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To Determine Areas Prone to Physical Development of the Analytical Hierarchy Process (AHP nine degree) Poldokhtar studied in Iran

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ABSTRACT

The physical developments of towns cites is considered as a perpetual & procedure within which the dynamic physical boundaries become developed both in terms of quality & quantity as well as horizontal & vertical directions. Now, if this procedure be so fast with no proper planning civil systems will face with huge obstacles e.g., the destruction at grades/orchards & farms just in order to be replaced with buildings & houses, trespassing the shines of rivers/lakes & environmental values, construction on steep slopes & so on. The localisation process subjected to the physical development ought to be achieved in a way that as the physical development is in progress, the environment/nathre suffers the least losses, & conserving the nature reach to the " sustainable development " at the same time. Considering the fact that on the process localisation for future development, quantitive models have the localisation mode & it shall be noted that the " Analytic Hierarchy Process (AHP)". This model is considered as on of the most renowned multi – purpose techniques in complex situations which own multiple & unorthodox facets. The aim of this study is to specify the spots/ regions capable of physical development of the town of Poldokhtar. The land zonation to meet the requirement of the study is based on 6 factors & natural criteria as well including; topography, gradient of slopes, geology, clearance off river, floods & farming land. The resulted zonation map shons 4 prior district containing "Shahrdaari (municipality), Pasdaran, Tang – Ali & Dardia" neighbourhoods. The studies proved that Dardia sectich (west & south – west of the town) is where most meets the standards for futhre development of Poldokhtar due to owning the qualities like: highly permeable soil, gentile gradient/slop, natural & appropriate drainage of surfaual waters & sewage, fact & easy access to civil services/ facilities, arid land & so on.

KEY WORD: physical developments, Geographic Information System (GIS), Analytic Hierarchy Process (AHP), Poldokhtar.

INTRODUCTION

In recent decades, rapid population growth is a characteristic of most large cities, especially in metropolitan cities. One of the main reasons for the rapid growth of these cities has been the service concentration, industries, and utilities in which they have been led to massive immigration, and population growth, in turn, led to the development of physical and non-physical aspects of the program and the unbridled, increased suburbanization and establishing settlements in the surrounding towns. In these circumstances the physical development usually happens without considering the natural and ecological parameters. Land suitability evaluation is a planning tool for designing and forecasting the optimal planning and land use that is trying to minimize environmental disputes and conflicts (Eastman et al., 1995). Using the natural and ecological data have originated and evolved to support the land use planning, particularly in urban areas of the broad concept of urban ecology (Sakvp et al., 1995). Destruction of orchards and farm land in favor of the construction, the operation of the river and environmental values, the development of steep slopes, poor land adjacent, etc. include the physical consequences of this type of development. To minimize the adverse environmental effects of such a process, it is necessary (in addition to economic, social, political factors) to be given adequate attention to the factors and elements of nature and characteristics of the land as the basis for the physical development (Karam and his colleague, 2009: 60). Although urban areas account for four percent of the lands in the world, irregular urban development can make wide variations in other application environmental conditions. Irregular urban development can have devastating effects on cities and their surrounding environment such as the heterogeneity of natural landscapes and the loss of agricultural lands noted (Batisani and Yamal, 2008,2). So according to these problems, it is essential that the urban development be regular to prevent the loss of land suitable and one

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of the solutions for the ease of suitable land is to locate the optimal urban development. In locating, the efforts are to associate the various parameters in relation to each other (Zhao, 2010, 246). Most theories of the location have regarded the industrial and commercial applications and considered the production factors, such as market, capital, labor, and distance to the market positioning of the basic variables and given priority to one or more factors specific models (Fakhri, 1999: 52). On the other hand, the geographic information system (GIS Arc) with the capability to collect, store, retrieve, manage, integrate, process, analyze, and display geographic modeling, can be a powerful instrument in the hands of managers and program planners for the optimal use of resources(Khajeh and his colleague). Analytical Hierarchy Process AHP is as one of the most versatile techniques for making complex situations where multiple and conflicting measures, flexible and yet powerful decision-making tool which for the first time was invented by Thomas. L. Clock in the 1970s. Since then many books and articles have been written on the subject and in practice, needing for planning a number of electric power planning and choosing the location of industrial units, location, etc. have been used for new cities. The basis of this model lies in deciding on paired comparisons, it means that foundations analyst with valuable information about alternative exists, interwoven set of measures for evaluating the measure creates priorities (Server, 2004: 20).

The importance and necessity

Unbridled physical development and without application is one of the basic problems in the urban structure (economic, social) in developing countries, including Iran, Poldokhtar city is also considering placing it in the Zagros mountains and the mountains like Mount trowel, sycamore and great mountains and river crossings and communication road Ahvaz - Tehran - in the middle of it, is no exception. However, due to the fact that on the one hand because of the lands south of flat agricultural land (narrow alley Ali) in recent years has been the development of large urban, and it has been a lot of constructions, and on the other hand, the formation of different neighborhoods and residential areas on the steeper slopes of the mountain town show the uncontrolled illegal construction and development of a non-normative and inappropriate, the need to locate the physical development of the city Poldokhtar has a double significance. Hence, in this research the effort is to use the natural factors and the use of analytic hierarchy process method (AHP) with the GIS (Arc GIS) integrated, optimized for the physical development of the city Poldokhtar location.

