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# The Role of Geographical Indications in Local Economic Development: Findings from a Study in Kalecik District Ankara[A]

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**Abstract:** Geographical indication is a quality mark that indicates and guarantees the origin of the product. Geographical indication registration protects products with distinctive local characteristics specific to their region of origin. Kalecik Karası Üzümü, Kalecik Ekmeği and Kalecik Çöreği are registered geographical indications of the district. In this study, the effects of the geographical indications of Kalecik district on local economic development and current and potential contribution of geographical indication to the promotion of local products have been examined. For this purpose, interviews were conducted with farmers, producers, companies, and other relevant stakeholders. The primary data of the study consists of the data obtained through the surveys. In addition to the survey data, in-depth interviews with local actors provided valuable qualitative insights into the perception and use of geographical indications. As a result of the interviews, it is seen that the primary income source of the producers is not the local product they are related to. The knowledge and awareness level of geographical indication of the producers is low. Use of the GI emblem is uncommon. Geographical indications are mostly considered as a tool which can contribute to the promotion of the product and the region. They are not considered to provide a direct benefit to the producer's income. The producer organization in the district is weak. In Kalecik Karası Üzümü example, the lack of an organized structure has caused wine producing companies to set prices and to decrease the grapes prices over the years.

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[A] This study is derived from the master's thesis titled "The Contribution of Geographical Indications to the Promotion of Local Products and Economic Development: Research of Ankara Province Kalecik District", prepared by Şule PEHLİVANOĞLU. The survey was carried out with voluntary participants, and no personal or sensitive data were collected; therefore, ethics committee approval was not required according to the relevant institutional guidelines.

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Geographical indications have limited impact on producer organization activities and do not significantly enhance communication between producers and other regional actors. The findings reveal that enhancing the impact of regional geographical indications on economic development requires the establishment of a stronger and more functional supportive organizational infrastructure.

**Keywords:** Economic development, geographical indications, local products, rural development.

## Yerel Ekonomik Kalkınmada Coğrafi İşaretlerin Rolü: Ankara ili Kalecik ilçesi Araştırmasından Bulgular

**Öz:** Coğrafi işaretler, ürünün kaynağını, karakteristik özelliklerini ve ürünün söz konusu karakteristik özellikleri ile coğrafi alan arasındaki bağlantıyı gösteren ve garanti eden kalite işaretleridir. Coğrafi işaret tescili ile kaynaklandığı yöreden elde ettiği yerel niteliklere bağlı olarak belli bir üne kavuşmuş ürünlerin korunması sağlanır. Kalecik Karası Üzümü, Kalecik Ekmeği ve Kalecik Çöreği, Kalecik ilçesine ait tescilli coğrafi işaretlerdir. Kalecik ilçesine ait coğrafi işaretlerin yerel ekonomik kalkınmaya etkilerinin ve coğrafi işaret kavramının yerel ürünlerin değerlendirmesine sunduğu mevcut ve potansiyel katkının incelendiği bu çalışmada; çiftçiler, üreticiler, firmalar ve coğrafi işaret kavramı ile ilgili diğer paydaşlar ile görüşülmüştür. Çalışmanın birincil verilerini bahsi geçen bu paydaşlar ile 2022 yılında yapılan anket çalışması verileri ve derinlemesine mülakat çalışmalarıyla elde edilen bilgiler oluşturmaktadır. Derinlemesine mülakatlar, yerel aktörlerin coğrafi işaret kavramına dair algılarını, uygulama pratiklerini ve yaşadıkları sorunları daha iyi anlamamıza olanak sağlamıştır. Çalışma kapsamında yapılan görüşmeler ve değerlendirmeler neticesinde üreticilerin birincil gelir kaynağının çoğunlukla ilgili oldukları coğrafi işaret/yerel ürün olmadığı görülmüştür. Üreticilerin genel anlamda coğrafi işaret bilgi ve farkındalık düzeylerinin düşük olduğu ve coğrafi işaret amblemi kullanımının olmadığı görülmektedir. Coğrafi işaretler üreticiler tarafından daha çok, ürünün ve bölgenin tanıtımına katkı sağlayabilecek bir araç olarak değerlendirilmekte, ürünlerin üretici gelirine direkt olarak bir fayda sağladığı düşünülmemektedir. İlçe, üretici örgütlenmesi açısından zayıftır. Kalecik Karası Üzümü örneğinde, kooperatif gibi bir örgütlü yapı eksikliğinin, yıllar içerisinde üzüm fiyatının düşmesine neden olduğu görülmüştür. Tescilli ürünlerin de üretici örgütlenme faaliyetlerini olumlu yönde etkilemediği ve üreticiler ile bölgedeki diğer aktörler arasındaki iletişime bir katkı sunmadığı değerlendirilmektedir. Elde edilen bulgular, bölgeye ait coğrafi işaretlerin ekonomik kalkınma üzerindeki etkisinin artırılabilmesi için daha güçlü ve işlevsel bir destekleyici organizasyonel altyapıya ihtiyaç duyulduğunu ortaya koymaktadır.

**Anahtar Kelimeler:** Ekonomik kalkınma, coğrafi işaretler, yerel ürünler, kırsal kalkınma.

## Introduction

The geographical indications (GI) system, which has a long history worldwide, initially emerged in France to regulate the wine market (Vivien, 2019). It later spread to other European countries and many developed nations, and is now recognised as an industrial property right. The GI system, also considered a rural development tool, grants rights to use GI names while imposing specific responsibilities on users.

One of the significant issues faced in rural areas is the sale of agricultural products at low added value. GIs have become an important concept in preserving the economic value of local products. GI registration helps ensure that local products gain their deserved commercial value and receive industrial property protection. The ability of these products to enter international markets is also crucial for rural development. This contributes to higher producer income, encourages production diversity, and increases demand for high-quality local products, helping to retain rural populations.

GIs are regarded as an important tool for development policy in EU countries. In the EU, GIs are used to highlight and emphasize the distinctive characteristics of local products. Thus, GIs contribute to the economic dimension of rural development by adding value to local products. Globally, especially in the EU, the prices of GIs are higher than those of similar products without such protection. According to a consumer survey conducted in the EU, 40% of consumers are willing to pay 10% more for GIs (EC, 2012). In France, GI-registered cheeses sell for 29% more than non-GI cheeses, and GI registered chicken commands a 23% premium. Italian GI registered cheeses are sold at 13% higher prices, while GI registered meats in Germany are sold at 79% higher prices. The olive oils in Canada protected by GI system are priced 30% higher (Chever et al., 2012). In Spain's Aragon region, consumers are willing to pay 9% more for lamb with the label “Teruel Origin” (Gracia, 2014).

