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**Down to Earth**

# **Regional report year 1 – Western Greece**

Environmental risks related with depopulation and ageing population  
in rural areas

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# Abbreviation list

Term	Description

# Executive Summary

**Context & Challenge:** Western Greece is grappling with a twofold challenge that threatens its long-term sustainability and economic vitality: depopulation and the looming impacts of climate change. The decreasing population, observed in many rural municipalities, reflects a larger regional trend, bringing with it potential economic stagnation, reduced workforce availability, and decreased local consumption. Concurrently, climate-related risks present direct threats to the region's ecological balance, natural attractions, and associated local economic activities.

**Local Economic Pillars:** Several local entities, like agricultural cooperatives and tourism-related ventures, serve as vital components of the region's economic fabric. These sectors not only foster stable income creation but also contribute significantly to maintaining ecosystems and incentivizing population retention in the most vulnerable areas.

**Heritage Preservation as an Economic Asset:** Western Greece boasts a diverse array of cultural, historical, and natural heritage. These assets, encompassing everything from historical sites to unique local products, serve as focal points for development. Properly managed, they have the potential to both attract tourism and stimulate local economic growth. Effective heritage management can help convert these resources into sustainable economic assets, provided they're managed in a manner that ensures their preservation for future generations.

**Economic Resilience Through Diversification:** Strategies to counter depopulation and climate risks should focus on diversifying the region's economic activities. Embracing technological solutions, such as digital tours and online platforms, can also bolster heritage management and widen the reach of local attractions to a global audience.

**Environmental Commons and Sustainable Development:** There's a pressing need to integrate principles of environmental economics into regional development strategies. This involves recognizing the intrinsic value of ecosystems and the services they provide,



from tourism to agriculture. Investments in sustainable infrastructure, green tourism, and the promotion of local products underpin a model that respects environmental limits while driving economic growth.

**Policy Implications & Recommendations:** For Western Greece to navigate the challenges of depopulation and climate change successfully, a holistic approach is essential. This approach should synergize economic development with heritage preservation, promote sustainable tourism, and embrace innovative solutions that respect the region's unique character. Policymakers must consider incentivizing residents to remain in, or return to, the region, possibly through tax breaks, business grants, or improved infrastructure and services. Additionally, forging partnerships with private enterprises can unlock investments in sustainable ventures that respect the local environment and culture.

In conclusion, addressing the dual challenges of depopulation and climate change in Western Greece necessitates a forward-thinking, integrative approach that views heritage and the environment not just as assets to be protected, but as pivotal components of a resilient economic strategy.

# 1 Introduction

## 1.1 Local context

### Population and economy

The characteristics of population and economic sectors in a country are important determinants in shaping the country's socioeconomic landscape. Understanding the dynamics of these sectors provides valuable insights into the challenges and opportunities that are available for a country to develop. Greece is located at the southernmost tip of Balkan Peninsula and extends between latitudes 34<sup>o</sup> and 43<sup>o</sup> North, and longitudes 19<sup>o</sup> and 28<sup>o</sup> East (Giannaros et al. 2017). The country covers an area of approximately 132,000 km<sup>2</sup> with a total population of nearly 10.5 million people based on census data of 2021 as recorded by the Hellenic Statistical Authority. Until 2011 the country was divided into 10 geographical departments consisting of 51 prefectures. However, Greece, as many other countries, faces several demographic trends and challenges that have appeared in the recent years. Among several others, Greece faces the issue of an increasingly aging population, it has experienced consistently low birth rates for decades, falling below the replacement level needed to maintain a stable population, it has witnessed a significant outflow of skilled and educated young individuals seeking better economic prospects abroad, etc.

The Greek economy consists of many key sectors, each with its own importance and challenges. Among the main sectors, we distinguish (1) tourism, which is a very important sector of the Greek economy, contributing significantly to GDP and employment. Of course, the tourism sector is highly seasonal, leading to income inequalities throughout the year, (2) shipping, which Greece has one of the largest shipping industries in the world and is an important economic activity at the national level, (3) agriculture, which although declining, remains a vital sector, especially in rural areas. Olive oil, wine and dairy products are some of the notable agricultural exports. However, problems such as small-scale agriculture and land fragmentation are major

limiting factors, (4) services and technology, which is a growing sector, led by sectors such as information technology, finance and real estate, and finally (5) manufacturing, which traditionally played a role in the Greek economy, with sectors such as food processing, textiles and pharmaceuticals.

### Vegetation and land use/land cover

Greece's diverse topography, climate, and geographic location have given rise to a wide variety of vegetation types and land use and land cover patterns. The country's landscape reflects a rich mosaic of ecosystems, each with its unique characteristics and significance. Among the main land cover types, we can recognize the following: (1) Mediterranean-type vegetation due to adaptation to warm, dry summers and mild, wet winters, including drought-resistant species like maquis and garrigue (dense, evergreen shrublands), olive groves (an important agricultural activity), vineyards, etc., (2) Forests and forested areas, including pine forests (like *Pinus halepensis* and *Pinus brutia*), broadleaf deciduous forests typically found in cooler, higher elevation areas, including oaks (*Quercus* spp.), chestnuts (*Castanea sativa*), and beech (*Fagus sylvatica*), (3) Agricultural land, along with olive groves and vineyards, arable land is used for growing crops such as wheat, barley, cotton, and citrus fruits, (4) Wetlands and Riparian Zones, providing critical habitats for wildlife and supporting aquatic ecosystems, (5) Coastal and Marine Ecosystems, due to extensive coastline and numerous islands, (6). Urban Areas, including residential, commercial, and industrial areas, and finally (7) extensive Mountainous terrain, characterized by rugged landscapes and alpine ecosystems, also associated to modern time with depopulation.

### Climate

The climate of Greece can be distinguished into five broad categories corresponding to five climatic regions (Mariolopoulos 1938): 1. Mountain region with long, harsh winters and short, rainy summers; 2. Continental region, with a climate intermediate between Mediterranean and central European; 3. Coastal Mediterranean region with mild summers; 4. Continental Mediterranean region characterized by extended summer

drought, and 5. Desert-like region in the south-eastern parts of the island of Crete. The most extensive ecosystems are the Mediterranean-type which account for 40% of the country's surface area (Arianoutsou and Diamantopoulos 1985). The prevailing climate category is the Mediterranean, with mild and rainy winters and relatively warm and dry summers. However, own to its geomorphological diversity climate may vary at local scales mainly as a result of the effect of latitude, elevation and distance from the coastline (Feidas et al. 2014). During the summer period, greater amounts of precipitation are recorded in elevated areas in the northern and central part of the mainland, whereas higher temperatures are recorded in lowland areas near the coast throughout the country (Feidas et al. 2014). The climate of Greece plays a significant role in shaping the country's environment, culture, and way of life.

## 1.2 Challenges

### 1.2.1 Demographic problems

Greece, like many countries, is experiencing a series of demographic problems that have significant social, economic and political implications. These demographic challenges have evolved over the years and continue to influence the development of the country. Some key demographic issues that Greece is facing are: (1) aging population, primarily attributed to declining birth rates and increased life expectancy, giving pressure on healthcare and pension systems, as well as the labor force, (2) low birth rates, as a result of economic uncertainty, limited family support structures, and high youth unemployment rates delaying family planning and promoting smaller family sizes, (3) brain drain, particularly among its younger, well-educated population who try to find opportunities abroad poses challenges for Greece's future economic growth and development, and finally (4) urbanization, with more people moving to larger cities, has various implications at multiple levels that requires effective urban planning and resource allocation.

### 1.2.2 Rural abandonment

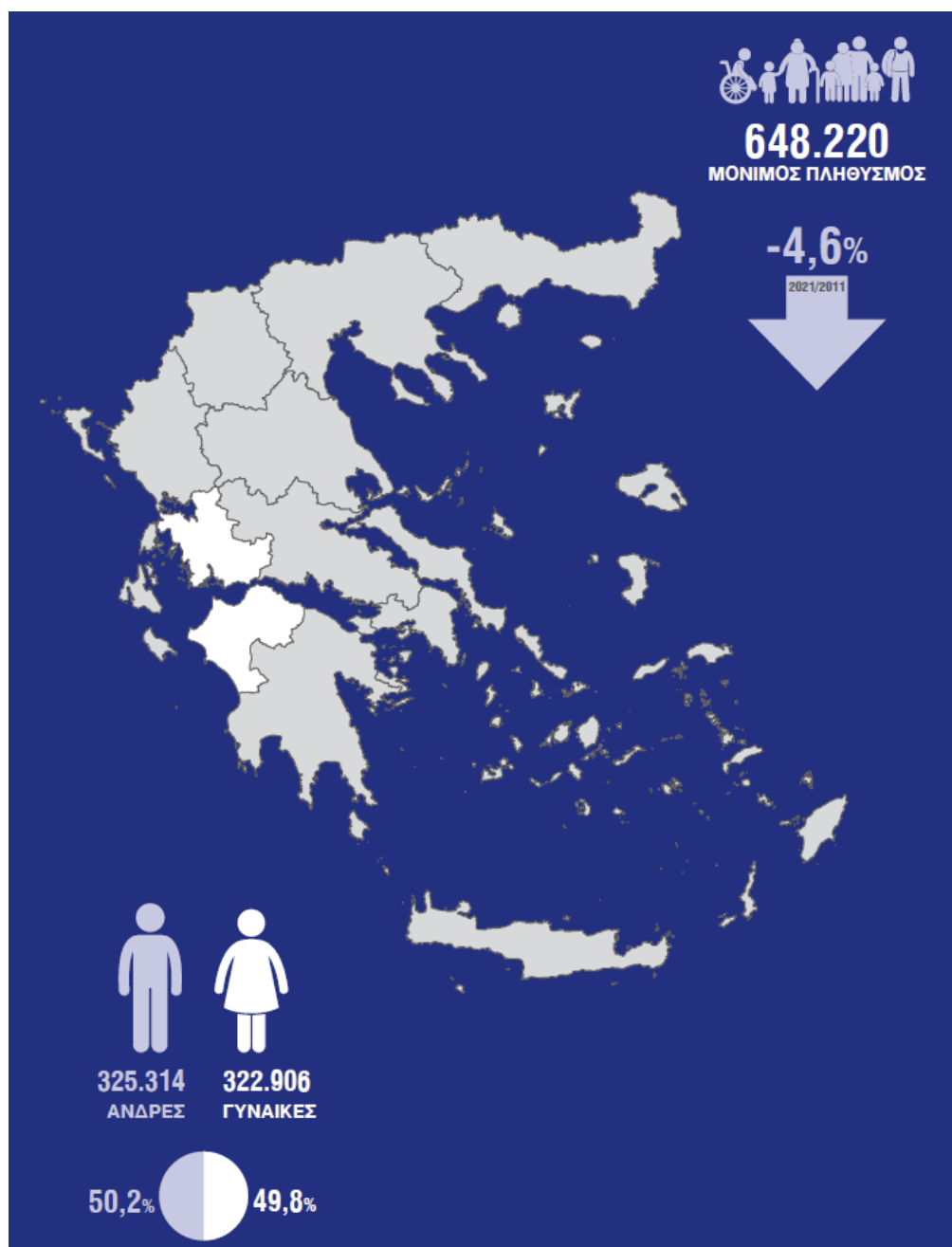
Rural abandonment is an important issue in Greece, reflecting a significant demographic and socio-economic shift over the past few decades. This phenomenon has many consequences for both rural communities and the country as a whole. The main causes and drivers beyond this movement of population from rural areas are (1) economic factors, that are driving rural abandonment in Greece for finding economic challenges and opportunities in urban areas because of the limited employment opportunities, low agricultural profitability, and lack of access to essential services in rural areas, (2) agricultural decline, as a result of changing market dynamics, agricultural modernization, and competition from larger-scale farming operations, (3) limited infrastructure and services, especially in rural areas, makes rural living less appealing, prompting migration to urban areas where such services and facilities are more readily available, (4) demographic aging as a result of movement of young population to cities. This demographic shift can exacerbate rural abandonment, as there are fewer working-age individuals to support and sustain local economies.

