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ORIGINAL ARTICLE

Evaluation and Comparison of Sustainability of Development of Villages Centered on the Axis of Agriculture and Villages Centered on the Axis of Industry (Case Study: Ghareh Toghan, Neka District, north of Iran)

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ABSTRACT

Rural development accounts for an important part of the national development process, especially in developing countries. Nowadays, employment and the kind of activity in rural areas is one of the key strategies to achieve sustainable development in rural areas. That rural areas can achieve development through agricultural activities or the basis for their sustainable development can be formed by creating other occupations such as industrial activities is an issue having a significant role in achieving development in our rural areas. The present study has used SPSS and GIS software to evaluate the development in villages centered on agriculture activities and the ones centered on industrial activities by using the indexes of being developed as well as the comparison of the level of development of these two groups of villages to demonstrate which one has been successful in achieving development.
Key Words: Sustainability of Development, Villages, the Axis of Agriculture, the Axis of Industry

INTRODUCTION

The gap between industrial advanced countries and developing countries has been increasing in the years after World War II. Although industrial advanced countrieshave almost all the required facilities for a luxurious and dynamic life, most of developing countries particularly a considerable number of African countries are deprived of most primary facilities; this discrepancy and its daily expansion have resulted in the controversy of the issues of being developed and undeveloped. In addition, it has taken the attention of many economists and sociologists to question why the developing countries are developing. One of the significant issues pertaining to it is the lack of development of rural areas. This issue is such an important one that the United Nation Center of Regional Development (UNCRD) conducts multinational comparative researches in developing countries annually to survey the regional development of choices for rural societies.

So any activity in rural environments, in order to ensure the welfare and livelihood of villagers occur all or part of the rural economy of form.Because most rural areas where agricultural production has been of late,Thus, a large percentage of the rural economy is dependent on the exploitation of the land.

It is common for the rural economy and the agricultural economy sometimes these two terms are used interchangeably,However, the two concepts are quite distinct.

Purely agricultural economy includes all economic activities depend on agriculture at the national level,While the rural economy include agriculture and non-agricultural activities in the village, the villagers are made to supply material prosperity,In other words, rural economy, rural economic activity all over the place, not only are households with agricultural activities.In many countries, a large percentage of the residents of the villages of rural non-farm activities such as well-dwellers are often working in the industrial and service areas [1].

Material aspects of life in the rural economy, rural residents are And include all economic activities that will satisfy the material needs of the villagers. It is natural that in rural areas due to the diversity and differences in the ability of rural economic activities in rural areas are not the same Most of the village is a

different buck.Overall economic activity Rvstahadr three pillars of agriculture, industry and services is [12].

The level of development of rural areas centered on agriculture and rural areas centered on industry can be determined by measuring the relative level of development of the studied rural areas using the regarded indexes such as agriculture, hygiene and health, education, etc. It can also be determined that which one of the areas has been more successful in achieving the development.

STATEMENT OF PROBLEM

Although poverty is a global problem, its presence in rural section has caused in consideration of the problem as one of the most important ones in rural areas. The dominant poverty is the result of inefficiency of rural economy, particularly agriculture in providing the opportunities for employment, income, and enhancing life status [13]. Village is generally a homogenous natural, social-economic, cultural and environmental unit which consists of a population center, work place, and permanent residence (both centered and continuous or scattered) with specific registered or independent conventional territory and domain. Majority of permanent residents are living off through direct or indirect working in one of the main agricultural, raising livestock, gardening, fishing, rural industries (tourism and services) activities and a combination of them. There is a deep cultural and social bond among the members of society and is known as village [3]. Village has had a particular place in the economics of country in thepast and present so that the village was the source of providing the citizenry's needs in the past and nowadays it has other functions such as tourism and services as well as the previous ones [1]. Economic development in villages is dependent on the optimum efficiency and combination of various economic sections (agriculture, industry, and services); since dependent on one section of economy is a failure and useless for development and progress. Agriculture will not proceed unless the industry and services provide the required facilities for agriculture growth. Industry progress is needed for agriculture progress because utilizing organization is inevitable for transformation from traditional agriculture to advanced agriculture which is able to provide consuming needs of population and a percentage of required exchangeas well as having the power of export. These facilities should be provided for agriculture section in a condition which the land has reached to enough growth in industry part [13]. Industrialization and expansion of rural nonagricultural activities are important factors in increasing welfare, providing essential goods and services for rural poor families. The effects and penetration of industrialization in the rural areas, can create active economic and have Multipliereffects as well, as experiences show that every structural changes through industrialization not only create valuable economic role in rural areas but also lead to self-derived economic [22]. The most important way to develop agriculture and at last national development is the balanced and harmonious development of three sectors of agriculture, industry and services. If these three sectors are put together in an interactive relationship, the economic development will be hopeful and agricultural development can be accelerator for industrial development and vice versa [14].