A notable report demonstrating the socioeconomic benefits of origin-linked GI products is ‘Strengthening Sustainable Food Systems through Geographical Indications’ (FAO, 2018), published by the FAO and the European Bank for Reconstruction and Development (EBRD). This study analyzed the economic impacts of geographical indication registration through nine case studies: Colombian Coffee, Darjeeling Tea (India), Futog Cabbage (Serbia), Kona Coffee (USA), Manchego Cheese (Spain), Penja Pepper (Cameroon), Taliouine Saffron (Morocco), Tête de Moine Cheese (Switzerland), and Vale dos Vinhedos Wine (Brazil). It was observed that origin-linked registration significantly increased the final product's price by 20% to 50%. One reason for this is that consumers are willing to pay higher prices for GI registered products.

Building on international evidence, we now turn to the case of Türkiye, which holds significant potential for GI-based local development. Numerous studies in Türkiye have examined consumer perceptions of geographical indications. Çukur (2017) found that GI awareness influences consumers’ willingness to pay higher prices. Similarly, Toklu et al. (2016) reported that GI registered Artvin Balı (honey) increases consumers’ willingness to pay, while Meral and Şahin (2013) indicated that 58.9% of consumers are inclined to pay more for GI-registered foods, offering a 29.8% premium for Gemlik Zeytini (olives). In a survey of 400 consumers in Antalya city center, 70% were willing to pay more for GI-protected Tavşan Yüreği Zeytini (olives), and 87% were willing to

pay more for Finike Portakalı (oranges), with approximately 45% of respondents for both products willing to pay an additional 5% (Dokuzlu et al., 2019).

Geographical indications serve as an important tool for local economic development (Kan and Gülçubuk, 2013). Research shows that GIs contribute beyond price increases by leveraging the unique origin-based characteristics of products to revitalize local economies. This revitalization can generate new opportunities in rural areas, including gastronomic, eco-, and cultural tourism (Kan et al., 2012). Consequently, GIs also positively affect city economies through branding, recognition, and tourism demand. Kan and Gülçubuk (2008) emphasized that GI protection, rooted in distinctive product characteristics, holds considerable potential to stimulate local economies, particularly in rural regions, while also helping to preserve local culture amidst globalization.

While GIs can enhance commercial activity and address rural market deficiencies, evidence suggests that unlocking their potential requires robust regional support systems and institutional understanding (Bardhı and Kapaj, 2017). In Türkiye, with its rich array of local products, GIs offer valuable opportunities for entrepreneurship and high value-added rural development. However, the system alone cannot generate substantial impact. A further challenge is the lack of precise data on the market size of GI products; current estimates rely on assumptions rather than concrete figures (Kan and Gülçubuk, 2021). This uncertainty is viewed as an obstacle for both market management and GI system development. Most registrants in Türkiye are municipalities and chambers of commerce and industry, with the majority of registered GIs being food and agricultural products.

Unlike most previous studies in Türkiye, which primarily focus on consumer perspectives, this study provides an empirical contribution from the producer perspective, highlighting structural issues such as organization, monitoring, and market practices that influence the realization of economic benefits from GI registrations.

In the Kalecik district of Ankara Province, three products hold Protected Geographical Indication (PGI) status: Kalecik Karası Üzümü (grape; 2007), Kalecik Ekmeği (bread; 2020), and Kalecik Çöreği (pastry; 2020). This study examines how these registrations contribute to the product, producers, and the region, assessing their economic implications alongside producer perceptions.

## Material and Method

The primary data for this study were collected through surveys conducted with individuals involved in the production and sale of GIs in the Kalecik district of Ankara Province. Secondary data included literature used to establish the conceptual framework, as well as reports from the Ministry of Agriculture and the Turkish Statistical Institute (TÜİK).

Kalecik district was chosen as the study area due to its proximity to Ankara city center and the high number of registered GIs at the time of the study. The presence of other potential GI products also informed this choice.

According to 2021 Farmer Registration System (FRS) records, 110 producers cultivate Kalecik Karası Üzümü, of whom 35 manage vineyards of 10 decares or more, representing approximately 30% of the total vineyard area. These producers were targeted for interviews through complete enumeration. Ultimately, interviews were completed with 27 farmers and all three wine-producing firms, as one farmer had converted their vines to table grapes and four farmers could not be reached.

The survey included demographic questions, Likert-type items assessing awareness and perceptions of GIs, and open-ended questions addressing production practices, marketing channels, and perceived constraints. Survey data were analysed using descriptive statistical methods and complemented by in-depth interviews.

In the center of Kalecik, four businesses are engaged in the production and marketing of Kalecik Ekmeği and Kalecik Çöreği. All four were included in the study, and surveys were conducted with the business owners through face-to-face interviews.

Additionally, in-depth interviews were held with officials from the Kalecik District Directorate of Agriculture and Forestry and the Kalecik Municipality regarding the registered products. Semi-structured questionnaires addressed the GI registration process, institutional initiatives and responsibilities, evaluation methods, protection and usage principles, contributions to producers and the district economy, and employment creation. Discussions were also held with the Kalecik Hanımeli Cooperative to examine the economic benefits of GIs for Kalecik Karası Üzümü, Kalecik Ekmeği, and Kalecik Çöreği, as well as the cooperative's role in evaluating these products.

Qualitative data from the interviews were analysed through thematic content analysis. Transcripts were reviewed to identify recurring themes related to producer awareness, organizational capacity, market participation, and perceived benefits and challenges associated with GIs. These qualitative findings were used to deepen the interpretation of the quantitative survey results.

Data were analysed descriptively. In addition to reporting basic proportions, qualitative interpretations were incorporated to assess producers' awareness, market participation, organizational structure, and perceived benefits of GIs.

## Results and Discussion

### Results of the Kalecik Karası Üzümü Study

The demographic characteristics of the grape producers interviewed in the study were analyzed. Most producers interviewed are 55 years or older; about 40% are aged 60 or above. This reflects the generally older age of rural agricultural workers in Türkiye. According to TÜİK (2022) labor force statistics, among the elderly population (65 years and older), 64.2% were employed in the agriculture sector in 2020. Among the 27 participants, only one is a woman. Approximately half of the producers reported that their household size is 2, indicating that they

live only with their spouses. Nearly half of the participating farmers (48%) have only completed primary education, while about 26% have received university-level education or higher.

When asked about the three main sources of livelihood in their neighborhood where they live and engage in viticulture, 70.4% of the producers indicated that the primary source of livelihood is non-viticultural plant production. The most common secondary and tertiary sources of livelihood mentioned were, respectively, retirement pensions (48.2%) and viticulture (47.6%). In rural areas where most households rely on agriculture, GI-registered products are expected to serve as a primary source of livelihood (Yin et al., 2024; Zhang et al., 2023). However, in Kalecik, viticulture remains only a tertiary source of income. Survey results indicate that although Kalecik Karası Üzümü is a registered geographical indication, its emblem and GI branding are not widely used by producers, …which reduces the potential economic benefits for producers. This suggests that the product has not yet functioned as a 'driving force' for local economic development.

