



**Original Article**

## **Assessing the Role of Non-Governmental Organizations in Rural Sustainable Development (Case Study: Zehak County)**

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### **Abstract**

**Purpose-** Non-governmental organizations (NGOs) play a significant role in the process of sustainable development and the social vitality of communities. These organizations focus on strengthening the economic and social capacities of marginalized groups, addressing general public issues, and sometimes tackling the challenges of specific social strata. In the age of globalization, sustainable development of a society depends on resolving its environmental, economic, and social problems.

**Design/methodology/approach-** This study adopts a descriptive-analytical approach and was conducted in the villages and among the households of Zahak County, located in Sistan and Baluchestan Province. Using Cochran's formula and questionnaires, 21 villages were selected as the sample, comprising 358 households. In order to obstacles to the growth and expansion of non-governmental organizations in the rural areas of Zahk county. To further assess the relationship between NGOs and sustainable development, **Analysis of Variance (ANOVA)** was employed. Additionally, the **Fuzzy Analytic Hierarchy Process (FAHP)** was applied to identify the most influential factors contributing to the effectiveness of NGOs. Finally, the **Fuzzy TOPSIS method** was used to prioritize the villages based on the role of NGOs in sustainable development.

**Findings-** The results of the research indicate that the impact of NGOs on rural development dimensions has been generally unfavorable, with only the socio-cultural dimension showing a significant effect (Beta coefficient: 0.311), while other dimensions demonstrated negligible influence.

**Practical Implications-** According to the research findings, investing in and implementing socio-cultural programs can help expand NGOs and improve the current condition of villages in Zahak County towards sustainable development.

**Originality/Value-** Although previous research has been conducted in various regions of Iran, the distinct characteristics of Zahak County -where this study is focused- limit the applicability of earlier findings. Consequently, new research is necessary to address the specific conditions of this area. Zahak County faces unique challenges, particularly due to the cessation of water flow from the Helmand River by the Afghan government. This disruption has significantly impacted local livelihoods and altered environmental conditions, creating circumstances that warrant dedicated investigation.

**Keywords-** Rural areas, Sustainable rural development, Non-governmental organizations (NGOs), Zahak County.

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## 1. Introduction

In the field of rural development and particularly in the planning and management of rural development, numerous executive bodies with overlapping responsibilities are involved (Rezvani, 2002). Among the facilitating institutions in the process of community development in the era of globalization are non-governmental and civil society organizations, hereafter referred to as NGOs (Moradi & Hamidi, 2020). NGOs are considered a modern phenomenon in the social life of communities (Ghaneirad & Hosseini, 2005: 97). These organizations represent a type of institutional structure characterized by legal independence from the government, non-profit status, and voluntary and participatory decision-making structures (Smith, 1989). NGOs are independent, flexible, democratic, and non-profit entities that focus their activities on strengthening the economic and social capacities of marginalized groups, addressing general societal. The general principle of all non-governmental organizations is public participation in achieving issues, and sometimes resolving the challenges of specific social classes (Lester et al., 1996). (balanced and sustainable development, ultimately leading to the creation of an advanced civil society (Barari et al., 2012). Sustainable development has been widely accepted by scientists, governments, international institutions, and private companies as a response to contemporary economic, environmental, and social crises (Soltanipour & Damari, 2016).

In most provinces of Iran, rural NGOs have been established to enable rural empowerment. A fundamental challenge in empowerment is that it is often considered a "hidden phenomenon" and not directly observable (Kazi et al., 2017). In other words, empowerment means the ability to make choices and gain power (Li et al., 2011). In this context, the province of Sistan and Baluchestan is still in its early stages concerning the formation of NGOs. The present study aims to evaluate the role of these organizations in the sustainable development of rural areas in Zahak County through two main stages: recognition and planning. In the first stage, the study seeks to understand the current conditions of the region's villages in relation to NGOs, identifying both the facilitating and inhibiting factors and the extent of NGO

influence on local rural development. In the second stage, based on the findings of the first phase, a set of planning recommendations is proposed to empower NGOs in fostering sustainable development in the target area.

Given these objectives, the study attempts to answer the following key questions:

1. What is the most significant factor contributing to the expansion of NGOs in the rural areas of Zahak County?
2. Which dimensions of sustainable development do non-governmental organizations have the greatest impact on?

By answering these questions, the study seeks to analyze the formation process and effectiveness of successful local NGOs and propose them as models for similar initiatives in other rural target areas.

## 2. Research Theoretical Literature

Development can be considered the ultimate goal of every planning system, which has accelerated in all aspects of human life and, in many cases, has even influenced the customs, traditions, and beliefs of societies (Moti'i Langroodi & Hajipour, 2018). Structural groundwork in four general dimensions can lead to the proper functioning of the sustainable development process. These dimensions include environmental-ecological, socio-cultural, economic-political, and physical-spatial (Saeedi, 2013).

NGOs serve as the best representatives of their communities and act as facilitators of meaningful dialogue between society and government, which can ultimately lead to societal resilience (Fitzpatrick et al., 2014). Improving environmental conditions, enhancing the welfare of underprivileged groups, promoting collective initiatives, and fostering a sense of responsibility are among the goals of forming NGOs (Sobhani Moghaddam et al., 2017). One possible reason for the limited presence of these organizations is the insufficient support from other governmental bodies, coupled with their marginalization from key societal affairs in recent years (Peyravisi & Shirkhani, 2020). One key strategy for achieving sustainable community development is the presence of vibrant and capable NGOs that can contribute their capacities to a comprehensive and participatory development process (Balouei Jamkhaneh et al., 2011). NGOs include independent cooperatives, women's groups, and

rural associations (Mohammadi & Navabakhsh, 2014).

