Spatial violence through modes of dispossession: A study of vulnerability and climate change adaptation in Yangon

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Abstract

Climate change is already threatening the lives and livelihoods of Yangon's residents, with low-income informal settlements experiencing high levels of vulnerability, while receiving little protection in the face of spatially violent development, policy and planning. This dissertation aims to situate current climate change adaptation needs within the context of historical and contemporary spatial violence that continues to impact everyday lived realities in low-income settlements. Spatial violence in the form of displacement, dislocation and dispossession threatens to continue along the current trajectory perpetuating high levels of vulnerability. With so called 'green' development putting those most vulnerable into further states of precarity, this dissertation utilises a Feminist Political Ecology lens to explore the reality for women in Yangon, who despite traditional narratives of relative equality, experience high levels of vulnerability due to their gendered experiences. As a reaction to perpetuating spatial violence and threats of further precarity, women and community groups in Yangon are emerging as agents of their own adaptation in the form of community housing and infrastructure upgrading initiatives. Without acknowledgement for the current experience of spatial violence in the city, and the reactions of the most vulnerable communities, adaptation that aims to challenge the structures behind current vulnerability will not occur. This dissertation found that while there is a lack of care and acknowledgement for the reality of the most marginalised communities, they respond to threats of further precarity with agency, that if supported, could lead to transformative adaptation for the city of Yangon.

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Abbreviations

AAPP – Assistance Association for Political Prisoners

ACCA – Asia Coalition for Community Action

ACHR – Asian Coalition for Housing Rights

CESCR – Committee on Economic Social and Cultural Rights

FPE – Feminist Political Ecology

GEN – Gender Equality Network

IFRC – International Federation of Red Cross

IPCC – Intergovernmental Panel on Climate Change

JICA – Japan International Cooperation Agency

MoNREC - Ministry of Natural Resources and Environmental Conservation

NGO – Non-Governmental Organisation

NYC – New Yangon City

NYDC – New Yangon Development Company

SLORC – State Law and Order Restoration Council

WfW – Women for the World

YCDC – Yangon City Development Committee

Chapter 1 Introduction

1.1 Introduction

Urban development and displacement have gone hand in hand throughout Yangon's history, both forming and perpetuating modes of spatial violence enacted on urban residents. In the context of high levels of vulnerability to climate change there is a further threat from development-led spatial violence in the name of 'green' adaptation, where the city's residents, who have been repeatedly disempowered and displaced, could continue to be forgotten, or even targeted, in policy, planning and practice. Yangon was noted as one of the world's most at risk cities to climate change (IFRC, 2020). However, the impacts are not faced evenly across the city. This dissertation will situate current climate change adaptation needs within the context of historical and contemporary spatial violence that continues to impact everyday lived realities for urban residents. It aims to answer the question of what impact climate change adaptation policy and planning has had on their experiences of spatial violence and vulnerability. It will argue that spatial violence has been enacted historically and through current policy, perpetuating vulnerability through the guise of development led forced evictions and climate change adaptation methods that don't account for the most vulnerable communities.

The IPCC (2021) Summary for Policy Makers as part of the 6th Assessment Report confirmed once again that anthropogenic climate change is on course for irreparable damage, with more frequent extreme weather events inevitably impacting coastal cities. The report offers an unembellished warning that without significant changes in emissions, a rise in temperature of 1.5 degrees is certain by 2040, impacting those most vulnerable more severely, despite often contributing the least (ibid.). As a result, adaptation is now seen in both academia and public policy (see National Environmental Conservation Committee, 2012) as a critical activity in preparing for the impacts of climate change and in reducing vulnerability (Eriksen et al., 2011). Myanmar has already started to see the devastating impacts of climate change, with dire impacts on human settlements frequently warned (Banerjee, 2017). Often this comes with references to the 2008 tragedy of Cyclone Nargis, which left a lasting impact on both rural and urban Myanmar. With the country currently facing a military coup, economic hardship and an intensifying COVID-19 Pandemic, fears for the future ability to adapt and respond to climate change, while enduring perpetuated spatial violence, are widespread.

Spatial violence can take many forms and highlights violence as much more than just physical harm, being sustained over time and space throughout urban development, policy and planning. Kouri et al. (2021, p.6) define spatial violence as "forms of structural and sustained violence perpetrated against specific groups of dwellers through spatial destitution, habitat destruction, and exclusion from housing rights". This encompasses Herscher and Siddiqi's vision of space as a "social, political, and economic figure, rather than an empty field upon which social, political, and economic forces act themselves out" (Herscher and Siddiqi, 2014, p.272). This study will look closely at the realities for urban dwellers experiencing this form of violence most acutely. For the case of Yangon, this refers to those living in low-income, informal settlements.

Low-income settlements in Yangon are sometimes referred to as 'informal', 'illegal' or 'squatter' settlements due to often being located on disused, government owned land and being at high risk of eviction. However, as we will discuss, informality in Yangon is fluid, and used for the benefit of political regimes as and when it suits them. In the past, to settle on unoccupied land and construct housing was regarded as legitimate and seen in a positive light, however this has changed as ownership disputes are now more common and often result in the dislocation and forced eviction of so called 'informal' settlements (Roberts, 2020). Forced evictions are defined by The United Nations Committee on Economic Social and Cultural Rights (CESCR) as:

> "the permanent or temporary removal against their will of individuals, families and/or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection" and can have a series of detrimental impacts on already vulnerable communities (CESCR, 1997, p.2).

Even within low-income settlements, levels of vulnerability vary. The access to, right to control and condition of assets is closely interwoven in Moser's (1998) understanding of vulnerability which will be explored in the context of informal settlements, specifically looking at the reality for women. Moser (1998, p.3) defines vulnerability as:

> "insecurity and sensitivity in the well-being of individuals, households and communities in the face of a changing environment, and implicit in this, their responsiveness and resilience to risks that they face during such negative change"

This investigation will aim to draw connections between spatial violence, vulnerability and climate change adaptation through a literature review before introducing a hybrid framework

for analysis, drawing on Moser's (1998) Asset Vulnerability framework. Following this the case study analysis of Yangon will be explored as a postcolonial city with documented histories of forced evictions and authoritarian rule, as well as an uncertain urban future. The case study will include analysis of the New Yangon City Development and current urban policy and planning. This will explore how climate change adaptation and forced displacement are inextricably linked to the social, spatial, historical and political contexts of the city, further perpetuating spatial violence in Yangon.

1.2 Acknowledging the current political context

While this paper is not looking exclusively at physical forms of violence and conflict, following the military coup in February 2021, this is a daily reality for Yangon's residents. Therefore, Myanmar's context cannot be ignored in relation to current and future spatial violence. As of 18th August 2021, the Assistance Association for Political Prisoners recorded over one thousand deaths at the hands of the military and close to six thousand political prisoners arrested, charged or sentenced (AAPP, 2021). Diminishing food security, threats to livelihoods and life have become a daily occurrence on top of the already serious threat coming from the global COVID-19 Pandemic (Rhoads *et al.*, 2020; Htun, 2021). Despite many referring to Myanmar's 'transformation' into a positive, democratic state, the complexities behind spatial and structural violence are still present and now increasingly violent (Prasse-Freeman and Kabya, 2021). The impact of the current context on this study will be discussed further in chapter 3 following a review of relevant literature.

Chapter 2 Literature Review

The following literature review will introduce the concept of spatial violence, before looking specifically at the link between spatial violence, forced evictions and climate change adaptation. This will lead into a review of literature on vulnerability and how vulnerability is a production of spatial violence enacted over time and looking forward through policy and planning. With an understanding of vulnerability not being held evenly across communities, we will specifically look at a gendered approach to research utilising Feminist Political Ecology.

2.1 Spatial violence

Spatial violence comes from the realisation that community experiences of violence emerge through much more than just physical harm and wars and that it can be built and sustained over time and histories (Pavoni and Tulumello, 2020; Boano, 2021; Kouri et al., 2021). The process of urbanisation and urban planning can both purposefully and consequently be used to enact spatial violence, in making and perpetuating vulnerability. By impacting, how, where and in what state people live, both historical policy and future development can enact violence on individuals to varying degrees.

In understanding spatial violence, Pavoni and Tulumello (2020, p.49) look towards general definitions of violence and discuss its under-theorisation throughout social sciences. Their work focuses on urban violence and highlights it "constantly oscillating between the physical and the structural, the visible and the invisible, the natural and the social, the institutional and the criminal" making it hard to define. Boano (2021) further accentuates that violence is not linear and has the ability to produce complex and detrimental spatial implications. Herscher and Siddiqi (2014, p.269) suggest spatial violence is "war by other means" and is the "harm meditated through built environments" as opposed to an outside force inflicted on urban forms. Narratives of order and control used to justify spatial violence in the face of large cities in the global south are often put in place to counteract the fragile and disorderly nature of 'informality' in low-income settlements (Pavoni and Tulumello, 2020). However, these detrimental and perpetuating forms of spatial violence are often directly or indirectly designed for the gain of those who have control over policy.

