

## Relationship between Vegetation Kermanshah Province, with its Prevailing Climatic Conditions

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### ABSTRACT

Vegetation, as one of the most important systems of human life and the environment, undeniable role in welfare, comfort and happiness of human society, and this valuable resource in many ways, it is very important for the future planning and the ups and downs is. This study is based on a comparative analysis, and the use of GIS software to study the vegetation, Kermanshah Province is discussed in relation to climate. The vegetation, the geography is very important. The results showed that vegetation (forest) Province, perfectly matches the conditions of temperature, altitude and rainfall is. The map indicates that the levels of rainfall, forest cover in Kermanshah Province, more rain is formed upon the terms, and this factor more than any other factor is the impact of forest cover.

**KEYWORDS:** Forest, environment, vegetation, Kermanshah Province, GIS.

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### 1. INTRODUCTION

Understanding the relationship between plants, and the environment is very important, so that this knowledge, the effect will be better management of grassland ecosystems (Jafari et al, 2009: 112). Plant communities, as an important part of grassland ecosystems, the topographic and climatic factors, soil formed. Systematic management of these ecosystems, the identification of areas of vegetation in relation to environmental factors is possible. In the meantime, any management plan, in order to revive or exploitation of natural resources is done, the first step requires knowledge of the vegetation zones (Ahmadi et al, 2002: 86). Quantitative analysis of the relationship between environmental factors and vegetation, one of the important aspects of the ecology of plant communities. In each area, depending on the scale of one or more environmental factors, are most closely connected with vegetation (zarechahkoohi et al, 2010). Structure, vegetation and ecological assessment, the following factors will vary. So ecosystem scientific management must be based on recognition of their ecological factors (Justin et al, 1997). Forests, as one of the most important systems of human life, undeniable role in welfare, comfort and happiness are human. Despite the many and varied economic, environmental and spiritual body of this valuable resource, reliable and strong support for the continuation and improvement of living animals, especially humans, and to ensure the flourishing of human life and sustainable development. Distribution of forests, not the same in all parts of the globe. Primarily to create a forest in a region, specific environmental conditions are needed. These conditions include temperature and humidity sufficient enough to heat and humidity, the appearance of the forests in the region, there are at least two months per year. The daily temperature for 60 days, an average of 10 degrees higher. Although the rainfall is sufficient moisture content is important enough, to promote good forest at least 600 mm of rainfall per year is required, of which at least half of which must, during the warm period of plant growth (spring and summer), loss (Marvi Mohajer, 2007: 1).

The world is about 4 billion hectares of forest area, which covers 29% of the land area, 66% of the forest area in the world, and the rest of the northern hemisphere, the southern hemisphere, the annual average of 5 percent, to 426 thousand hectares of forest, the world will be destroyed, according to FAO statistics, the largest forest area in Latin America and the Caribbean, and the lowest level of forests in Europe, and 43% of the forests in the world, in developed countries, and 57 percent in developing countries.

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**Table 1. All of the world's forests**

Percent of all forests	all forests	Percent of forest thinning	The lush	Percent of rainforests	The rainforests	Earth	Area
34	3799	13	1707	21	2092	13077	World
34	2153	9	563	25	1590	6417	Temperate forests
40	734	15	275	25	459	1835	North America
38	181	7	35	31	145	472	Europe
42	930	6	138	36	792	2227	USSR
16	309	6	115	10	194	1883	Other countries
49	2346	24	1144	25	1202	4815	Tropical forests
40	869	30	652	10	217	2190	Africa
43	410	11	104	32	306	945	Asia and Pacific
64	1067	23	388	40	679	1680	Latin America

Source: (Mossadegh, 2005: 3).

The total area of forest, 12/4 million hectares, which is about 7/6% of the country's total area covered. Of this amount, 1.8 million acres, belonging to the north, 4 to 5 million acres in the Zagros Basin, and 120 hectares of the area Arasbaran, and the sparse forest and south of the country. Given the country's population, currently Iran's share is about 0/2 ha.

**Table 2-level forests Iran**

Based on estimates of forest area (million ha)	According to United Nations estimates the area (million hectares)	Forests Iran
3/4	3/4	North Forests
10	5	Forests of West
2/4	1/5	Forests, pistachio and almond
1/2	1/1	Juniper forests
0/5	0/5	Desert forest
0/5	0/5	Forests, wetlands

Source: (Yakhshak, 1995: 11-12).

