International Journal of Agricultural Management and Development
Available online on: www.ijamad.iaurasht.ac.ir
ISSN: 2159-5852 (Print)
ISSN:2159-5860 (Online)
Research Paper

Assessment of the Sustainable Rural Livelihoods Assets in Langroud County

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Received: 19 November 2019,
Accepted: 14 May 2020

Abstract

The present descriptive survey aims to analyze sustainable rural livelihood in Langarud County of Guilan province, Iran. The statistical population was composed of all rural people in this county (N=37904). Convenience sampling used to determine sample size (n=180). They were selected by proportionally allocated random sampling method. The research instrument was a self-designed questionnaire whose face and content validity was confirmed by a panel of experts. The reliability of the questionnaire was estimated by Cronbach's alpha to be 0.76, implying its reliability. Results showed that among five capitals of sustainable livelihood, social, human, physical, natural and financial capitals were ranked from the first to fifth, respectively. Accordingly, rural people were in the best condition in terms of social capital compared to other capitals. Concerning the level of sustainable livelihood capitals, it is recommended that rural development policies should spur livelihood diversification as a core strategy. In addition, attempts should be made to enhance rural people's awareness of what they have and to change their attitude towards what they feel in their life and/or they see in nature.

Keywords:
Sustainable livelihoods; social capital; financial capital; human capital; natural capital, physical capital

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INTRODUCTION

As an environmental realm, the rural area is influenced by a diverse set of natural, economic, social and cultural systems so that any changes in one of these systems can transform the overall rural environment and can finally result in the development/underdevelopment of the rural area (Moteie Langarudi, 2003).

All over the world, rural areas are the drivers and backbone of economic activities (Alemu, 2012) mainly because they supply labour, food, and raw materials to other growing sectors of the economy. Development practitioners and government agree that livelihood strategies have a significant role in alleviating poverty in rural areas. These activities include farm and non-farm activities (Little et al., 2001). Any development path that seeks to support rural livelihoods has to take the diversification of livelihood strategies into consideration (Zenteno et al., 2013). According to Brown et al. (2006), the phenomenon of livelihood strategies is currently at the centre of development agenda. Rural households diversify their livelihood strategies by opting to engage in non-farm activities (Lay & Schuler, 2007). There are many reasons that cause rural people to diversify their livelihood strategies; this is mainly because they are trapped in low levels of livelihood strategies and occupy low social and economic status. Barrett et al. (2001) argue that very few households derive their income from a single asset. According to Heinemann (2014), livelihood diversification is a common practice in most rural households. People opt to engage in agricultural intensification or extensification, livelihood diversification, and migration. In addition, the kinds of assets that rural people have access to, determine the choice of their livelihoods and the social status they acquire in the community (Alemu, 2012). The livelihoods approach has been at the centre of rural development strategies since the 1990s (Zoomers, 2014). It is a very important approach that is used to understand how people live and the activities that they engage in to make ends meet.

Sustainable livelihood is a key aspect of the sustainable rural development paradigm, where serious consideration of livelihoods and their development as well as ways to settle its challenges are among the most essential aspects of rural poverty alleviation and rural development. The sustainable livelihood approach is a relatively new approach that has been proposed to address the failure of the previous approach in the development of local communities (Salvestrin, 2006).

By definition, livelihood is activities, assets, and access that jointly determine the sources of income for a rural person or household. As a result, a diversified rural livelihood is defined as a process by which the rural community earns diverse interests and incomes, providing social support for survival and improved living standards for the rural population (Davies & Hossain, 2007). The tendency of rural households to engage in multiple jobs has been observed very often, but little has been done in rural poverty alleviation policies to link this tendency with systematic strategies (NZAID, 2002).

The sustainable livelihoods framework is one way of explaining the complex issues around poverty. It is not the only way, and it needs to be adapted, modified, and made appropriate to local priorities and local circumstances (Coulthard et al., 2011). According to McGregor and Simon (2012) the sustainable livelihood framework is a tool frequently utilized by development bodies for formulating and evaluating development interventions. It emphasizes how individuals deliberately utilize the capitals accessible to them to forge livelihoods, and how development interventions can affect obtainable capitals and integrate with them.

The pentagram-based framework developed by the UK Department for International Development in 1999 is one of the best approaches to sustainable livelihood (Shen, 2009). This framework emphasizes a people-centered approach on the basis of five fea-

tures of the sustainable livelihood approach – i.e. human, social, natural, physical, and financial capitals (Serrat, 2008). These five assets are interdependent and each can supplement the other assets.