### 1.2.3 Climate change

Greece, like many other countries, is vulnerable to the effects of climate change and faces a number of climate-related challenges affecting its environment, economy and society. Some of the key aspects of the climate change problem in Greece are (1) Temperature increase, that is associated to several consequences, including heatwaves that can threaten public health, disrupt agriculture, and increase the risk of wildfires, (2) Increased wildfire risk, by creating favorable conditions to more frequent and intense wildfires and therefore enhancing the existent vulnerability of Greece to wildfires due to its hot, dry summers, (3) Water limitations as a result of changes in precipitation patterns, with potentially drier and warmer conditions, (4) Sea level rise since Greece has an extensive coastline and numerous islands that is susceptible to sea level rise, followed by Coastal erosion, flooding of low-lying areas, etc., (5) Impact on agriculture related to climate change, including altered growing seasons, water availability, and the

increased prevalence of pests and diseases, (6) Biodiversity loss as a result of climate change can threaten ecosystems and put pressure on endangered species.

Figure 1 - Results of the 2021 population census for Western Greece



## 1.3 Consequences

### 1.3.1 Demographic issues and rural abandonment

Among the main consequences of rural abandonment, it can be recognized the (1) cultural decline, from the loss of traditional ways of life, including local customs, and cultural practices. This loss of cultural heritage can have profound effects on the identity of rural communities, (2) economic decline, as a result of rural areas depopulation followed by a reduction of economic activities and thus affecting not only local economies but affecting the national economy with all the associated consequences followed, (3) social impacts, associated to the structure of the population that remains in the rural areas (e.g. older individuals, may face social isolation as their communities become increasingly depopulated), and (4) environmental risks, followed by the abandonment of the agricultural and forested land that can lead to soil degradation and increased wildfire risk. Since environmental risks are important, they are going to be analyzed further.

It is clear that demographic and economic challenges give rise to secondary issues associated with rural abandonment. When coupled with the pressing concerns of climate change, these challenges compound, resulting in a broader spectrum of environmental risks. Such environmental risks include (1) wildfires, Greece is highly susceptible to wildfires, exacerbated by factors such as rising temperatures, prolonged droughts, and land-use changes. These fires pose serious threats to ecosystems, property, and human lives, (2) drought and water scarcity, climate change has led to altered precipitation patterns and increased evaporation rates, resulting in water scarcity in some regions. This affects agriculture, water supply, and ecosystems, intensifying competition for limited water resources, (3) coastal erosion and sea-level rise, Greece's extensive coastline and numerous islands make it vulnerable to coastal erosion and sea-level rise. These phenomena can lead to damage to infrastructure, loss of coastal habitats, and increased flooding risks, (4) biodiversity Loss, climate change and habitat degradation pose significant threats to Greece's unique biodiversity. Native

species, especially those adapted to specific ecological niches, may face heightened risks of extinction.

**Figure 2 - Population census results for the Regional Unit of Achaia 2021**



### Περιφερειακή Ενότητα Αχαΐας

Δήμος	Πληθυσμός		Άνδρες		Γυναίκες	
	2011	2021	2011	2021	2011	2021
ΠΑΤΡΕΩΝ	213.984	215.922	104.307	104.541	109.677	111.381
ΑΙΓΙΑΛΕΙΑΣ	49.872	46.990	24.532	23.057	25.340	23.933
ΔΥΤΙΚΗΣ ΑΧΑΪΑΣ	25.916	25.633	13.653	13.547	12.263	12.086
ΕΡΥΜΑΝΘΟΥ	8.877	8.211	4.667	4.397	4.210	3.814
ΚΑΛΑΒΡΥΤΩΝ	11.045	9.223	5.712	4.813	5.333	4.410



Figure 3 - Population census results for the Regional Unit of Etoloakarnania



Δήμος	Πληθυσμός		Άνδρες		Γυναίκες	
	2011	2021	2011	2021	2011	2021
ΙΕΡΑΣ ΠΟΛΗΣ ΜΕΣΟΛΟΓΓΙΟΥ	34.416	32.048	17.180	16.126	17.236	15.922
ΑΚΤΙΟΥ - ΒΟΝΙΤΣΑΣ	17.370	14.644	8.972	7.533	8.398	7.111
ΑΓΡΙΝΙΟΥ	94.181	89.691	46.582	44.412	47.599	45.279
ΑΜΦΙΛΟΧΙΑΣ	17.056	14.979	8.503	7.660	8.553	7.319
ΘΕΡΜΟΥ	8.242	5.712	4.164	2.972	4.078	2.740
ΝΑΥΠΑΚΤΙΑΣ	27.800	25.065	14.023	12.555	13.777	12.510
ΞΗΡΟΜΕΡΟΥ	11.737	10.206	5.999	5.282	5.738	4.924

Figure 4 - Population census results for the Regional Unit of Ileia



Δήμος	Πληθυσμός		Άνδρες		Γυναίκες	
	2011	2021	2011	2021	2011	2021
ΠΥΡΓΟΥ	47.995	45.365	23.622	22.444	24.373	22.921
ΗΛΙΔΑΣ	32.219	29.347	16.285	14.675	15.934	14.672
ΑΝΔΡΑΒΙΔΑΣ - ΚΥΛΛΗΝΗΣ	21.581	22.552	11.558	13.156	10.023	9.396
ΑΝΔΡΙΤΣΑΙΝΑΣ - ΚΡΕΣΤΕΝΩΝ	14.109	11.200	7.387	6.102	6.722	5.098
ΑΡΧΑΙΑΣ ΟΛΥΜΠΙΑΣ	13.409	11.153	6.821	5.716	6.588	5.437
ΖΑΧΑΡΩΣ	8.953	8.654	4.547	4.466	4.406	4.188
ΠΗΝΕΙΟΥ	21.034	21.625	10.796	11.860	10.238	9.765

### 1.3.2 Rural abandonment, climate change and wildfires

Mediterranean landscapes have a distinct character resulting from their physiography and long history of human development (Cowling et al. 1996). Mediterranean-type ecosystems evolved under the influence of environmental stresses (mainly summer drought and low soil-nutrient availability) and the periodic impact of natural hazards (e.g. fire and tectonic instability). They have also experienced centuries of human activity, since the Mediterranean basin was settled by humans a long time ago, and are thus characterized as anthropogenic landscapes (Pérez et al. 2003). Indigenous agriculture and animal husbandry have been practiced here for more than 10,000 years (Naveh and Dan 1973, Le Houerou 1981, Naveh 1998), combined with deforestation practices and fire management (Trabaud and Galtíé 1996). These patterns existed in dynamic equilibrium at least until World War II (Caravello and Giacomini 1993), but began to change around 1950 following major changes in the economy and lifestyle. Initially, there were extensive rural migrations followed by agricultural intensification and mechanization, while the invention of new irrigation techniques expanded the agricultural sector. However, these patterns have changed again. Now, the most productive lands are used intensively, while the less productive areas are completely abandoned or subject to less intensive use and reforestation (Pérez et al. 2003, Vega-García and Chuvieco 2006). Reforestation and extensive plantations have been promoted in the Mediterranean region in recent decades, both as part of forestry policies (Pausas 2004) or more recently, as an alternative management on abandoned agricultural land (MacDonald et al. 2000, Pausas 2004, Mallinis et al. et al. 2011). As a result of these changes, the landscape is now more susceptible to fuel accumulation and this can lead to increased fire occurrence (Moreira et al. 2001, Vega-García and Chuvieco 2006, Loepfe et al. 2010, Moreira et al. 2011a).

Fire is an integral part of many terrestrial ecosystems, including Mediterranean ones, but it is also an important disturbance factor (Pausas et al. 2008). Recent decades have seen an increase in the number and size of wildfires in Mediterranean European regions (Moreno et al. 1998, Piñol et al. 1998) and elsewhere (Flannigan et al., 2009), although in

recent years a slight decrease in burned area at least in the European Mediterranean basin (Turco et al. 2016). The main drivers behind this change in the Mediterranean include land abandonment and reforestation of former agricultural land leading to increased fuel accumulation (Moreira et al. 2001, Pérez et al. 2003, Moreira et al. 2009), although the influence of climate changes cannot be ignored (Pausas et al., 2008; Pausas, 2004; Piñol et al., 1998). Moreira et al. (2011a) reported that the effects of fire on ecosystems and landscapes may vary from region to region as a result of local fire history, regeneration patterns, and topographic constraints (Viedma 2008). Furthermore, fire frequency depends not only on structural factors but also on spatial factors that reflect the degree of influence due to spatial interactions (Chou, 1990; Vázquez and Moreno, 2001), thus defining the role of space as an important factor.