Viticulture practices among the participants were assessed in terms of years of cultivation, vineyard size, and production volume. 63 percent of producers have cultivated Kalecik Karası for more than 21 years. Production expanded in the early 2000s, likely attracting a number of new producers at that time. However, according to the producers themselves, many of these new entrants subsequently abandoned their vineyards.

85% of the farmers have vineyard areas ranging from 11 to 50 decares. 26% of the producers reported an annual production of 6-10 tons of Kalecik Karası Üzümü, while 55.6% reported an annual production of 11-30 tons.

About 67% of producers sell to wine-producing companies, while 30% market their products through long-standing personal networks. Only one producer sells directly at a market. Producers selling to their own networks mostly have buyers who are molasses producers. Thus, about 30% of producers have their grapes processed into secondary products. This reflects the broader situation in Türkiye, a major global grape producer, where only 2.5–3% of grapes are processed into wine (Şenuyar et al., 2014).

All producers sell fresh grapes. 26 % also process grapes into molasses, vinegar, or -less commonly- raisins. In 2023, Kalecik Karası Üzümü were sold at approximately USD 0.52–USD 0.64 per kilogram, and molasses made from these grapes was sold at approximately USD 8.60 per kilogram. Considering that approximately 5 kg of grapes are needed to produce 1 kg of molasses, processing Kalecik Karası Üzümü into molasses could therefore be significantly more profitable than selling fresh grapes at low prices. None export or sell through a cooperative. Only 3 of the 27 producers are members of a producer organisation (Agricultural Credit Cooperatives of Türkiye). Discussions revealed that the Kalecik Karası Producers' Union was founded in 2008, during a period of increasing grape production. This increase was driven by the efforts of Ankara University's Faculty of Agriculture, GI registration, and the activities of various regional stakeholders, including public institutions and wineries. The union still exists but is no longer active.

While 30% stated they would join if an active cooperative existed, 37% reported they would not, believing it would not provide economic benefits. However, it is known that producer organizations positively affect producers' earnings by creating marketing opportunities. Indeed, Gülçubuk (2015) notes that, as in all developed

economies, cooperatives are the most important tool for producers to organize and gain an effective position in the market. For Kalecik Karası Üzümü, the absence of a producer cooperative is a key factor preventing the product from reaching its full potential value. This lack of cooperation leads to marketing challenges, which in turn affects farmers' income and prevents them from achieving the expected financial returns.

GI awareness among farmers is limited: 52% reported knowing the concept, while 48% did not. Those unfamiliar with GIs were mostly aged 55 or older. However, it is noteworthy that despite the presence of three registered geographical indications for Kalecik district and the registration of Kalecik Karası Üzümü in 2007, farmers' knowledge of GIs remains limited, which is lower than would be expected for a region with established GI products. Participants who claimed to know the concept generally described it correctly. Awareness was higher among university-educated farmers and in central neighbourhoods. Lower awareness in rural areas may reflect limited access to information and potential promotional or educational activities that aim to raise awareness about Kalecik Karası Üzümü.

**Table 1.** Knowledge levels of Kalecik Karası Üzümü producers regarding GIs

| **Informations about geographical indications** | **Correct** | | **Incorrect** | | **No Opinion** | | **Total** | |
|---|---|---|---|---|---|---|---|---|
| | **Number** | **%** | **Number** | **%** | **Number** | **%** | **Number** | **%** |
| Geographical indication is brand. | 4 | 14.8 | 5 | 18.5 | 18 | 66.7 | **27** | **100** |
| Geographical indication is patent. | 6 | 22.2 | 2 | 7.4 | 19 | 70.4 | **27** | **100** |
| Geographical indication is a right other than a brand or patent. | 10 | 37.0 | 2 | 7.4 | 15 | 55.6 | **27** | **100** |
| Geographical indication grants certain rights and responsibilities to producers. | 9 | 33.3 | 3 | 11.1 | 15 | 55.6 | **27** | **100** |
| The registration of geographical indications concerns public institutions, not producers. | 1 | 3.7 | 12 | 44.4 | 14 | 51.9 | **27** | **100** |
| Kalecik Karası Üzümü is a GI registered product. | 14 | 51.9 | 1 | 3.7 | 12 | 44.4 | **27** | **100** |
| There are multiple registered geographical indications belonging to Kalecik district. | 9 | 33.3 | 1 | 3.7 | 17 | 63.0 | **27** | **100** |

Questions were posed to measure participants' knowledge of GIs, and the responses are summarized in Table 1. It is evident that there is a general confusion between geographical indications and other intellectual property rights (particularly trademarks and patents) within the community. This confusion is largely attributed to misleading media expressions such as "patenting of local products." Indeed, only 18.5% of participants correctly identified that a GI is not a trademark, and 7.4% recognized that it is not a patent. Approximately 52% of

respondents were aware that Kalecik Karası Üzümü is a GI registered product. Only 33.3% correctly stated that there are multiple GIs registered in the Kalecik district. The low percentage of Kalecik Karası Üzümü producers with accurate information about geographical indications is noteworthy, as evidenced by the high proportion of "I don't know" responses.

Despite being primary stakeholders, producers' limited understanding of GIs reduces their awareness of the potential benefits for both themselves and the product. As a result, producers are less likely to use the GI name, emblem, or logo. This informational deficiency also hinders the establishment of organizations that could promote GI registered products in the market. In his doctoral thesis on the local economic impacts of GIs using Akşehir Kirazı (cherry) as a case, Kan (2011) questioned whether producers fully understood the concept. Kan's findings, which indicate that more than half of the producers lack knowledge about GIs, align with the results obtained in this study. Additionally, both studies found a similar proportion of individuals believing that geographical indications are patents (22.2% in this study, 23.81% in Kan's study). Despite the decade-long interval between the two studies, it is striking that the level of knowledge regarding GIs among producers remains approximately the same. This suggests that despite a decade of awareness-raising efforts, including legislative changes, they may have been insufficient or may have targeted consumers rather than rural producers.

Responses to the Likert-scale questions on the socio-economic impacts of GIs also show a high rate of "I don't know" selections. It is unsurprising yet noteworthy that producers with limited knowledge of GIs are similarly unaware of their socio-economic impacts. If GIs are expected to support income generation and local development in Türkiye, awareness activities targeting producers must be strengthened. Increased awareness could encourage producers to engage in GIs production, related activities, and organization. Participants tend to view the benefits of GIs more in terms of promotion and increasing visibility rather than economic gains. The highest agreement was recorded for statements such as "GIs contribute to regional promotion" (55.6%) and "GIs contribute to product promotion" (55.6%). Only 37% of respondents believed that GI registration is economically beneficial for producers, while 44.4% thought it would lead to higher product prices. This suggests that the registration is perceived more as a symbol or advertisement supporting regional and product promotion rather than creating direct and tangible economic benefits for the producer. Producers generally perceive GI contributions to economic development as indirect, with limited effects on product prices and sales volumes. The absence of a direct income benefit from the Kalecik Karası Üzümü GI registration appears to have shaped producers' perceptions. This issue is examined further in the following section.