### 2.1. Previous Studies on the Role of NGOs in Sustainable Development

- Naderi Khorshidi (2010), in a study titled *"The Role of NGOs in Social Engineering"* using content analysis and fuzzy logic, emphasizes that systematic interaction among the governmental, private, and public sectors leads to community advancement and development.
- Alal-Hesabi (2011), in a study titled *"The Role of NGOs and Local Leaders in Rural Development"*, investigated the port town of Laft using a qualitative and participatory approach and believes that the high capacity for public participation in Laft had a significant and accelerating effect on the development of the village.
- Javani et al. (2017), in their research titled *"The Status of NGOs in Villages: Formation Processes, Effects, and Consequences – Case Study: Villages of Rashtkhar County"*, found that NGOs enhance villagers' access to training programs, raise awareness, diversify job opportunities, and promote scientific outreach activities necessary for the prosperity of NGOs in various regions.
- Sobhi Moghaddam et al. (2017), in a study titled *"Designing a Model for the Formation of NGOs: Conditions, Interactions, and Consequences (Case Study: Kikha Village, Zabol County)"*, emphasized that local NGOs play a constructive role in improving social and cultural life, increasing income, enhancing health, empowering communities through modern education, protecting the environment, and emphasizing the role of women and other internal and external influencing factors.
- Yazdanpanah & Ghazalsafrou (2019), in a study entitled *"Exploring the Role of Non-Governmental Organizations in Achieving Sustainable Rural Development (Case Study: Golestan Province)"* using a descriptive non-experimental research method, found that non-governmental organizations, particularly in terms of knowledge-communication and economic factors, play the most significant role in achieving sustainable rural development
- Khosravipour & Asadi (2019), in a paper titled *"The Role of NGOs in Sustainable*

*Development"* in a review article based on library resources and internet websites, recognized NGOs as facilitators of development through cooperation among people, government, and the private sector.

- Naderi et al. (2019), in a study titled *"Examining the Relationship Between NGO Functions and Modern Sustainable Development Indicators (Case Study: Kermanshah Province NGOs)"* using a descriptive-survey research method, believe that, concluded that NGOs can significantly contribute to regional empowerment by attracting specialized volunteers and focusing on the interests of specific groups.
- Shafiee Sabet and Mirvahedi (2020), in their research *"Planning Model Based on New Paradigms in Pakdasht and Surrounding Areas"* using a descriptive-analytical method, concluded that, found that villagers have not played a significant role in sustainable development or participatory planning. They emphasize the importance of improving planning methods and adopting new paradigms to better understand rural issues and guide sustainable rural development.
- Peyravisi & Shirkhani (2020), in a study titled *"The Role of Women's Participation in Enhancing NGO Capabilities"*, identified factors highlighting women's role in strengthening NGOs and concluded that financial support plays a critical role in their development.
- Sourshramana (2015) studied *"The Role of NGOs in the Development of Rural Areas in Southern India"*, concluding that NGOs significantly contribute to promoting and implementing development programs in rural areas, positively affecting economic conditions, social status, and personal growth. The study emphasized the importance of government financial and institutional support for NGOs.
- Nyangau et al. (2016), in a study titled *"The Role of NGOs in Social Development in Developing Countries"*, found that in social development challenges, the government and international communities act as a team, with NGOs playing a key role in educating all stakeholders.
- Hartmann et al. (2019), in their research on the role of NGOs in enhancing social capital and innovation in Peru (2003–2018), concluded that NGOs have significantly contributed to rural development across different development stages.

• [Goudarzi Firouzi & Kouchaki \(2020\)](#), in their article \**“Structural Equation Modeling of the Factors Affecting the Realization of Rural Knowledge-Based Development (Case Study: Dehkadeh Village, Hamidiyeh County)”*\*, using a descriptive-analytical and survey method, concluded that reducing government intervention and strengthening and supporting voluntary non-governmental public institutions will lead to knowledge-based development and sustainable rural development.

• [Boozarjomehri & Javani \(2020\)](#), in a study entitled \**“The Role of Non-Governmental Organizations in Empowering Rural Women in Rashtkhar County”*\*, using a qualitative research method, showed that NGOs in rural areas with suitable conditions have various economic, social, and environmental effects, and in the

environmental dimension, they contribute to the empowerment of rural women

• [Keita et al. \(2022\)](#) argued that despite annual multi-million-dollar investments in irrigation development in coastal African countries, the transition from government-led to NGO-led development has not significantly changed the vulnerability of local populations over the past 60 years.

This comprehensive literature review reveals that both NGOs and government institutions must collaborate to improve service delivery and ensure dynamic and effective NGO operations. NGOs, rooted in humanitarian service, can complement government efforts by empowering individuals, fostering participation in rural development, and addressing deficiencies in governmental organizations. With proper investment and planning, NGOs can help rural communities thrive and create favorable conditions for sustainable development.

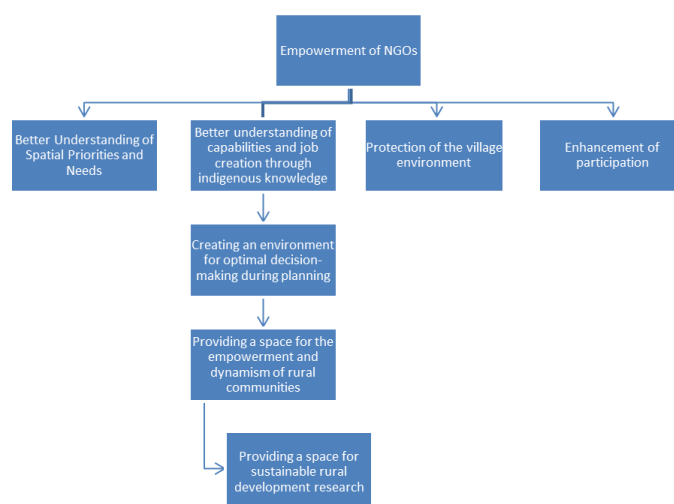


Figure 1. The Role of NGOs in Sustainable Development of the Villages in Zahak County

### 3. Research Methodology

#### 3.1 Geographical Scope of the Research

Zahak County is located in the northern part of Sistan and Baluchestan Province, in the eastern section of the Sistan plain. The county spans an area of 950 square kilometers, accounting for approximately 0.5% of the province's total area. The county is located at 30° 45' to 30° 55' N latitude and 61° 70' 67" to 61° 50' E longitude.