Industrializationasameans ofrapid economic growthandsocial developmentin developing countriesis And rural industrialization as part of a comprehensive rural development policy, which enables By creating jobs and providing basic needs of the rural population is a step towards rural development, is introduced[23]. Sample size estimation: the population of research is beneficiaries of 11 villages of Gharetaghan district in Neka. The populations, i.e. beneficiaries, are 2405. Two stages were used to determine the sample size. In first stage, 260 samples from the total of population were selected by using Cochran formula, precise ratio 0.06% and confidence coefficient 95%. In second, by using proportional allocation formula, the number of beneficiaries in any countryside divided by the total population of beneficiaries and the result multiplied by total sample size. The number of sample size for any countryside (9 countryside) is determined in table 1.

Cochran formula is as follows:

$$n = \frac{Nt_2 \times pq}{Nd_2 + t_2 pq}$$

$$=n = \frac{2405(1.96)_2 \times 0.5 \times 0.5}{2405(0.06)_2 + (1.96)_2 \times 0.5 \times 0.5} - 260$$

n- the required sample size

N- the total population (2405 families and 73 experts)

T_2- the probability of Health Speech

(in this case because the significant level of test is 0.06%, it equals to 1/96)

p- the probability of existing attribution (the probability of conducted project successfully in paddy field)- 0/5

q- the probability of lack of existing attribution (the probability of conducted project unsuccessfully in paddy field)- 0/5

d_2= sampling error with intended probable level of confidence degree- 0/06

Table1: sample size in the studied villages

sample size	Kind of activity industrial	agricultural	The name of village	
24	√	√	Nozarabad	1
13	√		Esmael agha mahalleh	2
29	√	√	dangsarak	3
20	√		Tazehabad	4
52	√	√	Khorshid	5
15	√		Emamieh	6
34	√	√	Tuskola	7
17	√		Tazehabad-e Bostan Kheyl	8
16	√		Gilabad	9
18	√	√	Siavash Kola	10
22	√	√	Alukandeh	11
260	-	-	Total	

Method of analysis: method of analysis consists of two parts: descriptive and analytic. To analyze the collected data in analytic part both Excel and also SPSS software were used. All analytic results of this study were obtained by them. GIS software was also utilized to show obtained results on map.

Hypothesis:

It seems there is a positive correlation between villages based on agricultural work and villages based on industrial works from social points of view.

It seems there is a positive correlation between villages based on agricultural work and villages based on industrial works from economic points of view.

It seems there is a positive correlation between villages based on agricultural work and villages based on industrial works from environmental points of view.

Introducing the case study: the case study is Neka County which is located between 36° and 18 minutes to 36° and 50 minutes of northern latitude, and 53° and 13 minutes to 54° and 03 minutes eastern longitude from Greenwich meridian. The area of this county is 1358/8 square kilometer which delimit from west and south to Sari county, by east and north east to Behshahr county and by southeast to Semnan province. Naturally it consists of mountainous area which located in its south and plain area in north, west and east [6]. This county has one urban point consists of Neka city and 2 parts, Markazi and Hezarjerib, and also 5 districts and 127 villages with population and 5 villages without population (gubernatorial of Neka). Gharetaghan has 21587 populations. We studied 11 villages of Gharetaghan from Neka County.