An overarching study, titled 'Trajectories of Spatial Violence' compared South-East Asian cities, and discussed spatial violence through methods of urban development often prioritising neoliberal, globalised agendas influenced by international developers, neglecting the needs of the city's residents (Kouri et al., 2021). Kouri et al. (2021, p.50) describe spatial violence as "an entanglement of long term trajectories of political regimes of urbanisation, exclusionary invisibility and disenfranchisement, housing provision policies and regulatory repertoires for displacement and dispossession". Rhoads (2020) suggests more subtle forms of spatial violence are prevalent in Yangon, in addition to a history of forced evictions, such as forms of exclusion directly and indirectly linking property rights and citizenship. Spatial violence is emerging as an important frame to view and understand the experiences of low-income urban residents. For the purpose of this paper we will look at spatial violence through climate adaptation-led development and its close links to vulnerability in Yangon, specifically

with regards to the prevalence of narratives that legitimise spatial violence as a necessary step in the form of displacement and dispossession in informal settlements.

2.2 Forced evictions and spatial violence

The most explored form of spatial violence in Yangon comes from forced eviction and modes of both explicit and covert dispossession, through urban development and policy (See: Rhoads, 2020). Spatial violence can be enacted and perpetuated through the guise of urban development (Kouri *et al.*, 2021), for which one the major current and future challenges is climate change. Narratives used to justify orderly and climate secure cities often result in dispossession and dislocation (Alvarez and Cardenas, 2019).

Scholarship on forced evictions in the South East Asia region commonly focuses on accumulation by dispossession, as termed by Harvey (2003), where neoliberalism and privatisation have encouraged forced evictions for the benefit of international influence and political elites (Kouri et al., 2021). It is important to look not only at forced evictions from their obvious impacts on vulnerable communities, but also through the complex notion of the 'home' and its importance for livelihood, community, family and individual wellbeing (Desmaison Estrada, 2016). Quality of housing and tenure security are considered pivotal for development and reducing vulnerability and were included in both the Millennium and Sustainable Development Goals with targets to ensure accessibility and quality (Chant and McIlwaine, 2015).

2.3 Climate change adaptation narratives used for enacting spatial violence

While there have been studies into climate change and its links to physical and collective violence (see Levy and Sidel, 2014), few draw connections between climate change adaptation and spatial violence. There have been reports and studies into climate led displacement in rural areas of Myanmar, and various reports suggesting the need for the government of Myanmar to act (Displacement Solutions and Ecodev, 2018), however there is a gap in literature surrounding the creation and implications of spatial violence with regards to climate change adaptation in Yangon.

While widespread acknowledgement has occurred as to the seriousness of climate change, this has not translated into urban policy and planning to the extent that would have been expected. This is especially true in Asian coastal cities (Fuchs, Conran and Louis, 2011),

where mitigation is not enough and adaptation to the now irreversible effects of climate change will be vital (IPCC, 2021). The IPCC (2007, p.6) defined adaptation as “the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities”. Adaptation aims to minimise harm caused by climate change, however it cannot always be easily differentiated from mitigative activities as there is necessary overlap (IPCC, 2007).

Unfortunately, some of the significant efforts to alleviate the impacts of climate change have proven to be both inadequate and fail to address existing and perpetuated inequalities (Puertas Robina, 2021). Thus far, there have been limited studies into the expected impacts in urban areas of Myanmar. Priority has been given to climate change impacts and adaptation in rural Myanmar, however these spaces are closely linked. For example, Zin, Teartisup and Kerdseub (2019) found that migration to Yangon was a popular survival method in the face of more severe weather events in central dry zones. This highlights the importance of understanding climate adaptation in Yangon, as population looks set to increase. Additionally, Pang, Guo and Wang (2021) suggest that there is a need to understand the rural and urban continuum, as inward and outward migration and close ties with Yangon make it impossible to draw a line between the two. There is acknowledgement that due to high current and future potential population density in urban areas there is a strong need to tackle adaptation in cities (Horton et al., 2017).

Jabeen (2014, p.161) states that in “the built environment – both the quality and design of housing and infrastructure as well as entitlement to these by urban poor households and individuals within households – significantly influences capacity to undertake actions that can help avoid loss and speed recovery from any extremes in climate”. However, Fuchs, Conran and Louis (2011) suggest that there is a tendency to rush towards hard engineering and technology based solutions, before considering ‘softer’ solutions around urban policy and planning. These often larger budget solutions are noted as being more open to corruption and co-opting for political motives (ibid.).

Current methods of adaptation are not doing enough to tackle the risks posed to the most at risk communities (Zune, Rodrigues and Gillott, 2020). Socio-political changes and instability will continue to ensure communities do not have access to the funding or resources to protect themselves from the increasingly dangerous impacts on their homes (ibid.). According to the Right to the City Report (Puertas Robina, 2021) climate change is a product of the current socio-economic model and is disproportionately felt by groups who more often than not have done very little to contribute to the acceleration of global warming. This is the

case for Myanmar, as while the country contributes comparatively less to GHG emissions and climate change currently, it sees a disproportionate amount of the impacts (MCCA, 2019).

Studies in Myanmar have primarily followed global trends of technocratic investigations and solutions into both the causes and effects of anthropogenic climate change. For example, New, Zomer and Corlett (2020) looked into the protection and spatial implications on biodiversity and nature suggesting that the political, economic and social context provides significant challenges towards protection. They suggest that data has historically been limited due to conflict and limited prioritisation, but that while focus remains on rural areas, it is the peri-urban areas, closest to the largest populations that will become critical to provide important resources to the population (ibid.). Furthermore, impacts that need to be investigated are both the direct as well as the indirect impacts on cities such as availability of water sources, natural systems, disaster risk management and migration (ibid.).

Borras, Franco and Nam (2020) who study the link between climate change and land in northern, rural Myanmar, suggest that while it is important to look at specific policy and developments aiming at mitigation and adaptation. There is also an important link between development and planning for land in general. They suggest that both the climate crisis and land grabbing are closely linked to capitalist and neo-colonial policy and priorities that result in mitigation and adaptation not meeting the needs of the most vulnerable (Borras, Franco and Nam, 2020).

O'lear (2016) discusses the prospect of climate change narratives leading to interpretations that enact 'slow violence'. O'lear uses Nixon's (2011) work on slow violence, as being indirect and enacted over time and space to slowly chip away at livelihoods, health and communities' resilience capacity as a result of policy and practice. This inherently links to the creation and use of urban space. Therefore, to adequately ensure just forms of climate adaptation, O'lear (O'Lear, 2016, p.5) suggests "we must first identify narratives and understandings which obstruct or obscure more just outcomes". This comes down to understanding current contexts of spatial violence before investigating future potential forms of violence that could be enacted under the scope of climate adaptation.

Climate change adaptation and vulnerability research often skims over the "political methods of social change and the processes that serve to reproduce vulnerability over time and space" according to Eriksen, Nightingale and Eakin (2015, p.523). They suggest that climate change adaptation methods have the ability to perpetuate existing authorities and modes of

dispossession, but also, through transformative adaptation techniques, have the ability to contest such social and political structures. Such adaptation techniques should not be seen as entirely new as a result of climate change, as many methods of community-based adaptation come about as an indirect and sometimes unconscious response (Eriksen, Nightingale and Eakin, 2015).

The potential negative effects of climate change adaptation policies are beginning to be explored (see Arnall et al., 2014; Bulkeley et al., 2014; Work et al., 2019). Fairhead, Leach and Scoones (2012), discuss the prominence of 'Green Grabbing' as a way for governments and institutions to gain power and control over land, within the narrative of environmental conservation and climate change adaptation. Global case studies include peri-urban reforestation in Cambodia (Scheidel and Work, 2018), 'green' development in India (Ghertner, 2010) and 'green washing' through the Belt and Road initiative in China (Harlan, 2020). These three cases discuss forced evictions and narratives unfairly blaming informal communities for wider ecological damage. Additionally, they for the most part conclude, like Henrique and Tschakert (2020) that these methods, utilising climate adaptive narratives, seek to continue the status quo, perpetuating vulnerabilities for the most at risk communities. Vulnerability therefore is continually used to justify the implementation of adaptation policy and programmes, despite little effort generally going towards assessing how far these methods actually assist in reducing vulnerability or even development, outside of economic gain (Eriksen et al., 2011). To continue we will need to understand the literature around vulnerability.

2.4 Spatial Violence and vulnerability

To understand whether climate adaptation methods aim for and achieve a reduction in vulnerability we must first understand what it means to be vulnerable. Much of the current climate change literature locates vulnerability within the realm of a fragile and hostile climate, as opposed to spatially created within societies and political economies (Eriksen, Nightingale and Eakin, 2015; Rigg et al., 2016). The IPCC (Cardona et al., 2012)) state that levels of vulnerability are a driver of the level of risk seen and experienced by communities. Vulnerability, exposure and hazard are the three components making up the level of risk experienced (ibid.). Exposure, in this case, being the location of communities in areas where a hazard occurs and vulnerability refers to the existing conditions in communities, including their livelihoods and homes that make them more likely to experience a hazard more detrimentally (ibid.).