Obviously this figure, according to the Global Forest capita, which is 7.0 hectares. Suggests extreme poverty and lack of forest cover countries in this field. It should be noted that, of the 56 countries with the world's forests, the world's forty-fifth position, which for us is a very poor rating. Iran's forests can be divided into the following five vegetation zones:

- A Hirkani area (Caspian), which forms the northern Green Belt.
- (B) the area of Iran and Turan, mainly distributed in central Iran.
- (C) the Zagros region, mainly "West's oak-up.
- (D) the Persian Gulf region, are scattered in the coastal south.
- E. Arsbarani area which consists of rare species, and are unique.

Table (3), the contribution of each of the provinces in a Zagros forests show.

**Table 3-level Zagros forests (Osareh, 2005: 306).**

Cover More than 50%	Canopy cover 31-50%	Canopy cover 11-30%	Canopy cover 6-10%	Canopy cover 1-5%	Forest area (hectares)	Name Province
8	11	28	24	29	149	Azərbayjan Gharbi
0	.	33	25	42	30	Kermanshah
11	5	30	22	32	450	İlam
1	1	29	27	42	307	Chahar Mahal and Bakhtiari
0	6	33	28	33	405	Khuzestan
1	1	22	39	37	863	Fars
10	13	27	15	35	300	Kurdistan
5	9	36	21	29	820	Kermanshah
10	10	27	18	36	846	Kohgiluyeh and Boyerahmad
0	5	40	15	40	880	Lorestan

The study area, Kermanshah province with an area of 43,424 square kilometers, is located in West Iran, and for the location, climate and timely and adequate rainfall, the north-west to south-east, the mountains Oramanat and Halilan and Zardalan the region, with the valley is covered with forests and meadows. Kermanshah province in four different regions can be distinguished: a) mild winters and hot, dry summers, Ghasreshirin and Sarpolzohab townships, and villages Ozgoleh, southwest Javanrood included. B) the winter and cool in summer, township of Paveh and Javanmard and Karand section functions Islamabad Gharb district reproduced by the as cover. C) semi-arid steppe climate cool, township Songhor and villages Poshtdarband, a suburb of the city of Kermanshah take. D) semi-arid steppe climate that is warm, Kangavar, Sahneh and Harsin district included. At a glance, we can say that, Kermanshah province, the climate in the tropical region (western region), and the rest is divided cold (Ebrahim-Zadeh et al., 2013: 39).

**Plant cover of Province**

Kermanshah has a range of unction, and the valleys of the north-west to south-east of the mountains and Oramanat and Halilan and Zardalan the area covered by forest. The valleys, due to its mild climate and beautiful landscapes, one of the best parts of the country, and the tribes are considered to Durability and recreation. The forest cover of more including oak is native to Iran. Kermanshah province, types of oak, ash, Mazooji,: Acer cineracens, ash, and some fruit trees such as peanut forest, mountain figs, blackberries, hawthorn, pear, walnut, Arjan, cherries, wild, wild olives, wild cherry, pistachio and Strawberry mountains seen. Borage, vanilla, sour, Sisymbrium irio, sagebrush, crap expression, diversity, tragacanth, red legs and Thyme, medical and industrial applications have grown over the year. Also, in the highlands of the province's lush vegetation for grazing. Forest area the size distribution, species and sizes of woody plants, valuable forest products and the possibility of animal husbandry, and provide for some of the residents, is important. Kermanshah forest altogether, from north to south, including forests Uraman Nosodeh, Paveh, Javanrood, SarpolzohabKarand to Patagh (Islamabad route to Ghasreshirin) is. The distribution area of this forest is very irregular, and its width is the width of the relatively large geographical. If the width of the geographical length, not too much. The forests, to the south by forest Lorestan and Bakhtiari and the west side of the forests of northern Iraq connected. In addition to the above herbs, trees in forests, mainly consisting of red willow, willow sprig, black willow, willow, yellow, musk willow, weeping willow, poplar, pine, sycamore, walnut, elm, oak, measure, acacia, juniper, pine and cypress is. Study of vegetation in relation to climate, geography is very important, but it should be noted that prior to the harmony between the different types of climate and plant species there. Plants are, in fact, reflect the climate of the region (agriculture Jihad of Kermanshah province, 2011: 2).