Choice of Index:

Table 2: indicators of sustainable rural development

Indicators of Sustainable Rural Development		
Dimension	Index	Indicator
Social	Health	Benefit from health facilities
		Dietary diversity
		Health level
		Recreational activities
	Personal and social safety	Vulnerability to crime
		Hope for the future
		Benefit from Rural Insurance
		Feeling Lucky
		Ethnic integration in rural
	Social relation	Cooperation
		Social cohesion
		Family Relations
	Partnership	Individual participation
		Community Involvement
	Education	Educational facilities
		Access to educational infrastructure
		The level of knowledge
	Access	Satisfaction with access to services
		Satisfaction with the quality
	Communication	Access to communication infrastructure
		Use of communication technology

Indicators of Sustainable Rural Development		
Dimension	Index	Indicator
Economic	Employment and productivity	Job Satisfaction
		Variety of career opportunities
	Substantial prosperity	Access to infrastructure facilities
		Feels ban
		Satisfaction with income
		Low cost of living
		Income and household wealth
		Rural household savings
Environmental	Quality of environment	Suitable climatic conditions
		Contamination of soil and water resources
		Use of fertilizer
		Waste and scrap
	Biodiversity	Diversity of plant species
		Animal species diversity
	Housing	Robust housing in rural
		Healthy Housing
		Satisfaction with housing
	Vulnerability	Vulnerability to hazards
		Vulnerability to disasters

RESULTS

The results of the descriptive and analytical findings are presented in two parts.

Descriptive findings from the research:

The social dimension:

For the study of the social dimensions of rural development measure the following indicators have been used. How Guyana frequency response of the indicators is as follows:

Table. 3: Villagers meet with central distribution table of industrial indicators of social work

Cumulative frequency	Frequency percent	Frequency	Response to social indicators
10/39	10/39	27	Low
35	24/61	64	Average
100	65	169	More
-	100	260	Total

Table. 4: CPU frequency response with a focus on rural agricultural labor and social indicators

Cumulative frequency	Frequency percent	Frequency	Response to social indicators
32/69	32/69	85	Low
76/15	43/46	113	Average
100	23/85	62	More
-	100	260	Total

The economic dimension:

To assess the level of development of the economies of rural areas following indicators have been used. How Guyana frequency response of the indicators is as follows:

Table. 5: Villagers meet with central distribution of industrial work table of economic indicators

Cumulative frequency	Frequency percent	Frequency	Response to social indicators
6/15	6/15	16	Low
32/69	26/54	69	Average
100	67/31	175	More
-	100	260	Total

Table. 6: CPU frequency response with a focus on rural agricultural economic indicators

Cumulative frequency	Frequency percent	Frequency	Response to social indicators
21/54	21/54	56	Low
86/54	65	169	Average
100	13/46	35	More
-	100	260	Total

The environment:
A case study of rural development Bdmhyty to measure the following indicators has been used. How Guyana frequency response of the indicators is as follows:

Table. 7: Villagers meet with central distribution table of the industrial work environment indicators

Cumulative frequency	Frequency percent	Frequency	Response to social indicators
11/15	11/15	29	Low
48/85	37/7	98	Average
100	51/15	133	More
-	100	260	Total

Table. 8: CPU frequency response with a focus on rural agricultural labor to environmental indices

Cumulative frequency	Frequency percent	Frequency	Response to social indicators
20/77	20/77	54	Low
72/3	51/53	134	Average
100	27/7	72	More
-	100	260	Total

Analytical findings of the study:
Since the rate of rural development with a focus on agricultural and industrial labor indicators in terms of economic, social and environmental objectives may be different, so the relationship between these two Finally, we study the group to understand the rural development measures intended to make comparison.To determine the relationship between the development of rural When the villagers saw each variable separately, and confirmed H0 or reject H0 and post-test was performed using Pearson's correlation Between the two populations studied and the final result is determined according to the hypothesis. In the table, the correlation coefficient between the two groups, the significance level (sig) or the likelihood of confusion between the two groups is shown in perspective. The maximum acceptable probability of error in terms of statistical 0/05 (or probably 95% accuracy) is . The correlation can be accepted as the significant level of at least 05/0 requirements.
The social dimension:

Table of Pearson correlation coefficient (x2): The industrial business-focused rural development in terms of social indicators (9)