In addition to the human factor, specific characteristics of vegetation, topography and meteorology are considered important variables of forest fires in the Mediterranean basin. The features of the Mediterranean vegetation, shaped mainly through mechanisms of adaptation to summer drought (i.e. flammable vegetation types and fire-prone ecosystems) and other peculiarities of the Mediterranean-type climate (i.e. strong winds), favor the occurrence and spread of fires. In addition, the recent expansion of the forest-urban interface is very characteristic of Mediterranean countries. Forest fires at the forest-urban interface have become very common in Europe, as population and human infrastructure occur in forest zones, especially near large cities and tourist resorts (Viegas et al. 2003), and are also due to the reforestation of abandoned agricultural land. of lands located near settlements (Galiana-Martin et al. 2011). Agricultural activities, land abandonment and economic development are important factors shaping fires in the Mediterranean (Martínez et al. 2009), while their relationships may vary spatially (Koutsias et al. 2010).

In extension for the Region of Western Greece, due to the characteristics of the Region, the sectors of agriculture, forestry, fisheries, are considered among the most vulnerable to the impacts of Climate Change, in the country, according to the EMEKA report (2011).

**Table 1 - Estimates of Climate Change impacts per sector, in the country, according to the EMEKA report (2011) in million EUR.**

ΠΙΝΑΚΑΣ 1: ΖΗΜΙΕΣ/ΟΙΚΟΝΟΜΙΚΗ ΔΡΑΣΤΗΡΙΟΤΗΤΑ ΑΝΑ ΠΕΡΙΦΕΡΕΙΑ ΚΑΙ ΤΟΜΕΑ σε ΕΚΑΤ. ΕΥΡΩ (ΕΜΕΚΑ, 2011)												
Γεωγραφική Περίφερα	Γεωργία	Δάση	Αλιεία	Εξορ. Βιομηχανία	Υδρευση	Δομ. Περιβάλλον	Μεταφορές	Τουρισμός	Υγεία	Συνολική Ζημιά	Προστ. Αξία (2011)	Ζ/ΠΑ
ΑΝΑΤΟΛΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ ΚΑΙ ΘΡΑΚΗΣ	105,246	3,747	0,857	25,938	15,276	1,518	2,128	32,876	3,274	190,859	7216,00	0,026449
ΚΕΝΤΡΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ	169,858	6,048	1,382	133,897	31,543	3,870	9,212	145,160	12,906	513,876	24992,00	0,020562
ΔΥΤΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ	33,845	1,205	0,275	348,744	3,496	1,078	1,021	24,133	1,226	415,023	4021,00	0,103214
ΗΠΕΙΡΟΥ	40,196	1,431	0,327	7,146	4,209	1,193	1,626	26,660	2,624	85,413	4055,00	0,021064
ΘΕΣΣΑΛΙΑΣ	110,471	3,933	0,899	16,246	19,136	2,113	2,150	48,175	4,250	207,372	8812,00	0,023533
ΙΟΝΙΩΝ ΝΗΣΩΝ	31,899	1,136	0,260	0,000	0,685	0,782	1,477	41,447	0,854	78,539	3098,00	0,025352
ΔΥΤΙΚΗΣ ΕΛΛΑΔΑΣ	114,731	4,085	0,934	0,000	9,359	1,998	3,616	53,965	4,522	193,211	8555,00	0,022585
ΣΤΕΡΕΑΣ ΕΛΛΑΔΑΣ	79,861	2,843	0,650	172,094	13,514	1,834	3,036	68,592	2,501	344,926	7984,00	0,043202
ΑΤΤΙΚΗΣ	35,889	1,278	0,292	160,317	113,300	13,901	57,696	429,395	52,979	865,046	88921,00	0,009728
ΠΕΛΟΠΟΝΝΗΣΟΥ	117,335	4,178	0,955	55,721	3,282	1,933	2,875	45,973	2,685	234,936	7755,00	0,030295
ΒΟΡΕΙΟΥ ΑΙΓΑΙΟΥ	19,077	0,679	0,155	0,000	2,185	0,603	1,055	17,745	1,000	42,501	2592,00	0,016397
ΝΟΤΙΟΥ ΑΙΓΑΙΟΥ	29,047	1,034	0,236	48,506	15,998	1,914	2,054	69,599	2,672	171,060	5747,00	0,029765
ΚΡΗΤΗΣ	95,545	3,402	0,778	31,181	11,018	2,264	3,053	81,280	3,506	232,028	8623,00	0,026908
<b>Σύνολα</b>	<b>983,000</b>	<b>35,000</b>	<b>8,000</b>	<b>999,790</b>	<b>243,000</b>	<b>35,000</b>	<b>91,000</b>	<b>1085,000</b>	<b>95,000</b>			

ΠΙΝΑΚΑΣ 2: ΚΑΤΑΝΟΜΗ ΤΡΩΤΟΤΗΤΑΣ ΑΝΑ ΠΕΡΙΦΕΡΕΙΑ ΚΑΙ ΤΟΜΕΑ										
Γεωγραφική Περιφέρεια	Γεωργία	Δάση	Αλιεία	Εξορυκτική Βιομηχανία	Υδρευση	Δομημένο Περιβάλλον	Μεταφορές	Τουρισμός	Υγεία	
ΑΝΑΤΟΛΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ ΚΑΙ ΘΡΑΚΗΣ	9	9	9	4	10	5	6	4	8	
ΚΕΝΤΡΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ	13	13	13	8	12	12	12	12	12	
ΔΥΤΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ	4	4	4	11	4	3	1	2	3	
ΗΠΕΙΡΟΥ	6	6	6	2	5	4	4	3	5	
ΘΕΣΣΑΛΙΑΣ	10	10	10	3	11	10	7	7	10	
ΙΟΝΙΩΝ ΝΗΣΩΝ	3	3	3	1	1	2	3	5	1	
ΔΥΤΙΚΗΣ ΕΛΛΑΔΑΣ	11	11	11	1	6	9	11	8	11	
ΣΤΕΡΕΑΣ ΕΛΛΑΔΑΣ	7	7	7	10	8	6	9	9	4	
ΑΤΤΙΚΗΣ	5	5	5	9	13	13	13	13	13	
ΠΕΛΟΠΟΝΝΗΣΟΥ	12	12	12	7	3	8	8	6	7	
ΒΟΡΕΙΟΥ ΑΙΓΑΙΟΥ	1	1	1	1	2	1	2	1	2	
ΝΟΤΙΟΥ ΑΙΓΑΙΟΥ	2	2	2	6	9	7	5	10	6	
ΚΡΗΤΗΣ	8	8	8	5	7	11	10	11	9	

## 1.4 Proposals for improvement

### 1.4.1 General

Addressing demographic challenges is a complex and multifaceted endeavor. Greece has initiated various policies to incentivize family planning, encourage repatriation of skilled professionals, and integrate immigrants into society. Moreover, economic

reforms are being pursued to stimulate job creation and economic growth.

Demographic challenges are not unique to Greece and are faced by many countries worldwide. Successfully managing these issues requires a combination of short-term measures and long-term strategies to promote sustainable population growth, ensure social cohesion, and maintain economic stability.

The demographic problems in Greece, such as an aging population and emigration, can exacerbate environmental risks. For instance, an aging population may require increased healthcare services, which, if not managed sustainably, can place additional stress on the environment. Emigration can also affect land use and development patterns, potentially leading to urban sprawl and habitat destruction. Greece recognizes the need for a comprehensive approach to address both demographic challenges and environmental risks. Initiatives include improving healthcare services for the elderly, promoting family-friendly policies to encourage higher birth rates, and implementing sustainable land-use planning to mitigate environmental risks.

Furthermore, Greece is taking steps to align its policies with international agreements, such as the Paris Agreement, to mitigate greenhouse gas emissions and transition to a low-carbon economy, thereby addressing climate change-related risks. In conclusion, Greece faces the dual challenges of demographic problems and environmental risks, which are interconnected and require a multidimensional response. Sustainable development and resilience-building strategies are essential to navigate these complex issues and secure a prosperous and environmentally responsible future for the country.

#### 1.4.2 Efforts to address rural abandonment:

Efforts to address rural abandonment include:

- Investment in Rural Development: Funds and programs aimed at revitalizing rural economies, improving infrastructure, and supporting small-scale agriculture.
- Promotion of Agro-Tourism: Encouraging tourism that focuses on rural and agricultural experiences to stimulate local economies.

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- Support for Small Farmers: Providing financial incentives, training, and resources to small-scale farmers to increase agricultural sustainability.
- Enhanced Connectivity: Improving transportation networks and digital connectivity in rural areas to reduce isolation and improve access to markets and services.

Rural abandonment is a complex and multifaceted issue that requires a holistic approach, considering economic, social, cultural, and environmental factors. Sustaining and revitalizing rural communities in Greece is not only essential for the well-being of those living in these areas but also for the country's overall economic and cultural continuity.

## 2 SWOT analysis

This report presents a comprehensive SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of the Region of Western Greece, with a particular focus on areas facing rural abandonment. The analysis aims to provide insights into the region's current state and potential future trajectories, taking into account factors such as depopulation and climate-related hazard risks.

The Region of Western Greece is characterized by its diverse natural and cultural assets, but it also faces significant challenges related to depopulation and climate-related hazards. Understanding the region's SWOT factors is essential for informed decision-making and sustainable development.

### 2.1 Strengths

#### 2.1.1 Natural Capital Assets

The region of Western Greece boasts rich natural capital assets across all three regional units, including forests, mountains, wetlands, and NATURA 2000 sites. These areas hold immense ecological and economic value, supporting biodiversity, tourism, and agriculture.

#### 2.1.2 Cultural Assets

The presence of heritage sites like Olympia and various heritage sites in Achaia and Etoloakarnania (historic monasteries, traditional villages, ancient theaters, festivals) contribute to the region's cultural identity and tourism potential, attracting visitors from around the world.

#### 2.1.3 Human Capital

The population of the Western Greece Region possesses valuable skills, which can be harnessed for local development and innovation. Urban centres, centrality, skills

#### 2.1.4 Research Institutions

The presence of research institutions with multidisciplinary expertise in geology, meteorology, environment, engineering, and economics provides a knowledge base for addressing regional challenges. The Region is the seat of the University of Patras—the country's third largest university and the Hellenic Open University, which specialises in remote learning and the University of Peloponnese.

