



UCL

MSc Building and Urban Design
in Development Student Report

Disaster Justice as a Tool of Upgrading

Yangon, Transformation in a time of transition

In partnership with WFW, ACHR, CAN, YTU
and AMA



dpu
Development
Planning Unit

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PREFACE

Acknowledgement

This report is the outcome of a collaborative effort by many individuals, partners, as well as students of Yangon Technical University and University College London. It has been an inspiring journey full of intellectual exchanges and enriching surprises. As members of the 'disaster' group representing BUDD this academic year, we would like to express our thanks to our teachers; Catalina Ortiz, Giovanna Astolfo, Ricardo Martén and Camillo Boano for being a great support during this academic year and fieldtrip; a huge depth we owe also to the local staff of Women for the World, Shoko Sakuma and Saptarshi Mitra; Witee Wisuthumporn from Community Architects Network (CAN) and their funders the Asian coalition for housing rights (ACHR); the Association of Myanmar architects (AMA) for allowing us to make use of their great working space; and last but not least, Japan International Cooperation Agency (JICA) and Yangon City Development Committee (YCDC).



Fig.1. Partnership in project

Executive Summary

The Yangon urban context is one with multiple contradictions and a lot of eyes fixed on it, and such contradictions are overarching on several scales. This report attempts to uncover some of these contradictions relevant to disaster risk mitigation and disaster justice as tools of approaching social justice. The methodology used to highlight those contradictions starts from focusing on four lenses on the national level; Land, Citizenship, Finance, and Heritage, all in relation to disaster risk mitigation.

It then moves into the city level, acknowledging the current practices and directions. Furthermore, the highlighting is done through pointing out and analysing existing paradoxes, flawed arguments, and repositioning them to harvest solutions to the issues they originally posed. This pivoting is done on two levels based on the research question, "Disaster Justice as a tool of upgradation: Under what conditions can collective models of risk mitigation lead to more socially just urban environments?". The first of which is the site level where socio-economic paradoxes are redirected towards leveraging the quality of life of the inhabitants throughout pilot projects collectively funded and managed (A solar power collective, and a bridge building collective). The second level is the wider city/national level, where the four lenses mentioned above would be directed towards enhancing preparedness, recovery, and resilience.

The report proposes utilizing disaster justice and resilience to fill a transformational gap between the current directions and a wider vision incorporating the livelihoods of the urban poor in future planning proposals. It also attempts to tackle social justice on the studied levels throughout touching on community and governmental practices relevant to the field in the process of analysis and in forming the strategies overall. The report then elaborates on some of the challenges of applying this proposal, specifically in regards to the state and private actors, and finishes with a brief reflection on what the project added to the contributors to this report.

စီမံကိန်း၏အဓိကအချက်အလက်များ

ရန်ကုန်မြို့၏ မြို့ပြအခြေအနေသည် အမျိုးမျိုးသော ဝိရောဓိများနှင့်အဆင့်ဆင့်ယှက်နွယ်ပြီး နေသားတကျဖြစ်လျက်ရှိသည်။ ဤအစီရင်ခံစာ သည် လူမှုရေးဆိုင်ရာတရားမျှတမှုကို အခြေခံ၍ ချဉ်းကပ်ကာ သဘာဝဘေးအန္တရာယ်လျော့ပါးသက်သာစေခြင်းနှင့် သဘာဝ ဘေးအန္တရာယ်ဆိုင်ရာ ဝိရောဓိများကို ဖော်ထုတ်နိုင်ရန် ကြိုးစားထားသည်။ အဆိုပါ ဝိရောဓိများကို မီးမောင်းထိုးပြရာတွင် နိုင်ငံတော်အဆင့် အပိုင်းကဏ္ဍများဖြစ်သည့် မြေယာပိုင်ဆိုင်မှု၊ နိုင်ငံသားဖြစ်မှု၊ ဘဏ္ဍာရေးနှင့် အမွေအနှစ် များကို သဘာဝဘေးအန္တရာယ်လျော့ပါးသက်သာစေခြင်းနှင့် ဆက်စပ် စဉ်းစား သွားမည်။

ထို့နောက်လက်ရှိ ကျင့်သုံးနေသော အလေ့အကျင့်များ၊ လမ်းညွှန်မှုများ ကိုထည့်သွင်း စဉ်းစားပြီး မြို့ပြအဆင့်သို့ ဆက်လက် ချဉ်းကပ်မည်။ တည်ဆဲ ဝိရောဓိများ၊ ချို့ယွင်းချက်ရှိသော အငြင်းပွားမှုများကို ခွဲခြမ်းစိတ်ဖြာပြီး မူရင်းပြဿနာများအတွက် အဖြေထုတ်ပေးမည်ဖြစ်သည်။ ထို့အပြင် ဘေးအန္တရာယ်အတွက် ကြိုတင်ပြင်ဆင်မှုကို အဆင့်မြှင့်တင်မှုကိရိယာ အဖြစ် စဉ်းစားပြီး သုတေသနမေးခွန်း တစ်ခုကို အခြေခံ၍ ဆောင်ရွက်ထားသည်။ “သဘာဝဘေးအန္တရာယ်အတွက် စုပေါင်းလုပ်ဆောင်ခြင်းသည် မည်သည့် အခြေအနေမျိုးတွင် မြို့ပြပတ်ဝန်းကျင်ထက် လူမှုရေးအရ ဦးဆောင်လမ်းပြပေးနိုင်မလဲ” ဟူ၍ ဖြစ်သည်။ အဆိုပါမေးခွန်းမှ လူမှုစီးပွား အခြေအနေများသည် ရပ်ကွက်အဆင့်တွင် အများစုပေါင်း၍ ကိုယ်ထူကိုယ်ထ စီမံဆောင်ရွက်ကြသောလုပ်ငန်းများ (ဥပမာ- ကိုယ်ထူကိုယ်ထ တံတားဆောက်ခြင်း၊ ကိုယ်ထူကိုယ်ထ လျှပ်စစ်မီးရရန်လုပ်ဆောင်ခြင်း) ကြောင့် လူနေမှုအဆင့်ကို မြှင့်တင်ရန် ဦးတည် လာနိုင်သည်။ ပိုမိုကျယ်ပြန့်သော မြို့နယ်၊ နိုင်ငံတော်အဆင့် များတွင် အထက်တွင်ဖော်ပြခဲ့သော အပိုင်းကဏ္ဍများအားဖြင့် ဘေးအန္တရာယ် ခံနိုင်ရည်၊ ကြိုတင်ပြင်ဆင်မှု၊ ပြန်လည်ထူထောင်ရေးတို့ကို မြှင့်တင်နိုင်သည်။

လက်ရှိစီမံချက်များနှင့် မြို့ပြနေ ဆင်းရဲသားပြည်သူ တို့၏ စားဝတ်နေရေး အခြေအနေ များကြား ကွာဟနေမှုများကို ဘေးအန္တရာယ်ခံနိုင်ရည်နှင့် ကြိုတင်ပြင်ဆင်မှု များကို အသုံးပြု၍ အနာဂတ် စီမံကိန်းများတွင်ဖြည့်တင်းနိုင်ရန် ယခုအစီရင်ခံစာက အဆိုတင်သွင်းထားသည်။ လူထုနှင့် အစိုးရကျင့်သုံးလျက်ရှိသော မူလအခြေအနေကိုသုံးသပ်ခြင်းနှင့် စီမံကိန်းရေးဆွဲမှုဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများကို လေ့လာပြီး လူမှုရေးဆိုင်ရာ တရားမျှတမှုကို ကိုင်တွယ်နိုင်ရန် ကြိုးပမ်းထားသည်။ ထို့အပြင် ယခု အဆိုပြုချက်တွင်ကြုံတွေ့ရမည့် စိန်ခေါ်မှုများ အထူးသဖြင့် ပုဂ္ဂလိကနှင့် အများ ဆောင်ရွက်မှုဆိုင်ရာ ကိစ္စရပ်များကို အသေးစိတ်ဆွေးနွေးထားပြီး စီမံကိန်းအတွက် ဤအစီရင်ခံစာ၏ ဖြည့်စွက်ချက်များကို အကျဉ်းချုပ်ဖော်ပြ၍အဆုံးသတ်ထားသည်။

The Team

Disaster group consisted of six members come from five nations; China, Japan, Korea, Netherlands and Syria. As each country has established diverse relations and stories with Myanmar, our group members easily could focus on their interests in Myanmar. We have endeavoured to address group tasks regarding 'disaster risk mitigation' based on our majors and learnings in the BUDD course. Before we start this journey, we hoped to broaden our perspectives and spectrums for complex issues in the field of development. We have finally, during this workshop, realised the real meaning of 'situated knowledge' and 'reversal of positionality and professionalism' with YTU peer students, WFW and CAN coordinators.

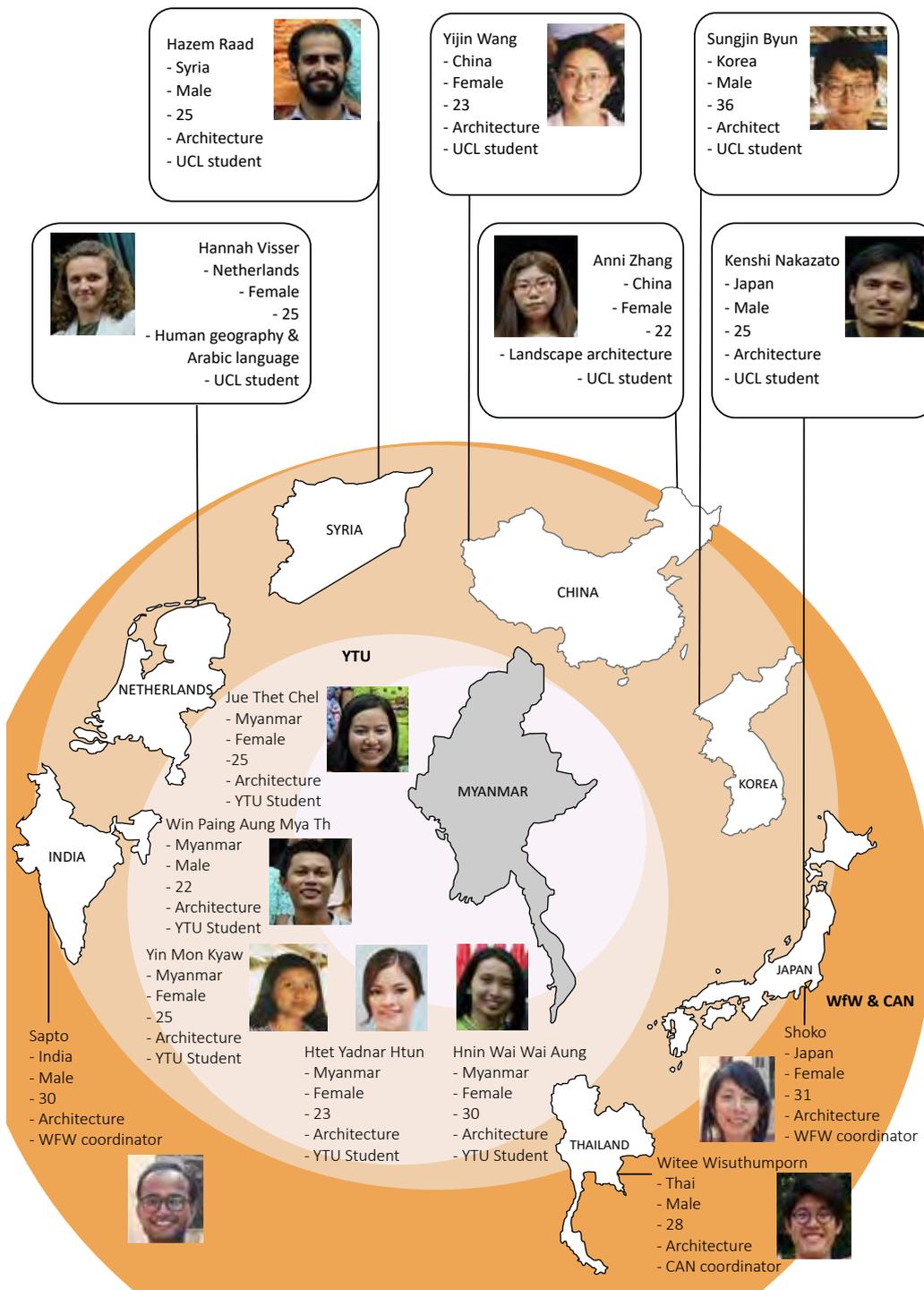


Fig.2. Team members

List of Acronyms

AADMER Agreement on Disaster Management and Emergency Response	MDRI-CESD Myanmar Development Resource Institute's Centre for Economic and Social Development
ACCA Asian Coalition for Community Action	MH Ministry of Health (water provision)
ACHR Asian Coalition for Housing Rights	MIMU Myanmar Information Management Unit
ADRC Asia Disaster Reduction Center	MNBC Myanmar National Building Code
AMA Association of Myanmar Architects	MoC Ministry of Construction
ASDP Agriculture Development Support Project	MoHA Ministry of Home Affairs
ASEAN Association of Southeast Asian Nations	MSWRR Ministry of Social Welfare, Relief and Resettlement
BSPP Burma Socialist Programme Party	MRCS Myanmar Red Cross Society
BUDD Building & Urban Design in Development	NAPA Myanmar National Adaptation Programme of Action
CAN Community Architects Network	NCA NECC National Environmental Conservation Committee
CBDRR Community Based Disaster Risk Reduction	NDMC National Disaster Management Committee
CBO Community Based Organization	NECC National Environmental Conservation Committee
CDF Community Development Fund	NGO Non Governmental Organization
CFE-DM Center For Excellence in Disaster Management and Humanitarian Assistance	NLD National League for Democracy
CHDB Construction and Housing Development Bank	NLUC National Land Use Council
CSO Civil Society Organization	NNDMC National Natural Disaster Management Committee
DAO Development Affairs Offices	OCHA United Nations Office for the Coordination of Humanitarian Affairs
DCA Dan Church Aid	PLAN Plan International
DDA Department for Development Affairs	SDMC School Disaster Management Committee
DEC Disasters Emergency Committee	SWDN Saving Women and Development Network
DFID Department for International Development	TDAC Township Development Affairs Committee
DHUD Development of Housing and Urban Development	TOD Transport Oriented Development
DHSHD Department of Human Settlements and Housing Development	UCL University College London
DMC Disaster Management Committees	UN-HABITAT United Nations Human Settlement Programme
DMHA Disaster Management and Humanitarian Assistance	UPCA Urban Poor Coalition Asia
DMTC Disaster Management Training Centre	USD Union Solidarity and Development Party
DPU Development Planning Unit.	UNDP United Nations Development Program
DRR Disaster Risk Reduction	UNEP United Nations Environment Programme
DRRWG Disaster Risk Reduction Working Group	UNICEF United Nations International Children's Emergency Fund
ECD Environment and Conservation Department	UNISDR United Nations Office for Disaster Risk Reduction
ERF Myanmar Emergency Response Fund	UNESCO United Nations Educational, Scientific and Cultural Organization
FDI Foreign Direct Investment	VDC Village Development Committee
FFSS Free Funeral Service Society	VDMC Village Disaster Management Committee
FMI First Myanmar Investment Co.	WB World Bank
GAD General Administration Department	WFW Women for the World
HMSF Humanitarian Multi-Stakeholder Fund	WVI World Vision International
ICCROM International Centre for the Study of the Preservation and Restoration	YCCD Yangon Coalition for Citywide Development
IMF International Monetary Fund	YCDC Yangon City Development Committee
IOD Industrial Oriented Development	YTH Yangon Heritage Trust
ISDR International Strategy for Disaster Reduction	YTU Yangon Technology University
JICA Japan International Cooperation Agency	YCDC Yangon City Development Committee
LCG Land Core Group	YHT Yangon Heritage Trust
LOD Livelihoods Oriented Development	YRTA Yangon Regional Transport Authority
LWF Lutheran World Federation	YTU Yangon Technological University
MAHU Myanmar Association for Housing and Urban Development	
MAPDRR Myanmar Action Plan for Disaster Risk Reduction	
MCCDDM Myanmar Consortium for Capacity Development on Disaster Management	
MCEA Myanmar Construction Entrepreneurs Association	
MDPA Myanmar Disaster Preparedness Agency	

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1. INTRODUCTION

1.1. Study background 1 - Myanmar, Yangon, and Ward 67

Significant social reform and urbanization in Myanmar

Myanmar has been reforming its nation through a 'triple transition'; in the political, economic and national reconciliation domains (Anu, 2013). In 2015, the general election showed democratic victory against the military government, and economic change towards a more market-based economy and a peaceful process aiming to end decades of conflict. Myanmar is now urbanizing rapidly. According to the census report in 2014, a third of the total population in Myanmar was living in the urban area (Department of Population, 2014). From 2010s, it outstands the pace of urbanization due to the political and economic opening of the country. If the 2010s pace of urbanization continues, the urban population will exceed the rural by near 2040 (Forbes, 2016).

Yangon's urban development characteristics

Yangon is Myanmar's largest city with a population of about 7 million, and is the commercial capital of the nation (MIMU,2014). Yangon City was founded in 1752 and re-planned as the capital city of Myanmar in 1852 for 50,000 residents during the British colonial era. In 1948, after independence, Yangon population increased by 600,000 and many people moved into Yangon, living in squatter area (Corporation, Consultants, & Co, 2014). As Yangon is surrounded by rivers, the city has extended northwards from the CBD area. By 1988, three new satellite towns; South and North Okkalapa and Thaketa, were planned as part of a slum clearance and to mitigate the lack of housing. In 1989, Yangon widened eastwards and westwards with the construction of the Dagon area and Hlaingtharyar region, and most of the industrial zones were moved to those areas.

Yangon's informal settlements and ward 67

Officially, the number of squatters is only 37,683 of Yangon's total residents, 5,156,646 (0.7 percent). However, an estimation in 2012 showed that about 500,000 people were squatters (10 percent) (Gomez-Ibanez et al, 2012), and experts expected that number to rise up to 30 percent of people in Yangon, including not only squatters, but inhabitants of informal settlements in some way (Forbes, 2016). The informal residents have not only lack of legal claim to land or housing and lack of basic urban services, but also they are living in unstable conditions and are at risk of eviction. And typical informal settlement areas are constantly affected by weather condition. During the raining season, the sites may be exposed to the risk of floods, and they are also prone to fire in the dry season (Forbes, 2016). Ward 67 is located in Dagon Seikkan Township which has the highest population of informal settlements in the total township population (YCDC, 2012). It has Over 4,000 squatter households, and it represents what could be branded as a typical informal settlement.

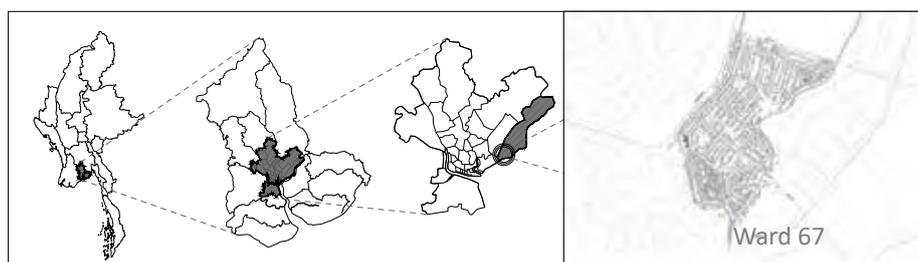


Fig.3. From national scale to ward scale in Myanmar

1.2. Study background 2 - Disaster risk and Myanmar

Disaster risks and Myanmar

According to the INFORM Report (Fig.4), Myanmar is one of the very high disaster risk regions (INFORM, 2017). Myanmar has been affected by regular cyclones, floods, earthquakes, landslides, drought and fires due to its topography and climate. In particular, 'Cyclone Nargis' in 2008 affected 2.4 million of people and over 140,000 killed (OCHA, 2016). The disaster damage was substantial because of the undeveloped infrastructure and public services. The event provoked criticism of the government's response capacity and preparedness plans. At the time, Myanmar was an internationally isolated country, under military junta since gaining independence in 1948. The government had been criticized and faced international sanctions by 2012. From the aftermath, Myanmar development was stunted and resulted in 25 percent of the country's citizens living in poverty (Smith et al., 2017) and the poverty also decreased individuals' and communities' capacity and resilience. High disaster risk in Myanmar still remains and increases because of climatological trends, urbanization, population growth, poverty and climate change.

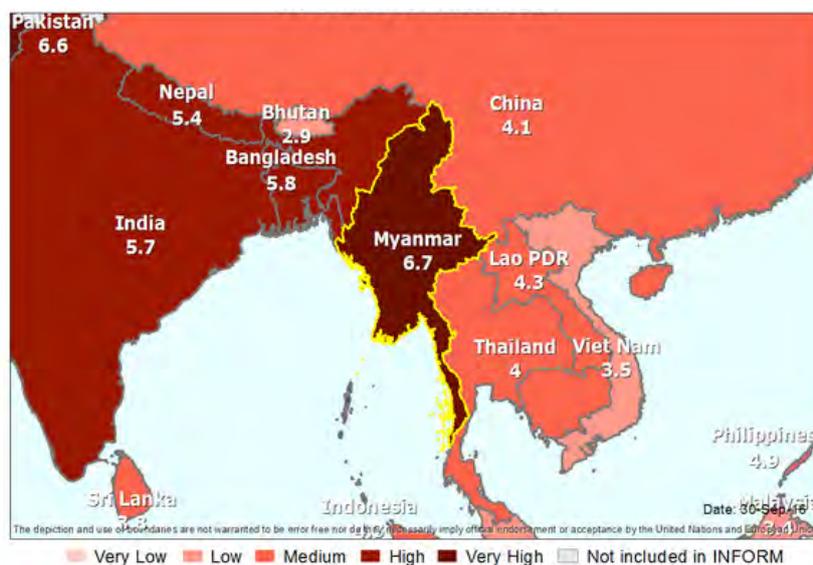


Fig.4. Myanmar INFORM 2017 Risk Index (INFORM, 2017)

Disaster risks as "windows of opportunity"

As the Myanmar case, "disasters are fundamentally social phenomena" and "the disruption of a disaster can unmark social inequalities (Bolin & Stanford, 1998)". And the term of 'Disaster Risk' composed of hazard(H), vulnerability(V) and lack of coping capacity(C) and Figure 5 illustrates this interaction as follows (USAID,2011). We can change the risk situation through the implementation of disaster risk reduction measures such as prevention, mitigation, preparedness, risk financing, and stand-by for recovery. Moreover, disasters, disaster risks and their processes can be a foundation for rebuilding Myanmar's social inequalities.

$$\text{Disaster risk (R)} = \frac{\text{Vulnerability (V)} \times \text{Hazard (H)}}{\text{Capacity (C)}}$$

Fig.5. The Formulation of Disaster risk (USAID, 2011)

1.3. Objectives of the report and its structure

Objectives of the report

The objective of this report to find out alternative directions for disaster risk reduction and upgradation in ward 67 based on the situated knowledges and relevant key actors and to enhance the slum environment through proposing community-led interventions and establishing new connections from local level to international level. In order to achieve this objective, we attempted to answer the question “Under what conditions can collective models of risk mitigation lead to more socially just urban environments?” Existing knowledges and practices were capitalized on to design a localized approach to reach more equitable disaster justice distribution across the ward. This approach tries to place scalarity, temporalities, and socio-economic risks as a compass to allow for longer term, larger scale, and wider scope of effect possibilities when scaling up.

