LOCAL COMMUNITY PARTICIPATORY PLANNING METHODOLOGIES AS A CATALYST TOWARDS LONG TERM URBAN RESILIENCE IN HAITI – Existing Planning Methodologies and Processes, Capacity building and Outreach activities, Statutory, Policy and Standards Reform[1]

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ABSTRACT
There is a critical need for urban resiliency planning to protect communities in Haiti and others in Caribbean's Small Island Developing States (SIDS) from severe exposure to natural disasters and the impacts of climate change. This paper argues that effective urban resiliency in Haiti, and indeed other urban centres in the Caribbean, requires new ways of empowering local communities through an equal and honest partnership in urban development. Haiti's urban settlements have historically experienced systemic urban challenges, most notably: lack of economic opportunity; poor infrastructure development; environmental degradation; and a lack of access to urban amenities, which pose a particular challenge to building urban resiliency. Addressing the associated environmental, social and economic issues must be underpinned by community participation as a starting point of any planning processes that aims for resilient futures. By placing local communities at the heart of development, urban planning and design can ensure that ownership, equity, and opportunities of development are locally embraced. With ownership comes responsibility and caring for environmental ecosystems that are critical for resilience and the ability of the local economy to withstand adversity and its citizen's ability to participate actively in the rebuilding process. In the case of Haiti, were there is well documented lack of empowered national and municipal governance urban development structures, community participation offers a chance towards a bottom up, community led urban resilience practices. This paper will discuss how community engagement and participatory design principles can be used as a catalyst for the transformation of local communities by placing local citizens at the center of the decision-making process to determine how their neighbourhoods, towns, and regions should develop. The Fond-des-Blancs Town Centre Masterplan (Haiti), undertaken through participatory design principles, will demonstrate critical lessons learned for how inclusive and participatory design processes may offer a road map toward locally sustainable economic development in Haiti. Some of the lessons from the Haiti work are universal lessons which would most importantly be applicable to the Caribbean region which shares the environmental and economic challenges due to it's geographical nature. As demonstrated in the Fond-des-Blans Town Centre Strategic Community Master Planning process, urban Resiliency to respond to natural events and climate change has to be built around emphasis on 'the local development imperative'. In Michael Lewis and Pat Conaty's book, "The Resilience Imperative", this is defined as; "an affirmation to the possibilities of positive change as it is shaped by individuals, communities, and institutions learning to live within their ecological limits" (Michael Lewis & Pat Conaty 2012). This means integrating urban resilience strategies around the livelihood and in support of local socio-economic development is a critical component of urban resilience.

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INTRODUCTION

Climate change is impacting Haiti, particularly in local communities where there is an acute need for new strategies to build urban resilience exacerbated by systemic lack of empowered governance systems. This paper will discuss the urban resilience agenda as demonstrated through a two-year participatory planning process in the community of Fond-des-Blans (FDB) in Haiti's southwest region, the Fond-des-Blans Town Centre Strategic Community Master Plan, developed by Build Health International (BHI) and lead by the author from 2017-2018.

Haiti, a Caribbean Small Island Developing State (SIDS), constitutes one of the biggest land mass islands and one of the highest national population densities in the Caribbean region. At 10,788,440 million inhabitants, Haiti's urban centres are projected to grow by about 1.3-5% in the next 20-15 years with majority of the population projected to be living in cities by 2050. Haiti also remains as one of the least development countries (LCD) rated nation within the SIDS nation and is the poorest country in the Western Hemisphere, with Gross Domestic Product (GDP) per capita of $870 in 2018. Based on the most recent household survey (2012), over 6 million Haitians live below the poverty line with less than US$2.41 per day, and more than 2.5 million fall below the extreme poverty line (US$1.23 per day).

According to The Global Facility for Disaster Reduction and Recovery (GFDRR) Natural Hazard Risk; "Haiti is one of the most exposed countries in the world to natural hazards that include hurricanes, floods, earthquakes, landslides, and droughts. From 1994-2013, Haiti was considered the third most affected country by extreme weather events in terms of lives lost and economic damages. More than 96 percent of the population is at risk of two or more hazards, and 56 percent of the country's GDP is linked to areas exposed to risk from two or more hazards. The 2010 earthquake caused over 200,000 deaths. Damages and losses were equivalent to 120 percent of Haiti's GDP." (GFDRR, "Haiti-Context, Natural Hazard Risks") This paper will explore the following questions, framed through the critical review of lessons learned from the community planning in Fond-des-Blancs:

- How do we best incorporate local stakeholders and community participation to create long term goals for urban resiliency? How do we arrive at a framework of project design and implementation that is both participatory and resilient to local communities in communities with weak local governance structures?
- By recognizing that community as a key part of urban resilience agenda, we seek pathways to answer the question of 'how' not 'if or why' should the community be central to future proofing of urban resilience in the SIDS nations.
- What role do architects, urban planners occupy when working in partnership with local communities towards producing resilient planning strategies?
- How should local knowledge and vernacular skills and livelihoods be integrated effectively as a key part of modern urban development strategies towards resilient urban neighbourhoods.
- How can technology help bridge the data gap towards the development of informed and evidence based local planning strategies?

