

# **CLIMATE CHANGE VULNERABILITY AND RISK**

**A GUIDE FOR COMMUNITY  
ASSESSMENTS, ACTION PLANNING  
AND IMPLEMENTATION**



## Climate Change Vulnerability and Risk – A Guide for Community Assessments, Action Planning and Implementation

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Design and layout: Begoña Peiró Salvador



**RISE UP:  
Resilient Settlements  
for the Urban Poor**

# **CLIMATE CHANGE VULNERABILITY AND RISK: A GUIDE FOR COMMUNITY ASSESSMENTS, ACTION PLANNING AND IMPLEMENTATION**

**UNHABITAT**  
FOR A BETTER URBAN FUTURE

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# ABBREVIATIONS AND ACRONYMS

|                   |                                                                |
|-------------------|----------------------------------------------------------------|
| <b>ACCCRN</b>     | Asian Cities Climate Change Resilience Network                 |
| <b>ACP</b>        | African, Caribbean and Pacific                                 |
| <b>AF</b>         | Adaptation Fund                                                |
| <b>AP</b>         | Action Plan                                                    |
| <b>AR5</b>        | Fifth Assessment Report                                        |
| <b>CBO</b>        | Community-Based Organization                                   |
| <b>CCCI</b>       | Cities and Climate Change Initiative                           |
| <b>City RAP</b>   | City Resilience Action Plan                                    |
| <b>DiMSUR</b>     | Disaster Risk Management, Sustainability and Urban Resilience  |
| <b>DRR</b>        | Disaster Risk Reduction                                        |
| <b>ESMP</b>       | Environmental and Social Management Plan                       |
| <b>ESS</b>        | Environmental and Social Safeguards                            |
| <b>FAO</b>        | Food and Agriculture Organization                              |
| <b>FGD</b>        | Focus Group Discussion                                         |
| <b>FPIC</b>       | Free, Prior and Informed Consent                               |
| <b>HHS</b>        | Household Survey                                               |
| <b>HURCAP</b>     | Honiara Urban Resilience and Climate Action Plan               |
| <b>IFC</b>        | International Financial Cooperation                            |
| <b>IPCC</b>       | Intergovernmental Panel on Climate Change                      |
| <b>MCCA</b>       | Myanmar Climate Change Alliance                                |
| <b>NAP</b>        | National Adaptation Plan                                       |
| <b>NDCs</b>       | Nationally Determined Contributions                            |
| <b>NGO</b>        | Non-Governmental Organization                                  |
| <b>PSUP</b>       | Participatory Slum Upgrading Programme                         |
| <b>SDG</b>        | Sustainable Development Goal                                   |
| <b>SIDA</b>       | Swedish International Development Cooperation Agency           |
| <b>SWOT</b>       | Strengths, Weaknesses, Opportunities, and Threats              |
| <b>UN</b>         | United Nations                                                 |
| <b>UNDRIP</b>     | United Nations Declaration on the Rights of Indigenous Peoples |
| <b>UNFCCC</b>     | United Nations Framework Convention on Climate Change          |
| <b>UN-Habitat</b> | United Nations Human Settlements Programme                     |
| <b>VA</b>         | Vulnerability Assessment                                       |
| <b>VRA</b>        | Vulnerability and Risk Assessment                              |
| <b>WASH</b>       | Water, Sanitation and Hygiene                                  |





# FOREWORD

## **Climate Change Vulnerability and Risk: A Guide for Community Assessments, Action Planning and Implementation**

Urbanization is one of the global megatrends of our time, unstoppable and irreversible. In 30 years, two-thirds of the world's population will live in urban areas; 90 per cent of this urban growth will take place in less developed regions such as East Asia, South Asia, and Sub-Saharan Africa. These are regions where capacity and resources are most constrained, and development challenges are ever more complex and concentrated.

Other global challenges such as poverty and migration are effectively urban phenomena too. Cities are at the forefront of dealing with these constant shocks, bearing the brunt of the risks. When examining the issue of migration, for example, we should note that internal and international migrants typically make informal settlements their first home when arriving in a city. They join already large populations of urban poor, with stressed infrastructure, in unsafe areas under unsuitable conditions. Currently home to some 1 billion people, informal settlements are where the impact of climate change is most acute.

The impacts of climate change, such as floods, heatwaves, droughts, landslides, storms, coastal erosion and inundation, and sea surges, are affecting cities around the world. The expected climatic changes in means (temperature, precipitation and sea-level rise), extremes (extreme rainfall, drought, heat or cold waves) and changes in exposure resulting in population movements and bio-climatic changes, will have particularly severe impacts on informal settlements. This is underlined by findings of the IPCC Special Report on Global Warming of 1.5°C

which states that “the extent of risk depends on human vulnerability and the effectiveness of adaptation for (...) informal settlements and infrastructure sectors”<sup>1</sup>.

The special vulnerability of informal settlements is due to three underlying factors: (i) The physical location is often on fragile sites such as steep slopes, coastlines or floodplains; (ii) The socio-economic characteristics of the residents, such as high levels of poverty and illiteracy mean that these communities have low capacity to deal with climate impacts; and (iii) The political and institutional marginalization of these communities, stemming from non-recognition of informal settlements as part of the larger city fabric, often results in the absence of meaningful risk-reducing services and infrastructure.

When we look at the challenges of urbanization, it becomes clear that city-wide resilience becomes an unattainable goal if we do not address the climate impact on informal settlements. Successful climate change adaptation requires a renewed focus on the most vulnerable communities. In fact, building the climate resilience of informal settlements can be a transformative process towards sustainable urban development, a once-in-a-lifetime opportunity that has the potential to change the social, political and economic fabric of human settlements, from small rural communities and market towns, to intermediate cities and metropolises. UN-Habitat's vision of “A better quality of life for all in an urbanizing world” is bold and ambitious; one that challenges us to galvanize international and national efforts on urbanization.

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<sup>1</sup> Hoegh-Guldberg, O., D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K.L. Ebi, F. Engelbrecht, J. Guiot, Y. Hijikata, S. Mehrotra, A. Payne, S.I. Seneviratne, A. Thomas, R. Warren, and G. Zhou, 2018: Impacts of 1.5°C Global Warming on Natural and Human Systems. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)], p. 180.



This guide supplements UN-Habitat's thematic guide "Addressing the most Vulnerable First – Pro-poor Climate Action in Informal Settlements"<sup>2</sup>. It provides a step-by-step methodology for engaging communities throughout the climate change vulnerability assessment and action planning process up to the development of concrete adaptation projects.

Community spirit coupled with integrity helps communities survive. However, climate change further reduces their assets and coping capacity and building their adaptive capacity or resilience is needed more than ever.