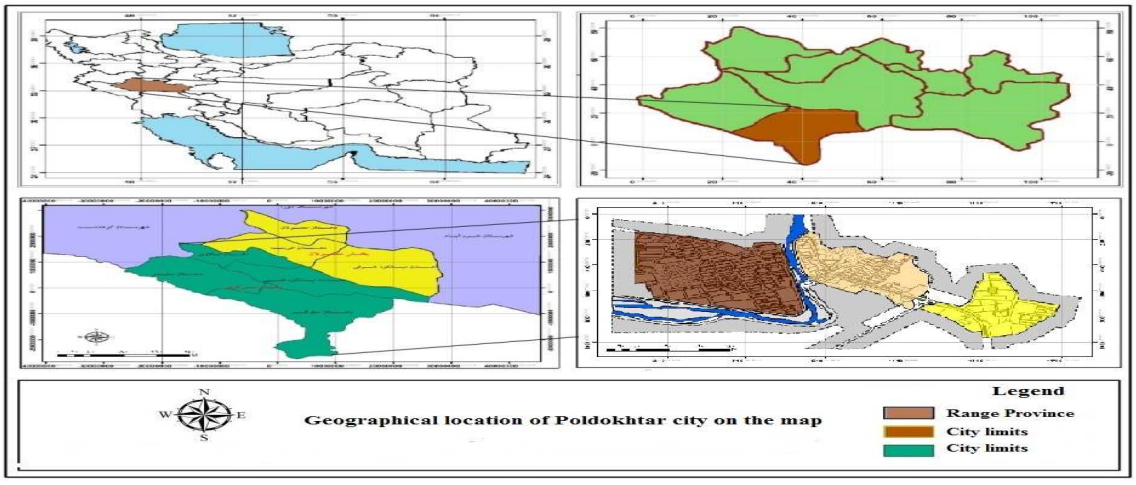
Research purposes

The purpose of this scientific method is to discover the facts and to establish the relationships between them and explain the situation and events. This determination must be conducted in a manner that reasonably lead to a series of generalizations, so if possible, be based on the prediction of events, (Kiani and his colleague, 2012: 79). The research is intended to achieve the following objectives:

- To determine the physical development in areas prone to Poldokhtar;
- To identify the factors and variables that influence the physical development of Poldokhtar;
- To provide recommendations for the proper development of Poldokhtar;

The introduction of the study area

The city of Poldokhtar is situated as the center of Poldokhtar between 47 degrees, 42 minutes, 39 seconds and 33 degrees longitude, 8 minutes and 59 seconds. The city's elevation is 680 meters above sea level. Poldokhtar city area is over 77/3901 square kilometer which involves 9/12 percent of the total area Lorestan province in the west of Iran. Poldokhtar population has been 25,092 people, which has an annual growth of about 4.3 percent.



Map 1: Poldokhtar geographical location of the country and province Source: authors

Methods and techniques

The method employed in this paper is based on the purpose of the application - development and the nature of descriptive analysis. The methods and data used in this study, in addition to library resources, include land use maps, topographic maps, geological maps and information of the field. The field data have been gathered based on the data obtained from questionnaires and interviews with experts. In this study, according to its purpose, after collecting data, information, maps, and layers have analyzed them in the model (AHP), and then to obtain the data weight has been used the hierarchy process (AHP) which due to the simplicity, flexibility, and the ability to simultaneously use both qualitative and quantitative metrics to evaluate the judgment can examine the issues related to urban and regional planning. Analytical hierarchical process (AHP) was introduced in 1971 hours by an extensive analysis tool for modeling issues in political, economic, social and management sciences, which was established based on paired comparisons of the values of a set of issues (Son yu, 2002). AHP merges different standards and different sizes and values and its main feature is that the judgment is based on comparing two binary measures over time (EWT Ngai, 2003). This method is also the basis for the analysis of complex and difficult issues become easier and provides a logical hierarchy in which the planner can help evaluate criteria and sub criteria options to perform easily (Qarekhlounreh and his colleagues, 2010: 76). Finally after the end of the overlap of the urban development plan and using the software (Arc GIS) and the results of AHP, the map of Poldokhtar optimal physical development was drawn.

Theoretical literature

Up to the 1960s, basically, the concept of development in terms of economic development used and why the quantitative indicators such as increasing the production, national income, and population growth in urban areas were based. But from the 1960s onwards, the radical changes brought the concept and indicators which in turn have influenced the goals and methods of planning (Mehdizadeh and his colleagues, 2006: 45). Urban development is the harmonious and balanced development of the dedicated to residential buildings in a city, and it is also equipped with the required levels and other users of the facilities, equipment needed and the required and acceptable level (Hosseni Of, 2003: 92).

From the perspective of urban sociology, an urban management system development project is a key tool for scientific remedy to deal with the consequences of the civil society which has become more complex (Papeliyazdi and Rajabisanajerdi, 2003: 34). So the urban development project is a basis on infrastructure renewal, economic, social, political, and cultural and civil rights considered which its aim primarily is to improve the process of urbanization and urbanism, restoration of urban environment, urban economy and the strengthening of political organization - the social life of the city (Rahnama and Abbaszadeh, 2008: 97). The phenomenon of urban and regional development is facilitated by various factors. Some consider the level of development commensurate with the nature of the activities, resources available, the nature and quality of the structural infrastructure, income distribution in the region (Renouil, 1972: 142).