Climatic and ecological status of this province, according to the average annual precipitation and relative humidity, so that, generally forested mountains and plains and grassland, and in some places also have agricultural lands, including water and dry, but what is certain is that, from an elevation of 1800 meters above generally includes high summer pastures, and the level of the forest and agricultural land, less frequent (Figure 1).

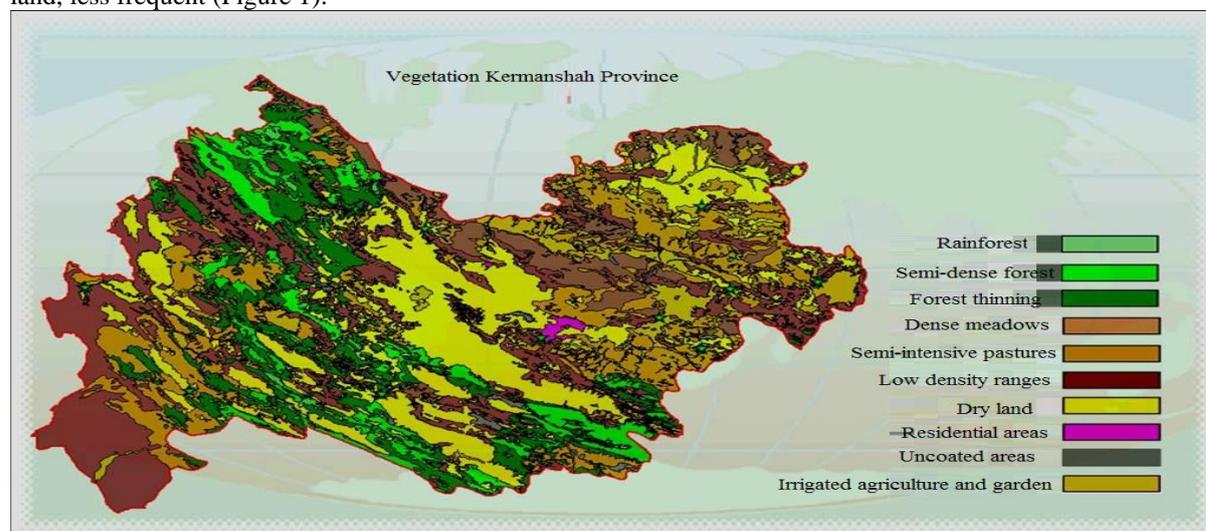


Figure 1. The vegetation of Kermanshah (agriculture Jihad of Kermanshah province, 2011).

Based on the above, the forests of the province of Kermanshah, from north to south West is drawn, and its concentration in the northwest, and the low and mid-range density maximum density in the southwest, and the northeast is drawn.

### 1. forest and pasture Province

The forests of this region, from the heights oromanat started, and the Basin and Halilan and Zardalan continues. Catchment areas like Kangavar, Songhor and Sahneh the south of the city of Kermanshah, is a semi-steppe vegetation. Forest trail in the mountains most Charzbar, continues south to north.

Types of trees, including oak and tannins that are seen in almost all mountain area, or Keykof: Acer cineracens, Karkov and Nushk or van, red hawthorn, black hawthorn, wild hawthorn (Goyech) observed that the red and yellow is, pear (Today or Hamrov) Toplak, almond (Arjan), wild cherry (Blalok) and plant diversity (diversity), which stem from the Gum would be seen in many fronts. Also in the humid valleys of the region, other trees such as ash, and walnut, mulberry and fig grows. Furthermore, in this region, medicinal and aromatic plants, and food, such as rhubarb, Choyer, licorice and Ajay expression (in the Black and sweet crap called) oregano, mint and Tseng is found in large amounts be.