In this paper, the urban resilience agenda, as demonstrated in the Fond-des-Blans (FDB) Town Centre Strategic Community Master Plan, is explained through the lens of the following frameworks:

The Rockefeller 100 Resilient Cities
The Rockefeller Foundation's 100 Resilient Cities project through its, City Resilience Framework (CRF); describes urban resilience as: "the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience." The CRF describes the essential systems of a city in terms of four dimensions:

- Health & Wellbeing
- Economy & Society
- Infrastructure & Environment
- Leadership & Strategy

This framework recognizes that urban resilience experiences

- **chronic stress** (high unemployment, overtaxed or inefficient public transportation system, endemic violence, chronic food and water shortages);
- **acute or extreme shocks** from external forces (earthquakes, floods, disease outbreak, terrorist attacks).

As noted in the World Bank Report 2016, these effects tend to be all interconnected problems with potential reinforcing feedback loops towards each other.

The United Nation's Sustainable Development Goals
The United Nation's Sustainable Development Goals (SDGs) offers an integrated framework of approach and multiple opportunities from which the urban resilience agenda can integrate with local community issues such as the wellbeing, poverty alleviation, inclusivity, sustainable and resilient cities;

- Goal 1- No poverty, **target 5;** "By 2030 build the resilience of the poor and those in vulnerable situations, and reduce their exposure and vulnerability to climate related extreme events and other economic, social and environmental shocks and disasters." (UN SDG 20130)
- Goal 11- Make cities inclusive, safe, resilient and sustainable, Targets;
    - **"11.3 "**By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries." (UN SDG 20130)
    - **'11.A "**Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning." (UN SDG 20130)

Regional frameworks: SIDS Accelerated Modalities of Action [S.A.M.O.A.] Pathway
The affirmation of the UN SDG's among all other affirmations at the Third International Conference on Small Island Developing States (SIDS Conference), 1-4 September 2014, Samoa by SIDS regional heads of states, building on the Barbados Programme of Action (BPOA) and Mauritius Strategy for Further Implementation (MIS), puts a regional emphasis on some of the most important regional priorities and underlying commitments to (SAMOA Pathway 2014)

- Sustained and sustainable, inclusive and equitable economic growth with decent work for all

- Development models in small island developing States for the implementation of sustainable development and poverty eradication

This paper will not review the SAMOA Pathway's implementation challenges nor successes but rather recognize the framework within which the concept of urban resilience can be interrogated at a regional level within the SIDS.

THE IMPACT OF CLIMATE CHANGE IN THE CARIBBEAN'S SMALL ISLAND DEVELOPING STATES (SIDS): AN OVERVIEW

Cities and urban centres are at the center of climate change mitigation and adaptation action (Seitzinzer et al, 2012). Not only are cities and urban settlements one of the biggest contributors of greenhouse emissions (37-49% carbon emissions (UN) while only occupying some 1-2% of land mass, half of the global urban population is now estimated to live in urban areas. The term 'urban' in the Caribbean's Small Island Developing States (SIDS) context can refer to a relatively small town connected by villages stretching along a coastal perimeter, a small town connected by villages on a single island, or a series of islets (ADB, 2012). According to UN Habitat Report (2015), "Of the 65 million people living in SIDS today, 38 million (59%) already live in urban settlements. Singapore and Nauru are among the most urbanized SIDS (100 per cent), while Trinidad and Tobago (13 per cent) and Papua New Guinea (12 per cent) are among the least. The urbanization rate amongst SIDS in the immediate future (2010-2015) is expected to be 1.4 per cent, just below the global average of 1.7 per cent but with striking regional and national differences." (UN Habitat Report 2015).

The population growth in urban centres will overcome investment in urban social infrastructure creating threats to the urban fabric due to climate change related stresses. Evidence of extreme shocks to the urban systems due to climate related events is already being documented globally. In the USA, the National Climate Assessment (NCA) comprehensive study conducted in 2011, shows that the USA stands to lose an estimated $141 billion from heat-related deaths, $118 billion from sea level rise and $32 billion from infrastructure damage by the end of the century.