Test results	Rate calculated from the viewpoints of farmers (sig)	Index
Reject H0	0/000	Benefit from health facilities
Reject H0	0/000	Dietary diversity
Reject H0	0/001	Health level
Reject H0	0/000	Recreational activities
Reject H0	0/002	Vulnerability to crime
Reject H0	0/000	Hope for the future
Reject H0	0/003	Benefit from Rural Insurance
Reject H0	0/001	Feeling Lucky
Reject H0	0/000	Ethnic integration in rural
Reject H0	0/030	Cooperation
Reject H0	0/010	Social cohesion
Reject H0	0/040	Family Relations
Reject H0	0/034	Individual participation
Reject H0	0/019	Community Involvement
Reject H0	0/041	Educational facilities
Reject H0	0/000	Access to educational infrastructure
Reject H0	0/000	The level of knowledge
Reject H0	0/000	Satisfaction with access to services
Reject H0	0/012	Satisfaction with the quality
Reject H0	0/004	Access to communication infrastructure
Reject H0	0/000	Use of communication technology

According to Table (9) All indices are expressed significant levels of less than 05/0 of the parameters H0 is rejected.

Table of Pearson correlation coefficient (x2): Of rural development with a focus on agricultural work in terms of social indicators (10)

Test results	Rate calculated from the viewpoints of farmers (sig)	Index
Confirmation H0	0/065	Benefit from health facilities
Confirmation H0	0/120	Dietary diversity
Confirmation H0	0/080	Health level
Confirmation H0	0/400	Recreational activities
Reject H0	0/016	Vulnerability to crime
Confirmation H0	0/070	Hope for the future
Reject H0	0/000	Benefit from Rural Insurance
Confirmation	0/110	Feeling Lucky

Test results	Rate calculated from the viewpoints of farmers (sig)	Index
Reject H0		
Reject H0	0/000	Ethnic integration in rural
Reject H0	0/010	Cooperation
Reject H0	0/021	Social cohesion
Reject H0	0/000	Family Relations
Reject H0	0/001	Individual participation
Reject H0	0/030	Community Involvement
Confirmation H0	0/310	Educational facilities
Confirmation H0	0/400	Access to educational infrastructure
Confirmation H0	0/680	The level of knowledge
Confirmation H0	0/600	Satisfaction with access to services
Confirmation H0	0/560	Satisfaction with the quality
Confirmation H0	0/054	Access to communication infrastructure
Confirmation H0	0/060	Use of communication technology

According to Table (10) Most of them expressed significant levels of 0/05 is the index of H0 is approved; The other villages studied did not develop socially oriented agricultural labor.

The economic dimension:
Table of Pearson correlation coefficient (x2): Development of rural areas in terms of economic indicators with a focus on industrial jobs (11)

Test results	Rate calculated from the viewpoints of farmers (sig)	Index
Reject H0	0/000	Job Satisfaction
Reject H0	0/001	Variety of career opportunities
Reject H0	0/000	Access to infrastructure facilities
Reject H0	0/020	Feels ban
Reject H0	0/000	Satisfaction with income
Reject H0	0/000	Low cost of living
Reject H0	0/001	Income and household wealth
Reject H0	0/021	Rural household savings

According to table (11), all parameters were significantly lower level of expression of the 05/0 The parameters of H0 was rejected by the other villages studied in terms of the indicators are developed.

Table of Pearson correlation coefficient (x2): Development of rural areas in terms of economic indicators with a focus on agricultural work (12)

Test results	Rate calculated from the viewpoints of farmers (sig)	Index
Confirmation H0	0/310	Job Satisfaction
Confirmation H0	0/060	Variety of career opportunities
Confirmation H0	0/110	Access to infrastructure facilities

Confirmation H0	0/520	Feels ban
Confirmation H0	0/400	Satisfaction with income
Confirmation H0	0/050	Low cost of living
Confirmation H0	0/100	Income and household wealth
Confirmation H0	0/080	Rural household savings

According to table (12), all of them expressed a significant level of more than 05/0 of the parameters H0 is confirmed According to the indicators used in the study villages are underdeveloped.