#### Pastures

**Kermanshah province ranges, can be divided into three categories:**

1. the summer pastures, from early May to late September, the use of animals, such as pastures Alvand Hamedan, Almagholagh (north of Asadabad) Dalakhani, Amrolah, Kangavar and Oramanat.
2. winter pastures that, from early November to mid-April, usable, and includes Ghasreshirin, Naftshahr, Sumar, Sarpolzohab and is Gilangharb.
3. The range between the segments located between the winter and summer, and in the course of the tribe. Figure 1 Map of the vegetation, show.

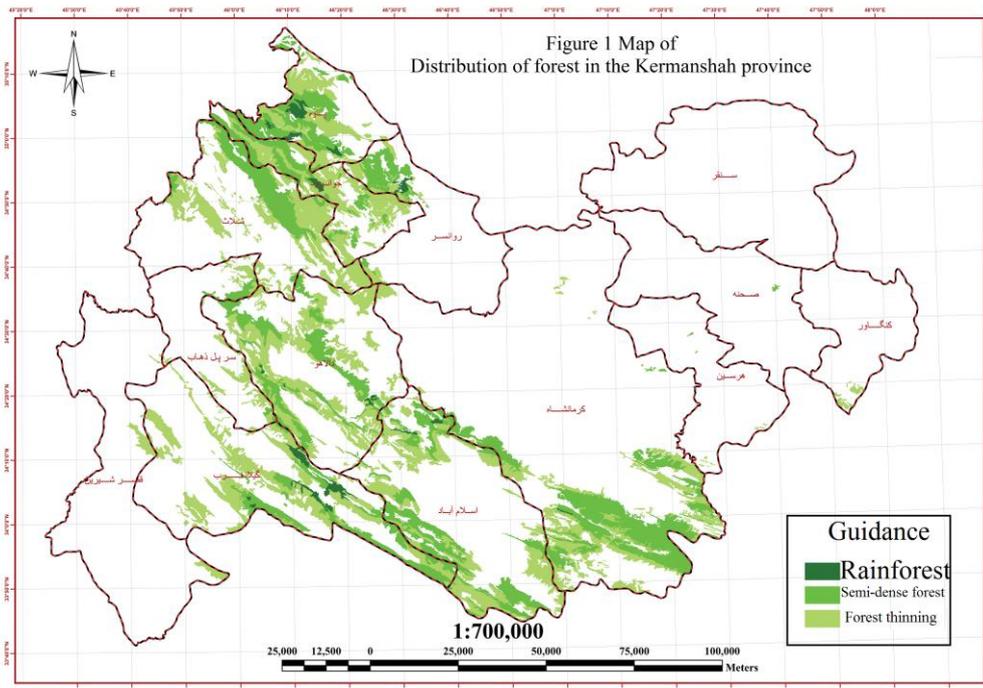


Figure 2 forests in Kermanshah

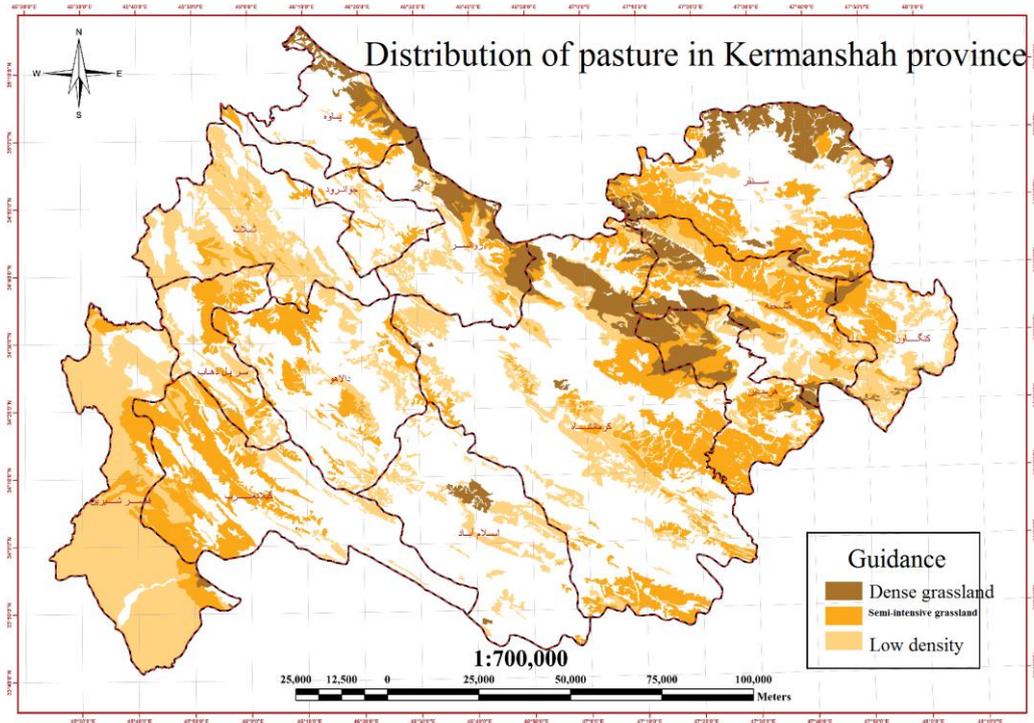


Figure 3. Range of Kermanshah

**2. assay vegetation Kermanshah Province, environmental conditions (temperature, rainfall and topography) of that Temperature**

Ambient temperature, the key issues in climate studies. Specific relationship between altitude, and temperature are such that with increasing altitude, temperature decreases. Average