

Life cycle management and urban settlements in spatial planning

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Abstract In order to preserve the natural landscapes and to achieve sustainable development in coastal areas in Albania, this paper presents plan proposals guided by sustainable principles of planning, (traffic and water networks) and sustainable applications into dwellings, (portable self-support houses). Assessment of the whole urban settlements as assemble and coastal urbanization trend is done by considering social, economic and political changes after 1990-ies. The economic changes (private property, demand for fast tourism development in coastal land) changed the report of construction land use and natural landscape. Social changes (population movement toward the coast, and density change) changed the report of the population with the buildings use. Massive emigrations created house stocks. The uncontrolled distribution of population, lead to uncontrolled investment of capital, which influenced urban infrastructure, lands use, natural and cultural heritage. Sustainable analyses of the proposals are done based on factors as flows, ecological factors, design and life cycle of the buildings, management and change.

1 Introduction

1.1 Current status and problems of the area

South Albania lies along the Ionian Sea, with a coastline approx. 170 km long and a population of about 270,000 inhabitants. Area is rich in historical monuments, archaeological sites and traditional villages mostly settled in the hills with easy access to the sea. The villages have Mediterranean features characterized by a vernacular/self built architecture mostly by stone and usually in white colours. Their layout is adapted to the landscape contours. Area is characterized by a unique scenic landscape, rocky going steeply into the sea. The area has priority for

development as an international tourist zones. The change of the political system in 1990 had socio- economic consequences. Economic changes (private property, demand for fast tourism development and coastal land, fast economic growth, politic (planning system problems) and social changes (uncontrolled population movement toward the coast and density change) are main driving forces causing problems in the tourist region. The free movement of population created opportunities for massive population flows. The uncontrolled distribution of population caused the uncontrolled and speculative investment of capitals. Although it is noticed an economic dynamism, the boom of construction has influenced urban infrastructure, land use, natural and cultural heritage. Another problem is the abounded houses that risk degrading.

Privatization of tourism sector changed the sleeping status of the areas. Due to the fact that this sector is very profitable in short terms, the need for fast economic growth led to unplanned development along the coast. Current urbanizations are object to strong development pressure threatening the whole integrity.

Sprawl and chaotic constructions risks the whole uniformity of the villages as assemble. New materials and forms are added to village's texture. The interference of new constructions inside villages is done without taking into account old architectural standards and traditional values. Except for the architectural and historic value, these villages are valuable also as a building resource. Some of the unsustainable consequences of the construction are: The enlargement of construction sites up to the seashore, degradation and deformity of landscape, increase of urban wastewater and discharges into the sea, increase of construction and urban solid waste, intensification of natural resources assimilating activity, mainly the shores and forest. Coastal forests are being cleaned for land for coastal development and as a consequence the deforestation is causing coastal soil erosion.

Valuable landscapes in the Southern coast have been influenced differently from the situation of the rest of the country because of the following phenomena: Strong real estate pressure on the coastal strip, the limited amount of land available for housing needs or for tourism, strong migration pressure, agriculture-dependant settlements are faced with depopulation, strong emigration abroad, agricultural land is under-exploited compared to the situation before 1990. The issue of ownership over the land in the region is critical constraint to any development. Coastal areas are very close connected to marine waters so the developments of terrestrial environments have direct consequences to marine components. Polluting of sea water, water systems and water diversity in general is a critical point for the area development [2].

The sprawl urban growth was accompanied by much slower infrastructure development. The changes in coastal areas changed the demand for infrastructure

services and transport. The infrastructure net was not foreseen to support the increase number of population during the tourism season. Water and sea water pollution is the major problem for long term tourism development. Most of the new buildings rely on illegal water connections to transmission mains. The majority of the informal settlements are not served by the piped wastewater collection network. The chaotic urbanization during this period is related to the poor urban planning. The weakness of public administration led to enormous illegal buildings, and unplanned urbanization of coastal areas risks of natural resources.

2 Plan proposal

Sustainable development plans based on environmental principles are a necessity to prevent further degradation of the area, to preserve cultural heritage, landscape and historical significance, diminish the need for new constructions, preservation of land and architectural values. From the tourism prospective the traditional villages can be restored and reused. In this plan proposal, as a starting point, planning is used for a sustainable spatial structuring, according to the framework for sustainable development, keeping the balance on the relationship that structure spatial and land use elements, using the Strategy of The Two Networks “S2N” [1] While a space demand for tourism habitation, agricultural, residential, and commercial and other land use functions exists, the problem of interference and mix of carrying functions is evident in the area. The residential areas are spread along the coast and the business activities like tourist services are interfering in the green and natural zones, polluting natural resources and water systems in general. According to S2N, the traffic network carries functions as mass action. The water network carries functions like water extraction and recreation. This create a zoning ranging from tranquil and unpolluted, to busy polluted areas. Applying this strategy in a tourist region is done with the purpose to distinguish the different types of tourist development. By concentrating the infrastructure networks at heavy points, it creates conditions for efficient use of it, for exploiting public transport and managing pollution and noise control and makes possible the management of “flows”. By concentrating the infrastructure in corridors create conditions for the reduction of barriers and less fragmentation of the landscape, the conservation of the smaller regions from the heavy development. Therefore the traffic principle of S2N makes possible the management of “areas”. It can secure a tourism densification without damaging ecological qualities of the area. “Blue”

and “green” networks are shaping the basic conditions for urban qualities and the right division of their functions.