The statement with the lowest agreement rate was "Geographical indications help prevent migration from villages to cities," at 29.6%. In their study on migration from rural areas to urban centers, Gülçubuk and Yasan (2009) identified factors such as rural poverty, low agricultural productivity, and limited employment opportunities. The most effective factors in migration were cited as the harsh living and working conditions in rural areas, along with scarcity and lack of resources. Accordingly, farmers' views on the connection between GIs and migration indirectly suggest that the GIs of the district have not had a significant positive impact on reducing poverty and increasing employment opportunities.

Thus far, the general level of knowledge and attitudes of the participating farmers regarding GIs has been assessed. This section analyzes responses to Likert-scale questions to understand the specific effects of the Kalecik Karası Üzümü GI registration on both the product and the producers. Responses to these questions are summarized in Table 2.

**Table 2.** Changes brought about by GI registration on Kalecik Karası Üzümü and producers

| Topic of Change | Increased a Lot (%) | Partially Increased (%) | No Change (%) | Partially Decreased (%) | Decreased a Lot (%) | No Opinion (%) | Total (%) |
|---|---|---|---|---|---|---|---|
| Production of Kalecik Karası Üzümü | 7.5 | 25.9 | 37 | 3.7 | - | 25.9 | **100** |
| Production of other grape varieties in the region | - | 11.1 | 59.3 | 3.7 | - | 25.9 | **100** |
| Price of Kalecik Karası Üzümü | - | 25.9 | 44.5 | 3.7 | - | 25.9 | **100** |
| Price of other grape varieties in the region | - | 3.7 | 63 | - | - | 33.3 | **100** |
| Demand for Kalecik Karası Üzümü | 33.3 | 7.5 | 33.3 | - | - | 25.9 | **100** |
| Recognition area of the product | 37 | 7.5 | 29.6 | - | - | 25.9 | **100** |
| District tourism activities | 7.5 | 18.5 | 40.7 | - | - | 33.3 | **100** |
| Protection of the product | 3.7 | 14.8 | 44.5 | - | - | 37 | **100** |
| Collective action of producers | - | - | 63 | - | - | 37 | **100** |
| Quality of the product | 22.3 | 11.1 | 33.3 | - | - | 33.3 | **100** |
| Producer's income | 11.1 | 7.4 | 44.5 | 3.7 | - | 33.3 | **100** |
| Production area of Kalecik Karası Üzümü | - | 22.2 | 44.5 | - | - | 33.3 | **100** |
| Number of producers | - | 25.9 | 40.8 | - | - | 33.3 | **100** |
| Employment | 3.7 | 18.5 | 44.5 | - | - | 33.3 | **100** |
| Demand for products processed from Kalecik Karası Üzümü | 14.8 | 18.5 | 29.7 | 3.7 | - | 33.3 | **100** |
| Number of products processed from Kalecik Karası Üzümü | - | 7.4 | 55.6 | - | - | 37 | **100** |
| Quantity of products processed from Kalecik Karası Üzümü | 7.5 | 11.1 | 48.1 | - | - | 33.3 | **100** |
| Transition to contract farming | - | - | 63 | - | - | 37 | **100** |

Participants reported that GI registration increased Kalecik Karası Üzümü production by 33.4%. 37% of participants believed the registration had no effect, while 3.7% thought it had slightly reduced grape production. Interviews indicated that Kalecik Karası Üzümü production increased in the early 2000s but declined over the past decade. Producers did not attribute changes in production to the GI registration. The proportion of those

who thought that the area of production had partially increased with the registration was 22.2%, while 44.5% believed there had been no change.

Regarding the price per kilogram of Kalecik Karası Üzümü, 44.5% of participants thought it had remained unchanged due to the registration. Approximately 26% believed that the price had partially increased. Producers who perceived a partial price increase explained that prices initially increased but subsequently declined. The demand for Kalecik Karası Üzümü was reported to have increased significantly by 33.3% and partially by 7.5% due to the GI registration. 33.3% of the participants thought the registration did not affect the demand for the grape. The demand for products made from Kalecik Karası Üzümü was reported to have increased significantly by 14.8% and partially by 18.5%. Over half of the producers stated that GI registration did not increase the variety of products derived from Kalecik Karası Üzümü. Most farmers believe that the GI registration of Kalecik Karası Üzümü has not had any impact on other grape varieties grown in the region. The shares of respondents stating that production quantity and demand for other grape varieties remained unchanged were 59.3% and 63%, respectively.

A total of 33.4% of participants indicated that the quality of Kalecik Karası Üzümü grown in the region had increased, using the options “increased significantly” and “increased partially” The proportion of those who thought that product preservation had increased was 18.5%. There is a perception that the GI registration has not been very beneficial for product preservation, and it is suggested that the product has preserved itself thanks to its quality. Respectively, 33.3% and 44.5% of respondents reported no change in quality or preservation. During the survey, grape producers reported that the dam irrigation system adversely affects grape quality. Grape producers reported that the dam irrigation system negatively impacts grape quality. The nearby cultivation of water-intensive crops, such as silage corn and alfalfa, coupled with uncontrolled irrigation, has disrupted the local moisture balance, leading to the emergence of previously absent diseases, including powdery mildew and vine moth, which in turn reduce grape quality and increase disease management costs.

Only 18.5% of the participants stated that the GI registration had increased farmers’ income. 44.5% reported no change, while 3.7% said it had partially decreased farmers' income. Although only 3.7%, reports of income decline following registration are noteworthy. The percentage of those who stated that the GI registration had increased the number of new producers is 25.9%. The proportion of those who think it had no impact on this aspect is 40.8%. Official records indicate that the number of Kalecik Karası Üzümü producers fell from 285 in 2014 to 110 in 2021. Participants indicated that the registration increased employment by 22.2%. This increase in employment is largely attributed to the rise in the number of workers at establishments producing wine and molasses and paste.

Consistent with earlier findings, the most recognized benefit of GI registration is increased product recognition. Indeed, participants indicated that the recognition of the product had increased significantly by 37% and partially by 7.5% with the registration. The proportion of those who thought there was no change was 29.6%. 26% of participants believed that the registration had increased tourism activities in the district.

Survey responses indicate that although GI registration improved product promotion and demand, farmers did not proportionately benefit economically. In successful GI systems, additional economic value created

through market activity is expected to be fairly shared across the value chain. GIs can support economic development only under these conditions. Kalecik Karası Üzümü had the potential to achieve economic success during the period of cultivation improvements, GI registration, and winery expansion. However, GI registration has neither protected the product and producers nor been effectively used as a marketing tool. Despite increased production, recognition, and demand, the resulting short-term economic gains were not sustained, and farmers' income did not rise. Insufficient protection, limited knowledge, and weak collective organization appear to have contributed to this outcome. Most of the farmers involved in the study believe that the GI registration has not had an impact on producer organization and collective action.

