International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 09 Issue: 08 | Aug 2022 www.irjet.net p-ISSN: 2395-0072

The Rural Settlements and Smart Green Cities.

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Abstract – *Our research that takes a look in the analysis in the field where we can find the type of settlement considered the set that tracks the material culture of the societies that occupied them, shows us obstacles that hampered the rigorous evaluation of their origin, in some cases because there are no sufficient scientific knowledge and, in other cases because the shortage of surface materials limited the approached field and hindered the approach to occupation modes, to the land use and to demographic realities that sustain them. In this terms Coastal cities are prioritized and relevant to climate change, sea-level rise, temperature and natural disaster monitoring, and the development of potential solutions to emerging urban problems.*

Key Words: Climate Change, Smart Green Cities, Sustainable Cities, Rural Settlements, United Nations.

1.INTRODUCTION

In a place in which cultural heritage represents a value from the historical, aesthetic, ethnological or anthropological point of view, urban rehabilitation will emerge as a commitment ring between sustainable, inclusive and intelligent development, in a line of reflection where different levels of analysis of urban space stands out, highlighting sustainability and integrated urban regeneration. Linking these elementals, from an objective point of view, the investigation will not seek miraculous solutions to old difficulties of spatial planning or rapid resolution of emerging problems, because more than expanding the generalist field of knowledge or giving a new academic precision to an empirical approach, the research aims to deepen scientific knowledge about the fishing settlements located on the border line provided by the sea line, and about the rural settlements delimited by the plow wake that once furrowed the land, with resilient particularities achieved in an unique and shared ambience because we will support the investigation in this "living-lab" and reapply the research on similar large-scale environments on Earth.

2. THE CASE STUDY

It was intended to also carry out field surveys in a territory in north of Portugal, Matosinhos as we see in fig 1 and study the heterogeneity of situations in the landscape, to understand the relationship between human structures and their physical surroundings and, from them, their evolutionary sense, considering the different stages of analysis:

Fig-1: World Map with location of Portugal, Matosinhos

1. Theoretical study of rural structures, addressing the principles that define them and the most characteristic elements, seeking to understand if that variation is a reflection of environmental responses;
2. practical study of the examples of the analysis field in which starts from the whole that means what is the territory made and an approach to the cluster to determine this path, a knowledge of the physical/ environmental units and scales of rural settlements that structure the territory raising the category of humanized space;
3. study of the relationship of the clusters with the environment, assuming a certain complexity that should result from the joint between the theoretical time and the practical time to clarify the analysis of field options, without falling into determinism imposing from the outset the premises of the investigation.
4. Study meshes and axes that correspond to the growth processes of the primitive cores related to sea-level rise;

Fig-2: Angeiras Beach and Fisherman Houses

To achieve these goals, it is necessary to create a stable field of analysis in which it is necessary to study the proposed system elements, their formation, their relationships and evolution of these elements in the border area between the sea and the rural area, that is based on three scales:

- The relationship between the different fixation poles: the settlements;
- The organization of the structure of the fixation pole: the rural settlement;
- The characterization of the public space of the fixation pole: the space not built.
- The connection between urban fishing subsystems, diffuse rural and peri urban cores in a perspective of resilience and sustainability developing solutions to design a smart green city.

Fig – 3: Aerial View: Settlements in between sea and green

Since this issue involves a wide range of relationships that influence in the definition of the morphology of rural and fishing settlements, the achievements related to the essence of the territorial unity and the development of different typologies and morphologies contributed to materialize the objectives of the present investigation. As Norberg-Schulz explains "Man dwells when he can orientate himself within and identify himself with an environment, or, in short, when he experiences the environment as meaningful. Dwelling therefor implies something more than "shelter". It implies that the spaces where life occurs are places, in the true sense of the word. A place is a space which has a distinct character. Since ancient times the genius loci, or "spirit of place", has been recognized as the concrete reality man has to face and come to terms with in his daily life." [1]

2. THE SMART GREEN CITIES

The ground of smart green cities is the sustainability and the principle goal is to achieve quality of life to their citizens. The United Nations Sustainable Development Goals "are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including poverty, inequality, climate change, environmental degradation, peace and justice." [2] The 15th goal focus on "Life on Land" adds multiple factors such as "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss".

