

Identifying the Effective Factors and the Importance of the Harirud Watershed in Afghanistan and its Impact on Iran

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ABSTRACT

One of the problems in the analysis of Hydro politics relations in the international river system is that the same factors can create a diverse range of conflict or cooperation, and even the same variable may play a different role in relation to other variables in each coastal country. Therefore, it is necessary to know the variables and the role that each variable plays in formulating a model for analyzing opportunities and risks for countries that share a watershed with other countries. One of the fundamental measures in the analysis of Hydro politics relations in the transboundary river system is to know the variables. Which play a role in the importance of transboundary waters for countries. Harirud water enters Iran from Afghanistan, and the location of its catchment area in the arid and semi-arid region of the world has made them dependent on Harirud water to meet their water needs. Afghanistan's development programs have caused a decrease in Harirud water entering Iran in such a way that it can create a challenge to Iran's security. Therefore, the question of the research is, what are the variables and indicators influencing the strategic importance of Harirud for Afghanistan, and what is its effect on Iran? For this purpose, 68 identification indicators and data were analyzed using the Delphi method and structural analysis method with Micmac software. In this research, 35 experts were selected, of which 25 participated in completing the Delphi questionnaires and 10 participated in completing the questionnaire of the mutual effects analysis matrix, and the answers of 8 of them were used to complete the matrix. is placed Based on the findings of the research, indicators of the importance of Harirud for national security, security of water resources, and implementation of economic development programs for Afghanistan are considered strategic indicators.

KEYWORDS

hydro politics; Afghanistan; Hari River; structural analysis; a border river; water

INTRODUCTION

Water is a vital and unique resource that cannot be replaced. The loss of natural resources and the development of deserts, pollution, and the lack of suitable infrastructures lead mankind to the global water crisis (Papli Yazdi and Voshoghi, 2010:19). In the nature of rivers as an open system, in some cases the reason for human manipulations is that its hydrological regime is disrupted (Kaviani, 2016:391)

Countries in the international system as well as at the regional level are always in a situation of cooperation with conflict and a combination of the two due to their goals, capabilities, and perceptions of various issues. Various factors also cause competition, conflict, and divergence between countries. Mainly, the conflict between nations is caused by endangering their national interests. In the meantime, one of the issues that have always been raised as one of the basic needs of governments and geographical territories is the debate on water resources and related Hydro politics challenges (Karimi, 2012:772). Cooperation between the countries along the rivers requires the agreement of all the countries along the rivers and the fair distribution of water between them (Afshari, 2016: 34). Reserves and natural resources in the border area or civil structures and border facilities have a direct effect. Those rivers are also important from a military point of view or river crossings that are used by drug smugglers. They cause many problems within the borders of the country. Even some great historical events took place on the edge of these border rivers (Mehrshahi, 2008:80).

In the political geography literature, hydro politics examines the position of water resources in the power relations of political-spatial units at sub-national, national and transnational scales (Kaviani Rad, 2015:30) conflict and cooperation in international catchment areas, and multiple uses of transboundary water resources. It makes hydro politics one of the complex and conflicting issues that countries and the international community are currently facing. Therefore, different goals of monitoring water resources are considered by actors: 1- Where water is scarce, this competition is for monitoring more water volume. 2- Where water is abundant, monitoring may be for hydropower purposes or flood monitoring. 3- In some places, the monitoring may pursue non-water political goals. However, whatever the motivation, the strongest and weakest coastal states find themselves in three situations: a- sharing (cooperation), b- paying attention to the interests of the stronger coastal state (little cooperation and no competition), and c- discussion and Controversy (intense competition) (Zeitoun, et al: 2011:92).

Border Rivers include rivers that separate two or more countries from each other; in fact, all or part of them form the border of two or more countries. As one of the types of borders, these rivers have a great role in regulating relations between neighboring countries. More than 40% of the world's population lives in areas that share watersheds. One of the factors of intensifying international conflicts is more than 250 borders and common rivers that have arisen between 145 countries of the world (Joan and Ahmadi, 2015:1).

Harirud watershed is also one of the border areas of Afghanistan. The area of this watershed in Afghanistan is 77,604 square kilometers, in which 2.5 billion cubic meters of water is produced in the year (Mohammadpour, 2016:289). Murghab is shared between Afghanistan and Turkmenistan. There is no hydrological link between these two basins and this division was done only to consolidate the management of basins in this part of the country in one unit (Hosseini, 2017: 10). Economic activities, coastal country Being or being a source of water, economic and military power, dependence and food security, climate change, mutual distrust, dissatisfaction with the performance of the officials of the two countries towards each other, the instability of Afghanistan's internal turmoil, the priority of the Afghan authorities to manage resources to influence It was introduced in the Hydro politics relations of two countries (Shroder and Ahmadzai, 2016:20). The research investigated the Hydro politics relations of the coastal countries in Transboundary Rivers and the use of geographical, military, political, economic, technical and foreign actors by the coastal countries. Weak and strong in achieving cooperation and preventing conflict Word has paid attention (Kehl, 2011:218).

