

Tackling Sustainability from a Systemic Perspective: A Contextualized Approach

Rozwój zrównoważony z perspektywy systemowej: podejście kontekstowe

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Abstract

Sustainable development represents a shared aspiration, the priority of which is widely recognised worldwide by scientists, decision-makers and public opinion alike. It became a topic for reflection and an endeavour for initiatives taken by local communities, businesses, regions, states and international organisations. The subject of sustainability is interdisciplinary and involves a complex thinking that recently led to the emergence of a new discipline, namely sustainability science.

The systems approach (systemics) is deemed to offer a set of concepts and methods that enable the elaboration of visions, as well as the steering of the process of sustainable development in real contexts. Within this framework, the main strength of this approach consists in its capacity to overcome the reductionism peculiar to conventional perspectives on sustainability as being limited to greening and environmentalism.

The alternative perspective proposed by systemics is based on taking stock of the knowledge pertaining to the complex interdependencies between nature, society (including the economy), technology and the built environment. In short, systemics offers a background that is both pertinent and pragmatic and which enables the understanding of complex problems and the design of their solutions. One peculiarity of this approach resides in its capacity to foster the coining of new, meaning-rich concepts, usable in further theoretical and practical undertakings. Examples of such concepts include systemography, complexification, syntegrity, and co-opetition. This paper proposes a new such concept, that is sitesynthesis, rooted in the spirit of a given place and time.

Key words: sustainable development, systems approach, systemics, sitesynthesis

Streszczenie

Rozwój zrównoważony jest wyrazem wspólnych aspiracji wyrażanych na całym świecie przez naukowców, polityków i opinię publiczną. To nie tylko temat do dyskusji, ale także do podejmowania konkretnych inicjatyw i to na różnych poziomach: lokalnych społeczności, przedsiębiorstw, regionów, krajów i organizacji międzynarodowych. Zagadnienie zrównoważoności jest interdyscyplinarne i zakłada holistyczne podejście, które niedawno doprowadziło do powstania nowej dyscypliny naukowej, którą jest nauka dla zrównoważonego rozwoju.

Uznaje się, że podejście systemowe (teoria systemów) oferuje zbiór pojęć i metod właściwych dla wypracowania koncepcji, a także wdrażania rozwoju zrównoważonego w rzeczywistości. Główną zaletą tego podejścia jest przewyciężenie redukcjonizmu, który jest cechą charakterystyczną tradycyjnego traktowania zrównoważoności, związanej do ekologii i środowiska.

Alternatywa, którą niesie ze sobą podejście systemowe, oparta jest na zasobach wiedzy odnoszącej się do złożonych współzależności występujących w świecie przyrody, społeczeństwie (w tym ekonomii), technologii i środowisku architektonicznym. Ujmując inaczej, podejście systemowe to podstawa, która jest trafna teoretycznie, a zarazem praktyczna, a która umożliwia zrozumienie złożonych problemów i przedstawia możliwe sposoby ich rozwiązania. Cechą szczególną tego podejścia jest zdolność do kreowania nowych szeroko zakrojonych koncepcji, które będą możliwe do wykorzystania w przyszłych tak teoretycznych, jak i praktycznych przedsięwzięciach. Wśród przykładowych koncepcji wskażmy na systemografię, syntensegrację i konkuperację. W niniejszym artykule zaproponowano kolejną taką koncepcję – to synteza zakorzeniona w duchu danego miejsca i czasu.

Słowa kluczowe: rozwój zrównowazony, podejście systemowe, teoria systemów, synteza miejsca

1. Introduction

Sustainable development is a subject which runs high in today's global agenda in scientific research and political decision-making. The public opinion in developed countries, as well as in developing ones, is showing an increased interest in this issue, and, in turn, the dynamics of the public discourse addressing it contributes to the further enhancement of this interest. The stake of sustainable development is highly relevant to the future of humanity due to its strong impact on life and the welfare of each citizen; thus, it involves a trans-generational perspective. These reasons led to placing this topic under the aegis of the United Nations, with a view to elaborating visions and achieving consensus on the initiatives of state and non-state actors. Agenda 21, designed under its auspices, set out the main landmarks regarding future actions of member states, as well as the cooperation amongst them, aimed at achieving sustainability. During the *Decade of Education for Sustainable Development*, proclaimed by the UN for the period 2005-2014, efforts were intensified for shaping visions for time horizons that allow for strategic engagement. In this respect, on 20-22 June 2012, the Rio 20+ Conference took place, 20 years after the Earth Conference held on June, 1992, in Rio de Janeiro. Both events having had a summit format and had gathered many high-level political decision-makers from all over the world. On these occasions, the concern was expressed with respect to the more diverse and tougher challenges, as well as the commitment to responding through focused, concerted efforts towards promoting sustainability. In 2012, the *Kyoto Protocol* which addressed the issue of limiting the greenhouse gas emissions into the atmosphere expired. Efforts to mitigate and counteract global warming were re-launched, in December 2015, at the Climate Conference (COP21) through the adoption of the *Paris Agreement*, concluded among 195 States that came into force on 5 October 2016.