Structure of the report

The objective of this report based on the brief backgrounds of Myanmar's transformation in a time of transition and disaster risk environment was explained in the introduction part. After this introduction, Chapter 2 will describe the theoretical approaches and key notions to interpret existing social, economical circumstances and disaster risk conditions and to establish proposal plan. And the each element will be interacted with analysis approach part. In Chapter 3, through four lenses; Land, Citizenship, Finance, and Heritage and notion of paradox will provide us situated problems during both everyday life and disaster period. From the outcomes, we will deduce research question and set up methodology and methods. For logical argument, the analysis approach will be divided three part; Existing direction, Proposed transformation, and Filling transformational gap; The Existing direction part will go through interventions from National-level to ward level and on-site conditions. Summary of analysis describes gap between existing directions. Based on the interpretation, alternative interventions will be introduced with vision, principle, guidelines, and strategies. Through the Transformational Gap part, we will suggest ideal recovery steps to achieve better future based on proposed transformation. In Chapter 4, Conclusion will explain our outcomes and limitations of the work and personal reflections.

2. THEORETICAL APPROACH



2.1. Concept of Four Lenses

Starting from four lenses for theoretical approach

Choosing the four lenses of approach was necessary to define a starting point of looking into the urban context of the country. On the national level, the lenses contributed to a loop of transformational and transitional shifts on this level, also reflected on the smaller levels of the township and the smallest of the ward. These shifts are not necessarily taking the country in the healthiest of directions, thus highlighting the flaws in the logics behind those shifts was necessary to demonstrate the need for alternative shifts of the discourse, hence the notion of the paradox. After demonstrating such needs, a transformational gap was proposed to showcase the possibilities localized development has in breaking that loop, all using disaster risk mitigation strategies as proxy to the larger urban transformation.

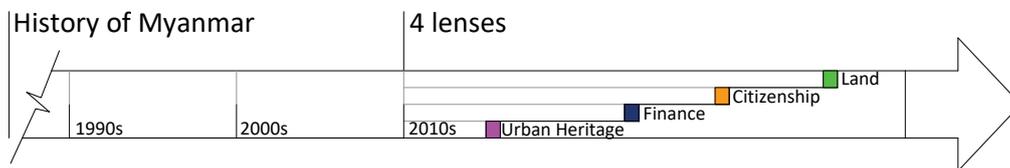


Fig.6. Four lenses as entry point for unpacking complexity of Myanmar (Disaster group, 2018)

Approaching the complexity of the context necessarily required specific entry points that would provide snapshots of the situation in the state. The picked “four lenses” of focus were chosen as they -together- provide a sufficiently whole picture of the socio-political situation in the state of Myanmar.



LAND

Land: With ownership of land being -in theory- not an option, taking a look at options of land security and their feasibility allows for a better understanding of the urban temporaries in the context.



CITIZENSHIP

Citizenship: The highly contested issue of citizenship in Myanmar allows for it to provide a fair representation of the “citizen” in the eyes of the state.



FINANCE

Finance: Accessibility to funds, whether public or otherwise, is a good indicator of the purchasing power of the income of the urban poor.



HERITAGE

Heritage: The extremely rich heritage of the state has turned into an issue with the escalation of the war. Understanding the ethnic and religious heritage of the context would allow for its utilization in positive social contexts reconciling the divide rather than enhancing it.

2.2. Transformation & Transition

The loop in fig. 7 represents the set of current urban processes and practices in Myanmar generally, and Yangon specifically. The lines forming the loop are the four lenses previously explained, and the following explanation of transformation and transition should elaborate on those very processes in an abstract manner.

Transition:

Urban transition is defined as the shift from rural to urban and from agricultural employment to industrial, commercial, or service employment. This definition cannot apply in this case as it marginalizes the non-capitalist elements of transition, elements that do not necessarily directly link to macro-economic indicators, but largely affect them indirectly as shapers of the resulting socio-economic sphere of the urban.

The concept of “urban transition” (Gibbs, 1963) denotes the process of transformation from mostly rural settlement systems made up of numerous and scattered hamlets and villages that are relatively homogeneous in their size and functions to almost entirely urban systems composed of a much more differentiated set of elements.

The urban transition almost always involves wrenching social adjustment as small agricultural communities are forced to adjust rapidly to post-agricultural ways of life. One immediate problem planners face in approaching this challenge is how to define, differentiate, and map what is rural, urban, and transitional (i.e., peri-urban).

Transformation:

Transformation here is defined as an interrelated series of materially-led practices, whereby the form, substance and overall dimensions of urban space are purposefully changed to reflect the principles of a more equitable social order.

This means the process of transformation necessitates the re-prioritization of planning issues in terms of employing and deploying human skills and expertise with the view to solve extant problems, eliminate red-tape, rationalize and systematize projects and programmes that expedite the translation into practice of specific objectives.

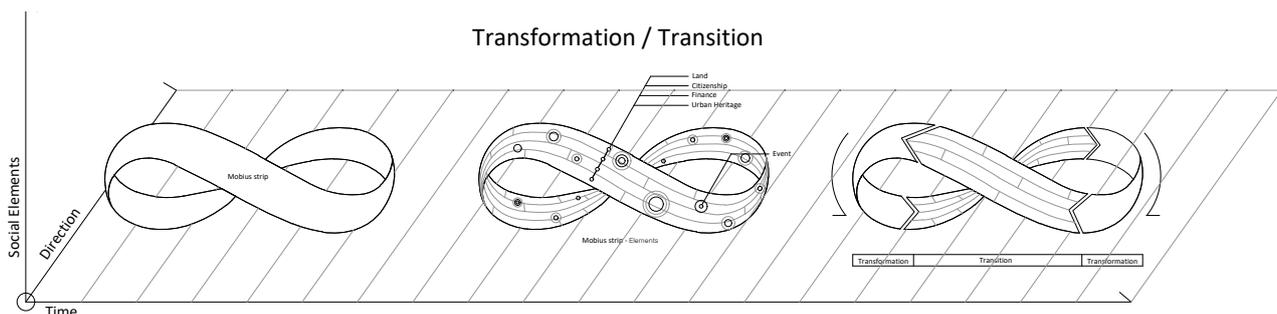


Fig.7. Concepts of transformation & transition (Disaster group, 2018)

2.3. The Notion of Paradox & Transformational Gap

The notion of the paradox:

The four lenses of Land, Citizenship, Finance, and Heritage were used to look at the national level practices of urbanization, and to serve as indicators of the levels of certain values within those practices, such as inclusion/exclusion, social justice, and equitable accessibility to basic needs and services.

The paradox entry point serves two main roles in this scenario, the first is to highlight and further explore the conflicted nature of different narratives, practices, and implementations of controversial urban policies, throughout analysing the utilization of political puns as tools of transformation. The second purpose of the paradoxical approach is maintaining a constant in the analysis/proposals across different scalarities and temporalities. This constant is evident on the national level, as well as both the township level and the studied site level, and every paradox of the ones highlighted in this report becomes more assertive of the one before it the smaller the scale gets.

Philosophers are by no means in complete agreement about the correct way to define paradox, but each of the prominent definitions points to an important feature of paradox. Very early in the Western philosophical tradition, Aristotle – the philosopher often called ‘father’ of systematic logic – studies and attempted to solve paradoxes. For him, paradoxes were flawed arguments, and to solve a paradox was to point to the flaw in the argument (Cuonzo, 2014: 11 - 12).

And this definition reflects exactly how this report is utilizing the paradox, as proxy to highlight a flaw in a bigger picture, in an argument that seems normative but, if examined thoroughly, contradicts its own premises and logical purposes.

The transformational gap:

The representation of the continuum of Transition/Transformation as a mobius strip stems from the fact that this never-ending circular process is repetitive yet distinct, with two directions in mind, the straight direction in which transition is being built up on the consequences of transformation, and the curved direction in which transformation is interrupting transition and adjusting the urban processes.

From this notion of interruption comes the idea of defining the transformational gap, examining the four lenses, and closely identifying disaster-related paradoxes that could be utilized to interrupt the current trajectories of transition. The (in)visible inequalities and priorities that should be focused on as catalysts of an urban transformation.

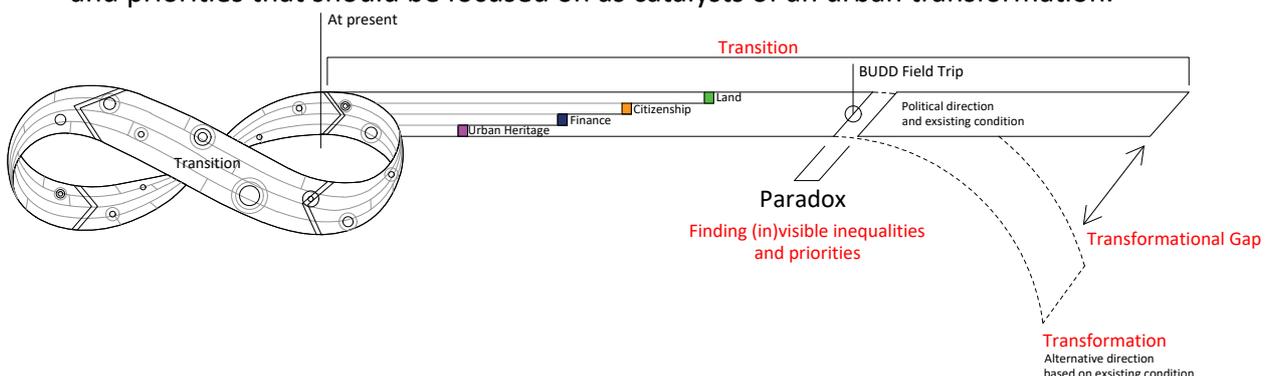


Fig.8. Paradox & transformational gap from concepts of transformation and transition (Disaster group, 2018)

2.4. Disaster Justice (Disaster & Risk)

The state-recognized disasters mostly exclude socioeconomic and environmental contradictions that generate disasters by making people vulnerable in the first place. Discussion of disaster justice, then, is limited to the immediate state responses to understanding disasters as natural episodes. (Huang, 2018) Moving beyond that to treat disasters as a socio-economic phenomenon, and risk as a social construct necessarily requires looking at the social conditions underlying any vulnerable urban context when examining disaster related aspects.

We can think of “community hazard” as a combination of a community’s “physical vulnerability” and its “social vulnerability.” Here, “community” means, as a geographer might put it, “the totality of social system interactions” contained within a “defined geographic space.” (Cutter, 2008. Cited by Verchick, 2013). Verchick goes on to argue for the need to widen the community hazard framework beyond geophysical factors to include the socio-economic. However, admitting to social vulnerabilities doesn’t mean adhering to them. On the contrary, the proposal capitalizes on the concept of human capacity introduced by Amartya Sen to redistribute vulnerabilities, catalyse collective participation in recovery, and recognize those in need of higher resilience over the long term.

As a continuum of the previously explained points, the utilization of this concept in the research comes as proxy to reach a broader social justice. This instrumentalization is crucial as the absence of disaster justice is dealt with very much directly by the residents, and has a very overarching effect over their lives, their perception, and thus state policies dealing with their conditions. The elaboration on the technical aspects of recovery curves paves the way for grounded strategies to be thoroughly guided aiming at achieving the the Rs (Response. Recovery. Resilience) in a more sustainable manner for the future.

2.5. Recovery Curve (Disaster Preparedness & Risk Mitigation)

An idealised recovery curve would distribute the three “R”s as follows (see fig.9), utilizing response and recovery to build up future resilience. This approach, although mostly used by the state with regards only to the geophysical, can be projected on the socioeconomic structure affected by disasters or under the risk of being so, as the vanishing of livelihoods could itself be seen as a considerable disaster. (Huang, 2018).

However, in communities where the initial resilience is lower than that of what is considered as formal housing, and with the lack of governmental support whatsoever, the recovery curve significantly differs. Where the initial response to disasters might be collective - Possibly, but not probably -, the early recovery and reconstruction are mainly individual, take longer to be achieved, get no support from the state, and are often capped at the initial pre-disaster resilience.

The gaps between the legal and “illegal” in terms of aid and resilience capacity building should be addressed as it forms in itself a paradox where the most vulnerable to disasters are the most deprived in the face of it. (fig.10)

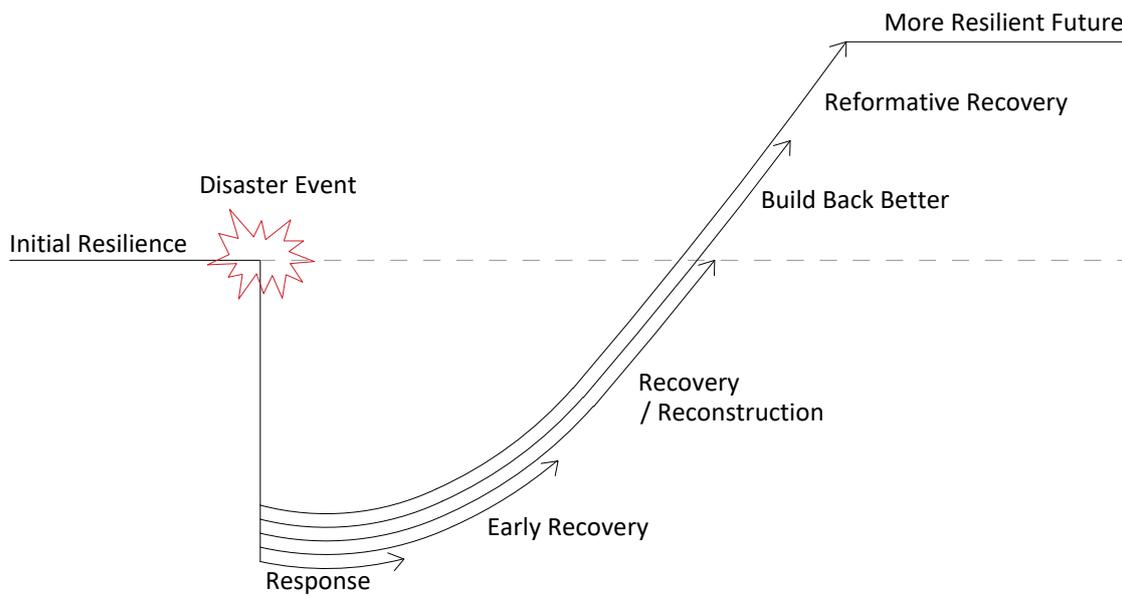


Fig.9. Idealised Recovery Curve (Laliemant, 2013)

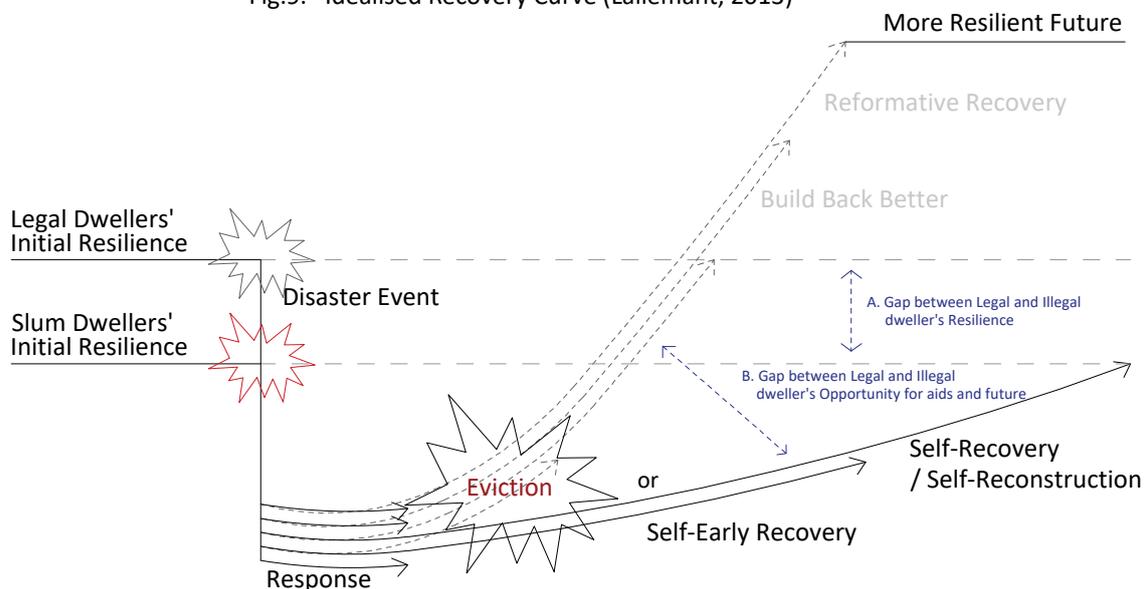
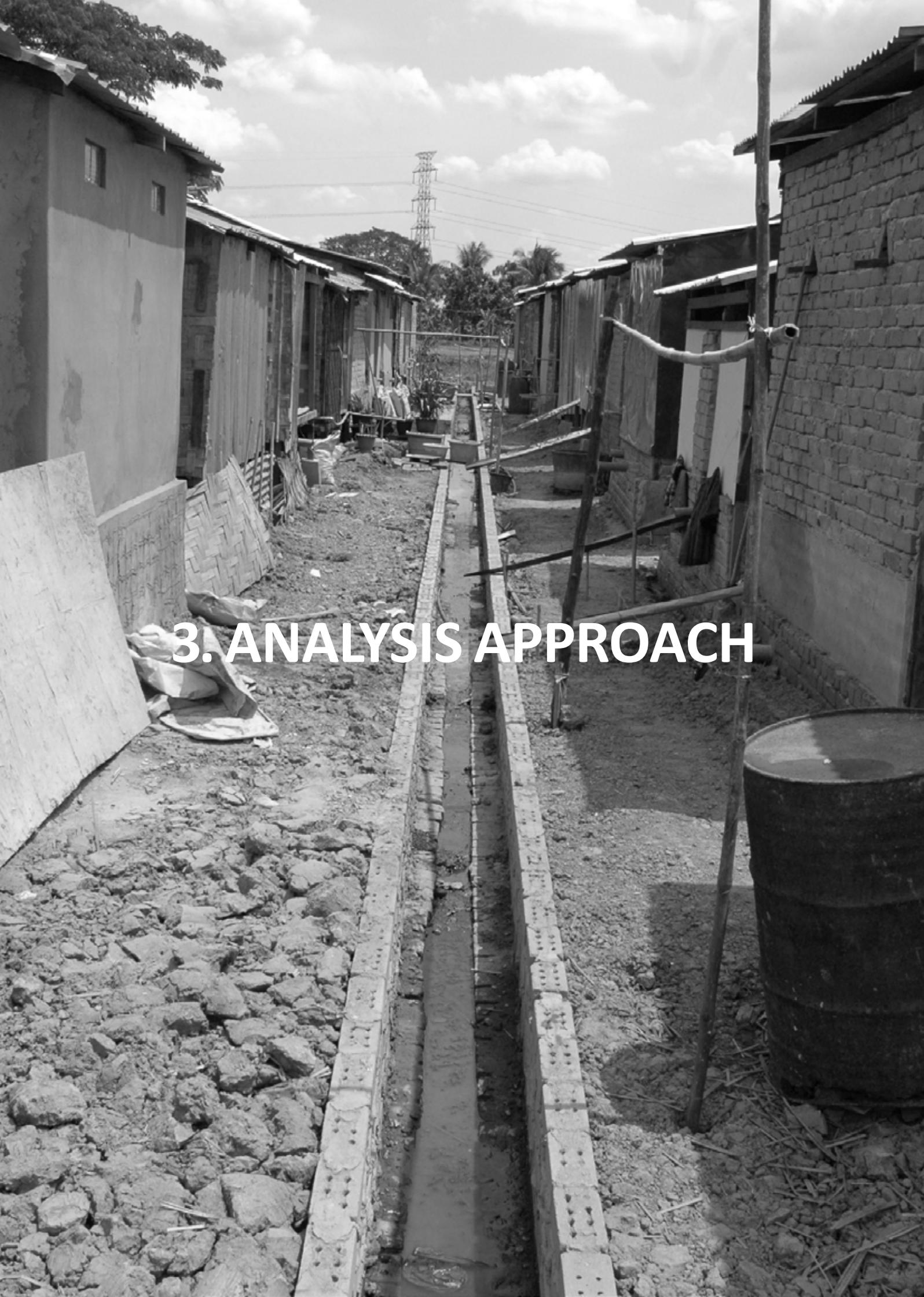


Fig.10. Idealised Recovery Curve Comparison between Legal and Ward 67 Dweller's Condition Disaster group, 2018)

2.6. Summary of the theoretical approach

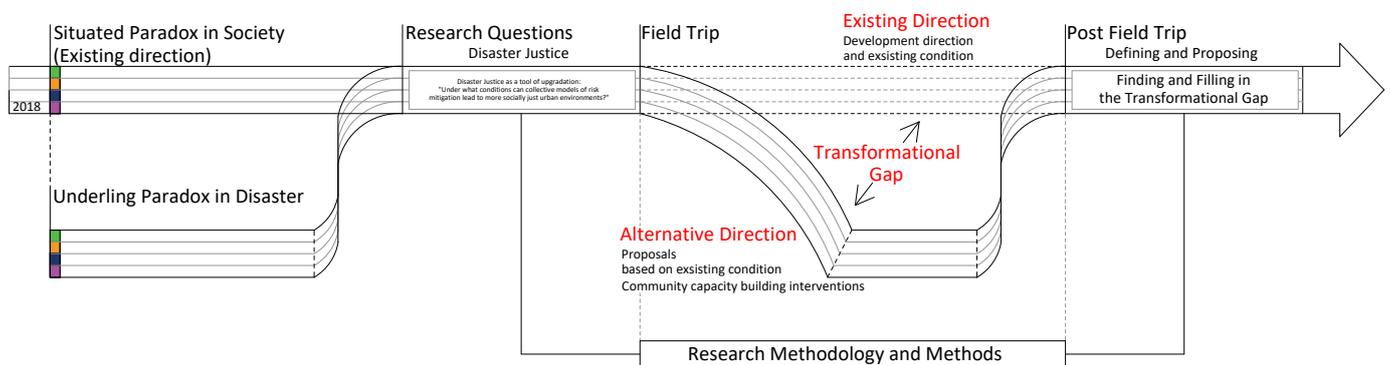
Summary of the theoretical approach

The focus of the scope of study is tight on disaster risk mitigation and disaster justice as a tool of urban upgradation. The starting point with the four lenses highlighted a recurring loop of patterns in the urban discourse in the nation. This loop formed of urban transitions and transformations is not flawless, on the contrary, it is very much flawed with several illogical arguments, demonstrated by the paradoxes mentioned before. A transformational gap that would ultimately eliminate those flaws could be achieved throughout contrasting the idealised recovery curve diagram by Laliemant, and the actual dwellers recovery process we found on the ground. This contrasting identifies two gaps, one in resilience and another in opportunities. From there, we move to our analysis in an attempt to see what local social capacities/hazards lie in those informal settlements, and what could be capitalized on in order to prevent which dangers within the ward.