Assets are considered the foundation on which households build their livelihoods (Timmermans, 2004). Assets can be stored, consumed, or be traded for the benefit of the household. Asset trading is at a very low scale in rural areas, most of them are used for subsistence purposes. The amount of asset holding at the household level determines whether the available assets can be used for subsistence or commercial purposes (Soltani et al., 2012). Lack of asset access or ownership to assets can result in poverty at household, community and societal levels. As a result, government and the private sector are focusing on helping the poor to build their asset endowments in order to escape poverty through their own means (Zoomers, 2014).

Heinemann (2014) points out that escaping poverty is driven by the ownership of assets. Assets are used in different ways. They may be used for food, energy, shelter, or medicinal purposes or as a means for survival in general. One asset may be used interchangeably or in combination with other assets. Shackleton and Shackleton (2004) observe that some assets replace others as safety nets during an economic downturn, social changes in the household, or due to environmental impact. These include but are not limited to loss of jobs, retrenchment, economic recession, death of the household head, and natural disasters (floods and droughts). Assets can be enriched to enhance one's livelihood. For example, this can be done by improving one's skills, investing finances, or intensifying agricultural activities. Financial assets include access to loan and household savings, remittance, salary, pensions and grants (Soltani et al, 2012).

Natural capital includes the availability of land, forest, and other resources. The physical or produced capital includes basic infrastructure (transport, roads, schools, hospitals, affordable building and energy etc.). The human capital includes the knowledge, skills, education, ability to work, and health (Ros-Tonen et al., 2005). Social capital is the most controversial and difficult capital composed of the measurement of trust, mutual understanding, common values, and socially preserved knowledge (Sadeghzadeh et al., 2014). So, given the role of rural people and regions in sustainable development, it is imperative to assess capitals of sustainable livelihood in these regions and analyze and take advantage of their strengths and weaknesses to reach an optimal sustainable livelihood approach.

In an analysis of the levels of sustainability assets in paddy farming system in Rasht County, Sadeghzadeh et al. (2015) found that the human capital in this county was at the highest level among the five sustainability capitals. The physical, human, financial, social and natural capitals were in the next levels, respectively. Sojasi Qidari et al. (2016) revealed significiant differences among the studied villages in terms of their enjoyment of the livelihood capitals. Also, the social capital was in a higher level than the other capitals, implying the solidarity, integrity, and social coherence. Kassa and Eshetu (2014) reported that the public sector agencies and stakeholders should strive to satisfy the needs of society in order to contribute to creating sustainable livelihood and rural development. Israr and Khan (2010) addressed the access to rural capitals in the north of Pakistan and found that the natural capitals in these regions included land, livestock, irrigation water, and forests and they helped livelihood remarkably. Physical capitals, including home ownership and access to driking water, power, agricultural machinery, are important indicators of the socio-economic status of a family. Work capacity, having skills, and enjoying professional training and extension services play a significant role in human capital. Social capital is significantly helped by decision-making power at the community level, work relationships with one another,

and agricultural organizations. Financial capital is also composed of savings, monthly salaries, livestock income, and access to credits. It was already mentioned that physical, financial, natural, social and human capitals have a vital role to play in the livelihood of rural households. However, access to these capitals is uneven and this has influenced the development of the rural regions. Fang and Hai Yang (2012) explored the relationship between livelihood assets and livelihood strategies in China. The results revealed that physical capital had the highest level. In addition, social capital was relatively high and social capital was in the third rank. Financial and natural capitals were relatively low, respectively.

Langroud's rural areas have an economy based on agriculture and in some cases industrial and service activities. Although economic activities in rural areas have been more or less diverse, they do not have a strong economy. Due to their internal and external effects, this area faces many economic problems. They cannot be productive in farming, horticulture, animal husbandry, fisheries, tourism, and handicrafts like in the past years. The subsistence economy has been formed in rural areas. Therefore, this kind of economy has affected rural people's migration, specifically daily migration, and decreases the number of productive labor. Accordingly, the present paper aims to explore sustainable livelihood capitals in the rural areas of Langarud County in which five capitals (social, financial, human, natural, and physical) are ranked as the specific objective of the research.