There is a conflict between vulnerability of the urban poor and climate adaptation studies, as discussed by Lee (2008), pointing to a disconnect in the literature in how access to and control over housing and climate change policy and practice perpetuates vulnerability in cities. Furthermore, Moser and McIlwaine (1999) point to the need for studies specifically on urban violence and vulnerability because of the differences faced between urban and rural environments. These include different states of tenure security, limited access to natural resources, reliance on provision of services and infrastructure and often stronger local governments.

Rigg et al. (2016) discuss the notion of vulnerability and its relation to precarity. They suggest the possibility for methods aiming at decreasing vulnerability, in turn, increasing precarity. They use vulnerability to refer to historically inherited forms of livelihood exposure to hazards and precarity to encompass 'modern' and produced exposures that could come from forced evictions and urban policy and planning. This diptych is used "because it provides us with the opportunity to consider how processes and structures rooted in different times and spaces intersect in the construction and sustainability of contemporary livelihoods" (Rigg et al., 2016, p.66). They suggest that efforts to reduce vulnerability, could in turn increase precarity for marginalised communities.

2.5 Gender, spatial violence and climate change

Spatial violence can take many forms and impact groups differently depending on levels of vulnerability. Therefore, it is important to acknowledge that women, men, boys and girls face different daily realities due to their gender roles, gendered access to services and work as well as their relationship with their environment (Moser, 1993; Arora-Jonsson, 2014). Patel (2021) suggests specifically the importance of understanding the challenges faced by women, to understand how they link to climate vulnerability and build capacities for directly overcoming injustices.

Studies taking a gendered focus with regards to climate change adaptation and modes of dispossession in Myanmar have mostly, if at all, been limited to rural contexts. For example, Park's study into environmental change and grassroots politics in the Tanintharyi region calling for an acknowledgement of women's rights and gendered perspectives (Park, 2021). Park argues that often, due to the urgency surrounding issues faced by communities, there is a conscious decision to side-line the gendered responses and needs that result (ibid.).

For a long time, discourse on gender roles and equality has perpetuated a narrative of a "traditional high status of women" in Myanmar (Ikeya, 2005, p.51). This has resulted in the oversimplifying of problems faced by women, limited data collection and less efforts to address structural inequalities. The negative perceptions towards feminism act as another barrier, where Than, Han and Lei (2018) suggest literal translations in the Burmese language might add to misconception of the feminist movement as a whole.

Studies therefore argue that the gendered impacts of climate change require a critical feminist perspective, that has so far been lacking in literature. One such study by Wonder (2018) discusses intimate partner violence and its links to climate change to explore how gendered roles, neoliberalism and politics produce gendered insecurities, vulnerabilities and risks. They argue that while the anthropogenic activities that produce climate change are global, the impacts and necessary responses are experienced and enacted locally. Similarly, Bee et al. (2015) suggest the ‘everyday’ gendered experiences of climate change policies and planning affect individuals in varied ways. The importance of the ‘everyday’ and individual experience of climate change is further highlighted by Arora-Johnson (2011) who investigated the dangers of framing women from the global south as vulnerable, versus the women of the global north as caring and knowledgeable actors. By over simplifying, little is done to combat the present lack of women in key decision making roles with regards to climate policy and practice whilst simultaneously placing an unfair burden on women to take action (ibid.). For this to be avoided, contextualisation and care is vital.

2.6 Analytical Lens: Feminist Political Ecology and the everyday

Feminist Political Ecology (FPE) can be used as a lens to encourage investigation and studies into the everyday lived realities and intersectional experiences of spatial violence through climate change adaptation and is encouraged by Wonders (2018) and Bee et al. (2015). We have seen spatial violence taking many forms in literature. An FPE lens encourages seeing low-income groups not as homogeneous in their experience of spatial violence and vulnerability. For example, studies have shown that women can be more likely to fall into poverty traps due to their lack of access to and control over resources and vital services (Miraftab, 2001), however the nuance behind differences within countries, cities and even communities can often be missed.

FPE emerged in the 1990s with seminal texts by Rocheleau et al. (1996, p.4) stating its role to “understand and interpret local experience in the context of global processes of

environmental and economic change". While Political Ecology itself looks at social justice and the politics surrounding environmental degradation and modes of dispossession, FPE aims to further contextualise, and bring into the forefront, notions of intersectionality from a feminist perspective (Ibid.).

Finally, FPE shows women's groups as not weak and passively controlled, but with agency to build and utilise institutions for their gain (Clement et al., 2019). In Cambodia, for example, Brickell (2020) discusses the feminization of responsibility that encourages more women to get involved in protests and politics surrounding evictions and climate based 'green' development. Miraftab (2001) similarly argues that when a home becomes under threat, women often take charge in counter protests and politically based activities. While the context of Myanmar is vastly complex and cannot be easily compared with other cities, there have emerged some forms of protest and agency from women's groups (see Khan, 2021).

Chapter 3 Methodology

3.1 Analytical Framework and Research Question

In chapter two, we discussed the connection between spatial violence, vulnerability and climate change and the need to incorporate a FPE perspective to ensure the everyday lived realities of marginalised groups, in this case women in Yangon, are not neglected. Through the case study of Yangon we will look at vulnerability in low-income settlements leaving groups under threat of and further marginalised by spatial violence as a result of development-led urban planning narratives within the context of climate change. The overarching question this study aims to answer is:

- What impact has climate change adaptation policy and planning had on experiences of spatial violence and existing vulnerability for women in Yangon?

To answer this research question in the context of Yangon, we will need to understand the relationship between vulnerability, spatial violence and climate change. A hybrid framework is therefore proposed to guide both research and analysis.

The analytical framework proposed in figure 1, expands on Moser's (1998) Asset Vulnerability Framework combined with Moser and McIlwaine's (1999) Participatory Urban Appraisal which incorporates the concept of violence, how it is created and how it is responded to by the urban poor. A FPE lens can be overlayed throughout to ensure there is not an over simplification of individual experiences. It also ensures a focus on the historical,

political, social and environmental underpinnings of spatial violence in the city, as Resurrección and Nguyen (2017) have explored with regards to South East Asian countries more generally. They suggest the need for studies to take place into planning and development used as a tool for building 'green economies' as we also encountered in the work of Fairhead, Leach and Scoones (2012) and Scheidel and Work (2018) which have further shaped this framework.

Figure 1 shows the stages of the proposed framework that will be explored to assess the impact climate change adaptation policy and planning has on marginalised communities' experiences of spatial violence. Through this framework, an introduction to the complex, interlinked relationship between spatial violence, vulnerability, urban planning and climate change adaptation will be explored, as well as suggestions for future uses of the framework.

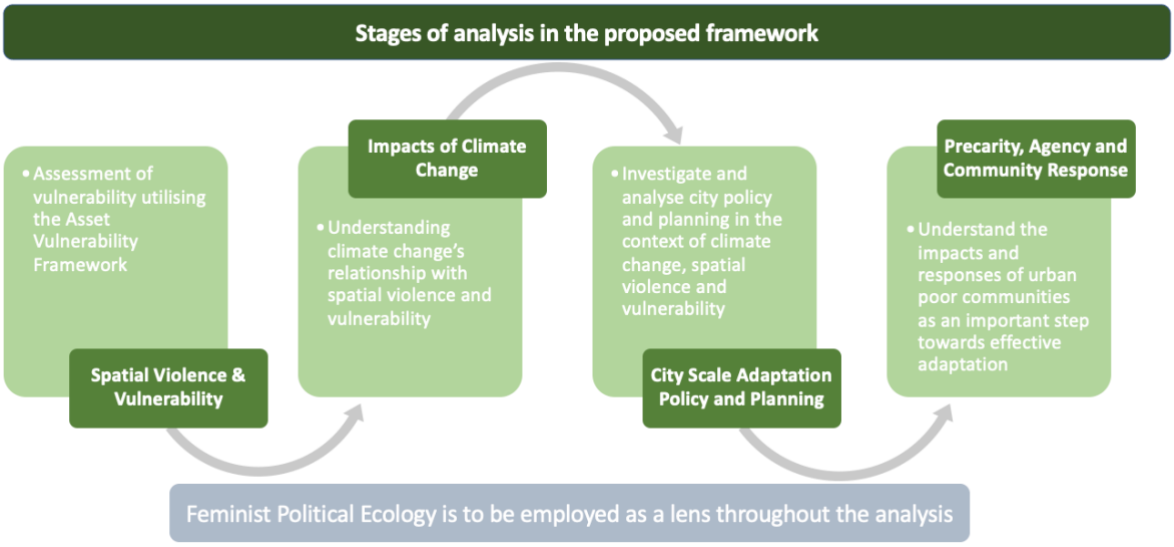

Figure 1 Stages of Analysis (Source: Author)

Adaptation planning requires urban vulnerability assessments that outline and analyse the current realities and context of climate change for urban poor communities (Moser *et al.*, 2010; Fuchs, Conran and Louis, 2011). Hence, the proposed conceptual framework starts with an assessment of vulnerability, utilising Moser's Asset Vulnerability Framework before detailing the current impacts of climate change on the city. Moser's (1998) framework highlights the inherently connected nature of vulnerability and access to or ownership of assets. This includes tangible and intangible assets (see figure 2), from housing to social structures, as well as the importance of both initial access and capacity to manage assets to avoid or reduce vulnerability. Violence through this framework is closely linked to the ability

to acquire and rely on assets and subsequent coping mechanisms (Moser and McIlwaine, 1999).