At the same time, it is this ingenuity and community knowledge that can enrich our response to climate change. This Guide leverages community capacities. It is designed to steer local-level engagement and planning with communities and support community resilience-building programmes, providing communities, community organizers, planners and local governments with the tools to engage. The Guide is derived from UN-Habitat's experience of working with informal settlements across the globe, and numerous case studies reflect this. In addition, the tools presented have been tested in UN-Habitat projects in Lao PDR, Fiji and The Solomon Islands.

The Guide further supports one of UN-Habitat's five Flagship Initiatives, **Resilient Settlements for the Urban Poor**, which aims to mobilize and coordinate large scale investments for urban adaptation and resilience-building into the global hotspots of vulnerability where it matters the most.

I hope this Guide will be useful for policymakers and practitioners in their efforts to galvanize community-based adaptation, while also mainstreaming such actions into citywide planning processes, in order to enable more resilient and inclusive cities, towns and human settlements.

**Ms. Maimunah Mohd Sharif**  
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<sup>2</sup>Dodman, D., Archer, D., and Mayr, M. (2018), Addressing the Most Vulnerable First: Pro-poor Climate Action in Informal Settlements, UN-Habitat, Nairobi. Available from <https://unhabitat.org/un-habitat-thematic-guide-addressing-the-most-vulnerable-first-pro-poor-climate-action-in-informal-settlements>







# INTRODUCTION

# INTRODUCTION

## 1.1. The need for community-driven approaches to resilience

Marginalized communities in informal settlements are particularly vulnerable to climate change. Their socio-economic vulnerability, traditionally expressed through the five shelter deprivations of limited access to water and sanitation, tenure insecurity, overcrowding and unsafe housing structures is aggravated by their climate vulnerability. Informal settlement communities often live in unsafe, flood- and landslide-prone locations, they often depend, at least partially, on climate-related livelihoods such as agriculture and their assets to protect themselves and recover from disasters are limited. Being outside the 'formal' structures of the city means that innovative approaches to climate resilience building are needed.

UN-Habitat, through its Cities and Climate Change Initiative (CCCI), has supported the conduct of city-wide climate change Vulnerability Assessments (VA). In every assessment, the climate change 'hotspots' included informal settlements. The resulting climate Action Plans have thus incorporated targeted actions to build the resilience of these communities as part of a comprehensive system's response to risk and vulnerability.

UN-Habitat's Participatory Slum Upgrading Programme (PSUP), a partnership of the European Commission and the Secretariat of the African, Caribbean and Pacific (ACP) Group of States, has addressed issues of vulnerability and marginalization through the lens of informal settlements upgrading, providing citywide upgrading strategies, anchored in policy and implemented at the level of informal settlements.

In many cities around the globe, the climate vulnerability of informal settlements has been recognized, providing a new impetus for settlements upgrading and the alignment with resilience building. To support the alignment of resilience building and upgrading at the sub-city level, new community-focused tools and planning processes are needed. This document provides guidance for teams tasked with facilitating vulnerability and risk assessments and climate change action planning processes at the community-level, with emphasis on the household level and on the vulnerabilities and resilience needs of specific groups such as women, youth, the elderly, people with disabilities, indigenous peoples or minorities.

This guide has been developed and tested through a variety of UN-Habitat projects in the Asia-Pacific region that either focus on community resilience, slum upgrading, or a combination of both in a variety of situations and geographic locations, including in Fiji, Lao PDR, Myanmar and Solomon Islands. These initiatives are supported by PSUP, the Adaptation Fund (AF), a multilateral climate finance mechanism under the United Nations Framework Convention for Climate Change (UNFCCC), and the Swedish International Development Cooperation Agency (SIDA). It also includes case studies from other regions, including several countries in Africa and the Caribbean.

Case studies are used throughout this guide, exemplifying the processes and methodologies involved in each of these specific applications. The importance of community vulnerability and risk assessments (VRA) in providing a starting point for the development of community action plans (AP) is emphasized throughout this guide. As such, these assessments and the subsequent action planning process can empower communities, and particularly people in vulnerable situations to work together to drive development, as opposed to being subjected to externally designed and instigated development initiatives.

This guide stresses that community-level VRAs and APs can and should be integrated into and inform broader planning processes at the city-level. To elaborate on the potential synergies within this nexus, examples drawn from local planning schemes in Fiji and Solomon Islands, as well as district and provincial plans in Lao PDR, will be introduced.

This guide also proposes the use of advanced but low-cost technology in achieving a high degree of resolution for more informed decision-making and for the establishment of accurate baseline data, such as the use of tablet technology to collect and collate household-level survey data, and the use of aerial photography and drone images to provide detailed spatial data for community consultations and action planning.

## 1.2. Importance of engaging across all levels of governance

Although the outputs of the VRA and AP methodology of this guide are tailored to the community-scale, collected information should feed into and strengthen planning and decision-making processes at the city, metropolitan, district, and provincial levels. Likewise, urban and regional assessments and plans need to inform community-level processes. The overall approach taken in conducting VRAs and APs at different levels is further outlined in Table 1.1.

**Table 1.1.** Vulnerability and Risk Assessment and Action Plan: Approaches at different levels

| Level of Engagement                                                                 | Focus                                                                                                                                                                                                                                          | Importance of community-level engagement for policies, plans and actions                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     |                                                                                                                                                                                                                                                | Community Vulnerability and Risk Assessment                                                                                                                                                                                                                                                                                                                                                                                                                     | Community Action Planning                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Community:<br>Informal settlements/<br>Peri-urban settlements/<br>Rural settlements | Community participatory processes.                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>• Understanding communities' perceptions of current and future climate risks.</li> <li>• Data and analyses are available to local and national government bodies and can be integrated into planning processes and policies.</li> </ul>                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Based on the VRA's findings, activities, and projects (e.g., community-based infrastructure, awareness-raising programs, etc.) that reduce vulnerabilities and risks can be identified and prioritized.</li> <li>• Actions are coordinated with local and national governments.</li> </ul>                                                                                                                                   |
| Town/City                                                                           | <ul style="list-style-type: none"> <li>• Institutional: Guiding local level processes and aligning assessment outcomes.</li> <li>• Information: Provide information on assessments, policies, plans for local planning, and action.</li> </ul> | Town/city policies, plans, strategies (relating to disaster risk reduction (DRR), climate change, infrastructure, etc.) are informed by community realities.                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• Town/city climate resilience APs are informed by and support community climate resilience APs.</li> <li>• The spatial and social integration of settlements within larger systems is key to increasing their climate resilience (particularly in the case of informal settlements that are often outside of formal regulatory systems). Actions in community-level APs may go beyond the settlement's boundaries.</li> </ul> |
| District/<br>Provincial/<br>Regional/<br>Metropolitan                               | Institutional: Key subnational assessments, plans, policies, and strategies (including watershed- and ecosystem-wide) inform and direct local planning and action.                                                                             | Inform and influence policies and planning at the district/province/ regional/metropolitan levels.                                                                                                                                                                                                                                                                                                                                                              | Inform and influence APs at higher levels for an integrated approach.                                                                                                                                                                                                                                                                                                                                                                                                 |
| National                                                                            | Key national assessments, plans, policies, and strategies (including UNFCCC reports, national climate change policies and strategies, slum upgrading, etc.) inform and direct subnational and local planning and action.                       | <ul style="list-style-type: none"> <li>• Based on the above information, barriers that stand in the way of increasing community-level resilience to climate change can be identified and addressed in national plans and policies.</li> <li>• National VRAs often form the basis for communications to the UNFCCC and the nationally determined contributions (NDCs), among others. Community-level information can provide compelling case studies.</li> </ul> | Communities that are highly vulnerable (e.g., informal settlements) are often excluded from higher-level processes. Ensuring that actions captured in community-level APs reach higher levels of discussion can help address this issue.                                                                                                                                                                                                                              |