METHODOLOGY

The study was carried out in the rural areas of Langarud County in Guilan province, Iran. It is also a descriptive survey in terms of variable control. The statistical population was composed of the residents of rural areas in Langarud County (amounting to 38,904 families), out of which 180 were sampled based on convenience sampling. Given the population of different rural districts of the county, the sample was taken from seven rural districts by the random technique. The data collection instrument was a researcher-made questionnaire designed by the deep review of the Sharifi et al. 2017 (Table 1). The validity was checked by face validity. The validity of the questionnaire was confirmed by a group of experts. To check the reliability of the questionnaire, a pilot study was conducted out of the research area and Cronbach's alpha was estimated to be 0.76. Overall, livelihood capitals were measured by assessing social, financial, human, natural and physical capitals. The data were analyzed by descriptive statistics including frequency, percentage, mean and standard deviation in the $SPSS_{19}$ software package. The levels of the capitals were measured by the confidence interval formula as shown below. It is calculated by the mean and standard deviation of each capital. The results are presented in Table 4.

$$A < \bar{X} - \frac{1}{2}SD \rightarrow A < 1.76$$

$$\bar{X} - \frac{1}{2}SD < B < \bar{X} + \frac{1}{2}SD \rightarrow 1.76 < B < 1.89$$

$$C > \bar{X} + \frac{1}{2}SD \rightarrow C > 1.89$$

RESULTS AND DISCUSSION

Most participants were male and they were mostly married. A majority of the respondents were in the age range of 50-60 years while the average age of the participants was about 48 years. The average family size was about three. Also, about two people were, on average, employed in each family (Table 2).

Social capital included five components of social trust, social network, social solidarity, social norm, and social participation. According to Table 3, the average score assigned by the respondents to social capital was 1.89 with a standard deviation (SD) of 0.25 ranging from 1.30 to 2.5. The average score for financial capital was 1.62 (SD = 0.55) with a minimum of 1.00 and a maximum of 3.00.

Table 1

Five Capitals of Sustainable Livelihood and How They Are Measured

Capital	Component	Indicator
Social	Social trust	People's being trustable, trusting family members, trusting neighbors, trusting friends, trusting relatives and acquaintances, lending work tools to others, lending to others when one can
	Social network	Possibility of asking for help from neighbors in routine activities, possibility of counting on neighbors in financial needs, hanging out with neighbors, spending time with family members, spending time with friends, counting on friends' help in financial needs, hanging out with friends, counting on family's help in financial needs
	Social solidarity	Tribal conflicts in the village, political conflicts among the villagers, disputing on unimportant issues, hanging out with villagers and asking about each other, people's helping each other when required
	Social norm	Respecting the rules of the village such as neatness, not bothering other villagers and so on, adhering to the traditional system of the villager, respecting the traditions including local customs, wearing local attire
	Social participation	Participating in local decision-making such as decision to improve streets, etc., visiting various fairs such as local product supply exhibits, participating in mourning, weddings, etc., participating in group works such as dredging irrigation canals and irrigation networks, participating in religious councils and gatherings, participating in charities such as donating to build schools and mosques, participating in supplying the cost or labor for projects at the rural level
Financial	Income	The income of the primary and second jobs
	Access to loans	The extent of access to bank loans and credits, ability to repay the loans, use of loans to launch businesses
Human	Education	Number of educational years, number of family members with a diploma or a higher degree
	Health	The use of the standard SF-36 questionnaire that measures the health-related life quality in eight domains by 36 items (Montazeri et al., 2005)
	Skill	Attending technical and vocational training courses, ability and skill to do own job, ability to convey own abilities and skills to others like children, friends, or relatives, interest in learning new skills
	Innovation	Interest to do new things, enjoying the construction of new things, creativity in making different things, interest in doing new and unusual things
Natural	Land	The status of the agricultural and horticultural land in ownership
	Soil	Application of chemical fertilizers in agricultural lands, application of chemical fertilizers in horticultural lands, leaching and erosion of soil in agricultural and horticultural lands, application of manure in agricultural activities, villagers' attention to conservation, villagers' attention to land defragmentation and leveling projects, caring for crop rotation by farmers, extent of the application of vertical plowing
	Water	The extent of access to groundwater tables, the extent of access to river and spring water, water pollution level
	Vegetation cover	Vegetation cover diversity including pastures and the presence of different plants in them, application of tree wood as fuel, application of pastures to collect medicinal plants, The extent of pasture use for fodder and livestock grazing
Physical	Home quality/quantity	Construction method, ownership, material type, ceiling type, floor type
	Home facilities	Bathroom, cooling facilities, adequate rooms
	Primary life furniture/appliances	Refrigerator and freezer, heater, stove, carpet
	Access to transportation tools	Bicycle, horst, working animal, motorcycle, truck, car
	Access to energy	Health drinking water, electricity, gas
	Access to communication tools	Radio and TV, the Internet, service offices
	Access to machinery	Tractor, water pump, tiller, pesticide sprayer

The participants assigned an average score of 1.85 (SD = 0.39) to human capital ranging from 1.08 to 2.60. The average score for natural capital was 1.80 (SD = 0.36) with the lowest and highest scores being 0.517 and 3, respectively. Finally, physical capital was assigned 1.80 on average (SD = 0.36), but it was in the range of 0.577 (Table 3).

