

Re-inventing through re-finding. Riparian agriculture for environmental system revitalization marking a new identity for lower shrinkage and isolation in Finiq

Franceska Korance, Leonora Haxhiu
PhD IDAUP/ Polis University

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Abstract- *The paper is a focused exploration of strategies aimed at revitalizing Finiq Municipality's environmental and cultural landscape, with a particular emphasis on riparian agriculture. Located in the southern region of Albania, Finiq possesses remarkable natural, historical, and culinary assets. However, the region grapples with persistent challenges such as population decline, economic stagnation, and cultural identity erosion. This study's core objective is to present innovative strategies centered around riparian agriculture, which can lead to the revitalization of Finiq's environmental systems, foster economic growth, mitigate isolation, and renew the region's cultural identity. The primary aim of this study is to introduce and advocate for riparian agriculture as a transformative force capable of rejuvenating Finiq Municipality's environmental systems, thereby stimulating economic revitalization, reducing isolation, and rekindling the region's cultural identity. This study employs a comprehensive research methodology that encompasses an in-depth examination of Finiq's environmental and cultural assets, an assessment of the challenges facing the region, and an exploration of successful riparian agriculture practices. Insights gained from local engagement and case studies form the basis for the development of strategic recommendations tailored to Finiq's unique context. In terms of the main conclusions derived from the paper, we should highlight the need for the adoption of riparian agriculture which can catalyze environmental restoration, economic growth, and cultural revival in Finiq. Encouraging community-based agricultural initiatives, including cooperatives and farmer markets, can enhance local engagement, promote economic development, and strengthen social bonds. Implementing terrace farming practices in hilly and mountainous areas has the potential to optimize land use, prevent environmental degradation, and support agro-tourism, offering unique products and experiences. Improvements in irrigation and drainage systems are essential to sustain agricultural growth and mitigate flooding concerns. Integrating renewable energy sources, such as wind and solar, with agriculture can create additional income streams, enhance energy sustainability, and contribute to Finiq's environmental regeneration.*

Keywords:

Finiq, municipality, riparian agriculture, irrigation, economical rejuvenation, system revitalization.

Introduction - Shrinking and isolated regions present complex challenges for policymakers and communities worldwide. These areas face sustained population decline and limited access to resources, hindering socio-economic development (Bradshaw & Wei, 2020; Carr & Lynch, 2018). Shrinking regions experience continual population decline

due to factors like outmigration and aging demographics, while isolated regions suffer from geographic remoteness and limited connectivity (Bradshaw & Wei, 2020; Carr & Lynch, 2018). Economic restructuring, demographic shifts, and geographic factors contribute to shrinkage and isolation by causing job loss, outmigration, and limited infrastructure

development (OECD, 2019; Pike et al., 2017). Revitalization efforts require diversifying the economic base, improving infrastructure, and investing in human capital and community engagement to foster resilience (Delina, 2020; Sohn & Lee, 2019). Situated along the Ionian coast of southern Albania, the Municipality of Finiq emerges as a locale characterized by its abundant natural form and function, historical significance, and rich heritage. However, beneath this picturesque exterior, Finiq grapples with a formidable challenge: a persistent decline that imperils its socioeconomic fabric. Central to this predicament is a diminishing population, waning cultural distinctiveness, and the looming threat of isolation. Moreover, in this type of scenario challenges include limited resources, governance fragmentation, and social resistance to change, requiring innovative approaches and long-term sustainability strategies (Turok & Mykhnenko, 2017). Yet, within these challenges lies an opportunity for rejuvenation—a prospect centered on the revitalization of Finiq's agricultural sector, deemed pivotal for the area's economic resurgence. In this light, this paper embarks on an exploratory study with a singular focus: the revival of Finiq's agricultural domain as the linchpin for its economic revitalization and system revitalization marking a new identity for lower shrinkage and isolation in Finiq. Successful examples such as Japan's Regional Revitalization Policy and the EU's Cohesion Policy highlight the importance of targeted investments and community