Others count the creation of development from the economic factors such as economies of scale and density which is expressed in the form of savings or urban space saving (Hilhorst, 1998: 56). The city's urban development is not limited to physical development and all the factors must be considered in developing a general sense. The new issues that have been raised in the urban development are a sustainable urban development. "Sustainable urban development is a form of the development which given the protection of the ecological environment of the historic city it deals with historical and cultural values" (Pourahmad and Shamaei, 2005: 282). Today the patterns of urban development have improved the quality and try to adapt themselves to the sustainable urban development (Rahnama and Abbaszadeh, 2008: 97). In developing the cities, all the factors in the development of the city should be considered. In Iran, urban development projects in guiding the development of cities (monitoring and controlling the development of urban land use) have been used as the most important tool (Sharmnd consulting engineers, 2003: 17). One of the issues in our country which are highly regarded these designs, are future development and physical development of cities why the city needs to expand its physical space for future expansion of their own professionalism. The physical development of cities can be defined as "to increase the quality and quantity of physical spaces and uses (residential, commercial, religious, communication, etc.), a town in the vertical and horizontal dimensions that can be done over time, refers to the physical development" (Bemanian and Mahmoudnejad, 2008: 22). Physical development of cities and urbanization is one of the requirements to the physical development of the direction to find that all of the principles be respected.

Analytical Hierarchy Process (AHP online degree) is a flexible, powerful and easy to decide in the absence of conflicting decision criteria, which makes it difficult to choose among the options (Zebardast, 2001: 1). And decisions should be made in a multidimensional space. In such circumstances, the multi-criteria evaluation methods, according to this method, it is assumed that each of the criteria can be used separately or later (Tofiq, 19993: 40). A basic method for testing the method of AHP model is a binary method. This approach significantly reduces the complexity of the concept of decision making because they are the only two components at a time, which includes three main steps: A. matrix product of binary comparison, B. comparison

of measurement criteria, and C. estimation of agreement ratio (Hadiani, 2010: 105). In this study, the procedure for locating the direction of future development of Poldokhtar is employed.

Variables affecting on locating the physical development of the city of Poldokhtar

The parameters used in the location are different to the type of the application but they are all aligned in order to select the proper location. Using these indicators need to have accurate and complete information about the study of location and access to information require extensive research and comprehensive. Only after analyzing the data collected and evaluated to decide where they may exist (Fakhri, 1999: 52). This study examines the role of the three variables related to physical development and future planning of Poldokhtar.

- The land is mountainous and hilly:

One of natural factors influencing the development of Poldokhtar is Heights and city ups and downs. Poldokhtar nucleus of the valley is surrounded by various heights. Highlands North, Northwest and Northeast (Maleh Mountain) in the ups and downs generally steep little use and the spread of the city.

- Alluvial terraces of the river:

Another factor affecting the physical development of Poldokhtar is the river of Kashkan, from north to south with a width of more than a hundred meters west of the city has passed, and the city has been divided into eastern and western half. The river due to the rupture in the fabric of the city center has always acted as a factor in the development of the city limits.

- The Plains (Gachsaran):

Generally, because of being mountains in Lorestan, there are not vast plains, the plains with their small size are the most important centers of population, and most major cities of the province have been established in the region. In Genesis plains in Lorestan, construction of earth, especially folding played the crucial role.

The findings

- Building a hierarchical decision tree

When the (AHP) is used as a tool for decision making, the group started to have a proper hierarchy tree that represents the problem under study, providing a hierarchical decision tree that has multiple levels with respect to the issue under.

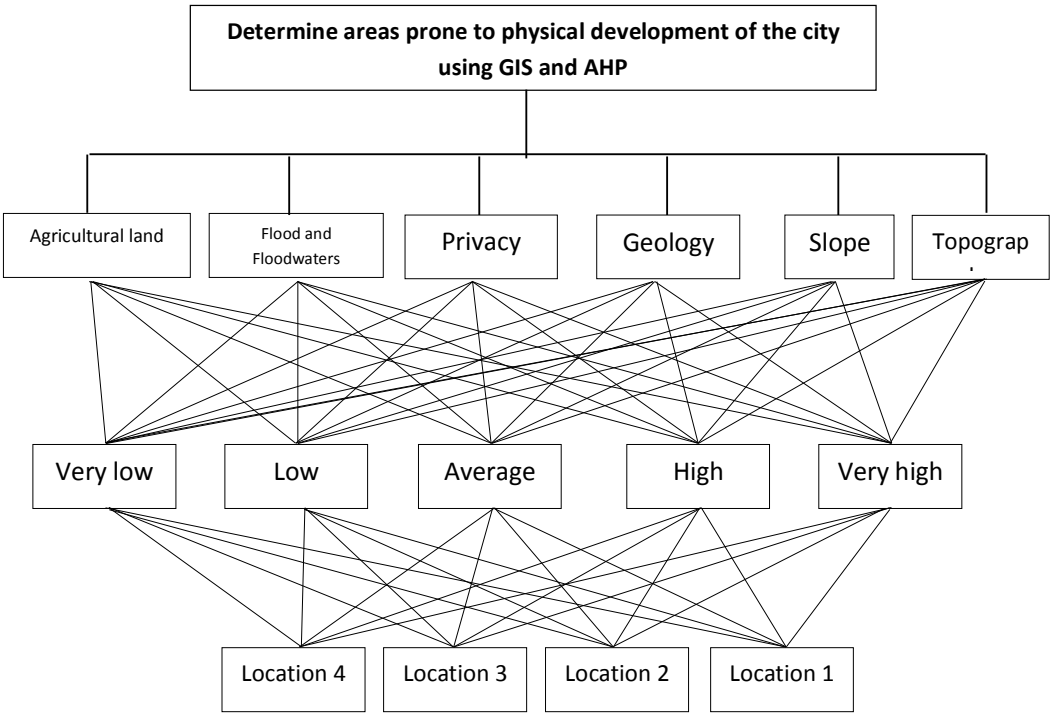
Each tree represents the first specific objective decisions. The level of the expression of each tree needs to be compared to each other and to select options that are in competition with each other. Other surfaces (C) show the factors that are the basis for comparison of options (Azar and his colleagues, 1995: 24). The most important part is the analytic hierarchy process, because in this part of the analysis of complex and difficult issues, analytic hierarchy process turns into a simple form, which corresponds to the mind and human nature (Zebardast, 2001: 15).

