

Geographic Analysis of Numerical Changes Trend in Rural Population at Southwest of the Caspian Sea during 1976-2011

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Abstract

Geographical studies of population are very important, because it survey the subject "population" with geographical view. Regarding the environmental variations and their effects on spatial distribution of population at southwest Caspian Sea and at Geographical contexts from coast to plain, foothills and mountain which are placed from east to west and from north to south, population distribution at villages is not same and congruent.

Based on latest vernacular divisions, southwest Caspian Sea covers Guilan Province. The Province with area of 14044 square kilometers covers one percent of Iran area and consist of 16 townships, 43 districts, 52 urban areas, 109 rural districts and 2694 inhabited villages, and 241 uninhabited ones. Guilan Province consists of 3 districts in Western, Central and Eastern respectively with 27.1, 28.6 and 46.3 percent of area. In addition, 21.5, 45.3 and 33.2 percent of inhabited villages are formed in coastal plain, and foothills -mountain districts.

The number of rural population at southwest Caspian Sea is reduced to 981044 peoples in 2011 compared to 1118801 people in 1976.

The main question of current project is that how has been numerical changes of rural population at southwest Caspian Sea during 1976-2011 and which geographical factors are effective?

Taking advantages of historical and descriptive research method and using the results of population and housing census in Guilan Province during 1976, 1986, 1996, 2006 and 2011, the numerical changes in rural population is reviewed. In this regard the numerical changes of Province population, the three areas (Western, Eastern and central), categories of rural population (tiny, small, average, large villages and village-city) and also coast-plain and foothills are studied.

The results show that the number and percentage of rural population in Guilan Province has dropped annually respectively 3936 people and 36%.

Keywords: Numerical changes, Rural population, Southwest Caspian Sea, Guilan Province.

Introduction

Population is one of the fundamental elements of social, economic and cultural planning. Accordingly, awareness of population, structure understanding and its dimensions and spatial extent area of major decision-making and planning tools (Mahdavi, 1974:61).

In many population studies and in most planning related to population, the number of population, geographical distribution and its changes are of high importance. Thus, in planning, change recognition and the numerical transformation of target population are of priority.

However, change recognition and the numerical transformation of population can be done better over time, so that change differences and the numerical transformation of population become so valuable (Zanjani, 1997:15).

Population changes in different areas are one of the factors that affect on change differences and the numerical transformation of population. In this context, recognition of numerical changes at rural population is very serious (Zanjani, 1997:16-18).

In recent decades (1976-2011) evolutions have happened in Iran like other countries which caused demographic changes move rapidly in line with urbanization. Moreover, it restricts rural communities and villagers at country level, resulting in reducing rural population.

Rate of population growth in urban and rural areas, emigration, changes in political and administrative units, definitions of city and village, creation of new cities and conversion of rural areas to urban ones, transformation of rural areas adjacent to urban areas and integration in cities and towns are of these evolutions (Javan,2001:119-123).

In general, we can say that in recent decades, internal population movements and displacements in Iran have caused not only the problem of rural to urban migration but also evolutions at villages level (Jahanfar, 2004:103-104).

The main question of this project is that how has been numerical changes of rural population at southwest Caspian Sea during 1976-2011 and which geographical factors are effective?

The present study has surveyed several factors to answer the question: factors like understanding the evolution of a population, determining the number of rural population during 1976-2011, determining the numerical changes in rural population, determining the number and changes of rural population based on different classes of the population and determining geographical factors effective in deviation of purposes.

The study area covers Guilan Province which consist of three Western, Central and Eastern regions and 2694 inhabited villages with area of 14044 square kilometers and study period covers 1976-2011 (Molaiehashjin, Pourramezan, and Beigi,2011).

Study Area

Southwest Caspian Sea covers Guilan Province. The Province with area of 14044square kilometers is one of northern Provinces which is placed at 36 degrees and 34 minutes to 38 degrees 27 minutes of north latitude and 48 degrees and 53 minutes to 50 degrees and 34 minutes of east longitude (Guilan's Department of Planning, 2009:60).

The area is bounded on the north by the Caspian Sea and Republic of Azerbaijan, on the west, by Ardabil Province, on the east, by Mazandaran Province, and on the south by Qazvin and Zanjans province.

According to latest vernacular divisions, this Province consist of 16 townships, 43districts, 109 rural districts and 2935 villages (2694 inhabited villages and 241 uninhabited ones) (Guilan's Department of Planning, 2009:61).

On the basis of ecological structure of the Province which is composed of coastal, plain, foothills and mountain regions, its rural districts is various, so that 55/9 percent of villages are placed at coastal-plain regions and the remaining 44/1 percent at foothills-mountain ones. The special geographic location of the Province at southwest Caspian Sea, surface water resources in the form of permanent rivers throughout the Province which are used for agricultural land irrigation, fertile soil specially at plain areas, suitable and moderate climate and forest and pasture vegetation are the formation causes of crowded villages at Province level.

About 35 percent of villages areas are located at the coastal -plain regions and the remaining 65 percent are located at foothills-mountain ones. Meanwhile, 80 percent of rural population are distributed at the coastal-plain areas and the remaining 20 percent at foothills-mountain ones; therefore, there is no congruence between the number and percentage of villages, rural population and area at coastal-plain areas and foothills-mountain ones (Fig. 1 and table 1).