#### 2.1.5 Unique Traditions and Product Brands

The region is known for its unique traditions and strong product brands associated with rural areas, such as feta, kefalograviera, dairy, meat products, honey, and fisheries (PDO PGI). These products have the potential to stimulate economic growth and promote sustainable agriculture, while also contributing to sustainable land management

#### 2.1.6 Mountain and Winter Tourism Resorts

The region's mountainous terrain and winter tourism resorts offer opportunities for year-round tourism, contributing to the local economy. The town of Kalavrita has developed as a hub of winter and mountain tourism, while mountainous Nafpaktia, Trichonida attract winter tourism. Efforts by the Region and local stakeholders are focusing on expanding the tourist season and drawing visitors also in the summer months with events and activities such as dance festivals and open air concerts, art shows, astronomy fairs (Thermo).

#### 2.1.7 Ecosystem Services

The region's natural assets provide essential ecosystem services, including clean air, water, and carbon sequestration.



## 2.2 Weaknesses

### 2.2.1 Weak Planning and Environmental Management Norms

Weaknesses in planning and environmental management can lead to uncoordinated development, posing risks to natural resources and ecosystems. Environmental risks that are relatively well documented in technical studies are often not subject to effective long-term monitoring and management.

### 2.2.2 Bureaucratic Processes

Cumbersome bureaucratic processes may hinder timely decision-making and the efficient allocation of resources. The processes required especially in the steps of the public planning pipeline, from inception to technical studies to public procurement are time-consuming and require administrative capacity that is often not adequate in rural areas and local agencies in rural areas facing socioeconomic decline and climate risks.

### 2.2.3 Youth Flight and Rural Exodus

The region faces a significant challenge of youth flight and rural exodus, which can result in a declining workforce and social imbalance. The number of active farmers in less populated areas has decreased, while remaining farmers are facing challenges due to rural land abandonment. Youth are mobile and choose to live and work in the main cities and settlements rather than their villages of origin in remote less populated areas.

### 2.2.4 Ageing Farmers

The ageing population of farmers may lead to a decline in agricultural productivity and innovation.

### 2.2.5 Social Disadvantage and Poverty in Rural Areas

Remote and sparsely populated settlements in the region are characterized by lower income levels compared to the main urban centres, which requires social investment and targeted interventions for economic development.

## 2.2.6 Lack of Recovery from Past Disaster Events

The region has struggled to recover from past disaster events, such as the 2007 and 2019 wildfires, highlighting vulnerabilities in disaster management and recovery efforts.

## 2.2.7 Shortage of Staff in Local Government

A shortage of staff in local government departments related to environment, civil protection, agriculture, and development can impede effective governance and crisis response.

## 2.3 Opportunities

### 2.3.1 Funding Opportunities

Access to funding opportunities through the ROP (Regional Operational Program) Cohesion, LEADER, and RRF (Recovery and Resilience Facility) can support projects that address regional challenges.

### 2.3.2 Increasing Policy Attention to Disaster Risk Management

Growing policy attention to the need for reorganizing Disaster Risk Management and Civil Protection can enhance the region's resilience to climate-related hazards.

### 2.3.3 Technological Advances

Advances in AI, transportation, and precision agriculture can drive innovation and economic diversification in the region. The potential of new technologies to enable new mechanisms and platforms of support for rural economic activities has to be explored

### 2.3.4 Open Spatial Data

The availability of open spatial data can facilitate evidence-based decision-making and spatial planning. Spatial data derived from remote sensing and other sources offer an excellent methodological to understanding the current situation with regard to

population needs and environmental challenges facing the region, as well as provide the tools for effective policy focus in key areas.

### 2.3.5 Growing Trend for Year-Long Tourism

The trend of year-long tourism offers opportunities to expand tourism beyond the traditional summer season. Coastal municipalities in rural areas are exploring the potential of a longer tourist season to mitigate the losses in the high season due to heatwaves and extreme events. Similarly mountain areas are seeking to develop summer and year round attractions.

## 2.4 Threats

### 2.4.1 Biodiversity Crisis Habitat Loss

Habitat loss due to urbanization and agricultural expansion, natural hazards can lead to biodiversity decline and ecosystem degradation.

The region faces biodiversity challenges, with species at risk of extinction due to habitat destruction and climate change.

### 2.4.2 Impacts of Climate crisis

Exogenous shocks due to climate crisis. The region is susceptible to extreme weather events, including floods, which can result in significant economic and social costs. Coastal erosion and SLR.

### 2.4.3 Environmental Losses and Damages

Climate-related environmental losses and damages, such as soil erosion and water scarcity, pose threats to agriculture and natural resources.

### 2.4.4 Cultural Loss

The loss of cultural heritage sites due to neglect or natural disasters can impact tourism and cultural identity.

## 2.4.5 Inflation in Goods and Raw Materials

Inflation in goods and raw materials, especially in rural areas, energy, and food costs, can strain household budgets and hinder economic development.

## 2.5 Conclusion

The Western Greece Region, while endowed with natural and cultural assets, faces significant challenges related to depopulation and climate-related hazards. Leveraging its strengths, addressing weaknesses, capitalizing on opportunities, and mitigating threats will be crucial for achieving sustainable and resilient development in the region. Effective governance, strategic planning, and targeted investments are essential for unlocking the region's potential and ensuring the continuing well-being of its residents, while arresting downward spirals of depopulation and rural abandonment.

**Table 2 - SWOT analysis summary**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>● Natural capital assets in forests, mountains, wetlands, NATURA 2000 sites</li> <li>● Cultural assets in heritage sites (Olympia, Etoloakarnania)</li> <li>● Human capital as shown in skills</li> <li>● Research institutions with multidisciplinary expertise in geology, meteorology, environment, engineering, economics</li> <li>● Unique tradition and strong product brands associated with the rural areas (feta, kefalograviera, dairy and meat products, honey and fisheries)</li> <li>● Winter and mountain tourism resorts</li> <li>● Ecosystem services</li> </ul>	<ul style="list-style-type: none"> <li>● Weak planning and environmental management norms</li> <li>● Bureaucratic processes</li> <li>● Youth flight and rural exodus</li> <li>● Ageing farmers</li> <li>● Lower income region</li> <li>● Social disadvantage and poverty in rural areas</li> <li>● Lack of recovery from past disaster events e.g. the 2007 wildfires</li> <li>● Shortage of staff in local government in departments of environment, civil protection, agriculture and development</li> </ul>
Opportunities	Threats

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>● Funding opportunities through the ROP, LEADER and RRF</li><li>● Increasing policy attention to the need for reorganization of Disaster Risk Management and Civil Protection</li><li>● Technological advances in AI, transportation, precision agriculture</li><li>● Open Spatial data</li><li>● Growing trend for year-long tourism</li></ul> | <ul style="list-style-type: none"><li>● Habitat loss</li><li>● Biodiversity crisis</li><li>● Impacts of extreme weather events</li><li>● Environmental losses and damages</li><li>● Cultural loss</li><li>● Inflation in goods and raw materials especially in rural areas, energy and food costs</li></ul> |
|---|---|

## 3 Legal and strategic framework

In general, in the Greek context, there is no specific legal framework focused on addressing environmental risks and demographic changes in rural areas. Nevertheless, a wider set of regulations which set out policies and instruments for spatial planning, natural capital conservation and management, land use management, rural development, forest and cadaster maps, civil protection and disaster risk management, exist and are applied across the country.

Relevant strategies at the national level on the issue of demographic change are being discussed.

Existing national strategies include the:

- Rural development policy tools such as the Rural Development Programme address issues of economic decline in rural areas.
- National Development Law includes provisions for support of investment in peripheral areas.
- Cohesion Policy in the 2021-2027 programming period supports rural disaster risk resilience through Policy Objective 2. Two Operational Programmes are focused on risk and resilience. OP Environment and Climate Change and OP for Civil Protection. Also the Regional Operational Programmes address challenges with respect to preservation of rural population, local development and climate adaptation and resilience. Actions of CLLD/LEADER and Integrated Territorial Investments are focused on supporting local development and climate resilience.
- The national recovery and resilience plan that is part of EU RRF.

### 3.1 EU level regulatory instruments and strategies

**The Interplay of EU Legal Frameworks on Environmental Protection, Land Use, Agriculture, and Rural Development in Greece:**

**Paris Accord:** The Paris Agreement, an international treaty ratified by the EU and its member states including Greece, seeks to limit global warming to well below 2°C above pre-industrial levels. This ambitious target necessitates significant mitigation efforts and financial commitments. For member states, this means devising and implementing stringent domestic policies to reduce greenhouse gas emissions, promote sustainable energy, and increase climate resilience. Economically, the accord emphasizes the reallocation of resources, both human and capital, toward green and sustainable sectors, and the decoupling of economic growth from carbon emissions.

**LULUCF (Land Use, Land-Use Change, and Forestry):** LULUCF represents a critical component of the EU's climate framework, primarily because land and forests act as carbon sinks, mitigating greenhouse gas emissions. For Greece, this means stringent regulatory oversight on land-use change dynamics, ensuring that practices related to forestry, agriculture, and other land uses are not just sustainable, but also contribute to carbon sequestration. Economically, LULUCF regulations can have implications for sectors such as timber, agriculture, and real estate, necessitating strategic land management to optimize both environmental and economic returns.

**EU Climate Adaptation Actions:** Recognizing the varied impacts of climate change across member states, the EU has proactively championed climate adaptation strategies tailored to regional and local needs. These initiatives are geared towards enhancing resilience against extreme weather events, sea-level rise, and other climate-related threats. For Greece, with its diverse geography ranging from islands to mountainous terrains, adapting to these challenges is paramount. Economically, such adaptive measures can present investment opportunities in infrastructure, technology, and research, driving innovation while preserving the integrity of both urban and rural ecosystems.

**EU CAP (Common Agricultural Policy):** The EU's Common Agricultural Policy is foundational to the bloc's agricultural and rural development strategies. For Greece, this translates to a dual focus on both increasing agricultural competitiveness and ensuring sustainable rural development. Economically, the CAP manifests through various

financial instruments and subsidies aimed at supporting farmers, promoting sustainable practices, and fostering innovation. This ensures that agriculture remains a viable economic activity, meeting both market demands and environmental standards. Moreover, the CAP's rural development pillar emphasizes investments in rural infrastructure, innovation, and environmental projects, aiming to strike a balance between economic viability and sustainability.

