high policy maker attitudes and policy documents, sustainable environment repeated many time. This theme mean all policies should be regard on sustainability of environment for next generations.

“Every Basin River might be studied as single analysis unite separately, for utilizing of policy and regulations might prepared to impact positively on society and sustainability of environment.”(Ghani, 17)

3.3. Water Participation

New generation of policies take step toward involvement of stake holder’s participants. Afghanistan’s water law emphasizes stakeholder participation in the management of water resources, equitable water allocation, stakeholder participation in decision-making, and task

division at the sub-basin, basin, and national levels. (R. Pathak, et al., 2022 p. 13) This organizer theme focus on the pattern and stage of participation in water resource management.

Local Participation: As in theme of local associations discussed before, this theme, convey the partnership of local stakeholders in policy designing to implication. It is a growing trend in water governance now, for example in Ground Water Resource Act emphasized on local partnership in title of National Authority of Water Regulation previously Ministry of water and energy responsibilities:

“Article 6: 4. Supporting the partnership of local and urban societies for saving and developing of ground water resources.” (Ground Water Recourse Act, 6)

Digging Absorb Wells: As the level of ground water decreasing speedily, in 2020 for reduction of its effect toke a policy action step by Ground Water Resource Act, to enhance stakeholder’s participation, ask and order citizens to dig absorb wells.

“Article 18: Owner of apartments, trade centers, houses, parks, and other constructions committed to collect snow and rain by digging absorb well regarding of amount of snow and rain, or take other action for supporting ground water resources” (Ground Water Recourse Act, 6)

Mirab-Rural Role: Mirab is an old management system of water in rural areas of country .A *Mirab* or *Chak Mirab* is usually responsible for main canal sections and the secondary canal. Concerned communities are represented by local or village committees (Rout, 2008). This is an informal water governance, Water law legalized Mirab role.

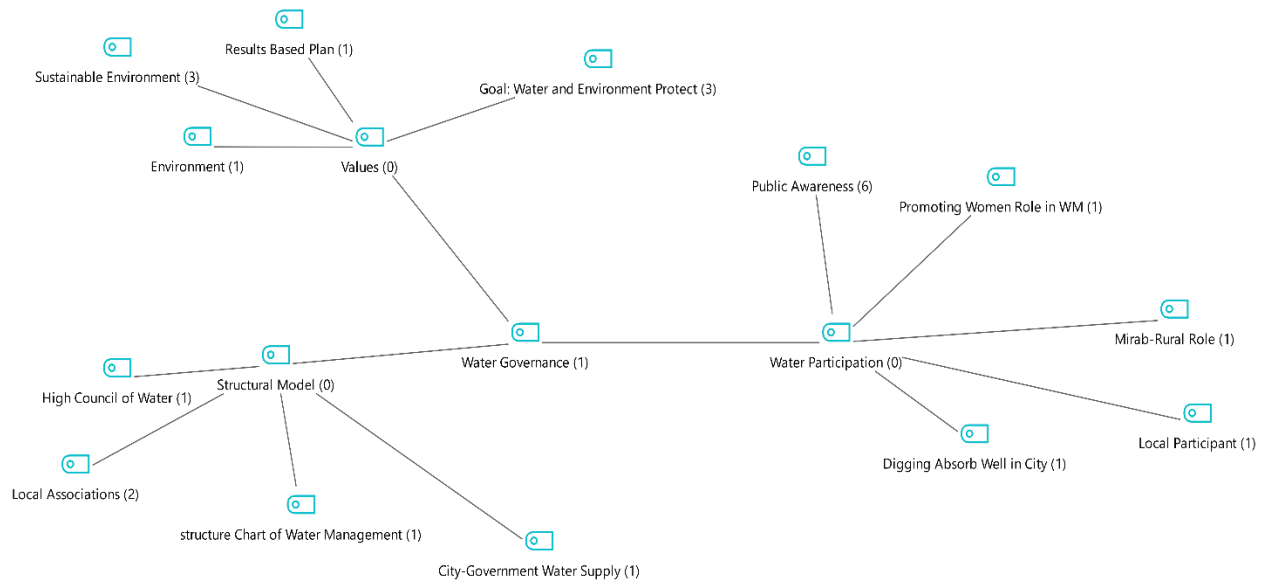
“Article 23: 2. Water Associations can transfer allocating right to Mirab Bashi, Mirab, whom chosen by irrigation associations.”(Water Law, 8)

Promoting Women Role in WM: According the aspect of IWRM, women have crucial role in the governance of water. Afghanistan policies have tendency toward supporting women partnership. The theme mentioned in documents such as Water Resources Management Policy in the operational aims section:

“Promoting the women role in all section of water governance, it will increase the sufficiency of water management.” (Water Resources Management Policy, 7, p13)

Transferring Power to Local Organizations: This theme in water governance suggested for the first time at Water Resources Management Policy in 2006, then water law and water resource management law accepted and repeated. “Next legalization attempt might transfer power and responsibility to Basin River organizations that is important step toward protecting water resources” (Water Resources Management Policy, 7, p11)

Public Awareness: This theme repeated 6 time in document and four in Ground Water Resource Act that emphasized on public awareness more than previous policy documents and show the responsibility of ministry of Information and Culture (article 11) , ministry of Religious and Haj (article 10) to give awareness on water using and shortage. Public awareness increase the taking of responsibility by citizen, respectively.



(Figure 10: Water Governance)

4. Water Policies

Water policies refer to the operational actions mentioned in policy documents and high policy maker's attitudes.

4.1. Dam Building

Dam building mostly recognized as first attempt of government in world history in manner of water policy. In Afghanistan dam building has three stages. First period was the 1880-1900, dam and hydraulic services done in traditional way. Second stage was during the cold war after World War II up 1978, until 1970 data shown 27 large and medium level dam were built (Ahlers, et al., 2014 p. 51). For three decades due of war the procedure stopped. Third period, start from 2001 until 2021, and dam building continued again. This theme or policy option repeated five times specially in National five years Development Plans.

"For urban and semi-urban areas, developing hydro-power through small and medium dams is promising."(1, Afghanistan National Development Strategy I, p76)

"Within the water resources sector, feasibility studies will be completed and investments will be made in the needed storage facilities, recharge basins, multi-purpose dams, irrigation systems required to improve water sector management for both agricultural and non-agricultural uses" (Afghanistan National Development Strategy II, 2, p9)

Need to Dam Build: this theme referring the need of dam building that repeated through policy documents or high policy maker speech. It show political will for dam building.

"Afghanistan people in agriculture, industrial, drinking need water constructions, but unfortunately until now [2010] we have just five large dam, our water go out of the country." (Ismail Khan, 12)

“I talked with USA government eight years ago about Kokcha dam in Badakhshan, and other three large dams with western officials. They was not favor, but it is need.”(Hamid Karzai, 13)

Building Small Reservoirs: This is an operational measure in water policy, mostly referring to the small dam that just acting as reservoirs.

“Increasing investments in water management, including rehabilitation of more than 1,000 irrigation schemes, developing new irrigation networks and building small water reservoirs.”(Afghanistan National Peace and Development Framework, 3, p19)

Dam Building Plan: The theme include just planning for dam building by official promised or suggested. For example, the minister of water and energy in his speech addressed in parliament mentioned dam building plan.

“Ministry of energy and water in purpose of protect and controlling water, have plan of build infrastructures, dams and reservoirs. The studying of building 208 dams completed include 20 large dams.” (Ismail Khan, 12)

“According to water strategy 40 dam in the country designed- projected, but ministry face logistic problems. If do not pay attention, water resource might waste and loss.” (Ali Ahmad Osmani, 14)

Electricity: Afghanistan has less access to electricity, so Water Sector Policy Framework in 2004 promised to build small scale electricity dam to provide it.

“The Afghanistan state provide human, technical, and financial support to implement and develop electricity dam in rural from water resource.” (Water Sector Policy Framework, 4, p22)

Statistical analysis: According to data, before 2001 Afghanistan build 27 dams in large and medium scales, then start to repair those dams that effected from war. According to Ismail Khan, minister of water and energy [2010] on his address to parliament 208 dam are studied, 20 dam designed. (Ismail Khan, 12). In 2017 Afghanistan completed the projecting design of 40 dams, and the in 2021 announced the name of 40 dams which the construction is start. Updated data shows (see figure 11) just four large dam completed, and 16 dams are under the construction.

Name	Completion	Name	Completion
<i>Salma Dam</i>	2016	<i>Pashdan Dam</i>	Under construction
<i>Kamal Khan Dam</i>	2021	<i>Shah wa Arus Dam</i>	Under construction
<i>Shorabak Dam</i>	2021	<i>Shahtoot Dam</i>	Under construction
<i>Surkhab Dam</i>	2009	<i>Tori Dam</i>	Under construction
<i>Lawari Dam</i>	Under construction	<i>Palto Dam</i>	Under construction
<i>Sar-e-Haus Dam</i>	Under construction	<i>Bakhsh Abad Dam</i>	Under construction
<i>Manogi Power Dam</i>	Under construction	<i>Pul-e-Khumri Dam</i>	Under construction
<i>Aino Mina Dam</i>	Under construction	<i>Dahan Dara Dam</i>	Under construction