The average density of villages at Province level is 0.02,meaning that there is 20 villages at each 100 square kilometers(Consulting engineers of Abadgran-E-shahrvarosta 2011: 117).But the

average density of villages at country level is 0.08, meaning that there is 8 villages at each 100 square kilometers(Planning and Budget organization, 2004: 159).

Material and Methods

Regarding to the subject of study, the present research method is descriptive that exploit the available resources and refers both to the theoretical resources and its structure and the results of population and housing census during 1976-2011. In this regard, the number and features of inhabited villages and also the number of their population (divided into western, Central and Eastern districts) were adjusted separately. Then the numerical changes and their changes percentage in tiny, small, average and large villages, small and large city-village were analyzed. Also for statistical analysis and drawing the maps, software Excel and Arc GIS were used.

Results

*The number and changes of villages at southwest Caspian Sea

The number of studied villages in 1976 was 2723. This number increased to 2745 in 1986 and reduced to 2700 in 1996, 2694 in 2006, and 2592 in 2011 which in fact we can say that, 131 villages have reduced overall in recent three & half decades.

At Western, Central and Eastern districts of Guilan, the number of villages has been reduced to 32, 74, 25, respectively (table 2 and figure 2).

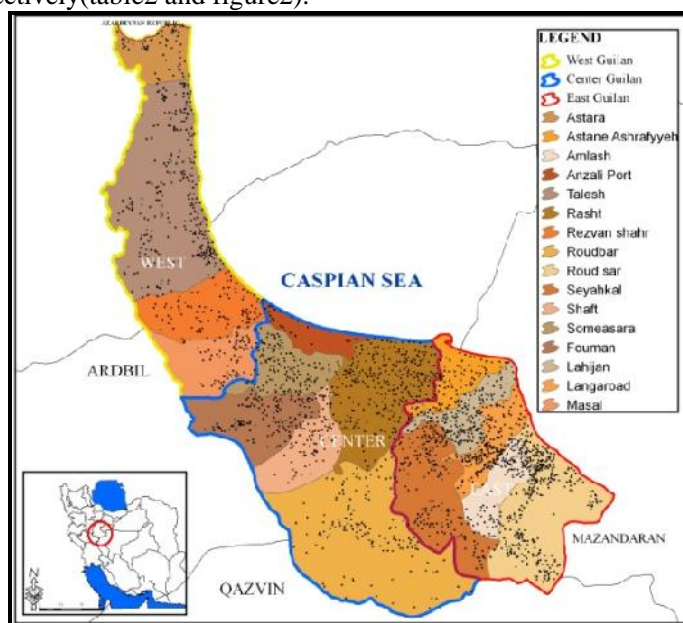


Fig. 1. The Location of Study Area in Vernacular Divisions

The number of rural population at southwest Caspian Sea was 1118801 peoples in 1976. This Fig. increased to 1296859 peoples in 1986. From 1986 onwards this number has dropped, so that 315815 peoples of rural population has declined during 1986-11 and in general, after the Islamic Revolution 137757 peoples has declined of Guilan population.

The distribution of numerical changes of rural population at Western district has been 56716 peoples during 1976-2011, but at Eastern and Central districts has reduced to 99105 and 95368 people, respectively (table 3 and Fig. 3).

In 1976, 14.32% of the total rural population have established in Western region, 50.66% at Central region and the remaining 35.2% at Eastern region. These figures have increased in 1986: 16.23% at Western region, 51.01% at Central region and 32.76% at Eastern region.

Table 1. Vernacular Divisions at Southwest Caspian Sea According to areas in 2008

Village						Urban areas		Rural District		District		Name of Township	Township		Area		Region	Order
percentage	in inhabited	percentage	inhabited	percentage	Total	percentage	number	percentage	number	percentage	number		percentage	number	percentage	km ²		
57.8	91	21.5	280	22.9	871	22.4	11	20.2	22	25.3	10	Astara-Talest-Karvanshahr-Masal	25	4	27.08	4803	West Guilan	1
22.0	53	33.2	894	32.3	947	42.8	21	43.1	47	41.9	18	Anzali port-Kasht-Soneasara-Fotman-Shaft-Roudar	37.2	5	44.29	5220	Center Guilan	2
40.2	97	45.3	1220	44.2	1317	34.7	17	36.7	40	37.9	15	Atashchehr-Ayvalik-Soybkhel-Lahijan Langroud Anilash-Roudar	37.5	6	28.63	4021	EAST Guilan	3
100.0	241	100.0	2697	100.0	2935	100.0	49	100.0	109	100.0	43		100	16	100.0	14044	Total province	

Source: Guilan's Department of Planning, 2009, Statistical Yearbook of Guilan Province, Statistics and Information Office,

Table 2. The distribution of number and percentage of changes at inhabited villages according to areas, during 1976-2011.

