

Original Article

Analyzing the Phenomenon of Kolbari and Identifying the Potential for Developing Alternative Economic Activities in Rural Areas (Case Study: Sarkol and Zrivar Rural Districts, Marivan County)

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Abstract

Purpose- Kolbari (informal cross-border goods carrying) and cross-border smuggling in the rural areas of Marivan County constitute a multidimensional crisis that not only undermines the region's economic and social security but also extends its adverse impacts to the political, environmental, and food security domains, thereby generating long-term structural challenges.

Design/methodology/approach- This study employed an exploratory sequential mixed-methods design (qualitative–quantitative). In the qualitative phase, the grounded theory approach, supported by semi-structured interviews, was used to comprehensively explore the security and social dimensions and consequences of Kolbari. Participants were selected purposively from three principal groups: rural Kolbars, county development officials, and local experts, including academic specialists in regional development as well as individuals with extensive knowledge and practical experience regarding Kolbari. In the quantitative phase, a researcher-developed questionnaire was designed and validated through expert assessment of content validity. The instrument demonstrated satisfactory reliability, with a Cronbach's alpha coefficient of 0.87.

Findings- The findings reveal that Kolbari, through 65 identified adverse variables, contributes to five major security challenges: weakened political–military security, environmental–physical security, social security, economic security, and food security. Collectively, these challenges lead to persistent and long-term security vulnerabilities within the region. Furthermore, the correlation analysis indicated that two key variables—educational attainment and the proportion of young rural population—are significantly associated with the emergence and persistence of Kolbari. Specifically, educational attainment exhibited a significant negative relationship with the phenomenon, whereas the proportion of young rural population showed a significant positive relationship.

Practical Implications- Based on the research findings, an innovative three-tier strategic model was developed to reduce Kolbari and establish sustainable regional security. At the first level, the model emphasizes economic empowerment through the development of sustainable non-agricultural enterprises, particularly in handicrafts, rural tourism, and green technologies. At the second level, it advocates strengthening social capital through targeted education and enhanced participation of rural youth in local development processes. At the third level, it highlights the establishment and improvement of security infrastructure to reinforce border security and reduce the risks associated with cross-border smuggling.

Originality/Value- The principal contribution of this study lies in integrating a grounded theory-based mixed-methods approach with correlation analysis to develop a comprehensive, multidimensional, and context-specific model for Marivan County. By identifying the complex causal relationships among security, social, and economic variables, the proposed framework provides practical and implementable recommendations for development agencies, planners, and security institutions.

Keywords- Kolbari, Border Security, Development Capacities; Rural Areas, Marivan County.

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1.Introduction

Border security constitutes a fundamental pillar of human security in all its dimensions. Any instability in border areas has the potential to disrupt the economic, social, cultural, political, and military systems of a country (Moradi, 2012). At the same time, security is widely recognized as the cornerstone of sustainable development, as the prosperity of economic, environmental, and social systems depends largely on the stability of security within a given geographical space (Alipour, Paydar, & Sadeghi, 2016). Accordingly, scholars and policy analysts have increasingly emphasized the inseparable relationship between security and development, arguing that their integration provides the most effective framework for formulating coherent policies and addressing security threats (Chandler, 2007). From this perspective, efforts aimed at strengthening sustainable security simultaneously contribute to the realization of sustainable development in border regions (Andalib, 2001). A closer examination of border regions, particularly rural settlements, reveals that these areas are confronted with the dual challenges of underdevelopment and geographical marginalization (Afrakhteh, 2012). Consequently, in many border villages, the primary concern is no longer economic advancement but rather livelihood survival. Under such circumstances, cross-border smuggling has emerged as one of the principal livelihood strategies adopted by border residents to overcome economic hardships and improve their quality of life. As an economic activity, smuggling has existed in border villages for decades and has continued to the present day. Owing to its relatively high profitability, it has substantially contributed to improving rural livelihoods by strengthening household incomes (Kohneh-Poushi, 2011). Indeed, rural settlements located in peripheral border regions—where inadequate infrastructure, limited public investment, and low living standards prevail—have sought to transform their geographical position into an economic asset by engaging in activities such as cross-border smuggling (Tayyebnia, Mohammadi, & Manouchehri, 2016).

The persistent shortage of decent employment opportunities in border regions, largely attributable

to uneven regional development and insufficient productive investment, has driven a considerable share of the economically active population toward the informal economy, particularly *Kolbari* (informal cross-border goods carrying) (Afrakhteh, 2012; Kohneh-Poushi, 2011; Tayyebnia et al., 2016). In this context, Marivan County has, in recent years, emerged as one of the major centers for the distribution and exchange of imported goods in western Iran. The expansion of the smuggling market, much of which relies on *Kuolbari*, has generated profound cultural, social, and economic transformations throughout the county while significantly reshaping regional employment patterns and investment structures (Aslamarz, Dindarloo, & Aslamarz, 2015). The growth of this informal border economy has become even more pronounced following the intensified implementation of border closure and control policies by provincial border authorities. Coupled with the growing demand for low-priced smuggled goods and the substantial financial returns associated with this activity, these developments have not only altered the occupational structure of border communities but have also considerably reduced incentives for investment in productive and industrial sectors. As a result, Marivan County has been unable to fully exploit its strategic comparative advantage for exporting goods to the relatively untapped market of the Kurdistan Region of Iraq—an opportunity that could have served as a significant driver of sustainable development for both the county and the wider province (Aslamarz et al., 2015). A particularly noteworthy issue is the widespread prevalence of *Kolbari* among the rural population of Marivan County. Owing to the limited diversification of rural economic activities and the scarcity of alternative income sources, many villagers regard *Kolbari* as their only viable livelihood option. In these rural communities, traditional agriculture remains the principal source of household income. However, land fragmentation, inadequate capital, dependence on unfavorable climatic conditions, and insufficient investment in the agricultural sector have considerably increased livelihood vulnerability. Consequently, many rural youths, constrained by limited access to farmland and the structural limitations of the agricultural sector, have

increasingly turned to *Kolbari* as an alternative means of generating income.

Despite its important role in supporting the livelihoods of border communities, *Kolbari* poses substantial challenges to the sustainability of national security, particularly in its economic, social, and political dimensions. Consequently, the governance and management of this phenomenon have become highly complex and remain subject to considerable debate. On the one hand, combating cross-border smuggling and *Kolbari* has been recognized in Iran as a strategic national economic priority, making the formulation of effective policies for the prevention and control of smuggling an unavoidable necessity. Likewise, at the international level, numerous countries—including the United States along the Mexico border, countries of the Indian subcontinent, and several states in the Horn of Africa—have implemented various border-control and border-closure measures to combat smuggling and other forms of illegal cross-border activities (Isacson, 2012). On the other hand, given the crucial role of *Kolbari* in sustaining the livelihoods of many border households and maintaining the relative stability of local economies, any attempt to reduce or eliminate this activity requires carefully designed alternative livelihood strategies (Kohne-Poushi, 2011; Tayyebnia et al., 2016). Otherwise, restricting *Kolbari* without simultaneously creating viable employment and income-generating opportunities is likely to reduce household incomes, increase livelihood vulnerability, and weaken the economic and social sustainability of border communities (Afrakhteh, 2012; Iranian Parliament Research Center, 2019). From this perspective, *Kolbari* should not be regarded merely as an isolated social problem; rather, it reflects structural deficiencies, including limited employment opportunities, inadequate economic diversification, and the underutilization of indigenous development capacities in rural border areas (Aslamarz et al., 2015; Tayyebnia et al., 2016). Accordingly, achieving a sustainable response to this phenomenon requires the identification of local development potentials, the promotion of alternative economic activities, and the adoption of development-oriented planning approaches tailored to rural border regions.

Among Iran's border regions, Marivan County has long been characterized by socioeconomic

deprivation and persistent developmental challenges (Shayan & Kohneh-Poushi, 2013). Despite the significance and widespread prevalence of *Kolbari* in this county, previous studies have primarily focused on explaining its underlying causes, its socioeconomic consequences, the role of border markets, or its security dimensions (Mohammadi, 2023; Kohneh-Poushi, 2011; Tayyebnia et al., 2016). Other investigations have mainly examined the phenomenon from security and law-enforcement perspectives (Isacson, 2012). Although these studies have substantially enhanced our understanding of various aspects of *Kolbari*, they have paid relatively limited attention to identifying viable alternative economic opportunities and developing practical strategies for reducing rural households' dependence on this informal livelihood activity. Furthermore, little consideration has been given to the spatial variation among rural settlements in terms of their reliance on *Kolbari* and its relationship with demographic, economic, and geographical characteristics. This research gap is particularly evident in the Sarkal and Zrivar rural districts, which constitute the principal concentration areas of rural *Kulbars* in Marivan County. In addition to accommodating a considerable proportion of households engaged in *Kolbari*, these two rural districts possess substantial development potential in agriculture, horticulture, livestock production, rural tourism, handicrafts, and small-scale rural enterprises. Nevertheless, these capacities have not yet been systematically identified, prioritized, or incorporated into an integrated framework for developing alternative economic activities. Moreover, no previous study has simultaneously employed a mixed-methods approach to examine both the multidimensional impacts of *Kolbari* on sustainable security and the identification and spatial assessment of alternative livelihood opportunities based on the local capacities of villages affected by this phenomenon. Accordingly, the present study seeks to address this research gap by integrating the perspectives of *Kolbars*, local administrators, and subject-matter experts to develop a practical framework for promoting alternative economic activities and reducing rural households' dependence on *Kolbari*. The central argument of this study is that the persistence of *Kolbari* in the rural border areas of

Marivan County primarily stems from the inadequate identification and utilization of local employment opportunities, insufficient economic planning, and the lack of institutional support for rural entrepreneurship and innovation. Identifying and strategically investing in these development capacities may therefore represent the key to mitigating the widespread expansion of Kolbari across the border villages of the county. Accordingly, this study addresses the following research questions:

1. How has the emergence and persistence of Kolbari affected the economic and social dimensions of sustainable security in the rural areas of Marivan County?
2. Are there significant spatial differences among rural settlements regarding their reliance on Kolbari? If so, which demographic, economic, and spatial characteristics best explain these differences?
3. What investment and employment potentials exist within the studied rural areas for developing small-scale enterprises capable of diversifying the local economy and reducing dependence on Kolbari?

Although numerous studies have examined cross-border smuggling in Iran, relatively few have specifically addressed Kolbari, largely because this phenomenon is geographically concentrated in the Kurdish border regions of western Iran. Consequently, the existing body of knowledge on *Kolbari* remains limited, creating a significant theoretical and empirical gap in the literature. Given the socioeconomic and security implications of this phenomenon, the present study seeks to contribute to the emerging scholarship by addressing aspects that have received limited scholarly attention. A selection of the most relevant national and international studies is reviewed below.

[Hernández \(2021\)](#), in an analytical study of cross-border smuggling along the Tijuana–San Diego (Mexico–United States) border based on documentary evidence and border statistics, found that informal cross-border trade is largely driven by economic disparities and differences in consumption patterns between neighboring countries. The study concluded that border enforcement and physical barriers alone are insufficient to achieve a sustainable reduction in

smuggling activities and emphasized the necessity of creating alternative economic opportunities for local communities.

[Hernández Campos and Torre Cantalapiedra \(2022\)](#), using a descriptive–analytical approach and migration and border data, demonstrated that individuals involved in informal border economies predominantly belong to socially and economically vulnerable groups. Their findings suggest that reducing participation in such activities requires integrated development policies focusing on employment creation, poverty reduction, and the socioeconomic empowerment of border communities.