According to the hierarchy, the aim of this study is to identify suitable areas for the physical development of the city of Poldokhtar (first hierarchical level).

The second level of the hierarchy tree is to determine the criteria needed to find the best places that these criteria are compared with each other in a double process here including topography, slope, geology, river, flooding and flooding of agricultural land.

And finally selecting the final score of the tree hierarchy to find is the best option for locating where in this study, according to studies conducted in the range of four locations (sites) 1.Municipal town, 2.Revolutionary Guards town, Tangali, 4.Dardia have been selected as the location of choice for future development. The present study attempts to do after a careful assessment of the best locations for future development of the four sites selected Poldokhtar. The hierarchical structure is presented in Figure 1.

Figure 1: Hierarchy of decision tree to determine suitable areas for the physical development of the city using GIS and AHP



Source: authors

The word sift presented by clock in Table 1, is shown that the criteria used to assess the degree of preference. Using a relative scale screening can be compared to the weighted qualitative and quantitative elements. When the judgment is screening, according to the scales mentioned above criteria can be converted into small amounts. This method is repeated for each element in the downward direction at every level.

Table 1. Comparison of weights choice AHP model for couples

9	Very good (very important)
7	Very powerful utility
5	Powerful utility
3	Slightly more (slightly better)
1	Equal utility
2, 4, 6 and 8	The distances between the above

Source: Ghodsei Poor, 2006: 5

- Weight of the measures (paired comparisons)

This process is the second step in the analytic hierarchy process (AHP). In this process to determine the important factor criteria, each level to its corresponding element in higher level has been compared as a couple. For example, the objective which is to determine suitable areas for the physical development of the city of Poldokhtar, the topography criterion is more important than geology criterion or flood and floods. Paired comparisons are recorded in a matrix of n × n (in this case 4 × 4) and this matrix "criteria binary matrix» is called $A = [a_{ij}]_{n*n}$. The elements of this matrix are all positive and according to the principle of "adverse conditions" in the analytic hierarchy process (if it matters i to j equals 1 / k is an important element j of i equal to 1 / k will be). In every binary comparison, we will have the numerical value a_{ij} and 1 / a_{ij}. Below is the criterion for binary comparison matrix presented in Table 2.

Table 2: Comparison of test and weight matrix

Agricultural land	Flood and Floodwaters	River Privacy	Geology	Slope	Topography	
4	3	2	5	4	1	Topography
4	2	1/4	6	1	1/4	Slope
1/3	1/5	1/5	1	1/6	1/5	Geology
6	3	1	5	4	1/2	River Privacy
3	1	1/3	5	1/2	1/3	Flood and Floodwaters
1	1/3	1/6	3	1/4	1/4	Agricultural land

Source: Authors calculations

After forming the matrix of pairwise comparison judgment, the measures weight (I = 1,2,3,4) for each of the measures of the decision should be calculated, these weights are determined in the abstract, in total, which of these measures are the most important. For this purpose, first, the geometric mean of each row is calculated as follows:

$$a_{ij} =: (\pi_{K=1}^{N} (\frac{k}{ij}) \frac{1}{N}$$

a_{ij}: comparison component of options i and j in terms of groups
N: number of members
a_{ij}^{k} : Comparison component of options i and j related to the person k the
π_{K-1}^{N} : Multiple comparisons test to the first group (N)
Geometric mean of each row of Table 2 is calculated as follows:

Table 3 - coefficient of importance of the criteria

Topography	$(4 * 3 * 2 * 5 * 4 * 1)\frac{1}{6} = 2.80$
Slope	1.20
Geology	0.28
River Privacy	2.38
Flood and Floodwaters	0.97
Agricultural land	0.47