Change 1976-2011										2011		2006		1996		1986		1976		Region	tes
1976-1986		1976-1986		1976-1986		1976-1986		1976-1986													
percentage	number	percentage	number	percentage	number	percentage	number	percentage	number	percentage	number	percentage	number	percentage	number	percentage	number	percentage	number		
5.61	32	7.76	45	0.69	4	1.77	10	0.18	1	20.64	555	21.53	580	21.33	576	20.62	566	20.82	567	West Guilan	1
-7.73	-74	-1.23	-11	0.56	5	-5.73	-54	-1.46	-14	34.06	883	33.18	894	32.93	889	34.35	943	35.15	957	Center Guilan	2
-2.09	-25	3.77	46	1.22	15	0.08	1	3.1	37	45.30	1174	45.29	1220	45.74	1235	45.03	1236	44.03	1159	EAST Guilan	3
-4.31	-131	-3.75	-102	-0.22	-6	-1.64	-45	0.81	22	100	2592	100	2694	100	2700	100	2745	100	2725	Total province	4

Source: Statistics Center of Iran, 1977-2012, The Culture of Villages and Township in Guilan Province, 1976, 1986, 1996, 2006 and 2011

*The number and changes of rural population at southwest Caspian Sea

In 1996, the number of rural population in all Western, Central and Eastern regions has dropped, compared to the reduction of the number of rural population in 1986 and its growth in 1976. However, population of Eastern region has dropped (contrary to the general trend) and proportion of its population has declined by only 0.22%, meanwhile this proportion for the Central region has been negative 2.8% and for the Western region, positive 3.02%.

In 2006, in addition to continuing decline in the rural population located at southwest Caspian Sea started from 1986 onwards, the number of population dropped by 9697 people. This trend can be also seen in the Eastern and Central regions, but the story in Western area is different, because in this region, 10556 people are added to rural population during 1976-2006.

In 2011, the population of total regions and western, Eastern and Central regions, compared to the previous years has reduced severely, so that 128060 people is decreased of rural population during 2006-2011. This trend can be seen in all three region. In general, 12.31% of rural

population is dropped during 1976-2011. However over the past 35 years, the population of west Guilan with four township (Astara, Talesh, Rezvanshahr, and Masal) has increased by 35.40% (from 160198 people in 1976 to 216914 people in 2011). but the population of Central region with six township (Anzali port, Rasht, Someasara, Fouman, Shaft, and Roudbar) has dropped by 17.48% (from 566819 people in 1976 to 467714 people in 2011) and the Eastern region population as well as the Central region with six township (Astane Ashrafiyeh, Seyahkal, Lahijan, Langaroud, Amlash, and Roudsar) has reduced by 24.34% (from 391784 people in 1976 to 296416 people in 2011) (table 3 and Fig. 3).

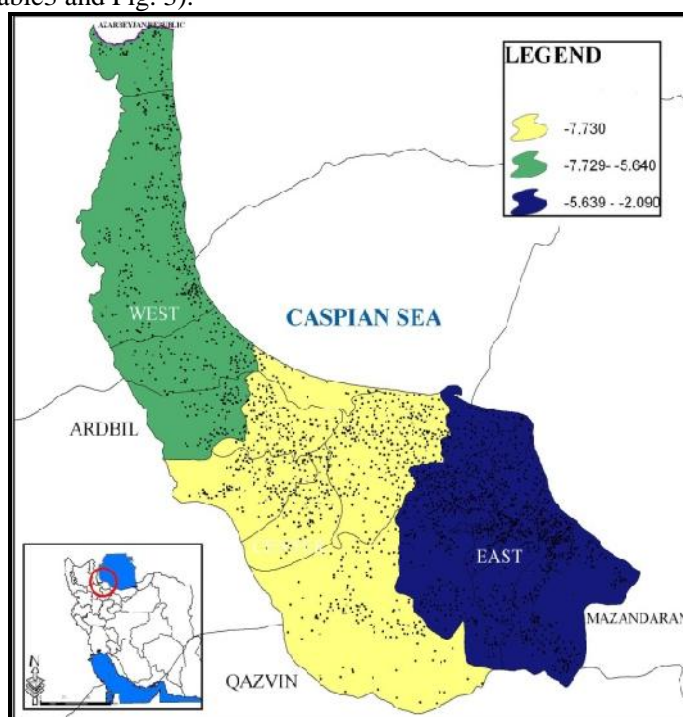


Fig. 2. The Changes of Inhabited Villages According to Areas Located at Southwest Caspian Sea, during 1976-2011

Table 3. The Distribution and Percentage of changes at population of Inhabited Villages, According to regions, During 1976-2011

Change 1976-2011										2011		2006		1996		1986		1976		Region	Total
1976-2011		2006-2011		1996-2006		1986-1996		1976-1986													
percentage	population	percentage	population	percentage	population	percentage	population	percentage	population	percentage	population	percentage	population	percentage	population	percentage	population	percentage	population		
35.40	56716	-9.58	-22084	4.6	10555	8.97	18688	31.27	50256	22.11	216914	21.63	239808	19.25	229342	16.23	210454	14.32	160193	West Guilan	1
-17.48	-59105	-11.00	-57823	-8.51	-48922	-13.15	-87026	16.7	94881	30.21	467714	47.28	525342	48.21	574444	51.01	661530	50.66	568877	Central Guilan	2
-24.14	-45368	-11.75	-47344	-11.76	-44010	-8.08	-37211	8.45	73321	47.68	756416	87.99	147664	72.54	87694	32.76	474975	73.07	891784	EAST Guilan	3
-12.31	-137757	-11.55	-128060	-6.91	-32376	-3.15	-105379	15.92	128058	100	981044	100	1105704	100	1191480	100	1296859	100	1118301	Total province	4

Source: Statistics Center of Iran, 1977-2011, The Culture of Villages and Township in Guilan Province, 1976, 1986, 1996, 2006 and 2011

Regarding the number of villages and distribution of rural population at southwest Caspian Sea and its three regions, the average quantity of rural population in 1976 was 411 people which about 36 peoples are reduced of rural population during 35 years.