### 1.3. Purpose and scope of this guide

To ensure that projects and related activities are adequately targeted at reducing climate change vulnerabilities in communities, it is necessary to conduct VRAs to understand which people and which areas are most at risk and why. This information can subsequently be used to:

- Inform participatory action planning processes that lead to community-driven and owned adaptation, as well as settlements upgrading processes.
- Identify lower risk areas where climate-resilient infrastructure and housing could be built.
- Develop targeted early warning systems, training programs in environmental management and DRR, community capacity building, alternative livelihood strategies, etc.
- Select, prioritize, and design appropriate resilient infrastructure development options.

To minimize social and environmental risks of projects, the VRAs conducted are also used to collect information about potential risks (e.g., people in vulnerable situations, natural habitats). Specific VRAs targeting people in vulnerable situations are necessary to capture more detailed disaggregated data focused on climate change-related issues, needs, and perceptions of specific groups such as women and youth with the aim to develop differentiated approaches to building resilience.

This guide promotes community-driven development in identifying issues, developing solutions with technical assistance partners, and active participation in implementing projects. Co-production processes in planning are a critical component of both appropriately selecting projects and building cohesion within communities. Engagement in community committees builds motivation for collective action in project implementation. Full and equal participation of women, youth, and other people in vulnerable situations is essential to reach all genders and all ages and to avoid under-representation of specific groups.

### 1.4. Target audience

The process described in the guide is designed to be used by a wide range of actors. It is aimed at teams tasked with facilitating VRAs and AP processes at the community-level, assisting them by providing guidance, methods, and tools. It may also support wider national government initiatives for slum upgrading and strengthening community climate resilience as well as community-based organizations (CBOs).

### 1.5. How to use this guide

This guide focuses on the processes involved in developing community-based VRAs and APs, providing general content, tools, and guidance on participatory methodologies and techniques. It may be used to support slum and informal settlements upgrading initiatives or can be used as a stand-alone process tool in support of local action. Case studies from different regions exemplify the processes and methodologies described.

The document's layout has been designed to guide the reader throughout the process in an easy and recognisable way, as shown in the illustrations on the next page.



## 1.6. The importance of data

Data and information generated in the process of conducting VRAs and formulating APs at the community level may potentially inform broader planning processes and contribute to a more comprehensive database at the local, regional, and national levels. In many cities and countries in which community-level VRAs are conducted with the assistance of UN-Habitat, the data deficit constrains planning and development efforts, particularly in terms of community-level planning. Receiving feedback on appropriate spatial and demographic data may help project teams and community planners to engage with broader stakeholders on data needs that go beyond the narrow reach of VRAs. However, it is imperative that any potential for the sharing of data collected at the community-level is clearly communicated to all participants from the outset. Moreover, it is crucial that such data is fed back to the correct agency or statistical body in the relevant country, and in compliance with data protection regulations and ethical considerations.

## 1.7. Related tools and publications

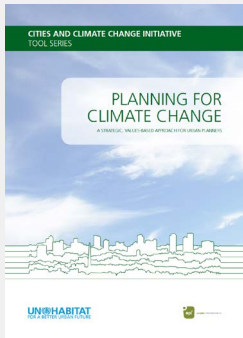
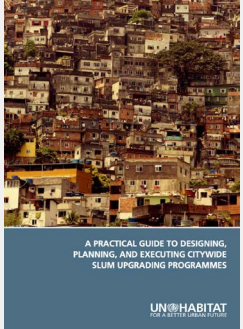
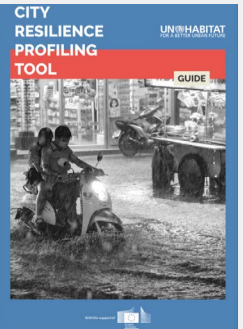
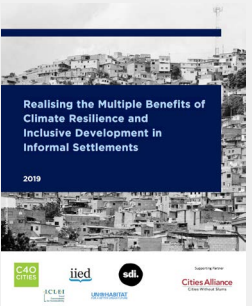
A number of tools and publications have been developed by various stakeholders and organizations involved in conducting VRAs, APs, climate resilience and, disaster risk management. Table 1.2 includes several publications as suggested readings.

**Table 1.2.** Suggested readings

| Publication                                                                                     | Synopsis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cover |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| UN-Habitat (2019). Thematic Guide: Pro-poor Climate Action in Informal Settlements <sup>3</sup> | <p>This Thematic Guide is intended to be the first of a series of resources for those with interest in the opportunities for building resilience and addressing the challenges of informality hand-in-hand.</p> <p>Note: This <i>Climate Change Vulnerability and Risk - A Guide for Community Assessments, Action Planning and Implementation</i> publication supports the operationalization of this Thematic Guide.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |
| UN-Habitat, DiMSUR. (2018). City Resilience Action Planning Tool (City-RAP) <sup>4</sup>        | <p>The City RAP tool has been developed and implemented in Sub-Saharan Africa. It enables and builds capacities of local authorities and communities in small to medium-size cities or neighbourhoods in larger cities to jointly lead urban resilience planning. Within the broad spectrum of urban resilience, the tool is built on participatory methods and consensus-building techniques to involve all concerned stakeholders with the aim to identify the entry points to start building the city's resiliency, with minimal external support.</p> <p>The conceptual framework of City RAP integrates both municipal self-assessment and participatory risk mapping in vulnerable communities. Prioritization of issues, in-depth baseline assessments as well as identification of concrete actions, all done jointly by local authorities and community representatives, culminates in a ten-year city Resilience Framework for Action.</p> |       |

<sup>3</sup> <https://unhabitat.org/un-habitat-thematic-guide-addressing-the-most-vulnerable-first-pro-poor-climate-action-in-informal-settlements/>