<i>Bagh Dara Dam</i>	Under construction	<i>Kunar Dam in Surtak</i>	Under construction
<i>Nahre Gawkhus Dam</i>	Under construction	<i>Nahre Gawkhus Dam</i>	Under construction

(Figure 11: Dam Building 2001-2021)

4.2. Drinking Water

Afghanistan citizens prepare their drinking water from unprotected resources such as wells, rivers, and springs. Because of the occurrence of recent droughts and population growth, many cities and provinces face reduction of supplies and the accessibility of drinking water. The quality examination of water is a need. For example, in Bamyan Valley a recent study shown more than 50% of spring water is not suitable for drinking (Malistani, et al., 2022 p. 13). In 2000 just 11% of residents acquire to the clean water, by many policy activities it increase up to 28% in 2020. This organizer theme contain sub-theme discuss about the need for water drinking in documents and attitudes.

2 Time Access (up to 2005): According to the Water Sector Policy Framework, as first attempt of water regulation after 2001, determined the water might become accessible twice than 2004.

“Increasing the level of (mount) water accessibility up to twice, by using proper technology up to 2005, increasing the clean drinking water up to 2015.” (Water Sector Policy Framework, 4, p4)

Priority for Drinking: Policies such as law, regulate the water issue specially, determine the usage of water. Water law in 2009, mentioned usages of water, and legalized it. Theme mean among all kind of water usage, the priority given to drinking.

“Article 6: Water resource become used regarding the law and customs for drinking, livelihood, agriculture, industrial, public services, transport, navigation, fish farming, and environmental needs. The priority given to drinking and livelihood usage of water resource.” (Water law, 8)

Water Quality Exam: It is important policy measurement in term of drinking water. In Afghanistan the morality of diarrhea for children was 26 death per day in 2017, according UNICEF. The main cause was drinking unhealthy water. This theme show law determine to exam water quality.

“Article 24(Quality Standard of Water): 2.The measures of water quality determined by Ministry of Public Health regarding international norms.” (Water law, 8)

Water license: This policy in purpose of water scarcity management has been chosen by many countries. But is some cases like Jordan, India, and Yemen this policy have been failed (Molle, et al., 2019 p. 8).

“Municipality duties, article 9.3: Deny and banning of wells, and deep wells without license that use ground water resource.” (Ground Water Recourse Act, 6)

“We might be careful of water using... deep wells harm environment, dried Karez [Traditional Water system for irrigation]... Afghanistan government might control digging deep wells and be careful” (Hamid Karzai, 13)

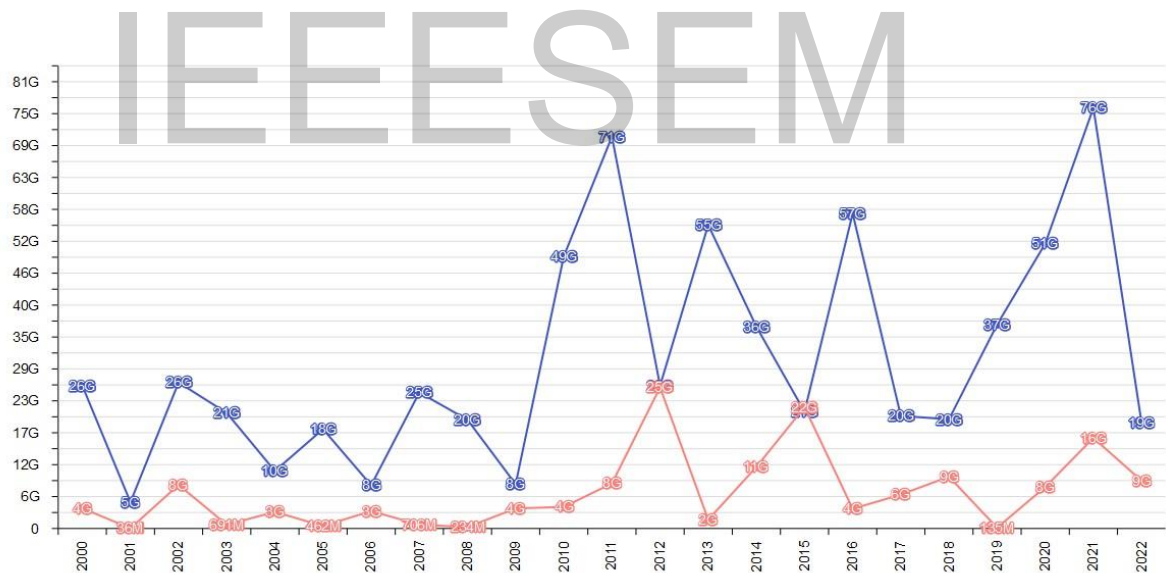
“Controlling and banning of digging deep wells, and wells without permission or license for drinking, freeze water, irrigation, bottled water, industry, fish farming, electricity, and other sectors.” (Ground Water Recourse Act, 6)