RESEARCH METHODS

The field method uses a combination of Delphi methods and cross-matrix analysis with Micmac software. The Delphi method is one of the methods of group knowledge acquisition, which is a structured process for predicting and helping decision-making, survey rounds to collect information and finally group consensus (Zali, 2014:1-36). Structural analysis is basically a tool to shape ideas. With this tool, a system can be described with the help of a matrix that connects its components. By examining these links, it is possible to determine the necessary variables for the transformation of the system. This tool can be used alone or as part of a complex pattern prediction effort. This method was developed with Micmac software by Michel Gaudete. The ability of this model is to identify the relationships between variables and ultimately to identify the key variables that are effective in completing the system (Gara et al., 2015:36-68) a two-dimensional matrix known as the matrix of mutual effects is used to examine the relationships between variables.

The statistical population of the research has been selected according to the type of expertise and work experience and relevance to the subject from domestic and foreign professors and researchers who have done research on the subject of research and Iran and Afghanistan, especially the water resources of the two countries. Targeted sampling has been done according to the characteristics of the statistical population. In this research, 35 experts were selected, of which 25 participated in completing the Delphi questionnaires and 10 participated in completing the interaction analysis matrix questionnaire, and the answers of 8 of them were used in completing the matrix. Is. Studying the direct matrix reveals the most influential variables. But this alone is not enough to reveal the hidden variables that sometimes affect the studied system. In fact, in addition to direct relationships between variables, there are indirect relationships through reaction loops or feedback between variables.

In order to calculate the indirect effects of each variable, the software automatically increases the relationships between the variables to powers of 2, 3, 4, 5, etc., and based on this, the indirect effects of the variables are measured. Such analyzes provide the possibility of a detailed study of the target system. The output of Micmac software is presented in the form of 5 categories of variables. These variables have differences due to their role in the dynamics of the desired system, which will be discussed separately in the following (Zali, 2012:40).

In order to evaluate the validity or validity of the questions in the questionnaire, while using the opinions of professors and experts, pre-tests were conducted with a limited number, and then modifications were made in the initial questionnaire, and overlapping questions were merged. Using Cronbach's test, the reliability of the questionnaire was 0.767, which is an acceptable result. It should be noted that if Cronbach's alpha coefficient is more than 0.7, the reliability of the questionnaire is evaluated as favorable. To evaluate and obtain the value of each of the variables in the Delphi method, after applying points by experts, Friedman's method was used to average and determine the average value until all the variables that obtained less than this average or average limit were removed and be left out.

LITERATURE REVIEW

Many types of research have been conducted on the Hydro politics relations between Iran and Afghanistan, especially the Helmand common watershed, and one of the reasons for this is the existence of joint agreements between Iran and Afghanistan regarding Iran's water rights from this common watershed. But there are few field studies about Harirud. In the research and research carried out in the Harirud catchment basin, an article with a Hydro politics and geopolitical investigation of the Harirud river has addressed the ineffectiveness

of the restrictive approaches and plans that have been implemented so far and concluded that in such circumstances, the development of regional cooperation in water issues requires avoiding realistic approaches to Security and water and turning attention to these two categories is within the framework of the human security approach, which can lead to the development of water cooperation in the countries of the Harirud basin based on the mutual and common interests of the people of the region and meeting the reasonable needs. However, with the approach of human security, some have paid attention to the development of water cooperation in the Harirud basin countries based on the mutual and common interests of the people of the region, without mentioning the variables and indicators that are effective in this approach (Sinai, 1390: 93). Some have proposed solutions to reduce tension in the bilateral relations between Iran and its neighbors by using geographical indicators of strategy. In these studies, without paying particular attention to the issue of Harirud water, the influential factors in the relations between Iran and Afghanistan have been investigated, and solutions such as multilateralism, connection with extra-regional powers, choosing a long-term strategy to create a peaceful regional environment with the inclusive participation of all of national governments, using the strategy of winning (Karimipour, 2013). In other sources, there are variables such as economic activities, being a coastal country or being a water source, economic and military power, dependence and food security, climate change, mutual distrust, dissatisfaction with the performance of the officials of the two countries towards each other, the instability of Afghanistan's internal turmoil. Afghan authorities' priority for resource management has been introduced to influence the Hydro politics relations of the two countries (Shroder & Ahmadzai, 2016:20).