In 2015, the *2030 Agenda for Sustainable Development* (United Nations, 2015) was adopted. It established a set of 17 items titled *Sustainable Development Goals*. Within this context, the articulation between the sustainable development agenda and that of the information society turned out to be justified. In this respect, in 2015, the WSIS-SDG matrix (ITU,

2015) was elaborated; it mapped the sustainable development goals onto the action lines for advancing the information society and was adopted at the High-level Meeting WSIS+10, held in Geneva on 10-13 June 2014 (ITU, 2014).

Currently, preparations are underway for the next High-level Political Forum on Sustainable Development to be held in New York on 10-19 July 2017. The Forum is expected to gather representatives from all the member states of the UN and its specialised agencies.

The events and official documents mentioned above are widely known and frequently referred to in government circles and the media; the reason to thereby cite them is to draw some contextualised insights. From the succession and subjects of the respective events, one can note that awareness is already present worldwide, at top decision-making level, about the currency of the issue of sustainable development and the need to pursue its goals in the long run. Two key imperatives with respect to the manner of tackling the respective issue can be discerned: vision and consensus building at international scale, as the problem at hand is global in scope, with stakes and implications alike. Top-down approaches, although necessary, are not sufficient. It took longer to raise awareness and to trigger involvement for promoting sustainability locally but, once activated, these factors started to play a role that tends nowadays to take precedence in terms of concrete outcomes. Two new kinds of stakeholders became more active in recent years: local communities and businesses. The sustainable development objective is particularly fit to the call of thinking globally and acting locally. Businesses are engaged in promoting sustainable development goals mainly by exerting their own corporate social responsibility in ways that protect customers, employees, local communities and the environment at large. It is worth mentioning that, in 2010, the World Business Council for Sustainable Development crafted a vision (Infosys, 2010) the time horizon of which spans to 2050, while governments' foresight horizon is until 2030.

The bottom-up approach got stronger in the 2000s. By contrast to top-down ones which express general concerns and set goals and action lines in rather broad terms, local initiatives are owing their vigour to the fact that they are directly addressing concrete

needs and have engaged stakeholders; thus these initiatives reap either praise or criticism from their beneficiaries. An example in this respect is the industrial symbiosis of Kalundborg (Jacobsen, 2006), a Danish harbour, where local businesses joined local governing bodies and the community in successfully designing and implementing, on a collaborative basis, a circular system of recycling water, steam and waste, while preserving the environment, safeguarding local working and living conditions and saving energy and other resources.

The remaining of this article includes a contextualised review of the foundations of systemics, as well as a practical example, aimed at arguing that promoting sustainable development involves a systemic approach in thinking and in action. Such an approach is useful for conceptualisation and foresight purposes, as well as for steering on-the-ground, actions aimed at achieving sustainable development within specific frameworks of space, time and agency.

Conceptualisation and foresight, regarding sustainable development require a systemic approach mainly due to the interdisciplinary character of the body of knowledge that pertain to it. These knowledge pieces originate from various disciplines, belonging to diverse science fields (life/natural sciences, regional, socio-economic and technical/engineering ones); therefore, a systemic referential becomes necessary that would allow for articulating such a composite knowledge base. For example, tackling systemically the theme of the global climate change, that is emblematic for the current spectrum of sustainable development, involves integrating knowledge originating not only from climatology, but also from geography, biology, physics and even medical and social sciences (Stehr and von Storch, 2009, p. 35).