Figure 2: Assets adapted from Moser (1998)

Labour: commonly identified as the most important asset for the urban poor
Human capital: health status, which determines people's capacity to work, and skills and education, which determine the return to their labour
Productive assets: for poor urban households the most important is often housing
Household relations: a mechanism for pooling income and sharing consumption
Social capital: reciprocity within communities and between households based on trust deriving from social ties

Utilising FPE, the conceptual framework then aims to situate the current state of vulnerability under spatial violence in the city and impacts of climate change in the daily lives of Yangon's urban poor. We will focus on vulnerability to spatial violence, the impact and relationship between spatial violence and climate change and the perpetuated violence enacted through the city's current adaptation plans and lack of consideration for the urban poor. For this, the New Yangon City (NYC) development will be explored in more detail. The proposed conceptual framework then builds on FPE perspectives that highlight the agency of women in urban communities in responding to spatial violence and adapting to the ever-growing climate threats.

The framework also aligns closely to Eriksen et al.'s (2011) principles for what they deem to be 'sustainable adaptation', suggesting this analysis could be taken further in the future towards improving Yangon's adaptive capacities. The first principle, like this framework, is to gather an understanding of vulnerability within the context. The second, similarly leans towards context analysis with acknowledging the vastly different actors and their individual interests. The third and fourth principles suggest the need for integrating local knowledge into adaptation planning and integrating with national and international efforts. Moser suggests further that gender be incorporated, not just in such a way as to meet levels of 'minimum compliance' in international agreements, but in transformative ways that aim to challenge existing social structures (Moser, 2020).

Finally, Moser and McIlwaine (1999) emphasise the importance of participatory urban research on violence to sufficiently understand the extent, causes of and coping mechanisms that emerge with regards to vulnerable urban poor groups. While a participatory engagement in Yangon is beyond the scope of this paper, for reasons outlined in section 3.2, it is important to engage with and understand the importance of such inclusion in any future studies.

3.2 Discussion of ethics and limitations

Due to the current COVID-19 pandemic, this research is restricted to secondary sources, meaning the lack of primary data collection may hinder the ability to truly understand the lived realities of everyday lives in Myanmar. Additionally, everyday realities within the current context of the military coup have taken on a whole new dimension of physical violence. The following section will detail the importance of ethics considerations within this work in such a context.

Charney (2021) asked “How Racist is your engagement with Burma studies?” in a recent blog post, outlining the history of colonisation in studies on Myanmar. He points to the importance of including and crediting contributions from Burmese authors and suggests western academics are often drawn to focus on the colonial period without proper recognition for the vast cultural and political heritage and history (Charney, 2021). One point Charney draws on that, I myself, am acutely aware of is that of scholars who are unable to engage with debates and opinions in Burmese. While this cannot be remedied in the short space of time of a master’s dissertation, I hope to reflect and remain aware of the impact on this work.

This dissertation initially came about, prior to the events of the February 2021 coup, as part of a fellowship scheme aimed at working directly with organisations located in Yangon to gather first-hand insights from the city’s residents. Considerations for the safety and security of these organisations as a result of current events has led to the decision to undertake purely desk-based research. This comes from what Brooten and Metro (2014, p.10) refer to as the most important obligation for researchers: “avoiding harm to participants”. For this purpose, a wide range of sources has been utilised, including news sources, urban planning documents, policy briefs, reports created by international and local NGOs and development organisations.

Despite removing the concerns related to any primary data gathering or in person research, Brooten and Metro (2014) suggest the need for ethics considerations that span the country's complex colonial past, military control, ethnic and religious conflicts and shifting political landscapes. Within this the author's positionality becomes important in understanding their perspective and inherent bias (ibid.). Reflecting on my own positionality, coming from the global north, more specifically the United Kingdom, but having lived 10 years in Singapore and 6 months in Cambodia, it is easy to brush past the impact on my own writing and perspectives. It was my work in Phnom Penh with women in communities facing or having experienced forced evictions that drew me to this fellowship opportunity. Having seen similarities between my work and the research topic I also appreciated the experience of introducing myself to the complexities of a new culture and urban landscape.

Finally, in a study on spatial violence, the importance of understanding how descriptions of violence can perpetuate violence itself (Brooten and Metro, 2014) must be kept at the centre of both this and any future studies. I therefore follow the lead of Brooten and Metro (2014) in trying to address power dynamics through a wide range of scholars, aiming to include voices from Myanmar as well as acknowledging the voices this work is unable to capture.

Chapter 4 Case study

Using the conceptual framework laid out in chapter three, the following section will review and analyse academic literature, policy and planning documents for the case study of Yangon, Myanmar. This case study aims to situate the historical context that has enforced vulnerability on the city's urban poor adding additional layers of spatial violence in the face of climate change and future urban development.

4.1 Urbanisation in Yangon

Myanmar is currently still in comparatively early stages of urbanisation, with only 30% of the population living in cities, however, the number is expected to double by 2050 (Rhoads et al., 2020). Yangon currently holds 30% of the urban population, with an estimated 5 million centrally and an additional 2.5 million in the wider metropolitan area (ibid.). By 2050, Yangon is predicted to become a 'mega city', however as development continues, the expected benefits will not be shared equally across the city's residents (Than and Kraas, 2020).

UN Habitat (2021) found that 34% of the city's population are living below the poverty line and relying on informal employment to support themselves. Poverty in Myanmar as a whole went from 48 percent to 25 percent between 2005 and 2017 (World Bank, 2020). Despite a general positive outlook on economic growth pre COVID-19 pandemic, the last year has put Myanmar in a state of uncertainty, with future progress far from secure (World Bank, 2020).

4.2 Vulnerability in Yangon

By looking at how spatial violence has been enacted on informal settlements in Yangon, we can assess vulnerability in terms of Moser's assets listed in chapter three. To avoid or reduce vulnerability, Moser suggests that assets not only need to be available, but individuals also need the ability to manage them (Moser, 1998). In the case of Yangon, it is not enough that informal settlements have access to shelter, but a key component of their insecurity and therefore vulnerability, is the uncertainty surrounding their tenure status and possibility for dispossession. Therefore the first and arguably most important asset we will look at is housing.

4.2.1 Housing

Moser (1998) terms housing as a productive asset, that is pivotal to vulnerability levels. There is currently an undersupply of half a million housing units estimated in Yangon and this is expected to increase to over 1 million by 2030 (Rhoads et al., 2020). The distinction between formal and informal housing in the city is noted to be fluid, however when looking at lack of access to basic infrastructure and services as a criteria for informality, as of 2017 there were an estimated 475,000 residents in informal housing (Rhoads et al., 2020). UN-Habitat estimated that during COVID-19 this was close to 8% of the city's population, with over a third living in Hlang Tharyar township (UN-Habitat, 2020).

Rhoads (2018) argues that Burmese regimes, though holding ideological differences, have continued colonial era policies, with differences being marginal with regards to their treatment of the urban poor. Yangon's expansion has, over time, involved mass evictions from the urban centre, to resettle squatters in newly industrialised zones or peri-urban locations known to be prone to flooding (Boutry et al., 2015). As a part of the 1989-90 squatter resettlement program led by the State Law and Order Restoration Council (SLORC), roughly 16% of the countries urban population were evicted with little to no compensation (Boutry et al., 2015). Despite narratives of relocating settlements following fires, there is speculation that the move was politically motivated to dispossess and dissolve

social ties amongst those who strongly opposed the junta (Boutry et al., 2015). This act of spatial violence resulting in dislocating community ties has increased vulnerability with negative impacts on household relations and social infrastructure assets.

Boutry (2018) undertook a study on migration and the common occurrence of low income settlements locating in flood prone areas of the city. This is not an uncommon occurrence in cities globally (Satterthwaite et al., 2020). However, Boutry (2018) draws the connection with locating in flood prone areas as a form of adaptation, to reduce vulnerability to eviction. This could lead to increased precarity for the future of informal settlements in Yangon, exposing them to increased long term harm. This exposure to hazard through climate change in the city will be explored in section 4.3.

There have been policies over time to tackle 'professional' squatters who act as landlords, renting out space in settlements with no legal right to the property (McPherson, 2016). However, these are estimated to make up a very small proportion of cases (ibid.) and despite a more caring narrative can end up reproducing the same dislocation of settlements seen throughout the history of the city. Additionally, The city has attempted to provide public housing to meet the demand, however this is widely regarded as too expensive and not meeting the needs of the city's poor (Boutry, 2018). While the narrative surrounding these policies has aimed at reducing vulnerability, in reality they have been acts of spatial violence against the urban poor. Particularly women, children and youths who face violence at home, in situations of increasing socio-economic stress and policies restricting movement, facing higher risk of becoming homeless (UN-Habitat, 2020). The political history and present of Yangon has enacted spatial violence on the city's residents in both clear acts of violence and more subtle forms of dispossession and dislocation (Rhoads, 2020).