Sinai (1390) in a research regarding the water shortage conditions of Iran, Afghanistan and Turkmenistan, population growth of the three countries and the growing need for water in industry and agriculture, the development of regional cooperation in water issues requires avoiding realistic approaches to security and water and focus on these two categories in the framework of the human security approach. This development framework can lead to water cooperation and joint projects in the Harirud basin based on strategic goals and mutual needs, such as coordinated and integrated management of common water resources, continuous consultation with local users, and control of population growth and migration. Zarkhani (2016) investigated the dual role and influence of the border river on the relations of the countries and with an emphasis on the border river of Harirud, in a descriptive-analytical way. They analyzed the role of this common water resource in creating cooperation and convergence between the two countries of Iran and Turkmenistan. Then by introducing 4 types of political, social, economic and structural convergence, they showed that climatic factors can play a significant role in regional tensions. They also mentioned Dusty Dam as an example of cooperation and legal system of joint exploitation between Iran and Turkmenistan. Nami (2015) believe that economic variables are among the most important variables that create regional convergence. Also, since sustainable development is human-centered, environmental threats are seen as the main economic threat. Therefore, the economic variable causes an increase in the environmental security factor in a region. Papli (2013) conducted a research on the global trend of water security and threats to regional stability caused by transboundary water resources. He dealt with the international conflicts of this country with its neighbors and at the end provided a framework for the proper management of the water resources of this region. Kandahari et al. (2015) looked at the interaction between the three countries of Iran, Afghanistan and Turkmenistan, and using game theory along with a comprehensive model of water resources management, provided an efficient tool for evaluating different management scenarios in the Harirud watershed. Their results showed that by benefiting from the knowledge of water resources management,

the threat of water conflicts can be turned into a profitable opportunity for countries. Afshari (2016) examined international water agreements such as treaties, protocols and bilateral or multilateral agreements that reduce or intensify disputes and conflicts between the beneficiary countries. Their results showed that most of the contracts are at a favorable level in terms of provisions related to data and information exchange, organizational structure and dispute resolution, but they have not been successful in the implementation phase. Mokhtari (2012) admitted that the water crisis is a late one that has started and will increase and expand in the future. In the meantime, the knowledge of political geography in the form of Hydro politics tendency analyzes this situation in a range of power relations of political-spatial units from supranational to global scale and from cooperation to coordination. They believe that due to phenomena such as climate change on a global scale and a change in the rainfall pattern on a regional scale, countries that previously had dry and low-rainfall climates are facing excessive withdrawal of underground water resources, aquifer level drop and land subsidence. Have become. Rai et al. (2017) introduced 14 criteria influencing transboundary water management in a research. Then they prioritized these criteria in a hypothetical basin using the opinions of experts and experts using the fuzzy clustering method. Their results showed that the criteria of food security, fair profitability, quality and quantity of water flow and hydro-hegemony are the most important priorities to advance negotiations. The review of previous studies indicates that each of the researchers has studied the issue of border and transboundary water sharing from a specific point of view, and they have rarely identified and investigated all the different issues affecting the management of these resources. Based on this, the aim of the current research is to investigate the issue of border water resource management from various aspects of the concept of hydro politics and categorize the identified factors in an innovative structural format to be used as a road map in interactions and negotiations. In this regard, the Harirud catchment basin, which is one of the common basins with many complexities and diversity of issues, was chosen as the study area.

RESULTS AND DISCUSSION

This research is based on qualitative and quantitative data. The research methodology is prospective research and the research method is descriptive-analytical. Data and information have been carefully analyzed. For this purpose, the basic information, concepts, and theoretical foundations of the research have been collected through the library method and by reading books and articles, etc., related to the research topic, and effective criteria have been identified in the research topic. In order to identify the influential variables in the Hydro politics relations between Iran and Afghanistan, about 86 indicators have been identified.

Table 1. Variables and research indicators

Sources	Titles of indicators	Variables
(Carter, 2010; Farooq, 1999; Favre & Kamal, 2004; Horsman, 2005; Mir, 2010; Peterson, 2013; Shroder & Ahmadzai, 2016)	National Security	Geopolitical-geographical
	Security of water resources	
	The geographical location of Afghanistan	
	Iran's geopolitical position	
	Conflict of strategic interests of two countries	
	The role of world powers in hydropolitical relations	
	The influence of countries in procurement Laws related to water	
	Cross competition of energy transfer	
	Weakness of Afghanistan's national power indicators	
	Power relations	
(Obedience and exercise, 1391; Tamna, 1390; Haq	The weakness of Iran's hydropolitical policies	

Panah and Rahimi, 1390; Kaviani Rad, 1384; Karimipour, 1380; Karimipour, 1393; Nami, 1395)	The effect of Iran's regional water crisis on national security	
	Countering Iran's ideological goals	
	Water transfer from Tajikistan to Iran	
	Geomorphology of Harirod watershed	
	Climate change	
(Favre & Kamal, 2004; Safi & Kohistani, 2013; Shelala, Kasting, & Cordesman, 2013; Yıldız, 2015) (Karimipour, Kaviani Rad, 2015; Karimipour, 1393)	Lack of a common interpretative framework	Technical and economic
	Weakness of water use technologies	
	Economic interdependence	
	Energy security	
	Afghanistan economic development program	
	Food security	
	Creating jobs	
(Nader, Scotten, Rahmani, Stewart, & Mahnad, 2014; Shelala et al., 2013; Shroder & Ahmadzai, 2016; Thomas & Warner, 2015; Torabi, 2012)	The role and perspective of political elites	Social political
	Afghanistan's place in Iran's foreign policy goals	
	Politics Local water sources in Afghanistan	
(Popli Yazdi and Vathoqi, 2013; Tamna, 2015; Haq Panah and Rahimi, 1390; Sinai, 1390; Safavi, 1385; Kavyani Rad, 2015; Karimipour, 1380; Karimipour, 2013)	Agreement Letter the right water Iran from Harirud water	
	Performance of regional institutions and international on the issue of transboundary water resources	
	Absence of mandatory rules Bringer international for transboundary waters	
	A long -term dispute on the Hirmand water issue	
	Iran's mistrust of Afghanistan	
	Using water to influence Iran	
	Afghan immigrants	
	Plan development Blue in the west and northwest of Iran	
	Poppy cultivation and opium production	