The strategy of S2N is applied in regional level to define zones in wide lines according to their potential for different types of tourism as “High dynamic areas” for intense tourism and traditional tourism and “low dynamic areas” for eco tourism.

2.1 High dynamic areas and intense tourism

These are the tourist centres that have already access from national road, where the mass tourism development is ongoing or is expected to develop with high capacities. (Vlora, Himara, Saranda). The existing infrastructure has dictated the development and new investments to increase the carrying capacity of the area are expected. The areas near or within these living centres with high densities are already experiencing strong development pressure, where the traffic network carries the dynamic functions. In the future the intensive development can be stressed in these areas as “The high dynamic areas”. Airline access, nautical access new road investments, railways is foreseen to be bundled together in Vlora and Saranda points, in order not to fragment by transport the natural belt between them. By concentrating development and investments in this points the natural landscapes will be protected.

2.2 High dynamic areas and traditional tourism

These are the traditional villages (Palase, Dhermi, Vuno, Pilur, old Himara, Qeparo, Borsh, Lukova, Shen Vasil), which can develop the bed and breakfast tourism by revitalization of old houses and reuse of them. These areas can be upgraded to relatively high dynamic area, which are valuable not only for their architectural and historic value, but also as a building resource. Due to the population migration the traditional villages create a considerable amount of stock houses and their revitalization can fulfil a part of the house demand for domestic and internationals tourist. By using this housing stock the quality of environment can be increased and environmental pollution reduced. The existing national road can be sufficient for their access but nautical tourism can be used to reach these locations as well.

2.3 Low dynamic areas and Eco-tourism

These areas are the last stage from the dynamic intensity. Natural landscapes near the sea and the sandy beaches will be considered low dynamic recreational areas with potential for eco-tourism and beach tourism. These natural landscapes rivers and water resources, where accessibility is difficult due to the absence of infrastructure and can be reached by paths, boats etc. they will be left in natural state with low-impact used for eco-tourism. The recreational areas with low dynamic functions will be considered the areas where pilot projects for eco-tourism development will be held.

3 Portable village proposal

The proposal for eco-sites sustainable development consists of a portable village project-idea based on alternative ways of building, in the forms of temporary urban units. This idea is taken from a self-sufficient portable house build of cardboard that will be the prototype house of the village. (The village will consist of 15-20 cardboard houses, situated near the spring that goes down to Shtylla beach). The portable village plan is organized following the relief near the spring and the sea. Distance from the sea, the pebbly beach, agriculture terraces, from the coastal trail are taken into consideration in the general design plan. The new design philosophy can help to change the mentality of people for heavy construction, encourages people to shift their preconceptions about the “typical house”, to challenge the existing construction method by introducing new ways of simple building, easily obtained and dismantled constructions, through the redefinition of space, materials and structure. The tourism development with portable buildings can enable the temporary exploitation of the sites. Because people like to exploit new environments, the portable village can move in the eco-sites that do not accept heavy interventions. Using these houses for a certain period of time and after that removing in other tourist destinations can help, to recover the used areas, to control the tourist trend and to direct sustainable development in other locations. This village is not simply a camping village. It consists of houses that have attractive alternative forms from architecture perspective and self-sufficiency from sustainable prospective. The facilities provided by these houses are typical of a construction unit.

The Cardboard House is designed by Peter Stutchbury and Richard Smith [3] and it is approx of 50m² + loft. [4] The advantage of this building is that it can be assembled by two people over a six-hour period using appropriate scaffolding, and is transportable in a light commercial vehicle. All the material in the house is recycled, and recyclable, making it an excellent environmentally sustainable option for housing. recycling the house saves 12 cubic metres of landfill, 39 trees and 30 000 litres of water, Rainwater collection & recirculation of grey water, extremely low cost, transportable, and flexible, autonomous servicing, low-voltage lighting can be powered using a 12-volt car battery or small photovoltaic cells mounted on the roof framing, Composting system produces nutrient-rich water for gardening.[3]

4 Sustainable analyses of the proposals

Sustainable analyses of the proposals consist on factors as flows (water and traffic systems, energy), land, building materials, design and life cycle of the buildings, change and management. [4]

Water and waste water systems

4.1 Water and wastewater

Study area is rich in natural water with very good quality, but it suffers from water shortage because of the bad management. The water supply for the portable village can be supplied from the springs nearby using the water storage tanks. In the portable house used water is collected in bladders underneath the floor which double as ballast to hold down the lightweight buildings. Treatment of the portable village will be separated in the individual houses. The sewage and organic waste treatment is achieved by utilizing a biolytic waste treatment system with the use of colonies of worms and beetles converting all waste to nutrient rich water for gardening purposes. Water quality will be preserved because no polluted water will be discharged into the sea.