involvement in stimulating economic growth (Terluin & Slangen, 2017; Woods, 2017). Re-inventing Finiq within its potential means re-finding its lost potential. The identity of Finiq is intimately entwined with its agrarian heritage, where fertile lands and undulating terrain serve as custodians of its cultural legacy. Nevertheless, this identity stands at a crossroads, beset by economic stagnation, environmental pressures, and the diminishing allure of traditional farming practices. At regional and national levels, policymakers have implemented policy frameworks to revitalize agriculture and the environment in shrinking and isolated regions. These frameworks include initiatives to promote sustainable farming, support rural livelihoods, and conserve natural resources (OECD, 2019; Sohn & Lee, 2019). Specifically, national policies provide financial support and technical assistance, while regional strategies tailor solutions to local challenges. By integrating economic, social, and environmental objectives, these policies aim to foster inclusive and resilient development (Delina, 2020). In this regard, this research acknowledges that the trajectory toward Finiq's revitalization commences at its agrarian core. It constitutes an investigation into the transformative potential of riparian agriculture—a comprehensive paradigm shift that reimagines the intersection of environment, economy, and culture. By prioritizing the reinvigoration of agriculture, this study endeavors to catalyze economic growth, alleviate isolation, and reignite a renewed area in

this distinctive locale. The future of Finiq hinges upon its capacity to reinvent itself through the rediscovery of its agricultural heritage. Riparian agriculture emerges as the prime catalyst—a beacon of promise that can bridge the divide between environmental preservation and economic prosperity. Through community-driven initiatives, infrastructure enhancements, and the embrace of sustainable practices, this study aspires to reverse the tide of population decline, rejuvenate economic prospects, and rekindle the cultural pride of Finiq.

This paper constitutes a clarion call to action, an entreaty to envision a future wherein agriculture stands as the bedrock of Finiq's economic, historic, and cultural renaissance. The research gap this paper addresses is the need for a more detailed analysis of the specific interventions and strategies needed to revitalize the agricultural sector in Finiq, considering the unique socio-economic, environmental, and cultural factors at play. As this research delves into some of the key strategic interventions that can realize this vision, it aims to identify a profound re-invention—a journey that holds the promise of lower shrinkage, reduced isolation, and a regenerated identity for Finiq, wherein agriculture assumes the role of the principal agent in revitalizing this extraordinary region.

Research Question

The main question driving this paper is: How can the revitalization of the

agricultural sector, particularly through the implementation of riparian agriculture and infrastructure investments, serve as a catalyst for environmental system rejuvenation, economic revitalization, and the reformation of cultural identity in Finiq Municipality, with the ultimate goal of reducing population decline and mitigating isolation? This research question encapsulates the central focus of the paper, which is to explore the challenges at hand and propose strategies for revitalizing the agricultural sector in Finiq as a means to address various interconnected challenges faced by the region, including economic stagnation, cultural erosion, and population decline while emphasizing the importance of agriculture as a transformative approach for Finiq.

Based on the above research question, we must emphasize that this research aims to achieve several key outcomes. Firstly, it seeks to provide a comprehensive understanding of the challenges and opportunities related to revitalizing the agricultural sector in Finiq Municipality. Through multidisciplinary methods including GIS analysis and data extraction from strategic environmental assessments, it aims to identify riparian agriculture and infrastructure investments as catalysts for environmental system rejuvenation, economic revitalization, and cultural identity reformulation. Ultimately, the study aims to offer actionable recommendations for policymakers and practitioners, informing evidence-

based decision-making and promoting sustainable development in Finiq Municipality.

Methodology Used

This study employs a multidisciplinary methodology to comprehensively address the revitalization of Finiq Municipality's agricultural sector and its implications for the broader environmental, economic, and cultural dimensions. The methodology comprises several key components, including Geographic Information System (GIS) analysis.

The study initiates with a robust data collection phase, using GIS technology to gather spatial data crucial for understanding the agricultural landscape of Finiq. However, it is important to note that issues with data accuracy may arise from the beginning. These issues could stem from various sources, including outdated satellite imagery, discrepancies in land use classification, or errors in georeferencing. GIS maps are utilized to delineate the agricultural areas, identify riparian zones, and pinpoint potential areas for infrastructure investment. Despite efforts to ensure accuracy, limitations inherent in the data may impact the precision of the analysis. For instance, inaccuracies in the delineation of boundaries or misinterpretation of features could introduce uncertainties in the findings. Moreover, GIS allows for the integration of these disparate datasets, facilitating a more comprehensive understanding of the interplay between

various factors influencing agricultural revitalization. However, the integration process itself may introduce errors or distortions, underscoring the need for careful scrutiny and validation of the synthesized data. Data accuracy is ensured through rigorous validation processes, cross-referencing GIS-derived information with ground-truthing and field surveys. Despite these efforts, it is important to recognize that complete accuracy may be elusive, particularly in complex and dynamic environments like Finiq Municipality.