The average quantity of rural population at Eastern and western regions of Guilan, in 1976 was 327 and 283 people, respectively; the figures lower than the average quantities, whereas at Central region with 592 people have been more than the average of total region.

Table 4. The Average distribution of population quantity at inhabited villages according to regions, during 1976-2011

Change 1976-2011					2011	2006	1996	1986	1976	Region	tier
1976-2011	1976-2006	1996-2006	1986-1996	1976-1986							
122.9	131.1	15.1	26.1	119.3	405.1	413.5	398.2	371.8	282.5	West Guilan	1
-62.7	-4.4	-58.3	-55.3	109.2	525.6	587.9	646.2	701.5	592.3	Center Guilan	2
-74.4	-45.1	-32.2	-29.9	17.0	252.4	281.7	313.9	343.8	326.8	EAST Guilan	3
-32.5	0.8	-29.6	-31.2	61.6	378.4	411.7	441.3	472.4	410.9	Total province	

Source: Statistics Center of Iran, 1977-2012, The Culture of villages and township in Guilan Province, 1976, 1986, 1996, 2006 and 2011

**The number and changes of inhabited villages in demographic categories located at southwest Caspian Sea*

**The quantity of rural population and its changes at southwest Caspian Sea*

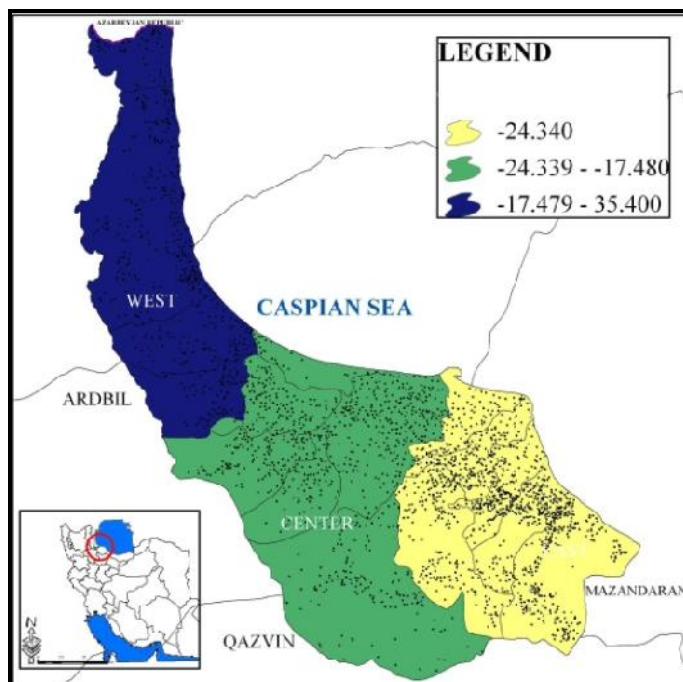


Fig. 3. The Changes of Population at Inhabited Villages According to Areas Located at Southwest Caspian Sea, during 1976-2011

Having increased the average quantity of rural population to 472 people in 1986, the average number of rural population in each three Western, Central and Eastern regions have increased to 702,372 and 344 people, respectively.

In 1996, in addition to decline in average quantity of rural population at southwest Caspian Sea to 441 people, the factor at Eastern and Central regions has been also dropped to 314 and 646 people, respectively. But the trend at Western area is different, because it has increased to 398 people. Although, the average quantity of rural population at Western and Central regions (unlike the Eastern region) had growth trend, during 1976-96.

In 2006, in addition to decline in average quantity of rural population at southwest Caspian Sea from 441 to 412 people (compared to 1996), Central and Eastern regions confronted to the population decline (588 and 282 people, respectively), but the factor at Western region increased by 414 people.

In 2011, in addition to continuing decline in average quantity of rural population from 412 to 378 people (compared to 2006), this trend can be seen in all three regions.

Although the changes of rural population at southwest Caspian Sea has been about 36 peoples, but the trend has not been same within its regions, so that at Western region, 123 peoples are added to average quantity of rural population meaning that 283 peoples in 1976 increased to 406 peoples. Whereas, the factor at Central and Eastern regions is dropped to 62 and 74 people, respectively (from 592 and 327 people in 1976 dropped to 529 and 252 peoples in 2011, respectively). (table 4 and Fig. 4).