**EU Civil Protection Mechanism:** Established to enhance the preparedness and response of member states to natural and man-made disasters, the EU Civil Protection Mechanism underscores the significance of solidarity and mutual assistance. For Greece, often grappling with wildfires, earthquakes, and other hazards, this mechanism offers both technical and financial support. Economically, it represents a commitment to risk management, emphasizing the importance of safeguarding assets, both tangible (like infrastructure) and intangible (like cultural heritage). This mechanism not only promotes resilience but also ensures that economic activities, particularly in vulnerable sectors like tourism, are not disproportionately impacted by unforeseen events.

In summation the intricate web of EU legal frameworks relating to environmental protection, land use, agriculture, and rural development has profound economic implications for Greece. Each directive and policy not only shapes the environmental landscape but also dictates the trajectory of economic activities, investments, and innovations. By aligning with these frameworks, Greece can ensure sustainable economic growth that respects environmental boundaries and global commitments.

### 3.2 Regional-level strategies

The most significant planning document in Western Greece is the **Regional Spatial Planning and Sustainable Development Framework** (2016), which defines the development and planning priorities for the region. In particular, it identifies the strategic directions for the integrated spatial development and organization of the region of Western Greece for a period of fifteen (15) years, aiming at the formation of a spatial development pattern that will respect people and the environment and will



highlight the natural and cultural identity, will create productive activities and will utilize and/or create technical and cultural heritage.

**The Regional Plan for Adaptation to Climate Change** (PESPKA) defines scenarios of climate change impact in the Region of Western Greece and lists necessary adaptation measures. The plan is a strategic tool for integrated planning of the necessary actions and interventions for the adaptation of the region to climate change. The plan was prepared taking into account three scenarios of global evolution of greenhouse gas concentrations (RCP2.6-flat, RCP4.5-intermediate, RCP8.5-dynamic) and for three time periods: short term (2011-2030), medium term (2031-2050) and long-term (2081-2100) time horizon of the 5th report for the AR5 (AR5, IPCC, 2014) of the Intergovernmental Panel for Climate Change (IPCC). The study on both the expected climate change in the EEZ and for the expected climate change in the vulnerability was carried out at a spatial resolution of 12.5 km x 12.5 km and includes Statistical Analysis of 70 Climate Indicators and Statistical Analysis of Climate Change Vulnerability for 12 sectors.

- Management plans for nature-protected areas (Natura 2000 sites), and agriculture are being prepared.
- Management plans per water basin exist.
- At municipal level the effort to draft new Local Spatial Plans is underway with technical experts appointed by the Ministry of Environment and Development.

The **Regional Operational Program for Western Greece 2021-2027** includes the following intervention categories under PO 2 Greener Europe:

Specific objective RSO2.7 Support for the protection and conservation of nature, biodiversity, green and blue infrastructure inter alia in urban areas and reduction of all forms of pollution

Intervention category 078. Protection, restoration and sustainable use of NATURA 2000 areas (ERDF allocation 3,4 million EUR)

Intervention category 079. Protection of nature and biodiversity, natural heritage and natural resources, green and blue infrastructure (ERDF allocation 14,3 million EUR).

PO 5 Europe closer to the citizens includes the following interventions:

- RSO5.2. Strengthening integrated and inclusive social, economic and local development, in the areas of culture, natural heritage, sustainable tourism and security in non-urban areas
- Interventions categories under Integrated Territorial Development strategies.

Figure 5 - Policy Objectives and Budget of ROP Western Greece 2021-2027

Στόχος Πολιτικής/Ειδικός Στόχος	Π/Υ ΔΔ
<b>ΣΠ 1: Μια Ευρώπη πιο ανταγωνιστική και πιο έξυπνη μέσω της προώθησης του καινοτόμου και έξυπνου οικονομικού μετασχηματισμού και της περιφερειακής συνδεδεσιμότητας ΤΠΕ</b>	<b>70.804.450</b>
1.i Ανάπτυξη και ενίσχυση των ικανοτήτων έρευνας και καινοτομίας και αξιοποίηση των προηγμένων τεχνολογιών	17.000.000
1.ii Αξιοποίηση των οφελών της ψηφιοποίησης για τους πολίτες, τις εταιρείες, τους ερευνητικούς οργανισμούς και τις δημόσιες αρχές	8.304.450
1.iii Ενίσχυση της βιώσιμης ανάπτυξης και της ανταγωνιστικότητας των ΜΜΕ και δημιουργία θέσεων εργασίας στις ΜΜΕ, μεταξύ άλλων μέσω παραγωγικών επενδύσεων	45.500.000
<b>ΣΠ 2: Μια πιο πράσινη και ανθεκτική Ευρώπη με χαμηλές εκπομπές διοξειδίου του άνθρακα και καθ' οδόν προς μια οικονομία καθαρών μηδενικών εκπομπών διοξειδίου του άνθρακα, μέσω της προώθησης της δίκαιης μετάβασης σε καθαρές μορφές ενέργειας, των πράσινων και γαλάζινων επενδύσεων, της κυκλικής οικονομίας, του μετριασμού της κλιματικής αλλαγής και της προσαρμογής στην κλιματική αλλαγή, της πρόληψης και της διαχείρισης των κινδύνων, και της βιώσιμης αστικής κινητικότητας</b>	<b>126.868.612</b>
2.i Προώθηση μέτρων ενεργειακής απόδοσης και μείωση των εκπομπών αερίων του θερμοκηπίου	32.500.000
2.ii Προώθηση των ανανεώσιμων πηγών ενέργειας σύμφωνα με την οδηγία για τις ανανεώσιμες πηγές ενέργειας	20.000.000
2.iv Προώθηση της προσαρμογής στην κλιματική αλλαγή και της πρόληψης του κινδύνου καταστροφών, της ανθεκτικότητας, λαμβάνοντας υπόψη προσεγγίσεις που βασίζονται στο οικοσύστημα	19.000.000
2.v Προαγωγή της πρόσβασης στην ύδρευση και της βιώσιμης διαχείρισης του νερού	34.500.000
2.vii Ενίσχυση της προστασίας και της διατήρησης της φύσης, της βιοποικιλότητας και των πράσινων υποδομών, μεταξύ άλλων σε αστικές περιοχές, και μείωση όλων των μορφών ρύπανσης	20.868.612
<b>ΣΠ 3: Μια πιο διασυνδεδεμένη Ευρώπη μέσω της ενίσχυσης της κινητικότητας</b>	<b>56.041.029</b>
3.i Ανάπτυξη ανθεκτικού στην κλιματική αλλαγή, έξυπνου, ασφαλούς, βιώσιμου και διατροφικού ΔΕΔ-Μ	2.500.000
3.ii Ανάπτυξη και ενίσχυση βιώσιμης, ανθεκτικής στην κλιματική αλλαγή, έξυπνης και διατροφικής εθνικής, περιφερειακής και τοπικής κινητικότητας, με καλύτερη πρόσβαση στο ΔΕΔ-Μ και διασυνδεδεμένη κινητικότητα	53.541.029
<b>ΣΠ 4: Μια πιο κοινωνική και χωρίς αποκλεισμούς Ευρώπη μέσω της υλοποίησης του ευρωπαϊκού πυλώνα κοινωνικών δικαιωμάτων (ΕΤΠΑ)</b>	<b>92.082.056</b>
4.ii Βελτίωση της ισότιμης πρόσβασης σε ποιοτικές υπηρεσίες εκπαίδευσης, κατάρτισης και διά βίου μάθησης	45.100.000
4.iii Προώθηση της κοινωνικοοικονομικής ένταξης περιθωριοποιημένων κοινοτήτων, νοικοκυριών με χαμηλό εισόδημα και μειονεκτουσών ομάδων	3.500.000
4.iv Εξασφάλιση ισότιμης πρόσβασης στην υγειονομική περίθαλψη και ενίσχυση της ανθεκτικότητας των συστημάτων υγείας, συμπεριλαμβανομένης της πρωτοβάθμιας υγειονομικής περίθαλψης, και προώθηση της μετάβασης από την ιδρυματική φροντίδα στη φροντίδα που βασίζεται σε επίπεδο οικογένειας και τοπικής κοινότητας	25.500.000
4.v: Ενίσχυση του ρόλου του πολιτισμού και του βιώσιμου τουρισμού στην οικονομική ανάπτυξη, την κοινωνική ένταξη και την κοινωνική καινοτομία	17.982.056
<b>ΣΠ 4: Μια πιο κοινωνική και χωρίς αποκλεισμούς Ευρώπη μέσω της υλοποίησης του ευρωπαϊκού πυλώνα κοινωνικών δικαιωμάτων ΕΚΤ+</b>	<b>159.438.992</b>
4.i Βελτίωση της πρόσβασης στην απασχόληση και μέτρα ενεργοποίησης για όλα τα άτομα που αναζητούν εργασία	16.800.000
4.vi Προώθηση της ίσης πρόσβασης σε ποιοτική και χωρίς αποκλεισμούς εκπαίδευση και κατάρτιση και της ολοκλήρωσής τους,	25.938.992
4.viii Προαγωγή της ενεργητικής ένταξης για προώθηση των ίσων ευκαιριών, της απαγόρευσης των διακρίσεων και της ενεργού συμμετοχής, καθώς και βελτίωση της απασχολησιμότητας, ειδικότερα των μειονεκτουσών ομάδων	18.200.000
4.ix Προώθηση της κοινωνικοοικονομικής ένταξης υπηκόων τρίτων χωρών, συμπεριλαμβανομένων των μεταναστών	6.000.000
4.x Προώθηση της κοινωνικοοικονομικής ένταξης των περιθωριοποιημένων κοινοτήτων, όπως οι Ρομά	7.150.000
4.xi Ενίσχυση της ισότιμης και έγκαιρης πρόσβασης σε ποιοτικές, βιώσιμες και οικονομικά προσιτές υπηρεσίες	77.350.000
4.xii Προώθηση της κοινωνικής ένταξης των ατόμων που αντιμετωπίζουν κίνδυνο φτώχειας ή κοινωνικού αποκλεισμού, συμπεριλαμβανομένων των ατόμων και των παιδιών	8.000.000
<b>ΣΠ 5: Μια Ευρώπη πιο κοντά στους πολίτες μέσω της προώθησης της βιώσιμης και ολοκληρωμένης ανάπτυξης όλων των εδαφικών τύπων και τοπικών πρωτοβουλιών</b>	<b>112.544.736</b>
5.i Ενίσχυση της ολοκληρωμένης και χωρίς αποκλεισμούς κοινωνικής, οικονομικής και περιβαλλοντικής ανάπτυξης, του πολιτισμού, της φυσικής κληρονομιάς, του βιώσιμου τουρισμού και της ασφάλειας στις αστικές περιοχές	81.290.232
5.ii Ενίσχυση της ολοκληρωμένης και χωρίς αποκλεισμούς κοινωνικής, οικονομικής και περιβαλλοντικής τοπικής ανάπτυξης, του πολιτισμού, της φυσικής κληρονομιάς, του βιώσιμου τουρισμού και της ασφάλειας σε περιοχές γλην των αστικών	31.254.504
<b>Τεχνική βοήθεια ΕΤΠΑ</b>	<b>7.293.748</b>
<b>Τεχνική βοήθεια ΕΚΤ+</b>	<b>3.373.579</b>
<b>Σύνολο</b>	<b>628.447.202</b>

Local Action Groups – LEADER

During the programming period 2023-2027 the LEADER program is a key instrument for the development of rural areas in Western Greece, as a separate intervention of the Strategic Plan of the Common Agricultural Policy (CAP), with a concentration of at least 5% of the resources of the European Agricultural Fund for Rural Development (EAFRD).