GI registration is also perceived as having no role in encouraging contract farming. Farmers refusing contract farming cited delayed payments as the main reason. Although harvest occurs in September, wineries reportedly announce prices months later and pay farmers in March–April. Uniform pricing regardless of product quality also discourages participation in contract farming.

Farmers were asked about GI audits and the effectiveness of local institutions. It was found that none of the farmers had previously encountered a GI audit, and nearly all were not knowledgeable about the geographical indication audit system. Given that the survey included the district's largest producers (10+ decares), GI audits appear to be ineffective or absent. Geographical indication audit not only ensures compliance with quality criteria established by the registration but also has a role in increasing product recognition. One reason for the farmers' lack of knowledge about geographical indications is thought to be the ineffective implementation of audit activities. The failure to effectively conduct GI audit activities may also be attributed to the fact that Kalecik Karası Üzümü has an earlier registration. A general issue is that audit criteria were not clearly specified in registrations made before the Industrial Property Law. This situation creates difficulties for registrants with regard to audit activities. It is anticipated that updating the registration and record information for Kalecik Karası Üzümü, which could be considered an older registration, may provide a solution to this problem.

All participants use the GI name 'Kalecik Karası Üzümü' in their sales, but none use the GI emblem. Only 3.7 % believe that using the geographical indication name and emblem offers economic benefits. The GI emblem is mentioned here because, according to information gathered during interviews, farmers generally perceive Kalecik Karası Üzümü as a product with a sales guarantee and believe that it can easily find buyers, thus viewing the emblem as having no significant economic advantage. Thus, the effect of the GI name cannot be overlooked. Producers stated that the Kalecik Karası Üzümü, with its unique features, easily finds buyers. Despite a drop in price, production continues due to its sales guarantee.

Approximately 70% of the participating producers believe that the Kalecik Municipality and the Kalecik District Directorate of Agriculture have not effectively managed the process initiated by the GI registration. However, recent initiatives, including reviving the Kalecik Karası Üzümü Festival, applying for GIs for Kalecik Ekmeği and Kalecik Çöreği and supporting the Hanımeli Cooperative, are considered beneficial for raising awareness of GIs. Nearly all participants reported receiving no training from the Municipality or the District Directorate of Agriculture on this matter. Only 7.4% of participants think that the geographical indication registration has improved farmers' relationships with the private sector and public institutions. Sarıipek and

Çevik (2020) found that institutions, including district governorships and municipalities, generally did not show sufficient interest in GIs. Based on this finding, GI related institutions in Kalecik are expected to take a more active role in informing producers and consumers and in supporting marketing activities.

Despite increased recognition and demand, expected to raise prices and farmers' incomes, these outcomes were not realized. Producers attribute the stagnation in income to the market pressure exerted by large wineries in the region. In a poorly organized market, these increasingly dominant firms kept grape prices artificially low. As a result, their presence further drove down grape prices. For instance, while Kalecik Karası Üzümü sold for around USD 1.5 per kilogram during the early years of increased production, wineries were offering approximately USD 0.5 per kilogram in 2021, representing a decline of about 67% in the price received by farmers. This indicates that the economic gains from rising recognition and production largely accrued to large wineries rather than farmers. This suggests that despite the heightened recognition of the Kalecik Karası Üzümü, producers were unable to fully capitalize on the increased demand and visibility. Contributing factors include inadequate producer organization, a lack of marketing efforts, and a weak audit system for geographical indications. As noted by Sarıipek and Çevik (2020), for producers to reap the economic benefits of geographical indications, it is crucial for institutions to become more actively involved, organize collective actions, and implement thorough marketing and inspection processes. In the case of Kalecik Karası Üzümü, weak organization, limited marketing, and inadequate GI enforcement have restricted the benefits that producers could have gained from the GI.

In the early 2000s, a major winery established new vineyards through contract farming, grafted Kalecik Karası onto existing vines, and adopted the T-training system. Producers reported that grape prices are initially set at harvest time. However, in the current non-competitive environment, wineries can set prices at their discretion. Farmers who continued to work under contract with large companies noted that they remained in the system primarily because it provided an easier way to market their produce after harvest. While large firms engaged in contract farming can offer small producers competitive advantages in today's market (Pakdemirli, 2020), interview findings from this study indicate that such arrangements have, in some respects disadvantaged farmers in the Kalecik district. Many producers reported that contractual relationships with wine-producing companies reduced their bargaining power and profits over time. These observations are consistent with the argument of Teoman and Tartıcı (2012), who view contract farming as a mechanism of capitalist intrusion into agriculture that undermines producers' economic autonomy.

Although contract farming temporarily increased vineyard areas for Kalecik Karası Üzümü, unfavorable practices by participating wineries led producers to switch to other grape varieties or crops. Delaying harvests to raise sugar levels for winemaking reduced yields and caused additional stress on the vines. Moreover, prolonged low pricing after harvest caused economic losses for Kalecik Karası Üzümü producers and weakened their motivation to continue cultivation. These observations highlight the need for improved producer organization and contract terms that protect smallholders' interests in the region.

While Anatolia, the historical cradle of grape cultivation and winemaking, might be expected to provide favorable conditions for the sector and support economic gains for producers, this has not been fully realized in

the case of Kalecik Karası Üzümü. As producers perceived that economic returns were not distributed equitably, their motivation gradually declined, which appears to have contributed to a reduction in Kalecik Karası Üzümü production over time.

A similar issue stemming from weak producer organization and limited marketing opportunities has also been observed in the case of Elazığ Öküzgözü Üzümü, another GI registered wine grape. This variety was registered as a geographical indication by the Elazığ Provincial Directorate of Agriculture and Forestry on March 6, 2009 (TÜRKPATENT, 2022).

According to Yücel (2015), more than half of the producers sell their grapes to wineries, wholesalers, and intermediaries at low prices. The lack of a well-structured marketing and distribution system in the region largely results from inadequate coordination among producers. As a result, intermediaries dominate the supply chain, leaving producers underpaid while consumers face higher prices.

In both the Kalecik Karası and Elazığ Öküzgözü Üzümü cases, producers of these specialized agricultural products have struggled to capture the potential economic benefits associated with increased recognition and demand. A key factor appears to be limited marketing opportunities stemming from the absence of effective cooperatives or the weak functioning of producer associations in both regions. As a result, the economic advantages of geographical indication registration have largely accrued to large wine producers and wholesalers, rather than to the farmers themselves. In the case of Kalecik Karası Üzümü, despite the increased recognition following GI registration, farmers' incomes have not improved and, in some cases, have declined over time, reflecting the critical role of organized producer networks and access to effective marketing channels. This underscores that, without robust producer organizations encompassing all regional stakeholders and addressing market limitations, the prestige associated with GI registration alone is insufficient to ensure tangible economic gains for local producers.