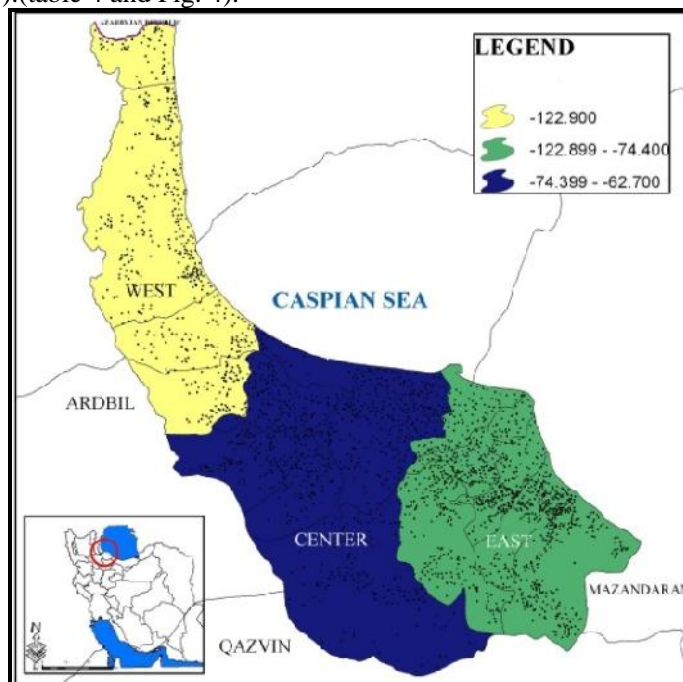


Fig. 4. The changes of population quantity at inhabited villages according to areas located at Southwest Caspian Sea, during 1976-2011

The number of inhabited villages at southwest Caspian Sea has been 2722 villages in 1976, 2745 ones in 1986, 2700 ones in 1996, 2694 ones in 2006 and 2592 ones in 2011. In general, 131 villages is reduced from the overall inhabited ones, during recent three & half decades. However, the number of inhabited villages has increased by 23 ones, during 1976-86.

The number of inhabited villages at various types of village has been different: tiny villages(1-200 people) positive 12 ones, small villages(200-500 people)negative 30 ones, average villages(500-1000 people)negative 52 ones, large villages(1000-2000 people)negative 55 ones, small city-village(2000-5000)negative 7 ones and large city-village(5000-10000)positive 2 ones.

In 1976, 46% of villages located at southwest Caspian Sea has been of tiny villages type, 27% small villages, 17.3% average ones,7.5% large ones and remaining 2.2% has been small city-village. The figures is totally different in 2011,because 48.8% of villages located at southwest Caspian has been of tiny villages,27.2% small ones,16.2% average ones,5.7% large ones,2% small city-village and 0.08% large city-villages.

It is noted that during 1976-2011, 2.77% has been added to the number of tiny villages, 0.2% to the small villages and 2.08% to the small city-village, but the percentage of other villages has been reduced (table5).

In 1976, maximum number and percentage of rural population located at southwest Caspian Sea has been centralized at average villages (500-1000 people) by 335572 peoples (about 30%). Meanwhile, there were few people at large city-villages and the minimum number and percentage of population related to the tiny villages with 105668 peoples and 9.44%,respectively.It's better to know that, small villages of Western area (population of 200-500 people)with 62160 people and 38.8% and average villages(population of 500-1000 people) of the Central and Eastern areas, respectively with 190321 people and 33.58% and101298 people and 25.86% are the maximum and minimum number and percentage of population. In 2011, the minimum number and percentage of population at large city-village was 11491 people and 1.2%, whereas the maximum number and percentage of population at average villages has been 299711 people and 30.6%.It is noted that apart from small villages and large city-villages which their population number and percentage have increased respectively, by 1.93% and 1.2%, the factors in other categories have increased (tables 6 and7).

Discussions

Human settlement date on the coast of Caspian Sea and specially its Southwest, cannot be identified. The land called today's "Guilan" has cohabitation with the rest of coast of Caspian. It is clear that this area at the beginning of forth millennium BC has been human lodging who engaged in the agricultural works (Iran' Researchers Team 2001:283-284).

Distribution of population at southwest Caspian Sea is so that living is easy at rural districts, especially at its plain area, because there is one village in every five square kilometers which compared to other areas is very dense (Molaeihashjin, 2012:11).

According to census performed in 2011, 39/54% of studied population lived at rural districts. However, during 1976-2011 rate of living at villages, has dropped by 31.26%, but the percentage of rural population is reduced by 13 % (table 8).

In the study area,56.3% of villages with 80% of rural population have settled at coast-plain districts(less than 100 meters)and 43.7% of villages with 20% of rural population have settled at foothills-mountain districts (more than 100 meters)(Poorramezan,2010:14).