[Salerno Valdez et al. \(2022\)](#), through an analytical documentary study of the informal economy and smuggling in the United States–Mexico border region, reported that the persistence of informal cross-border activities generates not only economic consequences but also profound social and cultural impacts on border communities. They identified economic deprivation and unemployment as the principal factors encouraging participation in these activities.

[Prieto-Curiel et al. \(2023\)](#), drawing on socioeconomic datasets and analytical methods to examine recruitment into informal and illegal networks in Mexico, argued that enforcement-oriented policies alone are insufficient to curb participation in illicit activities. Instead, investments in employment, education, and local economic development provide more effective and sustainable strategies for reducing individuals' involvement in informal and high-risk economic activities.

Likewise, [Augustova and Souber \(2023\)](#), in their study entitled *Kurdish Smugglers on the Iran–Turkey Border*, concluded that the expansion of informal cross-border activities in Kurdish regions is driven primarily by structural poverty, unemployment, and the absence of sustainable economic opportunities rather than by criminal intent. Their findings further indicate that border-control policies implemented without adequate consideration of local livelihood conditions merely displace these activities toward more hazardous routes, thereby intensifying social vulnerabilities.

At the national level, the Iranian Parliament [Research Center \(2019\)](#), in its expert report entitled *The Plan for Organizing Official Border Crossings (Kolbari and Teh-Lenji)*, argued that the

prevalence of Kolbari is inconsistent with the substantial development potential of Iran's border provinces. The report further noted that this phenomenon has frequently been exploited as political propaganda to portray deficiencies in employment generation and the protection of human dignity. It emphasized that sound economic policies, investment incentives in border regions, employment-support measures, and policies aimed at reducing the costs of residence and production could create profitable opportunities for traders, entrepreneurs, manufacturers, and investors while simultaneously fostering sustainable employment and reducing dependence on informal border activities.

Mohammadi (2023), in a study entitled *Analysis of the Factors Influencing the Emergence and Persistence of Kolbari in the Rural Border Areas of Kurdistan Province*, employed a descriptive-analytical design based on Grounded Theory. The study identified 76 underlying deficiencies that were classified into four principal categories: (1) weaknesses in policymaking, development planning, and border security management; (2) inadequate supportive legislation and insufficient physical infrastructure required for rural economic development; (3) social deficiencies and an unfavorable business environment for rural economic growth; and (4) limited financial capital available to local communities for entrepreneurship and employment generation. Among these, weaknesses in policymaking, development planning, and border security management, followed by the shortage of local investment capital, were identified as the most influential factors contributing to the persistence of Kolbari and the continuation of underdevelopment in the region.

Mohammadi et al. (2021), in their qualitative study entitled *Sustainable Employment in Border Cities: An Analysis of the Causes and Consequences of Kolbari in Baneh*, found that economic, political, legal, security, socio-cultural, geographical, and geopolitical factors collectively explain the emergence and persistence of Kolbari as an informal livelihood strategy. They argued that sustainable solutions require collaborative efforts between government institutions and border communities, emphasizing the utilization of endogenous regional capacities to promote sustainable urban development in Baneh.

Mahmoudi and Moradi (2021), using the Grounded Theory approach in their qualitative study *Kolbari as an Outcome of Underdevelopment-Oriented Policies: A Qualitative Study of Kulbars in Paveh*, organized their findings into 34 concepts, six major categories, and one core category, namely underdevelopment and inadequate economic growth. Their results indicate that Kolbari is a historically embedded phenomenon rooted in economic deprivation, geographical isolation, political marginalization, cultural constraints, limited livelihood opportunities, and the unintended consequences of border delineation. From the perspective of border residents, Kolbari represents the only viable livelihood strategy in response to persistent underdevelopment. The authors therefore emphasize the need for comprehensive planning at short-, medium-, and long-term horizons to address the socioeconomic needs of border communities.

Taheri (2018), in a descriptive-analytical study entitled *The Impact of the Recession and Closure of Official Border Markets on the Quality of Life of Rural Residents: A Case Study of Khav and Mirabad District, Marivan County*, found that the closure of temporary border markets significantly reduced the quality of life of rural households that had previously benefited from legally regulated Kolbari quotas. Furthermore, the absence of alternative income-generating opportunities resulted in a renewed increase in participation in Kolbari among rural residents.

Mottaghi et al. (2021), in their descriptive-analytical investigation of the determinants of participation in the informal economy with particular emphasis on Kolbari in Sardasht, reported no statistically significant relationship between motivations for engaging in Kolbari and variables such as gender, birthplace, migration history, household size, educational attainment, type of goods transported, monthly expenditures, pathways into the occupation, or seasonal income fluctuations. However, significant relationships were observed between motivations for engaging in Kolbari and respondents' age, previous occupation, marital status, monthly income, secondary sources of income, future occupational aspirations, job security, job satisfaction, and duration of employment as a Kulbar.

Anbari et al. (2025), applying Grounded Theory in their study *The Spatial Poverty Trap and the Social*

Construction of Kolbari in the Border Regions of Iranian Kurdistan, concluded that spatially embedded poverty constitutes the primary structural driver behind the emergence of Kolbari. Their findings suggest that severe economic pressures, the absence of alternative livelihood opportunities, environmental constraints, and the declining profitability of traditional cross-border trade, together with contextual factors such as the weakness of the agricultural sector, the lack of industrial employment, and the underdevelopment of tourism, compel border residents to rely primarily on their physical labor through Kolbari. The study further demonstrates that this survival strategy generates a wide range of long-term socio-cultural consequences, including the erosion of indigenous human capital, the expansion of consumerism, the deterioration of human dignity and legal rights, the proliferation of poverty-generating and marginalized spaces, and the reproduction of poverty and Kolbari across the border regions of western Iran, particularly in Kurdistan Province.

Mohammadi and Rostami (2018), in a descriptive-analytical study entitled *Assessing the Effects of Establishing Border Markets on Changes in Rural Quality of Life: A Case Study of Dezli Rural District, Sarvabad County*, concluded that the establishment of the border market significantly improved the quality of life of local rural residents compared with the period prior to its establishment. Improvements were observed across all measured dimensions of rural quality of life, with the economic dimension exhibiting the greatest positive change.

Likewise, Hooshangi and Mohammadi (2018), in their study *An Analysis of the Role of Border Markets (Formal Kolbari) in Enhancing the Livability of Rural Areas: A Case Study of Khav and Mirabad and Dezli Rural Districts, Western Kurdistan Province*, found that the establishment of officially regulated Kolbari border markets substantially enhanced the livability of the study villages. Among the four dimensions of rural livability—economic, social, physical, and environmental—the economic dimension experienced the most significant improvement following the establishment of these markets.

A synthesis of the existing literature indicates that previous studies on Kolbari can generally be classified into four major streams of research. The

first stream has focused on identifying the factors contributing to the emergence and persistence of Kolbari, highlighting poverty, unemployment, inadequate economic infrastructure, underdevelopment in border regions, ineffective support policies, and limited employment opportunities as the principal drivers of participation in this activity (Mohammadi, 2023; Mahmoudi & Moradi, 2021; Anbari et al., 2025). The second stream has examined the economic, social, cultural, and security consequences of Kolbari, emphasizing its impacts on quality of life, social capital, human dignity, and the development trajectory of border regions (Mohammadi et al., 2021; Mottaghi et al., 2021; Augustova & Souber, 2023). The third stream has investigated the effectiveness of border management policies, border closures, and security-oriented interventions, consistently concluding that enforcement-based approaches alone are insufficient to achieve a sustainable reduction in Kolbari (Hernández, 2021; Hernández Campos & Torre Cantalapiedra, 2022; Prieto-Curiel et al., 2023). Finally, the fourth stream has highlighted the contribution of formal border markets and regulated cross-border trade mechanisms to improving the economic conditions and quality of life of border residents (Taheri, 2018; Mohammadi & Rostami, 2018; Hooshangi & Mohammadi, 2018).

Despite the valuable contributions of these studies, several important research gaps remain. Existing research has primarily concentrated on explaining the causes and consequences of Kolbari or evaluating policies aimed at managing this phenomenon. Comparatively little attention has been devoted to simultaneously examining the multidimensional impacts of Kolbari while identifying feasible alternative economic opportunities capable of reducing rural households' dependence on this informal livelihood strategy. Moreover, no previous study conducted in the Sarkal and Zrivar rural districts of Marivan County has adopted a mixed-methods approach to simultaneously investigate the security, social, and economic implications of Kolbari and systematically assess the local capacities for developing viable alternative economic activities. Against this background, the present study extends the existing body of knowledge by adopting an integrated analytical framework. First, it identifies

and analyzes the multidimensional impacts of Kolbari within the rural communities under investigation. Second, by examining the spatial characteristics and endogenous development capacities of these villages, it evaluates the feasibility of developing alternative economic activities aimed at reducing rural households' dependence on Kolbari while strengthening sustainable security and regional development.

2. Research Theoretical Literature

Rural settlements located in border regions often experience persistent geographical marginalization, limited infrastructure, inadequate public and private investment, and consequently lower standards of living. Under such conditions, their proximity to international borders has frequently been utilized as an economic resource through engagement in informal cross-border activities, including the smuggling of goods (Tayyebnia, Mohammadi, & Manouchehri, 2016). At the same time, the predominance of a vulnerable mono-sectoral rural economy, coupled with the lack of employment diversification based on local comparative advantages, insufficient investment, and inadequate human capital development, has resulted in fragile and highly dependent local economies. As a consequence, many members of the rural labor force have resorted to *Kolbari*—the physically demanding practice of carrying goods across borders—as a means of securing their livelihoods. In many border villages, the workforce has been left without adequate vocational skills or sustainable employment opportunities and has consequently become dependent on Kolbari as one of the few available income-generating activities. In this sense, both public perceptions and, to some extent, governmental development policies have implicitly associated the economies of border villages with cross-border smuggling and Kolbari. Such an association has, in turn, diverted attention from the structural transformation and diversification of rural economies. Viewed from this perspective, Kolbari, as one manifestation of informal cross-border smuggling, represents a consequence of uneven regional development and unequal socioeconomic relations. These structural inequalities, reflected in pronounced regional and socioeconomic disparities, have contributed to the emergence and persistence of cross-border

smuggling, whereby economically disadvantaged border residents (Kulbars) and wealthier actors within informal trade networks pursue their respective economic interests (Abdolmohammadi, 2010).

One of the fundamental concepts in regional economic planning is comparative advantage, which serves as an important criterion for identifying both the potential and actual production capacities of a region and its ability to produce goods and services at lower opportunity costs. According to the theory of comparative advantage, the total output of individuals, firms, or nations is maximized when each economic actor specializes in producing goods or services for which it possesses the lowest opportunity cost (Piran & Oskouei, 2015). However, the concept of competitive advantage extends beyond comparative advantage by emphasizing the capability of organizations, regions, or local economies to achieve superior performance under competitive conditions (Pirasteh & Eslaminejad, 2010). Competitive advantage refers to a factor—or a combination of factors—that enables an organization, region, or economic system to outperform its competitors in a manner that is difficult to imitate. As illustrated in Figure 1, uniqueness and distinctiveness constitute the core characteristics of competitive advantage. Contemporary strategic management therefore places considerable emphasis on developing mechanisms capable of generating sustainable competitive advantage (Cegliński, 2016). Durability, resilience, and value creation are widely recognized as its defining attributes, while product quality, technological capability, innovation, brand image, and access to information represent some of its principal determinants (Wen-Cheng & Chien-Hung, 2011). Within the context of rural development, competitive advantage encompasses the set of local resources, capabilities, and endogenous potentials that enable rural producers and service providers to achieve superior performance relative to competing regions and thereby enhance local economic development (Pourtaheri et al., 2017).