Source: Authors calculations

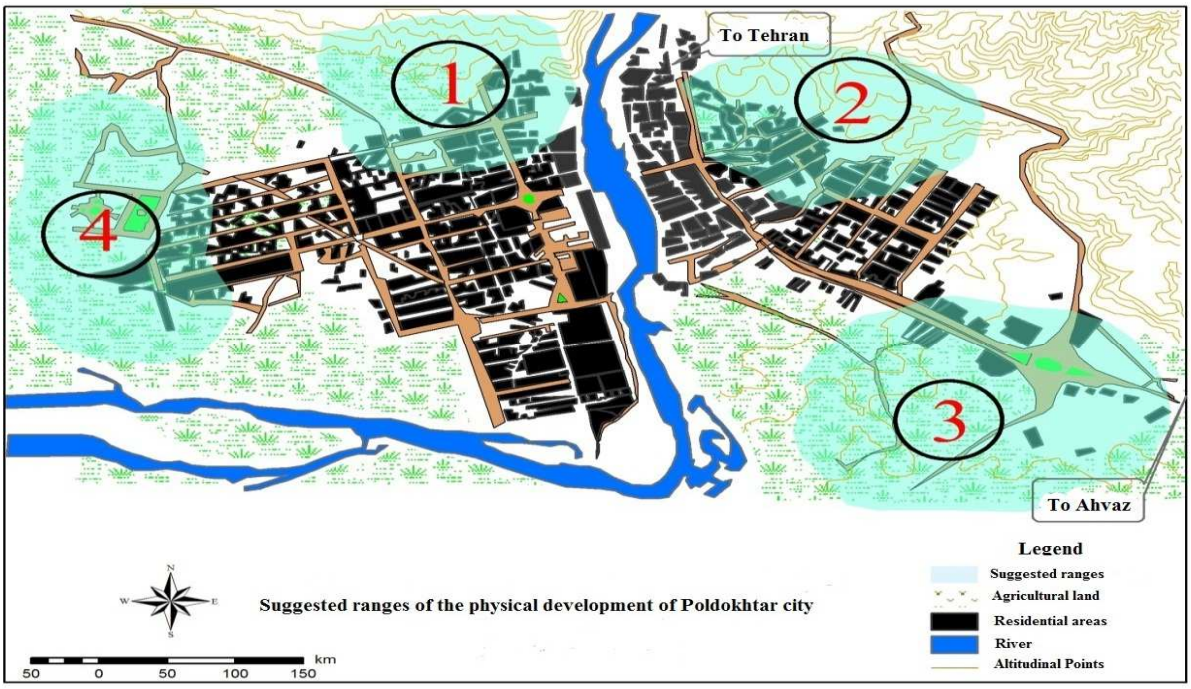
Then the ratio of geometric means can be obtained of normalizing the norms and values, namely the sum of any number of them. The calculation of this sum is equal to:
2/80 + 1/20 + 0/28 + 2/380 + 0/97 + 0/47 = 8/10
The normal values obtained by dividing the sum will be equal to:

Table 4 normalizing the importance coefficient measures

Topography	$W_1 = \frac{2/80}{8/10} = 0.346$
Slope	$W_2 = 0.148$
Geology	$W_3 = 0.035$
River Privacy	$W_4 = 0.294$
Flood and Floodwaters	$W_5 = 0.120$
Agricultural land	$W_6 = 0.058$

Source: Authors calculations

As it can be seen, the sum of the coefficients of the above criteria (the second level of the hierarchy) equals to 1 and this indicates the relative importance of the criteria. The map 2 shows the proposed fourfold sites of the physical development of the city of Poldokhtar.



Map 2. The map locations of the four proposals for future physical Poldokhtar, Source: authors

- Coefficient determination of option importance

After determining the factor of the criteria and sub-index of the options, coefficient determination of option importance should be set, i.e. determination of the priorities for future development of each of the locations. To do this, the judgment matrix and the matrix of each of the locations of the first criteria to judge each location is made with respect to the second criterion, and the judgment matrix continues to be made for each of the options. The process of weighing the options at this stage is done according to the criteria. The process of gaining weight (significance level) option to specify the level of importance of each criterion is similar to the target criteria. In both cases, the judgment is based on the binary options based on 9 criteria or hourly quantity taken and the results of the comparison matrix of binary values or options are recorded and normalized to the geometric mean of the rows of the matrix of the coefficients obtained. This step has two major differences with the previous step: One of the first steps towards the overall goal is done to compare our criteria, however, at this stage the following options is done according to a standard or criterion, and second, we have a judgment matrix K×K in the matrix related to criteria, If for any option at this stage we need to get a judgment matrix. At this stage, unlike the first stage instead of it is questioned, the measure i in achieving the goal, how much is more important than the criteria j? The question thus arises as an option if it is associated with x j preferred option? (Zebardast, 2001: 17). In Table 5, which is known as the evaluation matrix, the value of each option is provided in relation to the criteria.

Table 5. Evaluation Matrix for each location (sites)
(Source: field studies)

Appropriateness of geological	Distance from the river	Stay away from the watercourse and flood	Elevation and topography	Preserve agricultural land	Land slope (percent)	Site
Relatively poor	Relatively poor	Totally inappropriate	Totally inappropriate	Relatively reserved	Top 50	Site 1
Relatively poor	Appropriate	Relatively poor	Relatively poor	Fully protected	15 to 20	Site 2
Appropriate	Perfectly	Perfectly	Appropriate	Fully protected	10 to 15	Site 3
Perfectly	Relatively poo	Appropriate	Perfectly	Relatively non-reserved	5	Site 4

As it can be seen in the above table, the options are quantitative and qualitative; this represents a further advantage of AHP which is a combination of qualitative and quantitative criteria. After setting the above table, below the tables (6 to 11) show the comparison matrix of binary options. Binary options are on the table on one side of the matrix inserted, the coefficient in front of the options in relation to the Minister criteria is obtained by normalizing the rows of the matrix of the binary geometric mean.

