LIFE TERRACESCAPE

"Employing Land Stewardship to transform terraced landscapes into green infrastructures to better adapt to climate change"

Layman's Report

The LIFE16 CCA/GR/000050 project is implemented by the University of the Aegean, Municipality of Andros, Green Fund, National and Kapodistrian University of Athens, Hellenic Agricultural Organization – DEMETER and National Observatory of Athens.

With the contribution of the LIFE Programme of the European Union

With the contribution of the Green Fund

Project Information

LIFE Ref. No: LIFE 16 CCA/GR/000050

Duration: 64 months (01/07/2017 – 31/10/2022)

Budget: 2,694,038 €

EU contribution: 1,562,964 € (60%)

Coordinating beneficiary: University of the Aegean

Associated beneficiaries: Municipality of Andros, Green Fund, National and Kapodistrian University of Athens, HAO-Demeter, National Observatory of Athens

TERRACESCAPE project has been co-funded by the LIFE Programme of European Union, with the contribution of the Green Fund.

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*Cover page photo: Abandoned terraces in southern Andros Island, NCC

1. Introduction

As all Mediterranean countries, Greece faces the problem of increasing desertification, with its islands being listed as areas of high desertification risk. The impacts of climate change, in particular the reduction of rainfall in quantity or/and duration, temperature increase, as well as the increase of the frequency of extreme weather phenomena, are not only just a simple notice, but scientifically documented, posing a major threat to island ecosystems. The impacts of these specific changes are expected to influence significantly biodiversity, composition and functionality of ecosystems, soil structure, water reserves, island landscape and, as a result, the production and economic activities, such as agriculture and tourism.

The mitigation against climate change effects can be achieved through the installation of Green Infrastructures. The term applies to networks of natural and semi-natural areas with other environmental features designed to deliver essential ecosystem services which underpin human well-being and quality of life. The terraces of Andros, and of the Aegean islands in general, constitute an existing Green Infrastructure. Terraces, also known as *aemasies* in Andros Island, are manmade horizontal strips of land created on sloping terrain, almost always supported by walls. These walls are usually made from drystone (*xerolithia*).

The art of drystone walling, i.e., the knowledge of building stone structures without the use of mortar or any binding material, was inscribed in the UNESCO's Representative List of the Intangible Cultural Heritage of Humanity in 2018. Terraces were created mainly to permit or facilitate cultivation on slope terrain and for the reduction of soil erosion. At the same time, the terraces have many positive effects, such as the flood risk reduction and the water permeability easing in dry fields. In recent decades, however, they were almost completely abandoned along with the traditional land management.

2. LIFE TERRACESCAPE project

The LIFE TERRACESCAPE project aims to the functional restoration of terraces through re-cultivating them. The immediate objective of the project is to demonstrate the benefits of such an action on the spot, with the expectation that the effort will be multiplied by other locals. The ultimate objective is to create adaptive Green Infrastructures functioning as a barrier against the effects of climate change. The action takes place on the island of Andros, aiming to expand to other Aegean and Mediterranean islands.

3. Terraces of Andros as Green Infrastructure

In the framework of TERRACESCAPE project, the re-cultivation of terraces on a large scale is expected to offer a Green Infrastructure, with multiple benefits for the adaptation of the island ecosystems to the climate change.

The effects of terraces as Green Infrastructures include:

- flood risk reduction,
- soil retention and the reduction of erosion,
- water permeability easing and the aquifers replenishing,
- soil fertility increase through appropriate management and
- shelter and food provision for wildlife.

During the project, approximately 100 ha of terraced land are being cultivated with local varieties. These varieties are considered important as they are adapted to the insular climatic and soil conditions (drought, high temperature), as well as the expected prevailing conditions due to climate change, as they require small water inflows and minimal fertilization. The main crops cultivated for the project are mainly barley and in smaller areas oregano, onion, oat and lupine.

***Photo 1**: Barley harvesting on the project's terraces of Andros, 2021 (photo: NCC)*

Climatic adaptation of farmlands is achieved through implementing climate-smart agricultural practices. The state of habitats and biodiversity is improved, especially that of some threatened species and the same holds true for the micro-climate (temperature reduction, humidity increase). Some of the practices implemented are the maintenance and creation of hedgerows, the low intensity management of soil, the maintenance of the drystone terraces and the avoidance of agrochemicals use. All the practices are described in the "Good Practice Guide", created in the context of the project and available to interested farmers through the Land Stewardship Organization (LSO) office and the website.