On the other hand, in actual terms, the specific problems raised by achieving sustainable development are encountered within large-scale, dynamic systems. Their management involves monitoring and prediction over a wide range of parameters and also coordinated interventions over numerous factors of causation and influence, their outcome having an intricate, propagated impact. The essential vocation of the systems approach is to be anti-reductionist. The conventional way of addressing sustainable development is, most frequently, still focused on greening. Such a focus is over-simplifying, as it eludes the complexity of the phenomenon and the compensatory intervention needed. Therefore, the argument is hereby adopted that a comprehensive optic, of the kind of *sustainability beyond greening* is required (Dragomirescu and Marinescu, 2012). The issue of sustainable development is structured in terms of the relationship between the natural environment, the man-made environment (including the technological, the built and even the virtual ones) and society. After all, sustainable development is more about society and nature considered together, rather than just

nature. The former involves not only protecting nature as habitat, but, more significantly, protecting the essence of humanity itself. In the same line of thought, one can also mention the proposal to widen the scope of the sustainable development concept *so as to include ethical, technical/technological, legal and political aspects* (Pawłowski, 2008).

This paper lays down an annotated review of the main characteristics and strengths of the systemic approach, as compared to the conventional, analytical approach; the latter has still a considerable bearing on contemporary science. It puts forward a new concept, namely *sitesynthesis*, which is introduced with respect to an example of a proposed re-design of a residential settlement in Malta.

2 The systems approach: an annotated review of key tenets

According to Senge (1990, p. 7), *systems thinking is a conceptual framework, a body of knowledge and tools that has been developed over the past fifty years, to make the full patterns clearer, and to help us see how to change them effectively.*

This characterisation is particularly useful because it is pointing out that systemics has a two-fold bearing: onto thinking and onto acting. At the thinking layer, taking a systemic stance means ensuring accurate representations of reality and enabling design changes consisting of either creating new systems or transforming existing ones. At the action layer, systemics offers grounds for intelligently enacting, steering and undertaking interventions upon or within systems. As such, systemics is applicable to any active entity from nature, artefacts pertaining to infrastructure/technology, economy, society or human intellect.

Systemics reached its maturity in the mid 1980s, mainly based upon the developments occurred in social, cognitive and information sciences. Among its prominent promoters are Edgar Morin and Jean Louis le Moigne, pioneers of the new paradigm of complexity. The school of thought founded by them is centred on the study of complexity (see e.g. Morin, 2011; Le Moigne, 2013). Morin (1993) defines the system as *the global and organised totality of the relationships that tie together certain entities, actions or individuals*. Complexity is understood not as a feature intrinsic to the system, but peculiar to every observer's perception on the system (Le Moigne, 2013) and thus complexification is recommendable (Eriksson, 1997), by contrast to the traditional simplification (Le Moigne, 1990, p. 165), usually symbolised by Occam's razor. Examples of other notable schools of thought in the field of systemics are Santa Fé Institute (www.santafe.edu) and New England Institute for Complex Systems (NECSI, necsi.edu), both based in the USA.

Contemporary systemics built upon contributions that emerged in mid 20th century, some key ones belonging to Norbert Wiener, who coined the fundamental concept of feed-back, and Ludwig von Bertalanffy (François, 1999). The latter created an unified, general systems theory, according to which all systems, irrespective of their content and context of existence, are exhibiting a set of common properties. This meant a major leap as compared to the pre-systemics thinking, within which specific systems (e.g. biological, technical, social, astronomical etc.) were studied separately by the respective scientific disciplines

As, in systemics, the key logical operator is conjunction, a canonical form of the general system was proposed as a juncture of two conjunctions (Le Moigne, 1990, p. 38): the synchronic, between the system and its environment, and the diachronic, between the functioning of the system and the transformation that occurs by default as the former operates. The implications that can be further derived are highly significant and mark a shift from previous conventional wisdom. According to Le Moigne (1990, p. 40), the first conjunction entails that every system is meant, either explicitly or implicitly, to pursue a certain goal. The system is identifiable by the respective goal, and not, as previously considered, by its content, borders, label etc. Thus, systemic thinking has a projective, goal-centred orientation, and this feature has major implications for practical applications. Conventional wisdom used to imply that, since the system is hosted within its environment, the former is somehow captive inside, always enduring the influence of the former, without exerting, in turn, any significant influence over it. By contrast, systemics conveys the rather counter-intuitive hint that, while being subject to external influences, the system is also influencing its own environment, and can even induce its transformations.