(Heidari et al., 2016: 55). Zahak County, with a population of 74896 and an area of 950 km<sup>2</sup>, consists of two districts: Central and Jazinak. It includes four rural districts: Zahak, Khwaja Ahmad, Jazinak, and Khamak, and contains 203 villages in total. The distance from the county center to the provincial capital is 213 kilometers, and the distance to Tehran is approximately 1,518 km. The county sits at an elevation of 483 meters above sea level.



According to the 2016 census by the Statistical Center of Iran, Zahak County had about 17,849 households and a total population of 74,896. Among the rural districts, Zahak and Khwaja Ahmad had the highest (30,493) and lowest (9,342)

population, respectively. Gender demographics varied, with women outnumbering men in Jazinak and Khamak, and men outnumbering women in Khwaja Ahmad and Zahak (Statistical Center of Iran, 2016).

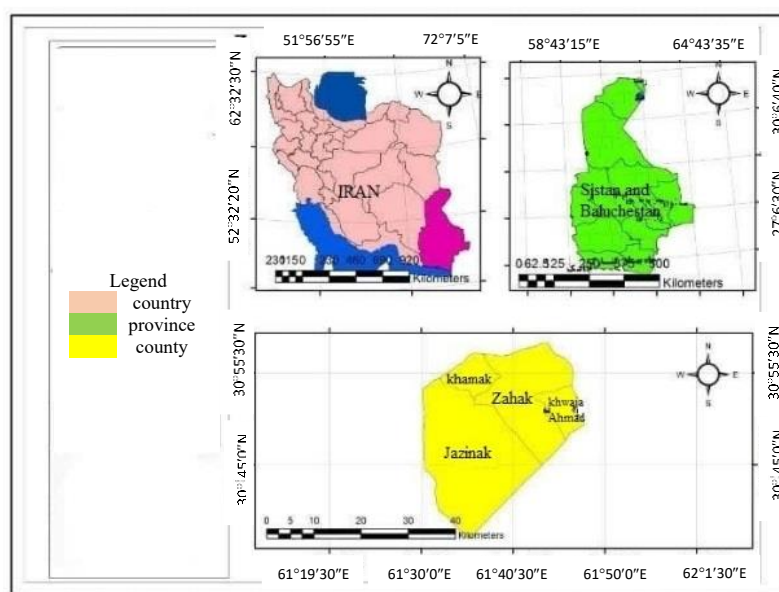


Figure 2. the study Location

### 3.2. Methodology

This study is applied in nature and adopts a combined descriptive-analytical and case study approach. The villages of Zahak County served as the study area, with resident villagers constituting the unit of analysis. Data collection employed both documentary (library-based) and field (survey-based) methods.

To determine the sample size, the total number of villages in the study area was first identified. Using Cochran's formula, 21 villages were randomly selected as sample villages through stratified sampling. Then, based on the number of households in each selected village and again using Cochran's formula, a sample size of 358 households was determined. Proportional to the number of households in each village, the number of sampled households was calculated, and questionnaires were completed through random selection and direct interviews with village residents.

The study was conducted in two stages: assessment and planning. In the assessment stage, data were gathered through documentary and field methods, with field data collected using structured

questionnaires. To analyze the data, statistical tools such as the **one-sample t-test** were used to evaluate the effects of NGOs on various aspects of sustainable development in the study area.

### 4. Research Findings

The findings are presented in two sections: **Recognition** and **Planning**.

#### 4.1. Findings from the Recognition Phase

To depict the existing spatial context of the villages in the region and to achieve a comprehensive understanding, the data collected during the recognition phase are presented as follows:

#### Respondents' Characteristics

##### a. The Impact of NGOs on Dimensions of Rural Sustainable Development:

In this section, a one-sample t-test was applied. The results are summarized in Tables 1 to 4 as follows:

##### b. Quality of the Relationship Between NGOs and Rural Sustainable Development:

The outcomes of this analysis are shown in Tables 5 and 6.

#### 4.2. Second Section: Planning

The findings obtained from the recognition phase indicate that the greatest impact of NGOs among

the dimensions of sustainable development is in the socio-cultural dimension. In villages with capable NGOs (as shown in Table 9), positive growth in community participation in rural projects has been observed. In these villages, NGOs have been able, to some extent, to facilitate access to healthcare and other services by identifying local problems and communicating them to authorities. They have also fostered social unity and cohesion among the residents. Another notable socio-cultural effect of these NGOs is encouraging villagers to preserve natural resources and the environment through religious, spiritual, and Quranic teachings.

From these findings, it can be inferred that when planning to empower and revitalize NGOs, system orientations, investments, and program designs should focus on utilizing socio-cultural capacities. Additionally, the results from Tables 2 to 5 indicate that the economic and physical structures in the study area's spatial context are inadequate. These findings suggest that, alongside socio-cultural program development, functional, economic, and

physical revitalization of the region must also be addressed to ultimately create a spatial environment conducive to NGO empowerment and dynamism.

According to supplementary questionnaires, 64.5% of respondents were male, and 35.5% were female. The highest relative frequency belonged to the age group 41 to 50 years (29.1%). Regarding education levels, the majority held a diploma (27.4%), while the lowest frequency was among illiterate respondents (7.5%).

**Response Rate to the Evaluation of the Role of NGOs in Rural Sustainable Development Based on Sustainable Development Indicators-** Among 20 social-cultural indicators examined, the means of 12 items were below the desired average, while 8 items exceeded it. The item "Giving importance to the position of local village managers" with a mean of 3.656 had the highest mean score, whereas "Increasing welfare facilities" with a mean of 1.908 had the lowest. Overall, the socio-cultural index, with a mean of 2.809, was below the average level.