Statistical Analysis: According to data, Afghanistan has 7822 canals, 5558 springs, 6741 Karizs, 6598 wells, and 17475 mills until 2002 records. (Qureshi, 2002 p. 12). Between 2001 and 2007, 1200 water networks (canals) repaired, 45666 well for drinking water dug (Water Sector Strategy, pp4-5). This number increased to 1500 irrigation water network rehabilitation and construction up to 2017.

4.3. Flood Management

Flood is the major type of natural disaster in the world, in many years Afghanistan faced with flash flood. In term of policy making, managing the flood come in literature of policy because of it is crucial impact on the human kind life.

Statistical analysis: the two type of natural disaster, flood and drought in the world costs economically. Data shows from 2000 flood costs 26 billion of dollar and drought costs 4 billion, in 2011 flood cost 71 billion and drought costs 8 billion dollar, in 2022 flood cost 19 billion, drought cost 9 billion dollars. (See Figure 12)



(Figure 12: Flood and Drought costs in the world in Dollars; (OurWorldinData, 2023))

Red line: Costs of Drought Blue line: Costs of Flood

According data, Afghanistan in 2021 has the third level of casualties among the world because of flash flood, India is first with 1828 deaths, China is second with 352 death, and Afghanistan is third with 260 death. Data shown between 2000 and 2018, Afghanistan was hit by 66 floods,

representing close to 56% of recorded disasters. Floods are also the deadliest disaster type with a total of 2 374 fatalities. (EM-DAT, 2023)

Flood water Harvesting: This theme referring to the controlling of flood water, so the best option is dam building to harvest the flood, and control it. As statistic show, Afghanistan is more vulnerable from flood and drought among the other countries. Afghanistan National Development Strategy II in water section mentioning the flood water harvesting.

“Proper planning and implementation of infrastructure for rain and flood water harvesting, supplementary irrigation, groundwater recharge and soil stabilization. Afghanistan National Development Strategy II in water section mentioning the flood water harvesting.” (Afghanistan National Development Strategy II, 2, p86)

4.4. Water Crime

Criminalization of violation of laws and principals about water issues is one of the great policy measure. It is legislation development in term of water resources regulation. For many years it was a policy gap, but in last two decades Ground Water Recourse Act criminalized seven actions as water crime.

“Article 31: The person who committed this actions on ground water resource managing, is criminal:

1. Well digging without license and using of ground water resources;
2. Using of ground water resource in area of water supply network covered;
3. Using of ground water resource without permission;
4. Not using of controlling system for Artesian well follow;
5. Polluting of ground water resource
6. Irrational using of ground water resource
7. Not applying the International norms in digging disposal well.”(Ground Water Recourse Act, 6)

Water pollution (2 year prison): According to the water law committing some activities has up to two years prisoning verdict. Article 35 mentioning destruction, changing, and cutting water follow, and violation of canals, wetland, springs and rivers realm is crime. About water pollution say if a person polluting water more than normal condition, would be condemned for two years prison.

Destruction of Water Resource: Article 35 mentioning destruction, changing, and cutting water follow have two years prison.

“If Person committed this actions would vindicated up two years prison: 1.If destroy, ban, or change the water duration. 2. If destroy or take out the equipment, and symbols in water areas.” (Water law, 8)

Banning of Factors in Red Water Zone: In order to protect water resource, Afghanistan government toke some legal policy action. For example, Regulation on Bed and Surrounding of Water Resources

and water Infrastructures in 2015 defined the realm and water zones to protect water resources. This referring to codification of bed realms, zones, and illegal activities.

“Article 14: Judicial and real person are denied to use and catch the bed and realm of water resource without the Ministry of water and energy permission. Article 15.1: Up to five Kilo meter radiation, establishment of industrial factories which polluting, toileting, radioactive storage and burying, harmful factory stock, Iron smelting, and other factories that pollute water zone are banned.”(Regulation on Bed and Surrounding of Water Resources and water Infrastructures, 9)

Capturing of Bed Water: This theme mean water resources such as rivers have bed and realm, which capturing is illegal, respectively. According to the law:

“Punishment, Article 23: The person who capturing the bed and realm of rivers, canals, spring or fountains, Kariz, wells, wetland, and water resources, according article 34 of water law oath punish.” (Regulation on Bed and Surrounding of Water Resources and water Infrastructures, 9)

4.5. Water Resource Management

This organizer theme discussing on the methods, approaches, policies, and actions regarding of water resources management in Afghanistan.