Also according to Le Moigne (1990, p. 40), the diachronic conjunction of the canonical form is emphasising the aspect of becoming, the transformation that occurs along the path of the functioning of the system, that affects its constitutive parts, the internal and external relationship of the respective system. This diachronic conjunction of the canonical form of the general system is particularly useful for understanding the limits of the overuse of socio-economic modelling that attempt to derive the future exclusively from the past.

Mainstream economics is facing nowadays heavy criticism as being unable to anticipate accurately future states and trends. There is still a propensity to pursue, in nowadays socio-economic research, an effort of excessively sophisticating the mathematical models, to use more and more refined quantitative techniques. Yet, trends identified in the past and transposed into mathematical functions stand only if one assumes continuity, meaning that the same

path/correlation valid in the past is applicable to future prediction purposes. Although the use of such functions is popular in today's socio-economic research, one should be aware of the relativity of the results thus obtained. We live now in a time of turbulence, where changes are mostly unpredictable, disruptive, and with high propagated impact, thus the assumption of omnipresent continuity is questionable.

Besides its goal centeredness and the focus placed upon interactions and dynamics, the systems approach has the merit of privileging the synoptic way of encompassing realities under scrutiny, as opposed to the *dissection* type of approach proposed by the Cartesian tradition of knowing by analysis.

One of the educational implications of the adoption of the systems approach is the possibility of adding generalist's abilities to the specialist's ones. The generalist is no longer defined as someone who knows something about everything; he/she is a specialist who can communicate and collaborate with other peers from different fields, on the unifying platform offered by systemics. This aspect has a key relevance for sustainability as an endeavour involving multi-disciplinary knowledge base and collaborative action among specialists and teams from different disciplines and cultures.

The strengths of systemics are rendering it particularly fit to applicative undertakings aimed at ensuring sustainable development: risk evaluation and mitigation, cross-impact studies, complex project management, articulating public policies in a coherent mix, design of new systems etc. In sum, many of these kinds of interventions would thus be of the kind of systemic changes that provide a viable alternative to the obsolete type of reparatory ones that can only patch, but not effectively and sustainably solve problems.

Systemics allows highlighting the shortcomings of the mechanistic approaches imported by social sciences from the technical ones. A mechanism is certainly a system, but not any system should be reduced to a mechanism. Mechanicism still present in economics is challenged by the systems approach on the grounds of the reductionism of the former. In terms of systemics, reductionism is generally understood as an attempt to represent a system through considering its parts separately (see e.g. Bar-Yam, 2011), while giving less or even no consideration to the interactions among these parts, thus actually risking to misrepresent or even elude the whole.

For instance, the mechanistic logic of the balance is still widespread in mainstream economics in the study of equilibrium. The clause *cæteris paribus* is, in turn, also reductionist, as it eludes the simultaneity of the dynamics of different parts of the systems. This clause also distorts the understanding of causation in socio-economic systems, because it tends to associate the whole variation of the output only to

the single parameter considered variable; all other parameters are conventionally considered as fixed, which factually is not the case.

Systemics is also pointing out to the obsolescence of the prejudice of linear causality (Le Moigne, 2007) and thus replaces it by circular causality. Accordingly, cause and effect are not permanent statuses of certain entities; they could switch to one another over time, while loops are key patterns in the phenomenology of dynamics and interaction. This aspect is also of particular relevance for sustainability, which involves recycling and, in general, the application of the principles of circular economy.

The contrast between the analytical approach, through which the positivist paradigm is operationalised, and the systems approach, as the core of the emergent paradigm of complexity, is presented in Table 1 with respect to a range of key features.

Table 1. Comparison between analytic and systemic approaches, based on De Rosnay (1975, p. 108)

Analytic approach	Systemic approach
Knowledge is meant to allow for the derivation of theories and models of generally valid truthfulness	Knowledge is meant to allow for the derivation of intelligible representations of reality that are pertinent to certain projects of intervention upon that reality
Knower is purpose-neutral and independent from the object of inquiry	Knower is purpose-oriented and interacts with the object of inquiry
Focus on elements; disjunction is the key logical operator (separating, isolating)	Focus on interactions between elements; conjunction is the key logical operator (associating, articulating)
Rigorous, detailed models (e.g., econometric models)	Models of a limited rigor, still useful for decision-making and action (e.g., Models of the Club of Rome)
Leads to knowledge accumulation into specialized disciplines	Leads to multi- and interdisciplinary integration of knowledge

Taking into consideration the arguments based upon the strengths of the systemic approach, as evidenced by the comparison presented in Table 1, one can assume that the alternative paradigm could offer the epistemological grounds for the emerging science of sustainability.