Hydro politic variables and indicators

Hydro politics is related to the ability of geopolitical institutions to manage common water resources in a politically stable manner without tension and conflict between political-spatial units (Rai, Wolf, Sharma & Tiwari, 2017:352). Therefore, the influential variables in hydro politic relations include the conceptual groups of power and development as independent variables and cooperation and conflict as dependent variables, which are used in formulating a format for analyzing opportunities and risks for the countries that are in the basin. Having a common watershed with other coastal countries, it affects (Rai, et al. 2017:362). The components of power include geographical power, material power, and political and economic power. The indicators of material power include military power, economic power, methods of production, and access to knowledge. Geographical power includes more stable features such as coastal location good and the size and value of the territory, phenomena such as resources, population, and access to resources (Zeitoun and Warner, 2006:442). Political power includes the performance of the government, political elites, different social groups, and the structure and performance of the international system. (Qavam, 2010: 258-256). In this analytical framework, the concept of development is described in the form of indicators such as the availability of water resources, storage capacity, food security, energy security, and economic power including trade, financial aid, access to It is information,

infrastructure and technical knowledge (Kehl, 2011: 227) political and military dominance affects the process of negotiations. A country that is more involved in the process of negotiations and decision-making may obtain a part of common water resources (Rai, et al. 2017:362).

Table 2. some key indicators of the Harirud watershed (Duran Research and Analysis, 2015; King and Sturtewagen, 2010)

Afghanistan	Iran	Indicator
44%	38%	The share of countries' area from the basin
32%	65%	Population share of countries in the basin
245	219	Average rainfall (mm)
213900	238906	Aquifer area in the basin (hectare)
1570	771	Total available surface water (million cubic meters)
640	1523	Total available underground water (million cubic meters)
2210	2294	Total available water (million cubic meters)
633	625	Storage capacity (million cubic meters) based on the statistics Year 2015
40%	100%	The ratio of surface water consumption in the basin Available surface water
25%	135%	The ratio of the use of underground water in the basin compared to Groundwater available
36%	122%	The ratio of the total water resources used in the basin Total available water
-	61%	Dependency ratio
47%	53%	percentage of grain (wheat) in the cultivation pattern
2/85	3/00	Average wheat harvest hectare/ton

Research findings

The variables and indicators obtained from library studies were prepared in the form of a questionnaire and sent to the statistical community to implement the Delphi method. After rating the indicators according to the average opinion of the experts, finally, the indicators affecting the importance of Harirud water for Afghanistan were selected.

Structural analysis of variables and indicators after identifying the indicators and with the aim of investigating their mutual effects on each other and identifying the key influential variables, the method of structural analysis has been used. This method describes and identifies the system by examining the relationship of all variables. The ability of this model is to identify the relationships between variables and ultimately to identify the key variables that are effective in completing the system (Gara, Heydari and Kokbi, 2015:19). Respondents were asked to give their opinion on whether there is a direct effect type relationship between variable 1 and variable 2. If the answer is negative, put number 0, number 1 for weak influence, number 2 for moderate influence and finally number 3 for high influence in the cell.

Matrix of direct and indirect effects

The initial analysis of the matrix data and the cross effects show that the selected factors have a great influence on each other and in fact the system is unstable. On the other hand, the matrix based on the statistical index with 3 rotations of the data has 100% desirability and optimization, which indicates the high validity of the questionnaire and answers.

Table 3. Initial analysis of the interaction matrix data

Degree fullness	Total	Number Three	Number Two	Number One	Number Zero	Number repetition	Dimensions matrix	
97/92%	238	55	104	79	18	3	16	Afghanistan

Based on the analytical results of the data in Table 4, in the direct effects of the indicators on Afghanistan, the geographical-geopolitical variables have the most influence and the most influence on the system.