4. Land Stewardship Organization "Aegean Farmers"

The Land Stewardship Organization "Aegean Farmers" (www.landstewardship.gr) was created in order to engage local communities and stakeholders in the implementation of core nature and culture conservation actions contributing to their sustainability in Andros Island. The LSO "Aegean Farmers" has been established through a collaborative agreement between the Green Fund, the

Municipality of Andros and the Social Cooperative Enterprise having the same name ("Aegean Farmers"). The objective of the project for the LSO is to soon become financially self-sustained, supported by the production revenue and the product placement on the market.

Land Stewardship is a strategical tool for the preservation of landscape values and of the environment as a whole, by prioritizing the functional restoration of agro-ecosystems, the capacity to respond to environmental disturbances and the preservation of biodiversity, without excluding man, farmer and/or land owner.

It is worth noting that "Aegean Farmers" is the first Land Stewardship Organization established in Greece.

Based on the project experience from the establishment and operation of the LSO during the project implementation period, it is possible to draw some conclusions in relation to future changes and improvements, targeting to a more functional approach of this issue. Land Stewardship Organizations are volunteer initiatives and should be motivated by the active members of local societies and not by public organizations. This is not related with the efficiency of public organizations; it is directly linked with the flexibility and motivation of volunteering participants and with the appeal of the image of such motivation to the local society. It is not possible to establish and run an LSO without using a bottom-up approach. Unfortunately, the project failed to foresee and deal with this drawback at an early stage. Despite the efforts of the GF team, the project LSO did not manage to motivate local actors and participants from Andros that would have the internal motivation/incentive to support the whole effort even when the circumstances were not favorable, as was the case with the local products from the terrace cultivations. In other circumstances, a locally motivated LSO could probably allow for some more time for the production to balance, e.g. after 2-3 years of field cultivation. But this has not been the case for the project with limited time allotted for its implementation.

Taking the above into consideration, the future establishment of LSOs in the country should start from some very basic principles, namely by involving motivated members of the local society, invest on the relevant experience of international specialized NGOs, agree in common objectives, produce commonly agreed strategies based on participatory process, seek for market opportunities, work locally to link the LSO with the expectations of the local society.

In conclusion, the project's worth-mentioning achievements concern the experienced gained on the necessary legal and tax issues undergone for establishing an LSO, LSO's function, and the creation of the related helpdesk that has paved the ground for future LSO initiatives in Greece.

5. Structural interventions and Drystone wall schools

In November 2021 and March 2022, two Drystone wall Schools were successfully held in which more than 40 people from Greece and abroad were trained. The training was undertaken by craftsmen from Andros and Epirus, distinguished professors, engineers and architects, offering the attendees practical and theoretical lessons. During the two Schools, 70 m of drystone terraces in the area of Korthi and 1000 m of a path that leads to the Archaeological site of Ancient Zagora, were restored.

Photo 2: *Restoration during the 1st Drystone wall School in Andros, November 2021 (photo: University of the Aegean)*

Photo 3: *Restoration during the 1st Drystone wall School in Andros, November 2021 (photo: University of the Aegean)*

Photo 4: *Restoration during the 2nd Drystone wall School in Andros, March 2022 (photo: University of the Aegean)*

In the framework of TERRACESCAPE project, structural interventions have been implemented in 6 fields. Specifically, drystone terraces, a stone paved threshing floor, a traditional wine press and a farmer hut.

Photo 5*: Restoration of a farmhouse complex encompassing a traditional wine press (not shown here) in the property of the Zoodohos Pigi Monastery, Andros Island (photo: Green Fund)*

6. Education of youth and TERRACESCAPE dissemination

A wide range of educational and dissemination material has been published during the implementation of TERRACESCAPE project. Four books have been published, referring to terraces cultivation, biodiversity on terraces, references to the terraces in the literature and a guide for the creation of a terrace model by students. Moreover an electronic game was created with the title "Building Terraces" aiming mainly to primary school pupils.