According to the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR), Small Island Developing States (SIDS) are highly vulnerable to climate change and natural disasters, and over 60% of countries with the highest losses from disaster events are small island states with damages of up to 9% of GDP. In the last half century, Pacific Island states alone have suffered US$3 billion in damages from natural disasters. And in the past year, Hurricane Maria wiped out 226% of Dominica's GDP. What is more, as SIDS populations grow and move into more at-risk areas in search of livelihoods, such as low-lying urban districts or mountainous valleys, the number of people exposed to risk stemming from severe weather events also increases.

The interconnectedness of urban systems, including infrastructures, land-use patterns, water resources, and food production means that extreme weather and climate-related impacts on one system can result in increased risks or failures in other critical systems, including water resources, food production and distribution, energy and transportation, public health, international trade, and national security.

In the face of these climate change related impeding shocks to the urban fabric, cities and policy makers alike are beginning to move towards the implementations of the so called 'Resiliency Plans', which foundationally are aimed at achieving urban resiliency, although the term itself is a

'contested concept' (Gallie, 1955; de Bruijne, et al., 2010). Recent research and reviews have found wide-ranging differences between definitions, focus, areas of application, and conceptualizations of urban resilience and the governance policies that seek to achieve it.

For the purposes of this paper, we will not attempt to define the term 'urban resilience*',* but rather focus on its relevance and relationship to local communities affected by the changing climate. We will recognize, as noted by Mackinnon and Derickson (2012) that; the global discussions and narratives around the resiliency building and often focuses on 'expert' driven input and externally defined forms of and pathways of achieving resilience. We will critically attempt to insert the local community imperative to the urban resilience agenda, and we will ask how locally driven community agenda through an engaged and participatory processes can help inform a more resilient urban development, especially in poor government challenged areas?

The understanding of the value-add and costs of resiliency strategies is often measured and discussed in economic metrics that are centered around the assumptions of functioning economies and structured governing systems. The majority of resilience frameworks, such as the Making Cities Resilient campaign of the UN Office for Disaster Risk Reduction (UNISDR) or the City Resilience Action Planning Tool of the UN-Habitat City Resilience Profiling Programme (CRPP), are clearly geared towards national governments. What does this mean for communities that do not have strong and well-resourced national government systems? These types of these frameworks, although essential for national governments and policy makers to define macro level agendas, mostly end up producing planning that puts most emphasis on economic growth over all other values.

FOND-DES-BLANS (FDB) TOWN CENTRE STRATEGIC COMMUNITY MASTERPLAN CONTEXT- NATIONAL, REGIONAL AND LOCAL CONTEXTUAL PROFILE

a. Haiti's Urban Planning Context:

In Haiti's local communities, the urban resilience agenda is no longer a conceptual thinking exercise but a forefront issue. Unfortunately, the unstable national government political climate, weak and under capacitated municipal governance systems and infrastructures means there is a long way to go before any effective resilience strategies can be implemented and take hold. Of all its urban existing centres, only some sporadic isolated areas have had the opportunity to develop community urban plans to date including the capital Port-Au-Prince, where some partial plans have been developed in support by multinational organisations and facing lack of empowered local municipalities towards implementation. Since 2012, a total of 18 planning activities and documents were produced for Haiti's various ad hoc municipalities development. Haiti has also recently launched its Strategic Development Plan for the Development of Haiti, an Emerging Country in in 2030 with emphasis on the following major action areas;

- **Territorial rebuilding-** programs and projects linked with regional and urban planning, community development, environmental protection, watershed rehabilitation, urban renewal, national transportation systems, nationwide electricity, expansion of telecommunications systems, improving drinking water supply and sanitation capacities including solid waste management
- **Economic Rebuilding**- focus on implementation of macroeconomic development policy; support private investment; modernization and revitalization of agriculture, livestock, fisheries production; upgrading competitive sectors in Haitian economy, such as manufacturing and tourism industry; implementing a true construction industry; developing the service sector; ensuring the sustainable exploitation of geological resources; and implementing employment generating projects.

- **Social rebuilding-** development of a network of modern healthcare and education facilities throughout Haiti, Including higher education, professional and vocational training. Social programs include heritage protection and arts support measures, better access to housing, development of civic action and sports and recreation opportunities, the implementation of a social insurance system for all workers, the organisation of social solidarity and a gender equality program.
- **Institutional rebuilding**- revising the legal framework, reinforcing the administrative structures of legislative and judicial branches, and of the independent institutions, modernizing the civil service, including law enforcement and public security, increasing the number of regional civil service employees, and reinforcing local government administrations and civil society.

b. Fond-des-Blancs (FDB)'s Urban Planning Context;

The township of Fond-des-Blancs, located in the SUD department also up until 2017 had never had any community plan developed meaning all its prior and current developments have existed in isolated and uncoordinated manner with little coordinated input from the community. When evaluated through the City Resilience Framework's four dimensions and the chronic stress and acute shock spectrum, FDB indeed ranks is in fragile state.