4 Site	3 Site	2 Site	1 Site	Table 6 slope	
1/7	1/5	1/3		1 Site	A : $\sqrt[4]{}$ 1.105 = 0.312W_A = 0.058
1/5	1/3		3	2 Site	B : $\sqrt[4]{}$3.15 = 0.668W_B = 0124
1/2		3	5	3 Site	C : $\sqrt[4]{}$15.5 = 1.495 W_C=0.278
	2	5	7	4 Site	D : $\sqrt[4]{}$70= 2.892W_D =0.53
					5.368

4 Site	1 Site	2 Site	3 Site	Table 7 Agricultural land	
6	4	2		3 Site	C : $\sqrt[4]{}$ 48 = 2.63W_C = 0.498
5	3		1/2	2 Site	B : $\sqrt[4]{}$15.2 = 1.65W_B = 0.313
2		1/3	1/4	1 Site	A: $\sqrt[4]{}$ 2.12 = 0.63W_A = 0.120
	1/2	1/5	1/6	4 Site	D: $\sqrt[4]{}$ 1.60 = 0.358W_D = 0.067
					5.281

1 Site	2 Site	3 Site	4 Site	Table 8 Topography	
8	5	2		4 Site	D : $\sqrt[4]{}$ 80 = 2.99W_D = 0.524
7	3		1/2	3 Site	C : $\sqrt[4]{}$21.2 = 1.80W_C =0.315
2		1/3	1/5	2 Site	B: $\sqrt[4]{}$ 2.15 = 0.60W_B = 0.105
	1/2	1/7	1/8	1 Site	A: $\sqrt[4]{}$ 1.11 = 0.307W_A = 0.53
					5.699

1 Site	4 Site	2 Site	3 Site	Table 9 River Privacy	
6	5	2		3 Site	D : $\sqrt[4]{}$168 = 3.60W_D = 0.582
5	3		1/2	2 Site	C : $\sqrt[4]{}$30.3 = 1.77W_C = 0.287
2		1/3	1/5	4 Site	B: $\sqrt[4]{}$2.35 = 0.488W_B =0.078
	1/2	1/5	1/6	1 Site	6.185A: $\sqrt[4]{}$1.96 = 0.319W_A = 0.051

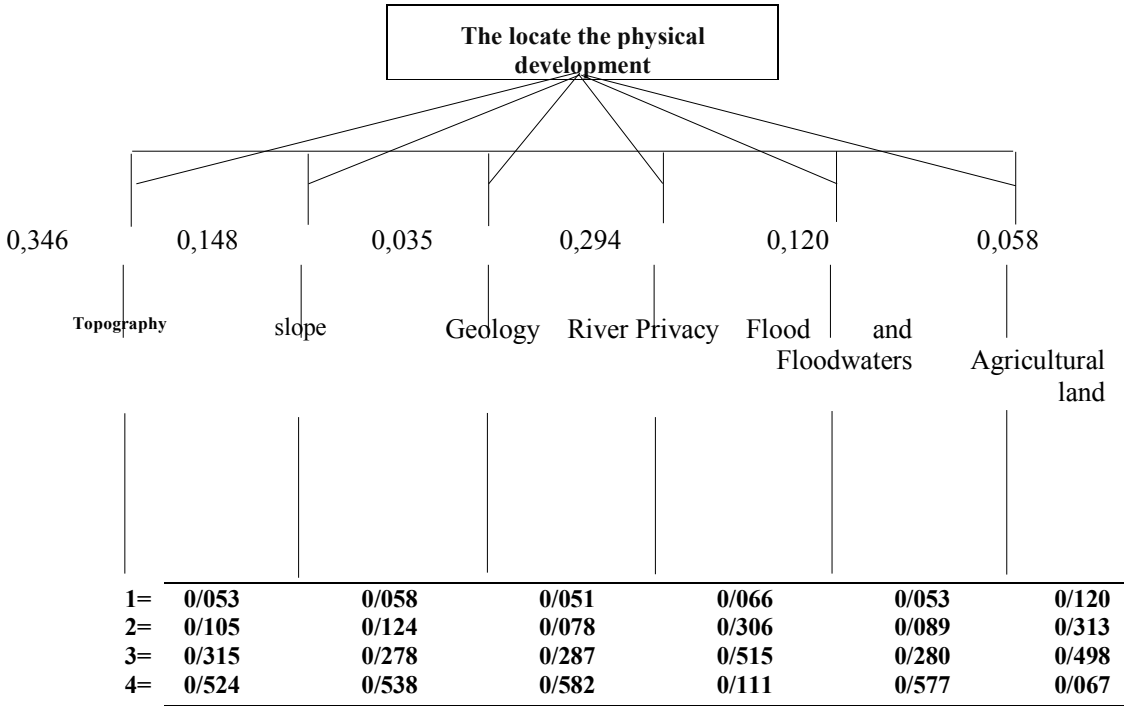
1 Site	2 Site	3 Site	4 Site	Table 10 Geology	
8	7	3		4 Site	D :$\sqrt[4]{}$144 = 3.46W_D =0.577
6	5		1/3	3 Site	C : $\sqrt[4]{}$24.3 =1.68W_C = 0.280
2		1/5	1/7	2 Site	B: $\sqrt[4]{}$ 2.24 =0.53W_B =0.089
	1/2	1/6	1/8	1 Site	A: $\sqrt[4]{}$ 1.96 = 0.319W_A =0.053
					6.001

1 Site	2 Site	4 Site	3 Site	Table 11 Flood and Floodwaters	
8	6	3		3 Site	C : $\sqrt[4]{}$60 =2.78W_C = 0.515
6	4		1/3	4 Site	B : $\sqrt[4]{}$15.2 =1.65W_B =0.306
2		1/4	1/6	2 Site	= 0.359W_A =0.066D: $\sqrt[4]{}$ 2.15 =0.60W_D =0.111
	1/2	1/6	1/8	1 Site	A: 1.60$\sqrt[4]{}$
					5.398

- To set the final score (priority) options

In this process the integrated and combined with calculations were obtained based on the criterion as well as the option of binary matrices, the final score was obtained in options, For this purpose, the combined hourly hierarchy that leads to "take precedence" Considering all judgments at all hierarchical levels, it will be used.