Photo 6: *The electronic game "Building Terraces"*

Photo 7: *Snapshot from the project's documentary "Xerolithia"*

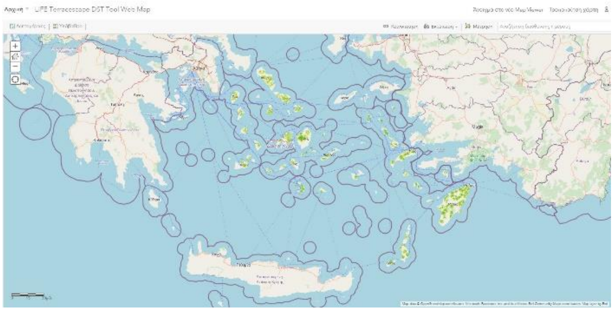
The TERRACESCAPE documentary "Xerolithia" (https://youtu.be/He2GPsEzsOA) was completed in September 2022 and shown for the first time on 10/09/2022 on the opening day of the exhibition "Terraces of the Aegean: Images from the Past to the Future", which is taking place at the Kaireios Library, in Chora, Andros (10/09/2022 – 31/01/2023). The documentary outlines the timeless relationship of islanders with the Aegean landscape, focusing on the construction and cultivation of terraces, completely intertwined with the life on the islands. It presents the past, present and future of terraces, their cultural and ecological value, with special emphasis on their environmental importance, through their timeless operation as Green Infrastructures, which today are an insurmountable tool for halting the effects of climate change that threaten the Aegean Sea. The documentary is a production of the University of the Aegean and was directed by Stelios Charalambopoulos.

7. Decision Support Tool

The development of a Decision Support Tool (DST) aims to identify areas that present evidence of suitability for an immediate and economically beneficial restoration and re-cultivation of abandoned terraces through a series of criteria. In essence, it is a cartographic tool that can indicate the areas of priority, i.e. those with economically viable features, to constitute the first choice for restoration and re-cultivation by any interested stakeholder, including the local population. These areas should meet the criteria of proximity to main settlements, accessibility through the existing road network, and relief with mild slopes to sustain easy cultivation.

To identify the areas that satisfy the selected criteria, a series of geospatial analysis was carried out in GIS environment, while the areas meeting the criteria for the presence of terraces vis-à-vis their abandonment status were evaluated. The result of the tool presents a series of areas (as polygons) in the area of the entire South Aegean Region with the presence of terraces that are potentially economically viable for their utilization. The tool is an auxiliary and advisory tool to all stakeholders. It offers useful information in a supervisory – interactive form regarding the presence and availability of suitable areas hosting or able to host terraces to be managed in the South Aegean Region.

Visit the Decision Support Tool here.



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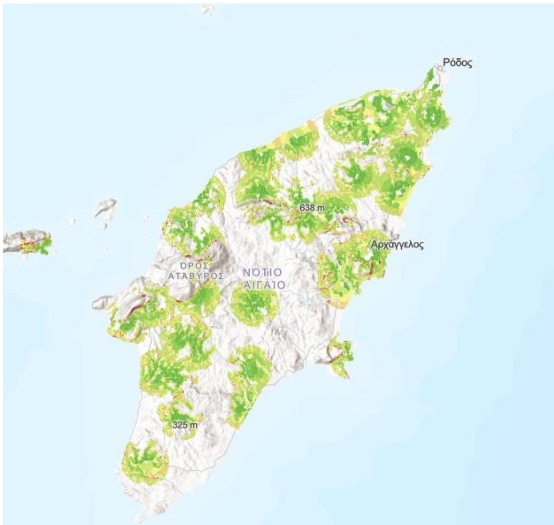

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Photo 8 *Screenshots of the Decision Support Tool (A) general introductory view; (B) the Island of Tinos (with existing terraces digitalized); (C) the Island of Andros with existing terraces digitalized); (D) the island of Rhodes*

8. Strategic Adaptation Plan to the Climate Change

The Strategic Adaptation Plan to the Climate Change (SAP) assesses the landscape condition of the terraces, the conservation needs, the role of ecosystem functions and the relationship with the local economy, in combination with modern agricultural practices.