Government Protect WR: In term of water resource management, in water law determined the government as regulator of water in the society, but the water property is to people or nation. This law take stand the position of water ownership neither to the government and individuals. In article 8:

“**Article 8.1:** All water resource is belong to Afghanistan people, and government responsibility is to protect, control, regulate, and usage regarding to the law.” (Water Law, 8)

Irrigation Water Management: As Afghanistan is an agricultural country, the main aspect of water management is irrigation. So the Afghanistan first Nation Development After 2001, emphasis on this.

“Irrigation water management is a powerful instrument for enhancement of agricultural production and reduction of rural poverty through increased yields, farm returns and increased rural employment. Our goal is to improve livelihoods through efficient irrigation water management, participatory decision-making and institutional reform, environmental management, and more equitable distribution of benefits across irrigation systems and across different agro-environment” (Afghanistan National Development Strategy I, 1, p147)

IWRM: Afghanistan water resource management shifted toward this model as we discussed previously, but for the first time Afghanistan National Development Strategy II (2008-2013) recognized, then Water Affairs Management Law legally determined:

“Steps have been undertaken to re-organize water resource management on the basis of an Integrated Water Resource Management System based on the five main river basins. Development will still be planned and implemented centrally, but in the future individual river basin organizations or authorities will be established.” (Afghanistan National Development Strategy II, 2.p83)

National Water Resources Development Program: In Afghanistan National Development Strategy II, government announced another action under the IWRM model, called National Water Resources Development Program. This program particularly say:

“Preparing for discussions on trans-boundary water issues with some neighbor countries. Proper planning and implementation of infrastructure for rain and flood water harvesting, supplementary irrigation, groundwater recharge and soil stabilization.”(Afghanistan National Development Strategy II, 2, p83)

Water Bed Realm Right: maybe the recognition of Water Bed Realm Right is a crucial step. This theme referring to the protection of environment in term of water resource management, that a water resource have three type of water forbidden zone protected from utilizing for industrial, agricultural, and other livelihood activities.

“Article 3: 1. Water resource bed: the ground surface which follow water of river, canal, wetland, lake, glacier, dam, water storage, Kariz, well, flood way called water resource bed. 2. Water resource realm: those land around the water surface is forbidden that need to protect the resource.”(Regulation on bed and Surrounding of water Resources and water Infrastructures, 9)

Meter Installation: Meter installation is a regulatory and management instrument for protecting ground water. This theme means for controlling the usage of water and allocating, meter installation is policy based action.

“Article 23: 1. In order of water extracting and using, these condition might token in both rural and urban... installing of meter to count usage of water consumption of drinking, livelihood, and other usages.” (Ground Water Recourse Act, 9)

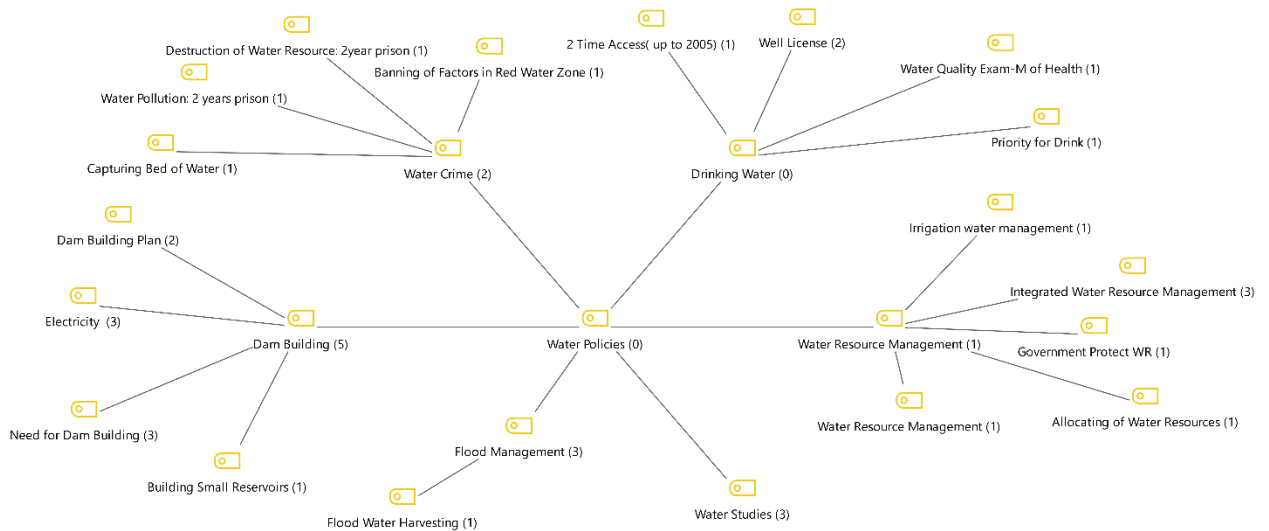
Well license- Industrial: The water policy document emphasis on licensing in last two decades, more particularly factories need to take license for well digging before the license of factory from ministry of trade and industry. For example, Ground Water Recourse Act determine the ministry of Trade and Industry to give industries license after taking water license. This mean if the water usage of industry harm water resource, it might not allow to have activities.