3. ANALYSIS APPROACH

3.1. From Paradox to Research

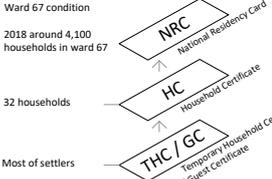
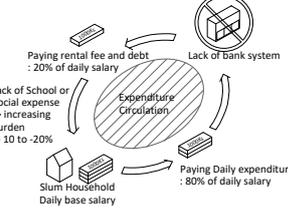
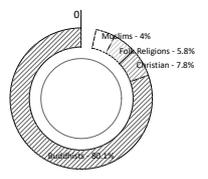


With the concept of the four lenses, situated paradoxes for the informal dwellers and underlying paradoxes in disaster will be examined; therefore, our research question will be framed. Based on the question, in order to identify Transformational Gap between Existing Direction and Alternative Direction in the contexts of Myanmar, especially Ward 67, research methodology and methods will be developed.

3.1.1. Reading paradox with four lenses

Throughout research and fieldwork, the group was able to identify several paradoxes underlying arguments looked at with each of the lenses it chose. These paradoxes highlight the necessity of developing alternative discourses and practices when it comes to the urban transitions and transformations.

Situated Paradox in Slum Dwellers

LAND	CITIZENSHIP	FINANCE	HERITAGE
<p>Informal settlements living under Eviction risk</p>  <p>Informality : Risk of eviction</p>	<p>10 - 30% of population is slum dwellers - lack of basic service from government</p> <p>Ward 67 condition</p> <p>2018 around 4,100 households in ward 67</p> <p>32 households</p> <p>Most of settlers</p> 	<p>Unbalance between income and expenses and lack of bank and loan system.</p> 	<p>The social responsibility of religion and religious facilities</p>  <p>Religious Demography (2010, global religious futures.org)</p>
<p>The unnecessary of owning allows for affordable dwelling spaces, but never allows for the transition from house to home because of the unknown temporalities.</p>	<p>The lack of papers doesn't allow for any official housing or infrastructure upgradation, but the certainty of the absence of rights allows for more freedom in the creation of makeshift solutions on larger scales and longer temporalities.</p>	<p>The existence of micro-economic solutions is indigenously innovative, but the lack of formal regulations allows for the creation of monopolies on basic services, no financial stability, and high expenditure in comparison to income.</p>	<p>The religious homogeneity of the ward catalyses many collectives on religious basis and occasions, however it also leads to the exclusion of thenon-religious and the different preserving a non-diverse controlling majority immune to non-religious values.</p>

Situated Paradox in Disaster period

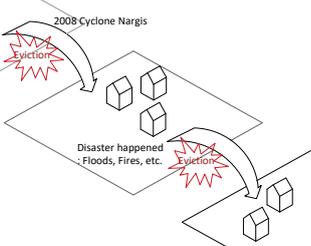
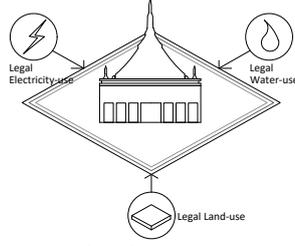
LAND	CITIZENSHIP	FINANCE	HERITAGE
<p>Disaster makes another causes of eviction</p>  <p>2008 Cyclone Nargis</p> <p>Eviction</p> <p>Disaster happened Floods, Fires, etc.</p>	<p>1000Ks Donation / Subsidy</p> <p>Disaster Response and First Aids</p> <p>Folded kits</p> <p>Medical services</p> <p>Funding</p> <p>Program</p> <p>THC / GC</p> <p>Disaster happened : No right to basic services</p>	<p>Lack of Collective supports</p> <p>A community</p> <p>Lack of sense of belonging</p> <p>Disaster happened : Less financial resilience</p> <p>Lack of responsibility for recovery and upgrading infrastructure</p> <p>A household</p> <p>Government</p> <p>One of the barrier for future development</p>	 <p>Legal Electricity-use</p> <p>Legal Water-use</p> <p>Legal Land-use</p> <p>Disaster happened : Monastery has potentials, but not be shared</p>
<p>Instead of dealing with risk and disasters as problems that need solving, disasters are looked at as tools of eviction, which is the ultimate social hazard in regards to livelihoods and disrupting existing social structures.</p>	<p>In cases of disasters, an ID based first aid system is used to distribute first aid, early recovery necessities, and access to further reconstruction funds. The lack of representation of the urban poor means that the most vulnerable will not benefit from such steps at all.</p>	<p>Refusal to recognize collective forms of saving as "Formal" by the state leads to their lack of spreading, which adds to the lack of sense of belonging to land people have no security in, all while access to neither public nor private funds is available, leading to the social hazard of disrupting livelihoods through eviction to overarch the scenario again.</p>	<p>Monasteries, as religious spaces of worship, are entitled to have basic services and land tenure legally from the state, which leads to the paradox of having places of worship that are -in the eyes of the law- of higher status than the people they were built for.</p>

Fig.11. Process from paradox to research question

3.1.2. Research Question

After looking into the theory behind disaster risk mitigation in relation to social justice, especially that of Cutter, Verchick, Huang, and Laliemant, the group started to look at disasters as socio-economic phenomena that needed a wide framework beyond just the geographical and physical aspects. This framework had to take livelihoods into consideration as Huang argued demolishing them would in itself lead to a disaster (2018). This needed grounding in the contrasting between the two recovery curves: The ideal, and the one in the slums. From this contrasting the question arose:

Research Question

Disaster Justice as a tool of upgradation:

"Under what conditions can collective models of risk mitigation lead to more socially just urban environments?"

To look into that question, the group decided to focus on the existing social capacities within slums, link them to the urban transitions and transformations on the local level, and then demonstrate the ability to scale that up in relation to each of the lenses used to investigate the urbanscape of Myanmar in the first phase.

3.1.3. Research Methodology & Method

On the field, the research methodology was made of three parts, the transect walk, the interviews, and the focus groups. These three parts allowed for a decent understanding of the existing social capacities, challenges, and different actors contributing to the formation of the current urban scene. This led to grounded strategies that could be implemented in the ward designed by the inhabitants and facilitated by the researchers. The feedback from presenting those strategies was taken into consideration when designing a bigger scale strategy that could capitalize on those proposals to reach a wider base. This was all in consistency with the four lenses the group started with, and all fed into the community's resilience in the face of natural disasters.

Research Methodology

The focus of this research is tracing the trajectories and narratives from different actors in the lens of disaster, specifically concentrating to

- Identify cause of and response for disaster
- Establish priorities for processing and operations
- Build disaster risk mitigation strategies
- Perform data collection
- Organise and document a written proposal

Research Method



Transect walk & Object mapping

Tracing disaster risks and relevant objects on a map to illustrate, draw, and share their locations, distributions and accesses with the community.



In-depth Interview & Narratives

Preparations and responses the community have done to fire and flood cases were identified in individual and community scale by conducting interviews, both structured and improvised.



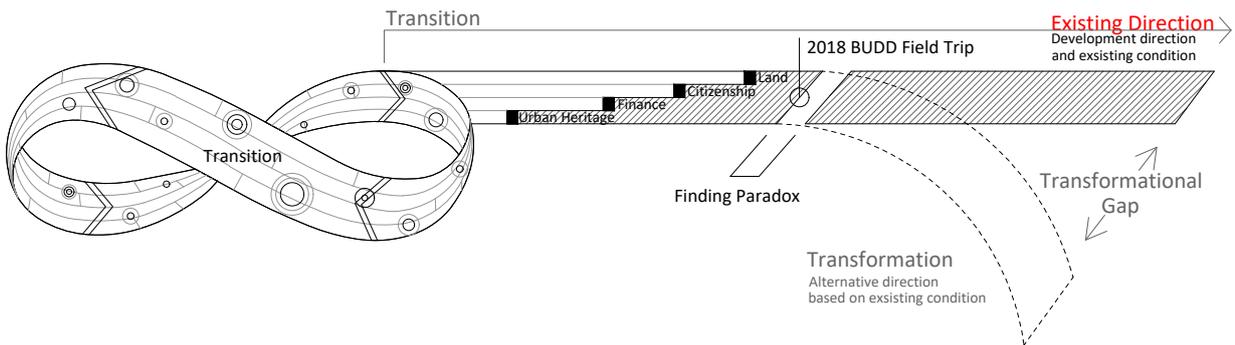
Focus group & informal group discussion

Disaster risk mitigation strategies were examined in which the priorities and feasibilities the community consider were carefully focused.

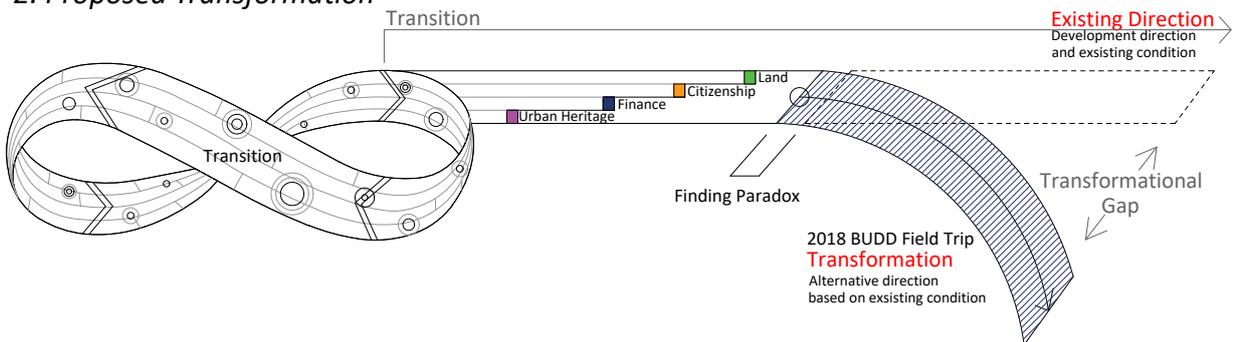
3.1.3. Structure of Analysis Approach

Based on the research question, research methodology and research method, on-site research was conducted. Following the chapters, 3.2, 3.3 and 3.4, will show the findings of the research, proposal intervention in ward scale, and city scale. The three contents will be structured as three concepts: Existing Direction, Proposed Transformation and Transformational Gap, respectively.

1. Existing Direction



2. Proposed Transformation



3. Transformational Gap

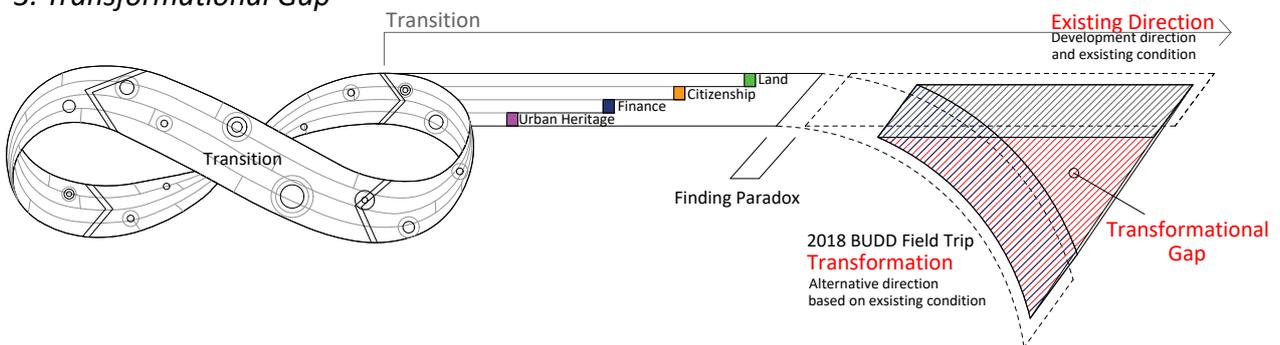
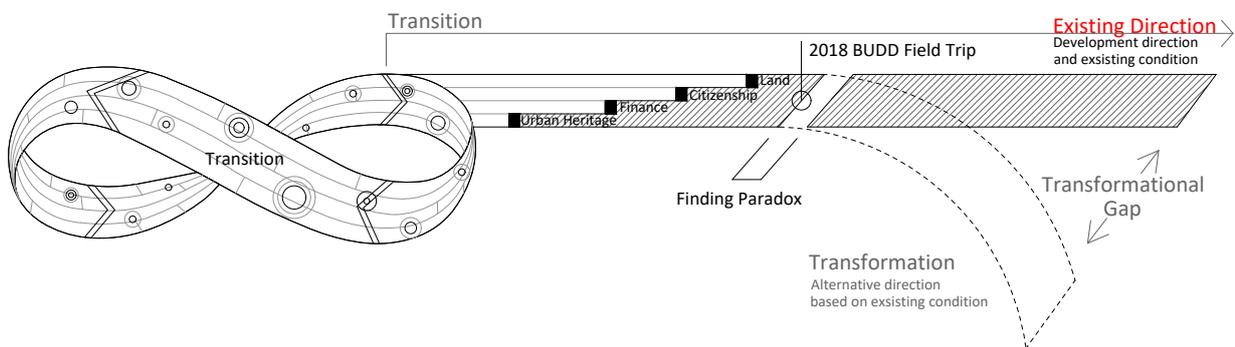


Fig.12. Three concepts structuring Analysis Approach

3.2. Existing Directions



This sub-chapter will discover Existing Direction regarding current interventions in disaster risks in Yangon in three levels, national, organisation and ward levels. The analysis of the intervention in the first and second level will be undertaken through secondary research while the last one, the ward level, will be conducted through primary research on the site and secondary research. The findings will be used in the following sub-chapter 3.3 to materialise our interventions as Proposed Transformation for the country.

3.2.1. Current Intervention Analysis

3.2.1.1. From National-Level to Ward-Level interventions

National-Level interventions

Myanmar is committed to disaster risk reduction as well as mitigation through numerous laws. In order to meet up to such management responsibility, the government has systems and procedures in place at different levels according to the international development frameworks, ranging from the national, to township, and wards. Though these laws greatly affect "squatters" and their settlements, there is a considerable lack of reference to such persons within environmental policy. In 2011, the Myanmar Disaster Preparedness Agency was formed, taking systematic preparedness measures for disasters sweeping through the country from time to time. Besides, most laws stress the aspect of disaster risk mitigation. They emphasize the importance of strategies for lessening or mitigating the adversity of hazardous impacts and their scales. Engineering techniques, hazard-resistant construction, and environmental policies all play important roles.

Organization-Level interventions

Numerous development organizations as well as the United Nations are actively seeking to help reaching national development goal, improve the living conditions of the urban poor, as well as framing activities for the programs. The table 17 below displays the main institutions with contribution to the challenges coming with such recent developments.

Ward-Level interventions

Ward level organizations and departments (ACCA, ACHR, AMA, CAN, WFW etc.) play an important role of implementing strategies from the bottom within the national and international frameworks. These organizations hold activities and interventions to engage the communities especially the vulnerability with the development process.

For a couple of years, the NGO Women for the World has been actively engaging with several of the saving group's community members. The core philosophy of WFW is constituted by the idea of participation. WFW deeply embedded within the culture of the Ward as they provide people with means to voice their priorities and allow for the design of responsive measures to problems. Whereas, government-based disaster risk reduction programs tend to fail serving the needs of communities and often cause communities to become more vulnerable, Women for the World bridges this gap.

The table displays the actors that are mostly strive to catalyse formations of collaborative people-centred partnerships in the Ward 67. Through the support of DHUD, ACHR, CAN, and UCL, the complexity and contradictory trajectories of urban development for the poor, and the role of agencies and design process in the Ward 67 is grasped more easily.

Actors	Paper/Policies/Program/Law	Responsibility/Services/Examples/Details
National Environmental Conservation Committee (NECC)	Environmental Conservation Law (supported by UNDP) (2012)	Responsible for guiding national activities to tackle climate change-related problems; Manages and coordinates all climate change related activities including the development of climate change related policies and strategies and corresponding programmes of action; Strategies: (a) clean environment and healthy, functioning ecosystems; (b) sustainable development; (c) mainstreaming environmental protection and management.
The Ministry of Social Welfare, Relief and Resettlement (MSWRR)	Disaster Management Law (2014)	For the purpose of disaster risk reduction or disaster mitigation, conduct the analysis of the disaster events, data and disaster management experience, and to prepare and develop the Disaster Management Plan, the standing order and the other related programs at the national level.
	Disaster Management Training Centre (DMTC) (2015)	Ensuring basic human rights in accord with democratic norms and human dignity; Building a resilient and disaster responsive society and provide better life for disaster affected people.
The Ministry of Construction (MOC)	Myanmar National Building Code (MNBC) (2016)	Building up national disaster risk reduction capacity for ensuring sustainability of development gains.
Myanmar Disaster Preparedness Agency (MDPA)	Myanmar National Adaptation Programme of Action (NAPA) to Climate Change (implemented by UNEP)(2012)	Now government is in the process of legalizing the MNBC to enforce it effectively across the country at local level. In this direction, first consultation workshop on MNBC legalization framework was organized in Nay Pyi Taw in July 2016.
		32 priority activities for effective climate change adaptation for eight main sectors/themes: agriculture, early warning systems, forest, public health, water resources, coastal zone, energy and industry, biodiversity.
National Disaster Management Committee (NDMC); National Natural Disaster Management Committee (NNDMC)	Natural Disaster Management Law (2013)	Highest decision-making body for disaster management
	Myanmar National Framework for Community Disaster Resilience (2017)	Law for natural disaster risk reduction activities including preparedness and prevention (minimize the potential losses before the natural disaster strikes); emergency response activities including search and rescue, rehabilitation and reconstruction activities after the natural disaster and activities incorporating natural disaster risk reduction measures in national development programme.
	Myanmar Action Plan on Disaster Risk Reduction (2017) (Together with MSWRR)	Achieving people-centered, inclusive, and sustainable socioeconomic development in the face of disasters triggered by natural hazards and climate change; Articulates a common understanding, proposes a coherent approach, and identifies potential opportunities for strengthening the resilience of communities. Identifies 32 priority actions under four pillars: risk information and awareness; risk governance; risk mitigation; preparedness and response, rehabilitation and reconstruction; aim to strengthen the policy frameworks and systems for long-term risk reduction.

Fig.13. Existing intervention in national level

Actors	Paper/Policies/Project/Law	Responsibility/Services/Examples/Details
Myanmar Red Cross Society (MRCS)	Providing significant technical contributions to the Country's Disaster Management Law, Policies, and Strategies; Assists government to support humanitarian actions; A member of National Search & Rescue Committee and a member in three sub committees of National Disaster Management Committee (NDMC).	Establishment of Disaster Management Training Centre (DMTC); Offering DRR related trainings; consultation meetings with VDMC & SDMC, RCVs; catalogue of trainings; training schedule.
World Vision International- Myanmar (WV)	Manual on Community-Based Disaster Risk Reduction (2013)	One of the largest international NGOs operating in Myanmar; Having a significant disaster response capability (pre-positioned supplies in warehouses in Yangon and Mandalay); Emphasizing community-based disaster risk reduction; A leading humanitarian agency in Myanmar, offering relief support to internally displaced people in Kachin state and rehabilitation support to areas affected by the 2015 floods.
The Lutheran World Federation (LWF)		Enabling communities to manage and mitigate disaster risks, and prepare for and respond effectively to disasters and emergencies; Emergency assistance provides practical support and involves vulnerable communities in meeting their basic needs; go beyond the immediate crisis by helping affected people rebuild their livelihoods and children and young people to get an education; Organizing disaster risk reduction initiatives focusing on training teams, raising awareness, running prevention, and mitigation interventions. Constructing bridges, multi-purpose halls, and other important community infrastructure.
Plan International (PLAN)	Working with poorest communities; Working with displaced communities to ensure that children have access to food, water, education and learning materials; Over next 5 years, including ongoing support to IDPs in camps located in Kachin and Rakhine, building resilience in communities, promoting safe schools and preparing for future emergencies.	
Dan Church Aid (DCA)	Projects and programmes are implemented within one of four thematic priorities: Active Citizenship, Right to Food, Humanitarian Action, and Safer Communities; Joint office and country programme, Norwegian Church Aid (NCA) and DCA support local and national civil society in their work for human rights, development, and resilient communities.	
Center For Excellence in Disaster Management and Humanitarian Assistance (CFE-DM)	A U.S. DOD organization that was established by U.S. Congress in 1994; Help bridge understanding between civil and military responders, and to provide a DOD platform for building Disaster Management and Humanitarian Assistance (DMHA) awareness and expertise in U.S. forces, and with partner nations in the Asia-Pacific.	
Disasters Emergency Committee (DEC)	Disaster Management Reference Handbook (2017)	Support local the government and communities to promote disaster resilience.
Japan International Cooperation Agency (JICA)	Brings together 13 leading UK aid agencies to raise money at times of humanitarian crisis in poorer countries.	Launch appeal; With the support of the rapid response network; Extremely cost effective model: spending 7.3% of the money on running appeals, the rest distribute to members to carry out their vital work; Publish regular independent appeal evaluations & annual reports.
Women for the World (WFW)	Country Report Myanmar Natural Disaster Risk Assessment and Area Business Continuity Plan Formulation for Industrial Agglomerated Areas in the ASEAN Region	Cases: Emergency Response for the Nepal Earthquake; Infrastructure and Livelihood Support for the Typhoon Yolanda in the Philippines; Strengthening Disaster Health Management in ASEAN
UNICEF	working for disaster risk reduction, mitigation and adaptation planning to the most vulnerable groups (squatters, the homeless) to provide housing and urban services in collaboration with many stakeholders including the government, UN-agencies, INGOs and local communities.	
Pyoe Pin	Country Programme 2018 - 2022 International Museum Academy: Myanmar 2018	Community based and currently there are more than 80 saving groups with more than 1500 saving members; Womens Saving Groups initiate community development such as livelihood and income generation, land tenure, housing, community infrastructure, water and sanitation activities. Strengthening Child health care and education Enhancing educational activities

Fig.14. Existing intervention in organisational level

Actors	Paper/Policies/Program/Law	Responsibility/Services/Examples/Details
ASEAN	<p>Agreement on Disaster Management and Emergency Response (AADMER),</p> <p>Disaster Risk Management Programmes:</p> <p>Myanmar Consortium for Capacity Development on Disaster Management (MCCDDM)</p>	<p>Serving as a common platform and regional policy backbone for disaster management in the ASEAN region; the AADMER Work Programme outlines a detailed structure of activities of the region's disaster management priorities over five-year periods.</p> <p>Assisting the governments and local authorities prepare and mitigate the risks of natural or manmade disasters; Assisting build better resilience against disaster, prepare action plans and enhance capacity towards response; Programmes on informal settlements upgrading, post disaster recovery of housing and infrastructure are designed with risk mitigation construction methodology.</p> <p>Developing disaster management capacity of a wide range of stakeholders through sustainable partnerships, to enhance safer and resilient communities.</p>
UN-Habitat	<p>Community Based Disaster Risk Reduction (CBDRR)</p> <p>Shelter Improvement and Disaster Risk Reduction Project</p>	<p>Enhancing basic disaster preparedness of the cyclone-affected communities and integrate disaster risk reduction efforts in some of the key sectors of recovery. Outputs: Community-based disaster preparedness (main responsibility UNDP); capacity development for integrating disaster risk reduction in the rebuilding of human settlements (main responsibility UN-Habitat); awareness generation, Knowledge Networking and Partnerships (shared responsibility). Set up artisan association groups for training of trainers at various levels.</p> <p>Enabling vulnerable households to bring about critical improvements to damaged houses and to increase knowledge of Disaster Risk Reduction at the community level.</p>
United Nations Development Programme (UNDP)	<p>Promoting the participation of and benefits for local communities in adaptation, preparedness and mitigation responses for natural disasters and the impacts of climate change.</p> <p>Environment, Climate Change, Energy and Disaster Risk Reduction Project</p>	<p>Insuring DRR and climate change adaption are incorporated in development plans and included in development plans; the skills and knowledge of communities and relevant institutions are built at different levels to enhance natural resource management in a sustainable way.</p>
United Nations Environment Programme (UNEP)	<p>Preparation of National Adaptation Programmes of Action to Climate Change(Enabling activities for NAPA)</p>	<p>Enabling Myanmar establish, compose and mandate; Literature review of past and ongoing studies on vulnerability and adaptation to climate change; Participatory assessment of vulnerability and adaptation measures and selection of criteria; Finalizing criteria and prioritization of adaptation measures; Development of proposals for draft NAPA Report.</p>
Regional & United Nations (International)	<p>Facilitate the implementation of the International Strategy for Disaster Reduction (ISDR)</p>	
United Nations Office for Disaster Risk Reduction (UNISDR)	<p>Hyogo Framework of Action 2005-2014</p> <p>Sendai Framework for Disaster Risk Reduction 2015-2030</p>	<p>Conclude the review of the Yokohama Strategy and its Plan of Action: Identify specific activities on vulnerability, risk assessment and disaster management; Share good practices and lessons learned to further disaster reduction and to identify gaps and challenges; Increase awareness of disaster reduction policies and facilitating the implementation of them; Increase the reliability and availability of appropriate disaster-related information to the public and disaster management agencies.</p>
United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)	<p>Supported the development of the Disaster Management Law in 2013 and the Disaster Management Rules in 2015</p>	<p>Building on the Hyogo Framework for Action, the framework aims to achieve: substantial reduction of disaster risk and losses in lives, livelihoods and health in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.</p> <p>Mobilize and coordinate effective and principled humanitarian action in partnership with national and international actors in order to alleviate human suffering in disasters and emergencies.</p>
United Nations Conference on Housing and Sustainable Urban Development	<p>Habitat III (2016)</p> <p>National Habitat Report-Myanmar (2016)</p>	<p>Reinvigorating the global commitment to sustainable urbanization, to focus on the implementation of a "New Urban Agenda", building on the Habitat Agenda of Istanbul in 1996.</p>
Myanmar Information Management Unit (MIMU)	<p>(Official Website) http://themimu.info/</p>	<p>Taking stock of Myanmar's current status of human settlements, identify ongoing projects and innovations, and look at a prospective emerging vision for human settlements towards the creation of the new urban agenda at Habitat III.</p> <p>A service to the UN Country Team and Humanitarian Country Team, under the management of the UN Resident and Humanitarian Coordinator; Improve the capacity for analysis and decision making by stakeholders both inside and outside of Myanmar through strengthening the coordination, collection, processing, analysis and dissemination of information.</p>

Fig.15. Existing intervention By UN

3.2.2. On-site Analysis

3.2.2.1. Case Study: Ward 67

One of more than 260 areas marked as “informal settlements” housing more than 40% of the population of the city, Ward 67 is located between two branches of the Yangon river in close proximity of the city centre. The ward contains more than 4000 households, the overwhelming majority of which have no papers registering their houses in the formal housing registration system, as they don’t own the land, nor do they have the sufficient personal documents to register ownership in the current legislative frameworks.