The Plan, designed to harmonize with the environmental, social, and economic needs of the communities throughout the Aegean, contributes to improving the quality of life for current and future residents and visitors. It focuses on the island of Andros where most of the sampling and technical measurements were carried out, but the conclusions are relevant to the whole of the South Aegean complex.

Through the chapters of the SAP, a series of features are described, including: the state of the landscape of the terraces and other structures, the abiotic and anthropogenic factors characterizing the region, the vulnerability to climate change of Andros and other Aegean islands through assessing the sensitivity to climate change of ecosystems and species (fauna/flora), as well as of crops and local varieties.

The SAP identifies the climate projections for both Andros and the wider Aegean region and the impacts of climate change on agriculture, biodiversity and the region's tertiary sector. The following chapters assess the state of the terraced landscapes, conservation needs, the role of ecosystem functions and the local economy in combination with modern agricultural practices and identify priorities for actions for the restoration and re-cultivation of terraced landscapes according to their contribution to local ecosystem resilience and the projected impacts due to climate change.

The SAP considers both the European Strategy for Adaptation to Climate Change and the relevant National Adaptation Strategy, taking into account the results and conclusions of the implementation and the implementation and monitoring actions of the project. It also takes into account the recent proposals of the European Commission to restore nature in Europe by 2050 and to halve the use of pesticides by 2030.

9. Terraces' biodiversity and the effect of TERRACESCAPE

This action was treated by two university teams: that of the National and Kapodistrian University of Athens and the University of the Aegean.

The first team undertook the assessment and monitoring of the structure and composition of terrestrial fauna communities in the study area, aiming to record its current state prior to the commencement of the project actions and to subsequently assess and evaluate the impact of these actions on the fauna of the area. More specifically, the biodiversity of terraces was studied in selected project sites where cultivation practices where implemented, with emphasis on the biodiversity of reptiles, small mammals, invertebrates and birds, as well as their abiotic environment.

Baseline surveys were conducted during the early years of the project for the assessment of the current state of fauna (arthropods, mammals, reptiles and birds) as well as abiotic parameters of their microhabitats. The methodological approaches for these surveys were developed at the

Monitoring Plan. The aim was to record the existing state of biodiversity so that an evaluation of the impact of re-cultivation of abandoned terraces on biodiversity could be performed.

As far as terrestrial insects are concerned, the cultivation techniques applied on the framework of the project had a positive impact on their abundance, which means that it was statistically confirmed that the revival of cultivation practices led to fields with higher insect abundances. On the contrary, the lizard populations that were also studied showed slightly increased population densities on the fields that were cultivated on the context of the project, however these differences were not statistically supported.

The team of the University of the Aegean undertook the monitoring of pollinators and their partner plants in the cultivated fields of the project. The samplings were performed in 9 cultivated fields and 6 abandoned ones for comparison's sake.

The outcome indicates that the pollinator abundance, the bee and the plant richness were positively affected by the field cultivation. In the context of the project the main cultivated species was barley that does not contribute to the available food for the pollinators. The cultivations were small-scale and hedgerows were maintained at the margin of the fields by selective removal of non-contributing plant species in pollination. In addition, environmentally friendly practices were performed without using agrochemicals. This fact allowed the preservation of a large number of insects and plants.

The continuation of cultivation with the same methods, the establishment of flowering plants and the removal of plants such as *Sarcopoterium spinosum*, are some of the measures that will contribute to the maintenance of a large number of pollinators and flowering plants in the following years after the completion of the project. Bees, and in particular those belonging to the Halictidae family, were the pollinators most benefited from the re-cultivation of the terraces, along with plants of the Asteraceae family.

The most abundant groups among invertebrates were insects and arachnids. In general, invertebrates were more abundant in the cultivated terraces. For reptiles, the analysis of population densities did not yield striking differences between cultivated and non-cultivated terraces, except for the Aegean wall lizard (*Podarcis erhardii*), the most common reptile in the Aegean islands, whose densities were higher in the case of cultivated terraces. The avifauna did not differ significantly between the terraces examined, including more or less the same number of bird species. However, the abundance (populations) of some species (in particular carnivorous and insectivorous birds) was higher on the cultivated terraces. Finally, there were no differences in micro-mammal populations between cultivated and non-cultivated areas. It is worth mentioning, however, that thanks to the use of traps, the presence of *Suncus etruscus* was verified for the first time in Andros.