Proposing the systemic concept of sitesynthesis and illustrating its practical applicability

This section introduces and discusses, within an applicative context, the concept of sitesynthesis which derives from taking a systemic stance in tackling a practical issue. It is illustrated by the design of an

architectural and urban redevelopment project referring to a specific locality in Malta. The intellectual motivation for crystallising this concept stemmed from the need for understanding the manifold and evolving context of a site in its totality, by integrating its natural/environmental, socio-economic realities, along with the wellbeing aspirations of the inhabitants and the public perception. By proposing this concept and embedding it into a specific local development project, instead of being a conventional architectural exercise, the respective proposal took the form of a systemic redesign of a human settlement geared to be sustainable. Integrating sustainability dimensions into the architectural design is a rather recent orientation, given that, in the 20th century, most notably with Modernism and the related International Style, the end product of residential architecture was in line with the dictum of Le Corbusier, *the house is a machine for living in* (1986, p. 4). From the systemic perspective, the quoted dictum and the practices based upon it exhibit clear marks of reductionism. Although traditional approaches in architecture take into account the physical characteristics of the site itself, they are doing so by considering these aspects separately rather than as a nexus. The concept of sitesynthesis offers the possibility of zooming on the items/aspects of the built environment, as well as the process of building design and erection, in a comprehensive manner, within the wider context that integrates also the human and natural dimensions into a synoptic representation. In order to illustrate the conceptual fitness and the practical applicability of sitesynthesis, we will outline some considerations relating to a design proposal for the re-development of a settlement in Malta. By taking a systemic stance, the proposal was conceived, in architectural terms, in order to ensure the progress on the respective settlement on the path of urbanisation, whilst also rendering it more compliant to the sustainable development objective at local level.

The preparation of the re-development proposal took place over the period July-September 2009. It was undertaken by an inter-disciplinary team of professionals, ranging from architects and environmental consultants to an expert in statistics, at Lino Bianco & Associates. The concept of sitesynthesis emerged in the research work that grounded the design of the re-development proposal.

The settlement subjected to re-development is the caravan and bungalow site at Ghadira, in mainland Malta, legally established in the late 1970s when Prime Minister Dom Mintoff was in office. The site, located off Mellieħa Bay, supports 236 residential units, hence forming a settlement equivalent to a full-scale village. The area surrounding the site is characterized by a coastal alluvial wide valley bed, the northern sector being on a slope with heavy terracing, whilst the southern is an unterraced plain.