Fig.16. Satellite picture of ward 67

This majority of houses is self-constructed with minimal resilience in terms of materiality, facing natural disasters, and preventing man-made disasters. On a slightly larger scale, the ward lacks proper infrastructure from the roads, to the irrigation and



Fig.17. Creek in ward 67

sewage systems, all the way to electricity, drinking water, and other basic infrastructure. Although the ward has a primitive address system, it is largely for internal use and is not recognized by the state. Basically, 4000 households are managing to survive with minimal support from the state, organizations, or charities.

The resilience of the ward in the face of natural disasters is extremely fragile, and this fragility has been significantly amplified by the current socio-economic models ruling the ward. However, the genuine microeconomic solutions that evolved in the camp are necessary to sustain life under the current circumstances, and the proposal capitalizes on them to further enhance the resilience of the ward, challenging those socio-economic models in the way.

3.2.2.2. Women for World & Saving Group

The existing saving group consists units of families in, as an example, SeeSainShin and San Thit Sa (see Appendix 1 for more information). Every family save 1-2 dollars per week by women, and collect the money every week at their community centre. Members can get benefits from getting loans with very lower interest rates (around 2%), compared to bank rates (about 20%), without putting up any substantial collateral. The money is used to handle health issues, education and emergencies. The process of collecting is transparent, shown on posters (See Fig. 18) .It builds their solidarity. Women from the communities said they trust each other and the process increases community bonding.

For this process, WfW gives technical support to communities and loans to saving groups. The saving groups can also borrow money from the organisations; however, its amount is limited to below a certain percentage of the saving groups' income. After saving, the groups identify land and start doing construction works by themselves. As a further scheme, they would negotiate with private landowners and government for more development scheme and formal infrastructures. The whole process will be monitored by WfW.



Fig.18. Table of amount of saving

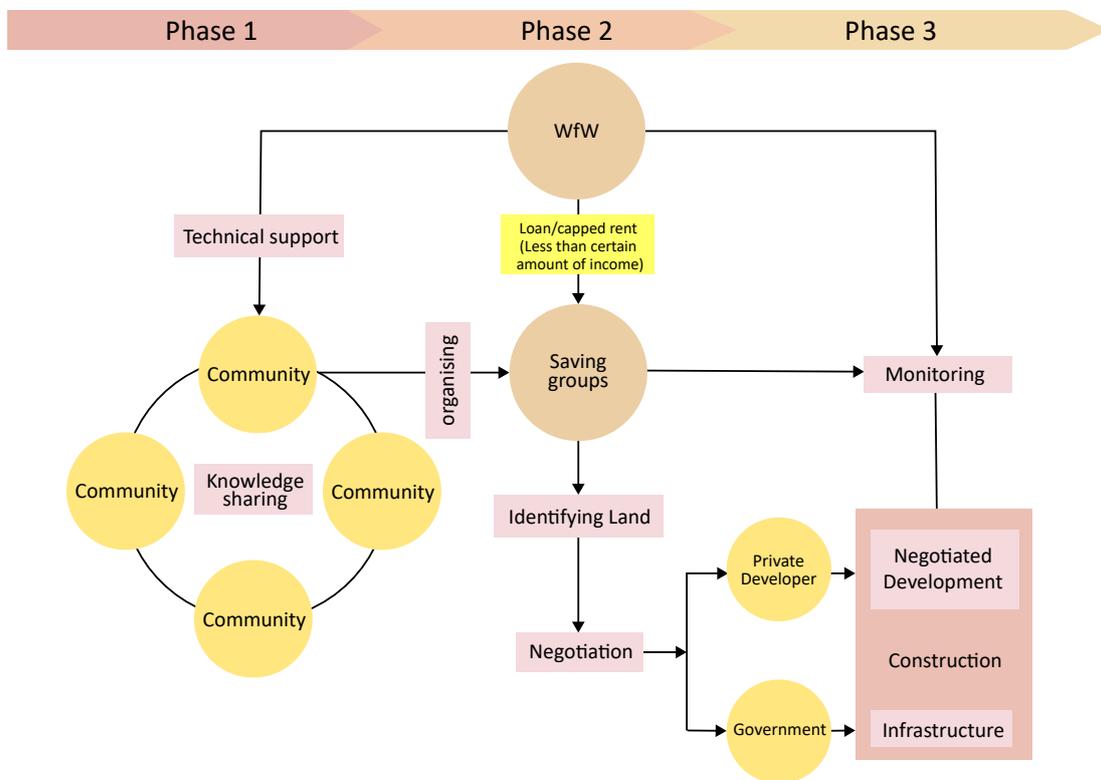


Fig.19. Work system of WfW & saving Group

3.2.2.3. Intervention Area

Through the walk and interview, we identified higher risk area in ward 67 regarding two main disasters: fire and flood. Despite the former disaster is everywhere, the area around which the electric towers (see Fig. 20) are located is considered as an area with a higher risk of fire. The latter one occurs along the creek, especially three areas, as illustrated in Fig. 21. From the overlap of the higher risk areas of both disasters, an area drawn in Fig. 22 is determined as our intervention area.

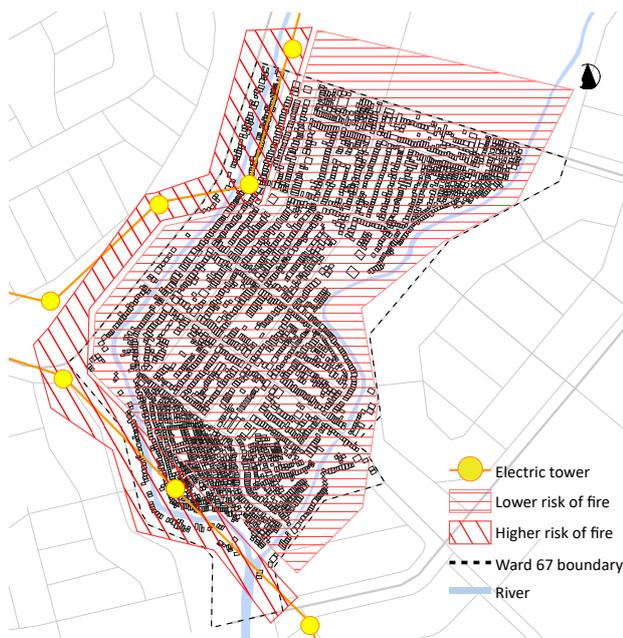


Fig.20. Map of fire risk

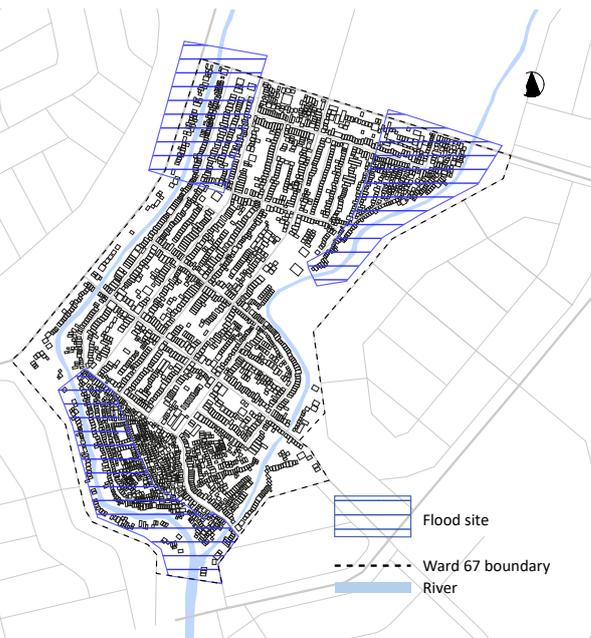


Fig.21. Map of flood risk



Fig.22. Intervention area

3.2.2.4. Risk Mitigation & Disaster Risk Reduction

With the identification of the research area, in this sub-chapter will examine risk mitigation and disaster risk reduction undertaken by the communities. Risk mitigation is often defined as “vaccinating against future illnesses” and is a very interrelated concept with disaster recovery and the social conditions behind both of them. Through interviews to the communities, it was identified that the two risks, Fire and Flood, are recognised by them and there have been some responses to the both disaster risks. By tracing the narratives of the communities, the findings in terms of risk mitigation, first responses, and post disaster responses will be identified.

Analysis of the fire risk

The research area is under the electric towers which cause the rain of fire on the housing constituting flammable materials such as cardboard, wood and thatch. In addition to the tower, electronic cables causing the fire rain as well as the tower are everywhere in the area with touching trees and the flammable houses. The use of fire in the house is another element to increase the risk of fire. Since many households live in their houses with no electricity, candles are often used to light up and fire is mainly used for cooking. These conditions have led to the area having the highest risk of fire going through a whole area in other word, the fire risk is everywhere.

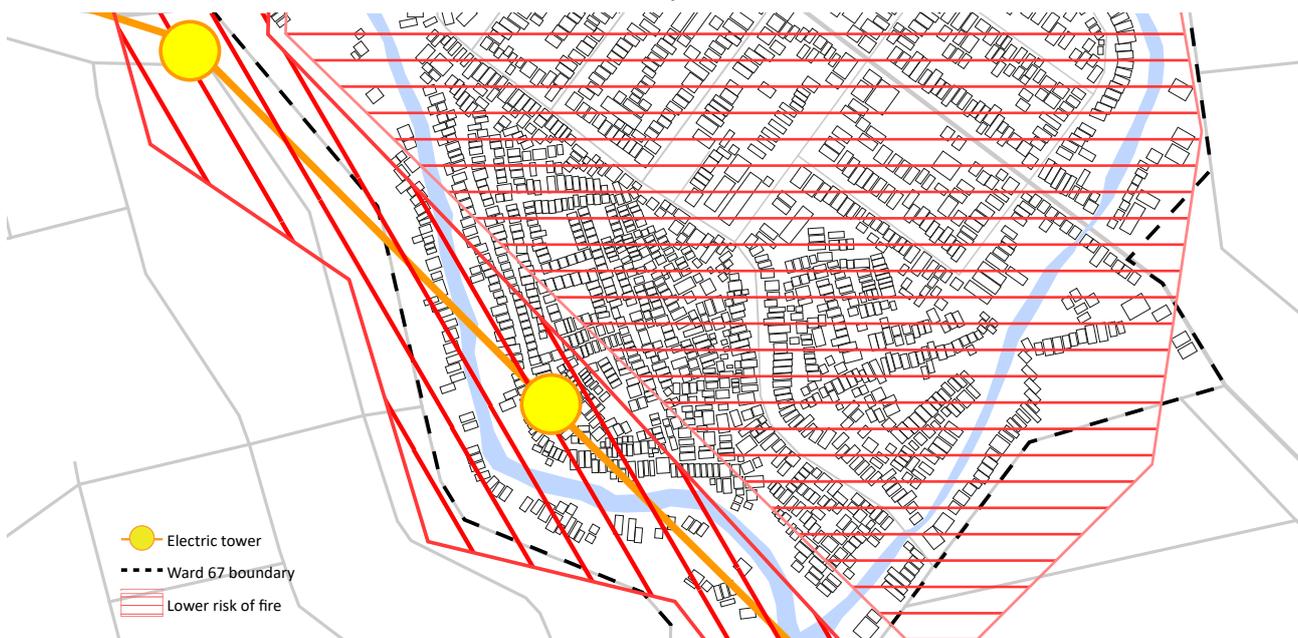


Fig.23. Map of fire risk



Fig.24. Use of flammable materials and electric wire



Fig.25. Use of candles & fire cooking inside of flammable housing

As preparation for fire risk, each house is supposed to equip water barrels (Fig.27), sand and water bags hanging next to the house to extinguish fire (Fig.30) and hooks to put out fires on roofs (Fig.31); however, they are not equipped in not every house, and as seen from Fig. 27 and 30, the quality of the preparation is not well enough. The initial response to fires is usually conducted throughout a series of fire alarm towers (Fig.28) that mobilize volunteers to put out fires by using the hooks, to avoid calling the fire station at all cost as fires constitute legal grounds to evict people preventing them from reconstructing their residences. As for the recovery phase, recovering from fires is strictly done on individual basis, where houses are self-built again by collecting its material by themselves (Fig. 29 and 32) unless a notice of eviction is issued by the state banning the residents from reconstructing.

Disaster Response of Community level for Fire

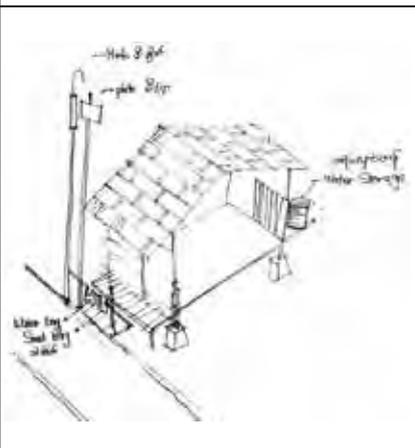
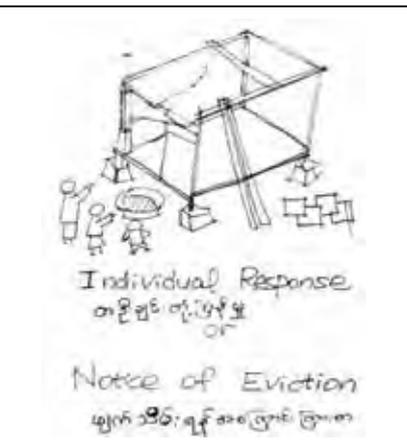
Preperation Phase	Disaster Phase	Post-disaster Phase
		 <p>Individual Response 01 02 03 04 05 06 or Notice of Eviction 07 08 09 10 11 12 13 14 15 16</p>

Fig.26. Preparation for & response to fire



Fig.27. Water tank



Fig.28. Fire alarm tower



Fig.29. Community buying materials



Fig.30. Sand & water bags



Fig.31. Hook being used to pull fire out



Fig.32. Repairing housings by the community itself

Analysis of the flood risk

A creek flowing right by the many houses especially in the research area has a higher risk of food as the level of the ground is lower than the other areas. Whilst, in a rainy season, flood happens three or four times, lower price of the land and a lack of space to build housings in Ward 67, there are many housings along the creek (Fig.33 and 34). The higher risk of flood is also caused by the situation that the flow of the creek has accumulated waste (Fig. 35) causing an increase in the water level, which is estimated to get worse since no existing cleaning activity for the creek.

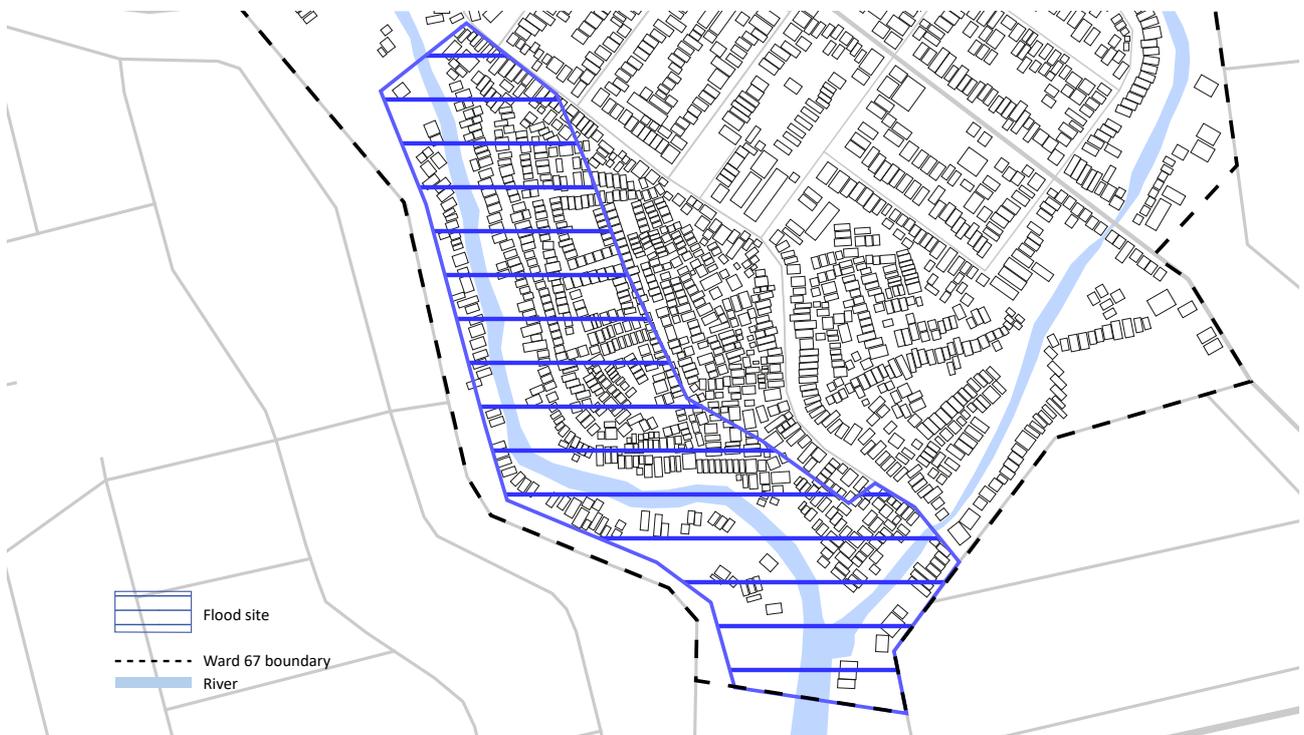


Fig.33. Map of flood risk



Fig.34. Living in poor structured houses along the creek



Fig.35. Accumulation of waste brought by the creek &

For the risk, communities enforce the structure of streets and by using sand bags (Fig.37) and strengthen the building structures by installing stronger materials such as zinc on the roof (Fig.40). When flood is happening, there technically is no response to the disaster other than moving out from sinking houses to higher grounds for several hours or three days. The monastery (Fig.41) serves as a temporary shelter in this case for those displaced and in need. After the disaster, as a response to damages from it, the situation is not different compared to the case of fire, where individual response is the largest portion of the efforts in place, with nuances of collective efforts occasionally occurring such as fixing one of the wooden bridges by donations of 25 households, and such as water channels collective digging.

Disaster Response of Community level for Flood

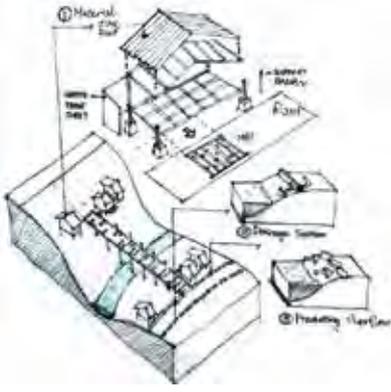
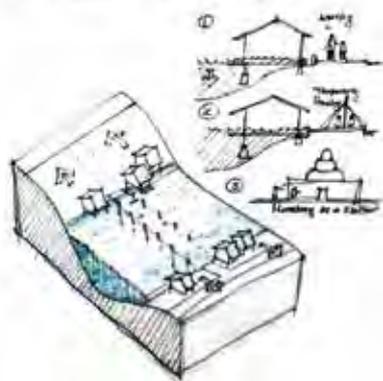
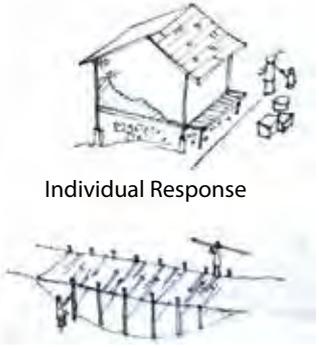
Preperation Phase	Disaster Phase	Post-disaster Phase
	<p>From Several Hours to 3 days</p> 	 <p>Individual Response</p> <p>Fixing bridge using donation from 25 households</p>

Fig.36. Preparation for & response to flood



Fig.37. Walls by sand bags / human activity



Fig.38. Street to which community escape from flood



Fig.39. Repairing housing by the community itself



Fig.40. Enforcing building structure by zinc roof



Fig.41. Monastery to which community escapes from flood



Fig.42. Bridge repaired when flood occurs

3.2.2.5. Social Condition Analysis

Analysing the social conditions was done on three scales (Household-Subcommunities-Site) and in three contexts (Physical-Social-Economic). The findings strongly support the assumption of the socio-economic conditions supporting the weak resilience of the site against natural (or manmade) disasters.