Health & Wellbeing; FDB boats the biggest health centre in the SUD, Saint Boniface Haiti Foundation Hospital, owned and operated by Saint Boniface Haiti Foundation, a US based foundation, the SBHF Hospital sees over 100,000 patient visits annually, more than 250 surgeries per month, 8,000 pre-natal exams every year. However, providing free and donor subsidized health care with little support from national government faces the following critical issues towards long-term urban resilience of FDB;

- Lack of sustainable funding means that the health sector is an unsustainable institution that without government involvement and investment, it will struggle to cope with growing patient numbers from the region. The collapse of failure of the SBHF would be a health catastrophe for the SUD Department's 100 000 per year patients it currently services.
- Lack of access to clean water, sanitation and basic waste management systems and infrastructure increases disease hygiene problems.

Economy & Society; The local economy in FDB, like in much of Haiti is informal based economy and dominated by reliance on agriculture as the main source of livelihoods. Some 80% population of FDB depends on agriculture for their livelihoods. The Sainthon travelling market in FDB provides the largest trading hub for majority of goods trading. Key chronic stress to FDB economic systems include:

- Lack of resources both financial, production skills to improve agriculture yields
- Lack of regional, national and integration of the agriculture market activities means that local farmers and producers have limited trading reach
- Drought conditions and extreme weather conditions makes unreliable farming conditions
- Poor roads and transportation networks inhibits FDB farmer's abilities to reach outside regional, national and international trading markets.

Infrastructure & Environment; There are limited formal government operated and invested infrastructure systems in FDB. Water, electricity, hospitals, school infrastructures are most enabled through donor and private investments. The main road is unpaved and is maintained through private donor contributions. Apart from the police and magistrate temporary office, local elected officials, government systems presence is largely minimal. Most chronic stresses in FDB infrastructure are;

- Lack of critical social infrastructure such as roads, schools and other community resource.
- High rate of environmental degradation through deforestation through the charcoal industry
- Shortage of productive land limitation towards commercial agriculture within the region.
- FDB's environmental stress include frequent droughts and also unpredictable destructive heavy rains causing flooding and crop destruction

Leadership & Strategy; In 2016, Fond-des-Blancs and Francipagne sections of the Aquin Commune were officially designated 'Commune' status through a presidential degree, however, to date FDB remains dependent on Aquin through financial and local governance operating systems. The governance of FDB is through two elected Conseil d'Administration de Section Communale (CASEC)'s (FDB Town Centre Masterplan 2018). However key local governance issues still continue to affect FDB communities such as:

- Lack of funding to public and governance institutions and no public revenue streams. FDB like much of Haiti struggles to collect taxes effectively.
- Lack of skills and capacity to local municipality towards project implementation
- Lack of transparency and public participation in community development and governance
- Disenfranchised public and lack of participation in local development
- High poverty rates and lack of access to public amenities

The development of the FDB community masterplan by BHI, led by the author, was initiated in 2017 through the funding support of W. Kellogg Foundation and enabled by the SBHF. The key immediate challenges faced in the above context included lack of any organized local municipal systems capable of partnering towards implementing such. In this context, the key driving process settled on early on was to develop the community master planning through community lead and participatory process. In choosing this process, it was envisioned that critical questions such as; who owned this process and plan? who would decide what is to be done? Who will implement any recommendations? that these questions would be explored albeit not entirely answered, through an inclusive community engaged and participatory process. BHI then developed a community engagement plan that defined the terms of engagement as a prerequisite binding partnership framework with the community before undertaking any planning work.

LOCAL COMMUNITY ENGAGEMENT AND PARTICIPATION IN THE CONTEXT OF RESILIENCE AGENDA

Why is community engagement and participation important in urban resilience? In his book *Rural Development: Putting the Last First*, published in 1983, Robert Chambers celebrated the value of 'local knowledge' and argued that "researchers, scientists, administrators, and fieldworkers rarely appreciate the richness and validity of rural people's knowledge, or the hidden nature of rural poverty." Russell Ackoff also argues that; "The proper role of the professional planner is not to plan for others but to facilitate their planning for themselves; that is, to provide everyone who can be affected by planning with an opportunity to participate in it and to provide them with the information, instruction and motivation that will enable them to carry it out effectively" (Ackoff R 1974).

The question now, especially since the resiliency agenda is no longer 'if' but 'how' local communities should fully participate in their community's future urban strategies and what are the methods and tools that can make this participation effective? The shifting attitudes since the mid-1980's towards a more inclusive, bottom up strategies that include local communities in decision making process are the more evident. Evidence of local communities demanding inclusion can be seen from the 3rd runway at Heathrow, the withdrawal of Olympic games application in city of Hamburg to the local standoff between local community of the North End in Boston, over the potential future uncertainty of the local community center called the Nazzaro Centre.