4.2.2 Labour

Families relocated in the multiple rounds of forced evictions within and around Yangon often find themselves displaced through physical distance to their employment, either resulting in high travel costs, costs incurred from moving or unemployment (Boutry, 2018). Additionally, it is a reality that families don't always get the opportunity to register in their new locations of residence, resulting in the inability to apply for an identity card which allows access to certain services and jobs in the city (ibid.). In the current COVID-19 pandemic, there has been a greater impact on low-wage, informal and migrant work which, in the case of Yangon, women and marginalized groups are more likely to be engaged in (Rhoads et al., 2020).

A study by Ko Ko et al. (2020) showed that levels of vulnerability can vary depending on employment in Yangon, for example street vendors, likely to be women, are more exposed to flooding and therefore risks to their health. However, home-based workers are less likely to be able to relocate in the case of a disaster. Additionally, where their home is impacted, so is their livelihood (ibid.). All workers in the study found that changing weather impacted their income due to fewer customers and the inability to work (ibid.). With a high proportion of low income residents undertaking informal work, they are less likely to be offered rights and protection in the case of threats to their income and health (UN-Habitat, 2020).

According to the City Life Survey carried out in 2018, women in Yangon have to allocate roughly double the amount of time to childcare as men, are less likely to engage in any local community and political engagement, and are more likely to be unemployed and not looking for work (Williscroft, 2020). Despite the increase in women engaging in work and income generation, socio-cultural norms continue to enforce reproductive burdens, adding to women comparatively being time-poor (ibid.). Time burdens are attributed in Yangon towards hours spent on public transport and accessibility to other services such as healthcare (Ibid.). Despite the narrative that women hold a high status in Myanmar, the reality shows higher levels of vulnerability when it comes to labour assets.

4.2.3 Human capital and infrastructure

Moser refers to human capital as a community or individuals health status and finds it is closely linked to supply of infrastructure (Moser, 1998). This is of special relevance as the COVID-19 pandemic death toll rises throughout Yangon. Rhoads et al. (2020) detailed, in a rapid assessment, the inability for the city's urban poor to protect themselves from transmission due to limited access to basic services, close proximity, as well as limited opportunities to work from home in informal employment.

Outside of COVID-19, flooding is a significant challenge for the city as a whole, and as mentioned informal settlements are more likely to locate in flood prone areas. In Yangon this often means they are in low lying areas, on top of drainage canals and on riverbanks, which, due to their tidal nature, can result in flooding throughout the dry and rainy seasons (Rhoads at al., 2020). Boutry (2018) detailed that during flooding parents would often carry their children to school to avoid leeches and much of the floodwater can become contaminated with household and human waste due to inadequate drainage and waste infrastructure in

many informal settlements in the city. Women's access to healthcare and opportunities to live a healthy lifestyle are further limited by Myanmar societies' cultural norms (Williscroft, 2020). The noted traditionally high status of women does not translate to gender equality. Cultural norms such as considering menstruation to be 'dirty', seeing women as primarily reproductive beings, encouraging women to sacrifice themselves for the sake of their families and discouraging family planning can all lead to negative health impacts on women in Yangon (Williscroft, 2020).

Wards that are regarded as 'illegal' are often left out of official planning for infrastructure upgrades and lack local government intervention in the case of flooding or basic service provision (Boutry, 2018). UN-Habitat suggest that almost none of the informal settlements in the city have basic municipal services such as piped water, sanitation facilities, drainage or solid waste management (UN-Habitat, 2020). This applies to the area Boutry (2018) studied, where not only is there no flood protection, but neighbouring, wealthier settlements discharge their waste into the nearby river, contaminating water quality for the community. Therefore, the lack of infrastructure is a threat, but spatial violence is enacted through the disregard for wellbeing in these so called 'illegal' areas.

4.2.4 Household relations and social capital

Community savings groups and community housing developments have come under increasing strain during the COVID-19 pandemic with many having to stop group meetings, housing construction and maintenance of infrastructure (Rhoads et al., 2020). Additionally, social capital has been widely known in the city to have been fragmented as a result of mass evictions (Boutry, 2018) by successive political regimes (Rhoads, 2018) and post disaster rural/urban migration following cyclone Nargis (Kostner, Han and Pursch, 2018). The community ties created over generations have systematically been broken through a barrier of physical distance enacted through forced evictions (Cornish, 2020) and climate emergencies.

4.2.5 Assets and vulnerability

The incidences of dispossession, dislocation and community responses in the form of adaptation all shaped by spatial violence in Yangon have created an environment of vulnerability and insecurity for informal, low-income settlements in the city. The possibility of more severe and frequent climate related disasters, as well as daily stresses as a

result, places vulnerable urban poor city-dwellers under increased levels of risk and insecurity, resulting in their ever increasing vulnerability through asset depletion.

This section has argued that the spatial violence enacted on the city's residents through the mode of dispossessing residents from their assets, has resulted in high levels of vulnerability. This vulnerability is then often used and manipulated by different state and local government actors for their own benefit (Boutry, 2018), often associated with neoliberal attitudes towards economic growth as development. While we have discussed the historical and current basis for vulnerability in Yangon, the next section will focus on what this means in the context of climate change impacts.

4.3 Climate change impacts

As discussed briefly, Yangon is at high risk of experiencing extreme impacts of climate change, being a low elevation coastal city and part of the deltaic system. The most immediate and obvious impacts are expected to come from flooding and high temperatures, however it is those most vulnerable who will be impacted the most.

Traditionally, Yangon has experienced three distinct seasons, however, they have become increasingly irregular and severe weather events have become more common (Horton *et al.*, 2017). Mean annual temperatures are set to increase by up to 3.5°C across Myanmar, with the highest increases in the Yangon Delta, by 2100 (World Bank, 2021). In 2019 the number of days Yangon experienced above 30 degrees Celsius doubled in comparison to a typical year (Zune, Rodrigues and Gillott, 2020) and resulting reports of death from heatstroke in Yangon and the surrounding areas increased (Soe, 2019). This shows what is to come for the city as global temperatures rise, as they still look to recover from cyclone Nargis which, in 2008, left between 138,000 and 200,000 dead or missing (Than and Kraas, 2020).

Figure 3 shows the projected areas of the city that will be under water by 2050 according to Climate Central (2019). A recent UN-Habitat report found that almost all informal settlements in Yangon are at risk of or currently experiencing flooding with 34% under what they term as 'severe risk' (UN-Habitat, 2020). This includes greater risk of contracting vector and water borne diseases such as diarrhoea, malaria, tuberculosis and dysentery (UN-Habitat, 2020).

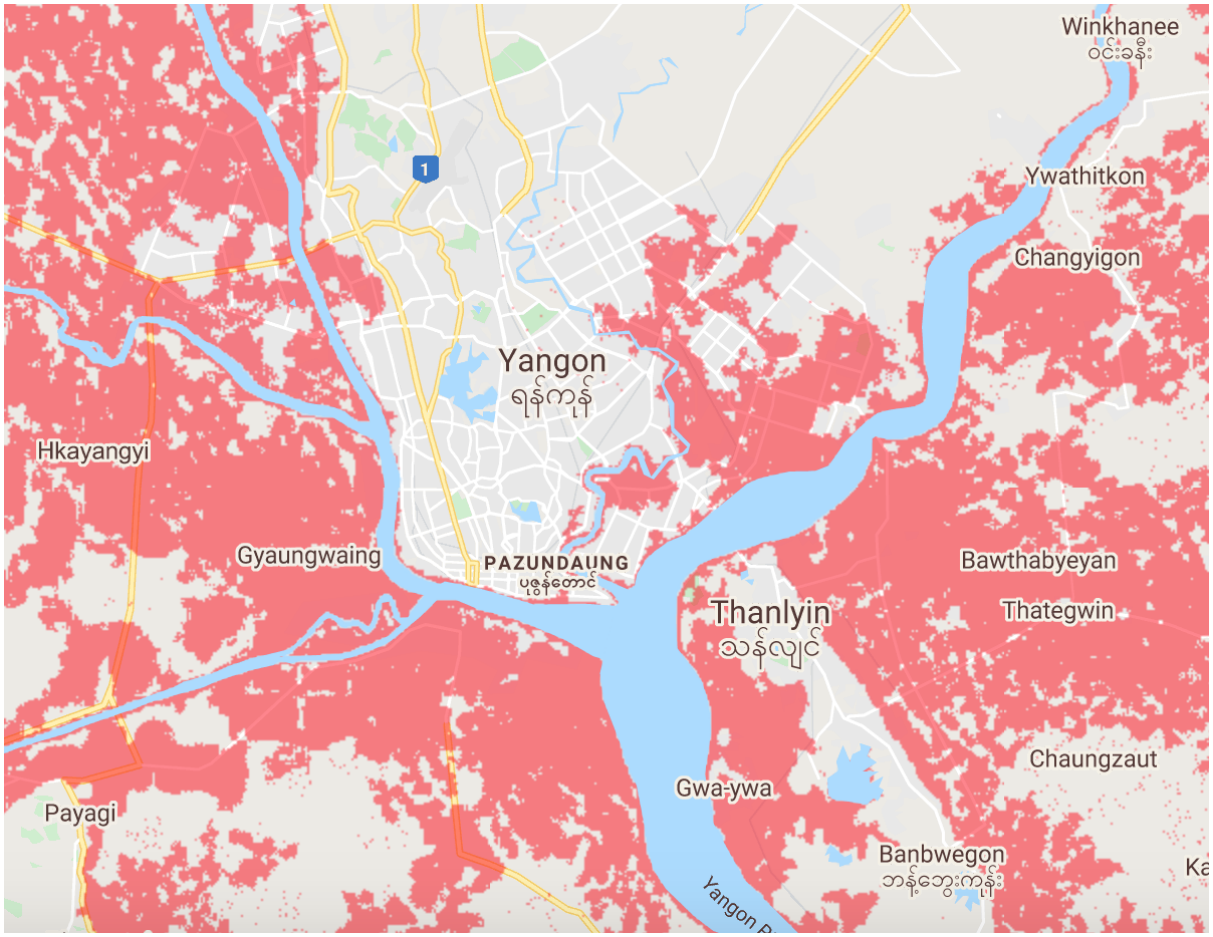

Figure 3 Projected flooding in Yangon by 2050 (Source: Climate Central, 2019)