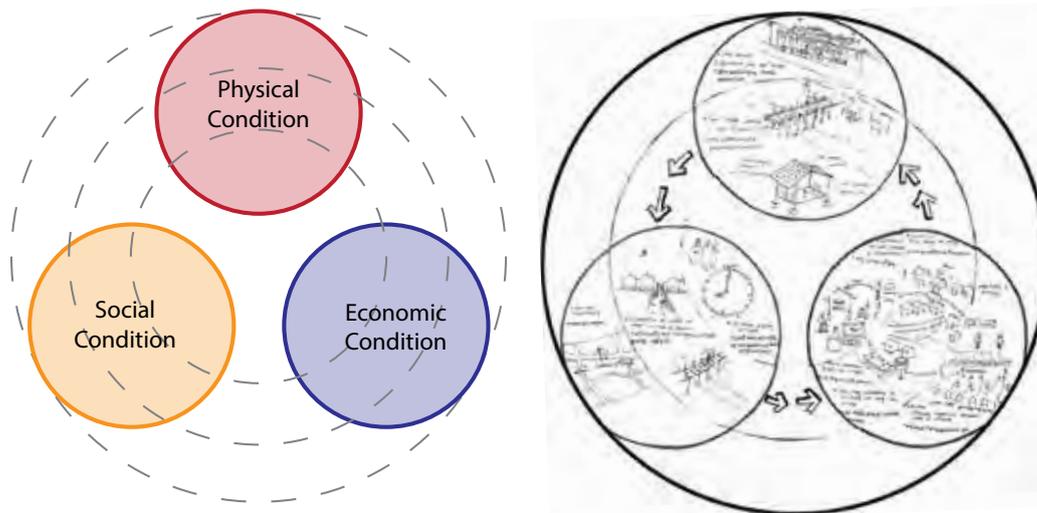


Fig.43. Analysis of existing condition through three lenses & three scales 1

The poor housing conditions in terms of materiality and hazard protection are evident at first sight, the lack of sustainable sources of electricity means life has to end by sunset, and the unbalance between income and expenditure is only asserted by the extremely high cost of the limited access to basic services the dwellers have (four hours /day of electricity on average, and costly access to drinking water).

On the sub-community level, the sub-community studied is one under high risk of both disasters, where one bridge in a very poor condition serves as a hub towards the outskirts of the site, and as a main path for the economic flow towards the ward. The area's lack of public lighting due to the lack of governmental infrastructure makes walking the streets at night a large concern as well.

As for the site level, the high density imposed by the narratives of lack of space and by the neglect of all standards due to the lack of governmental supervision over housing conditions means that the hazard of large fires is ever present, especially with electric wires and towers that are strongly evident in the site. The relationship between the ward and its surroundings is a one-way relationship in which the ward is dependent on its surroundings for a large portion of its daily needs, but barely supplies the surroundings with anything in return, and the monopolies on energy and water resulting from the micro economies that dominate the scene in the absence of governmental provision of services does not allow, as mentioned earlier, for any long term saving due to the burdens of the costs.

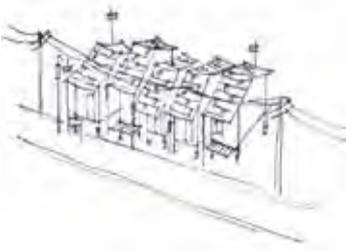
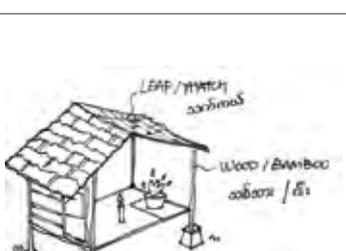
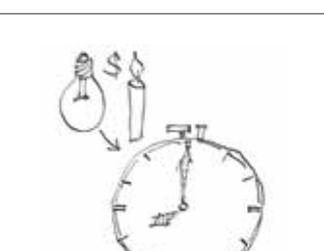
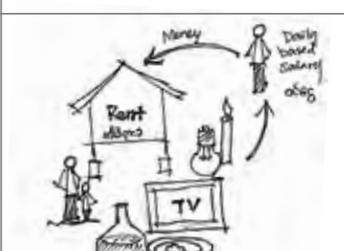
	Physical Condition	Social Condition	Economic Condition
Ward 67 level	 <p>- High Density & Electric wires and towers</p>	 <p>- One-way Relationship</p>	 <p>- Monopoly of energy - Bridge : Different importance btw Users and unusers</p>
Community level	 <p>- Poor Bridge Condition & Less Accessibility</p>	 <p>- No electricity on street (Crime & Safety)</p>	 <p>- Economical flow through this bridge</p>
Household level	 <p>- Poor Housing Condition</p>	 <p>- No activity at night</p>	 <p>- Unbalance between income and expenditure</p>

Fig.44. Analysis of existing condition through three lenses & threes scales 2

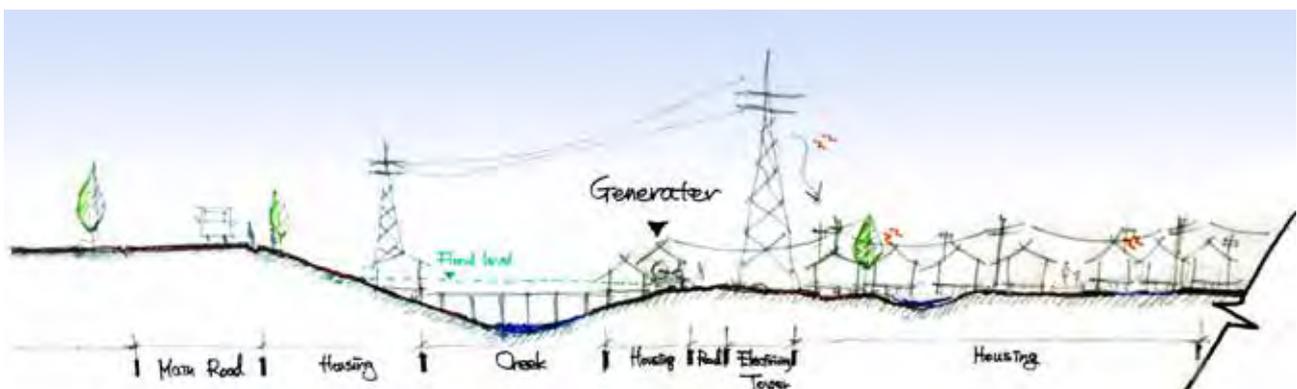


Fig.45. Section of existing condition

3.2.3. Summary of Analysis

3.2.3.1. Finding The Gap in Existing Transformation

Looking at interventions and policies attempting to support/dismantle the ward in contrast to the localities of the ward renders the gap between the different perceptions and visions of the ward extremely clear. While the governmental narrative is clearly filled with flaws and issues that need to be addressed by the state before initiating any productive conversation about the ward, other international development agencies and actors are not doing great in terms of taking the social capital into consideration in the master-planning proposals already available.

On the other hand, the social capital is close to being the only asset of the inhabitants of the ward, and dismantling it for any reason would form a disaster in itself as rebuilding it would be a challenge far greater than the rehousing of the ward inhabitants in case any of the already proposed scenarios go on to be achieved. A few non-governmental actors are active in the ward, but instead of attempting to bridge the gap between the different narratives, or of trying to increase the long-term resilience of the ward inhabitants, the focus of those actors largely goes to short term aid and response.

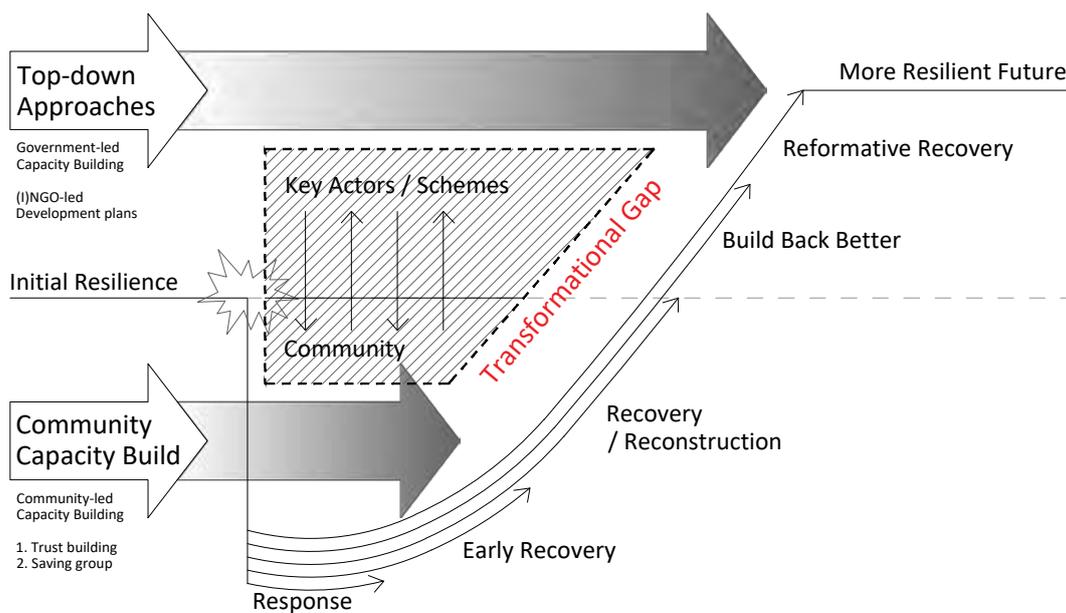
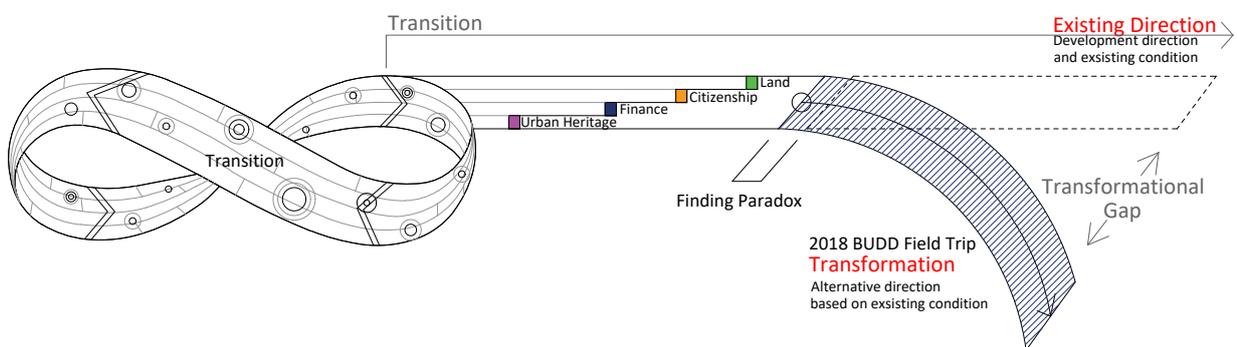


Fig.46. Transformational gap between existing top-down & bottom-up approaches

3.3. Proposed Transformation



Based on the findings in the previous chapter, this sub-chapter will present our intervention for the mitigation of two types of disaster risks, fire and flood, as Proposed Transformation, specifically the word level.

3.3.1. From Vision to Strategy

3.3.1. From Vision to Strategy

The analysis provided evidence that social capital is more than capable of dealing with the challenges presented by the landscape and typologies given the proper financial resources and practical frameworks. This has cultivated a sense of believe in this capital's ability to face all aspects of risks, and not just the physical one.

The vision of the group's strategy emerged then as an attempt to set the proper conditions for this capital to thrive. Collective models of risk mitigation already exist in the ward, and pockets of socially aware individuals and groups are always part of the scene. Furthermore, the collective model has been to some extent successful in primary response to disasters in the ward, which provides solid evidence for the success of the model.

The move from the vision to the strategies on the ward level was prompted by suggestions from the students, but all the other steps -though largely facilitated by the researchers- were designed and shall be implemented by the residents themselves.

Vision

"Setting up conditions under which collective models of risk mitigation could lead to more socially just urban environments"

Principles

Safety Collectivism Scalability Social justice

Guidelines

Site level

- Raising awareness about the benefits of collective action
- Upgrading the quality of life in both the private and public realms
- Enhancing community bonds between members of the ward

City level

- Challenging unjust socioeconomic models
- Providing a consistent nationwide model of disaster risk mitigation

Strategies

Ward-level upgradation throughout risk mitigation pilot projects

- Solar power collective
- Building bridge collective

3.3.1.1. Vision

Setting up conditions under which collective models of risk mitigation could lead to more socially just urban environments

The proposal revolves around two main sets of interventions, each tailored in accordance with its scale and locality. The main purpose of the proposal is setting up conditions under which collective models of risk mitigation could lead to more socially just urban environments, whether on the site scale or on the national scale.

On the site scale, building on the existing social capital recognized in the field research and reports of previous years, the project aims at deploying mechanisms of collective financial and infrastructural capacity building to achieve a detailed step by step upgradation scheme facing some of the major risks in the urban-scape of informal settlements in the city.

As elaborated earlier, Risks identified in both the theoretical research phase and the field / post field research phase are not limited to the physical risks -mainly fires and floods- but extend to the social risks such the lack of safe public spaces and convenient accessibility tools linking informal settlements to their surroundings. In addition to that, they extend to the financial risks of income gaps, the weak individual capacity for saving, monopolies on some of the necessities, and others.

On the larger scale of the city/national level, revisiting the paradoxes of the four lenses, the proposal works in two parallel lanes, trying to capitalize on solving those paradoxes in the first one, and on the collectives built on the site level in the second one. The reconciliation of both is done throughout an overarching strategy that would allow for a nationwide change in the discourse towards “informal settlements”.

3.3.1.2. Principles

- Safety

The most directly addressed value of the proposal should be the safety of the inhabitants of informal settlements. The conditions in which people are living are far from being describable as ‘humane’. Materials of which houses are built are highly flammable and adding the candles and the cooking fire to the combination makes things worse. Likewise, the preparations for floods are limited to enhancing the structures, allowing for water to enter the houses for days in some areas while the inhabitants just wait it out. Furthermore, the dense nature of the settlement allows for very little fire spreading preparation, and the lack of illumination of streets and public spaces necessarily means that life has to end by sunset and would not be safe to use after that time of the day.

- Collectivism

Like most other informal urban-scapes, the notion of the collective exists in many forms, especially in line with traditional societal hierarchies, and the religious nature of a large portion of the inhabitants of the settlement. These collectives have had some very visible outcomes, but they are yet to be catalysed to become part of the culture of such urban spaces, especially the more vulnerable ones. In addition to that, these collectives are exclusive in their nature, and scaling them up to face larger non-physical risks is not feasible as they themselves are embedded in some of the causes of those risks -such as the monopolies on water and electricity. However, building on those collectives doesn't contradict the principle of collective mobilization on the long term to face larger scale risks such as eviction. On the contrary, it facilitates promoting the concept while avoiding the negative aspects of the older social structures in a more just future.

- Scalability

The need for scalability stems from the complexity of risks and challenges faced by informal settlements in the city. From the very household level all the way to the national level, attempting to have a unified logic behind the proposal on every scale allows for a smoother transformational gap, and allows for transition to be organically socially considerate, as well as financially sane. More community focused alternatives to the existing collectives with better informed public about the demonstrated benefits of those collectives provides a good base if scalability is embedded in the design, which is what the group attempted to do in this proposal. Furthermore, embedding such collectives in higher negotiations around the security of the inhabitants necessarily means having them as an integral part of the social structure of informal settlements.

- Social justice

Although the struggle is pretty much universal all over the studied informal settlement in terms of challenges and risks, the socio-economic hierarchies still persist, and are damaging the quality of life far more than they are improving it. The existence of monopolies on electricity and water, as well as a mob-style informal government of the ward have led over the years to an evident gap between the richest and the poorest, between the most powerful and the least powerful, and between the least vulnerable and the most vulnerable. This, then, is reflected on the national level in the uneven distribution of power, lack of recognition of the dwellers, and thus the lack of representation. However, the proposal does not aim to tackle those issues per say, but rather to demonstrate how small improvements on the social justice conditions of the dwellers would significantly affect their lives, creating a loop between those conditions and the people's quality of life.

3.3.1.3. Guidelines

Site level:

- **Raising awareness about the benefits of collective action**

The first step towards any collective action that could span the entirety of the informal settlement has to be informing the inhabitants of the settlements about the benefits of forming a larger social and financial entity than their individual selves and the already existing collectives. This could be done throughout workshops, introductory sessions, or -for this proposal- by demonstrating the social and economic benefits with pilot projects with high visibility to potential members of future saving groups.

- **Upgrading the quality of life in both the private and public realms**

Although the 'proxy-fication' of disaster risk mitigation tools is strongly present in this proposal, this does not mean that the value of those tools should be any undermined in the process. In fact, successfully leveraging the quality of life of the inhabitants is a key guideline in guaranteeing and promoting the appeal of collective action over individual action, especially in an environment where most risk mitigation actions are taken individually with not much scope for advancing such actions further.

- **Enhancing community bonds between members of the ward**

The visit to the first sites of SeeSainShin housing and San Thit Sa housing demonstrated the achievements of having strong community bonds on a small scale. Bonds of such scale exist to some extent in the ward, but where they exist is the rather safer areas, and generally their temporality is very limited, being mostly built by an individual initiative for a single purpose and vanishing with the achievement of that purpose. Trust in saving collectives is virtually non-existing due to previous incidents of theft and conducts of mistrust, but enhancing the bonds and maintaining transparency among the people of the informal settlement should stay at the centre of any collective process to cultivate trust and growth of participation.

City level:

- **Challenging unjust socioeconomic models**

Whether indigenous microeconomic models that form alternative solutions to the lack of service provinces in the ward, or whether macroeconomic policies and practices that are exclusionary in their nature and pose more pressure than they do comfort to the urban poor. The adjustments needed in the socioeconomic models governing the dynamics of the informal on several scales have been at the heart of designing the interventions, tackling every major aspect as possible, and utilizing local knowledge and dynamics in an attempt to localize the interventions to the furthest extent.

- **Providing a consistent nationwide model of disaster risk mitigation**

As a continuum of scalability, networking different community initiatives (whether collectives or otherwise) is a key reflexive of the values and principles of this proposal. The proposal keeps in mind along every stage of its development the importance of having a modular model of urban transformation above all, one that can be extended, grouped and regrouped, and easily connected to others like it. This modularity is utilizable when tackling the national scale to provide consistent grounds for upgradation in any case whether regarding this locality or otherwise.

3.3.1.4. Strategy & Intervention Framework

Ward-level upgradation throughout risk mitigation pilot projects

- Solar power collective
- Building bridge collective



Fig.47. Existing solar panel



Fig.48. Existing wooden bridge

Strictly positioning ourselves as facilitators, the overarching strategy is a ward-level upgradation throughout risk mitigation pilot projects. The local context is rich in its makeshift solutions that originated as a workaround to the lack of basic services, and the experience locals had in those solutions is essential for any proposal to be localized to the context.

This overarching strategy evolves into two strategies on different scales; A solar power collective providing cheaper electricity to households and public spaces on a small scale of around ten houses each, and a larger collective of around 25 households that capitalizes on an already existing collective dealing with a critical bridge connecting the ward to its surroundings, strengthening it against floods and connecting it to a main road.

The proposal was entirely developed by the local partners from the community, involving many sub-communities including “The Funeral Service”, “Yami Yapa”, the local saving group, and many others. Our role was strictly limited to demonstrating successful models they could follow, and facilitating meetings between different actors of the community to assure defying the challenges imposed by cooperation between different actors from the very beginning.

	Interventions	Household level	Frameworks	Ward 67 Level
STRATEGY 1	< Inner-ward condition >	Household level	Community Level	Ward 67 Level
	<p>from mitigation of fires to upgradation of Housing</p>	<p>Independence of Power / Energy Mitigation of Fires</p>	<p>Up-grading Public Space</p>	<p>Energy Saving Village & Energy Business</p>
STRATEGY 2	< Outer-ward condition >	Household level	Community Level	Ward 67 Level
	<p>from mitigation of floods to upgradation of Infrastructure</p>	<p>Safer Infrastructure Mitigation of Floods</p>	<p>Improving relationship between in and out of ward</p>	<p>Linking Economic Flows</p>

Fig.49. Pilot projects

3.3.2. Intervention

3.3.2.1. Detail of Intervention1: Solar power collective

Building Solar Saving Group

The concept is that ten houses can contribute to a saving trust to buy the necessary equipment to build a solar powered electricity source, diversifying the sources of power in the ward, and providing a cheap alternative to the current privately held generators.

Furthermore, the set up of the solar panels will require a stronger physical structure than the ones existing right now, which allows for setting that structure as a condition to join the collective, overseen by diverse actors to make sure only eligible houses qualify for the project, catalysing a physical upgradation of the house.

Finally, the lighting of public spaces will result with an extension of the daily activity times to include post-sunset, which was not feasible before for reasons discussed in the analysis. This extension to the socio-economic public realm will provide necessary exposure for the project to become a reproduceable pilot project spanning the ward.

Existing Electricity Supply

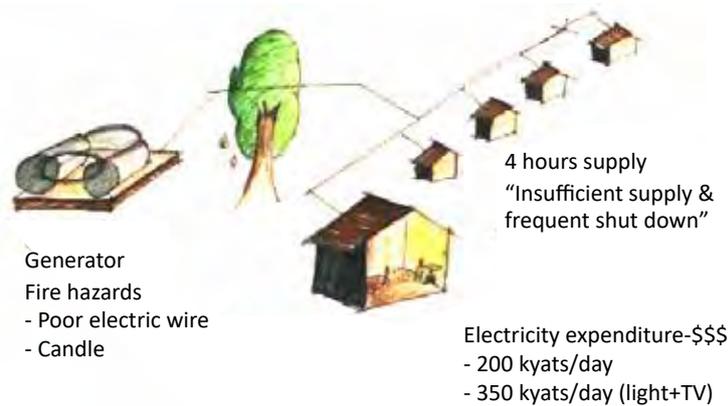


Fig.50. Existing Electricity Supply

Proposed Electricity Supply

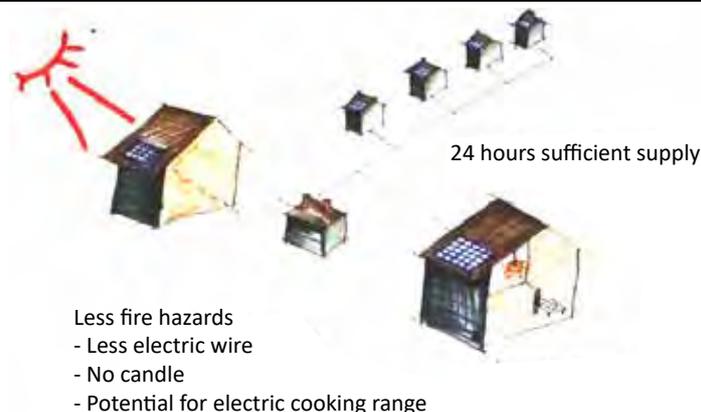


Fig.51. Proposed Electricity Supply

Mobilising Process (10 Households collective)

The resources needed as explained in the next page will be gathered by the mobilization of the existing saving group and the funeral services collective. The installation of solar power panels will require a physically capable structure of doing so, which will catalyze a physical upgradation of the houses. Furthermore, the process of mobilization would not exclude the holders of the monopoly, on the contrary, it aims at getting them involved and voluntarily retire their networks by contributing to a more inclusive network that renders the old model unnecessary.