Therefore, in the context of an effective resilience agenda that embraces the City Resilience Frame (CRF) principles, and recognizing the broad and yet community sensitive goals of the SGD's, especially those emphasizing local community issues such as goal 1 and 11, the hypothesis for this paper is centred on; 'a pathway to an effective urban resilience passes through local community engagement and participation'

It is also imperative that in discussing resilience, the chronic stresses that people living in urban settlements such as outlined under CRF, such as extreme high unemployment, overtaxed or inefficient public transportation system, endemic violence, chronic food and water shortages, are not only seen as an event-triggered issues through climate change, but for most communities in the Caribbean SIDS, and especially for Haiti, they are acute daily life challenges. Hence any effective urban resilience solutions must engage local communities towards addressing these daily urban shocks.

The local imperative agenda should also mean placing local economic sustainable development principles of bottom up development as underlined through the LESD paradigm which defines Local Sustainable Economic Development (LSED) as; an innovative, systemic approach to local and regional development of peripheral areas, which places the emphasis first and foremost on the needs, rights, and assets of local communities and their environments.

OPPORTUNITIES FOR COMMUNITY ENGAGEMENT & PARTICIPATORY DESIGN ENTRY POINT IN THE URBAN RESILIENCE AGENDA

a. Adopt deliberate Local community engagement and participatory urban design/planning processes

According to Bryson a major prerequisite to set up a successful participative process is to carefully assess and design for an intended context and purpose (J.M. Bryson et al 2013). This kind of Community engagement and participatory framework needs to be built around common universal principles and be adaptable to local situations within which resilience agendas are being negotiated. In Haiti, more especially, trust in promises to deliver are at rock bottom. Haitians are wary of promises often because international NGOs and other organisations, despite good intentions, either overpromise or under deliver. An NPR article, published in 2015 after the devastating 2010 earthquake, entitled "5 Years After Haiti's Earthquake, Where Did The $13.5 Billion Go?,"(Richard Knox, www.theguardian.com) explains such scepticism Building trust that is based on an open working partnership is an essential building block towards effective engagement process.

As is often discussed by others, understanding the relationship between experts and community partners should not be predicated on the 'so called' equal power between the two. The scales of power are not, and should not, be the same, if only because the position of any outside organisation - whether involved in conservation, development, or architecture - will always be

different than that of a local population, but it is equally essential to establish and maintain a kind of 'transparency of intention' regarding the purpose of a partnership. This translates into an understanding that often, the success of development depends on forming relationships of mutual gain, rather than mutual motives.

In the FDB project, BHI developed a working Community Engagement Plan (CEP), which was reviewed and agreed upon by community stakeholders before any planning work begun. In this engagement plan, local community stakeholders were identified and formed into a community planning advisory committee (CPAC) which comprised cross-cutting representations of elected leaders, religious leaders, youth leaders, agriculture, health sector, education, infrastructure and also diaspora community. The FDB CEP was predicated on the ambiguity of what we did not know about the community of Fond-des-Blancs and that without a formal identifiable common cultural theme or political leadership, various centres of power existed in FDB.

One of the lessons-learnt in the two years of working with the community of Fond-des-Blancs through this model is that often even they do not agree on what is the 'Community' is when they refer to as Fond-des-Blancs. In the absence of empowered local government as an implementing authority, how should they come together to implement initiatives in the community? These difficult questions remain unanswered but there now exists the forum and processes that was adopted in the development of the plan which will become the foundation for seeking long lasting solutions.

b. Value local knowledge into planning processes and enable local ownership of community planning processes

In his article, 'The Irrelevance of Development Studies,'' Michael Edwards states 1989, that the most troubling aspect of contemporary, so-called participatory approaches lies in their tendency to treat people as objects of study rather than subjects of their own domain. Researchers and professionals often referred to as 'experts' means local knowledge and skills intentionally or unintentionally get reduced to irrelevance in the urban planning strategies.

This proposition does not aim to relegate the value and expertise that trained urban designers, planners and architects bring to the table. It in fact embraces that indeed power dynamics in engagement and participatory process will remain unequal but there should be an understanding of who is in charge and in what sphere.