“**Article 13:** The ministry of trade and industry for ground water management with corporation of water regulation authority might do: 1. determining of trade and industry area to avoid ground water resource pollution. 3. Issuing of factory license based on its water usage license.” (Ground Water Recourse Act, 8)

4.6. Water studies

Policy based on science, knowledge, experience, and data can deal with large number of crisis. Afghanistan need more water policy studies as it is most vulnerable country in the central Asia. Most studies are external origin studies. The Afghanistan government legalized this important step in Water Affairs Management Law and ordered the ministry of Higher Education to establish Water Resource Research Center.

“Article 34: Ministry of Higher Education is responsible to establish the Water Resource Research Center under the National Center for Development and Research.”(Water Affairs Management Law, 11)



(Figure 13: Water Policies)

5. International Dimension

Afghanistan has a long history of international interaction, most nationalist call it invention. Beside of invade, it experience disputes many time with Pakistan and Iran on national interests such as proxy war and resource such as water. This global state the international dimension of water, that has would discuss is two organizer themes.

5.1. Global

This theme refer to the global aspect of water in Afghanistan, in last two decades Afghanistan faced with globalization, one of them was vulnerability of climate changes . Also Afghanistan received, fund from international society for reconciliation of country.

Climate change: Theme refer to the vulnerability of Afghanistan in climate change. At introduction we mentioned that Afghanistan is among the most vulnerable country of climate change.

“We talk on a national critic issue, in fact it is a global issue. Water and climate change is a crucial problem in both global and national level. Afghanistan is at line of vulnerable countries, may god protect us; because we are back warded, they can deal by technical and agricultural instrument with.” (Hamid Karzai, 13)

International Fund: This theme talk about the role of international fund in water sector for last two decades, particularly. Also Afghanistan gained fund for its water sector especially on dam building and clean water access. This theme has critical condition on policy maker’s attitudes.

“According to the Energy Master Plan, and ministry determination about 450 million dollar were promised that supply 65% of urban, 25% of rural, 90% of industry energy services.... But international society do not fulfilled their promise.” (Ismail Khan, 12)

5.2. Neighbors-Water

This organizer theme refer to the legal condition of trans-boundary River and political tension. Afghanistan has tension that lead toward crisis with its neighbors, such as Pakistan, Iran, and Uzbekistan. The paper find out the neighbor's rights issues reflected on policy maker's perspectives and policy documents.

"About this [Dam building] talking between we and our neighbor is important. Totally water of Afghanistan flow to neighbors, they use the water. Afghanistan need to build dam and electricity dam. We try to give the water right for them, but our neighbors might understand Afghanistan has the right to develop, the right to have better life, and we ask this rights."(Hamid Karzai, 13)

"We expect our neighbor not being worry about dam building, water network for utilizing of resources, they might support because the usefulness of water depend on its predictableness. If dam and network does not exist, we cannot distribute the water, we cannot manage floods, just inhibition water is manageable."(Ashraf Ghani, 17)

Afghanistan Rights: Regarding to the water tension between Afghanistan and its neighbors, this theme reflect legal right of Afghanistan on trans-boundary Rivers. For instance, the Iran-Afghanistan Helmand Treaty recognized the usage of water beyond the 22 m³plus 4m³ neighborhood water for Iran, for Afghanistan. Article 5 state:

"Afghanistan preserve all rights for remained water of Helmand River to use and consume in the way that will. There is no claim from Iran on Helmand River water more than mount of determined in Treaty [22 m³plus 4m³ neighborhood]."(Iran-Afghanistan Helmand Treaty, 5)

Iran Rights: During the last two decades Iranian official claimed that Afghanistan violate the Helmand Treaty, and avoid water to flow toward Iran. The situation going seriously near to a conflict on June 2023. Iranian President Ebrahim Raisi, told Afghanistan's leaders to take his words "very seriously," saying "I warn the rulers of Afghanistan to give the rights of the people in [the Iranian border regions of] Sistan and Baluchistan immediately." (Turak, 2023). But The Afghanistan's Ruler response was little soft and repeat the respect of Iran Rights and mentioned the drought caused the lack of water flow.