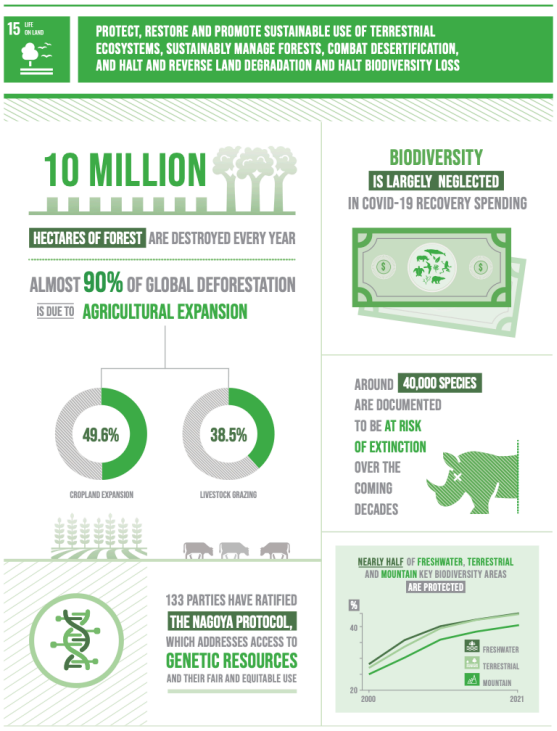

Fig – 4: Overview of the 15th Goal of UN

When we study specific points as the ground to create and/or preserve green cities (without the "smart" skills) we need to be accountable to some factors included in the General Assembly of United Nations of 12th September 1994 [3]:

- Aware that arid, semi-arid and dry sub-humid areas together account for a significant proportion of the Earth's land area and are the habitat and source of livelihood for a large segment of its population,
- Acknowledging that desertification [4] and drought [5] are problems of global dimension in that they affect all regions of the world and that joint action of the international community is needed to combat desertification and/or mitigate the effects of drought [6]
- Noting also that desertification is caused by complex interactions among physical, biological, political, social, cultural and economic factors
- Realizing that, despite efforts in the past, progress in combating desertification and mitigating the effects of drought has not met expectations and that a new and more effective approach is needed at all levels within the framework of sustainable development,
- Recognizing the urgent need to improve the effectiveness and coordination of international cooperation to facilitate the implementation of national plans and priorities;

These factors give us awareness that in our globe are some countries that are experience this challenges a long time. For our research it´s important this knowledge to create boundaries in our case study because we know that "Achieving this objective will involve long-term integrated strategies that focus simultaneously, in affected areas, on improved productivity of land, and the rehabilitation, conservation and sustainable management of land and water resources, leading to improved living conditions, in particular at the community level" [7].

