Sustainable Planning Education as Intercultural Service Learning: Kefalonia Program in Sustainable Community Development

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Abstract
This article presents an overview of a community development service learning programme operating in the Greek Ionian Island community of Farsa Village. The philosophical approach of the Kefalonia Program is one of ‘threading the past with the future’. It seeks to combine traditional knowledge with contemporary technologies in order to create a sustainable future for a community that was completely destroyed by an earthquake in 1953. The village provides a case study for collaboration, research and community education for students, teachers, researchers, nonprofit organisations, island governments and, in particular, the local Farsan Village community. As a catalyst, the programme has engaged the local community in an active planning process, which both reawakens the dream of village restoration and provides a common vision for the future.

INTRODUCTION

The Kefalonia Program in Sustainable Community Development was conceived following talks with leaders from the Prefecture of the Island of Kefalonia, Greece.

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The faculty programme director from Huxley College of Environment at Western Washington University, Bellingham WA, USA, asked the Kefalonia Governor whether the island would benefit from an American university-sponsored, applied research programme to address the island’s most pressing priorities. The Governor’s response was strongly favourable and he identified the island’s three most important concerns: 1) how best to redevelop the island’s villages that were destroyed in a devastating earthquake in 1953; 2) how to encourage a form of tourism that would avoid negative impacts to the island’s natural and social assets while generating positive economic and social benefit; and 3) how to revive the island’s agricultural economy. The Governor suggested a pilot project at Farsa Village, a small village on Kefalonia, the largest of the Ionian Islands, which was devastated by the 1953 earthquake and whose residents wanted it rehabilitated so that they could return.

The programme faculty met with the Farsa Village leadership to devise a research programme based on the community service learning model (Butin 2005). Village leaders emphasised the importance of respecting the village’s past while planning a sustainable future. The programme was warmly embraced by the Prefecture of Kefalonia, the local municipality of Argostoli, Farsa Village leaders and former residents of the now-deserted Farsa Village, who have since relocated to the adjacent ‘new’ Farsa Village, to Athens, and abroad. (Figure 1 shows a view of the abandoned Farsa Village.)

An academic framework was designed consisting of an interdisciplinary curriculum in urban design and planning, environmental resource management, historic preservation, sustainable technology, agro-ecology, transportation planning, social anthropology and other related disciplines within a community service learning approach. The programme seeks to incorporate a philosophy of balancing historic community restoration with the principles of community sustainable development. The curriculum evolves each year based on the progress accomplished in previous academic quarters.

Although the village has remained uninhabited for the past 50 years, remnants of its 160 former structures remain intact, providing students with a skeletal template from which to accurately develop baseline site plans of the historic village design. Surrounding the village lie extensive olive orchards, abandoned bee hives and vineyards, which comprised its agricultural economy. With the assistance of the former villagers now living in the ‘new’ Farsa Village and elsewhere on the island, individual homes were identified, measured and deconstructed to characterise features of architecture and building style and to begin to uncover the social history of Farsa Village.

Figure 1 View of Farsa Village
COMMUNITY SERVICE LEARNING AND THE KEFALONIA EXPERIENCE

‘Community Service Learning’ is a pedagogical model used extensively in the Kefalonia Program. It is a form of experiential learning that combines community service with classroom learning (Cone and Harris 1996; Speck and Hoppe 2004). Real-life experiences in the community are linked to academic content through applied research projects (Carver 1997; Cummings 2000; Giles and Eyler 1994). Community service learning has been shown to have positive effects on academic performance (Astin and Sax 1998; Bringle and Hatcher 2000; Tannenbaum and Berrett 2005). It promotes community cultural understanding and student leadership skills.

The Kefalonia Program is committed to a philosophy of bridging applied knowledge in sustainability practices within an international cultural context in order to help students prepare for careers focused on attaining just and sustainable global societies. The programme reflects an integrative approach to inquiry-based learning and real-world problem-solving.

The aim of sustainable community development service learning is to help local communities access knowledge, methods and technologies so that community development decisions can result in socially, environmentally and economically positive outcomes (Jacoby 2003; Keith 2005). The philosophical approach adopted in the Kefalonia Program is one of ‘threading the past with the future’ as the programme carefully seeks to combine the wisdom of the past with the efficiencies of sustainable technologies in order to revive a sustainable future in this seventeenth century village. The village provides a case study for collaboration, research and community education among a network of students, teachers, researchers, nonprofit organisations, local governments and the local community. A goal of the collaboration is to formulate a place-based model for sustainable development.