Community Led Local Development (CLLD) is a key tool for achieving the specific objective 8 of the CAP 2023-2027 "Promote employment, social inclusion and local development in rural areas including the bio-economy and sustainable forestry" and provides, directly or indirectly, a key element in the development of the rural economy directly or indirectly, provides solutions to meet most of the needs of the specific objective.

Local Action Groups which oversee and facilitate the implementation of the LEADER program are formed in the regional units, supported by local development agencies. The program in Achaia is supported by ACHAIA S.A, in Ileia it is supported by Olympia S.A., and in Etoloakarnania it is supported by Etoliki S.A.

Particular emphasis will be placed on the development of cooperative actions and initiatives with a social and environmental dimension. Key elements of the local strategies in this programming period will be and will be implemented in the context of the implementation of local strategies.

- implementation of actions in line with the objectives of the Green Deal and the Green Paper on rural development.
- innovation to address socio-economic problems,
- the promotion of the circular economy, and the promotion of the and bio-economy,
- the use of ICTs and the development of Smart Villages policies to promote the development of sustainable development.
- Measures to address in an integrated way the chronic problems of small sub-units of LEADER areas.

**Table 3 - Categories of Intervention of the LEADER program for Achaia**

Category 1: Strengthening the local economy

Category 2: Education of the local population

Category 3: Strengthening the local social fabric

Category 4: Improving the quality of life of the local population

Category 5: Preservation & improvement of cultural assets

Category 6: Protection & enhancement of the natural environment

Category 7: Networking and cooperation

## 4 Good practises & other experiences

The demographic crisis is severe in the more remote rural areas of Western Greece, where a population decrease of up to 13% in a 10-year-period has been recorded according to the 2021 census. The extreme weather events and Climate Change have burdened agricultural production and livestock farming, the risk of fires have been increased by late rainfall, while floods and earthquakes are a permanent risk factor in the area.

Innovative interventions are scheduled through the Integrated Territorial Investment (ITI) Strategies, and other development programmes, such as the establishment of livestock parks, the strengthening of social infrastructure and the provision of incentives for people to return to the villages. The following three examples highlight three areas of Western Greece where ITIs are being developed.

### 4.1 Sustainable Development and Revitalization around Lake Trichonida and Municipality of Thermo

Lake Trichonida, situated in the Aitolokarnania prefecture, holds the distinction of being Greece's most expansive freshwater body, spanning a surface area of 95.8 square kilometers. Owing to its minimal anthropogenic disturbances, it is renowned as one of the most pristine lakes nationwide. This unspoiled gem, however, offers immense potential for reversing the region's demographic downturn and environmental issues. As such it forms the lynchpin of a new spatial development Strategy of ITI which is going to be implemented in the the period 2021-2027.

Historically, the vicinity of Lake Trichonida has been a hub of agricultural activity. Once dominated by tobacco cultivation, present-day agricultural landscape leans towards olive farming. A combination of antiquated irrigation infrastructure and a deficit of both state-driven incentives and support mechanisms has rendered agriculture less lucrative, contributing to population decline.

Tourism around Lake Trichonida remains largely untapped. While the biennial music festival and theatrical presentations in partnership with the Agrinio Theatre bring transient spikes in visitation, the region's many natural attractions such as Mokistianos's twin waterfalls, Vlochos's acropolis, and the pristine Ammos beach, remain under-promoted. Adventure tourism, with treks across Mount Panetolikos and stopovers at the Agrinio Mountaineering Club's shelter, could further bolster the region's appeal.

The lake's sporting prospects, particularly waterskiing and wakeboarding, allure athletes nationwide, melding sportive endeavors with nature immersion. However, the absence of requisite infrastructural support hampers the scaling of such activities.

Aquaculture presents a promising avenue for sustainable economic growth. Lake Trichonida's rich ichthyofauna, comprising 20 distinct species, includes the unique atherina – a species of fish that transitioned from marine to freshwater habitats which is exclusive to this lake. Annual atherina-centric festivals in neighboring villages already generate localized interest, underscoring the potential for broader promotional campaigns.

In sum, while Lake Trichonida and the Municipality of Thermo grapple with population attrition and environmental concerns, a judicious mix of sustainable agritourism, ecotourism, and aquaculture initiatives could provide a roadmap for economic rejuvenation and ecological equilibrium.

## 4.2 Mountain Tourism and Sustainable Economic Development in Nafpaktia

Ano Nafpaktia (or upland Nafpaktia), situated in Western Greece, epitomizes the challenges typical of many mountainous locales: population decline and environmental threats. The exodus of the youth to urban centers has left a demographic vacuum, affecting both the human fabric and the natural environment. Notably, the development of mountain tourism stands out as a source of hope, presenting a nexus between economic revitalization and conservation of both natural and cultural assets.

*Economic Rejuvenation through Mountain Tourism:* The upward trajectory of mountain tourism in recent years has catalyzed sustainable growth opportunities for Nafpaktia's villages. Efforts to attract visitors are now establishing a robust mountain tourism grid, potentially contributing to stabilising the out-migration trend. Empirical investigations have also shed light on this transformation. Charalampopoulos et al. (2006) underscored the favorable climatic conditions of the Nafpaktia mountains, especially during summer, enhancing its touristic appeal, thus indirectly mitigating population decline. Kamoutsis et al. (2007) further corroborated this, positioning Nafpaktia as a haven for visitors seeking respite from the summer heat of congested urban zones.

*Strategic Interventions and Developmental Challenges:* The Regional Spatial Planning and Sustainable Development Framework (RSPSDF) for Western Greece pinpoints several challenges:

1. **Implementation Lag:** The RSPSDF strategies remain suboptimally implemented.
2. **Absence of Holistic Development Plans:** Comprehensive blueprints for mountainous regions' upliftment are conspicuously missing.
3. **Business Disincentives:** There exists a dearth of impetuses for enterprises, particularly in alternative tourism or indigenous product sectors.
4. **Governance Hurdles:** A conspicuous lack of political and administrative dynamism impedes the fruition of envisioned strategies.

Key takeaways from the RSPSDF assessment encompass a call for multi-tiered collaboration, a pivot towards non-conventional tourism paradigms like agrotourism, and a prohibitive stance on urban sprawl over fertile agricultural expanses.

*Blueprint for Sustainable Prosperity in Nafpaktia:* Several recommendations emerge to bolster Nafpaktia's sustainable trajectory:

- **Customized Development Paradigms:** Strategies tailored to regional specificities can enhance implementation efficacy.
- **Infrastructure Augmentation:** A focus on expanding transportation arteries, ensuring seamless access.



- **Diversification of Tourism:** Championing eclectic tourism facets, from ecotourism to agrotourism.
- **Corporate Incentivization:** Enticements for businesses in elevated terrains can fuel economic vitality.
- **Environmental Stewardship:** Heightened commitment to preserving the cultural and natural milieu, buttressed by stringent eco-norms.
- **Inclusive Governance:** Engaging dialogues with grassroots stakeholders can democratize decision-making processes.
- **Learn from the Past:** Analyzing past missteps can offer valuable foresight.

*Regional Development Aims for Nafpaktia (Government Gazette 2020):* From fortifying organic farming to boosting urban tourism in Nafpaktos and harnessing renewable energy sources, the outlined objectives provide a comprehensive roadmap for Nafpaktia's sustainable metamorphosis.

*Nafpaktia: A Sustainable Future Beckons:* In essence, Mountainous Nafpaktia teems with untapped potential. Harnessing its intrinsic strengths, addressing inherent frailties, capitalizing on emergent opportunities, and negating looming challenges can steer Nafpaktia towards a future marked by environmental stewardship and sustainable prosperity.

### 4.3 Resilient development in the Municipality of Kalavryta.

#### 4.3.1 Economic Resilience and Sustainable Development in Kalavryta

In the landscape of economic development and environmental sustainability, the Municipality of Kalavryta presents an intricate interplay between its natural assets, cultural heritage, and sustainable growth strategies. Two significant economic contributors, the Agricultural Dairy Cooperative and the Kalavryta Ski Resort, serve as

cornerstones in generating a steady flow of income while maintaining ecological balance.

Recent demographic data from ELSTAT's 2021 census underscores a decline in the resident population, marking a decrease of approximately 2,000 since 2011. This demographic shift underscores the urgency for economic diversification and the introduction of resilient development initiatives.

According to the results of the population census in the year 2021, published by ELSTAT, it appears that the Municipality of Kalavryta showed a population decrease of approximately 2,000 inhabitants. During the 2021 census, the Municipality registered 9,281 inhabitants, while in 2011, 11,045. For the province of Kalavryta, this number is unprecedentedly small, which is cause for concern. As shown in the diagram below, the population is gradually decreasing, having reached in recent years an extremely low number of residents.

#### 4.3.2 Resource Capital:

- **Natural Capital:** Kalavryta, characterized by its biodiversity, stands as a testament to the principles of environmental economics. Its varied landscapes, from the Vouraikos Gorge to the Cave of Lakes, are invaluable ecosystem services that provide both recreational value and maintain ecological balance.
- **Cultural and Heritage Capital:** The historical monuments, from the Monastery of Agia Lavra to the poignant ' municipal museum capturing the 1943 Massacre perpetrated by the German Army, add to the socio-cultural significance of the region. These assets hold potential for heritage.
- **Knowledge Capital:** The renowned Aristarchos telescope signifies Kalavryta's commitment to advancing scientific knowledge. Future plans for a planetarium are set to further enhance the region's educational assets.