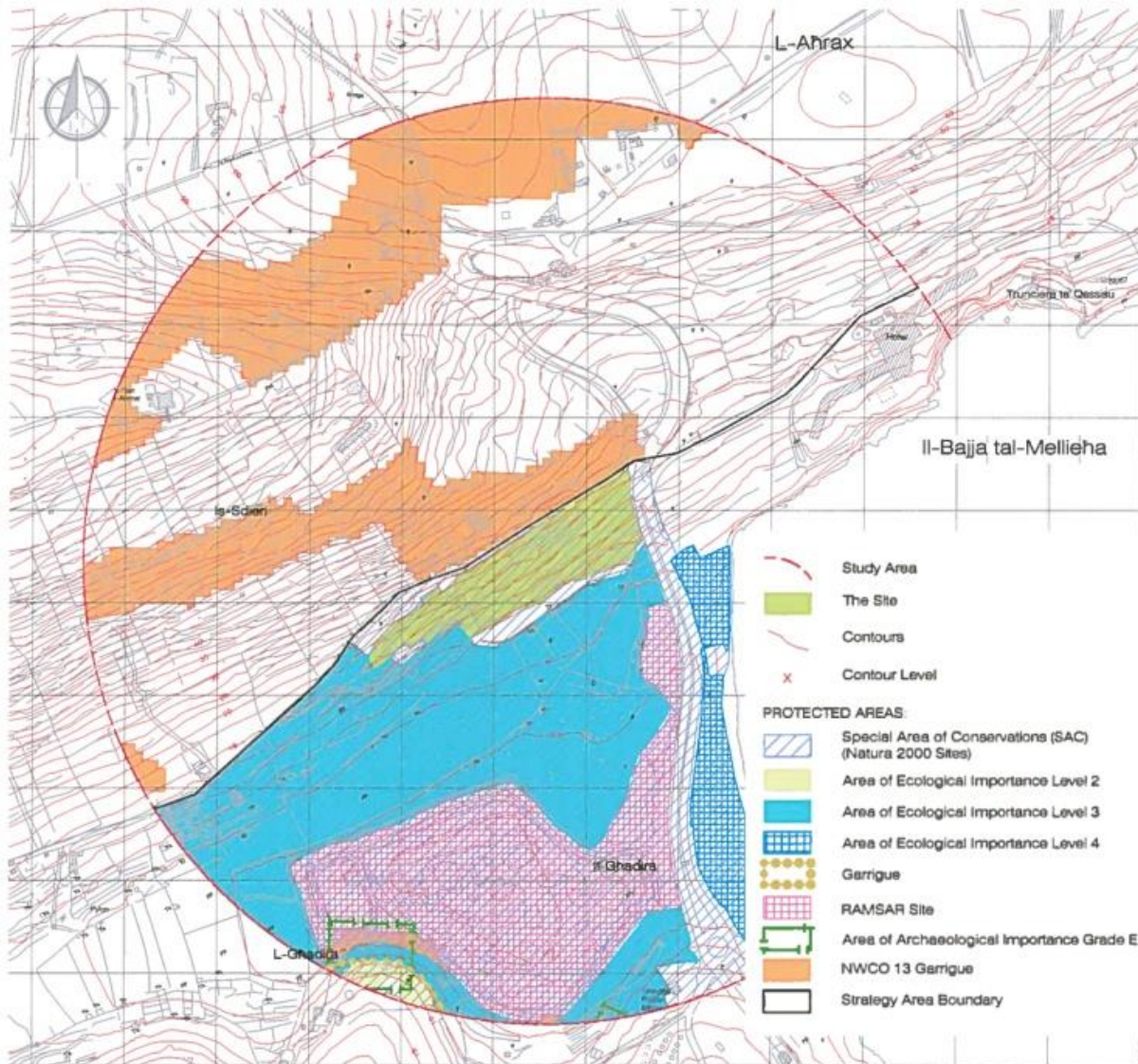


Figure 1. Areas graded for their natural heritage importance, source: Lino Bianco & Associates

The locale is a catchment area to the largest sandy beach in the Maltese Islands. With a Foresta 2000 site to the north and a Natura 2000 site to the south, the respective area is eco-sensitive and has considerable visual impact on the surrounding landscape. A description of the concerned area which covered a diameter of 1km around the site, based on fieldwork covering land uses and natural heritage, has already been published (Bianco, 2016); the sites which are graded and protected by law are plotted in Figures 1 and 2.

The Association of Caravan and Bungalow Owners, known in Maltese language as *Assoċjazzjoni tas-Sidien tal-Caravans u Bungalows*, was set up in 1978 to manage the site, organise activities for the community and bring forward issues related to the site to the attention of the public agencies concerned (*Assoċjazzjoni tas-Sidien tal-Caravans u Bungalows*, 1981).

Having a surface area of 316 km², Malta is the largest island of the Maltese archipelago, a group of islands located 96km south of Sicily and 390km north of Africa. Its climate is typically Mediterranean, characterised by hot dry summers and mild, wet winters. The island of Malta is rich in architectural and urban history and supports impressive cultural built heritage complexes, some labelled as World Heritage sites listed by UNESCO (1980). Besides significant geo-cultural landscapes, Malta sustains picturesque, terraced natural landscapes with occasionally endemic flora and fauna (Schembri and Sultana, 1989). Applying the I-distance method to the sustainable development indicators of the *EU Sustainable Development Strategy* (Eurostat, 2010), the I-distance value for Malta, which ranked in the 8th position of the 27 member states of the European Union at that time, is 18.726. Sweden ranked 1st with an I-distance value of 44.645, whilst Slovakia, at 3.838, was in the last position (Radojicic et al, 2012).