<sup>4</sup> [http://dmsur.org/wp-content/uploads/2019/03/CityRAP-Tool\\_Booklet\\_05032019-compressed.pdf](http://dmsur.org/wp-content/uploads/2019/03/CityRAP-Tool_Booklet_05032019-compressed.pdf)

|                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <p>UN-Habitat (2014). Planning for Climate Change<sup>5</sup></p>                                                                                                      | <p>This guide was developed for city planners to understand better, assess, and take action on climate change at the local level, specifically targeted to the needs of planners and allied professionals in low and middle-income countries where the challenges of planning for climate change are particularly high.</p> <p>One of the key themes in this guide is participation. The aim is to ensure that support of local communities and other stakeholders is sought so that local values, interests and priorities are captured.</p>                                                                                                                                                                              |    |
| <p>UN-Habitat (2014). A Practical Guide to Designing, Planning, and Executing Citywide Slum Upgrading Programmes<sup>6</sup></p>                                       | <p>This guide focuses on informal settlements upgrading and preventing the appearance of new ones.</p> <p>The guide draws on the wealth of knowledge and experience that has been accumulated during the last 50 years on how to establish and implement successful city-wide slum upgrading programs.</p>                                                                                                                                                                                                                                                                                                                                                                                                                 |   |
| <p>UN-Habitat (2018). City Resilience Profiling Tool<sup>7</sup></p>                                                                                                   | <p>UN-Habitat defines a resilient city as one that is able to absorb, adapt, and recover from the shocks and stresses that are likely to happen, transforming itself in a positive way towards sustainability. This guiding document explores the concept and various elements of urban resilience and explains the various phases followed in supporting local actors to make a plan for resilience-based urban development in their city. The phases include initiating a partnership between local authorities, UN-Habitat, and local stakeholders, providing training, collecting data, analysis, and diagnosis of the city's challenges, designing actions for resilience, and finally putting these into action.</p> |  |
| <p>C40 Cities Climate Leadership Group (2019). Realizing the Multiple Benefits of Climate Resilience and Inclusive Development in Informal Settlements<sup>8</sup></p> | <p>This report explores the benefits of upgrading informal settlements in a climate resilient, inclusive and low carbon way. Informal settlements upgrading is a process of improving living conditions, often through the provision of shelter and services and creating stronger links with the 'formal' city. The report presents a case study of a holistic intervention in Mukuru, Nairobi, analyzing the benefits of ten specific upgrading actions and offering several key recommendations for international, national, local policymakers and non-governmental organizations (NGOs) for future upgrading initiatives in informal settlements in cities.</p>                                                       |  |

<sup>5</sup> <https://unhabitat.org/books/planning-for-climate-change-a-strategic-values-based-approach-for-urban-planners-cities-and-climate-change-initiative/>

<sup>6</sup> <https://unhabitat.org/a-practical-guide-to-designing-planning-and-executing-citywide-slum-upgrading-programmes>

<sup>7</sup> <http://urbanresiliencehub.org/wp-content/uploads/2018/10/CRPT-Guide-Pages-Online.pdf>

<sup>8</sup> <http://urbanresiliencehub.org/wp-content/uploads/2019/11/C40-Climate-Resilience-Inclusive-Housing.pdf>

## 1.8. Key concepts

This section includes the key terminology employed throughout this guide. Most of the definitions included are provided by the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report<sup>9</sup>.

### **Adaptation**

The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.

### **Adaptive capacity**

The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.

### **Exposure**

The presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected.

### **Hazards**

The potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources. In this report, the term hazard usually refers to climate-related physical events or trends or their physical impacts.

### **Resilience**

The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation.

### **Risk**

The potential for consequences where something of value is at stake and where the outcome is uncertain, recognizing the diversity of values. Risk is often represented as probability of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. Risk results from the interaction of vulnerability, exposure, and hazard. (See Figure 1.1.).

### **Risk perception**

The subjective judgment that people make about the characteristics and severity of a risk.

### **Sensitivity**

The degree to which a system or species is affected, either adversely or beneficially, by climate variability or change. The effect may be direct (e.g., a change in crop yield in response to a change in the mean, range, or variability of temperature) or indirect (e.g., damages caused by an increase in the frequency of coastal flooding due to sea level rise).

### **Shocks**

Potential uncertain abrupt or long-onset events, whose main consequence is shifting a system from its current state to a disturbed one.

<sup>9</sup> Intergovernmental Panel on Climate Change (IPCC), 2014: Annex II: Glossary [Mach, K.J., S. Planton and C. von Stechow (eds.)]. In: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, pp. 117-130. Retrieved from: [https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_Glossary.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_Glossary.pdf)

### Stresses

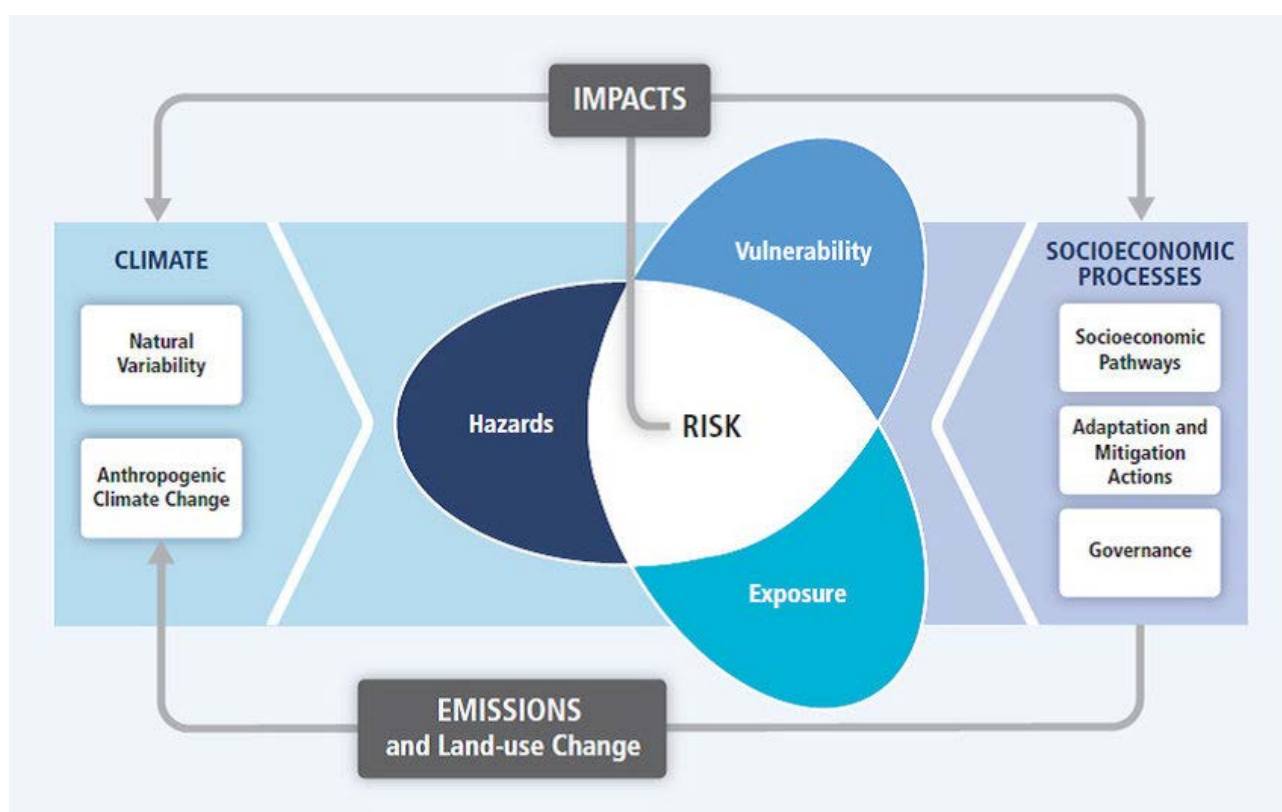
Chronic and ongoing dynamic pressures within a system, whose cumulative impacts undermines the capacity for sustainability and resilience.