**Table 1- Evaluation of the Role of NGOs in Rural Sustainable Development from the Socio-Cultural Indicator Perspective Using One-Sample t-Test (Test Value = 3)**

| Item                                                                              | Mean         | t-Statistic   | Significance (p) | Mean Difference | 95% Confidence Interval for Mean Difference |
|-----------------------------------------------------------------------------------|--------------|---------------|------------------|-----------------|---------------------------------------------|
|                                                                                   |              |               |                  |                 | Lower Bound                                 |
| Increasing Public Participation                                                   | 3.162        | 3.176         | 0.002            | 0.162           | 0.062                                       |
| Creating, Expanding, and Strengthening Coordination Between People and Government | 3.120        | 2.137         | 0.033            | 0.120           | 0.010                                       |
| Increasing Participation in Group Activities (Mutual Aid)                         | 2.774        | -3.925        | 0.000            | -0.226          | -0.340                                      |
| Appropriate Access to Medical Services                                            | 3.148        | 2.537         | 0.012            | 0.148           | 0.033                                       |
| Appropriate Access to Sanitary Water                                              | 2.059        | -13.764       | 0.000            | -0.941          | -1.076                                      |
| Improving Existing Educational Spaces                                             | 2.444        | -8.886        | 0.000            | -0.556          | -0.679                                      |
| Assisting in Literacy and Education in the Village                                | 1.911        | -16.156       | 0.000            | -1.089          | -1.222                                      |
| Building Trust Among Villagers                                                    | 2.064        | -12.595       | 0.000            | -0.936          | -1.819                                      |
| Increasing Welfare Facilities                                                     | 1.908        | -16.772       | 0.000            | -1.092          | -1.220                                      |
| Creating a Sense of Responsibility                                                | 2.564        | -6.148        | 0.000            | -0.436          | -0.575                                      |
| Increasing Assistance to Villagers During Natural Disasters                       | 2.430        | -9.094        | 0.000            | -0.570          | -0.693                                      |
| Holding Consultative and Synergistic Meetings                                     | 2.637        | -6.931        | 0.000            | -0.363          | -0.466                                      |
| Attention to Spirituality and Justice Among Villagers                             | 3.098        | 2.047         | 0.041            | 0.098           | 0.004                                       |
| Transferring Village Problems to Officials                                        | 3.693        | 13.927        | 0.000            | 0.693           | 0.595                                       |
| Unity and Solidarity                                                              | 3.369        | 9.199         | 0.000            | 0.369           | 0.290                                       |
| Empowerment of Women and Youth                                                    | 3.464        | 10.260        | 0.000            | 0.464           | 0.375                                       |
| Valuing the Position of Local Village Managers                                    | 3.656        | 15.724        | 0.000            | 0.656           | 0.574                                       |
| Enhancing the Status of Indigenous Rural Knowledge                                | 2.841        | -2.708        | 0.007            | -0.159          | -0.274                                      |
| Continuous Attention to Educational Programs                                      | 2.838        | -2.772        | 0.006            | -0.162          | -0.277                                      |
| Improving Quality of Life                                                         | 2.838        | -2.811        | 0.005            | -0.162          | -0.275                                      |
| <b>Overall (Socio-Cultural)</b>                                                   | <b>2.801</b> | <b>-6.353</b> | <b>0.000</b>     | <b>-0.199</b>   | <b>-0.261</b>                               |

The results regarding the economic indicator indicate that, among the 14 examined items, the means of 3 items were below the desired average. Overall, the economic indicator was evaluated as favorable with a mean of 3.229. Additionally, the

means of 9 items exceeded the desired average. The item "Support for vulnerable and low-income groups" recorded the highest mean at 4.061, while the item "Income empowerment of rural residents" had the lowest mean at 2.592.

**Table 2. Evaluation of the Role of NGOs in Rural Sustainable Development from the Economic**

| Item                                                        | Mean         | t-Statistic  | Significance (p) | Mean Difference | 95% Confidence Interval for Mean Difference |
|-------------------------------------------------------------|--------------|--------------|------------------|-----------------|---------------------------------------------|
|                                                             |              |              |                  |                 | Lower Bound                                 |
| Creation and Support of Home-Based Workshops                | 4.061        | 15.614       | 0                | 1.061           | 0.928                                       |
| Attention to Cooperatives and Microcredit Funds             | 3.656        | 16.165       | 0                | 0.656           | 0.557                                       |
| Provision of Supportive Employment Packages in Agriculture  | 3.455        | 9.174        | 0                | 0.455           | 0.358                                       |
| Attention to Quality of Indigenous Products and Handicrafts | 3.433        | 8.793        | 0                | 0.433           | 0.336                                       |
| Existence of Local Funds                                    | 3.369        | 5.964        | 0                | 0.369           | 0.241                                       |
| Mobilization of Small Public Resources (Resource Gathering) | 3.288        | 5.147        | 0                | 0.288           | 0.178                                       |
| Identification of Opportunities to Improve Rural Income     | 3.204        | 3.444        | 0.001            | 0.204           | 0.087                                       |
| Interaction with Financial and Credit Institutions          | 3.198        | 3.317        | 0.001            | 0.198           | 0.081                                       |
| Creation of New Jobs                                        | 3.187        | 3.009        | 0.003            | 0.187           | 0.065                                       |
| Capacity Building and Self-Reliance of Rural Residents      | 3.126        | 2.184        | 0.03             | 0.126           | 0.012                                       |
| Support for Vulnerable and Low-Income Groups                | 3.114        | 2.122        | 0.035            | 0.114           | 0.008                                       |
| Increase in Overall Household Income                        | 2.83         | -2.773       | 0.006            | -0.17           | -0.291                                      |
| Facilitation and Increase in Receiving Employment Loans     | 2.707        | -4.438       | 0                | -0.293          | -0.423                                      |
| Income Empowerment of Rural Residents                       | 2.592        | -6.379       | 0                | -0.408          | -0.534                                      |
| <b>Overall (Economic)</b>                                   | <b>3.229</b> | <b>8.061</b> | <b>0</b>         | <b>0.229</b>    | <b>0.173</b>                                |

**Environmental Indicator Results-** The results related to the environmental indicator show that among the 9 items examined, the mean scores of 6 items fall below the desired benchmark, while 3 items have means above the benchmark. The item "Biodiversity Conservation" received the highest

mean score of 4.279, whereas the item "Assistance in Combating Drought and Its Environmental Impacts" had the lowest mean score of 2.274. Overall, the environmental indicator was evaluated as unfavorable with an average score of 2.830.