Mobilising Process Diagram

Phase 1. Finding Key Actors

Community Leader

Phase 2. Creating Saving Group

Meeting for Saving Group

Phase 3. Supporting Saving Group

Existing Saving Group

Solar Saving Group

Funeral Service

Support

Support

Phase 4. Implementation

Buy & Collect Materials

Construction & Installment

Phase 5. Connecting Saving Groups

Project

Project

Project

Project

Fig.52. Process of Solar Saving Group

Solar Saving Group: Budget Plan (1Year Plan)

10 households' saving plan can be realised within one year saving. Each household needs to save about 280KS per a day. It can be saved from reducing betel or cigarettes expenditure. And one year later, the owners can save 350KS per a day with saving electricity expenditure.

Electricity expenditure

- 1 day electricity fee : 350KS / 1 house (Light + TV)
- 1 year electricity fee : 127,750KS / 1 house
(\$94.6 / 1 house, 1USD = 1,350MMK)
- 10 houses' 1 year electricity fee : 1,277,500KS / 10 houses
(\$946 / 10 house, 1USD = 1,350MMK)

*After 1 year Saving group can save around \$100 a year

Saving Plan for 10 Households

Aim Budget Total : \$760 / 10 houses (\$76 / 1 house)
(40Ah / house - Light + TV, Solar panels / Batteries / Inverters)

- 1 day Saving : 281.1KS / 1 house (\$76 = 102,600KS, 102,600/365 = 281.1)
- 1 week Saving : 1,967.7KS / 1 house (281.1 X 7 = 1,967.7KS = \$1.458)

* Betel or Cigarettes expenditure : 300KS / 1 day (WfW, 2018)

Solar Saving Group

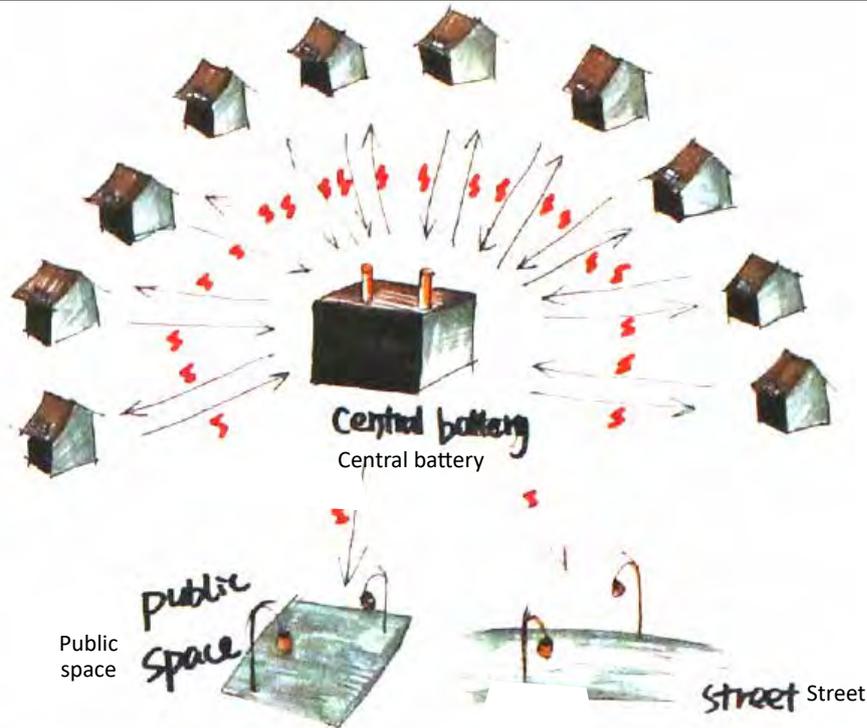


Fig.53. Solar Saving Group

3.3.2.2. Detail of Intervention1: Building Bridge Collective

Building Bridge Saving Group

Existing bridge in the research area is made by wood, built 5 years ago. Its financial resource was donated by 25 households, mostly living around the bridge. While the accessibility between areas spanned by the bridge has development, the wooden bridge makes those crossing it feel unsafe due to its poor structure, leading three times of wreck by floods and repairs by themselves within the five years. Its poor constructions management also cause an accumulation of many construction waste, bringing higher food risk.

To address this situation, through structuring saving group, the construction of solid structured bridge, having safer pedestrian way, will be achieved. Its construction process will be managed by the members of the group with advices from the expert, resulting in clean-up of waste in the creek; thus, lower fool risk.

Existing Bridge Supply

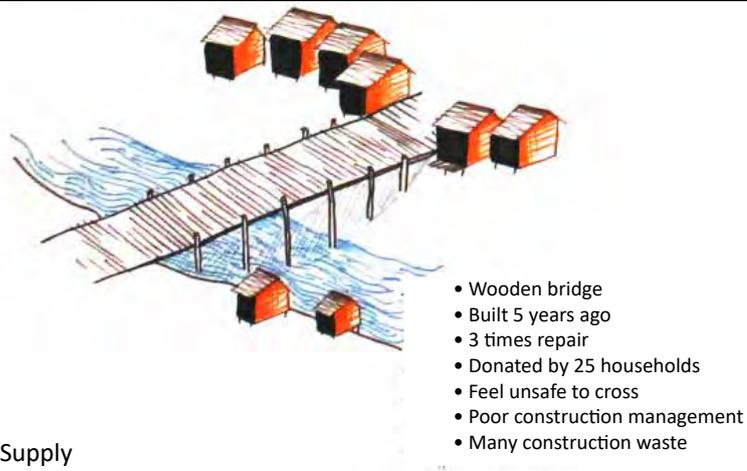


Fig.54. Existing Bridge Supply

Proposed Bridge Supply

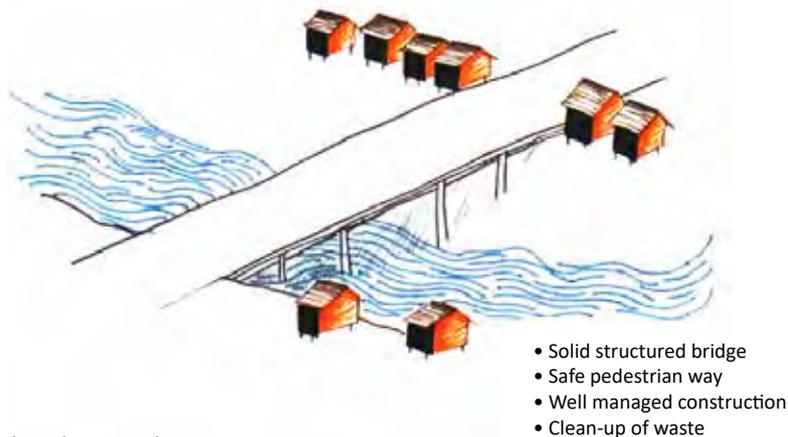


Fig.55. Proposed Bridge Supply

Mobilising Process (25 Households collective)

Suggested mobilising process is divided into five phases (see Fig. 56). Firstly, Finding key actors complements the weakness of the 25 households capacity, especially for the mobilization of power and proper saving methods or schemes. From second phase, Key actors' meeting, they can set up a new saving group basing on the diverse conditions, and it can be supported by existing saving groups to revise its direction. Implementation phase could be a catalyst to encourage around 300 bridge users' participation to donate, construct, or maintain the bridge. After the poroject, this saving group will become an entry point to organise other saving groups to address larger scale of projects.

Mobilising Process Diagram

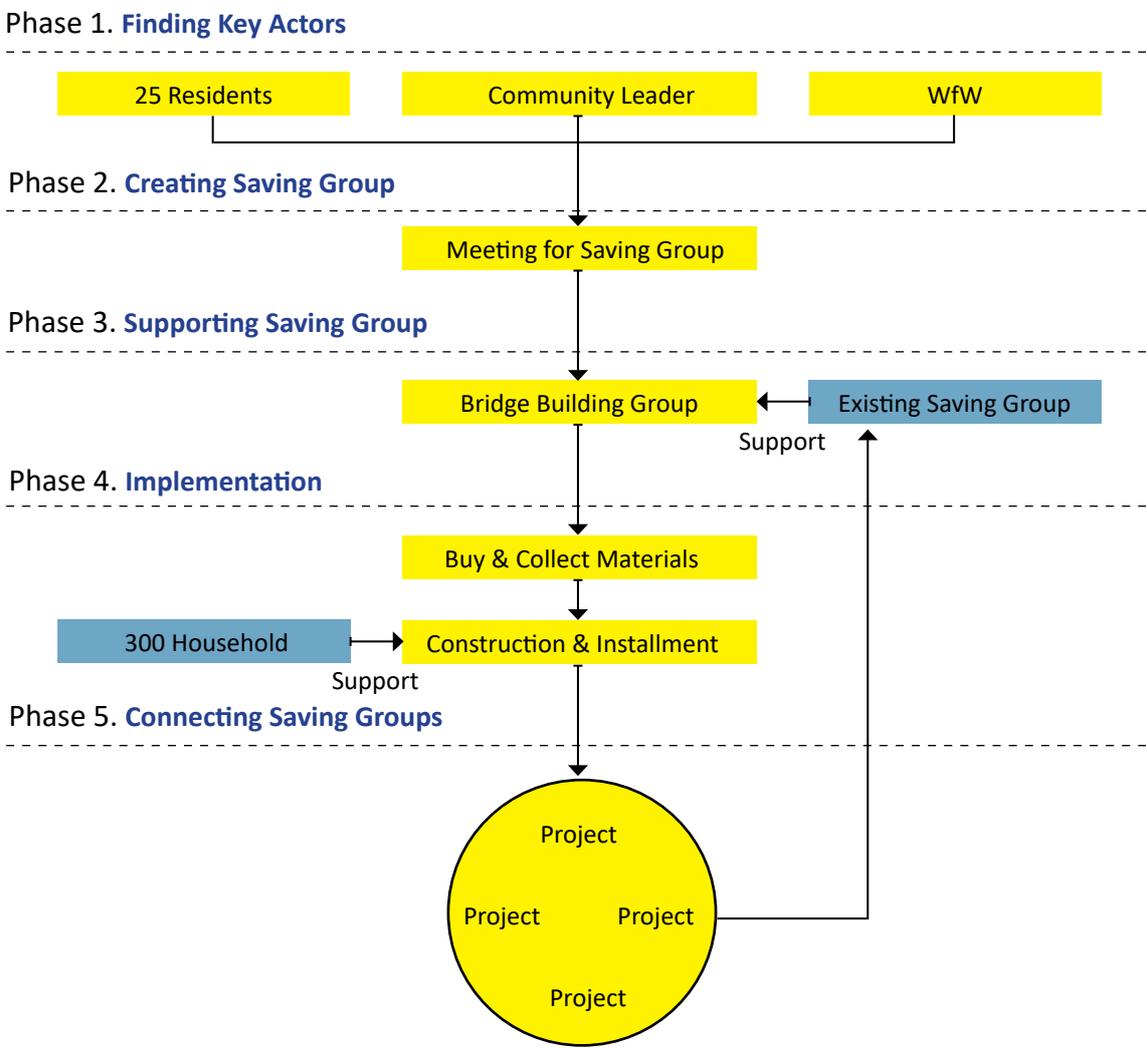


Fig.56. Process of Building Bridge Saving Group

Building Bridge Saving Group: Budget Plan

25 households' saving plan can be realised within one year saving. Each household needs to save about 350KS per a day. It can be saved from reducing betel or cigarettes expenditure and other donations. And one year later, the households can save fixing bridge expenditure between 400,000 to 500,000KS.

Fixing Bridge Expenditure

- 1 Time fixing cost : 400,000 ~ 500,000KS (\$296.3 ~ 370.4)
- 25 Households donate the cost: 16,000 ~ 20,000KS (\$11.9 ~ 14.8)

* If they spend this expenditure 8 times more, they will be spent \$2400.



Saving Plan for 25 Households (1Year Plan)

Aim Budget Total : \$2400 / 25 houses (\$96 / 1 house)
(Solid Bridge)

- 1 day Saving : 355.1KS / 1 house (\$96 = 129,600KS, 129,600/365 = 355.1)
- 1 week Saving : 2,485KS / 1 house (355.1 X 7 = 2,485.7KS = \$1.841)
- Their Saving Capacity : 500KS / 1 house weekly

* Betel or Cigarettes expenditure : 300KS / 1 day (WfW, 2018)

Bridge Saving Group

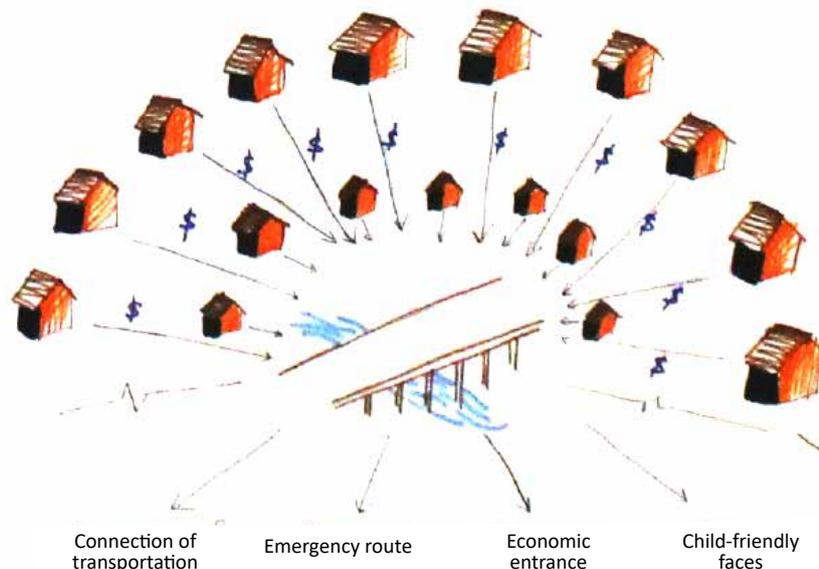


Fig.57. Bridge Saving Group

3.3.2.3. Expectations of the interventions in Ward 67

As explained in the principles guiding the strategies, scalability lies in the modularity of the proposed models. Both the solar panels saving group and the bridge saving group could be utilized to fulfil other infrastructural, or economic, or social needs. The difference in scale allows for different scales of interventions as well (e.g. The solar panels collective could then be pivoted into irrigation channels creation as this only needs a handful of full-time workers over a medium term to cover the entire ward, while the bridge collective could focus on paving and post-disaster infrastructure recovery as its size would allow it to allocate funds for larger projects).

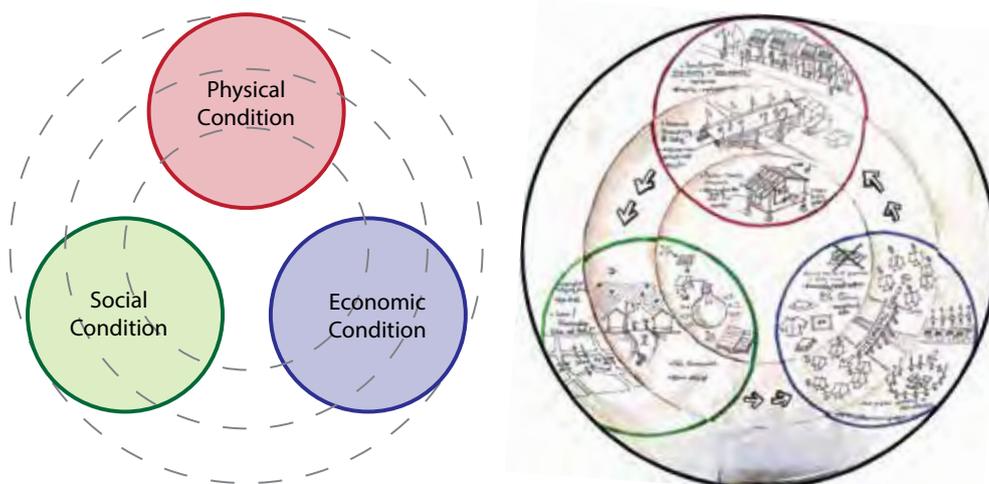


Fig.58. Analysis of future condition through three lenses & three scales

The vision dictates that the projects achieved by both collectives be of high visibility in order to attract as many participants as possible. The accumulation of participants contributing small amounts of money/knowledge/practice allows for gradually larger/faster upgradation of the ward, as explained in the 'saving groups' chapter.

The question posed here is 'should the groups grow bigger, or should people form new smaller groups as they want to participate', and the answer by the community members was 'they should create more saving groups' to allow for more flexibility in terms of decision making, as more groups mean more decentralization, thus diversifying decision making to cover as many challenges as possible over a shorter time, and varying scales.

The next challenge hence is the overarching risk of eviction. For this purpose, a next step on the ward-level is required to provide sufficient social and financial infrastructure to face this risk. The step proposes a network of saving groups of various scales that function as a 'saving group of saving groups'. Using the same mechanism that applies to individuals in small saving groups, a larger entity would allow for different saving groups to take loans of each other's, allowing for the following:

- Financial power redistribution: by giving the more vulnerable parts of the ward access to the funds of the more financially stable parts of the ward for community projects, and with feasible conditions that get funnelled back into development of the ward.
- Further community rapprochement: as it will be in the interest of every actor to have the quality of life of the loaned groups upgraded in order to pay back their loans.

- Larger scale projects: providing grounds for negotiations on community land trusts or land sharing models with the state, as the necessary financial infrastructure would be in place to arrange for a land purchase.

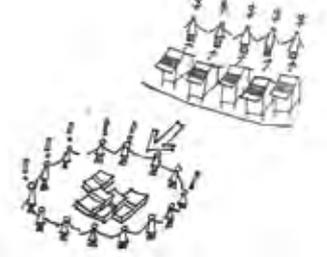
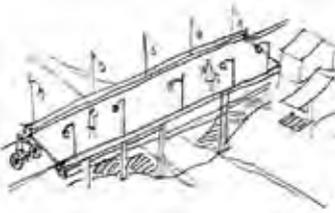
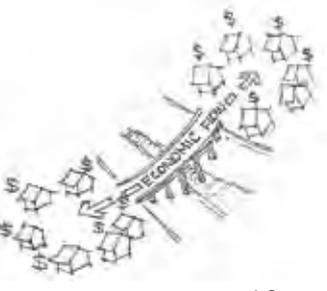
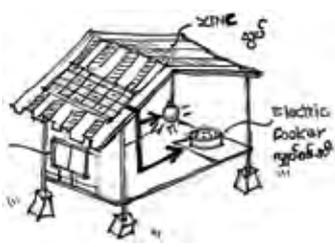
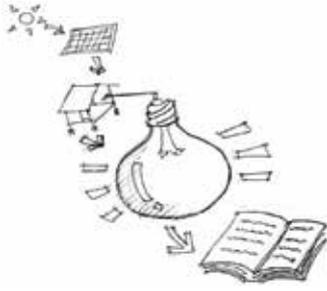
Ward 67 level	 <p>- Transformation High Density -> High Capacity</p>	 <p>- Inter Relationship</p>	 <p>- Independence of energy - Capacity to build new upgradation</p>
Community level	 <p>- Improved Accessibility & Safety</p>	 <p>- Safe environment</p>	 <p>- Encourage Economical flow through this bridge</p>
Household level	 <p>- Better Housing Condition</p>	 <p>- more activity at night</p>	 <p>- Saving and potentials for new expenditure</p>

Fig.59. Expected condition

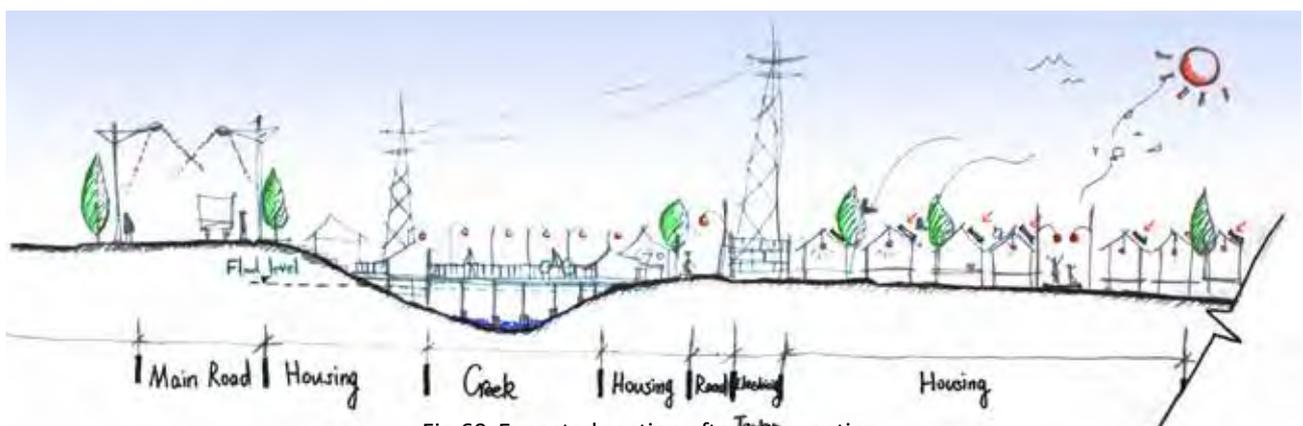
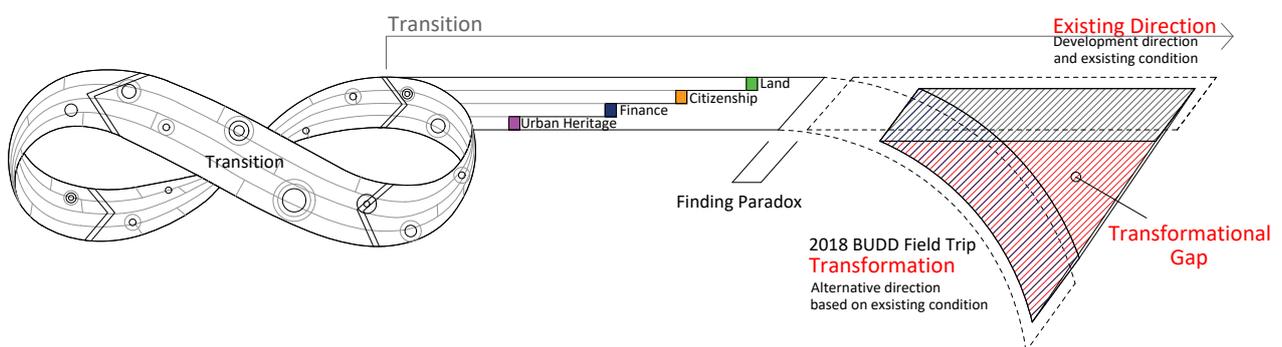


Fig.60. Expected section after Intervention

3.4. Transformational Gap



Through the examination of Existing Transformation and Proposed Transformation, this sub-chapter will identify Transformational Gap between the two transformations. The identified gap will be analysed through Recovery Curve (see Fig.11), and then an intervention with using four lenses (see p.17) aiming to fulfil the gap and achieve disaster justice (see P. 20) will be proposed.