So far, the discussion has drawn on survey data collected from grape producers. The following section incorporates insights from interviews conducted with wine-producing firms. Based on the Farmer Registration System, face-to-face interviews were held with three companies in the Kalecik district that own vineyards and produce Kalecik Karası Üzümü. Two of these firms remain active in wine production. The third reported producing wine under contract until 2014 but has since limited its operations to selling fresh grapes and previously produced wine, part of which is supplied to other wineries.

Two firms have been operating since the early 2000s, while the third has a longer history in wine production. Two of them obtain grapes both from their own vineyards and from local growers. They cultivate approximately 600, 200, and 180 decares of vineyards, yielding around 300, 60, and 55 tons of Kalecik Karası Üzümü, respectively.

The firms that buy from local farmers reported annual purchases of around 400 and 200 tons, respectively. One firm uses a contract farming model, initially covering vineyard establishment costs for selected producers, based on land, soil, and climate suitability, with repayment deducted from harvest payments. The firm also provides technical support throughout the growing season. Over time, this system has evolved to include only

technical guidance and advance cash support, also repaid during harvest. The firm currently collaborates with 10–15 producers in Kalecik. The other wine-producing company does not employ a contract model but performs quality analyses before procurement. Both firms sell their wines domestically and internationally.

All three firms emphasized that Kalecik Karası Üzümü stands out from other regional varieties due to its distinctive appearance, unique aroma, and superior quality. The firms observed that Kalecik Karası Üzümü grapes from the region display more uniform coloration and yield more consistent analytical results. Their distinctiveness is attributed to the area's climate and soil characteristics, the influence of the Kızılırmak River, and the region's microclimatic conditions. Moreover, Kalecik Karası Üzümü are regarded as suitable not only for winemaking but also for consumption as table grapes, as well as for juice and dried grape production.

The economic importance of Kalecik Karası Üzümü to the district is considered moderate. The firms stated that the product enjoys steady recognition, demand, and marketing opportunities, and that buyers are generally satisfied with its quality. However, producers' economic conditions remain modest. Collective action among growers is weak, and inter-institutional communication concerning the product is limited.

When asked about the major challenges facing grape production in the region, firms identified several key issues: limited technical knowledge among producers, a shortage of young labor for this labor-intensive crop, and land fragmentation caused by inheritance, which prevents the establishment of modern vineyard systems. Additional problems include the low profitability of grape cultivation relative to other crops, high input costs, and restricted irrigation opportunities, all of which contribute to reduced yields.

Although intended to improve productivity, the irrigation systems were reported by firms to have paradoxically harmed grape quality. The cultivation of water-intensive crops such as silage corn and alfalfa near vineyards, coupled with excessive and uncontrolled irrigation practices, has disrupted the region's moisture balance. This imbalance has triggered diseases such as powdery mildew and bunch rot—previously unseen in Kalecik vineyards—leading to declining grape quality and higher disease-control costs. To address these issues, the firms recommended providing growers with training on sustainable agricultural practices and enforcing stricter irrigation controls at the regional level.

As discussed earlier, the distinctive qualities of Kalecik Karası Üzümü are deeply connected to its geographic origin. The region's unique microclimate imparts qualities that distinguish this grape from other varieties grown elsewhere. This relationship exemplifies the essence of geographical indications, which derive their value from specific environmental factors that shape product characteristics. To fully realize the economic potential of such products, both the product and the environmental features that define its uniqueness must be protected. Accordingly, GI related development initiatives should be implemented sustainably, with due consideration for social and environmental impacts. Safeguarding environmental resources linked to GI production and ensuring that other regional activities do not degrade these conditions are essential for maintaining product quality and distinctiveness.

The firms involved in grape production view GI registration as an important driver of economic development for both Türkiye and the Kalecik district. However, they noted that the expected benefits, particularly for grapes,

have not been achieved. According to the firms interviewed, GI registration has had little tangible impact on Kalecik Karası Üzümü, its producers, or the local economy. The registration has not significantly affected production practices, grape quality, vineyard numbers, producer income, or local employment.

Two firms reported having undergone GI audits. One emphasized that such inspections are necessary to prevent the misuse of the GI name and to ensure fair competition.

**Research Findings on Kalecik Ekmeği and Kalecik Çöreği**

In the Kalecik district center, four establishments sell both Kalecik Ekmeği (bread) and Kalecik Çöreği (pastry). Two of these engage in both wholesale and retail trade, while the remaining two sell exclusively to end consumers. Wholesale sales are mainly directed to local restaurants, bakeries in neighboring provinces and districts, and regulated sales points operated by the Kalecik Municipality in Ankara's Pursaklar and Çankaya districts. Only one establishment sells products sourced from local neighborhood bakeries, whereas the other three engage in both production and sales.

In one establishment, two family members (a married couple) work together—one in production and the other in sales—whereas in the other businesses, only one family member is employed. Two establishments also employ salaried staff (one and two employees, respectively).

Three establishments report daily sales of approximately 150 loaves of Kalecik Ekmeği, while the remaining one sells between 70 and 80. Regarding Kalecik Çöreği, two establishments sell around 40–50 units per day, whereas the other two sell 70–80. Retail prices are uniform across all businesses, amounting to approximately USD 0.54 for Kalecik Ekmeği and USD 1.62 for Kalecik Çöreği as of October 2022. For comparison, the standard bread price at that time was roughly USD 0.14. Considering the dough weight of standard bread (≈250 g) versus Kalecik Ekmeği (≈1,000 g), the latter is not relatively more expensive. Consequently, the potential economic benefits of selling GI labeled products at premium prices have not yet been realized for Kalecik Ekmeği. Nonetheless, given their relatively recent GI registration, both Kalecik Ekmeği and Kalecik Çöreği may attain higher market value in the future through targeted GI based marketing strategies.

Producers source their flour from mills located in Kalecik and nearby provinces such as Kırıkkale and Çankırı. All establishments believe that part of the wheat used in these mills originates from Kalecik. This indicates that any increase in the production or sales of Kalecik Ekmeği and Kalecik Çöreği could enhance the added value of local wheat, contributing to the district's internal economic circulation.

All business owners reported understanding the meaning of a geographical indication, describing it as "a regional and registered product." However, there appears to be confusion between geographical indications and trademark or patent protection. Business owners are aware that Kalecik Ekmeği and Kalecik Çöreği are registered GIs, with the registrations obtained by the Kalecik Municipality. This confusion may be related to the recent nature of these registrations.