10. Climatic conditions and the next day

The National Observatory of Athens contributes to the LIFE TERRACESCAPE by recording basic meteorological data in selected locations, with or without the project interventions, through a meteorological network consisting of 13 stations. The (micro-) climate information of the selected terraces/plots has been recorded since summer 2018 by 12 small autonomous stations, covering air temperature and relative humidity, installed throughout Andros, as well as 1 automatic online meteorological station (recording air temperature, relative humidity, precipitation, wind speed / direction, atmospheric pressure, solar radiation), installed on the roof of the Moustakeio building (Korthi, SE Andros). The data were collected over the period 2018 -2022. Their analyses focuses on identifying extreme events such as heat waves and heavy rainfall. The collected data will provide a solid basis for comparisons, after the end of the project, with modelled future climate changes in the Aegean islands.

Results: figure 1 (left) shows the seasonal air temperature variability; the average annual temperature is around 18°C. The stations at higher altitude (Panachrandou Monastery, Gianniseo, Kastro Kochylou) show the lowest temperatures, while low-lying stations in Korthi Bay (Korthi stations) register the highest temperatures. Total annual precipitation (recorded by the online station, (https://tinyurl.com/7vy3emk9) was considerably higher for the 2018-2019 growing season (Figure 1 right) than the long-term mean (~508mm). National Observatory of Athens will also look at the (preliminary) changes in temperature and humidity between meteorological sensors on sites that did (marked with orange Figure 1)/ did not experience renewed terrace cultivation.

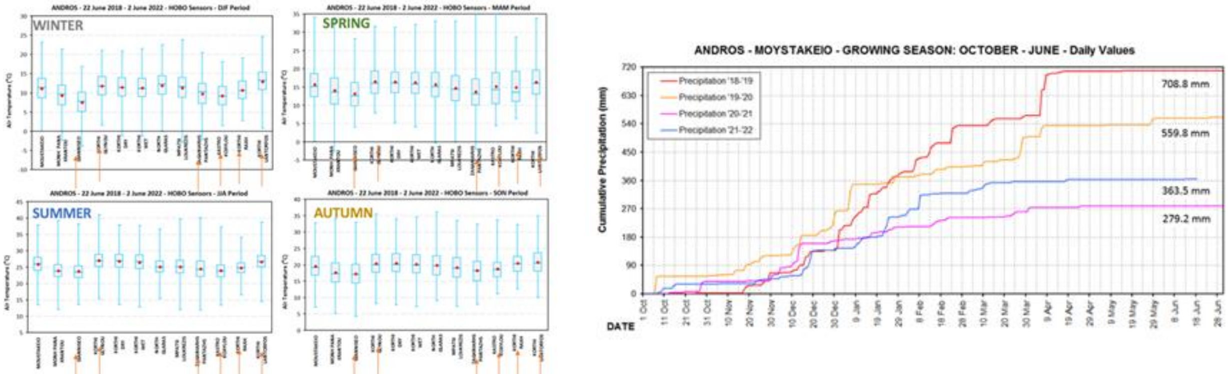

Figure 1. (Left) Seasonal air temperature from all 12 small stations for the data recording period June 2018-June 2022 over Andros. (**Right**) Precipitation in Moustakeio online station during the 4 past growing seasons

Furthermore, the National Observatory of Athens estimated and analyzed the changes of climate indices related to agriculture activities in order to identify regions most at risk to adverse climate change impacts in agriculture and to prioritize future interventions and adaptations in the Aegean islands. Changes in climate indices based on temperature and precipitation simulations of selected regional climate models from the EURO-CORDEX database (spatial resolution ~12 km), were estimated for two future periods, near-2031-2060 and distant-2071-2100 future under the IPCC RCP4.5 (intermediate, climate change mitigation scenario) and RCP8.5 (extreme, non-mitigation with high emissions) climate scenarios. Climate model projections for the Aegean islands showed (Table 1) increases in air temperature and drought periods in the future. These climate changes impact on, for example, floods, erosion, (ground) water availability, fire frequency/magnitude and vegetation. Terraces may help decrease the negative impacts of climate change, through decreasing erosion, increasing infiltration, help storage and slow release of groundwater, decreasing flood peaks, creating fire-breaks and preserving soil (and vegetation). The benefits of terrace restoration are likely felt progressively over time, depending on the total extent of restored / protected terrace surfaces.