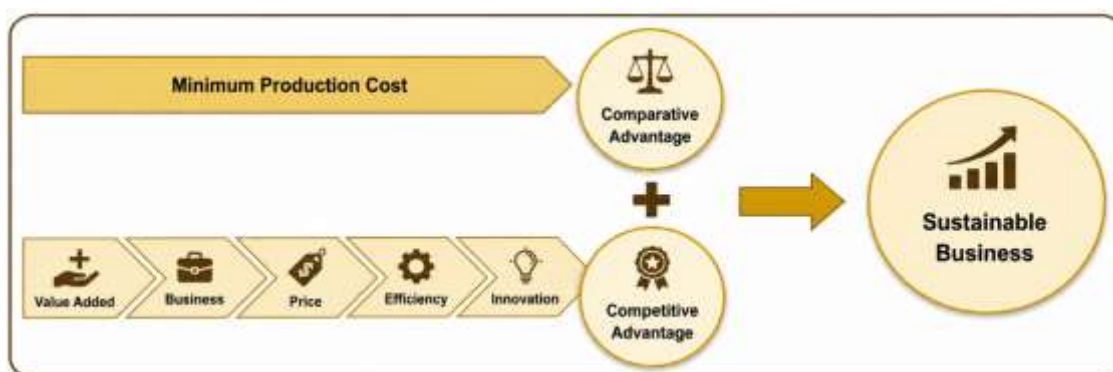


Figure 1. Relationship between comparative advantage and competitive advantage in the development of sustainable businesses and the criteria used for their assessment.

The emphasis on assessing the comparative and competitive advantages of rural border areas stems from the premise that addressing Kolbari—a phenomenon fundamentally rooted in persistent rural unemployment—can only be achieved through economic development based on the endogenous capacities and investment potentials of these regions. Temporary welfare-oriented interventions and short-term support programs may provide limited relief for border communities; however, they cannot adequately address the structural livelihood needs of rural households or eliminate their dependence on Kolbari. In contrast, identifying the comparative advantages and development potentials of border villages and providing institutional support for their effective utilization can foster the establishment of sustainable rural enterprises that constitute viable and long-term alternatives to Kolbari. Such an approach reflects the principles of endogenous, self-reliant, and place-based rural development, which have become central paradigms in contemporary rural development planning.

From this perspective, once it is recognized that the principal driving force behind the emergence and persistence of Kolbari is the lack of sustainable employment opportunities, the logical policy response is to identify local development capacities and transform them into productive economic opportunities. The creation of small-scale enterprises and diversified rural livelihoods based on indigenous resources and local capabilities provides a structural solution to Kolbari, rather than merely alleviating its symptoms. Consequently, the primary development need of

border villages extends beyond improvements in physical infrastructure or welfare provision. Instead, sustainable livelihood security depends fundamentally on strengthening local economies through employment generation based on endogenous capacities and comparative regional advantages. Given that the present study adopts a participatory approach to identifying local development potentials and formulating strategies for alternative economic development, participatory development planning is regarded as an essential mechanism for strengthening local capacities and enhancing rural development processes. In this regard, the United Nations Environment Programme (UNEP) defines capacity development as a set of interventions designed to strengthen the knowledge, skills, and experience of rural communities, thereby enabling them to promote positive social transformation and community empowerment (UNEP, 2011). Similarly, Young (2006) argues that capacity development enhances both physical and human capacities, including infrastructure, knowledge, technical skills, and institutional capabilities. Strengthening these capacities encourages broader community participation in rural development initiatives (Laverne & Saxby, 2001), while simultaneously enhancing self-confidence, informed decision-making, and social cohesion and reducing social isolation and passivity among rural residents. As a result, rural communities become active stakeholders capable of leading and sustaining their own socioeconomic development processes (Wendy, 2007) (Figure 2).

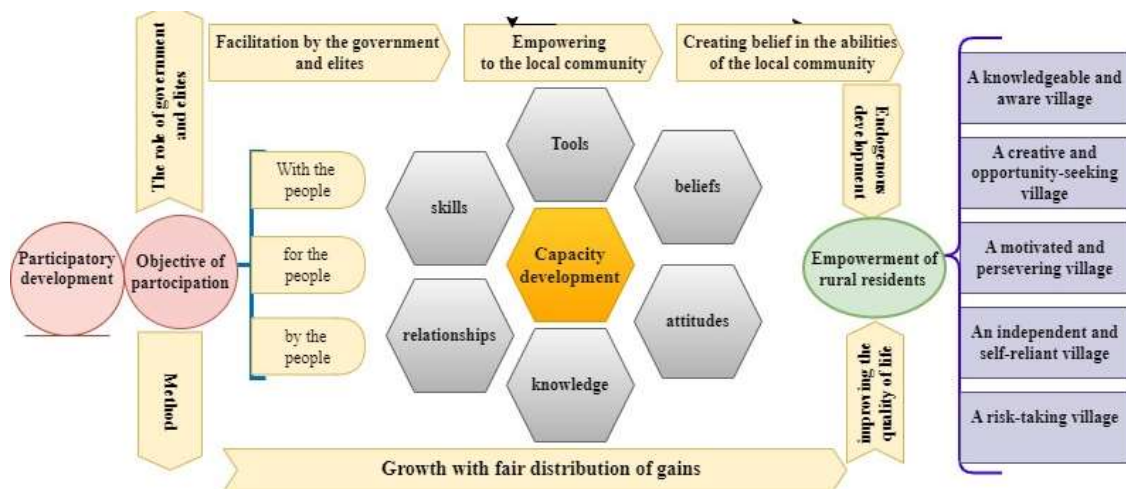


Figure 2. Process and outcomes of the participatory development approach

Accordingly, the management and mitigation of Kolbari in the rural areas of Marivan County should be pursued through comprehensive planning strategies aimed at reducing dependence on this informal livelihood by identifying local development capacities and promoting the diversification of rural economies. Within this perspective, the present study is founded upon the complementary development paradigms of economic diversification, participatory development, sustainable security, and sustainable livelihoods. These approaches stand in contrast to

the conventional **core-periphery** model of development, which emphasizes urban-centered economic growth and concentrates investment and development opportunities in metropolitan areas. Instead, they advocate a place-based and endogenous development strategy that mobilizes local resources, strengthens community participation, and fosters sustainable livelihood opportunities. These theoretical perspectives collectively constitute the conceptual foundation of the present research and are integrated into the study's conceptual framework (Figure 3).

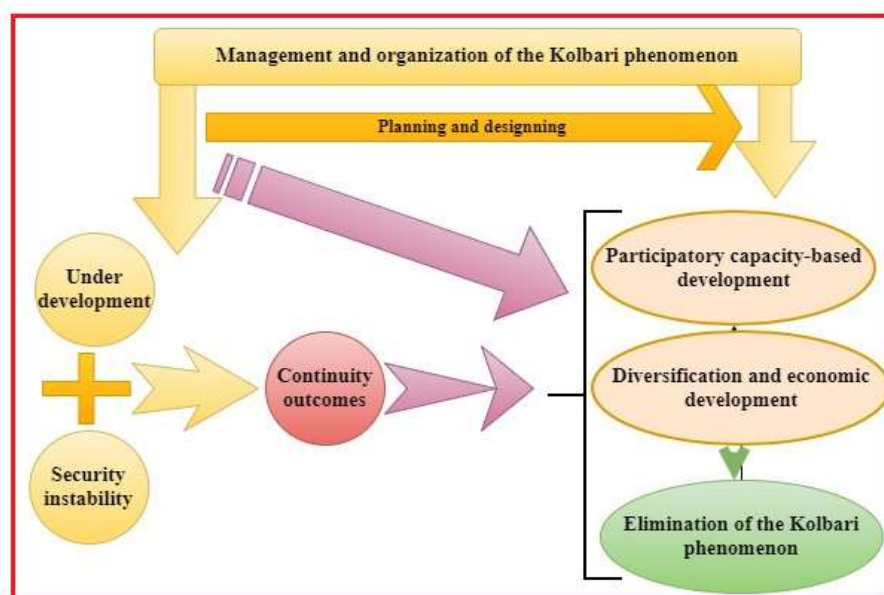


Figure 3. Conceptual framework of the study

3. Research Methodology

3.1. Geographical Scope of the Research

Marivan County is located in the western part of Kurdistan Province, adjacent to the border with Iraq. Covering an area of approximately 2,326.4 km², the county is centered on the city of Marivan

and comprises four cities: Marivan, Kanidinār, Chenareh, and Bardesh Rash. Administratively, the county consists of three districts, six rural districts (dehestans), 149 inhabited villages, and 25 uninhabited villages (Statistical Gazetteer of Marivan County, 2016) (Figure 4).

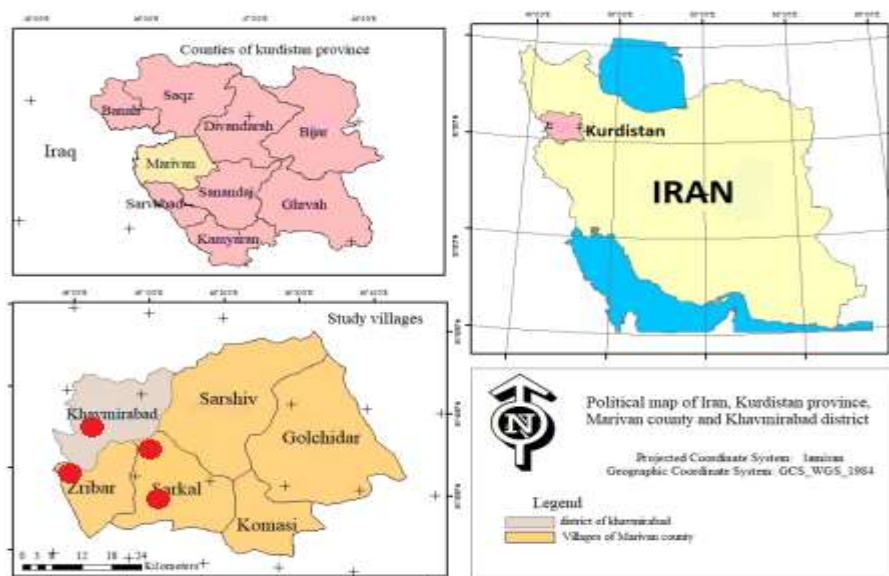


Figure 4. Location of the Central District of Marivan County.

Source: (Mohammadi & et al, 2021: 84).