Table 2
Demographic Characteristic

Features	Frequency	Valid percent
Gender		
Male	134	74.9
Female	45	25.1
No response	1	-
Marriage Status		
Married	142	79.3
Single	37	20.7
No response	1	-
Age		
30 and less	20	11.2
30-40	38	21.2
40-50	38	21.2
50-60	58	32.4
60-70	18	10.1
70 and above	7	3.90
No response	1	-
Family Member		
1 - 3	111	63.1
3-6	56	31.8
More than 6	9	5.10
No response	4	-
Employed Members of Family		
None	1	1.00
1 - 2	62	60.8
2-4	31	30.4
4-6	8	7.80
No response	78	-

Table 3
Average of Capitals (n=180)

Capitals	Minimum	Maximum	Mean	Standard deviation
Social	1.30	2.5	1.89	0.25
Financial	1.00	3.00	1.62	0.55
Human	1.08	2.60	1.85	0.39
Natural	1.0	3	1.65	0.29
Physical	0.517	3	1.80	0.36

The levels of sustainability capitals among the rural people in Langarud County were schematically displaced by a pentagram diagram (Figure 1) in which the levels of the five capitals can be visually compared. The diagram shows that social capital is in the first rank, human capital in the second rank, physical capital in the third rank, natural capital (1.65) in the fourth rank, and financial capital (1.62) in the fifth rank.

The first, second and third groups had a score of <1.76, 1.76-1.89 and >1.89 in social capital, respectively. Of all the participants, 33.3 percent belonged to the first group, 17.8 percent to the second group, and 48.9 percent to the third group. Based on the formula of confidence interval for financial capital, the scores were <1.07, 1.07-1.62 and >1.62 for the three groups and they contained 31.7 percent , 14.4 percent and 53.9 percent of the respondents, respectively. The scores for the first, second and third groups at the level of human capital were <1.65, 1.65-1.85, and 1.85, respectively. Among the respondents, 32.8 percent were categorized in the first group, 12.8 percent in the second group, and 54.4 percent in the third group. The first group in natural capital, whose score was <1.50, contained 33.9 percent of the respondents, the second group whose score was 1.50-1.65 contained 20.2 percent of the respondents, and the third group whose score was >1.65 contained 45.0 percent. The scores of the three groups in physical capital were <1.62, 1.62-1.98, and >1.98, respectively. As is evident in Table 3, 27.2 percent belonged to the first group, 53.9 percent to the second group, and 18.9 percent to the third group.

CONCLUSIONS AND RECOMMENDATIONS

The results of the study on five sustainable livelihood capitals in the rural areas of Langarud County revealed that the rural people were in the best condition in terms of social capital. In a similar study by Sojasi Qidari (2016), social capital was ranked the first among the five capitals.

The second rank was for human capital followed by physical, natural and financial capitals in the next ranks. The ranking of the