The Kefalonia Program, which began in the fall of 2005, operates two academic semesters each year. The project is a long-term and dynamic process in which outcomes are as important as learning processes. By emphasising the relationship between historic knowledge and sustainable technologies, the programme represents a model for education for sustainable development throughout Greece and beyond.

Adaptive Academic Curriculum

The programme offers a well-integrated and applied multidisciplinary curriculum serving advanced undergraduate and graduate students in the field of sustainable planning. The curriculum consists of 10 ‘floating’ courses which include site planning, architectural design, sustainable infrastructure design, green building techniques, energy systems, sustainable tourism and economic development, agro-ecology, community finance, and Greek language, history and culture. The selection of courses and design of syllabi are adapted each term to reflect progress in plan development. The classes are taught by American and Greek faculty. The programme’s curriculum focus in Farsa Village is designed to extend over a four- to five-year period before shifting to implementation phases, as well as to other regional sustainability issues (island-wide investigations...
addressing solid waste recycling and sustainable tourism were introduced in 2007). Future courses will evaluate alternatives for the community’s self-management for village redevelopment, preparation of design criteria, land and building entitlements, development financing and the evaluation of economic development activities to help sustain the future village economy.

The Kefalonia Program also supports independent graduate research. Currently, several graduate students are conducting parallel case study research in sustainable tourism, alternative energy systems design, sustainable water supply systems and rural agricultural development. The complementary research projects are integral to the Kefalonia partnership. In cooperation with local authorities, the programme also sponsors annual seminars, conferences and workshops disseminating knowledge developed through the Kefalonia Program.

Partnerships

A partnership network was formed with village representatives, the municipality of Argostoli, the Prefecture of Kefalonia, universities in Patras and Athens, professionals, nongovernmental organisations working in sustainability fields in Greece, and the university programme. Local community involvement is represented by the elected Farsa Village Community Board, an Athenian-based property owners’ community association, and a recently formed Farsa Village Redevelopment Advisory Committee comprised of village elders, village elected leaders, municipal and regional public officials, as well as village youth. It is envisioned that the Farsa Redevelopment Advisory Committee will assume a key leadership role in community redevelopment. The local community is active in reviewing and guiding all aspects of plan development and assists the students by leading field trips through the village. Community leaders also arrange for interviews with community members to help students understand the social history of Farsa as well as to interpret the historic characteristics of the individual structures. (Figure 2 shows programme staff, students, and Farsa villagers in the field.)

Following the completion of each academic quarter, students and faculty present their findings and recommendations at community meetings held in Farsa Village as well as in Athens where a large portion of the villagers now reside. During the summer months, when many Farsans return to the island for summer vacations, community educational meetings are held to report on progress and to ensure that a general consensus is reached on overall plan development. Linguistic gaps are bridged with the assistance of the Farsan
leadership fluent in English and the programme’s on-site Greek staff, who provide translation assistance to students and faculty. Student presentations and written materials are published in both English and Greek.

Representatives from the Municipality and the Prefecture provide technical and political support to the Farsa Village planning process. Early engagement of local officials has been critical to the long-term support of the project. The project is also affiliated to the United Nations Community Sustainable Development Partnership Programme, the Anna Lindh Euro-Mediterranean Foundation, and the Mediterranean Information Office for Culture, Environment, and Sustainable Development. In 2006, the Kefalonia project received the Mediterrania Honorific Award, a prestigious international recognition for its innovative applied research approach to sustainable rural development.

THE PROJECT COMMUNITY: FARSA VILLAGE

Kefalonia is the largest Ionian Island, with an area of 688 square kilometers. It is a beautiful island of contrasts—quiet, windless sandy beaches, verdant slopes and steep cliffs plunging into the Ionian Sea. It has a mild Mediterranean maritime climate, with a dry summer and a warm and wet winter.

August 11, 1953 marked the start of a series of earthquakes that devastated the islands of Kefalonia, Zakynthos and Ithaca. People on the islands were left homeless and their economy was shattered. Abandoning their olive fields and villages, many islanders left for Athens or migrated abroad to seek employment. Others stayed and helped rebuild the islands. Amidst this chaos, the remaining residents of Farsa Village abandoned their mountainside village for a new settlement located down the slope.