3.2. Methodology

This study is applied in terms of its objective and descriptive-analytical in terms of its research design. Data were collected using a combination of documentary (library-based) and field survey methods. The overall research design followed an exploratory sequential mixed-methods approach (qualitative → quantitative), whereby qualitative findings informed the subsequent quantitative phase. In the qualitative phase, the multidimensional consequences of Kolbari for the security and sustainable development of rural communities in the study area were explored using the Grounded Theory methodology and semi-structured interviews. Grounded Theory is a qualitative research strategy designed to generate theory inductively from empirical data. Rather than testing pre-existing theoretical assumptions, this approach enables researchers to systematically collect, code, and analyze field data in order to identify concepts, categories, and the relationships among them. The selection of Grounded Theory for the present study was motivated by the absence of a comprehensive theoretical framework

explaining the multidimensional nature and consequences of Kolbari, as well as the need to identify alternative rural development opportunities based on the experiences and perspectives of local stakeholders. Qualitative data analysis followed the three-stage coding procedure commonly employed in Grounded Theory. During open coding, initial concepts and themes emerging from the interview transcripts were identified and coded. Subsequently, axial coding was employed to organize similar concepts into broader categories and subcategories while establishing relationships among them. Finally, selective coding was used to identify the core category, integrate the relationships among the identified categories, and develop the study's conceptual framework explaining both the underlying drivers of Kolbari and the strategies for promoting alternative economic activities in the study area. In addition to the interview process, focus group discussions and researcher-designed questionnaires were employed to formulate an economic development program aimed at reducing dependence on Kolbari through the identification

of locally appropriate livelihood alternatives. To establish the validity of the questionnaire, both face validity and content validity were assessed. An initial version of the questionnaire was reviewed by a panel of university faculty members specializing in geography, rural planning, rural development, and experts familiar with Kolbari. Based on their comments, revisions were made regarding the relevance of questionnaire items to the research objectives, the clarity of wording, the comprehensiveness of the questions, and the modification or removal of ambiguous items. Furthermore, to ensure that the questionnaire was understandable for respondents, a pilot survey involving 12 participants was conducted, after which the final revisions were incorporated. The reliability of the questionnaire was evaluated using Cronbach's alpha coefficient. Following the pilot survey, the collected data were analyzed using SPSS, yielding a Cronbach's alpha value of 0.78. Since this value exceeds the commonly accepted threshold of 0.70, the questionnaire demonstrated satisfactory internal consistency and reliability for subsequent statistical analyses.

The study population consisted of rural Kolbari workers, county development officials, and local experts, including academic specialists in the field of development as well as individuals with practical knowledge, innovative ideas, and research experience related to Kolbari. In addition, village heads (Dehyars) and members of village councils in the Central District of Marivan County, which constitutes the principal area where rural Kolbari is concentrated, were included in the process of developing the proposed economic development and employment program. Given the limited knowledge regarding the dimensions and characteristics of the Kolbari phenomenon in the study area and the necessity of obtaining comprehensive and in-depth information, purposive sampling was adopted. The selection of participants in the qualitative phase of the study was carried out as follows. Regarding Kolbari

workers and villages affected by the Kolbari phenomenon in the Central District, information obtained from the County Governor's Office and the Central District Office indicated that, among the 43 villages located in the district, the highest concentration of Kolbari activities occurred in Sarkol and Zrivar rural districts. Accordingly, these two rural districts were selected for the study. Subsequently, based on the recommendations of the Central District Office, four villages with the largest number of rural Kolbari workers were purposively selected as the sample villages. These included Darzian and Balak in Sarkol Rural District, and Kalakeh Jan and Sianav in Zrivar Rural District. During the field visits, and with the cooperation of the village heads, approximately five Kolbari workers from each village were interviewed. For the group of development officials representing organizations responsible for rural employment generation and development, nine participants were purposively selected from the Governor's Office, the Central District Office, the Rural Cooperative Organization, and the Agricultural Jihad Organization based on criteria including administrative responsibility, familiarity with the study area, and professional experience (Table 1). Similarly, twelve local experts and academic specialists were purposively selected according to criteria such as educational qualifications, academic specialization related to rural development, and familiarity with the socioeconomic conditions of the study area (Table 1). For the Delphi panel, participants were selected based on their knowledge of the research topic, indigenous familiarity with the region, academic qualifications and field of specialization, and administrative responsibilities related to rural employment generation and economic development. Accordingly, ten experts, together with the village heads of the selected villages, were included in the Delphi panel, resulting in a total of 15 participants (Table 1).

Table 1. Characteristics of the Participants in the Development Officials, Local Experts, and Delphi Groups

Government Officials			Local Experts		Delphi Panel	
Organization (Affiliation)	Field of Study and Academic Degree	(N)	Field of Study and Academic Degree	(N)	Field of Study and Academic Degree	(N)
Governor's Office	M.A. in Rural Geography and Planning /	3	Assistant Professor, Ph.D. in Rural Geography and Planning	3	Associate Professor, Ph.D. in Rural Geography and	3

Government Officials			Local Experts		Delphi Panel	
	Management				Planning	
Central District Office	M.A. in Rural Geography and Planning / Sociology	2	Ph.D. in Development Sociology	3	Ph.D. in Development Sociology	3
Rural Cooperative Organization	M.A. in Social Welfare Planning	1	M.A./Ph.D. in Business Administration	2	Ph.D. in Entrepreneurship	1
Agricultural Jihad Organization	M.A. in Horticulture and Animal Sciences	2	Ph.D. in Entrepreneurship	1	M.A. in Rural Geography and Planning	1
Industry, Mine and Trade Organization	M.A. in Business Administration	1	Ph.D. in Agriculture	1	M.A. in Sociology	1
Cultural Heritage and Tourism Organization	M.A. in Tourism Management	1	Ph.D. in Political Geography	1	M.A. in Social Welfare Planning	1
Border Guard Command	B.A. in Border Guard Studies	1	B.A. in Border Guard Studies	1	—	—
—	—	—	B.A. in Business Administration	1	—	—
—	—	—	Associate Degree in Technical Sciences	1	—	—
—	—	—	M.A. in Remote Sensing	1	—	—
—	—	—	B.A. in Educational Sciences	1	—	—

In the quantitative phase of the study, 30 participants, a sample size considered acceptable for descriptive research, were purposively selected to validate the findings obtained from the qualitative phase. The participants were selected based on criteria including familiarity with the research topic, indigenous knowledge of the study area, academic qualifications and field of specialization, and administrative responsibilities related to rural employment generation and economic development. The selected participants included 10 experts, together with the village heads of the study villages.

The selection of a sample size of 30 participants in the quantitative phase was based on the exploratory nature of the study, the limited number of experts with relevant knowledge of the research topic, and the use of purposive sampling. Since the primary objective of this phase was to verify and evaluate the findings derived from the qualitative stage, and the respondents consisted of academic experts, executive managers, and local specialists, this sample size was considered appropriate for expert-based analyses. Furthermore, given that the statistical analyses relied on non-parametric

techniques, particularly Spearman's rank correlation coefficient, which is suitable for relatively small sample sizes, a sample of 30 respondents was deemed sufficient.

Subsequently, in line with the main objective of the study—namely, reducing dependence on Kolbari in the villages with the highest concentration of rural Kolbari workers in the Central District of Marivan County—a participatory planning process was undertaken. Following joint meetings with village heads, members of village councils, and local experts, together with extensive field observations, the capacities for diversifying the rural economy were identified and incorporated into the development planning process as alternative economic activities to Kolbari. Given the importance of identifying comparative advantages as the principal drivers of rural economic development and the catalysts for economic diversification, an assessment of the comparative advantages of the study villages was undertaken. In this regard, identifying the comparative advantages of each village constituted the first essential step. The concept of comparative advantage may be defined in various ways. If a

rural area can produce a particular good at a lower opportunity cost than other areas, that area is considered to possess a comparative advantage in producing that good. The central premise of this theory is the concept of opportunity cost, which refers to the value of the next best alternative forgone in producing a particular good. Accordingly, rural producers who incur lower opportunity costs in producing a specific commodity or service—that is, those who sacrifice fewer alternative goods or services—are considered to possess a comparative advantage in that activity.

To identify and prioritize alternative economic activities capable of replacing Kolbari, the Delphi technique was employed. Accordingly, a Delphi panel comprising 15 experts, including university faculty members, specialists in rural development, entrepreneurship, development sociology, and executive officials responsible for rural employment and development, was established. The Delphi process was conducted in three rounds. During the first round, an initial list of potential economic capacities and development opportunities for the study villages was compiled based on documentary sources, field interviews, and expert opinions. In the second round, a questionnaire based on a five-point Likert scale (1 = very low to 5 = very high) was distributed among the panel members to evaluate the importance and feasibility of each proposed activity. In the third round, the results of the previous round were returned to the panel members, who were invited to reconsider and, where necessary, revise their responses. Consensus was considered to have been achieved when more than 75% agreement among the experts was reached and the mean scores stabilized during the third Delphi round.

Furthermore, it was necessary to examine the influence of variables such as distance from the county center, the proportion of young population in the village, the diversity of local economic capacities, distance from the international border, educational attainment, marital status, and age on the persistence of the Kolbari phenomenon and its prevalence within the study villages. Accordingly, the opinions of 30 respondents, including development officials, village heads, district administrators, academic experts, and local specialists, were collected using a five-point Likert scale. The variables examined in this stage were selected based on the spatial, demographic, and socio-economic characteristics of the villages. Although household income and expenditure are widely recognized as important determinants of participation in Kolbari, reliable household-level data were not available due to the informal nature of much of the economic activity associated with Kolbari. Consequently, direct measurement of these variables was not feasible. Instead, proxy indicators, including educational attainment, the proportion of young population, and the diversity of local economic opportunities, were employed.

4. Research Findings

The principal impacts and consequences of the persistence of Kolbari on the security and development conditions of the study area were identified through the analysis of the semi-structured interviews using the Grounded Theory approach (Table 2). As shown in Table 2, the continuation of the Kolbari phenomenon has the potential to undermine security across multiple dimensions while simultaneously reinforcing the cycle of underdevelopment within the region. These adverse impacts extend from the individual and household levels to the local, regional, and even national scales.

Table 2. Effects of the Persistence of Kolbari on Sustainable Security in the Study Area

Core Category		Categories	Concepts
Security Instability	National Security	Political–Military Security:	Increasing social distance between local communities and security forces; intensification of security-oriented policies and border closures; expansion of a culture of law evasion; declining sense of belonging and loyalty toward the political system; recruitment of young people into illegal groups operating in border areas; increased media attention to the socioeconomic challenges of border regions; growing threats against border guards and border posts; rising costs of border protection; formation of organized criminal networks (e.g., smuggling and arms trafficking); increasing ethnic tensions arising from perceived regional inequalities; damage to security infrastructure; and the growth of religious radicalism.

Core Category		Categories	Concepts
	Human Security (Local–Regional)	Environmental–Physical Security:	Destruction of agricultural land and orchards; deterioration of transportation infrastructure and residential buildings; degradation of the visual quality of rural landscapes; and expansion of abandoned and unsafe spaces within villages.
		Social Security:	Declining attachment to rural communities; increasing fear and insecurity among households regarding the safety of their property (e.g., tractors, irrigation pumps, combine harvesters, and private vehicles); declining educational attainment; widening income disparities between rural and urban areas; migration; erosion of social capital; increased conflicts and disputes; expansion of informal settlements and crime-prone areas in neighboring cities; declining public trust in local media due to inadequate news coverage; increasing poverty and the culture of poverty; and reduced cooperation between local residents and public authorities in implementing security and development programs.
		Economic Security:	Increasing involvement in commodity smuggling; declining public and private investment; greater interest in intermediary and informal urban occupations; transfer of rural capital to neighboring cities; closure of border markets; rising unemployment; lack of occupational diversification; increasing public expenditures for infrastructure and security; declining household income and savings; reduced household purchasing power; dissolution of rural production cooperatives and local savings funds; reduced access to employment, housing, and production loans; and declining livestock numbers and diversity.
		Food Security:	Reduced capacity of households to meet their food needs (including meat and dairy products) and declining production of food crops for household consumption.
	Long-term Security Consequences	Long-term Security Vulnerabilities	Depopulation of sparsely populated villages located near the international border; depletion of land and water resources accompanied by declining national production; changes in the demographic structure of neighboring urban areas; social unrest and conflicts; expansion of organized smuggling; increasing poverty; declining institutional legitimacy in border regions; loss of previous investments devoted to regional security and development; further border restrictions; and increasing human and financial losses affecting border security forces and infrastructure.