The environment:

Table of Pearson correlation coefficient (x2): The industrial business-focused rural development in terms of environmental indices (13)

Test results	Rate calculated from the viewpoints of farmers (sig)	Index
Reject H0	0/000	Suitable climatic conditions
Reject H0	0/030	Contamination of soil and water resources
Reject H0	0/000	Use of fertilizer
Reject H0	0/040	Waste and scrap
Reject H0	0/004	Diversity of plant species
Reject H0	0/019	Animal species diversity
Reject H0	0/041	Robust housing in rural
Reject H0	0/030	Healthy Housing
Reject H0	0/010	Satisfaction with housing
Reject H0	0/020	Vulnerability to hazards
Reject H0	0/041	Vulnerability to disasters

Table of Pearson correlation coefficient (x2): Development of agricultural work in rural areas with a focus on environmental indices (14)

Test results	Rate calculated from the viewpoints of farmers (sig)	Index
Reject H0	0/000	Suitable climatic conditions
Reject H0	0/010	Contamination of soil and water resources
Reject H0	0/003	Use of fertilizer
Reject H0	0/041	Waste and scrap
Reject H0	0/000	Diversity of plant species
Reject H0	0/031	Animal species diversity
Reject	0/050	Robust housing in rural

H0		
Reject H0	0/003	Healthy Housing
Reject H0	0/049	Satisfaction with housing
Reject H0	0/020	Vulnerability to hazards
Confirmation H0	0/058	Vulnerability to disasters

According to table (13) table (14), the only variable in the villages with a focus on agricultural vulnerability to accidents, significantly greater levels of 0/05 is All indices are expressed significant levels of less than 05/0 The parameters of H0 is rejected, and the other villages studied in terms of the indicators are developed.

Hypothesis testing:
Table of Pearson correlation coefficient (x2) The development of rural areas in terms of social indicators (15)

		Farming villages	Industrial villages
The focus on agriculture, rural development in terms of social	The correlation coefficient	1	-0/068
	Significance level		0/081
Development of rural industries with a focus on socially	The correlation coefficient	-0/068	1
	Significance level	0/081	

Note that the correlation coefficient between the two villages studied 068/0- and 081/0 is Larger than 05/0, so the villages with a focus on agricultural and rural industry with a focus on the development of indicators, there is no correlation.

Table of Pearson correlation coefficient (x2) The development of rural areas in terms of economic indicators (16)

		Farming villages	Industrial villages
The focus on agriculture, rural development economically	The correlation coefficient	1	-0/075
	Significance level		0/110
Development of rural industries with a focus on economically	The correlation coefficient	-0/075	1
	Significance level	0/110	

Note that the correlation coefficient between the two villages studied 075/0- and 110/0 isLarger than 05/0, so the villages with a focus on agricultural and rural industry with a focus on the development of economic indicators since there is no correlation.

Table of Pearson correlation coefficient (x2) The development of rural areas in terms of environmental indicators (17)

		Farming villages	Industrial villages
The rural development with a focus on agriculture, the environment	The correlation coefficient	1	0/875
	Significance level		0/010
Development of rural industries with a focus on the environment	The correlation coefficient	0/875	1
	Significance level	0/010	

Note that the correlation coefficient between the village of 875/0, and the significance level of 010/0 is Less than 05/0, so the villages with a focus on agricultural and rural development with a focus in industrial work on environmental indicators are correlated.

CONCLUSIONS

The overall results of the data analysis In both descriptive and analytical, this is indicated The villages based on agriculture and industry working in both social and economic dimensions are not correlated; While the industrial villages in terms of economic and social indicators have improved, but not to rural agricultural development achieved. But in terms of the environment indicates that there is a correlation between the two villages, the villages of the industrial and agricultural villages in terms of environmental indicators are developed. Agriculture is the main activity of the rural population in the study area. However, due to population growth, reducing farmers' income, reduced income from farming, low prices for agricultural products, and ... Agriculture in the region is faced with a challenge. The agricultural industry development strategy to stimulate agricultural activities in rural areas will create jobs and attract population. Given that one of the main factors of migration of rural population to the cities is and According to the government policy to reduce the population of cities and rural industrialization strategy to achieve this important field of sustainable rural development is well.

Solutions:

1-Raising the level of productivity per unit area through the promotion of optimal inputs.

2- Loans to farmers if the farmers can sell their product at the right time to pay it.

3- Of local and regional markets to attract export industries.

4- The use of simple technology and user.