Extensive data are extracted from strategic environmental assessments, national plans, and relevant documents pertaining to the region. While these sources offer valuable insights, discrepancies or inconsistencies in the data may pose challenges to the analysis. It is essential for researchers to acknowledge these limitations and employ robust validation techniques to mitigate potential biases.

The methodology integrates findings from the above components, synthesizing data, and aligning them with the overarching goal of revitalizing the agricultural sector. This holistic framework acknowledges the inherent uncertainties in the data while striving to provide actionable insights for informed decision-making and targeted interventions.

Results

The Municipality of Phoeniciae (Finiq) located in the southern region of Albania and on the Ionian coast, is a rich territory,

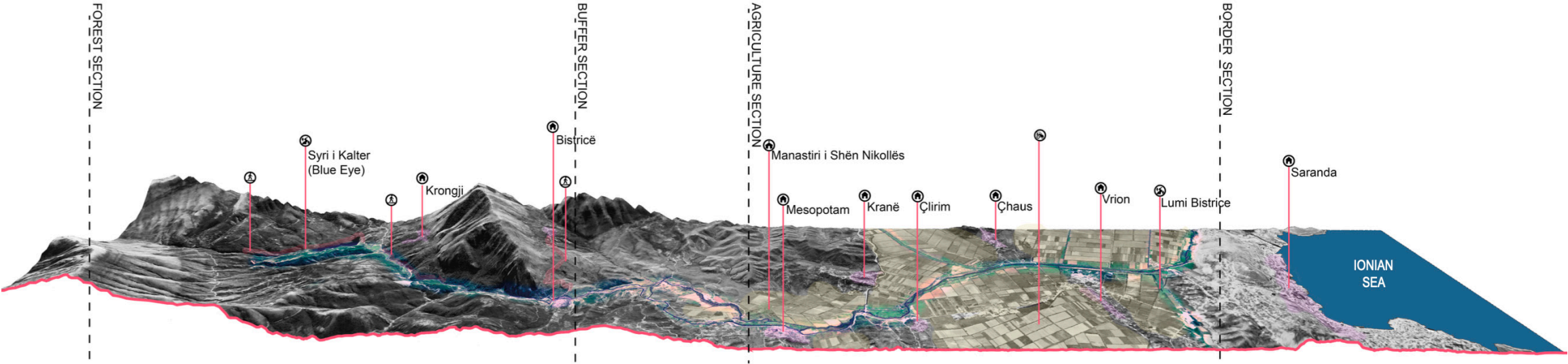


Fig1 / Finiq landscape and main villages source / the authors

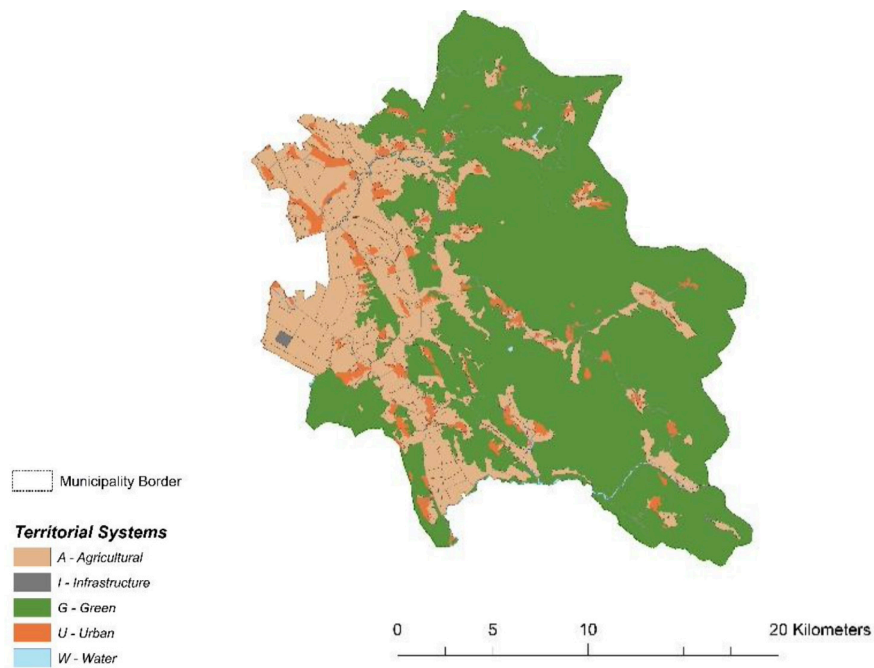


Fig2 / Finiq's main territorial systems
source / Bashkia Finiq, 2021

which combines great natural, historical, and culinary assets. Structurally, Finiq consists of three communities, Vurgu (plain villages), Rëza (mountain villages), and the intermediate hilly area (Sirakat, Livinë, Llazat, Gravë, Karroq). Culturally, the history of Finiq is "written in the stones" of the old settlements of Phoeniciae, Butrint and in the religious buildings of Dhrovjan (Këshilli Kombëtar i Territorit, 2021; Bashkia Finiq, 2021). Now, unfortunately, despite the richness surrounding it, Finiq is in a state of constant shrinkage, loss of identity, and under the threats of everyday isolation.

Assets in terms of environmental systems are complex. Climate, geology, and biology interact in complicated ways to result in the weather, landforms, and life that characterize any place, and all these elements are impacted by anthropological activities. Analyzing environmental systems requires analysis wrought by people over