**Table 3. Evaluation of the Role of NGOs in Rural Sustainable Development Based on the Environmental Indicator Using One-Sample t-Test (Test Value = 3)**

| Item                                            | Mean         | t-Statistic   | Significance (p) | Mean Difference | 95% Confidence Interval for Mean Difference |
|-------------------------------------------------|--------------|---------------|------------------|-----------------|---------------------------------------------|
|                                                 |              |               |                  |                 | Lower Bound                                 |
| Hygienic Waste Collection                       | 3.765        | 25.158        | 0.000            | 0.765           | 0.705                                       |
| Reduction of Environmental Pollution            | 3.179        | 2.928         | 0.004            | 0.179           | 0.059                                       |
| Sanitary Condition of Public Spaces             | 2.321        | -8.362        | 0.000            | -0.679          | -0.838                                      |
| Condition of Green Spaces                       | 2.321        | -8.802        | 0.000            | -0.679          | -0.830                                      |
| Biodiversity Conservation                       | 4.279        | 21.369        | 0.000            | 1.279           | 1.162                                       |
| Assistance in Combating Drought and Its Impacts | 2.274        | -9.386        | 0.000            | -0.726          | -0.878                                      |
| Reduction of Environmental Pressures            | 2.606        | -5.076        | 0.000            | -0.394          | -0.546                                      |
| Environmental Improvement                       | 2.427        | -7.107        | 0.000            | -0.573          | -0.731                                      |
| Vulnerability Reduction                         | 2.302        | -9.453        | 0.000            | -0.698          | -0.844                                      |
| <b>Overall (Environmental)</b>                  | <b>2.830</b> | <b>-3.828</b> | <b>0.000</b>     | <b>-0.169</b>   | <b>-0.256</b>                               |

### Physical (Built Environment) Indicator Results-

The results of the physical indicator reveal that all 9 examined items have mean scores below the desired benchmark. Among these, the item "Improvement of Infrastructure Facilities" holds

the highest mean score of 2.405, while "Increased Access to Renewable Energy Sources" has the lowest mean of 2.128. Overall, the physical indicator was evaluated as unfavorable with an average score of 2.310.

**Table 4. Evaluation of the Role of NGOs in Rural Sustainable Development Based on the Physical Indicator Using One-Sample t-Test (Test Value = 3)**

| Item                                                                      | Mean         | t-Statistic    | Significance (p) | Mean Difference | 95% Confidence Interval for Mean Difference |
|---------------------------------------------------------------------------|--------------|----------------|------------------|-----------------|---------------------------------------------|
|                                                                           |              |                |                  |                 | Lower Bound                                 |
| Access and Communication Routes                                           | 2.307        | -9.267         | 0.000            | -0.693          | -0.840                                      |
| Increased Access to Renewable Energy Sources                              | 2.128        | -11.184        | 0.000            | -0.872          | -1.025                                      |
| Access to Public Transportation                                           | 2.299        | -8.716         | 0.000            | -0.701          | -0.859                                      |
| Increased Access to Mass Communication Devices                            | 2.422        | -6.592         | 0.000            | -0.578          | -0.751                                      |
| Increased Access to Infrastructure (Electricity, Water)                   | 2.357        | -7.813         | 0.000            | -0.643          | -0.804                                      |
| Improvement of Infrastructure Equipment                                   | 2.405        | -7.644         | 0.000            | -0.595          | -0.748                                      |
| Compatibility of Executed Plans with Rural Environment                    | 2.207        | -10.477        | 0.000            | -0.793          | -0.942                                      |
| Attention to Establishment of Cultural, Educational, Health Centers, etc. | 2.355        | -7.912         | 0.000            | -0.645          | -0.806                                      |
| <b>Overall (Physical)</b>                                                 | <b>2.310</b> | <b>-10.201</b> | <b>0.000</b>     | <b>-0.690</b>   | <b>-0.823</b>                               |

### Multivariate Regression Analysis of the Impact of NGOs on Rural Sustainable Development in Zahak County-

The result showed that the adjusted coefficient of determination ( $R^2$ ) was found to be 0.682, indicating that the independent

variable explains 68.2% of the variance in the dependent variable. This demonstrates a highly significant relationship between NGOs and rural sustainable development, with the significance level reported as  $p = 0.000$ .

**Table 5. ANOVA Analysis of the Impact of NGOs on Rural Sustainable Development**

| Standard Error | Adjusted $R^2$ | $R^2$ | Multiple Correlation Coefficient (R) |
|----------------|----------------|-------|--------------------------------------|
| 0.065          | 0.682          | 0.703 | 0.713                                |

The regression sum of squares is substantially higher than the residual sum of squares, and given the large F-value which is significant at the 0.01

level, it can be concluded that the model possesses a high explanatory power in explaining the dependent variables.

**Table 6. ANOVA Analysis for the Existence of a Linear Relationship Between the Impact of NGOs on Rural Sustainable Development**

| Component         | Sum of Squares | Degrees of Freedom | Mean Square | F Statistic | Significance Level |
|-------------------|----------------|--------------------|-------------|-------------|--------------------|
| Regression Effect | 8.144          | 4                  | 6.672       | 66.509      | 0.000              |
| Residual          | 2.001          | 377                | 0.001       |             |                    |
| Total             | 10.145         | 381                |             |             |                    |

The results indicate that NGOs exerted the greatest influence on the socio-cultural dimension with a beta coefficient of 0.311. Additionally, they

influenced the economic dimension with a beta of 0.243, the environmental dimension with a beta of



0.189, and the physical (built environment) dimension with a beta of 0.144.

**Table 7. Regression Coefficients of Independent Variables on the Dependent Variable**

| Variables      | Standardized Beta ( $\beta$ ) | Standard Error | Unstandardized Coefficient (B) | t Statistic | Significance (p) |
|----------------|-------------------------------|----------------|--------------------------------|-------------|------------------|
| Constant       | —                             | 0.056          | 0.455                          | 5.113       | 0.069            |
| Economic       | 0.243                         | 0.017          | 0.197                          | 7.445       | 0.000            |
| Environmental  | 0.189                         | 0.022          | 0.137                          | 7.654       | 0.000            |
| Socio-Cultural | 0.311                         | 0.010          | 0.262                          | 8.887       | 0.000            |
| Physical       | 0.144                         | 0.033          | 0.098                          | 6.222       | 0.000            |

Source: Research Findings, 2023

**Prioritization of Key Factors in the Expansion of NGO Activities in the Villages of Zahak County-** To prioritize the most important factors

influencing the expansion of NGO activities in the villages of Zahak County, the Fuzzy Analytic Hierarchy Process (FAHP) model was utilized.