Table 4. Direct and indirect effects of indicators and variables on each other in the case of Afghanistan

Indirect effects				Direct effects				Titles of indicators	Variables
Influencing variables	Effective	Influence of variables	Effective	Influence variables	Effective	Influence of variables	Effective		
5507157	846235	5401884	813404	233	36	226	35	National Security	Water- geography
	843227		847914		37		37	Security of water resources	
	777215		767899		33		32	Iran's geopolitical position	
	651341		684697		27		28	Weakness of Afghanistan's national power	
	533436		684614		22		28	The role of world powers	
	625981		545067		26		22	The influence of countries in the preparation of laws related to water	
	455523		649194		19		27	The impact of Iran's regional water crisis on national security	
	774199		421095		33		17	Geomorphology of the basin	
4090935	740927	4183804	748243	170	31	176	31	Economic interdependence	Technical-economic
	652321		608921		27		25	Energy security	
	764289		728089		32		31	Food security	
	623623		692340		26		29	Creating jobs	
	794409		845609		33		36	Afghanistan economic development program	
	5155366		560602		21		24	Drinking water	
1187817	685906	1200221	673654	49	29	50	28	Afghanistan in Iran's foreign policy	Social
	501911		526567		20		22	Water is a tool to influence Iran	

The matrices show that indicators related to power and development will have a greater reflection in the set of hydro political relations of Afghanistan and will make them the most influential variables in this flow

Analysis of the role of research indicators

Studying the direct matrix reveals the most effective indicators. Based on the output of Micmac software, is presented in the form of 5 categories of indicators. These indicators have differences due to their role in the dynamics of the system in question (Zali, 2012:64-34). Which will be discussed separately in the following.

Influential indicators: Influential indicators are the most critical components. Because the system is dependent on them and the degree of control over these indicators is very important. Among these indicators, there are generally environmental indicators that strongly affect the system. These indicators are generally not controllable by the system, because they are outside the system and act more as factors of stability.

Two-way indicators: these indicators are effective and very effective at the same time. The nature of these indicators is mixed with instability because every action and change on them leads to a reaction and change on other indicators. These indicators are divided into two categories:

1. Risk indicators: These indicators have a very high capacity to become key and strategic players of the system because due to their unstable nature, they have the potential to become the breaking point of the system.
2. Target indicators: These indicators are more effective than they are effective and they can be identified with acceptable certainty as the complete results of the system.

Influential or dependent indicators: Dependent indicators have low influence and very high influence. Therefore, they are very sensitive to the evolution of influential and bimodal indicators, in other words, these indicators are the output of the system. Independent indicators: These indicators are not affected by other system indicators and do not affect them. These indicators include two categories: discrete indicators: these indicators have nothing to do with the dynamics and current changes of the system and can be removed from the system.

Secondary Leverage Indicators: These indicators are more influential than influential despite the fact that they are completely independent. Regulatory indicators: these indicators can act as secondary orders of weak goals or secondary indicators (Zali, 2012; Salmani et al., 2015:9).

Table 5. Analytical results of research indicators

Description	Afghanistan	Iran	Index type
This Indicator the most influence And the least influence particle for direct object had and by system able no control	Condition Geomorphology basin Harirod Watershed	Condition Geomorphology basin watershed Hari Road	Effective
This indicator i see simultaneous to the face effective and a lot effective action they stay and Nature they with instability mixed is Because every Action and a change on the reaction and change on other Indicators particle for direct object to follow	From Variable Geographical Geopolitics: Security, National security Sources Blue, location geopolitics Iran for access to the waters free and Program Development Economical Afghanistan from Variable technical Economic: for Food security and dependency Reciprocal Economical	From variable geogra- phical geopolitics: security national, security sources blue, weakness the power national Afghanistan and position geopolitics Iran to access Afghanistan to the waters free of variable technical economic: water drinkable and dependency reciprocal economic of Variable political social: position Afghanistan in goals politics Foreign Iran	Two-sided
This indicators capacity is very high to conver- sion to the actors key Systems have	Security national, security sources blue, food security and location geopolitics iran for access to the waters free program development economical, social and environ- mental afghanistan and economic dependence	Water beverage, security Sources Blue and impor- tance Harirod for security dietary	Risk

These indicators over from the one who is influential be effective and can they particle for direct object with certainty acceptable to title result evolution system identified by manipulation this indicator can to changes and evolution system in the direction item hand opinion found		position afghanistan at target's politics foreign iran, importance hari road to security national iran, geopolitical position iran to access afghanistan to the waters free, dependency reciprocal economical and structural weakness indicators the power national Afghanistan	Target
Indicators dependent system are that ratio to evolve variables the effect transition and two-way very sensitive is this indicators output system	Role powers global at relationships hydropolitics two country and importance hari road to creation opportunities job	Role and point of view elite political for Iran	Effective
This indicator i see from other indicator hi system not much effect did not accept and on they also the effect a little had effective does not have they relationship very a little with they have a system.	From variable technical economic: drinking water from variable political social: instrumental water to influence on policy objectives foreign Iran at Afghanistan	From variable technical economic: creation employment and energy security from variable political social: performance regional institutions and among international and distrust Iran to Afghanistan	Independent
This indicator communicational to dynamics and changes current system has not and can it particle for direct object from system took out	Knot corrosion crisis water regional with crisis national at Iran	Security energy	Discrete
These indicators over from this that effective be, influence put and they can to title a reference to test and to title criterion to work the river	From variable technical economic: security energy, from variable geopolitics: influence countries foreign at preparation rules related to water Afghanistan	From variable technical economic: creation employment, from variable political social: trust Iran to Afghanistan from variable geopolitics: transfer water from tajikistan to Iran	Lever Secondary
This indicator can lever face secondary, weak goals and or indicator risk action to slow down	From variable geographical geopolitics: weakness structural indicators national power Afghanistan At equal to Iran from variable political social: the position of Afghanistan at target's politics foreign Iran	Function Institutions among international	Regulatory
Security, national, security sources blue, location geopolitics Iran, dependency reciprocal Economical, food security, program development economical Afghanistan, location of Afghanistan at politics Foreign Iran		Security sources blue, security dietary, water drinking place Afghanistan at politics foreign iran	Strategic