### Urban resilience<sup>10</sup>

Urban resilience is the measurable ability of any urban system, with its inhabitants, to maintain continuity through all shocks and stresses, while positively adapting and transforming towards sustainability.

### Vulnerability

The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.



**Figure 1.1.** IPCC 5th Assessment Report risk and vulnerability framework<sup>11</sup>

<sup>10</sup> UN-Habitat (2018). City Resilience Profiling Tool. Available from <http://urbanresiliencehub.org/wp-content/uploads/2018/10/CRPT-Guide-Pages-Online.pdf>

<sup>11</sup> Source: IPCC 2014 (Fifth Assessment Report, Working Group 2, Chapter 19, Figure 19-1).



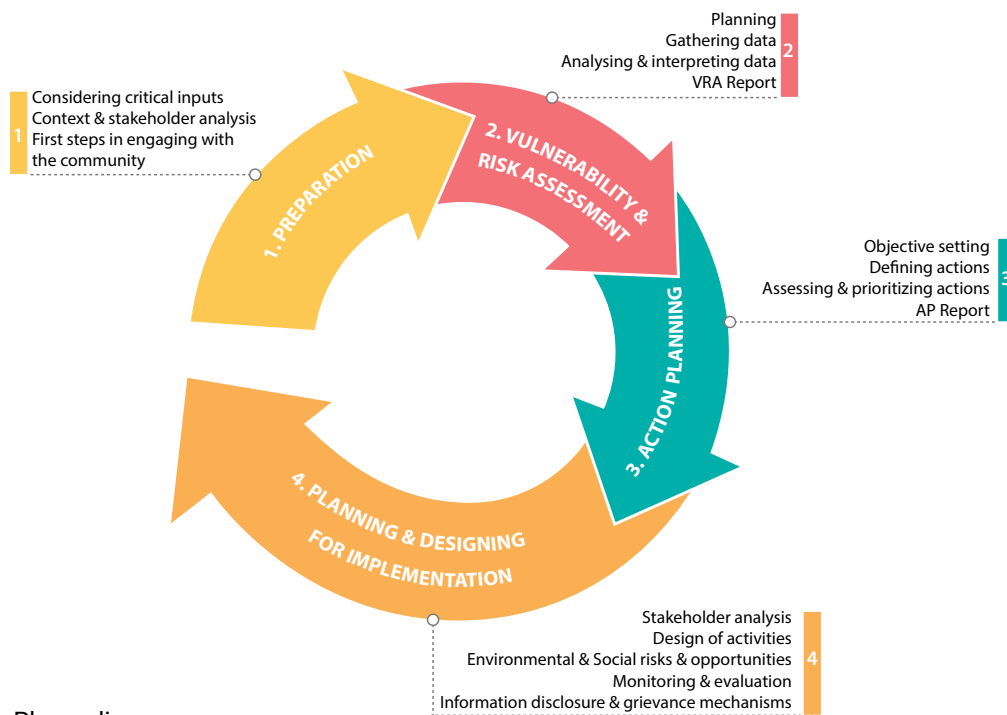


## **OVERVIEW & METHODOLOGY**

# OVERVIEW & METHODOLOGY

## 2.1. Overview

This guide focuses on the processes needed to develop VRAs and APs at the community-level with the ultimate goal of promoting actions that increase resilience and adaptive capacity. Four phases will be presented to guide the process: (1) Preparing for the Vulnerability and Risk Assessment and Action Plan; (2) The Vulnerability and Risk Assessment; (3) The Action Plan; and (4) Planning and designing the implementation (Figure 2.1).



**Figure 2.1.** Phase diagram

### Preparation phase

The preparation phase provides a critical foundation for community participation through the community-based VRA and AP. It includes a series of actions such as collation of secondary data on inputs that are relevant for the VRA and AP (e.g., policies, plans, initiatives, rules, regulations, etc.), gathering data on the context (e.g., climate-related data, socio-economic data, etc.) and identifying key stakeholders to engage with the community in an effective and culturally-sensitive way.

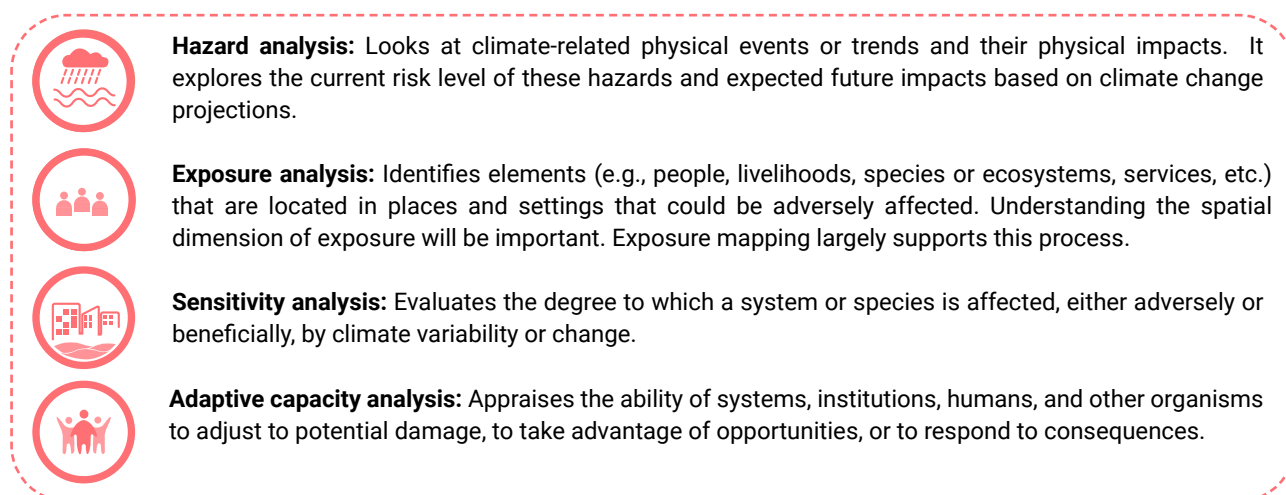
### Vulnerability and Risk Assessment phase

Four stages are identified for the VRA phase: (1) Planning the assessment; (2) Gathering data; (3) Analyzing and interpreting data; and (4) Elaborating the VRA report. Factors such as the variable size and complexity of communities, the project's objectives, available resources, time constraints, scale of the intervention, etc. will influence the level of assessment. This guide distinguishes between two levels for data collection and analysis: the community and the household level. Methods and tools that have been successfully employed in different geographic areas have been included.