Preliminary results, for selected very hot days, showed that stations located on uncultivated terraces had higher air temperature values at noon, compared to the values recorded from stations on cultivated terraces. The benefits of terrace restoration are likely to be felt progressively over time, depending on the total area of restored areas and assuming that cultivation will continue.

Table 1. Differences of selected climatic indices between near (2031–2060) or distant (2071-2100) future period and control period (1971-2000), under the RCP4.5 and RCP8.5 climate scenario.

Climatic index	Cyclades		Dodecanese		Central Crete		North Aegean	
	RCP4.5	RCP8.5	RCP4.5	RCP8.5	RCP4.5	RCP8.5	RCP4.5	RCP8.5
Climatic changes/differences—near future (2031–2060)								
Hot days (day/year)	+15	+20	+23	+25	+22	+30	+22	+25
T_{max} (°C)	+1.5	+2	+1.7	+2.2	+1.7	+2.1	+1.7	+2.1
PR (%)	−4	−7	−6	−9	−7	−11	−2	−6
Consecutive dry days—CDD (day/year)	+10	+7	+9	+11	+9	+12	+8	+9
Climatic changes/differences—distant future (2071–2100)								
Hot days (day/year)	+25	+48	+32	+60	+30	+58	+28	+55
T_{max} (°C)	+2.2	+3.9	+2.4	+4.5	+2.4	+4.4	+2.35	+4.4
PR (%)	−5	−17	−9	−25	−8	−25	−4	−15
Consecutive dry days—CDD (day/year)	+8	+21	+11	+25	+12	+25	+7	+25

11. The effect of TERRACESCAPE project to the soil

Implementation of the TERRACESCAPE project included mapping of the soils of Andros according to the Greek soil classification system. Based on this mapping, guidelines for good soil management were created in order to protect the soil of the terraces from erosion, but also to implement better and more efficient practices in agricultural production.

Regarding the soil organic carbon, the initial study of the project-cultivated fields showed that the soil organic carbon was similar to any typical Mediterranean environment, without significant differences between cultivated and non-terraced fields. However, in the course of time, the cultivated fields showed reduced organic carbon values in the surface soil layer, a result confirmed by the literature.

The rate of soil decomposition was calculated based on sampling carried out in 2018, 2019 and 2021. The results showed that there is a positive effect of cultivation on the decomposition rate.

12. Challenges and gained experience from TERRACESCAPE

The experience and conclusions that have emerged from the implementation of the TERRACESCAPE project, combined with the informative/educational and documentation material produced by the project, allow for a more optimistic expectation regarding the reintroduction of traditional crops and the protection of the rural landscape in the Aegean region.

First, the progress and effectiveness of the project have proven undoubtedly that any attempt to 'revive' the terraced crops in a museum context is doomed to failure if it is not linked with the contemporary needs of local communities, so that it becomes a functional element of the local production process, directly linked to the local tourist product. The restoration and cultivation management of terraces is a laborious, painstaking, and costly process, which must be carefully planned from the outset, setting appropriate priorities in the selecting of the sites, in order to avoid 'mishaps' which could easily undermine the whole effort. It is also necessary to ensure an economically viable production of branded products from local crop varieties, of high added value, whose guaranteed sale may support the increased production costs of the effort.

What does "mishaps" mean?