During the diagnostic stages of the FDB Town Centre Community Masterplan, absence of existing desktop information meant we needed to work with local traditional leaders not only to document the shared history, heritage, culture but also to help us map the environmental profile of FDB previously undocumented. For example, through working with local agronomists during the diagnostic workshops, we were able to get relatively accurate accounts of past storm flooding areas, landslide areas and also help map and validate generic anecdotal rainfall data. Our understanding of the local governance structural challenges would not have been possible without in depth discussions with local historian and community leader, Brielle Leville. This of course is not to diminish the role that we as experts had to do to validate the information points through critical observation and measurements using digital tools that will be discussed later in this paper.

c. Create emphasis on the value of social infrastructure development

In an article in the Los Angeles Times, Eric Klinenberg writes that; "In coming decades, the world's most affluent societies will invest trillions of dollars on new infrastructure sea walls, smart grids, basins for capturing rain water, hoping to mitigate unpredictable mega-storms,

droughts, wildfires or other climate disasters. But engineered systems can't fully climate-proof our densely populated cities. That's why it is equally important to invest in social infrastructure, the physical spaces where communities gather as part of our response to climate change"
Defined by Simplicable.com as; "Foundational services and structures that support the quality of life of a nation, region, city or neighbourhood, this includes:

- Education - Schools and skills development services
- Transport-Transport services such as sidewalks and rail.
- Healthcare-Services that prolong life and promote human health.
- Community Support-Services that support community well-being such as after-school activities for children.
- Public Space-Spaces for enjoying nature, sports, recreation, family, social activities and personal reflection.
- Information-Access to information including services such as internet and libraries.
- Public Safety-Emergency services and other safety infrastructure such as tsunami shelters.
- Sports & Recreation-Venues for sports and recreation such as a skate park.
- Arts & Culture-Aspects of a community that have artistic or cultural value such as historic buildings"

Klinenberg, 2019, further notes that, "…when social infrastructure is well-maintained, even those who disagree respect one another's common humanity and during disasters that can make the difference between life and death'".

For communities in climatically vulnerable Caribbean SIDS, investment in basic infrastructure is already lagging and stretched by disaster activities. More than 3351 major natural disasters have occurred in SIDS since 2000, resulting in an estimated USD 22.7 billion in direct damages. The cost of damage caused by natural disasters increased from an average of USD 8.7 billion in 2000-2007 to over USD 14 billion in 2008-2015.

Therefore, prioritizing investment in social infrastructure not only would provide basis for development but also improve the conditions for people's livelihood and foster community cohesion as noted by Klineberg.

d. Rethink the role of the urban planner/architect in creation of community plans (design)

Planning and architecture are rooted in society. The built environment affects our everyday actions and our understanding of cultural values, social relations, institutions, and the distribution of power (Dutton and Mann 1996). The value systems steeped in the history of the architectural profession have tended to serve the elite (Sutton 2001). The urban resilience agenda requires a new paradigm shift that repositions the role of the architect/urban planner within the process of urban development to serve local communities beyond service to the elite. Matt Dumich, interviewed in the Metropolis Magazine, (www.metroplismag.com 2019), succinctly states that, "Engagement and collaboration requires a different kind of architect. The model of architect with a cape is dead, the master builder. Today we are master collaborators".

In the Fond-des-Blancs Community master planning process, we did not define the future vision based on some utopian ideals but rather the vision was community led, based on the pragmatic real issues that the community wants to solve going into the future such restoring environmental degradations caused by deforestation, developing critical social infrastructure amenities such as access to clean water, affordable electricity, waste management, local municipal governance and preserving culture and heritage of their local community. It was therefore essential for us to

assume a ‘collaborator’ and ‘facilitator’ roles to enable local negotiations amongst community stakeholder towards their sought shared future aspirations.

In this case, where the funding provider was not necessarily through public financing for the public project, BHI as an ‘expert’ consultant partnered with the community in collaboration through the planning process, while also facilitating conversations between the funder and the community plus multiple other stakeholders that were required to complete the project. In so doing, BHI provided both the necessary conduit of facilitations which usually local communities are usually excluded from. Typical grant funded developments are usually between the implementing non-governmental organisational (NGO) and grantor, viewed as benevolent acts with no or minimal conversations between grant project recipient (community) and the grantor. In the case of FDB, it was fortunate that the funder, W.K. Kellogg Foundation (WKKF) foundation’s value ethos were embedded in community participation and engagement. The President of Kellogg Foundation, Ms. La June Montgomery Tabron, visited the community as part of the continued facilitation role that BHI as the consultant played.

e. Embrace new technologies to bridge the data gap in local development (New methods of analysis)

To undertake effective local development, researchers and urban designers often face challenges in the gathering of reliable data to inform better understanding of the systemic problems faced by communities. These includes basic information such as demographics data, existing livelihood situations environmental data and mapping data points. Since most emerging, cash strapped municipalities have many other priorities to focus on, how can the use of new technologies help bridge the data gap towards effective urban resilience?