3.4.1. Filling Gap through Recovery Curve with Using Four Lenses to Achieve Disaster Justice

As elaborated in previous chapters, the current recovery curve does not allow to enhance the resilience of “informal settlements dwellers” as exclusionary practices and policies leaves little to no space for building over the initial resilience in the case of any disaster.

However, reconciling the lenses of the national level analysis and the site level analysis, a comprehensive strategy is proposed capitalizing on the state capacity to provide in certain aspects contemplating the capacity of the community rather than replacing it while redistributing existing actors and their programmes (see Fig. 63 - 65).

The proposal is centred around the capacity building abilities on site levels, where community trusts and saving groups could layout the foundation of each of the steps of recovery (Response, early recovery, housing reconstruction, infrastructure reconstruction, in addition to enhancing the initial resilience by building back better, and reformative recovery adapting to the possibilities of various risks and disasters).

State reforms required to achieve this step are not as radical as national policy changes, but they pave the way for the integration of “informal settlements” in the state agenda rather than the current situation that overlooks them and doesn’t identify them as housing complexes, thus depriving them of the very essentials of thriving.

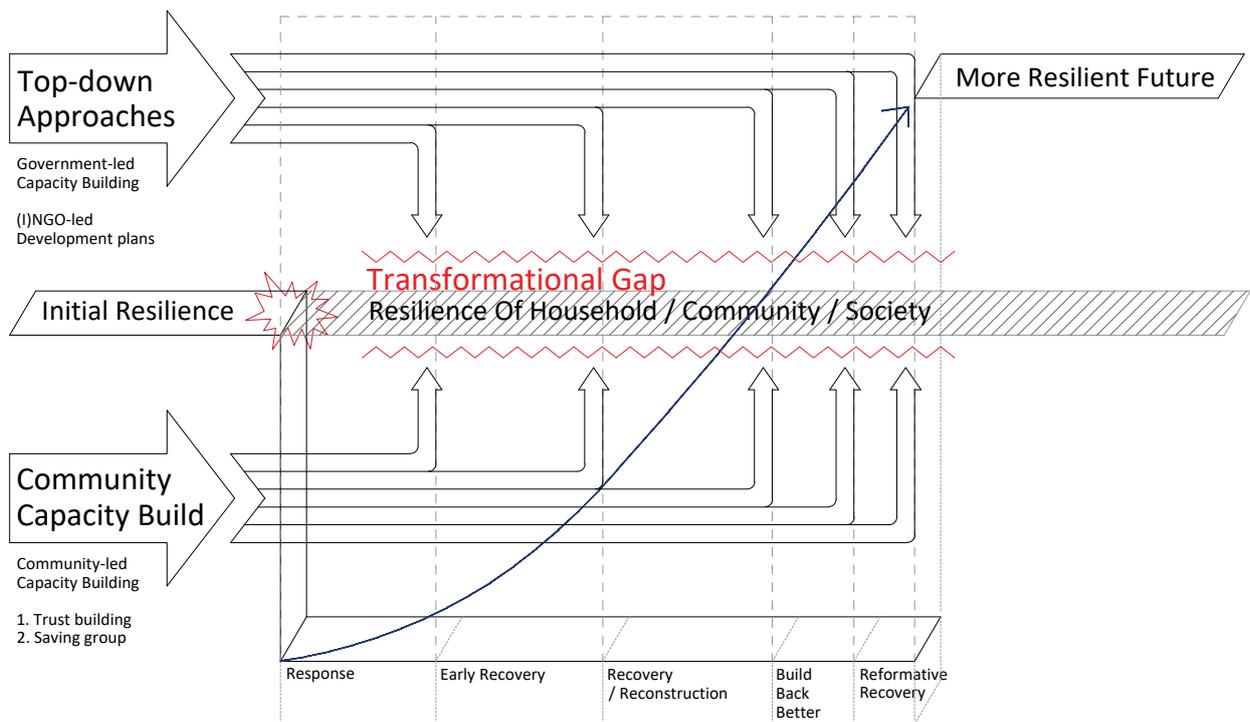


Fig.61. Filling transformational gap from top-down & bottom-up approaches (Disaster group, 2018)

Going back to the first stage, the loop of transformational and transitional practices flawed with the situated paradoxes found in the analysis needed to be shifted. This shift in the form of a transformational gap aims at altering the current discourses utilizing these very paradoxes and contradictions within the ward.

Every intervention on every scale is aimed at reinforcing the resilience of the inhabitants of the ward. The strategies on the ward level tackle the situated paradoxes within the ward. The strategies on the larger scales feed into the loop throughout tackling the larger paradoxes as well as other flaws in the arguments of the current discourse.

The steps:

Step 1 - Initial Response / Heritage

The use of the monastery on site as a temporary refuge space from disasters such as floods could be capitalized on further. It is safe to assume that informal settlements of the city house religious environments and spaces in many forms, and enhancing the resilience of those spaces of religious significance would allow for such spaces to be the main foundation of recovery in cases of emergency.

Role of social capacity: In addition to members helping each others, the collectives form a social structure that's already in place for first response. Whether financially or socially, the socio-economic relations of the members and their perception in the community could be utilized to form the financial power and human power needed to set the heritage sites as response centres in cases of reoccurring disasters.

Step 2 - Early Recovery / Citizenship

Enhancing the recognition of the dwellers does not necessarily mean instantly radically reforming the citizenship policies of the state. Recognition -though partial on a much smaller scale- could be achieved throughout state representatives within the ward, such as the administration office within ward 67. These offices have the potential to be hubs of support from both governmental and non-governmental institutions and organizations, and allowing for access to initial citizenship rights throughout such hubs would allow for truly inclusive, diverse support from aid providers.

Role of social capacity: The saving groups and community trusts could form a base level for the records of the people of the ward. Furthermore, this could be a solution for aid accessibility for the urban poor as such groups require no minimum entry requirements.

Step 3 - Housing Reconstruction / Land

Revisiting the concept of affordability in the context of affordable housing, acknowledging the housing capabilities of informal settlements would relief the state from a lot of pressure over the needed housing units in the current narratives. However, for the state to be able to capitalize on this several steps would be needed, such as the urgent need to identify different land owners in the governmental sector, and including the dwellers in the census. Providing the land security to dwellers would be critical for any long term development plans that would not cause the disaster of dismantling the livelihoods and social structures already in place in informal settlements, and addressing the proxy of land security as an exclusionary practice could very well be the first step into achieving

that. Role of social capacity: Models such as community land trusts or land sharing could be pragmatically instrumentalized by the state to achieve cheaper upgradation to the threshold of “the formal”. However, neither those models nor the simple recognition of land security is realistically achievable without a financial return, which is where building the collective financial capacity could be very handy.

4 - Infrastructure Reconstruction / Finance

Proving the community’s financial capabilities informally throughout community trusts and saving groups should be looked at as a highly credible mean of paying back loans to financial institutions -whether governmental or not- as the risk of defaulting is divided on a large number of people contributing small affordable amounts of funds. Such a change in the perception of the financial capabilities of the “informal”, combined with recognition and security would allow for the building of much-needed truly sustainable infrastructure in an urban context where expenditure over maintenance and constant reconstruction is much higher than it should be due to the lack of access to finance.

Role of social capacity: Linking to the previous two paragraphs, having an informal alternative economy that proves to be efficient and credible is a huge incentive for state institutions and the private sector to invest in the infrastructure of the “informal settlement” as it proves long-term returns whether on the political or the financial aspects of the context.

- Further steps:

The steps towards a more resilient future require more than social capacity, as it involves expertise that are not available on the level of the site, and as it requires a change of policy on the long-term to incorporate the “informal” as another type of urban rather than as the devious representation of everything wrong with the city in the state narrative, as well as in that of the private sector and several of the international development agencies working in the city. Having social capacity as the foundation of each step, and fulfilling each step building on that capacity will not change in building up further steps, but expertise from organisations such as ACHR and WfW, combined with overall planning schemes that take the socio-economic hazards as a risk with disastrous potentials, and look at maintaining livelihoods as an essential part of any future development. All of the above eventually contributes to better disaster justice, and shifts the power between actors and redistribution of existing actors and programmes, maintaining the flexibility of programs and interventions applied in the ward, and allowing for their outcomes to be funnelled back into the first four steps as disasters in informal settlements are reoccurring events that cannot be dealt with on a singular-phenomenon basis.

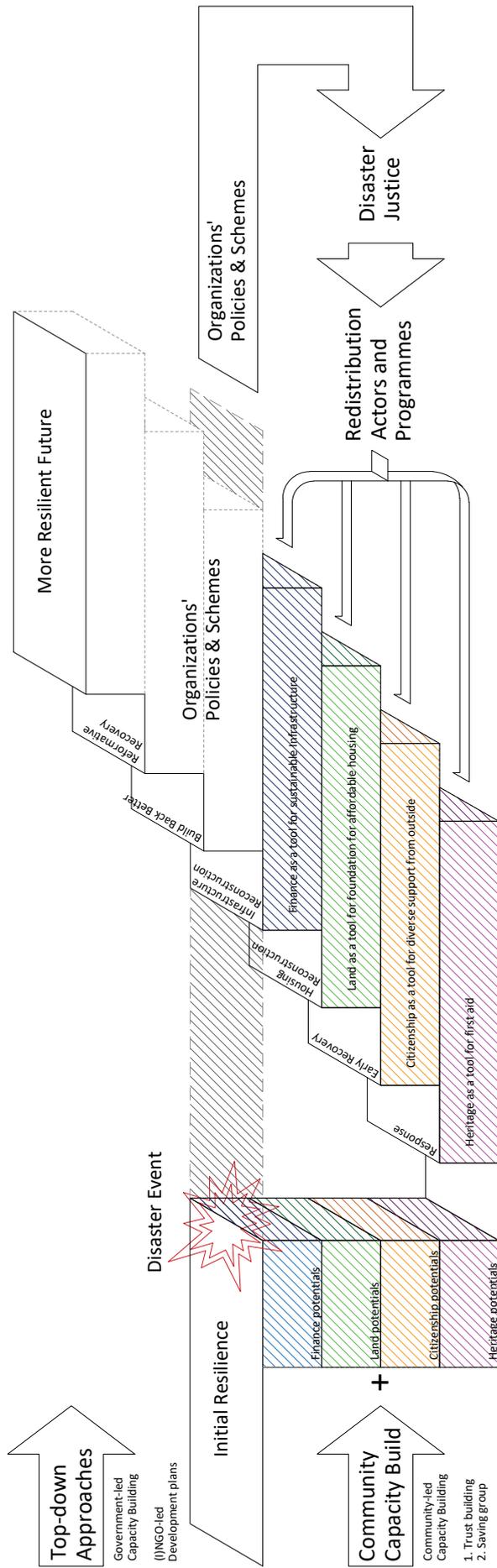


Fig.62. Idealised recovery steps (Disaster group, 2018)

The below tables, Fig. 63-65, shows who would be actors in and how their existing programmes would be redistributed to Community-led Capacity Building stage and the four steps: Heritage, Citizenship, Land and Finance.

Actors	Paper	Strategies/Activities/Actions	Interventions/Partners
United Nations		Sendai Framework for Disaster Risk Reduction 2015-2030	
Myanmar Red Cross Society	Community-Based Disaster Risk Reduction (CBDRR)	Establishment of Disaster Management Committees (DMC)	VDMC & SDMC
National Natural Disaster Management Committee	Myanmar Action Plan for Disaster Risk Reduction (MAPDRR)	Capacity Building for CBDRR	Offering DRR related trainings; consultation meetings (with VDMC & SDMC, RCVs); catalogue of trainings; training schedule
		Creating Public Awareness on DRR; Capacity development on disaster resilience and strengthening Disaster Management Training Centre (DMTC)	Department of Social Welfare; Lead for PWD Relief and Resettlement Department: Lead for nationwide awareness
		Promoting volunteerism, and establishing financing mechanisms for community-level disaster risk reduction measures	

Fig.63. Potential actors & programmes to be redistributed in Community-led Capacity Building stage

Lenses	Actors	Paper/Resources/Product	Relevant Strategies/Activities/Actions	Details/Interventions/Process/Partners
Heritage - First Aid	United Nations Office For Disaster Risk Reduction (UNISDR)	Hyogo Framework of Action 2005-2015		
	Land Use Allocation and Sutinizing Committee	National Land Use Policy	Zoning and Changing Land Use, Changing Land Use by Individual Application	
	International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM)	Annual Report 2016	First Aid to Cultural Heritage in Bagan Archaeological Area: A Community-Based Training of Trainers, Myanmar	Joint expert mission, requested by the UNESCO Bangkok office; UNESCO; Department of Archaeology; National Museum; on-site volunteers;
	Myanmar Red Cross Society (MRCS)	(Official website); Contribution to the Implementation of the Hyogo Framework of Action 2005-2015 (News & Report)	Workshops/courses supporting Myanmar after the earthquake (2016 in Bagan); Setting up emergency response and recovery measures regarding to heritage site	Mine risk education, communities based first aid, psychosocial support, safety trainings (water safety, life guarding, home accident prevention, road accident prevention)
			"One First Aider in One Household" goal First Aid and Safety Services trainings for RC volunteers and share knowledge with communities	Open Red Cross-based clinics in schools in Yangon Division; air educative personal-hygiene radio program series through stations in Yangon
			First aid training program in 43 Yangon Division schools	
	National Natural Disaster Management Committee	National Framework for Community Disaster Resilience	Need for community-based approaches to strengthen disaster resilience; Community engagement and empowerment	Local knowledge in identifying the hazards; engaging communities in identifying risks; bring wider development gains
	National Disaster Management Committee	Myanmar Action Plan for Disaster Risk Reduction (MAPDRR)	(Education, Building Capacity)	
	Japan International Cooperation Agency (JICA)	(News)Signing Agreement with Myanmar	Supporting improvements in medical services through the construction of a specialist hospital and the provision of equipment for cardiovascular diseases	
	Myanmar Red Cross Society (MRCS)	Contribution to the Implementation of the Hyogo Framework of Action 2005-2015	First aid training program in 43 Yangon Division schools	
Ministry of Home Affairs	The Ward or Village Tract Administration Law	Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels.		
Myanmar Development Resource Institute's Centre for Economic and Social Development (MDRI-CESD) & The Asian Foundation	An Overview of the General Administration Department in Myanmar	Function of administrators: interface between the government and the Myanmar population; Take responsibility when emergency situation arises		

Fig.64. Potential actors & programmes to be redistributed in Heritage & Citizenship steps

Lenses	Actors	Paper/Resources/Product	Relevant Strategies/Activities/Actions	Details/Interventions/Process/Partners
Land - Affordable Housing	Myanmar Engineering Society; UN-Habitat; Norwegian Ministry of Foreign Affairs		Myanmar National Building Code 2016	
	Yangon City Development Committee (YCDC)	The Project for the Strategic Urban Development Plan of the Greater Yangon	Affordable housing project in North Dagon township	
	The United Nations Conference on Housing and Sustainable Urban Development	National Habitat Report	Until 2016, the Government has no comprehensive slum or informal settlement policy	
	Ministry of Construction & JICA		Submitted a proposal to borrow 15 billion yen (K188 billion) from the Japan International Cooperation Agency for the construction of low- and medium-cost housing in Yangon, Ayeeyarwady, Magway and Sagaing regions.	Finance: proposed paying back the loan to JICA within 40 years at an interest rate of 0.001 percent; borrow money from the Construction and Housing Development Bank at an interest rate of 8.5 percent
Finance - Infrastructure	Myanmar Association for Housing and Urban Development (MAHU) and Myanmar Construction Entrepreneurs Association (MCEA)	On going affordable housing projects	Government sets the priority focus on public housing delivery schemes in cooperation with region and state government.	Pilot Project: Yangon Toll Gate; 4 units/House, 2 stories; Total floor area 257.5 squares meters, 7m * 8m/family (4 people)
	Women For The World (WFW)		Saving Groups; Empowering women for disaster risk reduction; Micro finance system	
	United Nations Office for the Coordination of Humanitarian Affairs (OCHA)	Myanmar Humanitarian Fund (official website); Myanmar Emergency Response Fund (ERF); Humanitarian Multi- Stakeholder Fund (HMSF)	Standard allocation: the process through which the majority of funding is channelled to priority activities within the HRP; Reserve allocation: the rapid and flexible allocation of funds in the event of unforeseen emergencies or to address emerging humanitarian needs	Submit proposal, conduct a strategic review of proposals; Short-listed proposals will be submitted for comments and preliminary approval; The review committee conduct technical and budget review and revise the proposals; Final project proposals will be submitted for budget clearance and grant finalization
	Disaster Emergency Committee (DEC)	(official website)	Launch appeal; With the support of the Rapid Response Network; extremely cost effective model: spending 7.3% of the money on running appeals, the rest distribute to members to carry out their vital work; publish regular independent appeal evaluations & annual reports	
	UN-Habitat	The Programme for Emergency Assistance to Poor and Vulnerable Community in Ethnic Minority Areas and Yangon	Construction of disaster resilient housing for urban and vulnerable poor squatters poor living in disaster prone areas Yangon; Construction or restoration of existing community physical infrastructure in two townships; Provision of training to the communities in DRR construction methods through training of community artisans; Empowering of women to take part in decision making in relation to project planning, implementing and monitoring	
	The World Bank	Myanmar Southeast Asia Disaster Risk Management Project	Improve drainage services, and the structural performance of selected public facilities in Yangon, and enhance the capacity of the Government to facilitate disaster response	Five components: Increase the disaster resilience; Urban Flood Risk Management (by YCDC-EDRB); Safer Public Facilities and Critical Infrastructure; The project management; The contingency emergency response component
	UNDP	Water Supply Project	UNDP's CDRT project supported 57 villages in Paletwa Township, Water, sanitation and hygiene were improved for 2,140 households	
	Myanmar Government	National Strategy for Rural Water Supply, Sanitation and Hygiene, Wash in Schools and Wash in Health Facilities 2016-2030	All the rural populace will have access to effective, efficient and affordable services for improved water supply by 2030; Sanitation...; Wash...	

Fig.65. Idealised recovery steps (Disaster group, 2018)

4. CONCLUDING REMARKS



4.1. Conclusion

The proposal examines at different levels and scales of the informality in Myanmar, and specializes in the informality of Yangon, using the super lens of disaster risk mitigation to navigate the cracks of the power relations within the context. The several paradoxes highlighted along the way are used as proxy to demonstrate both the ability and the potentials of change.

Such abilities lie in the originality of methods of adaptation on the site level, and in the readiness for a true transformation on the nation and city levels. Bridging the gap between the three using disasters justice as a tool of enhancing social justice was the focus of the report, predicting that if the steps of the proposal were to happen, it would create a valid incentive for nationwide reform for all actors involved.

The work was largely limited by the political nuances of the setting. The state -although heading towards political and economic openness- is not yet ready to integrate local socio-economic models into its urban planning policies as they do not reflect the western notion of a developed country. The notion of urban development is largely synonymous with master-planning rather than urban planning derived from the already existing capitals.

The challenges of achieving the proposal lie mainly in the ability to initiate a network of collectives on the site - and later city - level, and in the willingness of the different state actors to change their perspective of informality to become an asset rather than a cancer in the city. Such challenges will be key not only in this proposal, but in any proposal to achieve a transformational gap changing the current direction.

However, answering those challenges would very much address the mentioned paradoxes as well as other flaws in the current ruling arguments. The usage of disaster justice as a tool of upgradation is in itself a paradox designed to demonstrate the ability of paradoxes in good will, where the argument is a risky situation overarching the livelihoods of people as well as their conditions, and the paradox is the flaw interrupting this pessimistic narrative to achieve a better overall living experience.

Although this proposal does elaborate on incentives for the state and private actors to support it, it remains highly debatable that they actually would. The question thus is how to get the most powerful actors on the map to join the efforts to upgrade informal settlements without dismantling the social assets they behold? How to include international powers that are eager to have a piece in the urbanscape of the city involved in such a transformation?

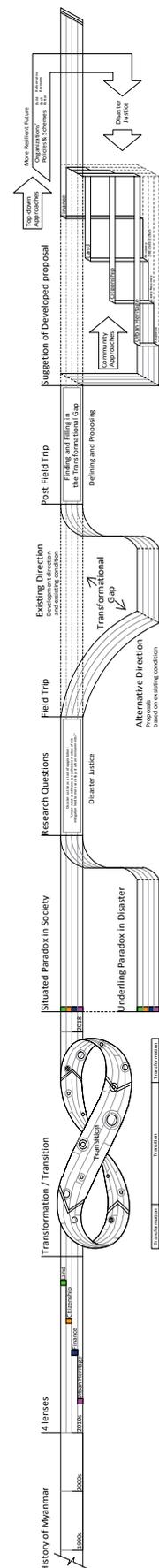


Fig.66. Process flow of project

4.2. Personal Reflection

The first of the two of the radical changes enabled by working on this report are readjusting our positions as practitioners in development to become elaborators/technicians rather than designers imposing solutions on contexts to which we are strangers. Not knowing the nuances of the context hence was no more a problem as our job was to lay out the possible paths after each decision was taken, and occasionally providing technical consultancies and successful case studies.

The second is the realization that no matter how unequal the distribution of power is, no matter how absent social justice is, people in any context will work on finding suitable alternatives. Redefining our perception of the term “Resilience” was probably the biggest outcome we could gain out of drafting this proposal, especially as we saw indigenous genuinely creative solutions for fundamental issues that minimalised the effect of those issues to a far extent.

We considered our job - in the proposal generally and in the fieldtrip specifically - to be a demonstration of what collective capitalization on the local “Resilience” could achieve. Such a demonstration is not specific to the local communities, but extends further to reach every other actor involved in the complexity of the urban context of Yangon, proving resilience is an asset that is truly hard to establish, but once established, could provide the means for a smooth city-wide upgradation that is as localized as any upgradation could get.

The role of a professional such as an architect is to learn what is valuable in the tradition, culture and local experience of people and try to find ways in which improvement can be made... herewith, the notion of risk refers to the control of future ills in the present (CAN)

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6.1. SeeSainShin & San Thit Sa Housing Projects

As another example in which WfW works for saving groups, We visited SeeSainShin and San Thit Sa housing projects in Hlaing Thar Yar Township on the first day of this field trip.

SeeSainShin Housing

See Sain Shin is one of the pilot housing projects organised by WfW located in the north-west of Yangon rural area. The community centre of See Sain Shin is a good gathering place. The saving group will collect money every week to finish their housing upgrading projects in the community center, and such process is already mature. They use the micro finance funding mechanism with the interest rates of 1.7/month. This project has started in 2017 near the creek. The houses are close to each other and there are no back roads in between. The many indoor upgrading process, such as adding floors and roof insulations, has been undergone in the most houses, and outdoor/public spaces, including the community center and house entrances, has been built in 2018.

Nevertheless, negative aspects can be seen. The narrow gaps between the back of houses may lead to a rapid expansion of the fire range. Because of the poor sewage system lacking a link to the creek, the piles of rubbish along the gutter can also maximise flooding risks ahead of the rainy season. Moreover, the wires are disorderly arranged over the roof, which would easily cause spark and fire.

