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Incorporating Social Innovation into ‘Humanitarian Architecture

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Abstract

Current studies on post-disaster reconstruction and informal areas upgrading tend to concentrate on a singular discipline point of view and to focus more on field operations that in reality are mostly limited to immediate disaster relief or rehabilitation rather than employing a long-term developmental perspective. As a result, there is a distinct lack of trans-disciplinary research that explores the links between interrelated topics, such as sustainable architecture, urban ecology, disaster risk, building types, cultural landscape, local traditions, vulnerability, ‘humanitarian’ and ‘designer’ practice, vernacular architecture, eco and energy efficiency, community-oriented design, well-being and aid self-help building.

In addition, in spite of recent attempts to bring together professionals coming from different areas and backgrounds and boost householders’ participation in decision-making processes, both the inter-disciplinary and the inter-cultural dialogue remain unsatisfactory.

This paper focuses on the role played by architects working alongside ‘humanitarians’, ‘developers’ and vulnerable communities and seeks a reframing of architectural practice and education to meet peoples’ aspirations. In practical terms, it tries to bridge the particular gaps between professionals and these and householders. Ultimately, it aims at applying this knowledge to the Portuguese Speaking Countries Community (CPLP).

The research builds on the latest findings on the role played by architects in post-disaster and informal settlement upgrading environments. Embracing the learning-by-doing instructional method study uses the data collected from and progress with the field work done by the SURE

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AFRICA project (Sustainable Urban Renewal: Energy Efficient Building for Africa) and NGO Building 4Humanity in Guinea-Bissau. Adopting a trans-disciplinary approach, it incorporates 'humanitarian architecture' with social innovation features such as the emphasis on connecting people, resources and ideas, eco-efficiency, empowerment and communities' engagement in design. To improve the dialogue between 'humanitarians' and 'designers', research suggests the exploration of translational tools, namely mapping, web-based platforms for co-design and tools for the intercultural dialogue.

Besides their singular urban and cultural realities, concerning rebuilding and development programs the rapidly growing cities of the CPLP countries seem to deal with similar challenges. Despite Portuguese alignment with international guides to reduce vulnerability and building communities' resilience to natural hazards, little attention has been paid to these issues within the bilateral framework for cooperation.

The analysis undertaken suggests that trans-disciplinary, interdisciplinary and intercultural dialogue play a crucial role in the process of informing and assisting local leaders and households to (re) build on community assets and internal capacities, introducing 'eco' and energy efficiency solutions without mischaracterizing traditional settlements and vernacular architectural knowledge and caring about previous lifestyles and livelihoods. It also emerged that the most sustainable and resilient accomplishments occur when architects work as 'cultivators' and 'facilitators', assuming a creative but also supporting role, instead of working merely as designers and processes controllers.

The reestablishment of architectural theory, practice and education through trans-disciplinary and the use of the adaptive capacity of architecture can contribute to enabling communities to implement suitable methods for building, recovering and upgrading homes. This process of

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change stands as a 'tipping point', i.e. a point of transformation, towards more sustainable and equitable cities.

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INTRODUCTION

Portugal, as a Europe Union country and founder and proactive member of the Portuguese Speaking Countries Community (CPLP), incorporated Hyogo Framework for Action 2005-2015 into governmental policy in 2004. Since then, concrete steps to integrate and streamline Disaster Risk Reduction (DRR) into national development strategies has been taken, recognizing the importance of DRR for the promotion of sustainable economic growth and progress. Although DRR has also been increasingly included in humanitarian aid policies, little attention has been paid to the issues related to rebuilding after disaster or development programs for informal settlement within bilateral cooperation within CPLP (UNISDR, 2015). Countries such as S.Tomé e Príncipe, Cabo Verde, Guiné-Bissau, Angola and Mozambique, Brazil and Timor-East present different urban realities, face particular problems and singular challenges. However, all have to deal with analogous situations when it comes to informal settlements, which are normally present in the peripheral and sometimes even central areas of their major and rapidly growing cities.