1. In the literal sense of the term, it means abandoned old terraced fields in marginal locations, with poor topsoil and a high proportion of rock and/or marginal slopes for cultivation (another term could be “badlands”). Such fields were once cultivated in years of poverty, under adverse socio-economic conditions, with great difficulty and excessive labour; in addition, they had marginal yields, and therefore constituted some of the first fields that were abandoned when local socio-economic development allowed farmers to free themselves from such unsuitable and essentially unprofitable cultivation efforts. Such sites have also proven from the experience of this project that it no longer makes sense to include them in any restoration and re-cultivation planning, since they cannot be made even remotely profitable under modern conditions.
2. In the less literal sense of the term, "badlands" includes another category of abandoned fields. Those located at a great distance from settlements or which have difficulties to be accessed by farmers and farm machinery, factors which currently make them unproductive. This has been one of the most common causes of abandonment in the past. In fact it is a common knowledge that the more remote and inaccessible a farm was, the earlier it was abandoned. Conversely, the closer a field was to the settlement, thus the more accessible it was, the more likely was to continue being cultivated by the land owner or tenant. By drawing concentric circles around existing settlements, it is therefore possible to prioritise areas where the best results can be expected from future re-cultivation efforts, based on distance and accessibility. This has been applied to the DST created as part of the project.
3. A third group of fields is figuratively included in the category of "misfits". That which exhibits problems either ownership-related or related to the history of land use. It is to be expected that the abandonment of farmland, combined with the transformation of rural societies and the migration that has occurred over decades, have created a situation of multiple ownership in many abandoned fields, with dozens of heirs scattered often in distant countries. It is therefore very difficult to reach agreement on the restoration and re-cultivation of such land. On the other hand, the same category includes agricultural land which, due to many years of abandonment, has now been partially or totally afforested, a situation which creates administrative and practical complications regarding the possibility of restoration and cultivation, even when they are located in relatively fertile and accessible locations.

The above three negative criteria for avoiding mishaps, badlands or misfits, should be complemented by some positive, perhaps more macro criteria for the selection of suitable sites for restoration and re-cultivation. Such criteria should be related to:

a. the positive spirit with which such an arduous, laborious and long-term beneficial effort can be accepted and embraced by local communities, as opposed to the "easy" and "trouble-free" life promised by mass tourism on the islands; and
b. the "maturity" and "identity" of the local tourism product so that it can integrate in a sustainable and beneficial way the high value-added-, climate-, landscape- and biodiversity-friendly products of the cultivated terraces.

As far as point (a) is concerned, it is clear that:

- On islands where tourism arrived early, shortly after the wave of local migration and therefore contributed to the abandonment not only of marginal and precarious cultivated land, but even of productive land, it is very difficult today to restore/re-cultivate/revive, simply because the culture/attitude of painstaking, careful and effort-intensive cultivation has already been lost, perhaps even for generations of farmers. Cases of such islands are for example Mykonos, Rhodes, Ios or even Santorini, without this meaning that even on such islands there may not be positive exceptions.
- A second category of "difficult" cases comprises the large islands, where local producers have for decades been able to switch to a more intensive production model (irrigated and high-input crops) by choosing the fields they want to work on. In these cases, the intensive farming model has been established for several decades and is difficult to change. Examples of such islands are mainly the East Aegean islands and Evia. On these islands there are clearly cases of producers who have the willingness and culture to deal with local crops produced on terraces. However, they cannot create the critical mass that will change the production model of these places, as intensification combined with tourism is already there.
- The third category of islands are those which, due to their size, geographical location and development history, have been relatively recently "discovered" by tourism, have a certain degree of productive self-sufficiency, maintain a productive agricultural sector that still incorporates some of the reclaimed land into the production process. In these cases, farmers continue to retain experience, expertise and know-how with regard to the maintenance of the terraces and other structural elements of the farmland, use or have knowledge of local varieties and the specific cultivation practices required for sustainable cultivation of the terraces. At the same time, many of them treat these lands as "ancestral", with a strong desire to preserve them as part of their personal and collective heritage of their place. In other words, they are familiar with the relevant practices and are receptive to extending them to some of the less 'easy' categories of land, provided that the conditions are right for the production and marketing of high value-added products. Examples of such islands are Tinos, Naxos, Karpathos, Amorgos, Nisyros, Tilos, Herakleia, Schinoussa, Kimolos, Sikinos, Skyros and several other small islands.

Regarding (b), the scale of the island, its "identity" as a sustainable tourist destination, and certainly the ability of the local tourism product to absorb the high value-added products of the terraces, play a key role. Alternatively, in the case of islands such as Crete, scale can be counterbalanced by local entrepreneurship in the primary or tertiary sector, as well as by scale at the level of individual sub-regions. In any case, islands such as Tinos, Tilos, Nisyros, Amorgos, Karpathos, Herakleia, Schinoussa, Kimolos and Skyros, as well as parts of Naxos or Crete, may well be good examples in that respect, They could well serve as good examples of the 'maturity' and 'identity' of the local tourism product and ultimately its suitability to sustainably incorporate the products of climate-friendly re-cultivation of the terraces.