Figure 2: Ratio of criteria, options in a hierarchical structure



1=	**0/053**	**0/058**	**0/051**	**0/066**	**0/053**	**0/120**
2=	**0/105**	**0/124**	**0/078**	**0/306**	**0/089**	**0/313**
3=	**0/315**	**0/278**	**0/287**	**0/515**	**0/280**	**0/498**
4=	**0/524**	**0/538**	**0/582**	**0/111**	**0/577**	**0/067**

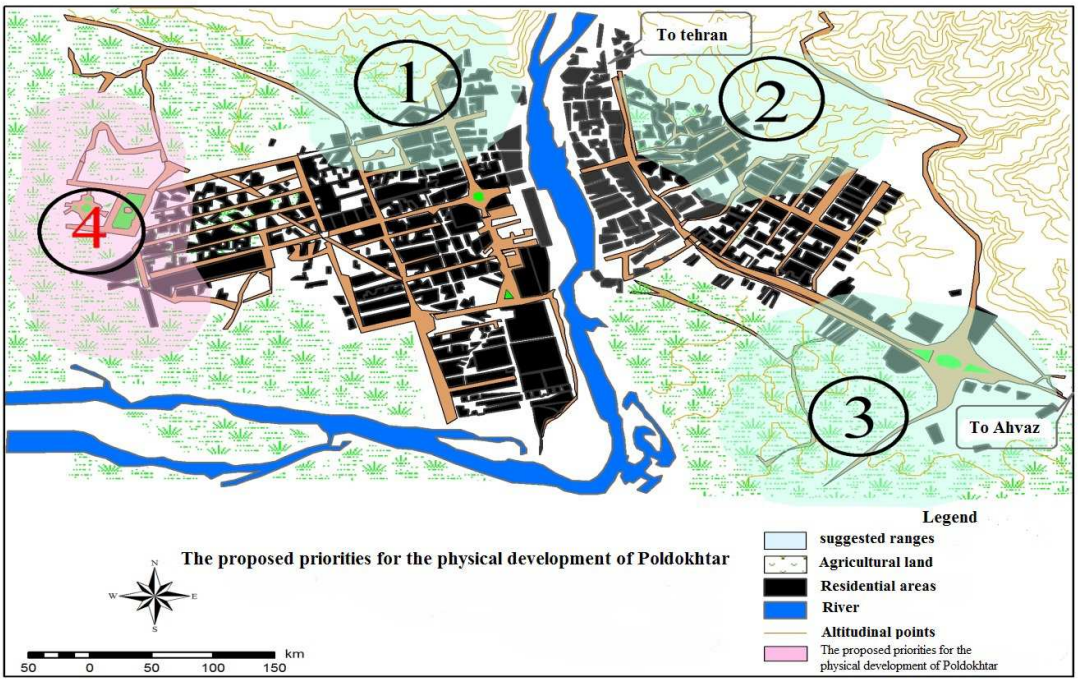
Source: Authors calculations

However, according to the results obtained of the calculation of criteria and alternatives, and the final weight of each place, where the greatest importance is highlighted, is determined. At this stage, according to the calculations given in Table 12, where it is desirable to have the greatest weight in the overall priorities. In the purpose mentioned (physical development of Poldokhtar) Site 4 (sea town) has a benefit with a final score of 0/386 and after that, the site 3 (Tangali town) with a final score of 0/374 and site 2 (Iranian Revolutionary Guards town) with a score of 0/176 and the site 1 (dormitory municipalities) with a score of 061/0 prioritize future development the city. Table 12 and Map 3 illustrate this fact.

Table 12. Determine the best location The the future development of the city

Location	**Topography**	slope	**Geology**	River Privacy	**Flood and Floodwaters**	**Agricultural land**	Final score
1	0.346*0.053	0.147*0.058	0.035*0.051	0.294*0.066	0.120*0.053	0.058*0.120	0.061
2	0.346*0.105	0.147*0.124	0.035*0.078	0.294*0.306	0.120*0.089	0.058*0.313	0.176
3	0.346*0.315	0.147*0.278	0.035*0.287	0.294*0.515	0.120*0.280	0.058*0.498	0.374
4	0.346*0.524	0.147*0.582	0.035*0.582	0.294*0.111	0.120*0.577	0.058*0.067	**0.386**

Source: Authors calculations



Map 3. The proposed priorities for the physical development of Poldokhtar Source: authors

- Checking the consistency of judgments

Next, to check the consistency of the judgments is used the hourly compatible rate. The adaptation rate in the AHP method is an indicator that shows the comparison consistency. This rate indicates the degree of accuracy and value of the investments in the paired comparisons, If the rate is equal to or less than 0/1, the value of investments and comparisons can be regarded as good and true, otherwise, valuation and paired comparisons must be done again or modified (Karam and his colleague, 2009: 67). Clock mechanism (Saaty, 1998) which is intended to check the inconsistency in judgments, calculates the index of inconsistency (IIR) which is the result of a division of inconsistency index (II) of the random index (RI).
Stochastic indicator of the number of criteria (n) is extracted from the table below:

Table 13: randomness index(R.I.)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	N
1/59	1/57	1/56	1/48	1/51	1/49	1/45	1/41	1/32	1/24	1/12	0/9	0/58	0	R.I

Source:(Bowen, 1993,346)

1	4	5	2	3	4		0/346		2/29
1/4	1	6	1/4	2	4		0/148		0/99
1/5	1/6	1	1/5	1/5	1/3		0/035		0/23
1/2	4	5	1	3	6	×	0/294	=	1/94
1/3	1/2	5	1/3	1	3		0/120		0/75
1/4	1/4	3	1/6	1/3	1		0/058		0/37

Source: Authors calculations

The geometric mean method is an approximate method to calculate the maximum eigenvalue (λ max) of L is as follows.

According to the results obtained, the consistency of judgments is observed.

RESULTS

In the right place for future physical development of Poldokhtar, 6 scale topography, slope, geology, river, flooding and flooding of agricultural land have been analyzed. First, each of these criteria in comparison matrix

binary compatible with attribution studies - field were weighted, the important factor is based on the binary options were proposed for the four sites, by combining and blending calculations based on that criterion as well as options of binary matrices were obtained, the final score was obtained for each option, the final stage of the synthesis and coating layers together Poldokhtar city zoning map was drawn for future physical development. Zoning map obtained from four different places for physical development shows that following are the major causes of poor physical development areas (municipalities, Iranian Revolutionary Guards and tight Ali) considered:

- Areas 1 and 2 (municipalities and Iranian Revolutionary Guards):

These places have been named as a dormitory town council and the Iranian Revolutionary Guards dormitory for reasons such as:

- Steep streets, the rugged terrain
- Cliffs and rocky terrain and lack of proper soil;
- Limitations of space and land for future development;
- The problem of disposal of surface water and water and sewage networks, problems of flooding and temporary and seasonal precipitation trends due to the low permeability of the limestone formations Asemary frail;
- Risk of river flooding is created adverse conditions because of the proximity to rivers and other aspects of limiting environmental policy development.

- Position 3 (Tangali town):

* One of the main causes of poor physical development of the region for physical development of city future is to place this region on the fertile and suitable lands for agriculture and since the economy has been dependent on agricultural production, people willingly turned much of the land to residential users and their applications, another limitation could include:

* Bund of the region near the foothill
* Loose and passive resistance of the soil
* Great mountains near the fault
* slope greater than 15%

According to the Zoning Map (Map 3), it can be concluded that location No. 4 (Dardia and Kavkali town) has the highest proportion in relation to the physical development of the city's Poldokhtar, which is recommended that the planning for the development of the cases be considered.

DISCUSSION AND CONCLUSION

Physical development of cities is one of the essentials of urban growth and if physical development of cities located is not optimal, it brings out the negative effects of many environmental and natural or human factors aspects on either side to cities. So, the importance of physical development and orientation of urban development is essential. Several factors are involved in locating the physical development that a comprehensive analysis of their locating is not possible by traditional methods such as hand lay on the map due to the large volume of data. On the other hand, neglecting of these factors in locating is resulted in wasting a significant portion of material resources and the loss of large amounts of energy and environmental resources. On the other hand, given that the location for the future development of multiple factors are involved, the location of a simple analytical and quantitative models made it necessary that one of these models is the model A.H.P. AHP is a flexible, powerful and easy to decide in the absence of conflicting decision criteria which it is difficult to choose among the options and decision-making should be used in a multi-dimensional space. This approach reduces the complexity of the concept of decision significantly since only two elements at a time, which are comprised of three main steps: A- production of paired comparison matrix, B- estimation of measurement criteria, and C- an estimate of the agreement ratio. Since the city of Poldokhtar is located in the west highlands, and agricultural lands, mountains and rivers have surrounded it, the desired location is a necessary physical development. The purpose of this study is to determine areas prone to physical development of Poldokhtar where is used to achieve this goal and criterion of 6 natural factors including topography, slope, geology, distance from river flooding and flooding of agricultural land which is performed by using analytic hierarchy process (AHP) in the GIS Arc (GIS). Based on the findings of the study it is suggested that the western part of the city (Dardia and Kavkali in the plain Jaidor) takes priority due to circumstances such as the slope of less than 15% (predominantly from 5 to 10%), the permeability of the soil, the most arid and barren ground or grade 2 and 3 of arable land, good natural drainage of surface water and sanitation for gentle slopes and river flows Kashkan, open space for future development of the city, the distance to the river, resistance of soil suitable for construction, easy access to services and water and keep the perfect environment for the future development of the city as the best place in the design and planning of urban development.

Suggestions:

- Appropriate bed river floods and natural way of navigating around the city and for the construction of infrastructure and development projects and development in the areas that are less vulnerable to natural hazards, in order to optimize the development of the South-West (plain Jaidor) and west town (Kavkali and Dardia) have a more favorable conditions.
- Preservation of agricultural land avoidance of the residential and other land use change due to the region's economy and limited agricultural potential of the land.
- It is better that building and construction not do on slopes over 15% in the North and North East of the city (Malehkou slopes) and be constructed in the inclined surface density of at least 5 to 15 percent and possible pathways or roads be constructed perpendicular to the mountains and foothills, and if constructed, the existing trench walls and slopes stabilized.

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