In this research, after identifying and categorizing the factors in three geographic groups, geopolitical, technical, economic, and social-political, and collecting the opinions of the statistical community in combined methods (Delphi and structural analysis), strategic variables influencing the hydro political relations between Iran and Afghanistan were identified.

CONCLUSION

In general, concerning the contents raised in this article, the country of Afghanistan is implicitly in favor of the theory of absolute territorial sovereignty in the exploitation of this international river due to its location in the upstream area of the Harirud River. According to this point of view, rivers and flowing waters in the territorial territory of this government are considered as other properties, resources, etc. of the government, and the aforementioned government exercises exclusive and absolute sovereignty in the exploitation of the Harirud River. This is the reason why the Afghan government cannot seriously respect the rights of other waterway states (Iran and Turkmenistan). The implicit emphasis and acceptance of the principle of absolute territorial sovereignty regarding the Harirud River considers this river as an internal river from the upstream country's point of view. Therefore, in the past, measures such as digging a canal to divert water and building a dam to store water have been carried out by the Afghan government.

In this study, the extracted variables and indicators based on the review of theoretical foundations using Delphi methods and mutual influence analysis to identify influential, influential, and strategic factors in the Micmac environment have been investigated and analyzed. Based on the analytical results of the research, the geographical-geopolitical variable has the most influence and effectiveness in the system, the economic technical variable has the most indirect influence and the social-political variable has the lowest influence and influence.

The analysis of opportunities and risks in the hydro-political relations between Iran and Afghanistan in the Harirud watershed based on the results of the influence of strategic variables on the target variables is conceived in two ways:

Risks: Due to the weakness of Afghanistan's political position in Iran's foreign policy and the structural weakness of Afghanistan's national power indicators vis-a-vis Iran, Afghanistan will try to deal with Iran on the issue of water from the perspective of power. In this case, Iran's mistrust of Afghanistan will increase and due to the low economic interdependence between the two countries, Iran will try to react to the Afghan government in the economic, geopolitical, and political fields to satisfy the Afghans. To pay attention to Iran's water rights from its transboundary rivers in the water issue. Based on this, it is expected that the relations between Iran and Afghanistan will move towards tension.

Opportunities: The geomorphology of the Harirud watershed as an influential environmental indicator will cause both Iran and Afghanistan to face a shortage of water resources in this area. In this case, Iran can improve Afghanistan's political position in Iran's foreign policy by managing strategic indicators and using its geopolitical position to give Afghanistan access to open waters through the implementation of the Chabahar Agreement between Iran, India, and Afghanistan. Afghanistan's agricultural sector and its related food industries. This will improve the economic indicators of the two countries and solve some of Afghanistan's internal problems related to human security. In such an environment, the performance of international institutions will improve as a research regulatory indicator for investment in the water sector and can play a role as a key player in the system. Based on this, not only the lack of water will not lead the hydro-political relations of the two countries to tension, but the two countries will reach a common understanding that Afghanistan

complements Iran's hydro politics and Iran complements Afghanistan's geopolitics, and this complementary aspect can be the basis for interaction between the two countries. Provide