- **Bridging the information and data gap using drone technology-** In Fond-des-Blancs, in the aftermath of the 2016 Hurricane Mathew, BHI worked with a Maine, USA, based mapping consultant, Center for Community GIS (CCGIS), to develop community maps to locate for the first time all village centres within the FDB Commune and matched these with the key social infrastructure resources such as water points, schools, health centres and assess level of damage from Hurricane. This data was critical in identifying communities with most dire needs for access to water and other amenities due to the hurricane. Using drone mapping technologies such as Lidar, CCGIS was able to use technology to provide valuable data that would not have been thinkable through the old manual surveying techniques. This use of drone mapping technological was instrumental in the production of data maps for the development of strategy maps for the FDB Town centre masterplan. Part of the delivery documents with the masterplan was an FDB map book documenting for the first time roads, infrastructure, main buildings and other key land features of the township of FBD.
- **Maximizing open source tools for documentation and conducting household surveys-** The deployment of household surveying and mobilizing, analysing data through hand-held forms can be a tedious often prohibitive process where there are limited resources of both human and capital. However, the availability of new open source tools can now mean researchers and planners can use these technologies during the data gathering and engagement of their work. In FDB, open source household survey, KOBO toolbox, developed and made available by Harvard, was instrumental in the household survey undertaken on our behalf by local organisation Association pour le Developpement de Fond-des-Blancs (ADF). Using hand held, GPS connected iPad devises, surveying team was able to deploy on motorbikes and traverse across local villages to gather data even where there was no internet connectivity. This data gathered through remote location GPS technology was able to correlate information taken through

geo-location and tagged images of the household. This not only improved reliability and accuracy of the information, but was able to help the design team develop better insights into far remote areas that would have been impossible to access without use of technology.

f. Embrace new digital tools in Community engagement and inclusive engagement

Citizens have a broad range of possibilities to communicate in urban planning like public hearings, neighbourhood meetings, community outreaches or citizen forums. Embracing new technologies can enable an effective and inclusive community engagement process.

Digital participation technologies have the potential to thoroughly reshape the professional practice in urban design and development (Saunder M. et al, 2017). It is necessary and most meaningful to enable constructive participation and co-design activities for the public in the early pre-design phases when changes are still possible on a feasible basis. This improves transparency for decision generation and facilitates procedural fairness and objectivity in the planning process.

Saunders notes that digital tools can have impact summarized by four new qualities (Saunder Munster, et al, 2017):

- Crowdsourcing Knowledge: Digital participation tools enable the utilisation of a wider knowledge basis as in conventional design practices before. It becomes possible to tap on valuable experiences and creativity of non-professionals too, especially local citizen experts.
- Design Evidence: New technologies like design sentiment analysis provide new evidence for designers and planners already in the design process. It is possible to develop projects in acknowledgement of public response, and to test public attitude and acceptance already in early project stages.
- Interaction: Besides technical advances, digital participation technologies provide for an interactive and communication-oriented planning process. Direct exchange between all stakeholders, especially planners and users (citizens, residents) will become a key activity in urban design.
- Agile Design: Participative tools and technologies will transform planning work into an iterative, agile work process, in contrast to sequential and linear workflows ("waterfalls") that have shaped urban design practice in the past.

g. Lessons from Systems Thinking as a tool to appreciating depth of complexity of problems within local communities

In the “messy systems” idea developed by Author and systems thinker, Russell Ackoff (1974), “every problem interacts with other problems and it is therefore a part of a set of interrelated problems, a system of problems.” Society’s problems, especially in the urban context, needs different kind of approach to resilience using lessons from Ackoff’s systems thinking framework of ‘messy systems.’ This offers the following principles which are very relevant towards inclusive urban panning through participatory process, Russell Ackoff (1974);

- “Participative planning- The principal benefits of planning are not derived from consuming its product (plans), but from engaging in their production. In planning, process is the most important product. Hence, effective planning cannot be done to or for an organisation; it must be done by it. The proper role of the professional planner is not to plan for others but to facilitate their planning for themselves; that is, to provide

everyone who can be affected by planning with an opportunity to participate in it and to provide them with the information, instruction and motivation that will enable them to carry it out effectively.

- Continuous planning- Because purposeful systems and their environments are changing continuously, no plan retains its value over time. Therefore, plans should be updated, extended and corrected frequently, if not continuously. Continuous planning is necessary if a system is to learn and adapt effectively. A plan's actual performance should be compared frequently with explicitly stated expectations. Where they deviate from each other significantly, the producers of the deviation should be identified and appropriate corrective action taken."

With a new role of 'master collaborators' in urban design/planning processes, there is need to adopt other tools that can enable researchers to work in an integrated approach with communities towards effective resilience strategies and systems thinking frameworks can offer foundations.

h. Harness the power of process impact in creation of local development planning

Measuring impact and identifying value add that projects contribute to local communities is a continuing working progress area that most funding organisations are struggling to pin down to a universal measuring system. In retrospect, it should be argued if true value of a successful project implementation can be comprehensibly measured. For the resilience agenda, researchers and urban planners should in addition to product delivery also exploit process impact. This entails deliberate impact points that a planning process may have in the community. For example, there are opportunities to impact skills into the community during the planning process.