Only two business owners demonstrated awareness of the general benefits expected from GI registration, recognizing its role in enhancing product recognition and protecting producers and consumers. Nonetheless,

none believed that the registration had delivered economic benefits. They noted that the prices of bread and pastries have not risen due to the registration but rather because of increased raw material costs and inflation. The registration has not affected the number of employees, producers, or sales establishments in the district, nor has it influenced wholesale or external trade. Two businesses conduct online sales but also reported no change in sales volume following registration. According to the business owners, the GI registration mainly improved the recognition of Kalecik Ekmeği and Kalecik Çöreği and slightly boosted sales through regulated municipal outlets. The absence of significant sales growth outside the district is attributed to local consumers' habits—Kalecik natives continue to buy these products primarily when visiting their hometown. It was also noted that the Kalecik Municipality purchases Kalecik Ekmeği and Kalecik Çöreği from these businesses to use as gifts during various events.

Şen and Ekinci (2020), in their study on GI registered breads in Türkiye, found that all but one of these breads (Kızılcahamam Bazlaması) are baked in domed ovens. This traditional baking method, integral to Kalecik Ekmeği production, could help position the region as a gastronomic tourism destination. In this context, Kalecik Ekmeği holds potential to indirectly support local economic development through gastronomic and rural tourism. At the time of this study, there were two municipal and six privately owned bakeries operating in the district center.

All businesses use the GI names Kalecik Ekmeği and Kalecik Çöreği on their products; however, none display the geographical indication emblem. This lack of compliance appears to result from limited awareness among business owners. Although they recognize that production must comply with certain quality criteria under the GI scheme, effective audit practices were found to be lacking in the district.

**Approach of District Actors to Geographical Indications**

Geographical indications, protected through registration and defined by the unique qualities derived from their region of origin, can play a pivotal role in addressing socio-economic challenges in rural areas. Achieving this potential requires active participation not only from producers but also from relevant associations, cooperatives, and public institutions. This study examined the perspectives and activities of public institutions and local authorities in the Kalecik district regarding existing and potential GIs. These institutions consider GIs as valuable tools for monitoring the district's gastronomic and cultural development, preserving this heritage for future generations, and contributing to regional promotion and economic growth.

In recent years, global demand for local products has increased markedly, a trend accelerated during the COVID-19 pandemic. During this period, products from the Kalecik district also gained greater recognition. Environmental challenges such as drought have made agricultural production more difficult, further elevating the importance of GI registered products. Insufficient returns from dry farming have highlighted the potential of GIs to add value to the district's economy, with Kalecik Karası Üzümü serving as a prominent example.

Recent assessments suggest that public institutions and the private sector have begun to enhance the contribution of GIs to the local economy. Both existing and potential GIs in the district are expected to generate

economic benefits in the near future. The district's proximity to Ankara, combined with the fact that many Kalecik residents live in the capital, provides important advantages for promoting and marketing local products. Additionally, domestic tourists' interest in GI registered products has increased in recent years. Nevertheless, marketing opportunities must be expanded further to ensure that GIs benefit producers and the local economy.

In recent years, local governments have launched several initiatives to raise awareness of and improve market access for the district's GIs. Kalecik Ekmeği (bread) and Kalecik Çöreği (pastry) were registered by the Kalecik Municipality in 2020, and the number of traditional stone ovens producing these goods has since increased. GI products and their derivatives are promoted through festivals, television programs, and both local and national promotional events. Festivals are considered important for rural economic development because they attract visitors and stimulate the local economy. GIs are particularly suitable as themes or focal points for such events, as they help promote the district and its quality products while increasing sales of goods and services during festival periods. For instance, the Çubuk Turşusu (pickle) and Culture Festival held in Çubuk, Ankara Province, in 2007 generated approximately USD 3.84 million over just four days (Yalçın, 2013).

Audits of registered products are reportedly conducted by the authorities listed in the GI registry. However, survey and interview findings indicate that effective auditing is largely absent in the district. For Kalecik Karası Üzümü in particular, audits appear to cover only a few large producers. The product's early registration, coupled with unclear provisions regarding inspection procedures and geographic boundaries, has contributed to weak enforcement.

The establishment of two regulated sales points in central Ankara and a newly opened marketplace in Kalecik district, where these products are sold together, represents a significant economic initiative. Local authorities have also supported the creation of a women's cooperative, the Hanımeli Cooperative, which produces and markets GI products.

The cooperative, officially named the "Limited Liability Kalecik Hanımeli Women's Initiative Production and Operating Cooperative", was established on July 4, 2019, with support from the Kalecik Municipality and eight founding members. Its mission includes promoting domestic and international marketing, advancing public health and women's rights, improving quality of life through educational programs, and establishing childcare centers for children aged 0–6. The municipality initially supported the cooperative by providing premises and a sales office, while additional assistance has come from project-based collaborations with various institutions, covering transportation, meals, website design, and product analysis. The cooperative's production facility is located in the Kalecik Small Industrial Site.

The Hanımeli Cooperative obtains Kalecik Karası Üzümü from both its members and local farmers, producing vinegar, molasses, grape juice, grape seed oil, and grape seed flour. It also makes canned stuffed grape leaves for ready-to-eat meals. These products are sold in both domestic and international markets. To meet growing demand, the cooperative purchases molasses directly from local farmers and has it analyzed by Ankara University prior to purchase to ensure quality standards.

Members reported that GI registration has brought clear economic benefits. Products made from GI registered grapes, especially Kalecik Karası Üzümü, are in higher demand, particularly in international markets, and the cooperative has no difficulty finding buyers. GI registration helps Kalecik Karası Üzümü access new markets, and products made from registered grapes command higher prices than those produced from non-GI varieties. The cooperative exports GI-related products such as vinegar, molasses, and grape seed oil, as well as some other processed goods, primarily to Malaysia and the Netherlands through intermediaries.

Initially, the cooperative also produced Kalecik Ekmeği and Kalecik Çöreği but later discontinued these activities due to early baking hours. However, it successfully tested freezing and baking Kalecik Çöreği before sale and plans to install a cooling and freezing system to expand domestic and international market opportunities. Partnerships with a local flour mill provide logistical and operational support, including meals and transport assistance. It is planned that the cooperative's name will appear on flour packaging produced under this joint project. Efforts are also underway to enable the cooperative to export independently.

Support from public and private organizations has strengthened communication among stakeholders involved in GI activities, creating a foundation for future projects that can further contribute to local development. Formed by eight dedicated women, the Hanımeli Cooperative demonstrates that rural development, the promotion of local products, and GI related benefits are achievable only through effective collective organization. Transforming local agricultural products into value-added goods and diversifying the product range are vital for regional economic growth. By utilizing every part of the Kalecik Karası Üzümü, the Hanımeli Cooperative serves as a promising model for enhancing the economic impact of the district's geographical indications.

## Conclusion

Geographical indications (GIs) are products whose reputation or specific quality characteristics are linked to a defined geographical area or to natural or human factors in that region. Registration of a GI protects products recognized for their quality, traditional production methods, or local raw materials. Beyond safeguarding the product, producers, and consumers, GIs support economic development. Since most GIs originate in rural areas and are primarily agricultural or food products, they also contribute to rural development, both in Türkiye and globally.