The original village has remained untouched since the earthquake. Among the olive trees and the stone terraces, the village’s blue, lapis lazuli and ochre-plastered walled ruins remain (Figure 3). Farsa Village was a close-knit sustainable community established 400 years ago during the long Venetian occupation of the Ionian Islands. The three institutions of governance, church and education played a central role in village life. Leaders included the village president, priest and schoolteacher, each held in high regard. The village is now governed by a community council, which manages village affairs and assumes a central role in planning the village’s reconstruction. Many Farsans no longer live as traditional a life as they once did, partly because tourism has replaced agriculture as the island’s major economic activity, but more significantly, because of their relocation to urban areas.

A central question to the planning study focuses on the desires and abilities of Farsan families to rebuild their private property holdings. Initial surveys indicate that many families are able to finance the

Figure 3 Typical building ruin
rebuilding of their family homes, assuming that a village infrastructure system and development entitlements permitting reconstruction activities are first in place. Other families have little ability to afford reconstruction, and would require financial assistance. Further, many owners now living outside of Kefalonia indicated that their use of a rebuilt family home would be limited to holidays and summer vacations. Others indicated an interest in one day retiring to their familial village. Many property owners stated an interest in generating supplemental rental income through a tourism programme as a way to help finance the reconstruction of their homes.

COMMUNITY DESIGN

The research programme began with investigations into the community’s historic, cultural, economic and physical conditions to determine traditional settlement patterns and land tenure conditions. Baseline site information was compiled from historic aerial photographs and topographic maps, field verification and personal interviews with village residents to create GIS base maps illustrating the spatial characteristics of the village. Computer-aided design (CAD) drawings depict the footprint of the original structures located throughout the settlement (see Figure 4). Interviews with building owners help students identify structural attributes not obvious from field observation. Cultural histories explaining the clustering of family residences into five distinct neighbourhoods were also mapped.

Students evaluated alternative models in community development that would maintain traditional village design and building typology while incorporating contemporary building techniques. The design process considered the reuse of local materials, such as the ubiquitous supply of stone rubble as a primary aggregate material in new construction; the development of sustainable energy and infrastructure systems.

![Base map of village based on aerial photo interpretation](image)
such as solar and wind energy; rainwater catchment systems; irrigation of treated wastewater through application to the surrounding olive orchards, and the exploration of income-generating activities to help finance redevelopment. Sustainable tourism, especially, was considered as part of the overall community redevelopment strategy.

The Kefalonia Program is also developing planning criteria to guide the planning process informed by the literature in sustainable design, the US Green Building Council’s (USGBC) Leadership in Energy and Environmental Design criteria, as well as the USGBC-Seattle Chapter’s ‘Living Building’ performance-based approach to sustainable development. The Program’s planning criteria incorporates consideration of historic Ionian Island building vernacular, cultural cohesiveness, the reuse of local materials, and sustainable infrastructure systems design for domestic water supply, wastewater treatment, transportation and energy.

**Historic Preservation Objectives**

Reestablishing historic design character is the community’s primary redevelopment goal. Design charrettes conducted by the students help the community reach consensus on an acceptable village design vernacular and the development of design codes to help ensure that future development of individually owned properties ‘fit’ within a unified design scheme. Design guidance requires the consideration of physical form as well as the traditional functional relationship between private buildings and the public village landscape. Design guidance is especially important as the village is still prone to severe earthquakes. The island imposes strict hazards-mitigation building requirements for new construction.

Individual property owners work closely with student design teams to evaluate design goals for their properties while considering specific use requirements of future occupants. Design guidelines address exterior surface materials, colour, building bulk, window and door styles, entrance ways, arches, roof slopes and materials, balconies, courtyards, exterior staircases and lighting (see Figure 5).

**Conceptual Village Designs**

Schematic design studies conducted in the fall 2006 programme depict the clustering of buildings in different village ‘neighbourhoods’ located along the village main street. Student design teams evaluated the redevelopment of the former schoolhouse for use as a community education centre. Possible uses include a common space where the community can convene events, and where visitors can learn about sustainable technologies employed in village reconstruction. The school study site plan includes...
an adjoining structure which could be used to support events such as weddings and educational seminars. Other schematic drawings show site plans for building clusters within each of the village neighbourhoods.