With regard to prevailing geographical conditions at southwest Caspian Sea and the spatial distribution of rural settlements at coast-plain and foothills-mountain districts, it can be said that this area has special position in Iran. However, to verify this claim there are several other factors like the establishment conditions, villages sustainability and suitable climate, height difference, rivers flow originating outside(Ghezeloan and Shahrood)in terms of water flow through Sefidrood dam and permanent rivers from height to the sea and excellent pastureland specially in the range of semi-dense forests. The population and its numerical changes depend on the stated conditions:

Table 5.The Distribution of Quantity and Percentage of Changes at Inhabited Villages Located at Southwest Caspian Sea, According to areas in different demographic categories, during 1976-2011

5000-10000 people		2000-5000 people		1000-2000 people		500-1000 people		200-500 people		1-200 people		Inhabited villages		Region		years
percentage	number	Small city- villages		Large villages		Average villages		Small villages		Tiny villages		percentage	number	percentage	number	
		percentage	number	percentage	number	percentage	number	percentage	number	percentage	number					
0	0	0.53	3	3.00	17	11.11	63	33.69	191	51.68	293	20.83	567	20.83	West Guilan	1976
0	0	4.08	39	11.82	113	27.30	261	29.08	278	27.72	265	35.12	956	35.12	Center Guilan	
0	0	1.42	17	6.17	74	12.26	147	22.10	265	58.05	696	44.05	1199	44.05	EAST Guilan	
0	0	2.17	59	7.49	204	17.30	471	26.97	734	46.07	1254	100.00	2722	100.00	Total province	
0.18	1	1.06	6	6.01	34	15.02	85	32.69	185	45.05	255	20.62	566	20.62	West Guilan	
0.32	3	5.30	50	16.54	156	28.53	269	24.81	234	24.50	231	34.35	943	34.35	Center Guilan	
0.00	0	1.62	20	6.15	76	12.30	152	25.16	311	54.77	677	45.03	1236	45.03	EAST Guilan	1986
0.15	4	2.77	76	9.69	266	18.43	506	26.59	730	42.37	1163	100	2745	100	Total province	
0.105	1	1.91	11	6.77	39	18.2	105	26.04	150	46.88	270	21.33	576	21.33	West Guilan	
0.112	1	4.95	44	15.19	135	26.2	233	27.78	247	25.76	229	32.93	889	32.93	Center Guilan	1996
0	0	1.70	21	4.94	61	11.7	144	24.21	299	57.49	710	45.74	1235	45.74	EAST Guilan	
0.074	2	2.81	76	8.70	235	17.9	482	25.78	696	44.78	1209	100.00	2700	100.00	Total province	
0.17	1	2.76	16	5.86	34	18.10	105	25.52	148	47.59	276	21.53	580	21.53	West Guilan	2006
0.34	3	3.91	35	11.19	100	25.06	224	30.31	271	29.19	261	33.18	894	33.18	Center Guilan	
0.00	0	1.15	14	4.10	50	10.74	131	22.62	276	61.39	749	45.29	1220	45.29	EAST Guilan	
0.15	4	2.41	65	6.83	184	17.07	460	25.80	695	47.74	1286	100.00	2694	100.00	Total province	
50.00	1	23.08	12	20.13	30	22.20	93	23.01	162	18.72	237	20.64	535	20.64	West Guilan	
50.00	1	61.54	32	55.03	82	48.93	205	39.35	277	22.59	286	34.07	883	34.07	Center Guilan	
0	0	15.38	8	24.83	37	28.88	121	37.64	265	58.69	743	45.29	1174	45.29	EAST Guilan	2011
0.08	2	2.00	52	5.74	149	16.17	419	27.17	704	48.84	1266	100.00	2592	100.00	Total province	
0.15	0	0.6	17	2.2	62	1.13	35	-0.38	-4	-3.7	91	.84	23	.84	1976-1986	
-0.075	4	0.04	0	-0.99	-31	-0.53	-24	-0.81	-34	2.41	46	-1.64	-45	-1.64	1986-1996	sample
0.075	-2	-0.4	-11	1.87	-51	-0.83	-22	0.02	-1	2.96	77	-2.3	-6	-2.3	1996-2006	

Source: Statistics Center of Iran, 1977-2011, the culture of villages and township in Guilan Province, 1976, 1986, 1996, 2006 and 2011

Table 6. The distribution of quantity and percentage of population at Southwest Caspian Sea, according to regions in demographic categories 1976-2011