REFERENCES

1. Ayobi.S., (1995). Based on agriculture, rural development, Master Thesis, Ferdowsi University of Mashhad, Iran.
2. Basel.B, (2002),Indicators for Sustainable Development: , translated by Neshat Haddad-Tehrani and N. Moharram-Nejad, publications, environmental organizations.
3. Bosel.H, (2007), indicators of sustainable development: theory, methods and experiences, translated by Ali Badri and AR eftekhari, publisher of Payam Noor University, Tehran
4. Bryden, J.(2002), Rural Development Indicators and Diversity in the European Union, PP.1-15.
5. Clark,W.C.,(1989),Managing Planet Earth, Scientific American,261,pp.47-54.
6. Eftekhari, A and M aghayari,2007,Grading sustainable rural development: a case study of the Hare, Geographical Studies, No. 61, Autumn Period
7. Golusin.M.,(2009),Definition,Characteristics and State of the Indicators of Sustainable Development in Countries of Southeastern Europe, Agriculture, Ecosystems and Environment, 130, PP.67-74
8. Gonzales,M.A. and Smith R.L., (2000),A Methodology to Evaluate Process of Sustainability, Environmental Progress, Vol.22,No.4
9. Institute of Rural Development, (2003), plans, outlook and future rural development in Iran, Tehran.
10. Jansen, L.,(2003),The Challenge of Sustainable Development, Journal of cleaner production, vol.11,No.3,PP.231-245
11. Jin,X.andHigh,K.A., (2004), A New Conceptual Hierarchy for Identifying Environmental Sustainability Metrics, Environmental Progress,Vol.23,No.4
12. Kabrydv, d.,(2002), characteristics of sustainable development: indicators of sustainable development, translation: Haddad-Tehrani Neshat and N. Moharram-Nejad, publisher of Environment, Tehran.
13. Khosrobaigi.R, Shayan.H, Sagasighaidari.H, sadeghlo.T, (2011). Evaluation of sustainability in rural areas using multivariate fuzzy decision making technique - TOPSIS, Rural Research, second year, first issue, Spring 2011.

14. Mahdavi.M, An introduction to rural geography Iran ,(2004): the samt publication.
15. Moradi, Mahmoud and others, (2005), the status of the process of industrialization and the development of rural industries in the central part of the city of Birjand, Journal of Geographical Research, No. 53, University of Tehran
16. Motieilangrodi.S.H ,Ardeshiri.A, (2007). Consequences of agricultural processing industries in rural development, Journal of Geographical Research, No. 61
17. Motieilangrodi.S.H, (2005),Economic Geography of Iran (industries), Mashhad University Jihad Publications
18. Myksl, r. F., (1997), Economic Development and the Environment, translation:Arbab. HR master record of scientific publications and Planning Organization, Tehran
19. Naderi.K, Kalantari.KH,Hosaini.M, Asadi.A, (2008),Content analysis of policies and programs of development of Islamic republic with the pattern consistent Development, Rural and Development Quarterly, 12, No
20. Nordin,M.,(2000),Indicators of Sustainable Development : The Malaysian Perspective, University Kebangsaan,Malaysia
21. OECD, (2001), Key Environmental   Indicators, Available on : http ://www.oecd.org/pdf.
22. OECD,(2004),Measuring Sustainable Development : Integrated Economic, Environmental and Social Frameworks, Paris : OECD
23. Portaheri.M, Sagasighaidari.H, sadeghlo.T, (2010),Assess and prioritize social stability in rural areas using fuzzy TOPSIS ranking method, Rural Research, Tehran University, first issue.
24. Taherkhani.M, (2001),The role of industrial districts in rural areas, geographical Journal, No. 40, Tehran University, 33-45
25. UNIDO.(1991).Industry and Development. Global report.
26. Waheed,B.,(2009),Linkage –Based Frameworks for Sustainability Assessment : Making a Case for Driving Force-Pressure-State-Exposure-Effect-Action (DPSEEA) Framewors, Faculty of Engineering and Applied Science, Memorial University, St.John, Newfoundland,1 ,PP.441-463.
27. Ziatavana.H: (1991). A look at the village and the mechanism of evolution in iran, Journal of Geography Education, Sixth Year, No. 24, year 1991, page 5