"Article 2 - The total amount of water that is delivered to Iran from the Hirmand River in a normal water year or an above-normal year from Afghanistan is limited to an average flow of 22 M³ per second according to table number ten of the Delta Commission Report. Helmand dated February 28, 1951 according to the monthly distributions mentioned in column 2 of the table listed in the third article of this treaty and an additional average (mean) flow of 4 M³ per second corresponding to the monthly distributions included in column 2 which is explained in column 3 of the table listed in the third article and it will be handed over to Iran on the basis of goodwill and brotherhood interests from Afghanistan."(Iran-Afghanistan Helmand Treaty, 5)

"Ministry of Energy and Water is determined for national interests, and on the water right of Iran would not singed new agreement or treaty. The treaty of 1972 would apply and continued...we are determine on Iran rights." (Mujiburahman Omar, 19)

Iran Dam Building: Afghanistan in response of water crisis between two countries accusing Iran that build many dams in common Basin River. Iran build according to access data more than 500 dams during the last one century.

“Iran has six Basin River, and build 600 dam on these Basin River, tenth of them built on four common trans-boundary that originate from Iran. Exactly by dam building water and drained water over Afghanistan, but Afghanistan build just one Salma Dam on Harirud River Basin” (Ali Ahmad Osmani, 14)

Water for oil: During the rising tension between Iran-Afghanistan on water, this theme repeated by president Ghani then by media than mean we do not give the water for free more than amount of treaty for Iran.

“Helmand Treaty is belong to all Afghanistan and Iran People. Treaty is not the problem, but the problem is implementation. The Helmand key is in our hand, and we implement the determination. More than determination, we might negotiate, if give us oil, we deliver water. If do not give oil, there is nothing to deliver.”(Ashraf Ghani, 18)



(Figure 14: International Dimension)

Conclusion

As article discuss on water policies in both Republican and Taliban periods, this research analyzed the water crisis and water policies. There are some most important points found in the research. 1. Afghanistan is one of the most vulnerable country among the world in term climate change, particularly on drought, flood, and clean water access, the policies made to deal with are not sufficient. 2. As research figure out, the legislative development on water policies occurred in last two decades, for instance, water crimes, water law, Ground Water Recourse Act, Regulation on bed and Surrounding of water Resources and water Infrastructures, Water Affairs Management Law are made. 3. Water discourse from a less important element changed to a centric issues for both society and state, in last four years it identified as national grace. 4. The four measurement of water policy were developing irrigation system, dam building, clean water access, flood and drought dealing actions. These important actions repeated in policies and speeches. 5. The data of statics shown Afghanistan still can not use its water resources in proper ways, but make improvement to pay attention on environment, shift from NEXUS to IWRM water governance model, and receive International Funds. 6. Water tension with its neighbor’s come to affect foreign policy, nation attitudes, and it relation with Iran, Pakistan, and Uzbekistan.