#### 4.3.3 Economic Diversification and Skill Development:

To capitalize on its existing resources and address demographic challenges, the municipality has proposed the introduction of a vocational school focused on dairy and meat processing. This initiative aims to:

- Enhance human capital by equipping residents with specialized skills.
- Support and amplify the existing economic pillars of the region, further integrating them into the value chain of the broader economy.

#### 4.3.4 Sustainable Management of Resources:

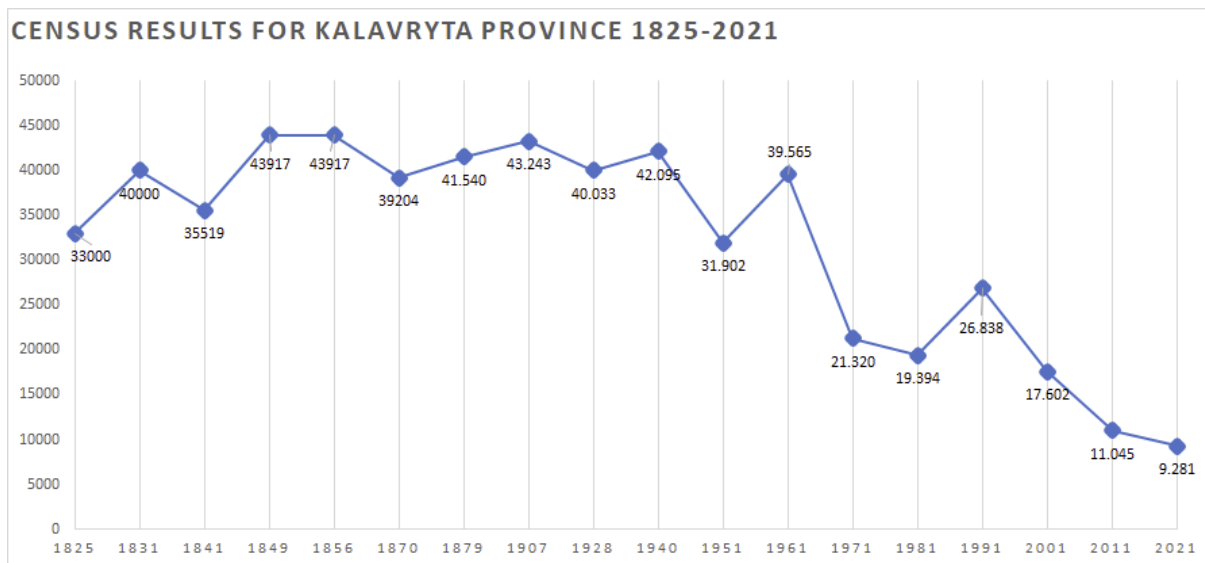
With its varied resources, Kalavryta illustrates the principles of environment and heritage management:

- **Natural Resource Management:** The Helmos-Vouraikos Geopark, recognized by UNESCO, is a stellar example of conserving biodiversity while enabling eco-tourism.
- **Cultural Asset Management:** From its aromatic herbs to dairy products like PDO Kalavryta feta, there's an evident emphasis on sustainable production and consumption, aligned with environmental economics' tenets.

#### 4.3.5 Leveraging Technology for Efficient Local Governance:

In an era where digital transformation drives efficiency, the municipality's online application serves as a nod to transparent and effective governance. By facilitating real-time feedback from residents across the vast mountain province (1 ' million stremma), it ensures adaptive management, a principle key to achieving economic efficiency in a public service facing increased costs in comparison to urban areas.

Kalavryta, equipped with its natural, cultural, and knowledge assets, is at a pivotal juncture. By embracing principles of environmental economics, economic development, and environment and heritage management, it can pave the way for a more sustainable and economically resilient future.



## 5 Proposals for improvement

**Strategically addressing Western Greece's environmental, climatic, and demographic challenges necessitates a comprehensive, sustainability-focused action plan.** This must be underpinned by cross-sectoral synergies, policy coherence, and foresight-driven planning.

*Adaptive Approaches:* Rural areas in Western Greece urgently demand enhanced adaptive capacities. Prioritizing climate-smart agricultural practices ensures food security amidst shifting weather conditions. Additionally, overhauling water management frameworks to anticipate fluctuating rainfall will be pivotal. Infrastructure, too, demands resilience-centric investments to withstand extreme weather-induced shocks.

*Financial Leverage:* The scale of adaptive endeavors calls for significant fiscal commitments. Precise quantifications of required financial outlays for adaptation and mitigation, especially in rural landscapes, are essential. Leveraging European and national financial avenues can catalyze transformative interventions in rural areas. Encouragingly, public-private partnerships can be key catalysts, steering investments toward sustainability-driven initiatives.

*Capacity Building:* Strengthened capacity-building measures for regional and local governance structures are vital to adeptly navigate impending climatic challenges. Infusing advanced technologies and practices can catalyze rural adaptation. Furthermore, periodic training for the agrarian sector and rural enterprises, emphasizing sustainable techniques, can drive grassroots change.

*Inclusive Governance:* Echoing the tenets of the Paris Agreement, local community integration in decision-making processes is important. Harnessing their traditional knowledge can offer innovative adaptation insights. Grassroots resilience and sustainability ventures must be prioritized.

*Economic Diversification:* Countering rural depopulation mandates an expanded economic activity spectrum. The emphasis should rest on cultivating sustainable sectors such as agri-tourism, organic farming, and year-round mountain tourism. Strengthening cooperative mechanisms for local product enhancement and marketing can rejuvenate the rural economic landscape.

*Forestry & Land Management:* Climate-centric land use policies are imperative. Embracing reforestation combats desertification challenges, and championing sustainable forestry practices ensures continued ecosystem service provisioning.

*Sustainable Energy Transition:* Rural energy paradigms should pivot towards renewables and community-based energy schemes with the participation of local government and collectivities. Prioritizing community-led clean energy projects ensures rural empowerment, while parallel campaigns should promote energy thriftiness across domestic and commercial spectrums.

*Connectivity Enhancement:* Bridging the connectivity gap can help mitigate rural exodus tendencies. Enhanced transportation infrastructures and exploration of sustainable transport modalities, emphasizing electrification, can revive rural landscapes as a weekend destination and place of activity for city inhabitants.

*Awareness & Education:* Improving local climate literacy through targeted campaigns is pivotal. The cultural treasures of Western Greece, such as the Olympia heritage site, underscore the pressing need for protective interventions against climate adversities, reinforcing the region's commitment to its cultural and sustainable legacy.

## 6 Conclusions

The Region of Western Greece stands as a paradigm of the complexities inherent in balancing natural and cultural capital assets against the backdrop of demographic and environmental challenges accentuated by the climate crisis. Rich in ecological and cultural assets, with treasures such as the Olympia heritage site, NATURA 2000 sites, and renowned rural agricultural products like feta and kefalograviera, the region offers a multitude of economic opportunities. Furthermore, its human capital, demonstrated in urban centres and the presence of eminent research institutions like the University of Patras, positions it as a hub of innovation and development.

However, this set of strengths is juxtaposed against pressing weaknesses. Despite its potential, the region grapples with bureaucratic institutions that stifle efficient resource allocation, particularly in the realms of public spatial and development planning and environmental management. This inefficiency is further accentuated in the face of an exodus of youth, a decline in active farmers, and an aging agricultural population. Socioeconomic disparities further exacerbate the landscape, with rural areas lagging behind urban centres in income levels. Past events, such as the wildfires of 2007 and 2019, underscore vulnerabilities in the region's disaster management and disaster recovery strategy.

Yet, amidst these challenges lie transformative opportunities. Funding mechanisms like the ROP and RRF offer a lifeline for projects aiming to address regional hurdles. Furthermore, with increasing policy attention pivoting towards disaster risk management and the advent of technological solutions in AI and precision agriculture, there's a potential opportunity for transforming rural economic activities. Open spatial data provide tools for evidence-based planning, and the evolving tourism trends offer avenues for economic diversification, transcending traditional seasonal dependencies.

Nonetheless, formidable threats are found in this transformative course. Biodiversity, a cornerstone of the region's ecological identity, is imperilled by habitat loss from urban

sprawl, natural hazards, and anthropogenic interventions. Furthermore, the intensifying climate crisis presents an increasing problem, with the spectre of extreme weather events and associated environmental losses posing challenges to both agriculture and cultural heritage. Inflationary pressures on essential goods and raw materials threaten to further strain the socio-economic fabric.

In essence, the narrative of Western Greece is emblematic of the intricate interplay between economic potential and environmental stewardship. To ensure a sustainable trajectory, a multi-pronged approach is indispensable. This entails amplifying its natural and cultural assets, streamlining bureaucratic processes, fostering innovation through its human and institutional capital, and forging resilience against environmental threats. Only through a holistic strategy that intertwines its strengths, addresses its weaknesses, harnesses its opportunities, and mitigates its threats, can Western Greece envision a future marked by sustainable and just development and resilience in the face of climate and demographic crisis.



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# 1 Annexes

## Minutes of the 1st Stakeholder Meeting held in Patras at 16/6/2023

**Θέμα:** Πανεπιστήμιο Πατρών και τοπικοί φορείς συνεργάζονται στη διατύπωση προτάσεων αντιμετώπισης της δημογραφικής συρρίκνωσης και ενίσχυσης της ανθεκτικότητας στις περιοχές της υπαίθρου, στο πλαίσιο του έργου «Interreg Europe DOWN-TO-EARTH»

Την Παρασκευή 16 Ιουνίου, το Πανεπιστήμιο Πατρών μέσω των Τμημάτων Πολιτικών Μηχανικών και Αειφορικής Γεωργίας, με Επιστημονικό Υπεύθυνο τον Καθ. Ευάγγελο Παπαδάκη και θεματικό ειδικό τον Καθ. Νίκο Κούτσια, συγκάλεσε την 1η Συνάντηση ενδιαφερόμενων μερών του Ευρωπαϊκού έργου INTERREG EUROPE «Down-to-Earth» με θέμα την Αντιμετώπιση των δημογραφικών προκλήσεων για τη βελτίωση της ανθεκτικότητας έναντι περιβαλλοντικών κινδύνων στις περιοχές της υπαίθρου.