Musseques, favelas, cortiços, caniços, bairros de lata: different names for equally unplanned, highly dense and overcrowded squatters' settlements. These areas typically have a lack of infrastructure, are exposed to floods and landslides, and are socially stigmatized. They are also recognised for having precarious security, social and public health problems as well as for their

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fragile and barely expandable houses. Unsurprisingly, these non-city areas have marginalized communities, which exhibit both immediate and developmental needs. Thus, in ‘the planet of slums’ social exclusion prevails making it difficult for people to escape the cycle of poverty (Davis, I., 2006). Moreover, in these areas the relationship between disasters and development is of much greater magnitude due to the vulnerability of people and houses (Davis, M., 1982). Corresponding to the impact of disasters, conflicts and extremely poverty, NGOs present in the field are mostly specialized in emergency response, and just a few of them have been dedicated to (re) building employing a long-term developmental perspective. As a result of that, there is a significant lack of planning, design and enduring action, notably in vulnerable areas, such as the informal settlements. Thus, besides the need for urgent humanitarian aid, action-research in addressing sustainable urbanism and architecture for informal settlement is necessary. By reducing disaster risks, promoting better building, retrofit, and rebuilding, it is possible to achieve a more substantial social impact.

Within the scope of analysis, synthesis and learning from local traditional and innovative attempted solutions, the current research will be looking at lessons to be learned from selected experiences on low-income housing and recovery to be applied to the CPLP, especially in Africa and in general in the Global South, where Portuguese actually is the most spoken language. Particular attention will be given to on-going humanitarian projects in Guiné-Bissau of a Portuguese-based NGO, in which one of the authors has been engaged. The case study of Bissau will be used to argue for the need for action on the theme of disaster risk reduction measures and building resilience, for houses and communities as a whole.

At the end it will be suggested that raising awareness of disaster risk reduction measures and dissemination of incremental housing design among householders, builders and self-builders may respond to both emergency and long-term needs, allowing for efficient and aesthetic reconstruction or upgrading interventions, either singular or collective.

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OBJECTIVES/SCOPE/TASKS/DELIVERY

The three-year research goals are as following:

- (1) Questioning the place occupied by architectural design practice and the role played by architects on rebuilding recovery processes addressed to very severely affected communities, in the context of humanitarian aid (post-disaster rebuilding) and low-income housing (development contexts).
- (2) Developing translation tools between ‘humanitarians’ and architects, exploring common conceptual vocabulary, web-based digital mapping, computer aid design and interactive systems for regenerating building types with the view of the engagement of locals in risk management, recovery and upgrading process
- (3) Incorporating the subject of humanitarian architecture into the architectural graduation curricula and outlining a post-graduate proposal with a focus on the CPLP geography.
- (4) In tandem with focusing on how to better plan, design and rebuild in disaster-prone and informal settlement areas, investigation must also address education at different levels, ranging from children (formal and informal education for disaster risk reduction) to adults (long life learning), to students of University (particularly those enrolled in architectural, urban design or urban planning graduations).
- (5) Bringing features and tools used in social innovation into the discussion of the theory and practice of Architecture, towards a sustainable and trans-disciplinary architectural approach to be applied in the context of disaster and development.
- (6) Making a contribution to the strengthening of cooperation amongst Portuguese speaking countries in the areas of resident’s empowerment on rebuilding and housing issues, disaster risk reduction, post-recovery assessment and informal settlement upgrading.

The scope of research comprehends the discussion of key critical points when dealing with communities in dire need:

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- (1) Which is the role-played by architects and architecture in the post-disaster, namely in the aftermath, in the developmental phase and also in between the two stages?
- (2) How many people are interested in the subject, what are the short and long terms architectural impacts, to what extent it matters, and, ultimately, does it make a difference?
- (3) What examples may confirm architectural impacts and the actual role played by designers working near humanitarians and low-income housing developers such as local communities, NGO's, and municipalities?
- (4) How to meaningfully involve the affected communities in the designing and building process?
- (5) How useful are classical design tools, such as incremental housing, and social and ecological innovative tools, such as community-design, community-mapping, experiential learning, gender equality and digital platforms for exchange among NGOs and architectural schools?
- (6) How to educate, enable, empower and technically support people for disaster risk reduction and launch, in a community-oriented basis, design and building recovery, and developmental processes?