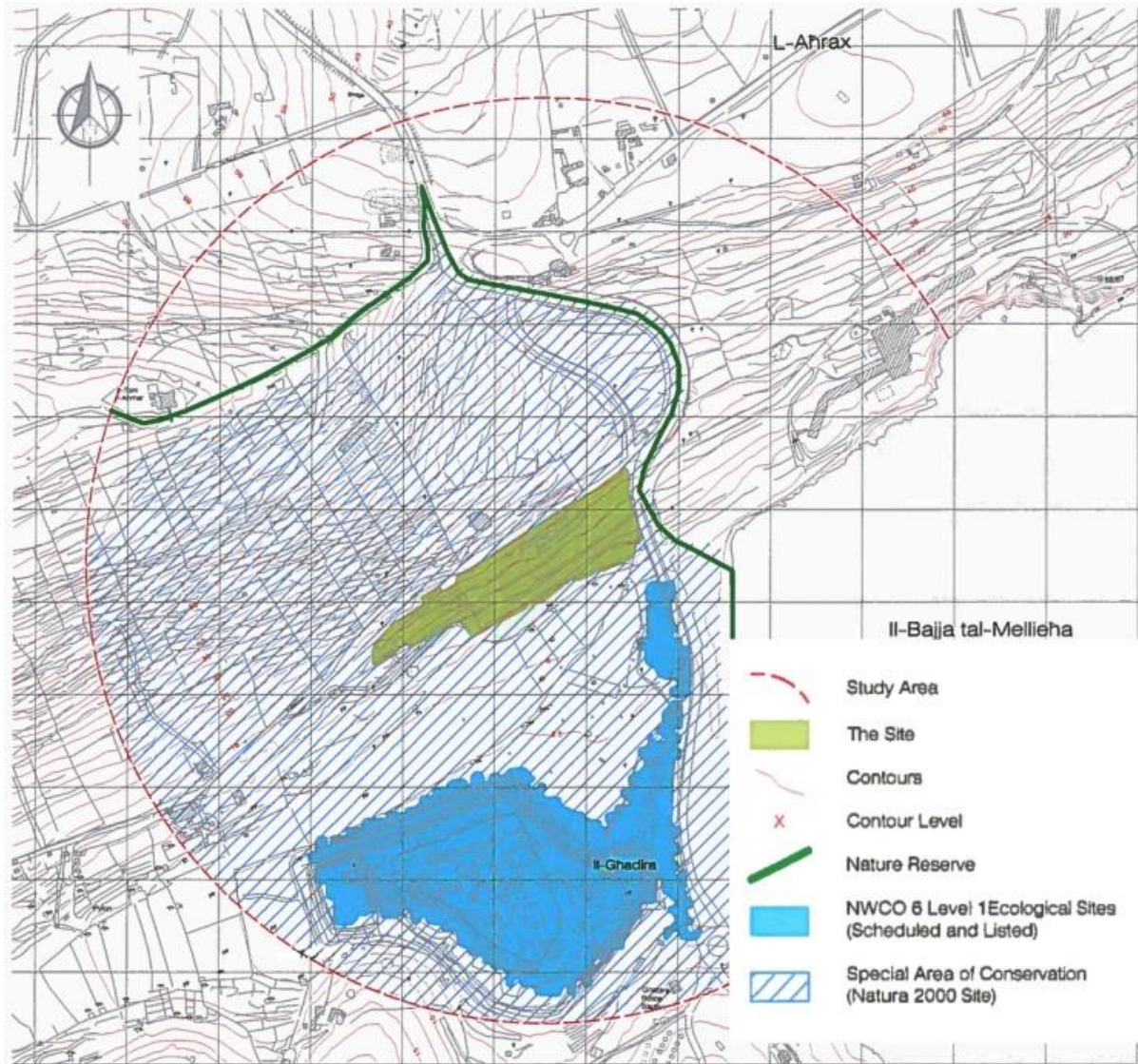


Figure 3. Protected areas for natural heritage significance, source: Lino Bianco & Associates

This method, proposed and elaborated by Ivanovic (1973), was the basis for the statistical approach developed by Radojicic et al. (2012) to measure sustainable development, through ranking countries in terms of their respective level of development, based on a number of indicators.