**Table 8. Prioritization of Key Factors in the Expansion of NGO Activities in Zahak County**

| Factors              | Economic Needs   | Socio-Cultural Needs  | Environmental Needs | Physical Needs | Weight | Rank |
|----------------------|------------------|-----------------------|---------------------|----------------|--------|------|
| Economic Needs       | 1.1.1            | 0.25 / 0.33 / 5       | 2 / 3 / 4           | 4 / 5 / 6      | 0.227  | 2    |
| Socio-Cultural Needs | 2 / 3 / 4        | 1.1.1                 | 4 / 5 / 6           | 6 / 7 / 8      | 0.318  | 1    |
| Environmental Needs  | 0.25 / 0.33 / 5  | 0.166 / 0.25 / 2      | 1.1.1               | 2 / 3 / 4      | 0.186  | 3    |
| Physical Needs       | 0.166 / 0.25 / 2 | 0.125 / 0.142 / 0.166 | 0.25 / 0.33 / 5     | 1.1.1          | 0.112  | 4    |

Source: Research Findings, 2023

The results indicate that socio-cultural needs, with a weight of 0.318, were the highest priority; economic needs followed with a weight of 0.227; environmental needs ranked third with a weight of 0.186; and physical needs were last with a weight of 0.112. These represent the most important factors for the expansion of NGO activities in the villages of Zahak County.

**Prioritization of Villages in Zahak County Based on the Role of NGOs in Rural Sustainable**

**Development-**The fuzzy TOPSIS method was employed to prioritize the villages of Zahak County regarding the role of NGOs in rural sustainable development. The results indicate that Qaleh Now village, with a TOPSIS score of 0.909, Guri with 0.832, Deh Safdar Mir Beyg with 0.785, and Khamak with 0.760 ranked first through fourth respectively, reflecting their relatively favorable status compared to other villages in terms of the role of NGOs in sustainable rural development.

**Table 9: Prioritization of Zahak County Villages Based on the Role of NGOs in Rural Sustainable Development Using Fuzzy TOPSIS**

| Village             | TOPSIS Weight | Rank |
|---------------------|---------------|------|
| Hasan Khun          | 0.449         | 11   |
| Amir Nezam          | 0.373         | 15   |
| Kaftar Gey          | 0.443         | 12   |
| Qaleh Kohnneh       | 0.368         | 18   |
| Hosein Abadi        | 0.724         | 6    |
| Asghazi             | 0.617         | 7    |
| Deh Ali Akhound     | 0.343         | 19   |
| Alari               | 0.732         | 5    |
| Qaleh Now           | 0.909         | 1    |
| Mola Ghasem         | 0.390         | 17   |
| Deh Abdol Aziz      | 0.289         | 21   |
| Deh Safdar Mir Beyg | 0.785         | 3    |

| Village       | TOPSIS Weight | Rank |
|---------------|---------------|------|
| Guri          | 0.832         | 2    |
| Khwaja Ahmad  | 0.405         | 14   |
| Deh Yadegar   | 0.372         | 16   |
| Abbas Rostam  | 0.410         | 13   |
| Piri          | 0.487         | 9    |
| Khamak        | 0.760         | 4    |
| Qaleh Kang    | 0.309         | 20   |
| Malek Heidari | 0.536         | 8    |
| Deh Deraz     | 0.468         | 10   |

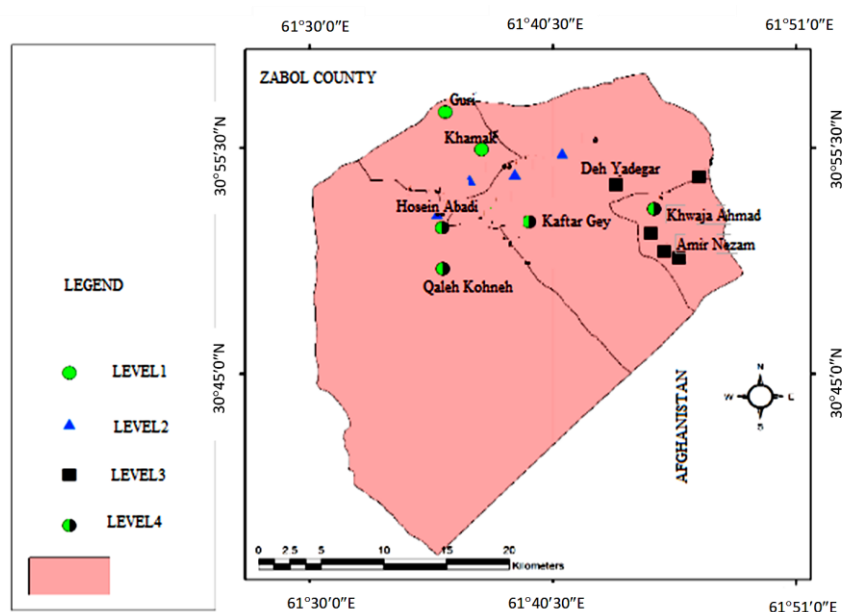


Figure 3. Priority Map of Villages in Zahak County Based on the Role of Non-Governmental Organizations in Rural Sustainable Development

## 5. Discussion and Conclusion

Although the villages of Zahak County are recognized as deprived and underdeveloped due to their prevailing geographical conditions, the formation of NGOs (Saman) in these villages has led to positive changes in their socio-cultural, economic, environmental, and physical conditions. Public participation in rural projects, which was minimal or almost non-existent before the formation of these NGOs, has now increased. Although still far from ideal, this progress has created much hope among villagers. The NGOs, by identifying the problems of the people and communicating these issues to authorities, have somewhat facilitated access to healthcare, hygiene, and other services, and fostered unity and solidarity among the villagers.