Ultimately, this research questions: how to assist people in rebuilding issues to meet, besides their immediate needs, their long-term physical, social, cultural, psychological and spiritual aspirations? A first working hypothesis was that the more sustainable and resilient accomplishments occur when architects work as 'cultivators' and 'facilitators', assuming a creative but also supporting role, instead of working as merely designers and processes controllers.

The research tasks comprise educational workshops with children, meetings with teachers and parents, sociological and architectural surveys and interviews to key-actors, NGO's and local authorities in Portuguese speaking countries. These activities are planned and developed in close collaboration with locals, and cover the themes and research questions agreed with stakeholders, namely disaster risk, incremental housing and neighbourhood upgrading. Attempts will be made

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near GIS and CAD software companies to advance mapping tools for local communities and to test and validate them in the field.

The research delivery may include the revision of community-design and community-mapping methods and tools under the form of guides for action and manuals of best practices, as well as Internet technologies applications accessible for all. Also training on rebuilding for disaster resilience and housing upgrading for both family members and professionals should be delivered.

METHODS

The approach adopted is trans-disciplinary whereas the type of investigation is action-based. Accordingly, the study undertakes the challenge of facing the theatre of humanitarian and developmental operations. Moreover, it brings together in humanitarian projects and surveys experts coming from different areas and with a diverse background, seating them on a table and acknowledge them an equal voice, instead of solely coordinating them, blending their contribution instead of articulating them. Finally, the trans-disciplinary work has implicit and must be developed while working and alongside and within communities.

The introduction of social innovation concepts into the practice of architecture in humanitarian context entails:

- Participation models and design and building strategies that strengthen the socio & cultural component of sustainability
- Enable and empower men and particularly women to acquire greater levels of expertise in green design, building and incremental housing
- Acknowledge the concept of social innovation architecture as an trans-disciplinary idea under construction that tries to blend several notions such as cultural landscape, building types, vernacular architecture, incremental housing, well-being, social change, participation models, community-design, empowerment, action-research laboratory, eco-efficiency and disaster risk reduction.



To accomplish the introduction of social innovation, two concepts will be recalled. Firstly, The concept of the Cultural Landscape, which values all kind of human footprints such as working territory remains, might be an update tool to set up a new process of local development upon the local heritage resources. In post-disaster recovery, the consideration of cultural assets has been recently discussed in international forums (Jigyasu, 2013).

The concept of Building Type, as expressed by Quatremère de Quincy in the 19th century and reinforced by Italian architectures of Venice and Milan schools in the middle of the past century (Muratori, Rossi, Aymonino), has been appropriated by the architects interested in the recovering of the vernacular, such as Hassan Fathy. In fact, the two concepts, cultural landscape and building type permeate Fathy's Nova Gourná's architecture for the poor.



Fig. 1 The Humanitarian architecture approach: a local-based multilevel, intercultural, trans-disciplinary and dialectic process that requires social innovation tools and involves diverse partners and members of the communities whose aspirations, ultimately, it will try to meet.

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Learning on the field, drawing near the residents and researching by project and by doing, designing and building in a local-resources-basis, requires a close relationship with stakeholders. In a low profile NGO such as Building 4Humanity working with local communities in Guine-Bissau, with the aim of building a children's library and a primary school, this relationship developed through remote communication; in the beginning, via humanitarians in the field; afterwards, without intermediates, thanks to internet technologies and social networks. The study of these interfaces of communication will progress in the next stage through a web community-driven mapping collaborative tool for architectural models simulations. This technology is supposed to anticipate both physical and financial scenarios for rebuilding, incremental housing, risk reduction measures and support the monitoring and assessment of long-term impacts of on-field actions.

Keeping the focus on the Portuguese-speaking developing countries geography, research deals with an encompassing framework concerning (1) theory and practice, (2) planning and building, (3) the social and the environmental, (4) the ethical and the educational, (5) innovation and traditional knowledge. The in-situ observation, the direct interviewing and surveys recently develop in a recent NGO mission in Guinea-Bissau, embraced a genuine community exchange and intercultural dialogue within residents. At this point, rudimental mapping and manual drawing assisted this interaction and served the purpose of empowerment on recovery, urban upgrading and housing issues. Next, as the projects move forward and get extra financial support, these tools will turn to digital mapping and computer aid design to study more cases and enable the dissemination of evidence.