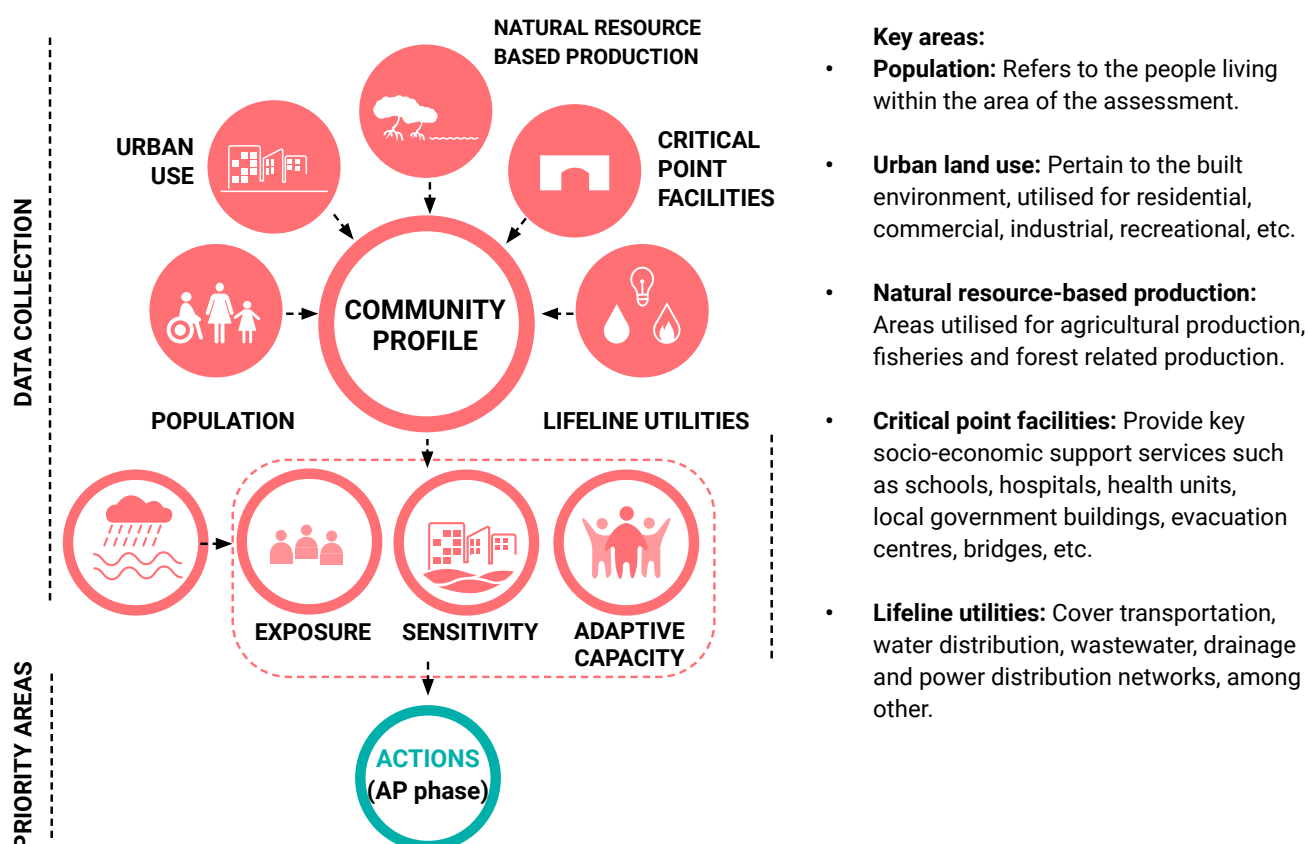


**Figure 2.2.** Vulnerability and Risk Assessment process flow

Consistent with internationally recognized methodologies, the VRA analyses four key components: climate hazard characteristics (including trends and projections), exposure (of people, livelihoods, species or ecosystems, etc.), sensitivity, and the adaptive capacity of people.



Data is collected around five key areas and climate hazards (including slow and rapid onset hazards) to conduct the aforementioned analyses. The findings and conclusions from the analysis will inform the action identification and prioritization during the AP phase. The figure below illustrates this process:

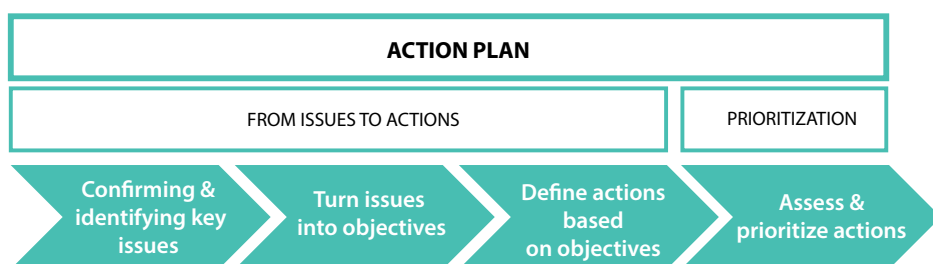


**Figure 2.3.** Vulnerability and Risk Assessment and Action Planning overview<sup>12</sup>

<sup>12</sup> The overview presented in this guide is aligned to the framework and methodology being employed by UN-Habitat for city-level Vulnerability and Risk Assessments in the Asia Pacific Region.

### Action Planning phase

As mentioned, the findings and conclusions from the VRA will lay the foundation for the AP. Four steps will guide the team in turning risks identified during the VRA into prioritized actions that increase community resilience and adaptive capacity<sup>13</sup>. These are: (1) Confirm and identify issues; (2) Turn issues into objectives; (3) Define actions based on objectives; and (4) Assess and prioritize actions (as shown in Figure 2.4).



**Figure 2.4.** Action Planning process flow

### Planning and designing for the implementation phase

Building on these previous processes, the last phase described in this guide is planning and designing for implementation. It explains how prioritized actions are turned into specific interventions that are designed and assessed in terms of Environmental and Social Safeguards (ESS) and cost-effectiveness. This phase lays the groundwork for the implementation.