recent times, while also acknowledging and evaluating the potentially long history of people shaping and interacting with environments through time. Failing to acknowledge that environmental systems enhancement and more importantly preservation, has shown to bring isolation, shrinking and identity changes in different territorial systems.

Finiq Municipality has a rich territory, abundant with water resources. The complex network of rivers and lakes in the Municipality of Finiq connects the whole territory, from the high mountain peaks on the east to the fields in the west. Hence, those rivers also collect the

pollution of this territory. Rivers and the land that surrounds them are focal points of economic activity and development. They are essential to humans for water supply, agriculture, transport, and energy; hold significant importance socially and culturally, and have critically important ecological habitats that sustain biodiversity.

Strategy

As an embodiment of the proposed strategy, this study delves into the development of three distinct case studies, each distinguished by its specific characteristics and land utilization patterns. These case studies serve as practical embodiments of the strategy and offer a blueprint for river-oriented actions in the broader context of Finiq Municipality.

Finiq's agricultural landscape confronts several pressing challenges (Davis, 2018; U.S. Department of Agriculture, 2021). Despite the presence of land boasting substantial productive capacity, the region suffers from inadequate infrastructure to support sustainable agricultural and industrial development. Malfunctions plague irrigation and drainage canals, land parcels remain fragmented and small-scale, disputes over ownership persist, and there is a pronounced scarcity of labor.

There are a few key strategic actions that can further enhance Finiq's economic prospects. First and most the community agriculture approach (Johnson & Davis, 2019; Garcia & Martinez, 2020). The proposed solution involves the