temperature of Kermanshah, from 8 ° to 20 ° from the mountains northeast, the southwest regions is variable. Rainforests northwest to southeast, on the average 10 degrees. However high and mid-range density, located in the temperature range of 8 to 10 degrees. Therefore it can be concluded that vegetation is grown at lower temperatures than high temperatures.

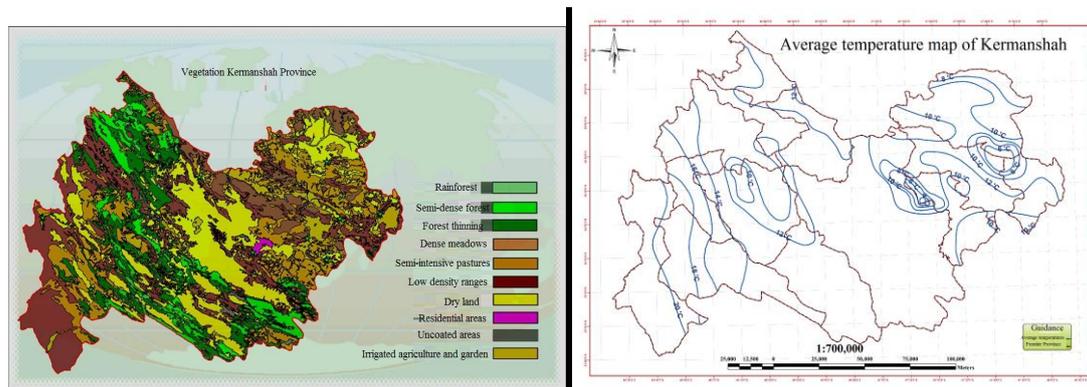


Figure 4- the different levels of the thermal plant figure 5- different levels of

**Topographical conditions**

The earth and its height, the growth of plants is effective, as a general rule, with an increase in altitude, rainfall increases (Arakhi and Lotfi, 2009: 7). The average height of 1,400 meters Kermanshah

Province, and variations in the height of 3237 meters (Eyni et al, 2012: 38). More than half the area of the province of Kermanshah, high mountains covered. Zagros Mountains, in the form of a set of parallel fibers, with high mountain plains, among them, there are various vegetation Has.