An action-research laboratory will be developed by crossing information with on-going projects for African countries by the Portuguese-based NGO Building 4Humanity Design and Reconstructing Communities Association. This work also follows steps of the joint international

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project leaded by a Portuguese University, focusing on local building types and energy efficiency, the SURE Africa (Guedes et al, 2011).

DISCUSSION

In the past three decades, we have been witnessing a great augment of research related to disasters. Firstly, at the beginning of the Eighties, the focus was clearly on sheltering which result in several reports and guides for emergency action, reconstruction and relocation issues (Davis, 1982). These documents were produced at request or directly by the United Nations and the World Bank, two entities that since then become leaders in the promotion of actions and broad and statistical studies on the impact of natural hazards and of the situation of developing countries (UN-HABITAT, 2009). In the Nineties, the attention gradually shifted to more sophisticated disaster recovery guides, with the incorporation of disaster mitigation strategies, livelihoods and community engagement (Hamdi and Goethert, 1997). New educational programs for international development and disaster marked this period. From these programs arose a wide range of researchers coming from social sciences.

In the 21st century, new developments in technology, notably in GIS, the consolidation of the environmental university programs and reshaping of geography and mathematic sciences enabled the incorporation of scholars from these areas, concomitantly contributing to widen the scope of post-disaster research. Thus, the new studies addressed risk and economic issues (Simão et al, 2009), social and cultural impacts, livelihoods, gender issues, minorities, social and cultural impacts, as well as in-depth investigations on participation models (Lizarralde et al, 2010; Hamdi, 2014). Additionally, in a gradually way, acquired importance the subject of the informal settlement, the place where came to live the majority of the most vulnerable people. Although covering an increasingly wide range of areas, it is noteworthy in recent studies, the lesser attention paid to architectural issues within the humanitarian context. As such, there is little evidence of architecture exposure to other fields of research, just a few signs of trans-disciplinary

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investigations (Doucet and Janssens, 2001). It is necessary to go back many decades to find an integration of architecture to services, infrastructures, economics and social dimensions, like the one proposed by the site and services projects (SSP). (Caminos and Goethert, 1978). In this matter, it is noteworthy that the current interest in the transdisciplinary concept of incremental housing, successfully implemented by Alejandro Aravena and Elemental group, in Chile (Greene and Rojas,, 2008). This concept, both in research and practice, can be seen, at a certain extent, as a revision of the SSP. (George and Goethert, Chavez, 2011). Recently, this concept has been approached by cutting-edge research focused on computer aid design-based automation software, with the goal of optimising mass housing design and (re) construction (Duarte, 2001).

In the Portuguese-speaking countries communities (CPLP), the inter- cooperation on urban research gave rise to studies that addressed suburban informal areas issues, highlighting social concerns and the right to the city, in Lefebvre terms. (Oppenheimer and Raposo, 2007). Singular cases of vernacular houses in African countries, addressing thermic comfort and building performance of local houses, through specific software simulation, showed the potential of cultural landscape and building type concepts in design thinking and within the field work with communities (Guedes, 2011). Moreover, by emphasizing local cultural idiosyncrasies through rituals and architecture these examples revealed that ‘building to meet people’s needs’, in Paul Oliver’s meaning, involve at the same level to meet physical, cultural and spiritual needs (Raport, 1969, 2006). Further, they embrace notions of comfort and well-being therefore exploring the full extent of architectural possibilities and expanding our understanding of what inhabiting is about (Bachelard, 1969).