In FDB, we not only trained local organisation ADF in community assessment and surveying techniques (through CCGIS) we also aimed to empower local stakeholder's who were part of the CPAC and worked throughout the planning process on some basic understanding and appreciation of the planning process. By adopting a participative approach, the planning process of the FDB Community Masterplan, also enabled the resurrection of the diaspora network community, COFEX based in the Boston area, with the purpose of actively participating in potential project implementation. Also the CPAC group at the end to the planning process transitioned into an action oriented community development advocacy and implementation registered entity which seems to partake in the future betterment of FDB.

i. Place local development within the global development agenda and systems

The resilience agenda is today a global trend, and governments, policy makers and multinational organisations are aligning resources and time towards meeting some of the frameworks as witnessed by the signatories to the UN's SDG agenda. It is therefore prudent for urban planning initiatives to recognize this trend and align strategies for local development in the SIDS and those of global trajectory in this field. Especially for local communities in resource strained areas such as Haiti, where most development initiatives are supported by multinationals, it is important to recognize the global agenda's in the urban resilience theme and align their local accordingly.

In the case of Fond-des-Blancs, the local strategic actions for the community plan were aligned with the national strategic action plans (The Haiti Strategic Development Plans SPDH 2030) and also with key relevant UN Sustainable Development Goals. This coordination makes it easier for international partners to assess how their global goals and values can be aligned with those of local communities they are looking to support. Where national development plans are

responsible, many national governments in the SIDS are committed towards meeting the SOMA Pathways goals and principles, which in turn are aligned with the UN's SDG long-term goals.

CONCLUSIONS

Lessons and opportunities for improvement learnt from the Fond-des-Blancs community engagement processes in Haiti touches both systemic and place specific agenda's. By the end of the planning reporting stage, community involvement and participation in their local development agenda had improved. Two local initiatives on waste collection and development advocacy had been initiated by the community and become active as a direct result of the two-year engagement process. The organizers of both the groups having come from the active members of the planning advisory group (CPAC) supported by the community. Secondly the involvement of the diaspora community, in the US, Boston based COVEX activated the group towards community involvement through funding support and participating in local activities. These two examples present at best some of the most important goals of the community engagement approach in urban planning, which is to inspire local communities' active participation, ownership and involvement in shaping their future aspirations. Local ownership and participation of local communities is critical in the development of resilience strategies.

What remains a unique challenge as evidenced through the work in FDB is the intrinsic role that lack of governance and leadership can have on local development efforts. Due to lack of empowered municipal leadership in FDB, which is common phenomenon across other local communities in Haiti, meaningful implementation of the results of the community plan will remain a key challenge. The investment in local municipal capacity building especially in the context of Haiti will need to take equal priority of any community planning strategies. In FDB, this gap resulted in renewed funding focus by the Kellogg Foundation to invest in capacity building of municipal structures including creation of inter-city partnerships with other local municipalities in Rwanda to inspire change and opportunity of lessons in development. Although at infancy, the idea of ensuring that local municipal and community leadership are empowered towards implementation of urban planning strategies could inspire and bottom up local development approach that can present opportunities to inform greater national goals.

In conclusion, the local development imperative for an urban resilience agenda in the SIDS requires honest community engagement predicated on transparent intent and a dedication to a bottom-up development framework that is informed by local communities' aspirations. The environmental stresses and acute shocks to the urban systems from weather events is not only the key threat to the livelihoods of local communities, but also the everyday chronic shocks through extreme poverty, lack of access to basic social infrastructure, and lack of opportunity has a profound impact on the lives of people in the SIDS. Involving communities in the shaping of the resilience agenda only ensures better local communities preparedness to change, adaptation and also ability to take active roles in implementing sustainable practices that can have positive impact on their local environment.

To develop an effective resilient strategy in these resource-strained and extreme-weather-exposed urbanizing communities, one must engage these local communities directly in the planning processes to have a positive and lasting impact of the future development of their neighbourhoods, towns and regions. This will empower local communities to adapt to the changing conditions and provide the locals with the knowledge and ability to rebuild after major weather events. This, in turn, will also reduce of greenhouse emission profile of the region, thereby contributing to living practices that will ultimately benefit the larger regional and global climate systems.

Architects and urban planners working with local communities in developing urban resiliency planning strategies need to adopt a new model of working which emphasizes 'working-with' rather than 'working-for' paradigm. This form of collaborating with communities through engagement beyond the immediate product, holds potential to empower local communities and build ownership to these strategies, which will be key towards implementations and/or holding accountable through tasked with implementation.

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