Additionally, migration to the city has been and will continue to be shaped by climate change and extreme weather events. Cyclone Nargis led many to migrate to Yangon from the Ayeyarwady region in search of work to support themselves and families who they left behind (Kostner, Han and Pursch, 2018). Boutry's (2018) report into the narrative around flooding in the western outskirts of Myanmar suggests that migration in the face of flooding and toward flood prone areas can be seen as a resilience building technique among the urban poor (see also: Elmhirst, Middleton and Resurrección, 2018). Moving towards flood prone, often disused, government owned land can provide some safety against eviction, as land is undesirable for other means. However this leaves residents more at risk of damage to their homes, health impacts and even loss of life. Migration from rural areas that rely heavily on agricultural livelihoods is only expected to increase as climate change continues to disrupt agricultural practices in regions where drought and flooding have already started to become unruly (Displacement Solutions and Ecodev, 2018).

Post Nargis, despite aid efforts, remittances from outward migration were highlighted as a significant factor in the current, still recovering, levels of resilience in villages impacted (Kostner and Thitsar, 2020). Aid provided also was found to have led to years of overfishing in the deltaic region, due to the amount of fishing equipment that was given (Kostner and Thitsar, 2020). The impacts of policies surrounding climate change and adaptation will be discussed further in later sections. Whether adaptation methods linked with the future development of the city will be transformative in the face of existing trajectories of spatial violence is yet to be seen.

4.4 The impact of development: New Yangon City

As we saw through the literature review, studies have taken place revealing development projects that seek to 'beautify' cities as opposed to creating socially and environmentally just adaptive capacities within communities most at risk to the impacts of climate change. We have thus far explored the links between spatial violence, vulnerability and exposure to climate change in Yangon. The following section aims to show the current and future planned development of the city as a further form of spatial violence creating increased levels of precarity for Yangon's urban poor. The specific case to be explored is that of the NYC. The project is seen as an expansion of the city by the New Yangon Development Company (NYDC), focusing on smart 'green' development as seen in cities like Singapore (Stephenson and Dobson, 2020). Where vulnerability of the city's urban poor is not taken into account, plans can be seen as a form of perpetuating spatial violence and risking further precarity through dispossession and neglect.

The land south of the city (see figure 4) has been targeted for a long time as a solution to the city's growing population and lack of infrastructure (Wittekind, 2021). What started out as a $1.5 billion investment into the creation of a city in the south of Yangon has changed significantly over time in scale and cost (Stephenson and Dobson, 2020). The initial plan was described as a redesigned city with an abundance of green space, world class technology and new residential communities (Board, 2019). The plan encompasses not only the new city itself, but a redevelopment of the city's central area through heritage preservation efforts and repurposing of derelict colonial buildings (Stephenson and Dobson,

2020). However, it has also been described as an effort to ‘mask’ the intrenched inequalities in the city (Stephenson and Dobson, 2020) which we will explore further.

Figure 4 New Yangon City Plan (NYDC,2020, p.4)

The controversies around NYC development emerged from the start. From funding and international investors, to the size and scale of the development, changes have been frequent and many don’t believe the project will ever manifest in its entirety (Board, 2019). This has not been uncommon with other Chinese backed projects in the region and has led to concerns that it will be used to advance the China-Myanmar economic corridor and increase Chinese influence in the city (Stephenson and Dobson, 2020). The Junta has remained quiet over the current state of development, however it was reported they are pushing ahead with all Chinese backed initiatives as a priority in an effort to legitimise the regime (The Irrawaddy, 2021).

Concerns for the flood prone location are leaving many citizens doubtful that the land will be suitable for development, despite a flood risk assessment conducted by NYDC stating otherwise (NYDC, 2019b). This brings to mind development of wetlands in Phnom Penh,

Cambodia that filled in much of the cities natural drainage and water filtration systems, now resulting in increased risk of flooding for surrounding residents, most of whom are in informal settlements (LICADHO *et al.*, 2020). When looking at figure 3, showing the increased flood risk locations, we can see NYC being located in one of the most at risk locations in figure 4.

Reports from the NYDC (2018) show an acknowledgement that relocation will occur for existing settlements (shown in figure 5), however detailed descriptions of how this will take place and where they will be moved to is yet to be released. The settlements primarily locate along the river banks, where development of flood barriers and drainage systems are likely to be located to protect the new development.

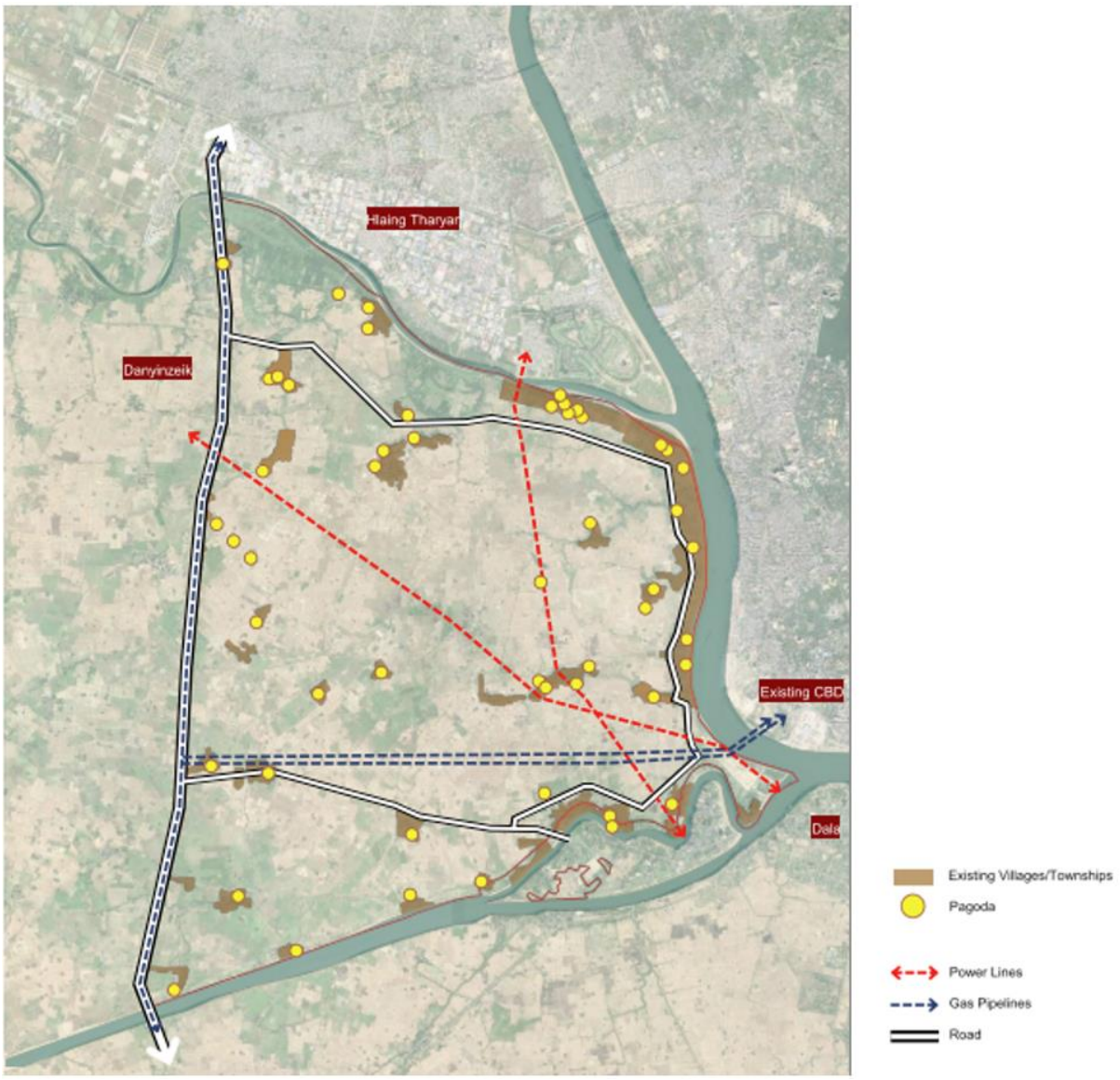

Figure 5 Locations of Existing Villages and Townships (Source: NYDC, 2019, p.20)

With such little information available, it is hard not to assume the fate of such settlements will continue along the trajectory of spatial violence through eviction, relocation and dislocation that has persisted throughout Yangon's history (ACHR, 2014). This is not unheard of as

McPherson (2016) and Myint (2017) have previously documented so called ‘eco-projects’ that have resulted in forced eviction of ‘squatters’ deemed to be illegal by the NYDC. On an international scale, Myanmar has previously received funding and undertaken collaborative initiatives to build resilience and adaptive capacity with international agencies such as the World Bank and the Japanese International Cooperation Agency (JICA) (Vaughan, 2012). Many of these initiatives have been criticised for focusing more closely on future investment opportunities for international actors as opposed to building resilience for vulnerable communities (Vaughan, 2012).