REFERENCES

- Afshari, Akbar. (2016). Hydropolitical Analysis of Western Iran Case Study of Sirvan River, M.Sc. Thesis, Department of Political Geography, Faculty of Humanities, Islamic Azad University, Science and Research Branch.
- Araghchi, Seyyed Abbas. (2016). Foreign policy pursuits of J.A. Iran for the right of Harirod with the Afghan authorities. Interview by Hassan Sadranian. Tehran
- Carter, Stephen. (2010). Iran's interests in Afghanistan and their implications for NATO. *International Journal*, 65(4), 977–993
- Conflict, cooperation, and governance of international river systems. *Journal of World-Systems Research*, 17(1), 218–235.
- Das, S.K.; Adhikary, S.K.; Atef, S.S.; Dasgupta, A.; & Babel, M.S. (2011). Simulating impacts of EFR consideration on reservoir operation policy and irrigation management in the Hari rod River Basin. Presented at the 19th International Congress on Modelling and Simulation, Perth, Australia: The Australian National University.
- Drysdal et al. (2013), Political Geography of the Middle East and North Africa, translated by Mir Haidar. Tehran: Bureau of Political and International Studies.
- Duran Research and Analysis. (2015). Afghanistan's Trans-Boundary Waters: An Overview. Kabul: Duran Research and Analysis.
- FAO. Country Programming Framework (CPF) (2012-2015) for Afghanistan. United States: United Nations.
- Farouq, Vamsi K. (1999). The Effects of Local, Regional, and Global Political on the Development of the Helmand-Arghandab Valley of Afghanistan. University of London.
- Favre, Raphy; & Kamal, Golam Monowar. (2004). Watershed Atlas of Afghanistan. Kabul: Swiss Agency for Development and Cooperation (SDC).
- Favre, R., & Kamal, G. M. (2004). Watershed atlas of Afghanistan. Kabul: Ministry of Irrigation, Water Resources, and Environment.
- Faver Raphy (2004) Watershed Atlas of Afghanistan, First edition- a working document for planners, Kabul.
- Gara, Ehsan, Heydari, Gholmarza, and Kokbi, Morteza. (2015). The foresight of information science and epistemology education in Iran with the approach of analyzing mutual effects. *Academic Library and Information Research*, Volume 51(4), 36-68
- Godet, M. (2006). Creating Future Scenario Planning as a Strategic Management Tool (2nd). Washington DC: Economic Ltd.
- Haqpanah, Jafar; and Rahimi, Mohammad. (1390). Geopolitics of Afghanistan and regional developments in West Asia. Tehran: Imam Sadegh University
- Horseman, Stuart. (2005). Afghanistan and transboundary water management on the Amu Darya: a political history. *Central Asian Waters*, 63-74
- Hosseini, Seyyed Ali. (2017). Harirud (overview of the watershed). Kabul: Afghanistan Institute of Strategic Studies
- Iraq (2015) Transboundary Aquifers of the World, Special Edition for the 7 World Water Forum
- Javan, Ali Shoghi and Ahmadi, Azadeh. (2015). Allocation of water in border rivers with the view of joint view, case study: Harirud River. 9th National Congress of Civil Engineering. 21 and 22: Iran: Ferdowsi University
- Karimipour, Yadaleh. (2013). Geography, first in the service of peace, Tehran: Ekhet Publishing House

- Karimi, Bayram. (2012) Aras Frontier River Hydropolytic (Conflict or Cooperation), MSc Thesis, Faculty of Literature and Humanities, Department of Political Geography, Ferdowsi University of Mashhad.
- Kaviani Rad, Murad. (1384). Hydropolitical relations between Iran and Afghanistan. *Strategic Studies Quarterly*, Year 8 (2), 337-385.
- Kaviani Rad, Murad. (2015). The neighbor who closes the rivers to Iran/Salma Dam on Harirud threatens the water security of Khorasan. Shafqna website: Shafqna.
- Khel, Jenny R. (2011). Hydro political complexes and asymmetrical power: Conflict, cooperation, and governance of international river systems. *Journal of World-Systems Research*, 17(1), 218–235.
- King, Matthew; & Sturtewagen, Benjamin. (2010). Making the Most of Afghanistan's River Basins Opportunities for Regional Cooperation. The United States. The East-West Institute
- Mehrshahi, Dariush (1388), A critique on exceptionalism in Iran's civil spatial identity, *Journal of Geography and Environmental Studies*, University. Azad Islamic, Najaf Abad Branch, No. 2
- Ministry of Power. (2014) Statistical yearbook of the country's water 2013-2016 Tehran: Water and Water Resources Planning Office of the Ministry of Energy.
- Mir, H. Afghanistan. In A. J. Telis & A. Mukherjee (eds.) (2010). (A. J. Telis & A. Mukherjee, eds.), *Is a Regional Strategy Viable in Afghanistan?* Washington DC: Carnegie Endowment for International Peace.
- Mohammadpour, Ali, Ahmadipour, Zahra (1383), the role of the evolution of the border function on the geographical space (tax collectors on the border of Iran and Turkmenistan),
- Mokhtari Heshi, Hossein. (2012). Hydropolitics of Iran, the geography of the water crisis on the horizon of 1404, *Geopolitics Quarterly*, Year 9 (3), 49-83
- Nami, Mohammad Hassan. (2015). *Geography of Afghanistan*. Tehran: Geographical Organization of the Armed Forces
- Nader, Alireza; Scotten, Ali G.; Rahmani, Ahmad Idrees; Stewart, Robert; & Mahnad, Leila. (2014). *Iran's influence in Afghanistan: implications for the U.S. drawdown*. Washington DC: RAND OFFICES.
- Najafi, Alireza; & Vatanfada, Jabber. (2012). *Iran Transboundary Rivers Treaties with its Neighbors Implementations and Challenges*. Presented at the International Conference on Traditional Knowledge for Water Resources Management, Yazd: Civilians.
- Najafi, Alireza; & Vatanfada, Jabber. (2013). *Transboundary Water Management Improvements, the Way Forward in the Middle East; Case Study: Transboundary Water Management of Iran and Neighbors*. *Geopolitics Quarterly*, 8(28), 135-155.
- Obedience, Javad, and exercise, Ismail. (2011). Helmand hydro politics: reasons, works, and consequences. *Human Geography Research*, 80 (1), 193-212
- Oregon State University. N.d. Program in Water Conflict Management and Transformation. Retrieved from <http://www.transboundarywaters.orst.edu/> (accessed on 15 September 2018)
- Papli Yazdi, Jesin, and Vathoghi, Fatemeh. (2010) *Khorasan, geopolitics, and development*. Mashhad: Papli, (1383). Papli Yazdi, Mohammad Hossein; and Wastoqi, Fatima. *A Look at Iran's Water Diplomacy (Hydro politics)* Mashhad: Papli Publications
- Peterson, Scott. (2013, July 30). Why a dam in Afghanistan might set back peace. *Christian Science Monitor*.
- Qavam, Seyyed Abdul Ali. (2010). *Principles of foreign policy and international politics*, 16th edition. Tehran: Samit Publications