As the results of the Spearman's rank correlation analysis indicate (Table 3), at the 0.05 significance level, statistically significant relationships were identified only for the variables of educational attainment and the proportion of the young population. In other words, these were the only variables that exhibited a significant association with the persistence and expansion of Kolbari in the study villages. The relationship between the proportion of the young population and Kolbari was positive, indicating that villages with larger young populations tend to experience higher levels of participation in Kolbari. Conversely, the relationship between educational attainment and Kolbari was negative, suggesting that higher educational levels are associated with lower levels of engagement in Kolbari. By contrast, the absence

of statistically significant relationships for variables such as economic diversification, distance from the international border, marital status, and age constitutes an important finding with substantial policy implications. These results suggest that the Kolbari phenomenon has become deeply embedded across the rural communities of the study area, irrespective of these characteristics. In particular, the lack of association between economic diversification and the prevalence of Kolbari indicates that insufficient diversification of the rural economy has resulted in the dominance of a single-source livelihood structure, thereby diminishing the effectiveness of alternative economic activities that could otherwise serve as viable substitutes for Kolbari in the study villages.

Table 3. Relationship between individual and village characteristics and the persistence of cross-border portering in the study area

Statistical indicator	Test	N	Coefficient	Significance level	Result
Young population of villages	Spearman	30	0.641	0.000	Reject H ₀
Educational level	Spearman	30	-0.295	0.000	Reject H ₀
Economic diversification of villages	Spearman	30	–	0.115	Accept H ₀
Age	Spearman	30	–	0.514	Accept H ₀
Marital status	Spearman	30	–	0.098	Accept H ₀
Distance from the border	Spearman	30	–	0.117	Accept H ₀
Distance from the county center	Spearman	30	–	0.386	Accept H ₀

In this section, the capacities and comparative advantages of the four sample villages are identified and analyzed with the aim of proposing sustainable economic alternatives to cross-border portering. It should be noted that the prioritization of economic development drivers was carried out based on the scores assigned by experts and participants during the focus group discussions. To this end, the identified economic activities were evaluated using a five-point Likert scale (1 = very low importance to 5 = very high importance). Subsequently, the mean score for each activity was calculated, and the final ranking of the proposed economic activities was determined accordingly.

4.1. KalakehJan Village

The prioritization of the economic development drivers in Kalakeh Jan village (Figure 5) revealed that, from the perspective of the participants in the focus group discussions, rainfed farming, livestock husbandry, horticulture, and skilled/service-based occupations respectively constitute the most important existing sources of income and economic activities in the village, although these activities currently operate with relatively low

productivity. In this regard, with the implementation of the village economic development plan and considering the rapid expansion of orchards—particularly rainfed vineyards—throughout Marivan County, together with the considerable potential of livestock husbandry, these two sectors are expected to become the principal economic activities of the village. Meanwhile, rainfed farming will decline to the lowest development priority within the proposed economic development framework, since it is characterized by very low productivity and a considerable proportion of rainfed agricultural lands are expected to be converted into vineyards. Furthermore, poultry farming, which is currently an underutilized economic activity practiced by only one villager, is projected to become an important complementary economic sector alongside skilled and service-oriented occupations in the future. Consequently, it can contribute to diversifying the village economy, creating new employment opportunities, and ultimately reducing villagers' dependence on kolbari.

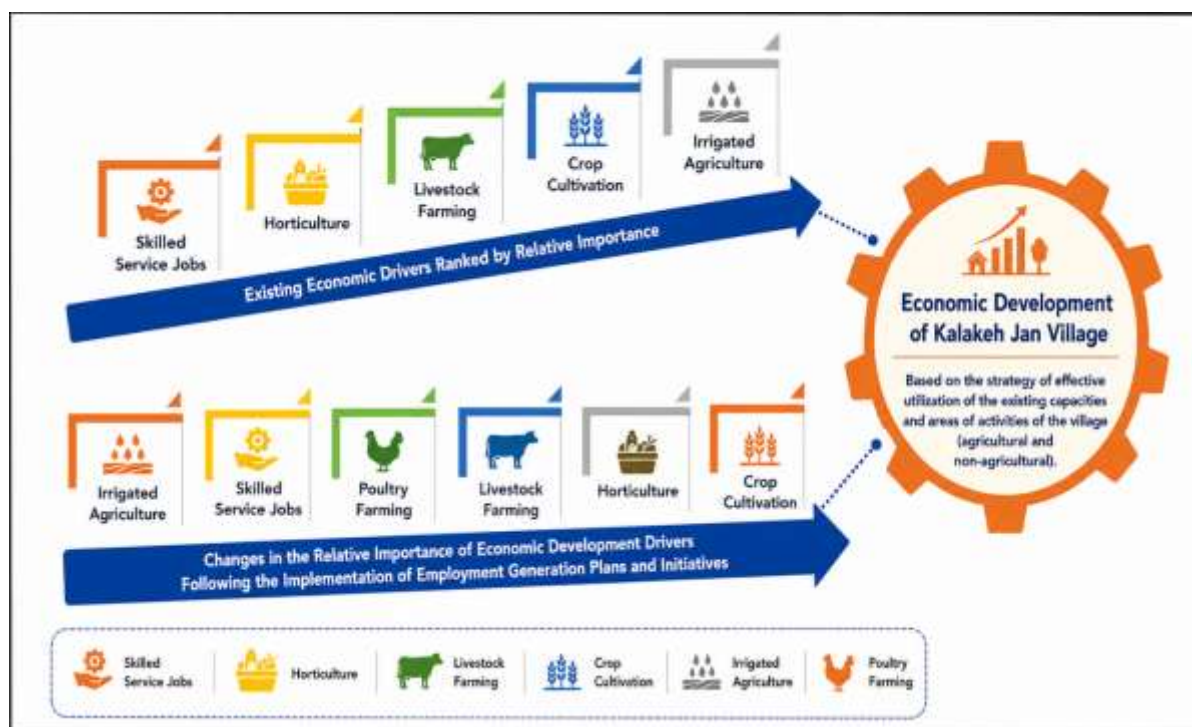


Figure 5. Economic development drivers of KalakehJan Village under the current conditions and after the implementation of employment development programs

With regard to the existing pattern of economic activities in Kalakeh Jan village, and based on criteria such as the quantity and quality of production, the capacity of local natural resources to support the development of each activity, the willingness, skills, and experience of local residents, as well as the current comparative advantages of the village economy, the village's comparative economic advantages were identified through the consensus achieved during participatory meetings and individual interviews with local residents and regional experts (Figure 6). As illustrated, under the current conditions no economic sector can be regarded as possessing a clear comparative advantage in Kalakeh Jan

village. Economic activities are primarily concentrated in livestock husbandry and skilled/service-based occupations; however, these sectors currently operate with limited effectiveness and productivity. Nevertheless, the proposed village economic development plan indicates that livestock husbandry, skilled and service-based occupations, together with poultry farming, have the potential to evolve into the village's principal comparative advantages, thereby providing a stronger foundation for sustainable livelihoods, economic diversification, and reducing dependence on kolbari.

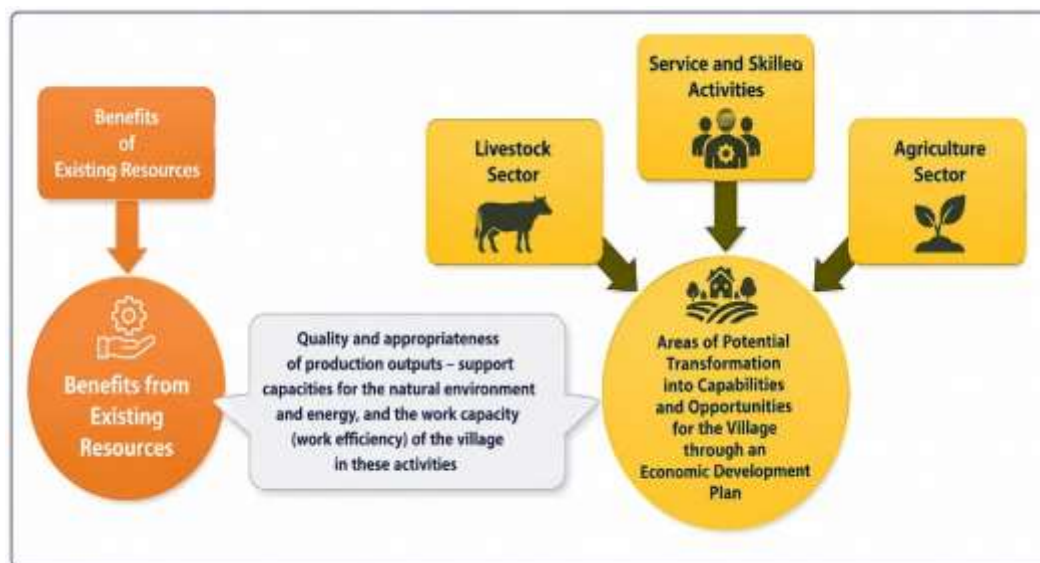


Figure 6. Identification of the comparative advantages of economic activities in Kalakeh Jan Village under the current conditions and after the implementation of the village economic development plan.

4.2. Darziyan Village

The preliminary assessment revealed that the business environment of Darziyan village suffers from very low productivity, with many of its economic potentials remaining underutilized due to inadequate management, insufficient investment, and ineffective resource utilization. The lack of sustainable employment opportunities has driven a considerable proportion of the village's workforce toward informal occupations, particularly *kolbari* and cross-border smuggling, thereby fostering a gradual shift away from a culture of production, entrepreneurship, and innovation within the village. At the same time, the active involvement of rural women in livestock production, agro-processing, and agricultural value-added activities, together with the availability of livelihood-oriented residential spaces, provides favorable conditions for the expansion of home-based enterprises, strengthening women's economic participation, and promoting a livelihood-oriented housing model.

However, social constraints on women's participation, limited awareness among villagers regarding income-generating activities that can be established within residential units, and inadequate financial resources have prevented the full utilization of these capacities for the development of home-based and livelihood-oriented businesses. The prioritization of the economic development drivers in Darziyan village (Figure 7) indicated that, under the current economic conditions, livestock husbandry, crop cultivation, and horticulture constitute the principal economic activities of the village. However, according to the participants, implementation of the proposed employment development plan would, in addition to strengthening these three sectors, introduce beekeeping, women-centered home-based businesses, and mulberry cultivation combined with sericulture as new pillars of employment generation and local economic development.