The uncertainty about the future of NYC’s scale and outcomes have left citizens in the not rural and not yet urban location with their lives on hold (Wittekind, 2021). Those deemed vulnerable in other areas of the city, still lacking infrastructure, could understandably feel forgotten, while others are living under uncertain futures in a static state until development begins. In 2018 land owners were given the choice between receiving cash payments or land NYC (Linn, 2018). The equivalent of 20% of the relinquished land would be given to landlords (Linn, 2018), however, there is little if any mention of compensation or protections for those who might be renting or where proof of ownership is not corroborated by the authorities, as is often the case for the urban poor. While many, specifically farmers, were happy to accept land in hopes it could be sold later for a profit once development starts (ibid.), with uncertainty about development timelines, this could leave farmers without a source of income or ability to fund relocation.

The master plan published by NYDC (2019c) suggests that the current city faces many challenges with energy, efficiency, waste collection, water and sanitation, that would take considerable effort to improve. Consequently, the new city aims to start with a “clean slate” (NYDC, 2018, p.9). The plan makes bold claims towards setting new national standards for transparency, accountability and efficiency (NYDC, 2018) which is echoed through participatory methods mentioned in the strategic plans (see Poujol, Collins and To, 2019) and Environmental Impact Assessment (NYDC, 2019a). However the project has already been criticised for lacking transparency (Yifan, 2019) and there is little evidence thus far of true participatory practices outside of infographics, like the one in figure 6, laid out in the reports on NYDC’s website.

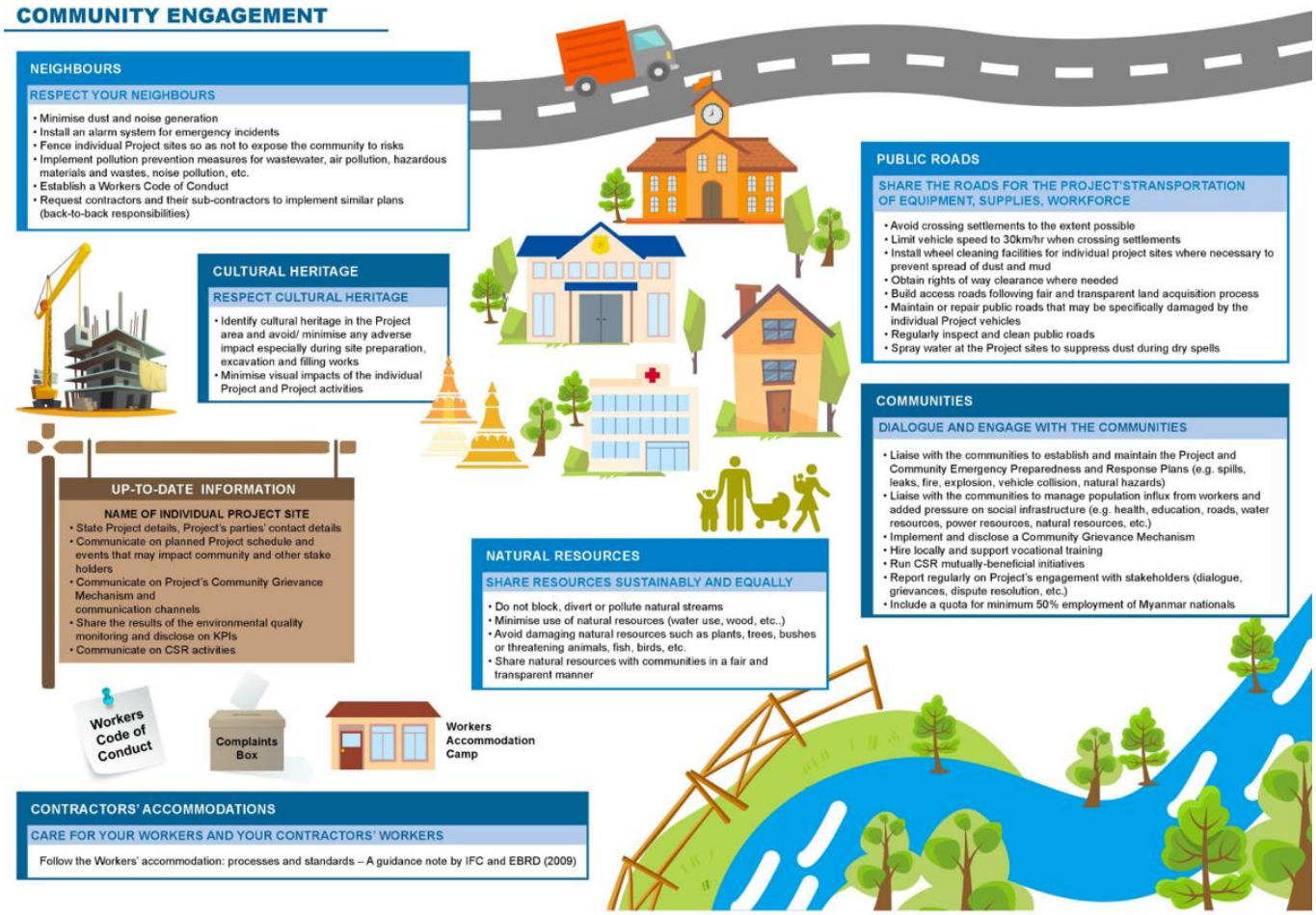

Figure 6 Community Engagement infographic (Source: Poujol, Collins and To, 2019, p.20)

Phase 1 plans for the development refer to a “smart city”, “green development” and better use of technology to meet the demands of an expanding city (Poujol, Collins and To, 2019). The plan states that the city aims to attract foreign workers, investment and states benchmarks for development based on liveability, health, job creation, mobility, transport, society and environment, with ‘smart city’ being one of the key indicators. To date little information has been released or realised around each indicator. The indicator for becoming a ‘smart city’ includes “citizenship engagement apps”, “centralised command centres” for emergency response and “supported CCTV coverage of public areas” (NYDC, 2018, p.13). In the current context of surveillance of citizens and restrictions of rights this could constitute a warning sign for an increased surveillance state, enacting further violence and oppression on the city’s residents. Much of the narrative evokes imagery of ‘building back better’ as opposed to truly equitable adaptation and development, as would be criticised by Alvarez and Cardenas (2019) and Henrique and Tschakert (2020).

4.5 City scale adaptation policy and planning

Yangon has had many urban master plans over the years (see YCDC and JICA, 2013; JICA, 2018) and have introduced some policies to meet climate adaptation needs, however these have often been vague with a disregard for the city's urban poor and very few specific approaches to reduce vulnerability among women. Myanmar has introduced both an Action Plan for Disaster Risk Reduction (Than and Kraas, 2020) and a Climate Change Adaptation Plan (Abeysinghe et al., 2018), however both provide little detail on how adaptation will be enacted at an urban scale (Than and Kraas, 2020) due to a heavy focus on agricultural and rural areas. They also do not go into any detail to disaggregate data and approaches towards inclusive and possibly transformative adaptation.

Zune, Rodrigues and Gillott (2020) suggest that current adaptive approaches are not doing enough to tackle the risks posed to the most at risk communities. They suggest the socio-political changes and instability will continue to ensure communities do not have access to the funding or resource to protect themselves from the increasing dangerously high heat levels within homes. This could be a result of the top down nature of climate change adaptation policy more generally, despite attempts to move towards a de-centralised system in recent years (see MoNREC, 2017). The traditional high status of women in Myanmar could also be a barrier towards any specific focus on their specific needs, or adaptation that would improve their status.

Mentions of urban adaptation in Myanmar's national and regional strategies tend to rely on technocentric approaches and solutions, without acknowledging the need for structural and institutional changes, as would be recommended in a transformational adaptation approach (see Goldman, Turner and Daly, 2018). In an Asian Cities Climate Change Resilience Network (ACCCRN) report, Yangon's master plans are criticised for short term planning (Vaughan, 2012). For example, focusing on making roads wider to accommodate urban population growth as opposed to supporting public transport to reduce emissions (Vaughan, 2012). Past plans, or lack thereof, have also resulted in Yangon losing much of its green spaces with deforestation the second highest in the country (Chann, 2019).