This project stand on the findings on the role played by architects in post-disaster environments (Tauber, 2014) and foster a reestablishment in the architectural practice into an emergent humanitarian architecture (Esterworth, 2014) and try to fill some gaps in research: translation tools in the dialogue between ‘designers’ and ‘humanitarians’; the role played by architects on

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post-disaster and development environments, namely in the CPLP; the incorporation of informal methods into formal practice, such as incremental housing; the introduction of social innovation trends in humanitarian architectural; participations process and the use digital mapping and CAD tools; the cooperation among CPLP members in post-disasters and developmental issues considering the post-Hyogo framework on disaster risk reduction .

Pursuing the chief goal of enhancing lifestyles and livelihoods research discusses the bridging of architecture with other disciplines presents on the field (Sanderson, 2009). In this domain, it argues that an architecture embedded in a trans-disciplinary approach is more likely to foster communities' participatory action, sustainability issues, and, ultimately, is more suitable to pursue a dynamic of social change. (Zetter&Watson, 2007). This shift in the current architectural practice into a more socially responsible humanitarian architecture (Charlesworth, 2015) means to move from the dominant design-centred approach to drawing near social innovation issues regarding local housing recovery and development. Hence, themes such as community involvement, land rights, local governance articulation, social business, minorities and gender (Mitlin and Patel 2010) will be relevant at some point.

THE CASE OF GUINE BISSAU CASE- first analysis.

Very recently an interdisciplinary team of the NGO Building Humanity (B 4H) went to Bissau, the capital city of Guinea, and worked within the Parish of Bra, which is in the neighbourhood of Plack 1, in the district of Bairro Militar. This area is a non-infrastructured residential fringe where people live on the edge of poverty, facing on a daily-basis several challenge. The field-work done by a team composed of a small group of architects and a psychologist comprised of: three different workshops with students, including drawing, mapping, and models construction; diverse meetings with teachers, parents, community representatives; interviews with key-community-actors; audiences with national authorities, including six state general-directors; architectural and

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social surveys. All activities meant to support the construction of a new school while raising awareness on urban disasters issues.

As a result of a two-year dialogue sustained through conferences calls, personal and social media messages, the two-weeks program was planned and discussed in detail with the members of the school's board. Throughout the process, the teachers consulted with both civil and religious community leaders as well as the representatives of parents and guardians. The workshops, interviews and inquiries registered a very convenient participation, thanks to the involvement of some teachers who volunteered as all-purpose personal assistants and improvised translators. Despite Portuguese being the State's official language, the Guineans typically prefer Creole, a common mother tongue among a population that belongs to more than twenty different ethnicities, each of them having their own dialect.



Fig. 2 Building 4Humanity team (Liliana Pires, Nuno Martins and Mario Jaleco) with professor Beto Semedo leading workshops with pupils in a Santa Clara School, in Pack1, Bairro Militar, Bissau, May, 2015

The surveys addressed broad urban daily living conditions but mainly focused on housing and building issues, exposure to natural disasters, construction skills and prevention measures to reduce the impact of rains, storms, winds and floods. Broadly speaking, the surveys found some no surprising tendencies among the population and characterization of the neighbourhoods. Comparing the actual situation with the one described by Julio Davila and Claudio Acioly at the

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end of the Eighties, besides the advent of modern communications, which has undoubtedly contributed to reduce the isolation of the country and citizens, and also the implosion of Bissau's population, which doubled, one finds little difference between the two. Indeed, now, as then, neighbourhoods feature neither sewage nor water supply systems and the water is still collected from traditional wells; there is no public lighting except in very few main streets and domestic electricity connection remains an exception. Several environmental problems are reported: numerous dumping areas, trash infrequently collected and consequently accumulating nearby houses, and, even more dangerous, shaky dry pit latrines, usually shared by several houses, becoming saturated. The Bairro (neighbourhood) Militar, the most populous of Bissau, with several dozen thousand inhabitants, has no health centre, with the result that people take between half an hour and one hour to arrive at a public hospital, and no community services are provided.

Some thirty years ago it was estimated that almost 80 % of the population of Bissau lived in informal settlements locally known as "bairros", meaning popular neighbourhoods (Davila,1989; Acioly 1992, 1993). These settlements grew in an informal way, without urban plans or observation of building rules. Roads are rarely paved, and the space between the omnipresent one-storey houses is barely identifiable as a street, in spite of the frequent occurrence of local commerce. Although reasonably well-known, solar panels are sporadic, and although considered by people as a promising solution, the majority would prefer to be connected to the fragile public energy grid. The few communal water taps in existence are insufficient to supply the actual demand for potable water.