IEEESEM

Global, Organizer, and Basic Themes (Codes)	High Maker Speeches	Policy	Afghanistan Development Plans	Water and Laws	Policies 106	Total
Water Meaning	0.00		0.00	0.00		0.00
Legislative Meaning	0.00		0.00	0.00		0.00
Customs as Source of Water Law	0.00		0.00	100.00		100.00
Islamic Fiq	0.00		0.00	100.00		100.00
Legislations Document	0.00		0.00	100.00		100.00
Water Rights	100.00		0.00	0.00		100.00
Water Discourse	0.00		0.00	0.00		0.00
Food Safety	0.00		0.00	100.00		100.00
Water Identity	100.00		0.00	0.00		100.00
Water Scarcity	50.00		0.00	50.00		100.00
Water: Public Asset	60.00		0.00	40.00		100.00
Victim for Dam	100.00		0.00	0.00		100.00
Poverty	0.00		0.00	100.00		100.00
water future	0.00		0.00	100.00		100.00
water is life	100.00		0.00	0.00		100.00
Water Crisis	0.00		0.00	0.00		0.00
Drought Crisis	0.00		0.00	100.00		100.00
Drought as National Disaster	0.00		33.33	66.67		100.00
Wetland Drought	0.00		0.00	0.00		0.00
Water Access	0.00		75.00	25.00		100.00
Access to Clean Water and Irrigation	0.00		100.00	0.00		100.00
Clean Water	0.00		0.00	100.00		100.00
Improved Water Resources for Drinking and Irrigation(25-30%)	0.00		100.00	0.00		100.00
War: Reduced 50% of Water Access	0.00		50.00	50.00		100.00
Wasting (50% up to land)	0.00		0.00	100.00		100.00
Water Pollution	0.00		0.00	100.00		100.00
Water Conflict	0.00		0.00	100.00		100.00
Destruction of Water System	0.00		0.00	100.00		100.00
Lack of Water Knowledge	0.00		0.00	100.00		100.00
Urbanization and Water	0.00		0.00	100.00		100.00
Water Governance	0.00		0.00	100.00		100.00
Structural Model	0.00		0.00	0.00		0.00
City-Government Water Supply	0.00		0.00	100.00		100.00
High Council of Water	0.00		0.00	100.00		100.00
Local Associations	50.00		0.00	50.00		100.00
structure Chart of Water Management	0.00		0.00	100.00		100.00
Values	0.00		0.00	0.00		0.00
Environment	0.00		0.00	100.00		100.00
Water and Environment Protect	33.33		0.00	66.67		100.00
Results Based Plan	0.00		0.00	100.00		100.00
Sustainable Environment	33.33		0.00	66.67		100.00
Water Participation	0.00		0.00	0.00		0.00
Country- Private- Government Water Supply	0.00		0.00	100.00		100.00
Digging Absorb Well in City	0.00		0.00	100.00		100.00
Local Participant	0.00		0.00	100.00		100.00
Mirab-Rural Role	0.00		0.00	100.00		100.00

Promoting Women Role in WM	0.00	0.00	100.00	100.00
Public Awareness	66.67	0.00	33.33	100.00
Sharing of City Plan By Ministry of Urban Development	0.00	0.00	100.00	100.00
Transferring Power to Local Organization	0.00	0.00	100.00	100.00
Water Policies	0.00	0.00	0.00	0.00
Dam Building	0.00	60.00	40.00	100.00
Building Small Reservoirs	0.00	100.00	0.00	100.00
Dam Building Plan	100.00	0.00	0.00	100.00
Electricity	33.33	33.33	33.33	100.00
Need for Dam Building	100.00	0.00	0.00	100.00
Drinking Water	0.00	0.00	0.00	0.00
2 Time Access(up to 2005)	0.00	0.00	100.00	100.00
Priority for Drink	0.00	0.00	100.00	100.00
Water Quality Exam-M of Health	0.00	0.00	100.00	100.00
Well License	0.00	0.00	100.00	100.00
Well Banning-Well License	33.33	0.00	66.67	100.00
Flood Management	66.67	0.00	33.33	100.00
Flood Water Harvesting	0.00	100.00	0.00	100.00
Water Crime	0.00	0.00	100.00	100.00
Capturing Bed of Water	0.00	0.00	100.00	100.00
Banning of Factors in Red Water Zone	0.00	0.00	100.00	100.00
Destruction of Water Resource: 2year prison	0.00	0.00	100.00	100.00
Water Pollution: 2 years prison	0.00	0.00	100.00	100.00
Water Resource Management	0.00	100.00	0.00	100.00
Allocating of Water Resources	0.00	0.00	100.00	100.00
Government Protect WR	0.00	0.00	100.00	100.00
Integrated Water Resource Management	0.00	50.00	50.00	100.00
Irrigation water management	0.00	100.00	0.00	100.00
Meter Installing	0.00	0.00	100.00	100.00
National Water Resources Development Program	0.00	100.00	0.00	100.00
Sustainability of Water	0.00	0.00	100.00	100.00
The Irrigation Program	0.00	100.00	0.00	100.00
The Rural Water Supply and Sanitation Program	0.00	100.00	0.00	100.00
Traditional Water Management Systems	0.00	0.00	0.00	0.00
Water Bed Realm Right	0.00	0.00	100.00	100.00
Water Resource Management	0.00	100.00	0.00	100.00
Well License- Industrial	0.00	0.00	100.00	100.00
Water Studies	0.00	50.00	50.00	100.00
International Dimension	0.00	0.00	0.00	0.00
Climate Changes	100.00	0.00	0.00	100.00
International Fund	100.00	0.00	0.00	100.00
Neighbors-Water	100.00	0.00	0.00	100.00
Iran Dam Building	100.00	0.00	0.00	100.00
Afghanistan Rights	0.00	0.00	100.00	100.00

Iran Rights	50.00	0.00	50.00	100.00
Water for Oil	100.00	0.00	0.00	100.00
SUM	27.78	16.67	55.56	100.00

(Figure 15: Global, Organizer, and Basic Themes Matrix)

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