

INTEGRATED EVALUATION FOR THE PROTECTION AND SUSTAINABLE DEVELOPMENT OF THE CAPULA- MORELIA -CUITZEO –LOS AZUFRES (MICHOACAN ESTATE , MEXICO) VOLCANIC AREA

Joan Poch¹, M. Rita Estrada¹, Isabelle Briansó², José Luis Briansó Penalva¹, Elia Mercedes Alonso Guzmán³, Wilfrido Martínez³ and Virginia Domingo¹

(1) Universitat Autònoma de Barcelona (UAB), Spain
(2) Université de Versailles Saint Quentin (UVSQ), France
(3) Universidad Michoacana de San Nicolás de Hidalgo (UMSNH), Mexico



INTRODUCTION

Under the research project called STRAVAL: "Studies, training, socio-economical valorization and management of natural, cultural and monumental property for the promotion of the local societies of Latin America Argentina, Brazil, Mexico" (FP7-PEOPLE; 2011-2015), the Universitat Autònoma de Barcelona (UAB) is coordinating a multidisciplinary team (geologists, environmentalists, architects, engineers, etc.) focused on rural sustainable development. One of the study cases of the project is the area of Morelia and Cuitzeo Lake (State of Michoacan, Mexico), which is part of the Mexican Volcanic Belt. Local geodiversity is characterized by lacustrine dynamics, monogenetic volcanism and geothermal field of Los Azufres. Threats such as the exploitation of volcanic cones do exist, although there are also many opportunities, including the potential for tourism, at sites reflecting the impressive local natural and cultural heritage.

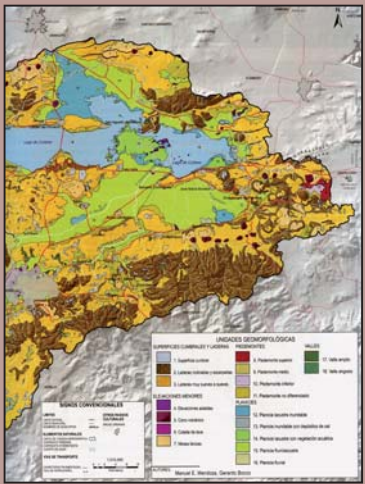
The historic center of Morelia is part of the World Heritage list of UNESCO. This protected site acts as a powerful magnet promoting economic and social bookmarking of remote places, if that marginal area is valorized properly. Such valorisation generates knowledge and good practices that can be transferred to natural or monumental sites that have received some form of protection either at national or international level in Latin America in order to avoid the marginalization of surrounding areas.

PRACTICAL AND THEORETICAL VALUES

Given that the protection and socio-economic development of a volcanic area should not be restricted purely to the management of its geological heritage, our team has developed an interdisciplinary approach that integrates elements of geological, biological, architectural, historical, social, economic and industrial heritage.



Geomorphological map. Authors: Mendoza & Bocco (2010).



GOALS

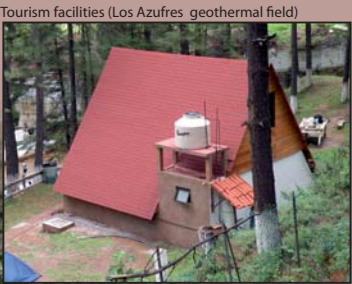
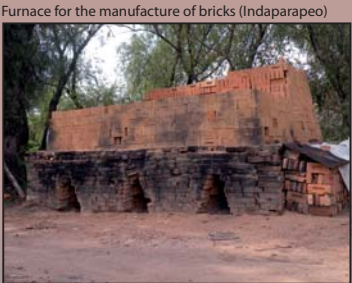
1. The identification of sites of interest that are susceptible to be protected and/or promoted.
2. The development of geotourism and cultural routes (sustainable tourism).
3. University training to improve the management of heritage assets.
4. Awareness-raising amongst the local population.

METHODS USED IN THE STRAVAL PROJECT

1. With the goal of creating a database to make the organization and diffusion of technical and iconographic information easier to work with, an inventory of natural sites, museums, cultural testimonies of the past and technical achievements, has been carried out.
2. Study of all existing potentials, impacts and socio economic capabilities in the settings of the selected sites. Scientific, socio-economic, cultural and historical studies in order to analyse the physical environment of each site, including potential impacts and corrective measures to recover and valorise the target sites.
3. Valorisation and Management: Establish a project development and management of the studied areas, compatible with the environment and sustainable development with the support of local authorities and populations (e.g: Instituto Nacional de Antropología e Historia (INAH-Morelia), Michoacán).
4. Education and Training: through the creation of educational modules on topics related to those selected places as well as their geographical environment, highlighting their intrinsic values capable to generate economic activities with attendant socio-economic impacts on local populations. After completing the modules a platform for on-line courses at the involved universities will be created.
5. Dissemination of results through the specifically designed tools: Web, open days, posters/banners, thematic videos, leaflets/brochures, seminars, short courses in schools or social centres, short conferences addressed to the public in general.

Proposed georoute

Map source: Google



RESULTS

After a year of work, the participants from the different universities integrated in the Project, have developed a good team work, unifying criteria to get the first results of the Project:
1. The first exchange of human resources between Cataluña (Spain) and Michoacán State (Mexico) universities has made possible the comparison of case studies and the assessment of good practice from similar projects which are already consolidated.

2. Partial inventory draw identifying a wide range of elements from the cultural and natural heritage of the study area (geodiversity, biodiversity, traditional crafts, agricultural produce, etc.).
3. Proposal of a geoturistic route embracing the highlighted elements.
4. Digital platform development in order to track and spread the Project results.

CONCLUSIONS

During the first year of development of the STRAVAL Project, the surroundings of Lake Cuitzeo have become fruitful as far as our project goals are concerned. The multidisciplinary team selection and coordination has achieved the expected results for this phase of the project. The project's work team cohesion is worthy of mentions, the components of which have had to perform a great effort to integrate themselves with the team, developing a "common language" in order to allow the communication from different technical and scientific disciplines.