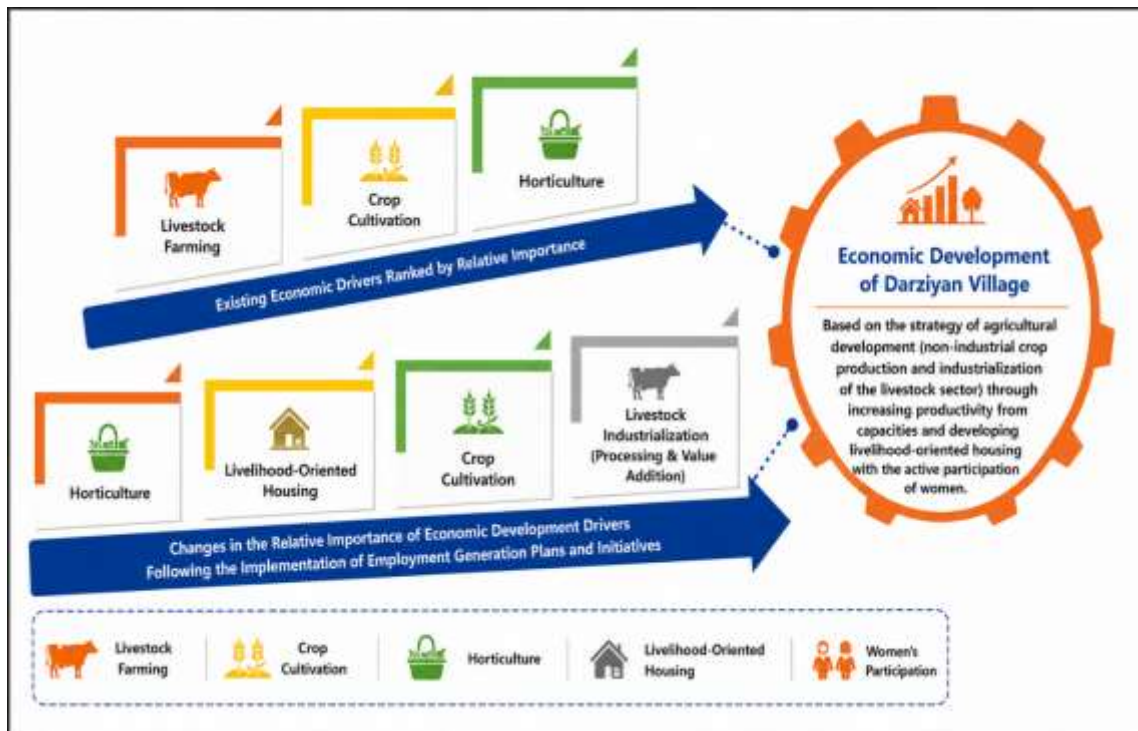


Figure 7. Importance of the economic development drivers in Darziyan Village under the current conditions and following the implementation of employment development programs

Considering the importance of comparative advantage assessment as the foundation of rural economic development and as a catalyst for agricultural diversification in Darziyan village, the village's comparative advantages were subsequently evaluated. Accordingly, identifying comparative advantages constituted the first step of the analysis. Based on the existing pattern of economic activities in Darziyan village, and considering criteria such as the quantity and quality of production, the capacity of natural resources to support each activity, the willingness, skills, and experience of local residents, as well as the current comparative advantages of the village economy, the village's comparative economic advantages were identified through the consensus reached during participatory meetings and individual interviews with local residents and regional experts (Figure 8). The findings indicate that, under the current conditions, livestock husbandry and tobacco cultivation represent the village's principal comparative advantages. Under the proposed economic development plan, however, rainfed viticulture, greenhouse cultivation, and the production of medicinal plants are expected to emerge as the main comparative advantage sectors. Furthermore, if the proposed Garan Dam water transfer project to the village's agricultural lands is implemented, forage crop cultivation is also expected to become an additional comparative advantage and an important component of the village's future economic structure.

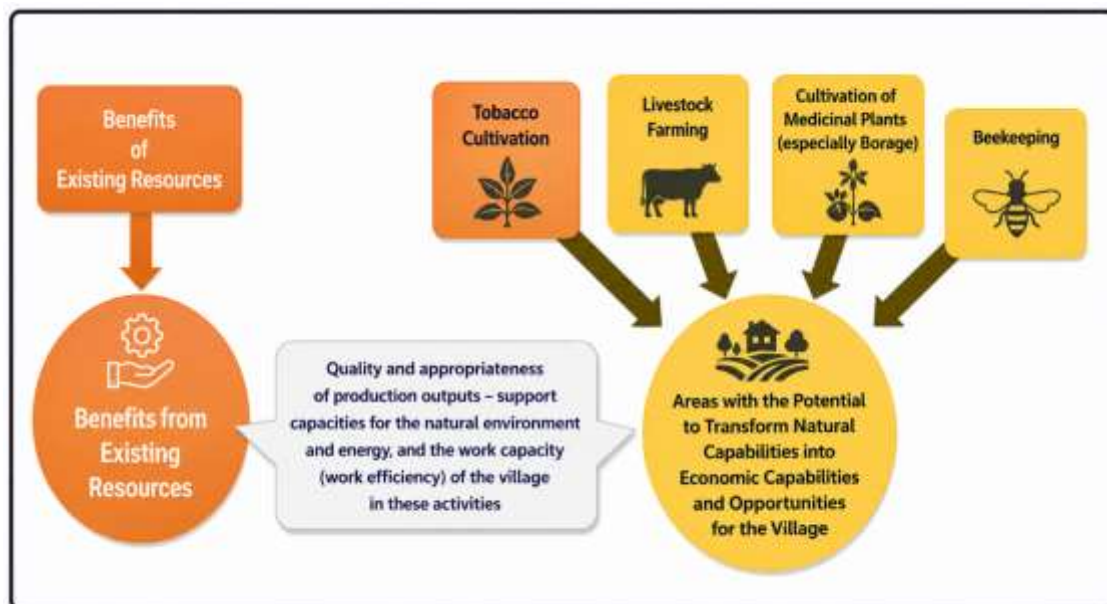


Figure 8. Identification of the comparative advantages of economic activities in Darziyan Village under the current conditions and after the implementation of the village economic development plan.

4.3. Balak Village

The prioritization of the economic development drivers in Balak village indicated that, from the perspective of the participants, implementation of the proposed employment initiatives and the village economic development plan would not only strengthen the position of horticulture as the village's primary economic activity, but would also elevate livestock husbandry to the second most important economic sector. In addition, home-based enterprises and *Kalash* weaving, which are closely associated with the independent economic participation of rural women, together with aquaculture and religious tourism, are expected to emerge as new sources of employment and income generation. The development potential of aquaculture is primarily attributed to the availability of adequate water resources, provided that the village's springs and water resources are properly managed, while the potential for religious tourism stems from the presence of the culturally and religiously significant shrine of Imam Mohammad Mulla Baqer Balak, which constitutes an important local attraction (Figure 9).

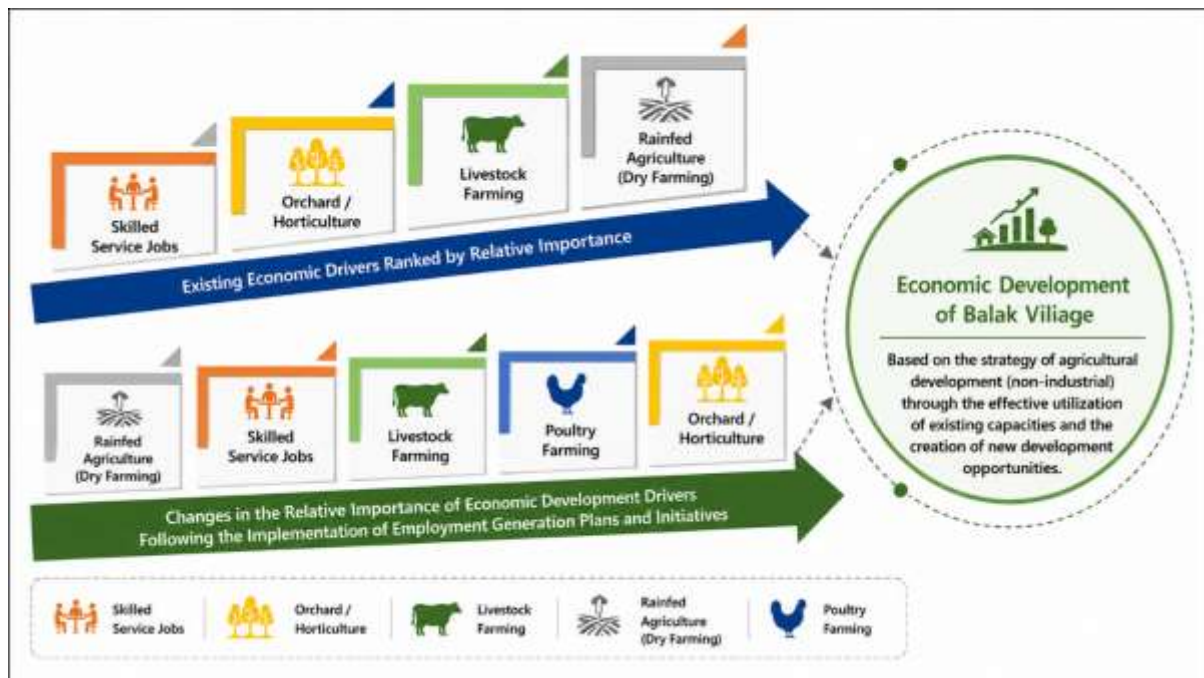


Figure 9. Importance of the economic development drivers in Balak Village under the current conditions and following the implementation of employment development programs

Based on the existing pattern of economic activities in Balak village, and considering criteria such as the quantity and quality of production, the capacity of local natural resources to support the development of each activity, the willingness, skills, and experience of local residents, as well as the existing comparative advantages of the village economy, the comparative economic advantages of the village were identified through the consensus

achieved during participatory meetings and individual interviews with local residents and regional experts. Accordingly, the comparative advantages of Balak village were determined both under the current conditions and under the proposed village economic development plan, which emphasizes the effective utilization of local resources and development potentials (Figure 10).

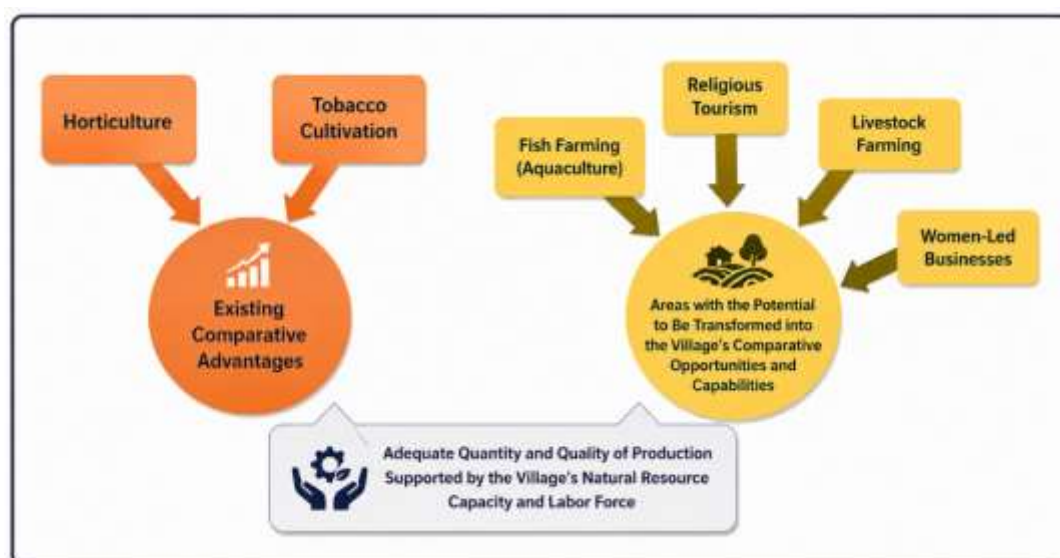


Figure 10. Identification of the comparative advantages of economic activities in Balak Village under the current conditions and after the implementation of the village economic development plan

4.4. Sianav Village

The prioritization of the economic development drivers in Sianav village, based on the views expressed by participants during the focus group discussions, indicated that the village's existing economic sectors will be maintained and further strengthened through the implementation of the proposed economic development plan. In essence, the primary objective is to enhance the productivity and efficiency of these existing activities. At the same time, economic

diversification is expected to be achieved through the establishment of small-scale enterprises linked to livestock husbandry, the expansion of women-led income-generating activities, and the development of service-oriented businesses that capitalize on the village's strategic location and its function as a local service center. Consequently, these economic sectors are anticipated to play a more substantial role in promoting employment generation and fostering the overall economic development of the village (Figure 11).