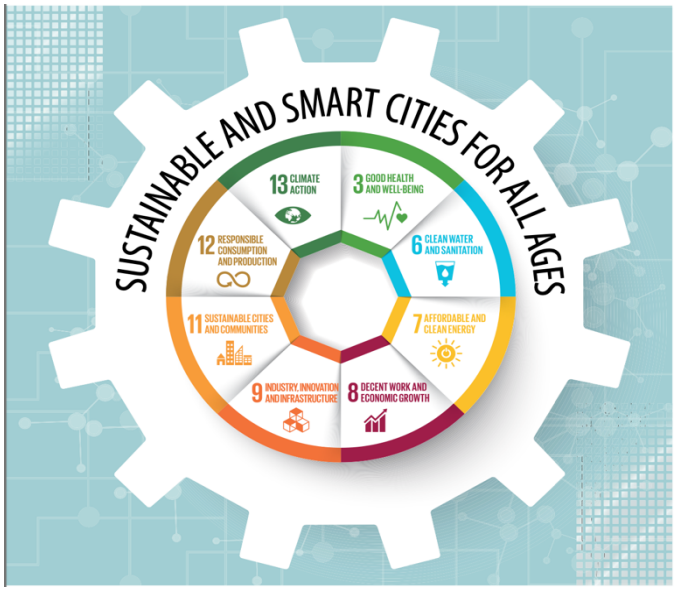

Fig-5: People-Smart Sustainable Cities

Olga Algayerova[8] writes that "Cities possesses massive resourses, talent and creativity and serve as hubs for Knowledge sharing, experimentation and innovation, generating new ideas, embedding these solutions locally and scaling-up successful practices. Cities, however, are not abstract sustainability-making machines; they are places where real people live, work, study and flourish. Cities are made of people, by people and for people. Sustainable measures will have to make sense to inhabitants of cities, making their life more livable. Furthermore, it is people who drive sustainability and who are its ultimate source and beneficiaries." [9]

Fig-6: Angeiras Market, Matosinhos

The imperative need for sustainable development remains a key planetary consensus. Sustainable development provides a long-term vision that unites peoples and nations in addressing important questions: how do we want the world around us to function and develop? What are the key priorities? How do we balance and reconcile different priorities? What future do we want?

One main point to develop the goals is the consensus of the "Innovation definition". In the Organization for Economic Cooperation and Development (OECD) Innovation does not necessarily mean something that has been unknown or untested beforehand. It includes implementing approaches that have been developed in other contexts. It is important to note that innovations in this context include not only technology, but also, more broadly, mechanisms to apply knowledge, ideas, practices, and new and better ways of doing things in addressing contemporary dilemmas and challenges. OECD defines innovation as "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations. Innovation includes the generation and application of new knowledge that contributes in a novel way to creating pathways to a more sustainable future. Apart from new technology or new product, innovation may involve new governance and organizational practices, new ways of structuring partnerships, or new ways of managing social relationships. In short, the concept of innovation goes far beyond scientific research, high-tech start-ups, and even profit-oriented, private sector activities as a whole. It is about

trying out and finding better ways for human beings to interact and to thrive." [10].

3. CONCLUSIONS

Sustainability calls for development that meets the needs of the present without compromising the ability of future generations to also meet their needs. It calls for the integration of economic development, social equity, and environmental protection. It is the kind of development that puts people at the centre and that is just, equitable and inclusive (UN DESA and UNDP, 2012).

The United Nations *2030 Agenda for Sustainable Development* provides an ambitious and comprehensive plan of action. At the heart of it are 17 Sustainable Development Goals (SDGs), which represent a blueprint for policymaking and international cooperation. SDGs recognize that a sustainable future depends on how successfully multiple global challenges will be addressed at once: ending poverty and other deprivations, improving health, education and wellbeing, reducing inequality and spurring economic growth, preserving the environment, and tackling climate change. The integrated character of the 2030 Agenda draws attention to linkages and complementarities among many traditionally dispersed policy areas. [9]

In summary, the research intended to contribute to the study of fixing poles, considered as centers of gravity of the physical environment, and specific frame assumptions involving the implantation of man in the territory, including the group structure configured in the cluster, stressing the sense of loss that falls on this and lay the foundations of other ways of looking at the rural areas, subscribing in this trend the positive valuation that the heritage and culture should go on to have when applied to development processes whose spatial translation overlaps new territorial configurations to strict dichotomous interpretations of the country in inland and coastal or rural and urban.

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[2] https://www.un.org/sustainabledevelopment/sustainable-development-goals/

[3] https://www.unccd.int/sites/default/files/relevant-links/2017-01/English_0.pdf

[4] desertification" means land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities;

[5] drought" means the naturally occurring phenomenon that exists when precipitation has been significantly below normal recorded levels, causing serious hydrological imbalances that adversely affect land resource production systems;

[6] "mitigating the effects of drought" means activities related to the prediction of drought and intended to reduce the vulnerability of society and natural systems to drought as it relates to combating desertification;

[7] https://www.unccd.int/sites/default/files/relevant-links/2017-01/English_0.pdf

[8] Olga Algayerova is Under-Secretary of the United Nations

[9] https://unece.org/sites/default/files/2021-01/SSC%20nexus_web_opt_ENG_0.pdf

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