5000-10000 people		2000-5000 people		1000-2000 people		500-1000 people		200-500 people		1-200 people		Villages of inhabited		Region	year
Large city-villages		Small city-villages		Large villages		Average villages		Small villages		Tiny villages		percentage	number		
percentage	number	percentage	number	percentage	number	percentage	number	percentage	number	percentage	number	percentage	number		
0	0	4.71	7546	13.17	21099	27.44	43953	38.80	62160	15.88	25440	14.32	160198	West Gulain	1976
0	0	18.16	102959	27.00	153048	33.58	190321	17.02	96450	4.24	24041	50.66	566819	Center Gulain	
0	0	12.45	48790	25.09	98299	25.86	101298	22.26	87210	14.34	56187	35.02	391784	EAST Gulain	
0	0	14.24	159295	24.35	272446	29.99	335572	21.97	245820	9.44	105668	100.00	1118801	Total province	1986
2.57	5419	7.50	15788	22.3	46970	27.37	57602	28.92	60869	11.3	23806	16.23	210454	West Gulain	
2.84	18816	20.28	134182	31.8	210644	29.08	192345	12.46	82413	3.5	23100	51.01	661500	Center Gulain	
0.00	0	13.08	55597	24.1	102330	25.35	107696	16.17	68690	13.7	58142	32.76	424905	EAST Gulain	1996
1.87	24235	15.85	205567	27.8	359944	27.58	357643	16.35	211972	8.1	105048	100.00	1296859	Total province	
3.18	7296	11.3	25983	23.6	54070	31.31	71803	21.10	48399	9.5	21791	19.25	229342	West Gulain	
1.00	5754	20.0	114821	31.5	180677	29.02	166702	14.82	85124	3.7	21366	48.21	574444	Center Gulain	2006
0.00	0	13.9	53891	20.0	77465	26.04	100968	25.28	98020	14.8	57350	32.54	387694	EAST Gulain	
1.10	13050	16.3	194695	26.2	312212	28.49	339473	19.43	231543	8.4	100507	100.00	1191480	Total province	
2.35	5641	17.5	41920	19.4	46536	30.71	73673	21.05	50489	9.0	21639	21.63	239898	West Gulain	2011
3.58	18819	17.9	93849	26.2	137885	30.24	158907	17.57	92325	4.5	23757	47.38	525542	Center Gulain	
0.00	0	11.1	38239	19.2	65841	27.18	93420	25.76	88528	16.8	57636	30.99	343664	EAST Gulain	
2.21	24460	15.7	174008	22.6	250262	29.39	326000	20.86	231342	9.3	103032	100.00	1109104	Total province	2011
47.15	5418	23.23	31317	20.40	41649	21.71	65053	23.91	55964	18.08	17513	22.11	216914	West Gulain	
52.85	6073	60.81	81986	55.50	113299	48.96	146736	39.92	93426	27.04	26194	47.68	467714	Center Gulain	
0	0	15.96	21512	24.09	49177	29.34	87922	36.17	84647	54.88	53158	30.21	296416	EAST Gulain	Total province
1.2	11491	13.7	134815	20.8	204125	30.6	299711	23.9	234037	9.9	98865	100.00	981044	Total province	

Source: Statistics Center of Iran. 1977-2012, the culture of villages and township in Gulain Province. 1976,1986,1996,2006 and 2011

Table 7. The distribution and percentage of changes at population of inhabited villages located at Southwest Caspian Sea, according to regions, during 1976-2011

5000-10000 people		2000-5000 people		1000-2000 people		500-1000 people		200-500 people		1-200 people		Region	years
Large city-villages		Small city-villages		Large villages		Average villages		Small villages		Tiny villages			
percentage	population	percentage	population	percentage	population	percentage	population	percentage	population	percentage	population		
2.57	5419	2.79	8242	9.15	25871	-0.07	13649	-9.88	-1291	-4.57	-1634	West Guilan	1976-1986
2.84	18816	2.12	31223	4.84	57596	-4.50	2024	-4.56	-14037	-0.75	-941	Center Guilan	
0.00	0	0.63	6807	-1.01	4031	-0.51	6398	-6.09	-18520	-0.66	1955	EAST Guilan	
1.87	24235	1.61	46272	3.40	87498	-2.42	22071	-5.63	-33848	-1.34	-620	Total province	1986-1996
0.61	1877	3.83	10195	1.26	7100	3.94	14201	-7.82	-12470	-1.81	-2015	West Guilan	
-1.84	-13062	-0.30	-19361	-0.39	-29967	-0.06	-25643	2.36	2711	0.23	-1734	Center Guilan	
0.00	0	0.82	-1706	-4.10	-24865	0.70	-6728	9.12	29330	1.11	-792	EAST Guilan	1996-2006
-0.77	-11185	0.49	-10872	-1.55	-47732	0.91	-18170	3.09	19571	0.34	-4541	Total province	
-0.83	1655	6.14	15937	-4.2	-7534	-0.60	1870	-0.06	2090	-0.48	-152	West Guilan	
2.58	13065	-2.13	-20972	-5.3	-42792	1.22	-7795	2.75	7201	0.80	2391	Center Guilan	2006-2011
0.00	0	-2.77	-15652	-0.8	-11624	1.14	-7548	0.48	-9492	1.98	286	EAST Guilan	
1.11	11410	-0.65	-20687	-3.6	-61950	0.90	-13473	1.43	-201	0.85	2525	Total province	
44.8	-223	5.73	-10603	1	-4887	-9	-8620	2.86	5475	9.08	0.48	West Guilan	2006-2011
49.27	-12746	42.91	-11863	29.3	-24586	18.72	-12171	22.35	1101	22.54	-17.17	Center Guilan	
0	0	4.86	-16727	4.89	-16664	2.16	-5498	10.41	-3881	38.08	16.69	EAST Guilan	
-1.01	-12969	-2	-39193	-1.8	-46137	1.21	-26289	3.04	2695	0.6	0	Total province	1976-2011
47.15	5418	18.52	23771	7.23	20550	-14.89	-6196	2.2	-7927	7.79	56716	Total province	
52.85	6073	42.65	-20973	28.5	-39749	22.9	-3024	22.8	2153	-20.45	-99105	Total province	
0	0	3.51	-27278	-1	-49122	13.91	-2563	40.54	-3029	12.66	-95368	Total province	1976-2011
1.2	11491	-0.54	-24480	-3.55	-68321	1.93	-11783	0.46	-8803	0	-137757	Total province	