13. The next day of the TERRACESCAPE project

The experience gained during the five years of TERRACESCAPE project implementation, as well as the challenges mentioned in the previous chapter, helped the project team to plan and envision the next steps in projects with similar objectives.

Based on this knowledge and experience, the following questions have been codified and clearly answered in order to ensure a proper future selection of sites where the first phase of the implementation of the large-scale terraces restoration and re-cultivation project in the Aegean Sea can start.

Why do we want to restore and re-cultivate terraces?

- To contribute to the climate adaptation of local agricultural production and the local development model of the Aegean islands in general
- To obtain self-sufficient and sustainable primary production on islands
- To contribute to the preservation of the island's rural landscape
- To contribute to the conservation of island biodiversity
- To enhance the sustainability and attractiveness of the local tourism product

How can we achieve the above on the scale of the Aegean island complex?

- In connection with socially acceptable and economically sustainable producing activities
- With activities embedded within an attractive and sustainable local tourism product, promoting respect for the environment, landscape, culture and island' self-sufficiency
- Considering landscape and culture features as 'living' rather than 'museum' elements.

What should be the characteristics of the areas to be prioritized for the project?

- Areas that still maintain traditional agricultural activities
- Small-sized islands or sub-areas within larger islands
- Areas where tourism has arrived lately
- Areas where the tourism product is greener

How can such an effort succeed?

- In cooperation with farmers who have experience and willingness to try and toil
- In collaboration with entrepreneurs in the tourism sector who understand the benefits of eco-sustainability and sustainable growth
- In collaboration with local authorities that actively adopt and invest in a local sustainable development model

- Through using scientific and modern technical tools and guidelines, such as those developed by the TERRACESCAPE project
- Through continuous training and interaction of stakeholders making use of structures such as the Drystone Wall Schools

What are the specific characteristics of the fields to be included in the effort?

- Have good access for farmers and small-scale machinery
- Be relatively close to existing settlements
- Have been abandoned within the last three decades, not before
- Have no serious ownership issues
- Have no serious land use/forestry/land disputes issues
- Have no serious damage to their structural elements requiring a very significant investment for restoration
- Their cultivation history must be related to the objectives of the programme, including local varieties and sustainability of cultivation

What is the projected time scale of the effort to achieve demonstrable positive results?

- Ten-year scale, with priority given to the easiest/most suitable areas on the basis of the above (first five-year areas)
- The effort and the implementation plan should be re-evaluated and adjusted every five years, always in line with the initial objectives
- The selection of the islands in the programme should be combined with a local product branding programme
- The selection of islands in the programme should be combined with commitments by tourism operators (e.g. contract farming)

The selection of the areas where the first phase of the large-scale programme for the restoration and re-cultivation of terraces in the Aegean can be launched can be based on the above elements and conclusions and take into account the following criteria:

- Islands where there is a culture and experience of traditional small-scale and effort-intensive farming
- Islands where the identity and maturity of the local tourism product can sustainably and effectively integrate the high added-value products to be produced by the effort
- The selection of the islands in the programme should be combined with a commitment to participate – cooperate with similar networks in Greece, the Mediterranean, and other regions with similar characteristics
- The selection of the islands in the programme should be accompanied by a branding programme for local products
- The selection of the islands under the programme should be accompanied by scientific documentation/evaluation programmes on the degree of climate adaptation and the impact on local biodiversity in order to grant certification of the products

- The selection of programme islands should be combined with commitments by producers and tourism operators to periodic adjustments based on the objectives of the reforestation and restoration programme.

Indicatively, the first phase could take place on the islands: Tinos, Tilos, Tilos, Syros, Karpathos, Naxos, Amorgos, Nisyros, Kimolos, Schinoussa, Herakleia and Skyros.

The LIFE TERRACESCAPE (LIFE16 CCA/GR/000050) is co-funded by the LIFE Programme of EU, with the contribution of the Green Fund.

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