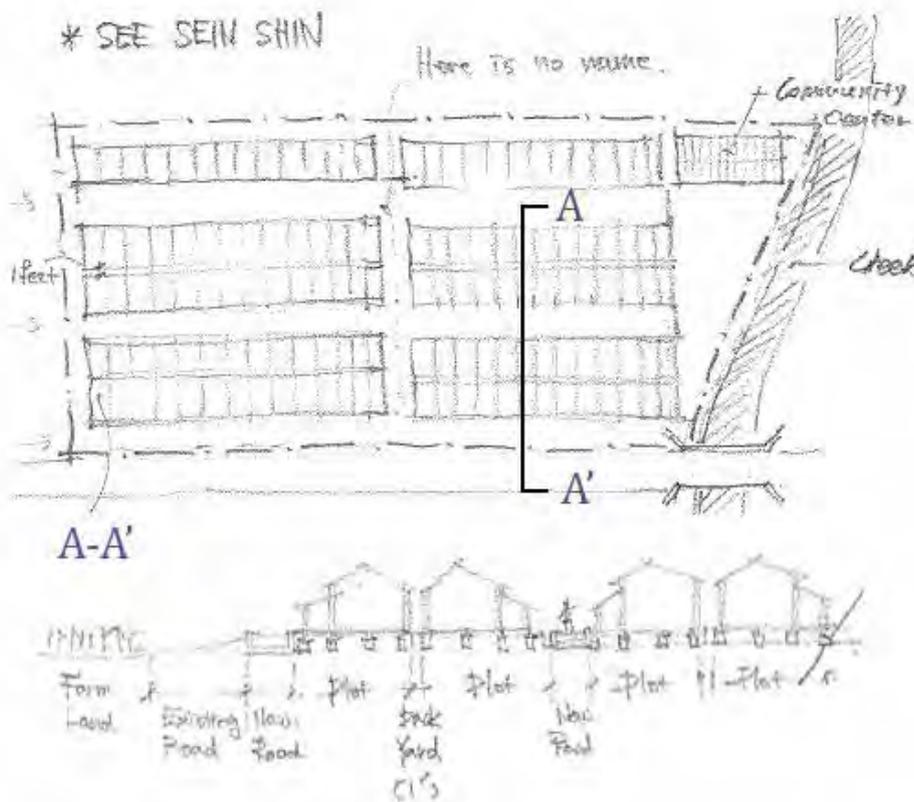


Fig.67. Map & section of SeeSainShin Housing



Fig.68. Upgradation of outside in individual ways



Fig.69. Upgradation of inside



Fig.70. Community centre



Fig.71. Electric wire going through area



Fig.72. Creek causing flood



Fig.73. Narrow backspace causing accumulation of waste

San Thit San Housing

San Thit Sa Housing is located 5 minutes walk from See Sain Shin. They are close so that people can help, monitor, and learn from each other. According to the possible risks conditions from See Sain Shin housing, San Thit Sa started construction works in 2018 and changed some of the housing standards. They widened the space of each row but narrowed the room space. The room height has been increased to fit further indoor space upgrading.

Apart from the positive changes, negative aspects exist in the saving and construction process. As the land size become wider, the estimated cost for each house raises as well as the total budget, although the population is less than See Sain Shin. The indoor upgrading process hasn't finished so that this community does not have enough savings to build a community centre. Although the gutter as been reinforced and wires are neatly arranged, this process just started after they have done housing constructions in this area. After building up San Thit Sa housing, the saving groups found new cheap land near these two sites; however, it is under the electricity tower. In other words, this new project would be exposed to high risks of disaster especially fire.

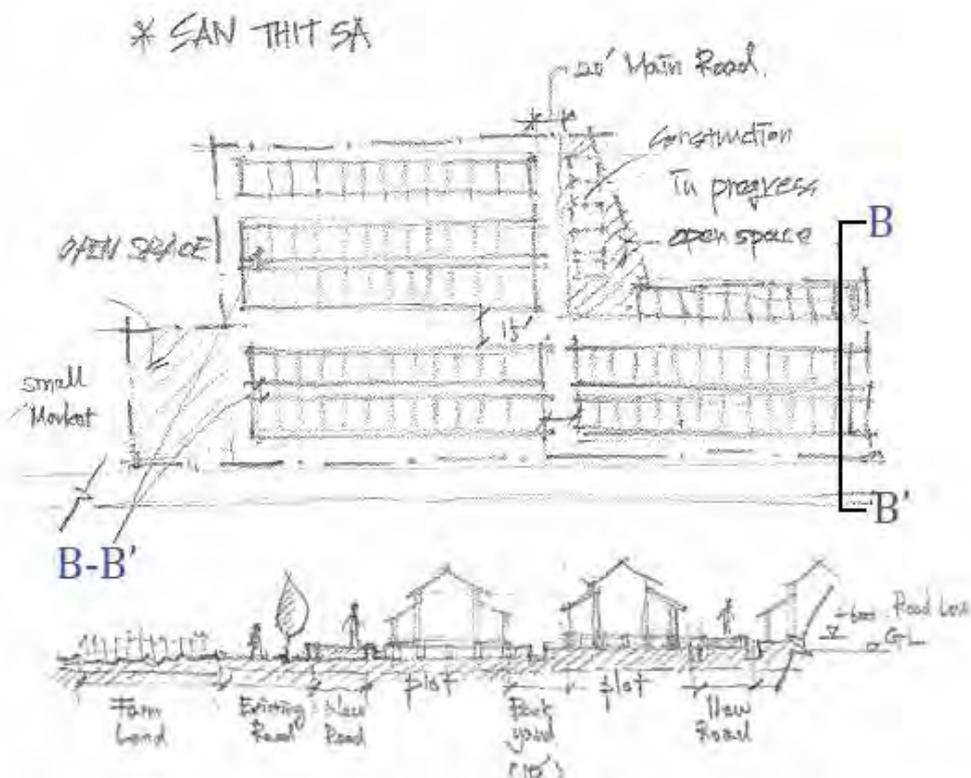


Fig.74. Map & section of San Thit San Housing



Fig.77. Less upgradation of outside



Fig.75. Upgradation of interior



Fig.76. Sand bags preventing flood



Fig.78. New project site under electricity tower

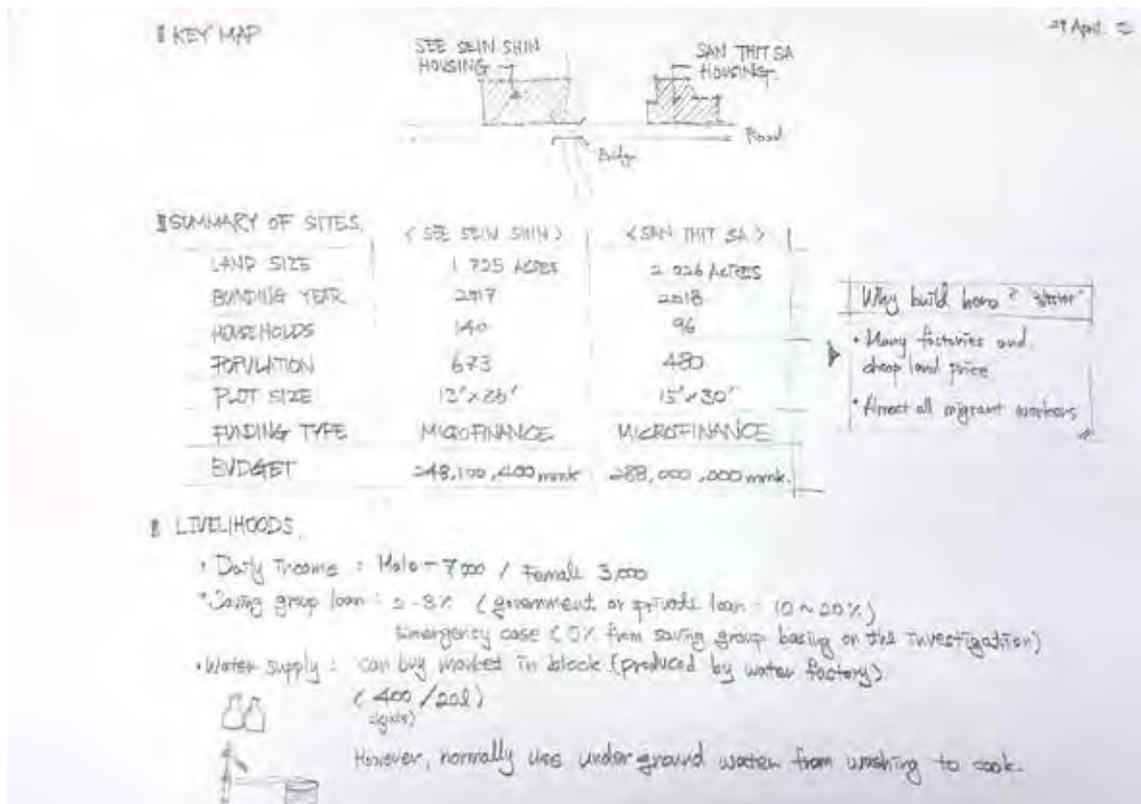


Fig.79. Comparison between two sites and common livelihood

6.2. Interview Site & Quotation

The map shows where we conducted interview to identify preparations and responses the community have done to fire and flood cases in individual and community scale. In addition to 22 interviews to the community on the map, several extra interviews were done outside of our research area. Remarkable quotations are illustrated below.

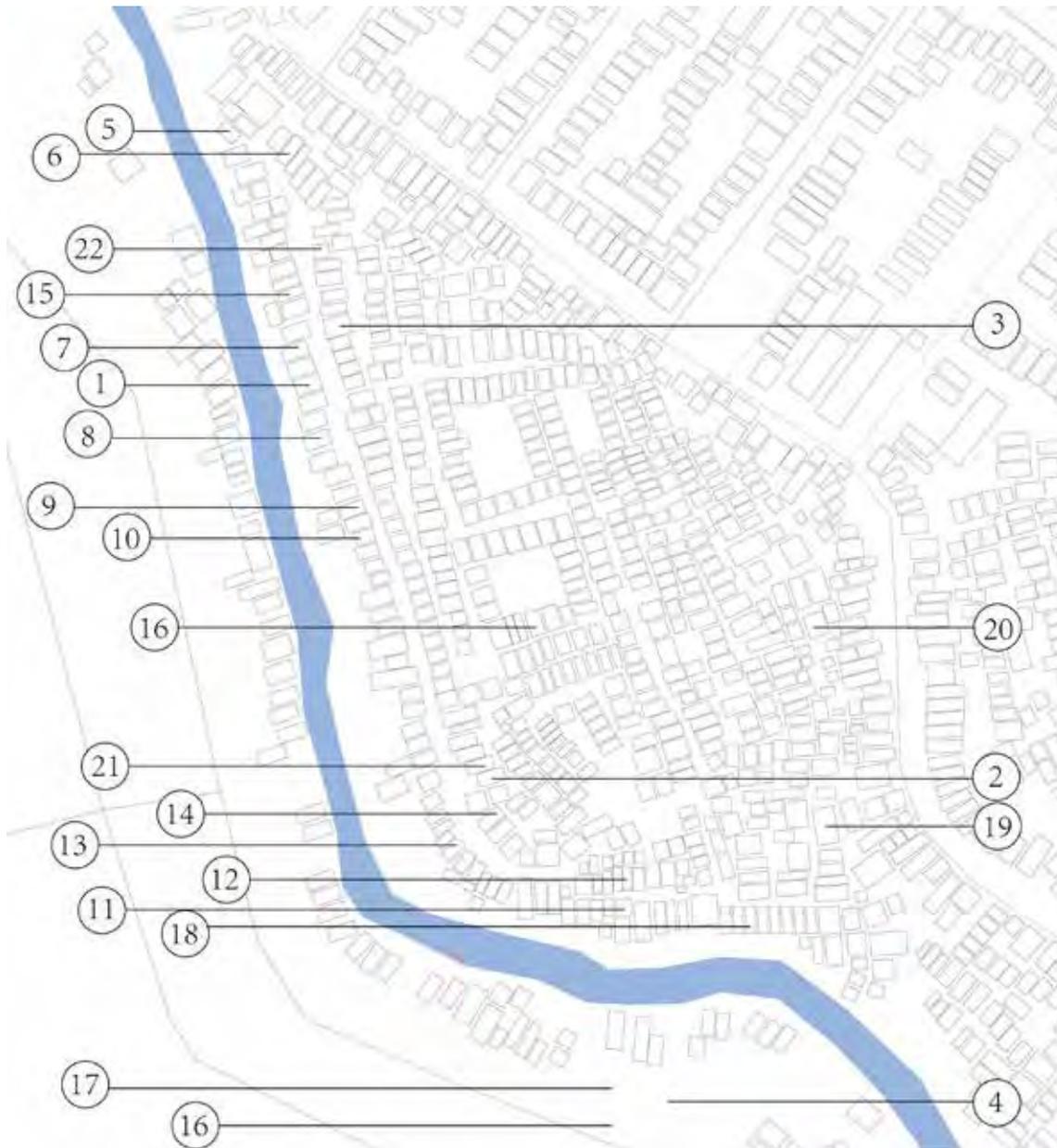


Fig.80. Interview map

Quotation from interviews

- “Since most community came from Ayawadi Division, they know how to be prepared for flood (*⑩: Community Leader).”
- “I, even my husband, have no idea about equipments for flood (⑩: Housewoker).”
- “I know how to equip for flood, but I want to spend my money on my children’s education and an expansion of my business (⑧: Owner of water generator).”
- What I can do when flood occurs is only to escape to the main street and stay for 3-4 days until the water goes out (⑩: Man living in another higher flood risk area).”
- “I know the existence of fire towers, but I don’t know where they are exactly located (Man living in the research area).”
- “If flood damages my house, I have to repair it by myself. There is no one inspecting its condition (⑩. Man living in another higher flood risk area).”
- “I will ask my neighbours if they can help with the house maintenance after floods, and I pay them 5000-10000 kyats per day. (②. housekeeper)
- “If fire occurs, we extinguish the fire collectively (②. housekeeper).
- “In case of fire, we can call a fire-fighting truck, but we don’t want to do so because the government will know about that (④: shop owner).
- “If fire happens, we would be given an eviction notice (④: shop owner).

* (Number from the map: occupation)

* ⑩ shows quotations from data from outside of the research area

6.3. Transect Walk Day 1



Fig.81. Transect walk map day 1

6.4. Transect Walk Day 2

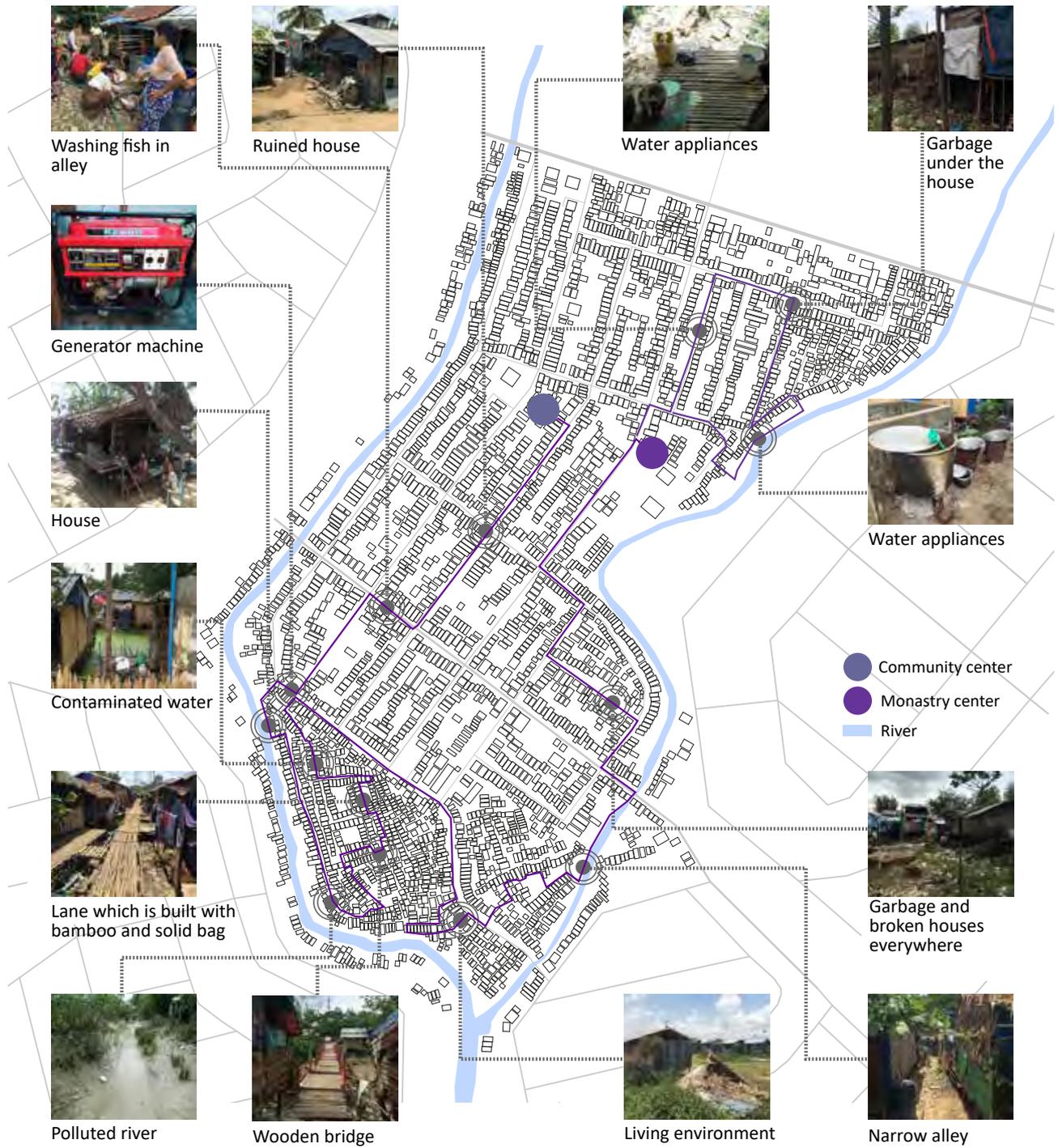


Fig.82. Transect walk map day 2

6.5. Transect Walk Day 3



Fig.83. Transect walk map day 3

6.6. Discussion regarding 'Disaster Risks' with YTU

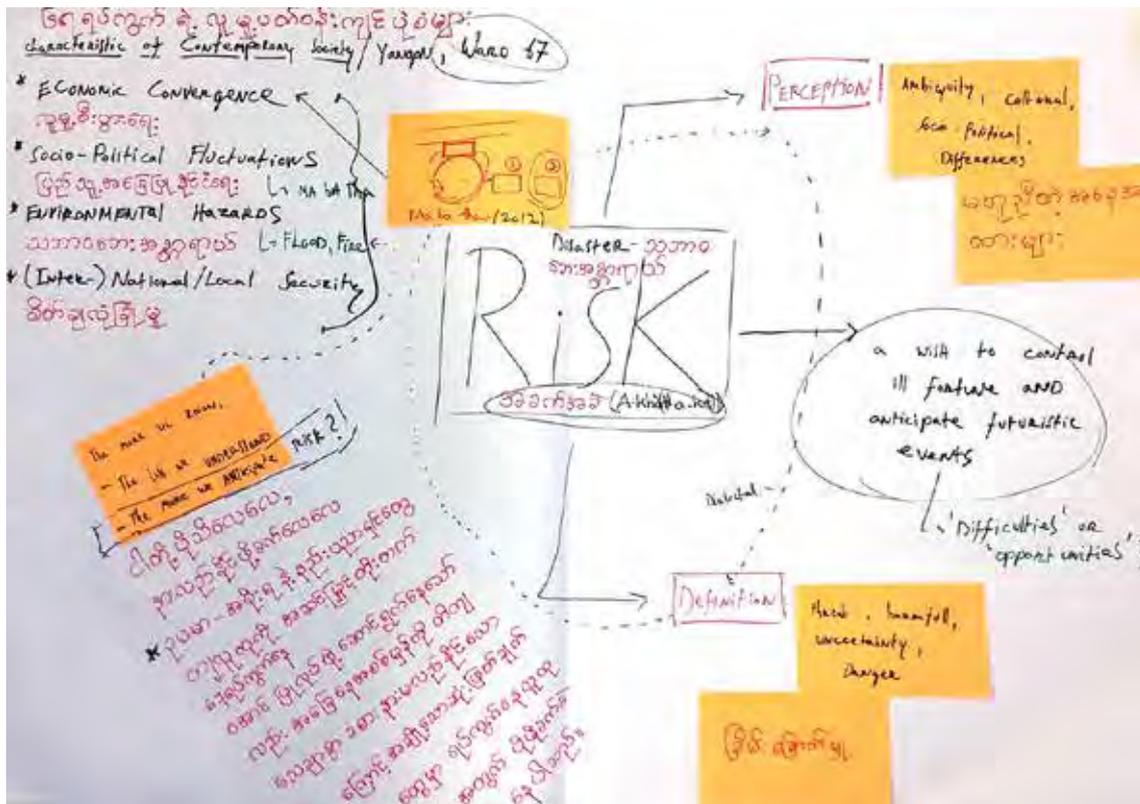


Fig.84. The perception of the term of 'Risk' with YTU students

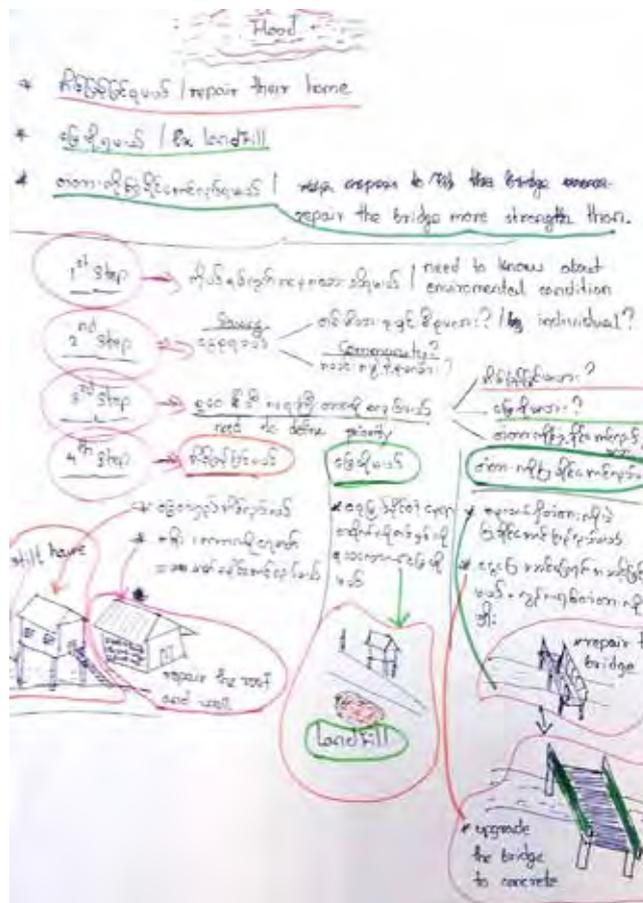


Fig.85. Developing ideas for disaster risk reduction from YTU students



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