4.2 Traffic

Relatively far from the national road traffic noise and pollution do not disturb. The four valleys will not be fragmented by roads because the old hiking tracks and old unpaved roads will be reused. For everyday services, the connection with the village can be made by paths and trails and an interesting factor to mention is that the local people still use the transport by donkeys and horses. Nautical transport is foreseen to reach the holiday centre.

4.3 Land

Land is free of development. Its natural state makes it difficult to interfere but the nature of the plan does not occupy the land forever. This plan is suitable for a low carrying capacity site and temporary use. The concept of a movable (lightweight) dwelling proposes the short term leasing or borrowing of land rather than purchase.

4.4 Building materials

The traditional building material is stone. However, recently concrete and bricks are massively used in new constructions. The notion of using cardboard as a building material it is unknown in the area. Despite lacking obvious structural, waterproofing and fire resistance properties, cardboard are essentially a very green material (being easily recyclable as well as being made from recycled matter such as paper waste). Local industry can be encouraged for material recycle development.

4.5 Energy

The network electricity of the holiday village is self sufficient. Electrical services for lighting, smoke detectors, refrigeration and electronics are supplied by 4xBP solar panels which together with an LP gas store provide affordable utilities. The placement of solar energy panels it is very appropriate for the Mediterranean climate with too many sunny days.

4.6 Ecological factor

The portable village proposal carefully interferes in the beautiful natural landscape. The agricultural areas are saved. Olive yards very common for the area are let in their original status

4.7 Design and building life cycle

It will be a visual contrast of the portable village with other constructions of the living centre nearby. This fact does not diminish the importance of cultural heritage of the area. The small leaving centre consists on traditional buildings before 1945, the communist time constructions after 1945, (larger blocks of flats that do not fit with old buildings) and new constructions after 1990 are concentrated in the upper and lower areas towards the north and east. The traditional houses are 1-2 stores, located linearly on the ridge of the hill, orientated towards the sea (south), creating a harmony as assemble. The buildings of communist time have not any architecture value and the last category of new buildings have failed to fit in the old style. The traditional architecture elements can be used in revitalization of old houses or in new construction very near to the old locations in order not to destroy the harmony of the existing settlements. The traditional building material is stone. The stone houses of the old village usually has one window, hipped roofs covered with hand made and fired clay tiles. Stone paved alleys are characteristic for old village. Despite traditional houses restoration new interventions nearby can be distinguished with new contemporaneous style to show the time features differences. The contrast stays not only in the material but also in the alternative forms. While the proposed portable village design will be very different from the architecture design used in the area, this fact does not create a concern because the contrast between the types of design only gives rise to site diversity and fashion.

4.8 Density

The density concept is widely used in defining density zones in the general plan proposal. The S2N concept keeps the density balance and the proposal of portable village fits with this concept. The portable village because of its recreational nature will be of very low density. Contrary the density of the old village is high and can be even higher during the tourist season when used for bed and breakfast

tourism. The services of the leaving centre can be upgraded, but these small urban centres will be relatively of lower dynamic functions compare to two big centres of high pressure and priority. The density of the old village and the existing leaving centre is supposed to increase, but this can be followed by an upgrade of the carrying capacity by improving services. The population of the leaving centre for the moment is 2,306 inhabitants and 539 households. The number of tourists to urban the holiday village can be approx. 15-20 houses and 50 tourists. This does not include the number of tourist that can visit during the day the beaches and the recreational services.

4.9 Change and management

These plan proposals definitely leaves room for changing needs of residents. Portable houses introduce new building materials, new forms, and new concept and are temporary placed leaving the area empty. The tourist locations are the strategic points to use alternative building and planning. These places can be subject to experiment sites for architecture innovation. Many pilot sustainable projects can be experimented in these places. The portable village implementation plan does not affect other plans for revitalization of the old village. Furthermore, delays in implementing other plans for infrastructure development of the region do not affect the portable village functionality. The idea is region development based on small sustainable plans which coordinate with the whole region strategy development but does not necessarily depend on it to function.

5 Conclusions

As a result of transition the rhythm of development has changed, un-coordination exists between the planning process and fast development. The need for fast economic growth at cost of resource exploitation has made a necessity the measures for a sustainable development. Through analyses of different life cycles platforms, a sustainable spatial configuration can anticipate future developments. Economic politic and social changes are main driving forces causing problems in the tourist region. Coastal urbanization without plan by free initiative is one of the main polluters of coastal resources and traditional heritage damager. Traffic and water are used as instruments for planning for an optimal and rationale use of resources. These proposals keeps the balance between expectations for quick growth, the need for preservation of large coastal landscape by avoiding

fragmentation, and the need for gradual development of coastal infrastructure. It creates conditions for diversity types of tourism, stimulate creative solutions for sustainable spatial organization without the limitations of day to day practices, explore specific plans as portable village, and create conditions for both economic and ecologic development. The environmental zoning division development of intense tourism, traditional tourism and eco-tourism, will create conditions for sustainable management of areas and flows and exploit the natural resources for eco-tourism in a controlled way by preserving and conserving them.

6 References

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