- Rai, Subash Prasad; Wolf, Aaron T.; Sharma, Nayan; & Tiwari, Hari Narayan. (2017). Hydro politics in Transboundary Water Conflict and Cooperation. In N. Sharma (ed.), (N. Sharma, ed.), *River System Analysis and Management*, pp. 353-368. Singapore:
- Safavi, Sidihihi (1385).. *An introduction to the military geography of Iran*. Tehran: Geographical Organization of the Armed Forces
- Safi, H.; & Kohistani, A.J. (2013). *Water Resources Potential, Quality Problems, Challenges and Solutions in Afghanistan*. Kabul: Daccaar Main Office Kabul.
- Salmani, Mohammad; Kazemi Thani Ataahllal, Nasreen, Badri, Seyed Ali, and Motouf, Sharif. (2015). Identifying and analyzing the impact of resilience variables and indicators: evidence from the north and northeast of Tehran. *Spatial analysis of environmental hazards*, 10 (3), 1-22.
- Shalala, I. I.; Casting, Nori; & Cordesman, A. H. (2013). *US, and Iranian Strategic Competition: The Impact of Afghanistan, Pakistan, India, and Central Asia*. Center for Strategic and International Studies Washington, DC.
- Shroder, John; & Ahmadzai, Sher Jan. (2016). *Transboundary Water Resources in Afghanistan*. Oxford: Candice Janco.
- Sinai, Vahid. (1390). *Hydropolitics of security and development of water cooperation in relations between Iran, Afghanistan and Turkmenistan*. *Foreign Relations Quarterly*, third year (2), pp. 185-211.
- Springer Singapore. (2017). https://doi.org/10.1007/978-981-10-1472-7_19
- Tamna, Farmarz. (2016). *The position of Afghanistan in the relations between Iran and Pakistan*. Strategic relations between Iran and Pakistan. Tehran: Research Institute of Strategic Studies
- Thomas, Vincent; Azizi, Mujib Ahmad; & Behzad, Khalid. (2016). *Developing transboundary water resources: what perspectives for cooperation between Afghanistan, Iran, and Pakistan?* Kabul: Afghanistan Research and Evaluation Unit.
- Thomas, Vincent; & Warner, Jeroen. (2015). Hydro politics in the Harried/Tijen River Basin: Afghanistan as hydro-hegemon? *Water International*, 40(4), 593-613. <https://doi.org/10.1080/02508060.2015.1059164>
- Torabi, Yama. (2012). *The Growing Challenge of Corruption in Afghanistan Reflections on a Survey of the Afghan People*, Part 3 of 4. Washington DC: Asia Foundation.
- Wolf, Aaron T. (1999). The Transboundary Freshwater Dispute Database Project. *Water International*, 24(2), 160-163. <https://doi.org/10.1080/02508069908692153>
- Yıldız, Dursun. (2015). Afghanistan's Transboundary Rivers and Regional Security. *World Scientific News*, (16), 40-52.
- Zali (2012). *Strategic foresight in regional planning and development*. Tehran: Strategic Studies Research Institute
- Zarkani, Hadi. (2016), *geopolitical factors affecting the role and function of borders with an emphasis on Iran's borders*, *Geopolitics Quarterly*, No. 2
- Zeitoun, Mark; Mirumachi, Naho; & Warner, Jeroen. (2011). Transboundary water interaction II: the influence of "soft" power. *International Environmental Agreements: Politics, Law and Economics*, 11(2), 159-178. <https://doi.org/10.1007/s10784-010-9134-6>
- Zeitoun, Mark; & Warner, Jeroen. (2006). Hydro-hegemony-a framework for analysis of transboundary water conflicts. *Water Policy*, (8), 435-460.