Dwellings are usually constructed with adobe bricks according to a local building type of one-storey house with a rectangular, sometimes square shape (10-15 meters side) surrounded by a wide balcony (around 1,80m) and with four to six rooms. The balcony, 'veranda', works as a place for preparing the meals, socializing and resting. These houses usually have a roof that is four-sided and is usually covered by cheap corrugated zinc sheets, covering an area equal to 180 m²,

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and sometimes even larger, that includes the veranda so that the overhang protects the adobe walls from the rain. The bathroom is constructed outside, at a short distance from the home, since it is a traditional latrine, sometimes used by residents of several houses. Houses are grouped with more or less density depending on the location; for instance, on the main roads with local commerce they tend to be closer and aligned whereas in more residential areas they respect some distance, allowing some communal spaces in between and apparently following no obvious order. These types of settlements seem to replicate the traditional rural 'tabancas' which the B4H team visited, for instance, in the Pecixe island, in Cacheu region and nearby Quinhamel, in Biombo region.

Householders pay to the Municipality, a yearly land occupation tax of around 7€. Land tenure is based on the customary rules ("traditional occupation"), except when the plot has been demarcated and regularized by a property title issued by the Municipality, which is the minority of the cases. The population density is very high, usually above 200 inhabitants/ha and the multiple dwelling unit is often overcrowded, providing lodging for more than one family, or for enlarged families, with ten, sometimes up to twenty relatives. A household with two up to four or five children commonly occupy two rooms of 16 m². The B4H team interview a retired civil servant whose home sheltered a record of forty-three people; although women run an informal trade selling a few vegetables and mangos, all of them basically depended on his retirement pension of around 90€/month and garden vegetables production. Salaries of thirty-five or forty-five euros are common, and many teachers reported to have two or more jobs. Taxi drivers and people working in the privately-operated buses, the so-called 'toca-toca', which employs several thousands of persons, work twelve up to fourteen hours per day in twenty or thirty-old vehicles in the middle of a dense traffic and a polluted air to get a monthly income of seventy to one hundred euros.

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These numbers and housing features confirmed that Guine-Bissau ranks amongst the poorest less developed countries and in the world with a per capita income of no more 200 US\$. (UN-Habitat, 2014). Poverty also explains that the so-called 'precarious constructions' remain for a long time, despite their fragility and lower resistance to natural agents. Householders seem to be aware of the risk that they are facing and despite the traditional African relaxed attitude they do fear that a greater storm or flood damage their homes and harm their relatives. In accordance to this concern, they corroborate the necessity of changing their situation, improve their houses, rebuild, perhaps, build a new one. Regarding their personal aspirations, it is frequently the reference to getting a better job or starting a business, namely exploring a container-shop. The lower wages, the country's long-lasting unstable political situation, the still incipient state of economy, human rights and rule of law, seem, however, to positively constrain peoples' ambitions and no alternatives remain. Many of the interviewed revealed an interest in accessing the micro-credit, but so far they have not had contact with banks or other providers.

URBAN DISASTER VULNERABILITIES IN BISSAU

In relation to disaster risk management the situation is difficult to define, since there is an evident contradiction between the level of vulnerability, which is almost maximum, and the real consequences of natural and human hazards actually affecting the country. According to unofficial numbers, Guinéa overpassed the 1,700 000 inhabitants, and nearly one-quarter of the population lives in Bissau, with a high percentage of families occupying clandestine houses or sharing overcrowded unity houses as described above. Their neighbours have in general one single paved main street and additionally several non-defined and claim roads subject to a long process of erosion. Rain drainage gutters are in many cases obsolete, systematically blocked by solid waste or just inexistent. As a consequence, the rainfall follow his way and make what in the beginning resemble grooves, rapidly passing to natural ditches until constitute authentic ravines, through which water flows dangerously, considering the proximity to walking paths, courtyards

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and houses. Houses invariably built without foundations and adequate care regarding flood-prone areas. Some of them are affected and fall down every year, in the face of the absence of the response by the local authorities who seem to have no tools to tackle it.