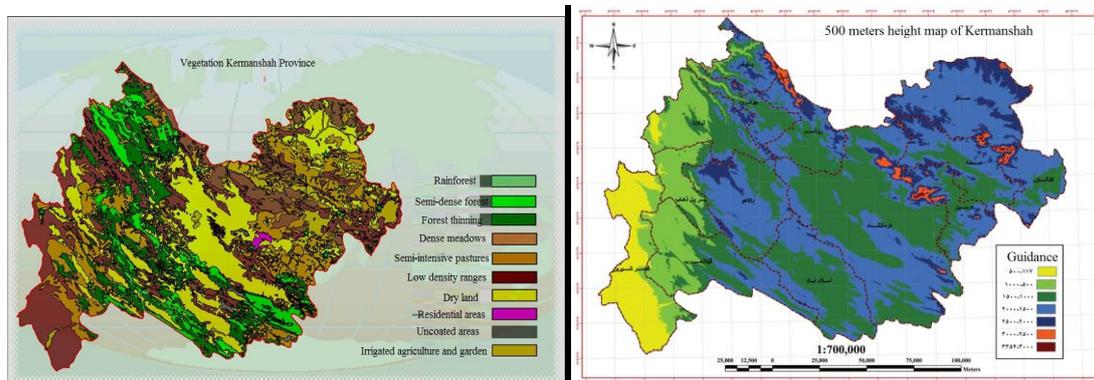


Figure 6- different levels of elevation of the plant figure 7- different levels of high

Based on these figures, the highest mountains in the north, center and northeast are located. The forests and meadows Well, in the northwest to the southeast and northeast walls. However, the most appropriate vegetation and pasture, located at altitudes above 2,000 meters.

**Terms of precipitation**

Kermanshah Province, under the influence of Mediterranean climate, temperate and the West, and because of this climate is, with maximum rainfall in autumn, winter and spring, and the majority of it in winter, so in Kermanshah, the most precipitation in winter and late fall (November), occurs. The province has the highest rainfall in the month of February, then March, December, January, and April is. Kermanshah province in the least rainfall of less than 300 mm, in the southeastern province of up to 900 m in the northwest corner of the variable.

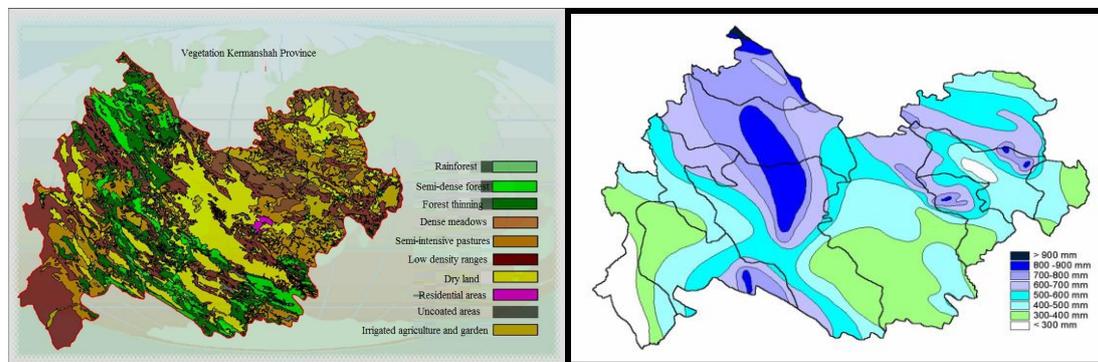


Figure 8 - different levels of precipitation in the form of herbal figure 9- different levels of precipitation

Based on these figures, the highest rainfall in the northwest, and central regions of Kermanshah, and in the northeast of the province, according to the high altitude regions, as well as the flow direction is west. The best coverage of forest and pasture in this area is located. So we can say that the conditions of rainfall and vegetation condition, compliance and greater homogeneity.

**3.conculation**

According to what has been analyzed, Kermanshah province in terms of vegetation, temperature, rainfall and altitude, has a remarkable diversity that each of these factors have an impact on the environment. The survey was carried out, Kermanshah Province of pastures and forests have low density is, the higher the altitude, the vegetation of the forest affected, and at an altitude of 2,000 to 3,000 meters, and the range is crowded at altitudes above 2000 m, are located. In terms of temperature, vegetation suitable Province, at temperatures below 12 degrees on average, have more growth. As noted in the discussion of rainfall, the highest similarity to the lines of the forest, the rainfall conditions

are such that, in the northwest of the provincial capital of maps, and on the northeast corner show the greatest similarity.

#### **4. Suggestion and Solutions**

1. The systematic management lush and vulnerable, and serious attention to their
- 2-Prospective planned and calculated, to protect forest lands, especially in dense forests.
- 3-culture, and education and the importance of natural resources, the current generation
4. artificial afforestation in areas prone to forest areas
5. Planting trees resistant to drought and salinity in the southern part of the vegetation, and no significant forest.
6. The improvement of environmental conditions, the recovery of lost resources
7. The background to the development of dependence on forest resources are available.

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