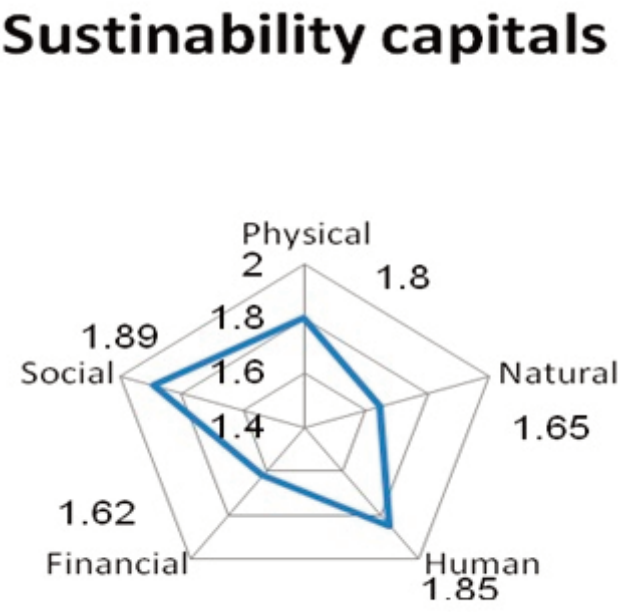

Figure 1. A pentagram diagram of sustainability capitals

Table 4
Levels of Capitals

	Frequency	Percentage
Low social capital (<1.76)	60	33.3
Moderate social capital (1.76-1.89)	32	17.8
High social capital (>1.89)	88	48.9
Low financial capital (<1.07)	57	31.7
Moderate financial capital (1.07-1.62)	26	14.4
High financial capital (>1.62)	97	53.9
Low human capital (<1.65)	59	32.8
Moderate human capital (1.65-1.85)	23	12.8
High human capital (>1.85)	98	54.4
Low natural capital (<1.50)	61	33.9
Moderate natural capital (1.50-1.65)	38	20.2
High natural capital (>1.65)	81	45.0
Low physical capital (<1.62)	49	27.2
Moderate physical capital (1.62-1.98)	97	53.9
High physical capital (>1.98)	34	18.9

human, natural and financial capitals is similar in Fang and HaiYang (2012). When it comes to social capital, one can say that rural people trust their family members. They will lend money to relatives and people who need money if they have enough financial capability. In addition, they have no problem in lending their working tools to others. In addition, they can count on their family in case they have financial problems. They spend adequate time with their families every day. The studied people spend some time with their friends every day. The village residents do not dispute on unimportant issues and they have solidarity. These people visit one another frequently. They also help each other when they have a problem. The residents observe the traditional system of the village strictly. They also show significant respect for traditions such as local rites and attire. The villagers actively participate in religious gatherings and rituals. They take part in their mourning or wedding rituals. They are present in charities such as helping in the construction of schools, mosques, and so on. With respect to financial capital, it can be said that farming was the main job for most respondents. Most of them had a monthly income of 10-20 million IRR. In addition, the villagers stated that they had used bank loans for launching businesses. They can also repay their loans. They have access to bank credits and loans. In human capital, the rural people perceive that they are in an excellent health condition and they think that they are as healthy as the others. They expect that they lose their health gradually. They like learning new skills and stated that they need to be highly capable and skillful for their job (e.g. farming). They can convey their skills and capabilities to others like their children, friends, and relatives. The villagers enjoy making new things and are interested in doing new things. Also, they are creative in making different things. The results for natural capital indicated that the rural people have welcomed the projects of land defragmentation and leveling. Furthermore, it is of crucial importance for the farmers to follow agronomic rotation (not planting a single crop in two consecutive years). Access to river and spring water is high and water sources are highly polluted. They have high access to groundwater tables. Pastures are extensively used for grazing and the region enjoys a highly diverse plant cover in its pastures. The results about physical capital showed that most studied people had relatively new home and most were the owners of their own homes. Almost all studied villagers had bathrooms in their homes and most had enough

rooms. Most rural people had access to drinking water, power grid, telephone network, Internet connection, and service agencies. Few villagers had tractors, tillers, or pesticide sprayers.

Given the moderate and low level of sustainability capitals in the villages of Langarud County, it is recommended to the planners to develop plans for improving these capitals to achieve rural development.

Attempts should be made to enhance farmers' awareness of what they have and to change their attitude towards what they feel in their life and/or they see in nature. For example, they should perceive the surrounding nature as capital. They should even perceive the social relationships they have in their life as capital. This can be obtained through training and promotion by responsible organizations.

The economic potential of rural areas is not identified and profiled in this research. Therefore, it is recommended to conduct a study in rural areas that can identify rural economic opportunities. Migration from rural areas leaves behind the elderly people that cannot effectively use their talent and creativity to unlock the economic potential in rural areas. The economic opportunities in rural areas can cap migration to urban areas. So, rural areas have the potential to sustain themselves economically if economic opportunities are identified and unlocked.

ACKNOWLEDGEMENTS

The authors would like to thank everyone who participated in this research and the anonymous reviewers for their helpful comments.

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How to cite this article:
Rezadoost, H., Estelaji, A., & Vali Shariat Panahi, M. (2020). Assessment of the sustainable rural livelihoods assets in Langroud County. *International Journal of Agricultural Management and Development, 10*(4), 323-332.
URL: http://ijamad.iaurasht.ac.ir/article_677782_f11be3cc3f8f99c25ab126c7f41e90d0.pdf