Στη συνάντηση συμμετείχαν εκπρόσωποι της πρωτοβάθμιας αυτοδιοίκησης, επικεφαλής αναπτυξιακών εταιρειών, εκπρόσωποι μονάδων διαχείρισης προστατευόμενων περιοχών, εκπρόσωποι φορέων της κοινωνίας πολιτών και ερευνητές.

Ο Καθηγητής κ. Ευάγγελος Παπαδάκης, καλωσόρισε τους φορείς που ανταποκρίθηκαν στην πρόσκληση του Πανεπιστημίου και τόνισε την ανάγκη στήριξης της ομάδας έργου από εκπροσώπους των τοπικών φορέων οι οποίοι θα συνδιαμορφώσουν τις προτάσεις του έργου, ενώ υπογράμμισε τη σημασία της διαπεριφερειακής ανταλλαγής εμπειρίας με άλλες περιφέρειες της Ευρώπης, οι οποίες αντιμετωπίζουν αντίστοιχα οξείες προκλήσεις στο δημογραφικό και τους κινδύνους φυσικών καταστροφών.

Παρουσιάζοντας τη διάρθρωση των εργασιών του έργου ο κ. Παπαδάκης προσδιόρισε τη διεξαγωγή εξειδικευμένου συνεδρίου στην Δυτική Ελλάδα με θέμα την παρουσίαση μέτρων αντιμετώπισης της πληθυσμιακής συρρίκνωσης και γήρανσης για την ενίσχυση

της ανθεκτικότητας στις περιοχές της υπαίθρου, στις αρχές του 2024. Αντικειμενικός στόχος του έργου, ανέφερε ο κ. Παπαδάκης, θα είναι η κατάρτιση περιφερειακού σχεδίου δράσης με εξειδικευμένες προτάσεις πολιτικής σε επίπεδο νέων προσκλήσεων του Επιχειρησιακού Προγράμματος «Δυτική Ελλάδα 2021-2027», όπου σε συνεργασία με τον αρμόδιο θεματικό Αντιπεριφερειάρχη Έρευνας, Επιχειρηματικότητας και Καινοτομίας κ. Ζαΐμη, έχουν προσδιοριστεί τα συναφή πεδία παρέμβασης στους στόχους πολιτικής 2 «πιο πράσινη Ευρώπη» και 5 «Μια Ευρώπη πιο κοντά στους πολίτες»--ειδικά σε σχέση με Δήμους οι οποίοι υλοποιούν στρατηγικές ΟΧΕ στον χώρο της υπαίθρου. Εν συνεχεία ο Δρ. Κωνσταντίνος Αντωνόπουλος, παρουσίασε αναλυτικά τη δομή και μεθοδολογία σύνταξης της αναφοράς για την τρέχουσα κατάσταση και τα μέτρα αντιμετώπισης που έχουν υλοποιηθεί σε περιφερειακό επίπεδο, ενόψει των προσεχών επισκέψεων εργασίας για την ανταλλαγή εμπειρίας.

Στην παρέμβασή του ο Δήμαρχος του Ξηρομέρου κ. Γιάννης Τριανταφυλλάκης, τόνισε την σημασία του εγχειρήματος που υλοποιεί το Πανεπιστήμιο, το οποίο εστιάζει στην καρδιά των προβλημάτων που αντιμετωπίζουν οι μικρότεροι Δήμοι της περιφέρειας. Όπως ανέφερε χαρακτηριστικά, η δημογραφική κρίση είναι έντονη σε περιοχές του Δήμου Ξηρομέρου, όπου καταγράφηκε μείωση πληθυσμού έως 13% σύμφωνα με την απογραφή 2021, «τα έκτακτα καιρικά φαινόμενα και η Κλιματική Αλλαγή έχουν επιβαρύνει την αγροτική παραγωγή και κτηνοτροφία, ο κίνδυνος πυρκαγιών έχει ενισχυθεί από τις όψιμες βροχοπτώσεις, ενώ οι πλημμύρες και οι σεισμοί αποτελούν παράγοντα κινδύνου». Κλείνοντας ο κ. Τριανταφυλλάκης αναφέρθηκε στις δυνατότητες να γίνουν καινοτόμες παρεμβάσεις μέσα από το ΠΕΠ, τις νέες στρατηγικές ΟΧΕ και τα υπόλοιπα αναπτυξιακά προγράμματα, όπως με τη χωροθέτηση κτηνοτροφικών πάρκων, την ενίσχυση των κοινωνικών υποδομών και την παροχή κινήτρων για την επιστροφή του κόσμου στα χωριά.

Η διευθύντρια της Αναπτυξιακής Εταιρείας «ΑΧΑΪΑ» κ. Ηρώ Τσιμπρή χαιρέτισε την πρωτοβουλία του Πανεπιστημίου, η οποία συμβάλει στη διασύνδεση έρευνας και ανάλυσης με την τοπική ανάπτυξη ενώ υπογράμμισε την ανάγκη συνεργασίας, συνέργειας και συνεννόησης για την επίτευξη πολλαπλασιαστικών αποτελεσμάτων μέσω του έργου «Down to Earth», όπως και στην ευρύτερη αναπτυξιακή ατζέντα που

υποστηρίζει η ΑΧΑΪΑ Αναπτυξιακή μέσω του Προγράμματος LEADER, του οποίου ξεκίνησε η υλοποίηση. Μάλιστα η κυρία Τσιμπρή επισήμανε ότι το Πρόγραμμα LEADER διαθέτει ειδική πίστωση για νέα δημόσια έργα και διακρατικές συνεργασίες, γεγονός που μπορεί να συμβάλει στην πολλαπλασιαστική αξιοποίηση των θεμάτων που θα μελετήσει το έργο, σε συνδυασμό με ευρωπαϊκές πρωτοβουλίες, όπως το Rural Pact που δίνει φωνή στις περιφέρειες της υπαίθρου.

Στην παρέμβασή του ο Διευθυντής της Αιτωλικής Αναπτυξιακής κ. Χαράλαμπος Μιχαλόπουλος, αναφέρθηκε στη σημασία της διατοπικής συνεργασίας και στο ιδιαίτερο αναπτυξιακό αποτύπωμα του προγράμματος LEADER, το οποίο είναι σημαντικό για την τοπική οικονομία και απασχόληση στις περιοχές με πληθυσμιακή συρρίκνωση και ανάγκη ενίσχυσης της ανθεκτικότητας τους.

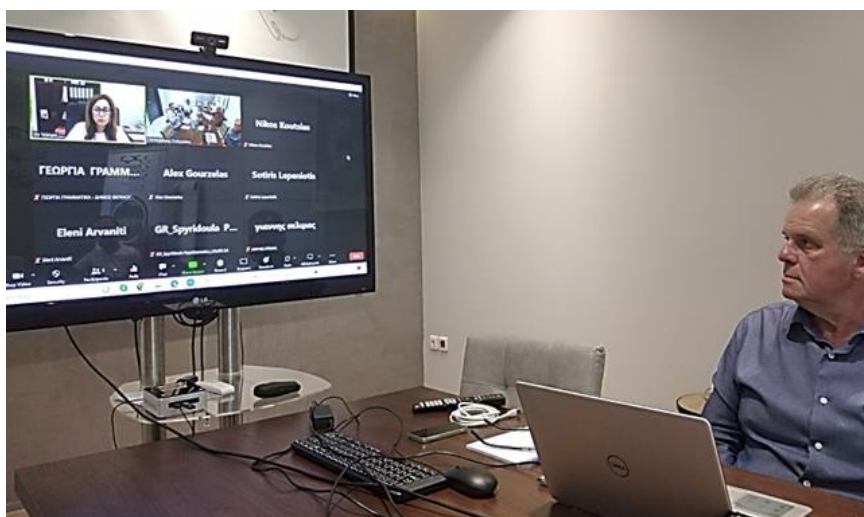
Σύντομη παρέμβαση έκανε ο κ. Νίκος Αντωνόπουλος εκ μέρους της ΑΜΚΕ «Λαπατοχώρια» η οποία εργάζεται για την ανάπτυξη σε 25 χωριά των Καλαβρύτων ως φορέας της κοινωνίας των πολιτών—του πλέον αδύναμου κρίκου όπως ανέφερε χαρακτηριστικά—ενώ τόνισε ότι η καταγραφή των προβλημάτων, η αποτύπωση της κατάστασης και η επεξεργασία προτάσεων αποτελεί πολύ σημαντικό βήμα, το οποίο θα πρέπει να συνοδεύεται από τη δημιουργία, με στήριξη των ΟΤΑ, ενός μόνιμου παρατηρητηρίου για τον πληθυσμό και την ανθεκτικότητα σε επίπεδο περιφέρειας.

Στην παρέμβασή του ο Προϊστάμενος της Μονάδας Διαχείρισης Μεσολογίου-Αιτωλικού και Δυτικής Στερεάς Ελλάδας, αναφέρθηκε στις περιβαλλοντικές προκλήσεις της περιοχής ευθύνης των περιοχών NATURA, όπως έχουν καταγραφεί από καινοτόμα έργα όπως το LIFE IP Natura αναφέροντας τα προβλήματα των γεωτρήσεων στον Αράκυνθο και τις ρίψεις απορριμμάτων και μπαζών, στα οποία έχει σημειωθεί μόνο μερική πρόοδος. Επισήμανε τη διάθεση του φορέα να συνδράμει σε σχετικό αίτημα παροχής πληροφόρησης για το έργο, που θα κατατεθεί αναφορικά με τα πορίσματα των μελετών του οργανισμού.

Στη συζήτηση παρέστησαν εκ μέρους του Δήμου Καλαβρύτων ο κ. Αλέξης Γουρζέλας και εκ μέρους του Δήμου Θέρμου η κ. Γεωργία Γραμματικά.



Δεξιά ο Καθ. κ. Ευαγ. Παπαδάκης, μέσον ο Δήμαρχος Ξηρόμερου κ. Γ. Τριανταφυλλάκης, αριστερά Δρ. Κ. Αντωνόπουλος



Διαδικτυακή παρέμβαση από την κυρία Ηρώ Τσιμπρή, Διευθύντρια ΑΧΑΪΑΣ Αναπτυξιακής



Ο Δήμαρχος Ξηρόμερου κ. Γ. Τριανταφυλλάκης