#### Box 1

## SHOCKS AND STRESSES

Communities, and other systems, are often exposed to a range of shocks and stresses. Disasters triggered by biological, environmental, and other types of hazards, can be further exacerbated by climate extremes. Examples of other hazards include geological hazards such as earthquakes or biological hazards such as epidemics.

Therefore, although the main focus of this guide remains on climate change and climate-related hazards, it is important to identify other types of hazards and how these can interact. Furthermore, information on the likely impacts on communities and their assets may also be collected.

As shown in this section, the methods presented in this guide collect data around five key areas when carrying out the community profile. This information is used to conduct the analysis of four key components (i.e., hazard, exposure, sensitivity and adaptive capacity). Given that a part of this information is related to the characteristics of the community under study (e.g., socio-economic characteristics, access to infrastructure, etc.), it can also inform and provide an important baseline in the face of other hazards that are not climate-related. Case study 6 presents an example of how the processes involved when developing the community-based VRAs in 16 informal settlements in Fiji were useful during the COVID-19 emergency response.

Moreover, although the action planning phase aims to identify community-based interventions that will strengthen the resilience of communities to climate change, understanding the risks to other hazards will be critical.

<sup>13</sup> The methodology applied is largely based on the process described in the Planning for Climate Change Guide and Tool documents. Available online: <https://unhabitat.org/books/planning-for-climate-change-a-strategic-values-based-approach-for-urban-planners-cities-and-climate-change-initiative/>

## 2.2. Methodology

The methodology employed is intrinsically participatory and community-based with a focus on ensuring that people in vulnerable situations (women, girls, youth, the elderly, and people with disabilities) articulate their realities and their needs supported by the team of the assessment and planning process. This guide presents a number of participatory methods and activities for data collection and planning at the community level. These range from focus group discussions, to household surveys, mapping exercises, brainstorming sessions to identify resilience-building activities, etc.

Engaging the community throughout the different phases presented in this guide will allow for a two-way information exchange that will largely benefit the entire process. Assessment teams may present climate-related scientific information in a comprehensible manner, raising awareness on current and future risks of climate change within the community and allowing the team to understand the level of knowledge in the subject communities. Participatory data collection methods used during the VRA will help capture the main challenges faced by community members and their perceptions of current and future climate-related risks. This information will feed into the broader process of the VRA. Furthermore, organizing participatory activities during the AP will provide opportunities to find sensitive solutions that enhance adaptive capacity while considering community's local knowledge and practices. Engaging the community throughout the entire process will also build 'ownership' of the planning process and related interventions, leading to higher levels of community commitment and more climate resilience-based sustainable implementation outcomes.

In relation to the aforementioned participatory processes, the following aspects may be considered:

- Different participatory workshops may be organized throughout the phases, as described in the guide. To the largest extent possible, the same participants should be engaged throughout this process.
- Facilitators should have adequate knowledge of participatory methodologies and techniques.
- Facilitation techniques and methods shall be culturally sensitive.
- When people in vulnerable situations are identified, appropriate measures are to be taken to ensure that their perspectives are reflected in the process in a culturally sensitive manner (for example, by holding separate focus group discussions with women, contacting peak bodies that represent vulnerable groups, etc.).
- Participatory activities must be carried out in the local languages and be informed (and if necessary guided) by local people.
- Appropriate activity methodologies will be selected, taking into account the number of participants.



Flexibility is crucial when engaging in community processes. This guide has been designed to be used flexibly and highlights the need to adapt tools and methods to specific contexts. Inclusiveness will be at the core of the process to ensure equal participation. Flexibility will also be required to ensure that people in vulnerable situations are involved in a culturally sensitive way. To successfully guide the process, facilitators must be ready to adapt the system from one community to another.



**Focus group discussion, Fiji**  
© UN-Habitat



**Focus group discussion, Lao PDR**  
© UN-Habitat



Fish market, Fiji  
© UN-Habitat / Begoña Peiró

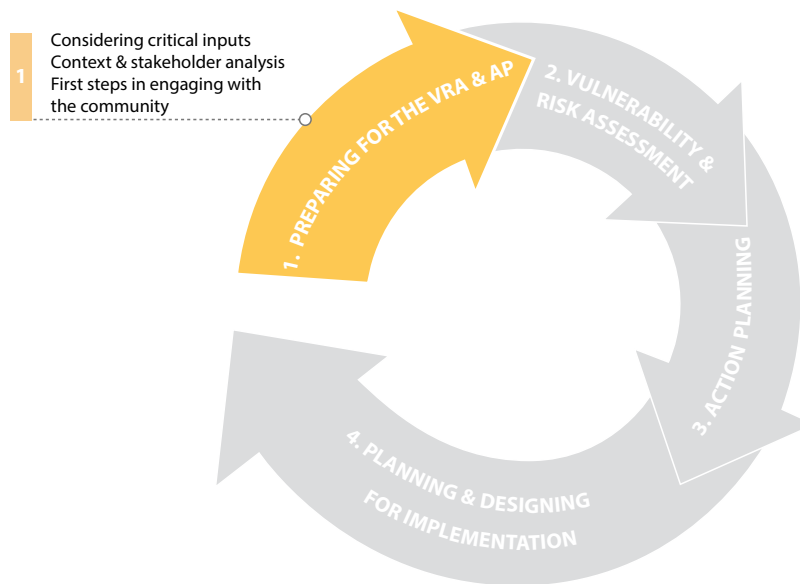


# **PREPARING FOR THE VULNERABILITY & RISK ASSESSMENT & ACTION PLANNING**

# PREPARING FOR THE VULNERABILITY & RISK ASSESSMENT & ACTION PLANNING

## 3.1. Where to start

This chapter describes a number of steps needed before starting the VRA and AP. It takes the user through the process ‘step-by-step’, highlighting the main considerations which are fundamental for initiating and conducting the VRA and AP. Reviewing existing policies, plans, national laws, rules, regulations, and standards to ensure compliance, gaining Free Prior and Informed Consent (FPIC), setting a strategy for compliance with ESS, planning information disclosure processes and putting in place grievance mechanisms, are all steps that should be followed prior to the assessment. Pre-engagement with the communities during this phase will be the starting point to understand existing community governance structures and key community representatives. Promoting social mobilization and engagement will help build community ownership throughout the whole process.



**Figure 3.1.** Phase diagram: Planning and profiling

## 3.2. Inputs to consider

Prior to any community engagement, government approval processes (e.g., research permits) must be identified. Where such processes apply, they must be complied with and are likely to provide additional safeguards for both the project and community members (such as independent avenues for grievance and project legitimacy).