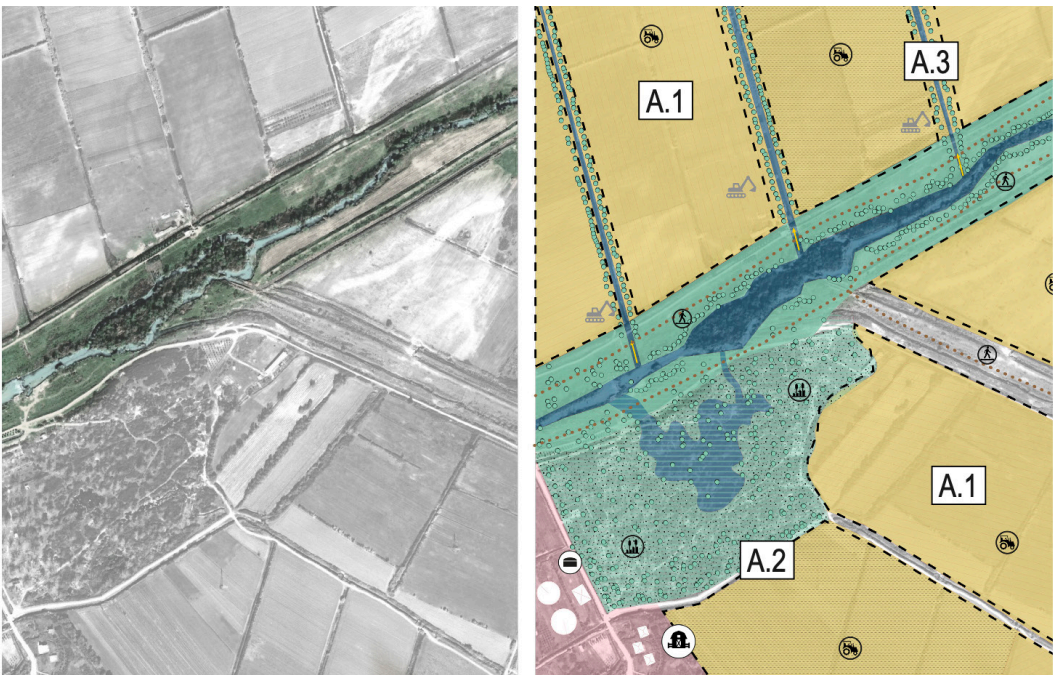


Fig3 / The distinct case studies in Finiq (the body of water, the agricultural land and the urban settlements)
source / the authors

establishment of a collaborative farmer community, potentially in the form of a consortium. This community-driven approach envisions all participating farmers working together, sharing equitably in the profits derived from their collective production. Complementing this initiative, the introduction of a local agricultural market is recommended, completing the agricultural economic chain by facilitating the processing and sale of agricultural products (Wilson & Anderson, 2016; Johnson & Smith, 2021).

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Another key component for Finiq would be terrace farming (Turner & Wilson, 2018; Smith & Davis, 2017). To optimize land usage, particularly in the hilly and mountainous terrain adjacent to settlements, terrace farming emerges

as a viable approach. This model encourages various villages to aggregate their agricultural output in a centralized farmer market, thus alleviating isolation and stimulating economic exchange. Furthermore, terrace farming aims to rejuvenate the cultivation of sage and mountain tea, bolstering agro-tourism by offering products like sage oils and immersive mountain tea experiences (Brown & Anderson, 2020; Garcia & Turner, 2019).

Looking forward to more strategic components that Finiq can use in order to enhance economic revitalization, as we can also see from the picture above, a key approach can be riparian agriculture mixed with energy production (Wilson & Turner, 2018; Brown & Smith, 2017). This innovative approach involves the cultivation of trees and the integration of agriculture with bioremediation plants capable of thriving in inundated areas. Such a strategy not only purifies water but also safeguards the soil against erosion. Furthermore, it advocates diversifying energy sources through the incorporation of renewables, capitalizing on wind resources at river mouths, and harnessing favorable solar radiation, particularly pronounced in Finiq.

The most important challenge to be addressed is the critical inadequacies in agricultural infrastructure, this strategic action centers on the improvement of irrigation and drainage systems supporting agricultural lands. Significant investment is allocated for enhancing, regenerating, and maintaining drainage channels essential for irrigated agricultural