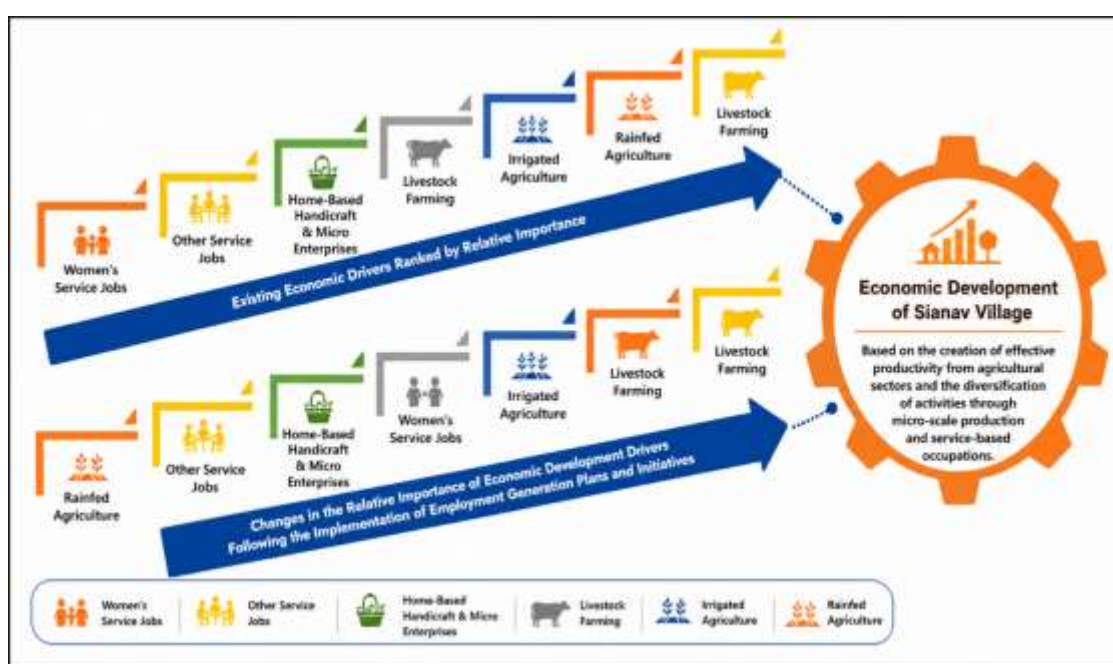


Figure 11. Importance of the economic development drivers in Siyanav Village under the current conditions and following the implementation of employment development programs

Considering the current pattern of economic activities in Sianav Village and based on criteria such as the quantity and quality of production, the capacity of natural resources to support the expansion of economic activities, the support, willingness, and skills of local residents to engage in these activities, as well as the existing comparative advantages identified through consensus achieved during participatory meetings and individual interviews with villagers and regional experts, the comparative advantages of the village economy were identified. As illustrated in

Figure 12, under present conditions, livestock farming constitutes the village's primary comparative advantage. However, with the implementation of the village economic development plan and its associated employment-generation projects, beekeeping, rain-fed grape cultivation, and women-based entrepreneurial and home business activities can also be transformed into major comparative advantages, thereby strengthening the village's economic base, diversifying livelihood opportunities, and reducing dependence on cross-border carrying (Kolbari).

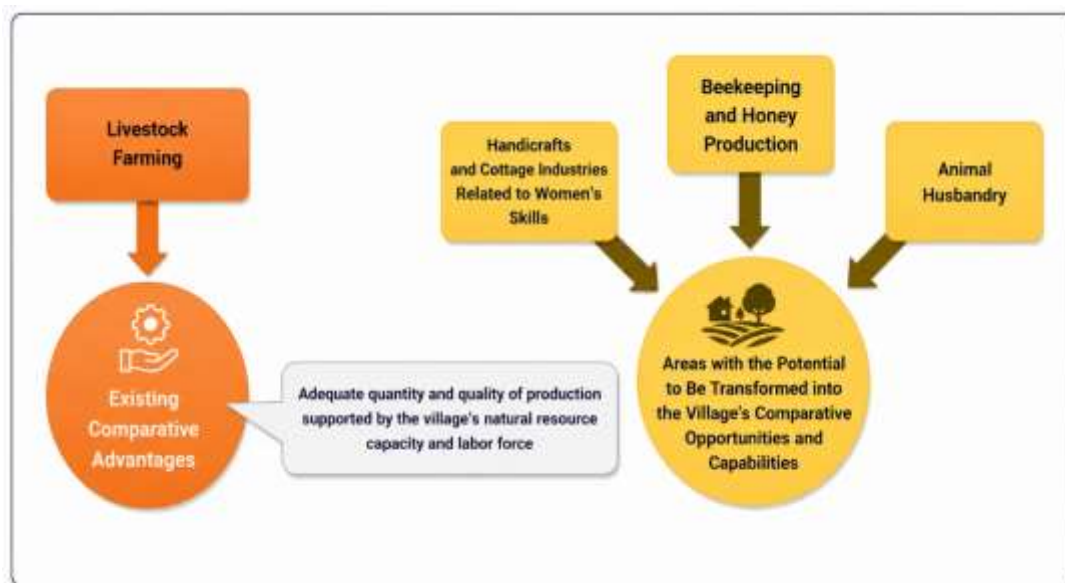


Figure 12. Identification of the comparative advantages of economic activities in Siyanav Village under the current conditions and after the implementation of the village economic development plan

5. Discussion and Conclusion

The present study aimed to analyze the socio-economic impacts of *Kolbari* (cross-border carrying) and to identify regional capacities for reducing dependence on this activity in the rural border areas of Marivan County. The findings, presented in relation to the three main research questions, not only clarify the multidimensional nature of *Kolbari* but also reveal potential pathways for promoting alternative livelihood opportunities and reducing rural households' reliance on this informal economic activity.

With regard to the first research question, the findings indicate that *Kolbari* is not merely an informal income-generating activity adopted by border households to secure their livelihoods; rather, it has far-reaching implications for the sustainable security of the region. The qualitative analysis revealed that the persistence of this phenomenon has generated challenges across multiple dimensions of security, including political-military security, economic security, social security, food security, and environmental-physical security, ultimately contributing to long-term developmental and security instability in the study area. These findings are consistent with those reported by Mohammadi et al. (2021), Augustova and Sober (2023), Salerno Valdez et al. (2022), and Anbari et al. (2025), who argue that *Kolbari* and other forms of informal cross-border economic activity have consequences that extend well

beyond the economic sphere, affecting social cohesion, cultural values, and regional security. The findings are also in line with the studies of Hernández (2021), Hernández Campos and Torre Cantalapiedra (2022), and Prieto-Curiel et al. (2023), which demonstrate that border-control and enforcement-oriented policies, when implemented without addressing the livelihood needs and development challenges of local communities, are unlikely to achieve a sustainable reduction in informal cross-border activities. However, the present study advances the existing literature by systematically conceptualizing the security implications of *Kolbari* within a comprehensive framework encompassing five dimensions of sustainable security. The results suggest that the continuation of this phenomenon not only undermines the quality of life of rural residents but also imposes substantial economic, administrative, and security costs on the country's border management system. From this perspective, the findings reinforce the argument that security in border regions is inherently multidimensional and that its sustainable realization requires the simultaneous integration of economic development, social well-being, and livelihood improvement into border governance strategies.

In response to the second research question, the results of the Spearman correlation analysis revealed that, among the variables examined, only educational attainment and the proportion of the

young population in the villages were significantly associated with the persistence of *Kolbari*. The positive relationship between the young population and the prevalence of *Kolbari* indicates that, in the absence of sustainable employment opportunities, young people are more likely than other social groups to engage in this activity. This finding is consistent with the studies of Mohammadi (2023), Mahmoudi and Moradi (2021), and Anbari et al. (2025), which identified unemployment, an underdeveloped business environment, and limited economic opportunities as the principal factors driving border residents toward *Kolbari*. Furthermore, the significant negative relationship between educational attainment and the continuation of *Kolbari* suggests that improving human capital through education can play a crucial role in reducing individuals' dependence on informal and high-risk economic activities. This result is in agreement with the findings of Hernández Campos and Torre Cantalapiedra (2022) and Prieto-Curiel et al. (2023), who emphasized the importance of education, capacity building, and employment creation in reducing participation in the informal economy. In contrast, this finding differs from that of Motaghi, Amraei, and Ghorbani (2021), who reported no significant relationship between educational level and the tendency to engage in *Kolbari*. This discrepancy may be attributed to differences in the socio-economic characteristics of the study areas as well as the greater dependence of rural households in Marivan County on *Kolbari* as a livelihood strategy. Moreover, the absence of significant relationships between *Kolbari* and variables such as distance from the border, distance from the county center, age, marital status, and the degree of economic diversification indicates that, within the study area, *Kolbari* has evolved beyond a localized phenomenon and has become deeply embedded in the economic and social structure of rural communities. The lack of a significant relationship with economic diversification further suggests that existing economic activities have not yet developed sufficient capacity to serve as viable alternatives to *Kolbari*, and that the regional economy continues to suffer from limited diversification and structural vulnerability.

Regarding the third research question, the findings derived from participatory economic development planning and field investigations in the selected

villages demonstrated that each village possesses distinctive economic capacities and comparative advantages that can support the development of alternative livelihood opportunities. Livestock production, rain-fed grape cultivation, beekeeping, poultry farming, medicinal plant cultivation, home-based enterprises, agro-processing industries, religious tourism, and women-led economic activities were identified as the most promising development opportunities. These findings are consistent with those reported by the Iranian Parliament Research Center (2019), Mohammadi et al. (2021), Hernández (2021), and Prieto-Curiel et al. (2023), all of whom emphasized that expanding local employment opportunities, investing in productive economic activities, and strengthening regional economies constitute the most effective strategies for reducing border communities' dependence on informal economic activities. The findings are also in line with the studies of Taheri (2018), Mohammadi and Rostami (2018), and Hooshangi and Mohammadi (2018), which highlighted the positive role of formal economic activities and border markets in improving the quality of life and alleviating the economic pressures experienced by border households. Nevertheless, the principal contribution of the present study lies in moving beyond merely identifying the causes and consequences of *Kolbari* by systematically identifying and assessing the feasibility of locally appropriate economic development opportunities within the study villages. Accordingly, the findings suggest that the sustainable reduction of *Kolbari* cannot be achieved solely through border enforcement and security measures; rather, it requires endogenous economic development, diversification of rural economic activities, and the creation of employment opportunities that are compatible with the comparative advantages of each village.

Overall, the findings of this study indicate that *Kolbari* should be understood not simply as an economic choice but as a livelihood strategy adopted in response to limited employment opportunities and the persistent underdevelopment of border regions. Consequently, policies aimed at reducing this phenomenon should be founded upon the interdependent relationship between security and development while prioritizing improvements in the quality of life of rural communities. In this

regard, revising security-centered border management approaches, expanding formal border markets, supporting productive investments, promoting agro-processing industries, strengthening vocational education and skills training, encouraging rural entrepreneurship, developing tourism, and supporting women's economic participation are among the key strategies that can reduce rural households' dependence on *Kolbari* and contribute to the realization of sustainable security and balanced regional development in border areas

It should be noted that, like any empirical investigation, the present study was subject to several limitations. The most significant limitation was the security-sensitive nature of *Kolbari*, which made access to information and individuals involved in this activity particularly challenging. In some cases, respondents were understandably cautious in providing information, which may have affected the depth of the collected data. Another limitation was the lack of comprehensive and reliable official statistics concerning the various dimensions of *Kolbari*, as well as the fact that the empirical investigation was confined to selected villages in Marivan County, thereby limiting the generalizability of the findings to other border regions. Furthermore, although household income and expenditure are recognized as important determinants of engagement in *Kolbari*, these variables could not be examined due to the absence of accurate and reliable data and the difficulty of obtaining detailed household economic information.