Given the spiritual values among villagers, NGOs strive to use religious and Quranic teachings and other spiritual education to encourage optimal and non-wasteful use of resources. This not only prevents environmental degradation but also helps other villages benefit from these resources. NGOs play an effective role in rural development, consistent with the findings of [Khosravipour and Asadi \(2019\)](#). However, the research showed that NGOs' role in increasing overall household income and income empowerment in rural residents has not been satisfactory, which contrasts with the findings of [Naderi et al. \(2019\)](#).

Based on the research findings, the following recommendations are proposed:

- **Utilizing NGO opinions** to align rural development project proposals with the real

needs and priorities of the villages. This will make project suggestions more realistic and increase the chances of their implementation.

- **Enhancing institutional participation:** NGOs, due to their understanding of poverty areas, priorities, and real village needs, can act as a bridge between people and relevant governmental organizations for rural development and infrastructure.
- **Economic and functional revitalization:** Relevant organizations should use the indigenous knowledge of NGOs when preparing rural development plans, leveraging their awareness of local potentials for sustainable employment suited to the region.
- **Physical revitalization and organization:** NGOs are more aware of the physical shortcomings and problems in their living spaces; thus, their input should be incorporated in rural master plans to ensure these plans address real physical needs.
- **Strengthening socio-cultural dimensions:** NGOs' socio-cultural capabilities can be harnessed to increase participation and conserve natural and environmental resources towards sustainable development.

Some efforts have been made to establish home production workshops, such as carpet weaving, handicrafts, and beekeeping, but these are limited. With support, the capacity to increase such workshops in Zahak villages exists. Considering

the villagers' livelihood status and ongoing drought, it is suggested that NGOs identify income improvement opportunities and provide employment support packages to help improve villagers' income and living conditions.

Cultural centers and libraries are very limited or absent in most villages. Actions should be taken to increase villagers' access to these facilities. Although jihadist groups provide training in Quran, Islamic teachings, and personal and public health, lack of dedicated venues and poor dissemination hinder full utilization; thus, proper measures should be undertaken.

Jihadist groups engage in house construction, distribution of stationery, remedial academic and artistic classes, and invite volunteer doctors in Zahak County. However, due to the county's size and the distances between villages and the county center, access is limited. It is recommended these activities be expanded and offered in more parts of the county.

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#### Authors contributions

The authors equally contributed to the preparation of this article.

#### Conflict of interest

The authors declare no conflict of interest.

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## ارزیابی نقش سازمان های مردم نهاد در توسعه پایدار روستایی (مطالعه موردی: شهرستان زهک)

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### چکیده مبسوط

#### ۱. مقدمه

در عرصه توسعه و عمران روستاها و بویژه در زمینه برنامه ریزی و مدیریت توسعه روستایی، دستگاه های اجرایی با وظایف موازی و مشابه حضور دارند. از جمله نهادهای تسهیلگر در فرایند توسعه جوامع در عصر جهانی شدن سازمان های مردم نهاد و غیر دولتی (NGO) می باشند. سمن های روستایی در بیشتر استان های ایران برای ایجاد توانمندسازی روستایی تشکیل شده است. در این راستا استان سیستان و بلوچستان، به عنوان یکی از استان های نوپا در زمینه تشکیل سمن ها می باشد. پژوهش حاضر سعی دارد در دو مرحله شناخت و برنامه ریزی به ارزیابی نقش این سازمان ها بر توسعه پایدار روستاهای شهرستان زهک بپردازد. سازمان های مردم نهاد (NGOs) نقش مهمی در فرایند توسعه پایدار و پویایی اجتماعی جوامع ایفا می کنند. این سازمان ها بر تقویت ظرفیت های اقتصادی و اجتماعی گروه های به حاشیه رانده شده، پرداختن به مسائل عمومی و گاه مواجهه با چالش های قشرهای خاص اجتماعی تمرکز دارند.

#### ۲. مبانی نظری تحقیق

سمن ها از آنجا که بر پایه خدمات رسانی به انسان ها شکل گرفت؛ میتواند در کنار نظام سیاسی، محقق کننده این اهداف باشند. سمن ها به عنوان واسطه ای برای توانمندسازی و برانگیختن ابتکار عمل فردی در روستاییان زمینه ی مشارکت فعالانه و ثمربخشی شان را در عمران، بهسازی و توسعه بخشی کمی و کیفی فضاهای زیستی شان مهیا می سازند. سمن ها، نماد مشارکت اجتماعی هستند که باعث کاهش فقر و بی عدالتی بویژه در مناطق محروم می شوند و بخشی از ناکارآمدی سازمان های دولتی را جبران می نمایند. توجه، سرمایه گذاری و برنامه ریزی در جهت، توانمند و پویاسازی سمن ها می تواند، فضا را برای توانمندشدن روستاهای فضای مورد مطالعه

پژوهش فراهم سازند. همچنین زمینه برای تدوین بهینه طرح ها و برنامه ها برای نهادهای و ارگان های مرتبط با توسعه پایدار روستایی فراهم سازد.

#### ۳. روش تحقیق

پژوهش حاضر از نظر هدف، کاربردی و از نظر روش بررسی، ترکیبی از روش های توصیفی-تحلیلی می باشد و از نظر روش مطالعه موردی استفاده شده است. مورد مطالعه روستاهای شهرستان زهک و واحد تجزیه و تحلیل در این پژوهش اهالی ساکن در روستاهای این شهرستان هستند. که با استفاده از شیوه اسنادی (کتابخانه ای) و میدانی (پرسشنامه) اجرا شده است و برای تعیین حجم نمونه، ابتدا تعداد روستاهای محدوده مورد مطالعه مشخص گردید و با توجه به تعداد آن ها و استفاده از فرمول کوکران تعداد ۲۱ روستا به عنوان روستاهای نمونه محاسبه گردیده است انتخاب روستاها نیز به روش تصادفی طبقه ای صورت گرفته است. سپس با توجه به تعداد خانوارهای ساکن در روستاهای نمونه و استفاده مجدد از فرمول کوکران، تعداد ۳۵۸ خانوار به عنوان خانوار نمونه محاسبه شده است. در مرحله بعد به تناسب تعداد خانوارهای ساکن در هر روستا، تعداد خانوارهای نمونه آن روستاها تعیین و به طور انتخابی برای تکمیل پرسشنامه ها انتخاب شده اند. جمع آوری اطلاعات به دو صورت انجام گرفته است: الف) روش اسنادی (کتابخانه ای) ب) روش میدانی: در این روش با حضور در روستاها و تکمیل پرسشنامه از طریق مصاحبه مستقیم با اهالی روستا، اطلاعات مورد نیاز گردآوری شده است. پژوهش حاضر در دو مرحله شناخت و برنامه ریزی انجام می گیرد. داده ها و اطلاعات مورد نیاز مرحله شناخت از دو طریق اسنادی و میدانی فراهم گردیده در بخش میدانی از ابزار پرسشنامه استفاده شده است. همچنین جهت تجزیه و تحلیل داده های حاصله