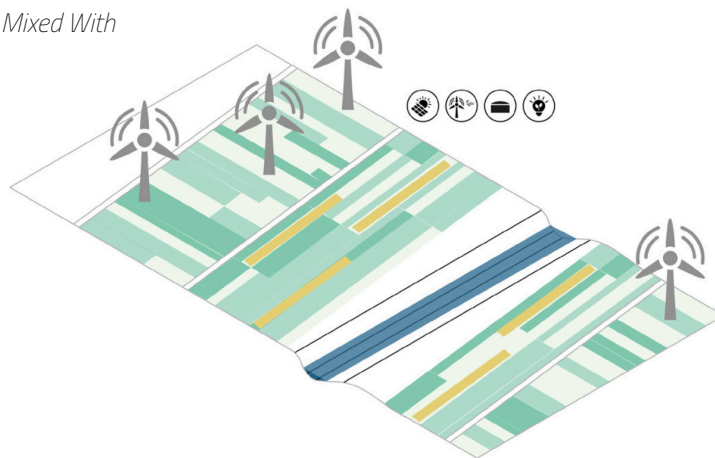
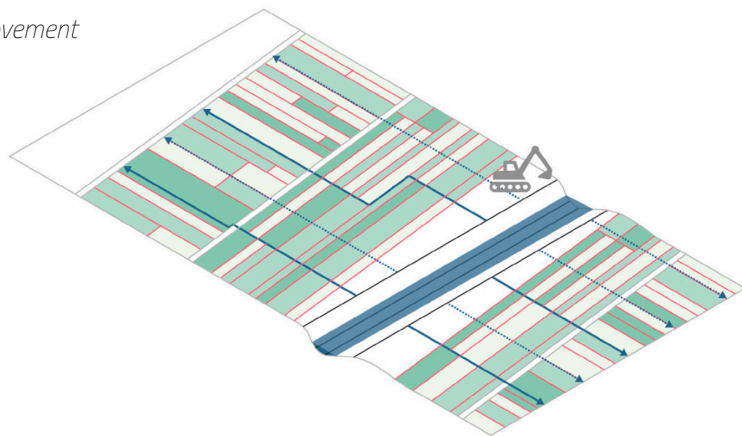
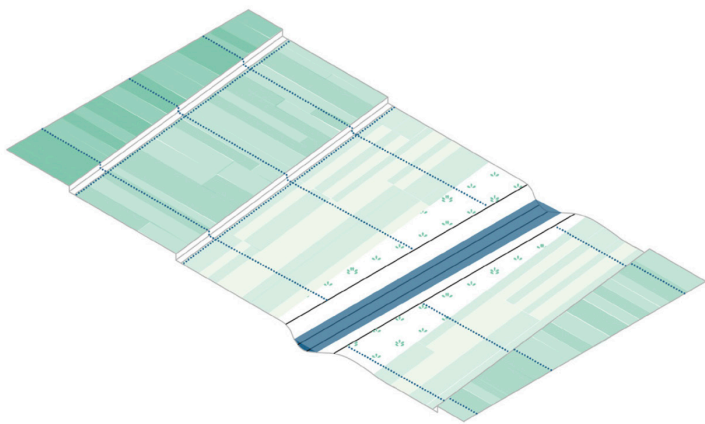
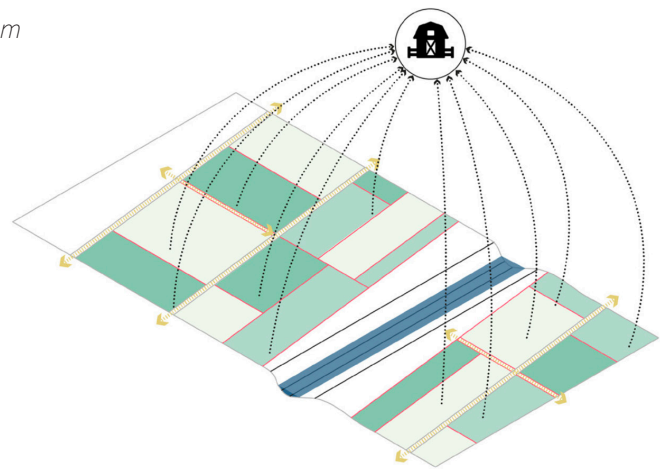


Fig4 / Main strategies
source / the authors

systems, with the overarching objective of promoting agricultural crop growth and resilience (Martinez & Brown, 2019; Davis & Johnson, 2016). As we can see from the above figure, the collective and drainage channels, built as infrastructure long ago, are now completely depreciated and no longer serve any function. It must be said that the revitalization of these channels undoubtedly requires a significant investment, and remains one of the main challenges for the development of this sector. Currently, as estimated there are 513407.065059 shape lengths for all drainage canals in Finiq's main agricultural land (calculated by the authors as seen in the figure above). The cost of restoring drainage canals can vary significantly depending on factors such as the extent of degradation, the size of the canal network, and the specific requirements for rehabilitation. Typically, restoration costs may include expenses for dredging, desilting, repairing canal banks and structures, installing new drainage tiles or pipes, and implementing erosion control measures. However, investing in this infrastructure not only helps agriculture restoration but has a triple effect. For example, in the agricultural regions of the Midwest, USA, drainage canals play a crucial role in maintaining soil moisture levels and preventing waterlogging. In states like Iowa and Illinois, farmers and local authorities have collaborated on drainage canal revitalization projects, often through watershed management initiatives. Investments typically involve repairing and replacing aging infrastructure, installing new drainage tiles, and implementing conservation practices to minimize soil erosion and nutrient runoff (USDA Natural Resources Conservation Service, 2018; Midwest Row Crop Collaborative, 2019). These strategic actions encapsulate the essence of the economic revitalization strategy. They collectively aim to promote agriculture revitalization and develop environmental infrastructure for settlements within Finiq Municipality. These strategies endeavor to mitigate the issues of isolation and population shrinkage, while simultaneously ushering in a renewed and sustainable identity for Finiq.