Based on the findings of this study, the most effective strategy for reducing rural households' dependence on *Kolbari* is to promote economic development and diversify income-generating activities in rural border areas. In this regard, it is essential that the management of border regions shifts from a predominantly security-oriented and threat-based perspective toward a development-oriented approach grounded in the principles of sustainable security. In addition, revising existing border closure policies, adopting modern border-monitoring technologies, and strengthening coordination among security, administrative, and

development agencies would enhance the effectiveness of regional development programs. Moreover, strengthening formal border markets, promoting agro-processing industries, supporting rural cooperatives and local investment funds, providing entrepreneurship and vocational training, developing rural tourism, branding local products, and facilitating financial support for productive investments are among the most important strategies for generating sustainable employment opportunities in the region. Expanding social insurance coverage, improving service and transportation infrastructure, and increasing media attention to both the challenges and development potential of border regions can also contribute significantly to improving the quality of life of rural residents and enhancing sustainable regional security.

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Author Contributions

The authors contributed equally to the development and preparation of this research.

Conflict of Interest

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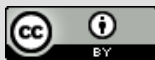
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تحلیل پدیده کولبری و شناسایی ظرفیت های توسعه اقتصادی جایگزین در نواحی روستایی (مطالعه موردی: دهستانهای سرکل و زریوار - شهرستان مریوان)

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چکیده مبسوط

۱. مقدمه

امنیت پایدار در نواحی مرزی از مهم ترین پیش نیازهای تحقق توسعه پایدار محسوب می شود، زیرا هرگونه اختلال در امنیت این مناطق می تواند آثار گسترده ای بر ابعاد اقتصادی، اجتماعی، سیاسی و حتی زیست محیطی کشور برجای گذارد. نواحی روستایی مرزی به دلیل دوری از مراکز تصمیم گیری، ضعف زیرساخت ها، محدودیت فرصت های شغلی و سرمایه گذاری، همواره با چالش های توسعه ای مواجه بوده اند. این شرایط موجب شده است بخشی از جمعیت فعال این مناطق، به ویژه جوانان، برای تأمین معیشت خود به فعالیت های اقتصاد غیررسمی از جمله کولبری روی آورند. کولبری در سال های اخیر به یکی از مهم ترین شیوه های کسب درآمد در بخش قابل توجهی از روستاهای مرزی غرب کشور، به ویژه شهرستان مریوان، تبدیل شده است. اگرچه این فعالیت در کوتاه مدت بخشی از نیازهای معیشتی خانوارهای مرزنشین را تأمین می کند، اما در بلندمدت پیامدهای نامطلوبی بر امنیت مرزی، توسعه اقتصادی، انسجام اجتماعی و سرمایه گذاری در منطقه برجای می گذارد. شهرستان مریوان به دلیل همجواری با اقلیم کردستان عراق، یکی از مهم ترین کانون های فعالیت کولبری در غرب ایران محسوب می شود. رونق مبادلات غیررسمی کالا، ضمن تغییر ساختار اشتغال و درآمد روستاییان، موجب کاهش انگیزه سرمایه گذاری در بخش های مولد، تضعیف فعالیت های تولیدی، گسترش اقتصاد واسطه ای و افزایش وابستگی معیشتی خانوارها به فعالیت های غیررسمی شده است. در چنین شرایطی، مدیریت این پدیده صرفاً از طریق اقدامات انتظامی و انسداد مرزها نه تنها به کاهش پایدار آن منجر نمی شود، بلکه در صورت نبود فرصت های شغلی جایگزین، می تواند آسیب های اقتصادی و اجتماعی گسترده تری برای جوامع محلی ایجاد کند. بر این اساس،

پژوهش حاضر با هدف تحلیل پیامدهای امنیتی و توسعه ای کولبری، شناسایی عوامل مؤثر بر تداوم آن و تدوین چارچوبی کاربردی برای توسعه فعالیت های اقتصادی جایگزین در روستاهای دهستان های سرکل و زریوار انجام شده است.

۲. روش تحقیق

این پژوهش از نظر هدف، کاربردی و از لحاظ ماهیت، توصیفی - تحلیلی است و با استفاده از رویکرد آمیخته متوالی اکتشافی (کیفی - کمی) انجام شده است. در مرحله نخست، به منظور شناخت عمیق ابعاد، علل و پیامدهای کولبری، از روش نظریه داده بنیاد و مصاحبه های نیمه ساختاریافته استفاده شد. مشارکت کنندگان به روش نمونه گیری هدفمند از میان کولبران روستایی، مدیران و مسئولان توسعه شهرستان، خبرگان علمی و محلی و نیز دهیاران و اعضای شوراهای اسلامی روستاهای مورد مطالعه انتخاب شدند. تحلیل داده های کیفی بر اساس مراحل کدگذاری باز، محوری و انتخابی انجام گرفت و در نتیجه، مقوله های اصلی، مفاهیم محوری و روابط میان آن ها استخراج شد. در بخش کمی، برای ارزیابی و تأیید یافته های کیفی، پرسشنامه ای محقق ساخته تدوین شد. روایی ابزار از طریق نظر متخصصان حوزه توسعه روستایی و جغرافیا و پایایی آن با استفاده از ضریب آلفای کرونباخ مورد سنجش قرار گرفت که مقدار آن برابر با ۸۷/۰ بود و پایایی مطلوب ابزار را نشان داد. داده های گردآوری شده با استفاده از آزمون همبستگی اسپیرمن تحلیل شدند تا رابطه میان ویژگی های جمعیتی، اجتماعی و فضایی روستاها با تداوم پدیده کولبری بررسی شود.

۲. یافته های تحقیق

نتایج مرحله کیفی نشان داد که کولبری صرفاً یک فعالیت معیشتی نیست، بلکه به پدیده ای چندبعدی تبدیل شده است که پیامدهای

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مزیت‌های نسبی و قابلیت‌های محلی هر روستا است و نمی‌توان برای تمامی روستاها نسخه‌ای واحد ارائه کرد.

۵. بحث و نتیجه‌گیری

یافته‌های پژوهش نشان می‌دهد که کولبری بیش از آنکه یک انتخاب اقتصادی باشد، راهبردی معیشتی در واکنش به ضعف ساختارهای توسعه‌ای، کمبود فرصت‌های اشتغال و نبود تنوع اقتصادی در نواحی روستایی مرزی است. بنابراین، تداوم این پدیده را نمی‌توان صرفاً با سیاست‌های امنیتی و انتظامی کنترل کرد، بلکه کاهش پایدار آن مستلزم پیوند هم‌زمان سیاست‌های امنیتی و توسعه‌ای است. بر این اساس، رویکرد مدیریت مرزها باید از نگرش صرفاً تهدیدمحور به رویکرد امنیت پایدار و توسعه‌محور تغییر یابد.

از مهم‌ترین دستاوردهای پژوهش حاضر، ارائه مدلی سه‌سطحی برای کاهش وابستگی معیشتی به کولبری است. در سطح نخست، توسعه اقتصادی بر پایه ظرفیت‌های بومی هر روستا، از طریق حمایت از دامداری، باغداری، زنبورداری، صنایع دستی، گردشگری روستایی، صنایع تبدیلی، مشاغل خانگی و کسب‌وکارهای نوآورانه مورد تأکید قرار گرفته است. در سطح دوم، تقویت سرمایه انسانی و اجتماعی از طریق آموزش‌های مهارتی، توسعه کارآفرینی، افزایش مشارکت جوانان و توانمندسازی اقتصادی زنان روستایی پیشنهاد می‌شود. در سطح سوم نیز توسعه زیرساخت‌های خدماتی، تقویت بازارچه‌های رسمی مرزی، حمایت از تعاونی‌های محلی، تسهیل سرمایه‌گذاری بخش خصوصی، بهبود هماهنگی میان نهادهای توسعه‌ای و امنیتی و بهره‌گیری از فناوری‌های نوین مدیریت مرزها به‌عنوان راهبردهای مکمل مطرح شده‌اند.

کلیدواژه‌ها: کولبری، امنیت مرزی، ظرفیت‌های توسعه‌ای، نواحی روستایی شهرستان مریوان.

تشکر و قدردانی

نویسندگان مراتب سپاس و قدردانی خود را از تمامی کولبران پاسخ دهنده، خبرگان، کارشناسان و افراد شرکت‌کننده در این پژوهش ابراز می‌دارند. همچنین از همکاری و حمایت نهادهای سازمان‌ها و مؤسسات مرتبط، صمیمانه تشکر و قدردانی می‌شود. و در نهایت از داوران ارجمند و سردبیر محترم نشریه که با یادآوری نکات ارزشمند به بهبود کیفیت مقاله، کمک نمودند، سپاسگزاریم.

گسترده‌ای بر امنیت پایدار منطقه دارد. بر اساس تحلیل داده‌ها، تعداد ۶۵ مفهوم منفی استخراج شد که در قالب پنج مقوله اصلی شامل ضعف در امنیت سیاسی - نظامی، امنیت اقتصادی، امنیت اجتماعی، امنیت محیطی - کالبدی و امنیت غذایی طبقه‌بندی شدند. این پیامدها در نهایت موجب شکل‌گیری آسیب‌های بلندمدت امنیتی از جمله افزایش هزینه‌های حفاظت از مرز، کاهش سرمایه اجتماعی، گسترش قانون‌گریزی، افزایش مهاجرت، کاهش سرمایه‌گذاری مولد، تخریب زیرساخت‌ها، افزایش فقر، کاهش امنیت غذایی، کاهش تولیدات محلی و تشدید نابرابری‌های منطقه‌ای می‌شوند.

نتایج تحلیل کمی نشان داد که از میان متغیرهای مورد بررسی، تنها سطح تحصیلات و نسبت جمعیت جوان روستاها دارای رابطه معنادار با تداوم کولبری هستند. به‌گونه‌ای که افزایش سطح تحصیلات با کاهش گرایش به کولبری همراه بوده، در حالی که افزایش سهم جمعیت جوان موجب افزایش احتمال گرایش به این فعالیت شده است. در مقابل، متغیرهایی مانند فاصله از مرز، فاصله از مرکز شهرستان، سن، تأهل و تنوع اقتصادی موجود روستاها رابطه معناداری با تداوم کولبری نشان ندادند. این یافته بیانگر آن است که کولبری در محدوده مورد مطالعه از یک فعالیت محدود فراتر رفته و به بخشی از ساختار اقتصادی و اجتماعی منطقه تبدیل شده است.

در بخش برنامه‌ریزی توسعه اقتصادی، نتایج نشان داد که هر یک از روستاهای مورد مطالعه دارای ظرفیت‌های متفاوتی برای توسعه فعالیت‌های اقتصادی جایگزین هستند. در روستای کلکه‌جان، توسعه دامداری، باغداری انگور دیم، پرورش طیور و مشاغل خدماتی دارای بیشترین اولویت بود. در روستای درزیان، توسعه دامداری، زنبورداری، باغداری، گیاهان دارویی، مشاغل خانگی و صنایع تبدیلی به عنوان مهم‌ترین ظرفیت‌ها شناسایی شد. در روستای بالک، باغداری، دامداری، پرورش ماهی، گردشگری مذهبی و صنایع دستی زنان روستایی در اولویت قرار گرفتند. همچنین در روستای سیانو، توسعه دامداری، زنبورداری، باغداری انگور دیم، کسب‌وکارهای مبتنی بر مشارکت زنان و فعالیت‌های خدماتی مهم‌ترین گزینه‌های اشتغال جایگزین تشخیص داده شدند. این نتایج نشان می‌دهد که توسعه اقتصادی مناطق روستایی مرزی نیازمند برنامه‌هایی متناسب با



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