Bissau is located in the Geba River estuary and is a very flat conurbation, reaching a maximum of forty meters of altitude while the whole country never pass the three hundred meters of altitude with the vast majority of the territory situated under the sixty meters. The low altitude added to a uniform topography and a tropical climate with a pretty steady rain season, lasting from June to November, and finally, to a great level of poverty and vulnerability of peoples and houses, create conditions to disasters related to flood and storms, favouring the impact of natural hazard. This combination of factors places the country in a position of total dependence on its limited natural resources and increasingly low levels of official development assistance. (Augusto da Silva, 2010)

In the 2013, World Risk Index of 2013 (WRI 2013), calculated by the United Nations University for Environment and Human Security (UNU-EHS) a report that systematically considers a country's vulnerability, and its exposure to natural hazards to determine a ranking of countries around the world based on their disaster risk, positioned Guinea-Bissau as one of the fifteen countries more exposed to disasters in the world (WRR, 2013).

According to the National Strategy for Management of Catastrophes' Risks (Silva, 2013) the recent crises that have affected Guinea-Bissau comprises: the military-political conflict of 1998-1999 that destroyed nearly 30% of national infrastructures; the floods, which affected 1,750 people; tropical cyclones that caused 2712 victims; epidemics, with particular incidence of cholera, affected 105 380 people causing 3032 dead. Summing up, the anthropic accidents caused 7,000 victims while the rains destroyed more than 829 homes and 25 schools nationwide.

As stated in the same report by the consultant Alziro Silva, the State of Guinea-Bissau start to recognize the integration of disaster risk reduction in socio-economic development of the

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country as a prerequisite for achieving the millennium development goals (MDGs). As such, the prevention and reduction of disaster risk stand as a priority in the National Strategy Document for Poverty Reduction (2011-2015) and reducing disaster risk is also part of the strategy and national policy on the Action and Adaptation of Climate Change national program (2006), as well as in the National Strategy for Protected Areas and Biodiversity (2009-2013).

At the urban scale of the neighbourhood, some disaster risk measures applied by the residents were reported, for example, temporary barricades made with earthbags protecting entrances, surrounding houses or strategically aligned in crossroads. Other actions to protect from the rain include homemade mud plaster, executed in a very basic way by family members, and the tying of the zinc sheets. The reinforcement of the adobe or rammed walls with steel bars is almost unknown while the replacement of the veranda pillars and the roof frame, both made in Sibe, the traditional local wood, by reinforced concrete are increasing, although still too much expensive for the majority of the population.

On one hand there are some urban and architectural endeavours to mitigate the impact of disasters; on the other hand, the enlargement of houses, to accommodate more family members and newcomers, become an issue. These extensions of the residential units are often made at the cost of the space of the verandas and somewhat would not constitute a problem since these has generous surfaces. Nevertheless, the new rooms that are repeatedly built with their walls aligning with the edge of the roof and as such, these walls receive water from the gutter, are exposed to the rain and wind. When the enlargement surpasses that alignment, to gain some more space and achieve a more comfortable bedroom or kitchen, susceptible points appear, such as construction joints and leaks. These works are done without a permit and the participation of specialists, being entirely realised by members of the family, instead. As a result, rather than improving weakness, incremental housing ends contributing to increasing vulnerability.

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RESULTS

Both literature analysis and under progress operations of the Portuguese based NGO Building 4Humanity Designing and Reconstructing Communities in Guiné-Bissau point to the best methods of informing local leaders and households to rebuild and incrementally expand their houses, without mischaracterizing traditional settlements and vernacular architectural knowledge and caring about previous lifestyles and livelihoods. In addition, from the interaction with stakeholders, it has emerged that the most sustainable and resilient accomplishments occur when architects work as ‘cultivators’ and ‘facilitators’, assuming a creative but also supporting role, instead of working merely as designers and processes controllers. In this sense, these on-going experiences confirmed architecture as a consolidated body of knowledge to where high kinds of knowledge converge to and amalgamate. They also corroborated literature, namely, case studies that advocate that in the humanitarian field, to filling the gaps between theory and practice a new conceptual and instrumental lexical is needed, in order to pervade architectural discourse towards a real humanitarian architecture.