Along the years, from seasonal mobile units, caravans eventually became permanent on site. At present, most of them are constructed through cheap building materials, mostly recycled, rendering them intrusive with respect to the natural landscape, and also not appealing in appearance; others are erected in load-bearing masonry construction. The style of the caravan units is truly that of an *architecture without architects* (Rudofsky, 1964). They are mostly built by the caravan owners to suit their own individual needs, breaching local sanitary laws and regulations in force. The only obligation which was not actually breached is the external bright green colour of the unit, a condition imposed on the caravans by the Government (the colour was chosen by virtue of

Press Release number 504 issued by the Department of Information, Castille, Valletta, in 1978). The site at Ghadira is no exception (Assoeġazzjoni tas-Sidien tal-Caravans u Bungalows, 2008). As to the architecture of the caravans, a few ended up erected in more durable material and thus known as bungalows, developed through the actions of the builders, namely the occupiers of the site. By necessity, it is an expression of the socio-economic, cultural and technological realities adjusted to the physical characteristics of the site.

Given the negative reaction towards such caravan sites, rooted in the general public's consciousness of environmental planning and equally shared by environmental activists and NGOs, the Association of Caravan and Bungalow Owners decided, in 2009, to propose a re-design of the respective settlement. This initiative entailed the upgrading of a poor quality and intrusive caravans and bungalows to become an environmentally-sensitive settlement which respects both the physical characteristics of the site and the

needs of the residents. The scope of this assignment fell outside the remit of the Association; given the growing commitment of its members to induce improvements on the residential units, the architecture and environmental planning practice Lino Bianco & Associates was requested to develop a design solution with a view to improving the existing site.

The vision adopted for the redeveloping of the site aimed at integrating, in a systemic perspective, the environmental setting with the residents' requirements. In re-designing the site, it was considered essential to maintain a balance between the environmental backdrop, the community needs and the provision of essential public services, sustainability and security. Thus, the objectives of the proposed re-design, dictated by the environmental and social considerations, were the following:

1. Understanding the community's sense of its own existence, so that a more favourable perception by the general public emerges, mainly through refining the visual impact of the settlement, after implementing the re-development scheme.
2. Developing a social profile of the existing settlement through a census of the inhabitants and the respective typologies of units occupied by them, thus ensuring that the proposed design is backed by a wide positive social response.
3. Triggering a regenerative catalyst for the site through reaching upper standards for habitation for the existing community, whilst respecting the physical characteristics of the site and also meeting the expectations of the public opinion countrywide.
4. Developing locals' social responsibility, as a success condition of the implementation of the redevelopment of the existing settlement and
5. As the present settlement is the resultant of erections by the builders of the individual caravans/bungalows, there is no elite, be it the architect or the Committee of the Association of Caravans and Bungalows Owners, who will condition and/or dominate the layout of the re-designed settlement.

The urban planning layout was developed through participatory engagement with the residents (Bianco, 2016), this participation being itself a feature of sitesynthesis. Residents' engagement rendered the local development planning a constructive process for both the individual inhabitants and the community at large, thus the advancement towards urbanisation was facilitated. The application of sitesynthesis led to a blueprint that, when implemented in practice, would have a favourable impact in terms of sustainable local development. In principle, the authors share the view, that the actual chances to prevent the degradation of the environment and to promote sustainability are still low; but, presumably,

this is due to the fact that too few projects yet are designed and implemented in a systemic optic. Sitesynthesis appears, in this context, as a counter-example; it is a conceptual and pragmatic architectural and urban design option that supports sustainability, at least at local level.

Conclusions

The above considerations pertaining to the re-development proposal for the Ghadira site should not be misread by lack of official implementation, as the formal initial assignment was limited only to the preparation of the scheme. The respective settlement is still in place and thus the preparation of its re-development proposal can be read as catalytic to a conceptual innovation and also as a social experiment. Two main outcomes can be noted:

1. There is a general-purpose research outcome consisting in the elaboration of the systemic concept of sitesynthesis that could be further extended to other applicative contexts, and
2. The preparation of the re-development proposal, even though lasting a few months, involved comprehensive surveys and fieldwork that led to comprehensive understanding of the local problems relevant not only to the issue at stake, but also to the broader agenda of sustainable local development.

Moreover, the social engagement with the respective project (Bianco, 2016) can be further interpreted as a demonstration for the feasibility and usefulness of the collaboration between professionals and local inhabitants in preparing a viable proposal for re-developing the respective settlement. Thus, the common platform of thinking and acting being already laid out, also benefitting from the use of systemic tools, the implementation of the proposal, at the time chosen by the authorities, will be facilitated.

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