Source: Statistics Center of Iran, 1976-2012, the culture of villages and township in Guilan Province, 1976, 1986, 1996, 2006 and 2011

Table 8.The distribution of quantity and annual growth of rural population at Southwest Caspian Sea, during 1976-2011

Changes of population Growth	Rate of population Growth	Change of percentage Rural population	Percentages of Rural population	Number of Rural population	Describe
-2.03	1.27	-5.7	70.8	1120517	1976
-0.2	1.47	-8.5	62.3	1296859	1986
-2.31	-0.84	-9.1	53.2	1191916	1996
-0.12	-0.72	-7.08	46.12	1109104	2006
-3.15	-2.43	-6.58	39.54	981044	2011
-	-0.38	-31.26	-31.26	-139473	change 1976-2011

Source: Guilan's Department of Planning, 2008:94-98 and Census of Population and Housing during 1976,1986,1996,2006 and 2011.

The changes of number and percentage of villages located at southwest Caspian Sea are related to factors like transformation of a number of villages to urban areas in the form of newly-formed sections, merging of villages into urban areas, specially at Central region and towns centers located at Western and Eastern areas and finally leaving the tiny villages which are located at foothills and mountain districts (table 1).

Regarding the increasing and decreasing changes of villages at southwest Caspian Sea, during 1976-86, population increased at total area and three regions, because of population incentive policies executed after the Republic Revolution. But reasons like executing the birth limitation policies and its expansion at country villages level from 1989onwards, economic problems, unemployment at villages, high fertility at villages(compared to cities) and migration from rural to urban areas caused decreasing the rural population.

However, the severity of population decline in west Guilan and especially at township Rezvanshahr, Masal, and Astara has been less than Eastern and Central areas. Distribution and diversity of villages, specially small and average villages, inaccessibility to the facilities, unfamiliarity with the methods of preventing pregnancy, the traditional structure of economic activities especially at foothills and mountain districts are of factors that have been caused population growth.

But, despite the increasing number of villages at Eastern area, 50% of its township encountered population decline, from 1987onwards. The reasons are: the average rural population of area in form of average villages (500-1000 people), better distribution of villages and rural population, accessibility to the population control facilities and high awareness of villagers related to population.

In the Central area, in addition to above factors there are other reasons for population decline: merging the villages in the cities and specially Rasht as Guilan /province center, high awareness of villagers, and accessibility to the birth control facilities and migration to the cities.

During 1976-2011, the average quantity of rural population decreased about 33 people and this is natural, because of the changes of number and percentage of rural population. In the western area, the factor (average population of villages) increased from 283 to 405 peoples, but in Central and Eastern areas decreased to 63 and 74 peoples, respectively.

With regard to the changes of inhabited villages in demographic categories located at southwest Caspian Sea, factors like migration from tiny and small villages(because of limitation

of facilities and infrastructure and superstructure services), hidden and visible unemployment, low wages and finally, reduction in quantity of demographic categories are the reasons for tiny and small villages decline.

Regarding the decreasing changes of villages, the number and percentage of population at all levels, tiny, small, average, large villages, small and large city-village have reduced, during 1976-2011 and it can be seen increasing changes only at large city-village.

It's better to know that the reasons for population increase at these categories are: accessibility to the facilities and infrastructure and public structure services (compared to other demographic categories), availability of employment opportunities, population stabilization and even attracting population from lower categories.

Conclusion

In 2011, in addition to decreasing number of rural population to (from 2006) has continued. Continuance of transformation trend in rural population can be seen in this period (from 1986 onwards). In this period, the number and rural population share has increased at West Guilan, but the factor is dropped at two Central and Eastern areas. The patterns of population life will also change at Eastern area to 2016 and at Western area to 2021.

During 1976-2011, on average about four inhabited villages have been deleted from geographical map of southwest Caspian Sea, annually. The main reasons of decreasing the number of villages are transformation of rural districts to urban ones, merging the villages into cities and discharge of tiny villages.

The study of rural population evolutions at southwest Caspian Sea during 1976-2011, show that about 3936 people from rural population have been dropped, annually. This indicates that decreasing number of study villages is mainly related to the large and average villages.

During 1976-2011, despite high fertility at villages (compared to cities), about 33 people have been decreased from the average rural population located at southwest Caspian Sea (from 411 people in 1976-378 people in 2011). its reasons are: population stabilization at villages and migration of active population to urban districts.

Regarding the changes in the number of villages, rural population and its share and the average quantity of rural population at southwest Caspian Sea, reduction trend in Iran perspective will continue (based on table 9).

Table 9. Estimating the number of inhabited villages, population, and the average quantity of population at Southwest Caspian Sea in 2025

Changes 2011-2025	2025	2021	2016	2011	Rate of Growth	Describe
-51	2541	2556	2574	2592	-0.14	Number of village
-50922	930122	944395	962545	981044	-0.38	Number of Rural population
-4.65	34.89	36.16	37.81	39.54	-0.89	Percentage of Rural population
-12.4	366	369.4	374	378.4	0.28	Average number of quantity population villages

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