Conclusions and Recommendations

Shrinking and isolated regions pose significant challenges for policymakers and communities globally, characterized by sustained population decline, limited

resource access, and hindered socio-economic development. The Municipality of Finiq, situated along the Ionian coast of southern Albania, epitomizes such challenges, grappling with diminishing population numbers, cultural erosion, and the looming threat of isolation. Economic restructuring, demographic shifts, and geographical factors exacerbate these issues, leading to job loss, outmigration, and insufficient infrastructure development. In response, revitalization efforts demand a multifaceted approach, involving economic diversification, infrastructure improvement, and community engagement to foster resilience. Amidst the challenges faced by Finiq, there lies an opportunity for regeneration, particularly through the revitalization of its agricultural sector, considered pivotal for economic resurgence. The agricultural heritage of Finiq, intertwined with its cultural identity, serves as a potential catalyst for transformation, offering a pathway towards reduced shrinkage and isolation. In this regard, the research underscores the significance of addressing the specific challenges faced by Finiq through tailored interventions. By prioritizing the reinvigoration of its agricultural sector, the study endeavors to catalyze economic growth, alleviate isolation, and reignite cultural pride. The trajectory towards Finiq's revitalization commences at its agrarian core, marking a new identity for the region as it leverages its agricultural heritage for sustainable development. Several recommendations emerge for policymakers and practitioners. First, to prioritize investments in the revitalization of Finiq's agricultural sector, focusing on community-driven initiatives, infrastructure enhancements, and sustainable practices. Secondly, to establish collaborative farmer communities and local agricultural markets to promote collective production, equitable profit-sharing, and economic exchange. Thirdly, to implement and promote terrace farming initiatives to optimize land usage and promote agrotourism, while regenerating traditional farming practices. And more importantly, allocate significant investment towards improving irrigation and drainage systems, addressing critical inadequacies in agricultural infrastructure, and promoting agricultural resilience.

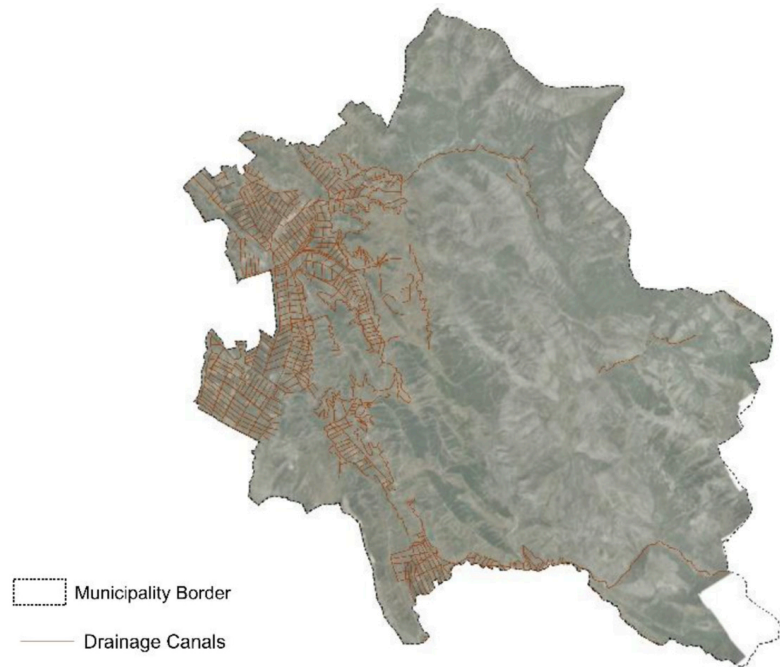


Fig5 / Finiq drainage system
source / the authors

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