GI registration preserves valuable products that embody cultural heritage, safeguards the historical and cultural identity of the region, allows producers to compete with industrial products through additional income, and can reduce migration by retaining local producers. GIs also promote rural tourism.

Successful GI examples from Türkiye and worldwide show that collaboration among all relevant actors is key. GI registration alone may not significantly increase producer income or support rural development; it becomes effective when combined with the efforts of public institutions, associations, foundations, cooperatives, and producer unions. Interaction among stakeholders and a shared vision are crucial for raising awareness among both producers and consumers. Local actors must champion and protect GIs to foster regional development and

contribute to the national economy. A lack of dialogue can result in missed opportunities, limit innovation, and reduce access to public support, ultimately affecting producer income. Producers not supported by other organizations may lack a platform to express concerns, potentially leading to decreased production if issues remain unresolved.

In Kalecik district, insufficient dialogue among farmers, producers, public institutions, and local authorities may have contributed to producers' limited knowledge about geographical indications. As a result, they are unable to take full advantage of GI protection. For instance, businesses producing and selling Kalecik Ekmeği and Kalecik Çöreği do not use the GI emblem, primarily due to a lack of information. Since the emblem can serve as a signal of authenticity and attract consumers, particularly tourists, this knowledge gap may constrain the potential market and sales performance of these products.

Kalecik's proximity to Ankara is advantageous for products like bread and pastries, which are affordable and sell quickly. Expanding marketing to include Kalecik Ekmeği and Kalecik Çöreği in chain stores in the capital could increase sales. As demand grows, large markets now include sections for organic, local, diabetic, gluten-free, and GI products, highlighting the importance of integrating Kalecik products into such channels. Production planning should align with increasing demand. The traditional dome-shaped ovens used to bake Kalecik Ekmeği connect the product to the district's historical and cultural heritage, creating an opportunity to enhance tourism, particularly gastronomic tourism, and generate economic benefits for the region.

The Hanımeli Cooperative, a relatively new and small initiative, has fostered dialogue among public institutions, private sector entities, universities, and e-commerce platforms, both locally and beyond. Their efforts enhance production motivation and support future projects. In a region with an underdeveloped wine sector, the cooperative has created alternative uses for Kalecik Karası Üzümü, utilizing all parts of the grape, from leaves to seeds. Additionally, marketing Kalecik Çöreği in semi-prepared frozen form broadens potential market reach.

In developed economies, producer organizations are considered crucial for coordinating producers and establishing an effective market position. In the case of Kalecik Karası Üzümü, the absence of an active producer organization is evident, as the product has not achieved its potential value and farmers have not realized additional income that could be expected from the recognition and niche status of a GI. Without such organizational structures, large wine producers have filled the gap, capturing a portion of farmers' income and determining prices. Interviews also indicate that contract farming arrangements, which theoretically should motivate production by guaranteeing product sales, have in some respects disadvantaged farmers, reducing their bargaining power and economic returns. To address this, producers should collaborate and establish contract terms that safeguard their income over the long term. Moreover, forming organized producer groups would strengthen smallholders' position against larger firms, while government support could help protect farmers' rights within contractual arrangements.

Under Türkiye's Industrial Property Law, producer groups, individual producers, associations, foundations, cooperatives, and public institutions acting in the public interest can apply for GI registration. When public

institutions act without producer involvement, GI ownership and protection may suffer, limiting producers' ability to resolve issues and turning registration into a mere statistical achievement.

For GIs to generate the expected economic benefits and ensure a fair distribution of this value, it is essential that producer organizations are involved from the outset of the registration process and take an active role in managing the GI. Legislative amendments could help address current shortcomings, for instance, by requiring the establishment or designation of an active producer organization as a formal stakeholder in the GI system, defining minimum responsibilities for these organizations (such as coordination, communication, monitoring, and internal control), and ensuring their direct involvement in decisions concerning product specifications, control procedures, and the use of the GI emblem. Such measures would strengthen producer participation and contribute to more effective and equitable GI management.

An effective monitoring system is essential for ensuring that GI protection functions as intended and delivers economic benefits. Preventing the misuse of a GI name depends on the strength of this system. In this context, both the qualifications of the individuals and institutions responsible for monitoring and the clear, accurate definition of product-specific protection criteria play a critical role.

For Kalecik Karası Üzümü, with an older GI registration, audit issues must be resolved. Current challenges, including the absence of new vineyards, the geographical designation as the entire Republic of Türkiye, and unclear audit criteria, hinder effective monitoring. A robust audit system should track the product from harvest to final product using labeling (including the GI emblem) and ensure that grapes from outside Kalecik are not used in GI-branded products. Such a system requires an active cooperative or producer union.

Amending the GI registration of Kalecik Karası Üzümü to define the geographical boundary as "Kalecik District, Ankara Province," to include newly established cooperatives in audit processes, clearly specify audit criteria, and, following necessary studies, update the specifications to consider changing the registration from PGI to PDO could enhance its economic benefits. This would legally prevent use of the GI name and emblem by producers outside the defined area, stabilize prices through producer organization, and ensure that local producers retain control over pricing. Additionally, registering wine made from Kalecik Karası Üzümü as a GI could further strengthen the protection and market value of the product.

Kalecik Karası Üzümü also used in the production of products such as molasses and vinegar. As noted in earlier sections of this manuscript, processing grapes before sale is economically more advantageous, making it beneficial for a new producer initiative to focus on this area. A potential collaboration with Hanımeli Cooperative, which currently produces these products and markets them both domestically and internationally, could further expand marketing opportunities for Kalecik Karası Üzümü, preventing producers from having to sell their product at low prices due to limited market access.

As noted earlier, while GIs are recognized as tools for supporting rural development and transformation, economic sustainability is often emphasized over environmental and social considerations. For the economic benefits of GIs to be truly sustainable, producers and relevant stakeholders must also be attentive to environmental issues. Maintaining the district's specific soil, climate, and cultural characteristics is essential to

ensure the desired quality of GI products derived from Kalecik. To this end, producers should be educated on conscious farming practices, and irrigation must be managed by the appropriate authorities. Furthermore, environmental considerations should be integrated into GI registration and future organizational initiatives to preserve local conditions.

These findings reflect medium- and large-scale producers (10 decares or more), the primary commercial supply base. Excluding small-scale producers may limit generalizability. Future studies should include smaller producers to improve representativeness.

In conclusion, local products associated with GIs are not the primary income source for producers. Awareness of GIs and emblem use is limited. GIs are mainly seen as tools for enhancing product visibility rather than generating direct economic benefits. Weak organizational capacity allows wine companies to dictate pricing, causing a gradual decline in Kalecik Karası Üzümü prices. GIs have had little effect on strengthening producer organizations or improving collaboration between producers and regional stakeholders.

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