In a report titled *Mainstreaming Climate Change in Town Planning in Myanmar*, developed by the Institute for Housing and Urban Development Studies and Myanmar Climate Change Alliance (Tsatsou and Grafakos, 2018), the steps for incorporating the concepts of vulnerability and adaptive capacity are outlined and presented to the relevant departments

for inclusion. The report however is forward looking and does not represent the reality of current policy and planning in Myanmar. Boutry (2018) suggests that throughout the changing government regimes, new policies and plans are made on a regular basis, however few are enacted in reality and, if they are, they tackle immediate needs and not long-standing inequalities. For a city that has faced flooding year on year during monsoon season, very little has been done to incorporate future adaptation into city planning.

4.6 Precarity and agency

It can be argued that current vulnerability in Yangon, perpetuated through spatial violence, could result in further pushing marginalised groups towards states of precarity as the city develops through policy and practice that leaves behind those most at risk. Figure 7 aims to show how this has manifested thus far in Yangon. In the city's narrative of development, and projects aiming to reduce vulnerability of the city as a whole, communities have been left in a precarious state of uncertainty, where historical modes of spatial violence seem to be perpetuating an ongoing threat. While city planning and development tells of smart, green, sustainable cities, the voices of the most at risk residents are being neglected, leaving them in a state of dislocation and dispossession leading to ever more precarity.

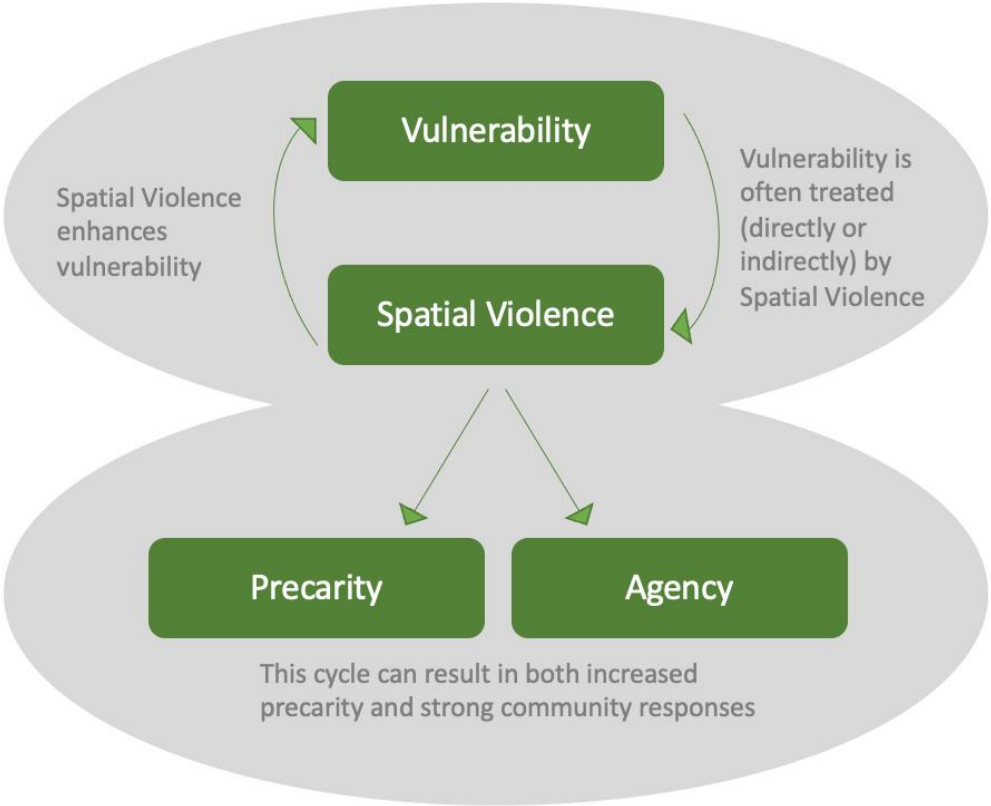

Figure 7 Relationship and Impact (Source: Author)

Due to women's traditional high status in Myanmar, along with a tendency to fund gender based initiatives without tackling the structures that lead them to be more vulnerable in the first place (GEN, 2015), they are more likely to enter a state of precarity. Their precarity is added to by further exclusionary methods from politics and planning, being less likely to hold community leadership or political roles, some of which they are excluded from outright (EMReF, 2020). However, this is not to say that Yangon's urban and vulnerable communities do not respond with a strong sense of urgency and agency through community-based action to counteract where the city has let them down.

It is important that we don't just see communities as vulnerable and at risk of climate change hazards, but also with their own agency to adapt and build resilience through locally designed and focused initiatives (Satterthwaite *et al.*, 2020). In Yangon there has been an emerging activism from youth and women's groups as a result of increased understanding of the institutional failures of the government to adequately address the needs of vulnerable communities (Garnett, 2014). Their experience of hazards has built an awareness that grassroots activists are using to create educational platforms and tackle the structures and institutions perpetuating spatial violence and climate injustices (ibid., p.2). Communities are putting pressure on the government to protect vulnerable residents as a part of the city's development (ibid.).

Community-led housing is another emerging response to meet the changing needs of the city's residents in the face of climate change (Yin Mon and Hirohide, 2021). Community-led housing in Yangon is still in its early stage in comparison to other cities, with currently only a few projects run by local community organisations and supported by local NGOs such as Women for the World (WfW). Notable projects have been in Kaw Hmu, Kunchankone and Dedaye Townships where women's groups have pooled resources, applied for loans and purchased land to plan and build 100 houses and accompanying infrastructure to escape from threat of eviction (ACHR, 2013, 2014). While this has been possible in the past, suggestions that land prices have increased exponentially since has made securing funds for housing projects close to impossible. Therefore, WfW have shifted their focus from outright purchase of land to exploring the possibility of city scale settlement mapping, including housing upgrading and resettlement options, to improve the negotiation capacity of informal settlement communities, with a specific focus on women (ACHR, 2013). On top of this they are running community led heat mitigation projects that start by raising awareness and encouraging communities to share their coping mechanisms and incorporate tree cover

and green space into their house upgrading designs (Cities Alliance, 2021). Despite the current violence experienced in Yangon, both spatial and physical, women and urban poor communities are increasingly taking climate adaptation measures into their own hands, in the face of uncertainty, vulnerability and precarity.

Chapter 5 Conclusion and recommendations

5.1 Conclusion and recommendations

Climate change adaptation policy and planning has the capacity to perpetuate and expand spatial violence and entrenched vulnerabilities present in Yangon, to the point of increasing precarity. With limited acknowledgement towards urban informal settlements, women and vulnerable communities in general, current policy and planning in Yangon runs the risk of and in some ways is designed towards, further perpetuating spatial violence in the city. New Yangon City is used as one example that portrays narratives of green and clean development, that in reality could result in enacting further harm and inducing increasing precarity for the urban poor as they continue to be pushed out of the city and further from infrastructure and development to meet their needs.

Consequently, low-income settlements are emerging as important actors in the future of their own adaptation to climate change to fill the void. Development and urban planning in Yangon are filled with uncertainty due to the current Covid pandemic, political instability and economic constraints. However, if they continue along the trajectory of spatial violence laid out through the historical and current growth of the city, the impact on low-income settlements could lead to ever more precarity in the face of existing and future vulnerabilities. There is a need to put in place plans and policies that focus on inclusion and participatory practices to ensure they are more than a tick-box exercise on the path towards prioritising international investors and political agendas over the needs of marginalised and vulnerable communities.

The framework used, while developed and adapted in this case for Yangon, offers a snapshot in time and highlights the need for further research to be undertaken to better understand perspectives and realities from Yangon's residents themselves. As a general framework it could be used to understand the impact spatial violence has on other cities facing varying levels of vulnerability to climate change. An extension of the framework would be to use it to encourage participatory processes in urban climate change adaptation. By

using this framework to understand spatial violence in urban development and planning, we can understand spaces as not immune to politics and innocent of perpetuating vulnerabilities, but as a tool which can be used to reproduce violence or possibly even counteract it.

By taking an FPE perspective we have attempted to situate climate adaptation in Yangon, within a context of historical and current spatial violence, however future studies will be important in delving deeper into the realities for communities. Uncertainty over the New Yangon City development as well as limitations in current urban policy and practice constitute a perpetuation of spatial violence we have seen in the form of displacement, dispossession and dislocation of marginalised communities through Yangon's history and present. This should involve collecting data first hand, however, as mentioned in section 3.2, only when it becomes safe and ethical to do so. Future studies should gather more data and include the voices of women in the city to ensure that attempts towards supporting their initiatives are transformative and look towards reducing precarity. What has emerged is the need for further studies that speak directly to residents in Yangon, to gather their stories, insights and actions, to better understand how the past, present and future development of the city will shape their experience of the inevitable impacts of climate change.

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