Initial results suggest, therefore, that a new commitment, a real shift in architecture within the humanitarian context is necessary to allow innovative on-going practice and thinking infuse architecture. Instead of undermining its credibility or narrow its field of intervention, this cross-disciplinary interaction tends to consolidate architecture as a broader body of knowledge to where high kinds of knowledge converge to and amalgamate. But what will be the profile of this refreshed humanitarian architecture?

The practice started in Guiné-Bissau provided valuable clues to devise a set of principles for a humanitarian and sustainable practice: (1) Prioritizing local cultures, knowledge and resources; (2) paying attention to minorities, (3) investigating urban & architectural design and building strategies and also participation models that strengthen the social and cultural component of sustainability and community resilience, (4) incorporating into humanitarian architecture intercultural and interdisciplinary dialogue, (5) integrate into architectural practice social

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innovation's trends and tools, exploring digital mapping and internet technologies (6) bring in findings of ground-breaking research and mainstream disruptive practices that embrace, not necessarily prioritized in this order, assertive concepts such as (i) local building type, (ii) incremental housing (iii) community resilience (iv) disaster risk reduction (v) women participation (vi) cultural landscape (vii) cultural and social assets (viii) well-being.

At the end, this widened conceptual and instrumental lexicon is supposed to pervade architectural discourse and practice, thus contributing to filling the gaps between theory and practice, between 'humanitarians' immediate focus and 'designers' developmental visions. Ultimately, this upgrade of humanitarian architecture fits the purpose of building translation tools for the inter-sectorial dialogue among professionals and intercultural between these and the locals.

CONCLUSIONS

The dialogue between researchers and professionals may benefit from the acknowledgement of a common ground of interest. The current research champions that social innovation might be the common ground from where to build this dialogue between 'humanitarians' and 'designers'. At this point, it is important to bear in mind that an inter, multi, or trans-disciplinary approach must not overlap to the nature of the discipline of Architecture. The operation initiated in Guinea-Bissau suggests not to underestimated the role to be played by architects if a consistent humanitarian architecture is to be accomplished.

Throughout this study, it was argued that to expand research goals beyond disciplinary boundaries and letting related disciplines permeate architecture requires a trans-disciplinary approach. However, rather than mitigating architectural identity and running the risk of turning it into a syncretistic field of knowledge, this approach pointed to the full spectrum of architecture's

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possibilities. In this sense, the case of Guinea discloses simple but effective ways of merging the contributions of different specialists and local actors into design practices.

The attempt to bring in social innovation to the architectural arena encompassed a extensively use of a few pairs of complementary concepts: (1) Cultural Landscape and intangible heritage (2) Building system types, vernacular and informal architecture (3) Action planning and community-design (4) Self-help building and incremental housing, (5) Creative thinking and Incremental design, (6) eco-sufficiency and relationship between architecture, culture and spirituality, (7) equality and social justice, (8) gender roles and women participation.

However, this process of re-awakening of architecture is unlikely to trigger by itself. It depends on a great measure of a broader framework of fostering social change. And social changes, at least long-lasting changes takes some time to occur and usually must be preceded of raising awareness of social inequities and by the dynamics of both social and cultural change. These dynamics emphasizes the role of education. Thereby, to gave birth to social change it is critical that education is addressed. For this reason the forth-coming working plan will comprise the production of diverse pedagogical material to children and aim at penetrating the architecture most conservative curricula, bringing in courses dedicated to urban disasters issues and to informal settlement upgrading in the geographical context of the CPLP countries. Besides, the promotion of digital mapping and 3D simulation tools may add operationally to different objectives of the research. In the case of education, they can give students an attractive tool that makes it easier to embrace the set of cities of the Portuguese-speaking community as a community with a common heritage and similar challenges. These ICT tools are supposed to contribute to improving practice, facilitate the exchange of good practices and hence, influence housing and urban policies about disaster risk and development.

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