The group of buildings located on the east side of the main street traditionally contained commercial uses, including a wine press, grocery store, café and olive oil press, all occupying upper floors of private residences. Plans call for the re-establishment of Farsa’s main street as mixed commercial and residential uses, including the adaptation of restored buildings to support contemporary living requirements (see Figure 6).

Sustainable Infrastructure Design

Village redevelopment requires the provision of water supply, wastewater treatment, transportation, energy and telecommunications services. Students have proposed the use of rainwater—the village’s sole traditional water supply—as the primary water source. Groundwater sources may exist but they are prone to overextraction and risk of salt water intrusion. Analysis of annual rainfall in Kefalonia indicates an adequate supply; however, rainfall occurs mostly during the winter months with drought conditions during the peak-use summer months.

Roof surfaces and courtyards can serve as efficient rain collectors, with water supply stored in underground cisterns. (see Figure 7). Catchment surfaces were calculated to maximise the amount of water that can be captured and storage containers were sized to provide a reliable supply source throughout the summer. Traditional village cisterns were constructed of stone and lined with lime plaster providing waterproofing as well as disinfection thereby maintaining an adequate drinkable water quality standard. An analysis of alternative storage methods considers both storage costs as well as the material’s ability to withstand ground movement from earthquakes.

Wastewater treatment presents opportunities for adapting new technologies in collection, treatment and disposal. Future
classes will investigate the adaptation of sustainable community treatment systems that combine wastewater effluent disposal with olive orchard irrigation to increase olive fruit production. Treated effluent disposal through drip irrigation methods onto the orchards surrounding the village may serve to safely dispose of treated effluent while increasing the productivity of the revived agricultural economy.

TOURISM AS SUPPLEMENTAL ECONOMY

Tourism comprises the chief economic activity in Kefalonia and can play an important and positive role in the redevelopment of the village. Tourism can provide new employment, contribute to the appreciation and understanding of local culture, and generate revenues to help pay for project debt financing. At the same time, negative impacts from tourism development—seasonality of jobs, infrastructure overload, and the loss of authenticity and cultural degradation—can adversely affect the local environment. Establishing conditions for ‘good’ tourism through careful planning and policymaking helps offset its negative effects. The central question is: In what form and to what degree can tourism be sustained in a newly constructed village to ensure that the community’s economic and social objectives are met? A sustainable tourism plan should be in balance with the environmental and social carrying capacity of the village and its surrounding landscape. An initial project is a village heritage ‘walking trail’ map developed by the students that reflects the unique and rich physical and natural history of Farsa.

Perspective renderings illustrate concepts for adapting structures for use as tourist accommodations. Private homes could offer guest rooms through a hotel cooperative. A centralised hotel with reception, restaurant and other support services is planned to occupy one of the village structures. A tourism plan is being developed, based on discussions with property owners interested in ‘pooling’ their residences as guest rooms. The hotel cooperative would maintain and manage the guest units. The hotel business concept assumes a village carrying capacity for 20-40 guest rooms scattered throughout the village.

CONCLUSION

This article presents several initial development concepts from the Kefalonia Program’s two-year investigation. It is a deeply engaging project as it focuses on how best to connect a village’s past cultural heritage to its sustainable, yet unknown, future. It also offers students a remarkable opportunity to become immersed in an unfamiliar cultural environment, to apply acquired knowledge about SD for the direct benefit of a local community, and to cultivate intercultural awareness about local community development needs. Skills acquired through the programme are intended to be transferable to other cultural community contexts. The community of Farsa Village has viewed the programme favourably, as it has served as a catalyst for reawakening their dream of village restoration and has helped engage the local community in its own
active planning process, even after a 50-year dormant period following the destruction of their village.

The relocated Farsan community still retains strong memories of its past. The ruins of the old village, still clearly visible on the mountainside, evoke memories, nostalgia and hope; a hope that is being realised as restoration planning begins. A common thread among all Farsans is their collective desire to see their village reestablished in a way that is true to its ancestral heritage so that once again it may sustain the future generations of Farsians.

Note
For more information on the Kefalonia Program see the Section on Academic Programmes in this issue.

References