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روستاها از نظر نقش سازمان های مردم نهاد در توسعه پایدار روستایی است.

### ۵. بحث و نتیجه گیری

اگرچه روستاهای شهرستان زهک با توجه به شرایط جغرافیایی حاکم بر آنها به عنوان روستاهای محروم و توسعه نیافته شناخته می شوند، اما شکل گیری سمن ها در این روستاها موجب شده تا وضعیت اجتماعی- فرهنگی، اقتصادی، محیطی و کالبدی روستاها تغییرات مثبتی داشته باشند. افزایش مشارکت مردم در طرح های روستایی که تا قبل از شکل گیری سمنها بسیار ناچیز و شاید وجود نداشت در حال حاضر رشد داشته است اگرچه هنوز هم با شرایط ایده آل بسیار فاصله دارد، ولی موجبات امیدواری بسیاری را در میان روستاییان فراهم کرده است. سمن ها در روستاهای مورد مطالعه، با شناسایی مشکلات مردم و انتقال این مشکلات و کاستی ها به مسئولین تا اندازه ای توانسته اند دسترسی مردم را به خدمات درمانی، بهداشتی و خدمات دیگر آسان تر نمایند و موجب اتحاد و همبستگی در بین روستاییان شوند. سمن ها با توجه به معنویات بین روستاییان سعی دارند تا با تفکرات دینی و قرآنی و همچنین آموزش معنویات دیگر به روستاییان در راستای استفاده بهینه و بدور از اسراف از منابع مختلف، علاوه بر این که مانع از تخریب محیط زیست شوند، در برخورداری دیگر روستاها از این منابع کمک نمایند. همچنین سمن ها در توسعه روستاها نقش موثری دارن سمن ها با توجه به شناخت حوزه های فقر، اولویت ها و نیازهای واقعی روستاها، می توانند این موارد را به ارگان ها و سازمان های دولتی مربوطه در زمینه عمران و آبادانی روستاها، انتقال دهند و در واقع به مثابه پلی میان مردم و نهادهای تصمیم گیر و اجرایی باشند.

**کلیدواژه ها:** مناطق روستایی، توسعه پایدار روستایی، سازمان های مردم نهاد، شهرستان زهک،

### تشکر و قدردانی

پژوهش حاضر حامی مالی نداشته و حاصل فعالیت علمی نویسندگان است.

از آزمون های آماری تی - تک نمونه ای جهت ارزیابی اثرات سمن ها بر ابعاد مختلف توسعه پایدار در منطقه مورد مطالعه استفاده شده است. با توجه به این که از طیف پنج گزینه ای لیکرت در پرسشنامه استفاده شده است، براین اساس عدد ۳ به عنوان معیار سنجش یا میانگین مطلوب انتخاب شده و کلیه میانگین های به دست آمده با توجه به سطح معناداری کمتر از ۰/۰۵ نسبت به این میانگین مورد ارزیابی قرار گرفته است. همچنین برای شناخت کیفیت ارتباط میان سمن ها و توسعه پایدار از مدل تحلیل واریانس و جهت شناخت عوامل توسعه دهنده اثرات سمن ها از مدل تحلیل سلسله مراتبی فازی (FAHP) استفاده شده است. در نهایت نیز جهت اولویت بندی روستاهای فضای مورد مطالعه در زمینه پژوهش از روش تاپسیس فازی استفاده شده است. و ابزار های نرم افزاری مانند EXCEL و SPSS به کار گرفته شد.

### ۴. یافته های تحقیق

به منظور بررسی تاثیر سمن ها بر توسعه پایدار روستایی در روستاهای شهرستان زهک از آزمون تحلیل رگرسیون چند متغیره و آزمون فیشر استفاده شده است. همان طور که مشاهده می شود مقدار ضریب تعیین تصحیح شده برابر است با ۰/۶۸۲ که نشان می دهد که متغیر مستقل ۰/۶۸ درصد از متغیر وابسته را تبیین می کند که این نشان می دهد بین سمن ها و توسعه پایدار روستایی با توجه به سطح معناداری بدست آمده که برابر با ۰/۰۰۰ است، رابطه کاملاً معناداری برقرار است. سمن ها بیش ترین تاثیر را با مقدار ضریب بتای ۰/۳۱۱ بر بعد اجتماعی- فرهنگی داشته اند. همچنین بر بعد اقتصادی با ضریب بتای ۰/۲۴۳، بر بعد زیست محیطی با ضریب بتای ۰/۱۸۹ و بر بعد کالبدی با ضریب بتای ۰/۱۴۴ نیز تاثیر گذار بوده اند. به منظور اولویت بندی روستاهای شهرستان زهک از نظر نقش سمن ها در توسعه پایدار روستایی از مدل تاپسیس فازی استفاده شده است. نتایج نشان می دهد که روستای قلعه نو با مقدار تاپسیس ۰/۹۰۹، گوری با مقدار تاپسیس ۰/۸۳۲، ده صفدر میربیگ با مقدار تاپسیس ۰/۷۸۵ و خمک با مقدار ۰/۷۶۰ به ترتیب در رتبه های اول تا چهارم قرار دارند که نشان دهنده وضعیت مناسب این روستاها نسبت به سایر

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