Components of assessment and engagement leading up to the VRA and AP may include (although not necessarily in this order):

- Reviewing existing policies, plans, national laws, and standards to ensure compliance.
- Reviewing ESS policies at the beginning of the project in order to identify potential risks and mitigation measures as soon as possible. ESS policies will also allow the identification of potential benefits that can be enhanced throughout the process.
- The uneven distribution of impacts and vulnerabilities to climate change results in some groups being impacted more severely than others. It is important to identify such groups, to ensure their full and equal participation

throughout the process, and because they will potentially require the most attention in the AP. Such groups often include women, youth, the elderly, and the urban poor. These groups are not only particularly vulnerable but also traditionally under-represented. To tackle this issue of under-representation during consultation with stakeholders, it is necessary to apply gender and youth informed participatory methods. This can be done by consulting with male and female beneficiaries/stakeholders, both separately and in mixed groups.

- Rapid city-wide assessments of settlement sites and engagement with key approval bodies to assess whether there are land disputes, identifying key land use planning constraints and potential issues in gaining consent or formalizing agreements with landowners (including traditional landowners), as well as identifying other factors that could undermine land tenure security, security of investments or permissibility of development.
- Gaining or clarifying procedures for gaining consent from individual landowners for potential upgrading (e.g., government agencies or customary landowners), and defining broadly permissible classes of development.

### 3.2.1. Consistency with environmental and social safeguards policies

ESS aim to avoid, reduce, or compensate for the negative effects of activities<sup>14</sup>. However, most ESS policies go beyond the risk assessment approach, seeking opportunities to maximize environmental and social benefits. Even though the ESS risk assessment, as such, will be carried out once activities are defined, all steps before will shape the process and form the basis for this assessment. For this reason, this guide aims to mainstream ESS into the whole process (Annex 1 provides an overview of how ESS risks and opportunities can be mainstreamed into each phase). During this first phase, an ESS strategy may be developed to manage compliance adequately and to lay the foundation for “Environmental and Social Safeguards thinking” throughout the entire process.

Community participation throughout different phases (e.g., assessment phase, project design, implementation, and monitoring) is often among the principles and requirements of ESS policies. Furthermore, grievance mechanisms are to be set up for stakeholders to voice any project-related concerns they have, so that action can be taken. The participatory approach followed in the VRA and AP phases presents the opportunity to integrate sessions that are specific to ESS. This will help to raise awareness among key stakeholders on what ESS are, the principles followed, and other aspects such as the existence of grievance mechanisms. Preparing visual and other material that easily communicates key aspects related to ESS can help raise awareness of community members, including their rights and principles that must be ensured throughout the whole project cycle<sup>15</sup>.

In the context of climate change and disaster risks, involuntary resettlement is particularly important since informal settlements and people in vulnerable situations might be located in risk prone areas. Involuntary resettlement refers to both physical displacement (with respect to shelter), and economic displacement (loss of assets or access to assets leading to a loss of income sources or means of livelihood)<sup>16</sup>. Involuntary resettlement is to be avoided at all times. However, when limited resettlement is unavoidable or projects involve providing housing alternatives for households that want to move (e.g., from hazardous areas to safer areas), strong adherence to due process for resettlement is imperative. Such a process involves informing the displaced persons of their rights, consulting them on their options and offering technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation (Box 2 provides more information).

<sup>14</sup> <https://www.gcfreadinessprogramme.org/sites/default/files/Environmental%20and%20Social%20Safeguards%20at%20the%20Green%20Climate%20Fund.pdf>

<sup>15</sup> This will be further detailed under section ‘First steps in engaging with the community’.

<sup>16</sup> IFC Performance Standard 5. Land acquisition and Involuntary Resettlement (2012). [https://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/sustainability-at-ifc/policies-standards/performance-standards/ps5](https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/performance-standards/ps5)

## Box 2

## RESETTLEMENT PROCESS<sup>17</sup>

When resettlement is unavoidable or projects involve providing housing alternatives for people who want to move, displaced persons shall be informed of their rights, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation.

In line with the UN Basic Principles and Guidelines on Development-based Evictions and Displacements, the resettlement process must follow the elements mentioned below:

**Prior to evictions:** All possible alternatives to evictions should be explored. Resettlements and evictions particularly affect women, children, youth, the elderly, people with disabilities, and indigenous people disproportionately and increase their vulnerability. All potentially affected groups and persons, and especially, people in vulnerable situations, have the right to relevant information, full consultation and participation throughout the whole process. Additional processes should be put in place to ensure sufficient human rights safeguards, particularly during the vulnerability and risk assessment phase.

The following elements must be included throughout the process: (1) Appropriate notice to all potentially affected persons that eviction is being considered and announcement of public hearings on the proposed plans and alternatives; (2) Effective dissemination by the authorities of relevant information in advance (such as land records and proposed resettlement plans); (3) Reasonable time period for public review of, comment on, and/or objection to the proposed plan; (4) Legal, technical and other relevant advice to the affected persons about their rights and options; (5) Public hearing(s) that allow affected persons/advocates to challenge the relocation, present their demands and/or to propose alternatives.

**During evictions:** If evictions are unavoidable, there are certain procedural requirements that must be followed to avoid any violation of human rights or the dignity of those being affected.

Procedural requirements include: (1) The mandatory presence of governmental officials/their representatives on-site during evictions; (2) Upon request, neutral observers should be allowed access during the eviction process; (3) Dignity and human rights to life and security of the affected people shall not be violated. Special attention is to be paid to ensure that gender-based violence and discrimination does not take place during evictions and that the human rights of children are protected; (4) Evictions must not take place in inclement weather, at night, during festivals/religious holidays, prior to elections, during/prior to school examinations; (5) No one is subject to direct or indiscriminate attacks or other acts of violence.

**After an eviction:** Just compensation and sufficient alternative accommodation must be provided immediately upon eviction. Members of the same extended family are not to be separated as a result of the resettlement process. Furthermore, special attention must be paid to the needs of women, children, and other vulnerable groups, including health needs, ensuring healthcare is not disrupted and prevention of contagious and infectious diseases at the relocation sites.

Safe and secure access to the following services must be ensured: (1) Essential food, potable drinking water, and sanitation; (2) Basic shelter and housing; (3) Appropriate clothing; (4) Essential medical services; (5) Livelihood sources; (6) Fodder for livestock and access to common property resources they depended on before being relocated; (7) Education for children and childcare facilities.

<sup>17</sup> Based on the United Nations Basic Principles and Guidelines on Development-based Evictions and Displacement. [https://www.ohchr.org/Documents/Issues/Housing/Guidelines\\_en.pdf](https://www.ohchr.org/Documents/Issues/Housing/Guidelines_en.pdf)

### 3.2.2. Consistency with local, regional, national and international strategies and standards

To ensure that community VRAs and APs are consistent with national procedures and standards (and thus can feed into national assessment and planning processes), it is important to understand how this assessment and planning process will comply with relevant national processes and standards. Note also that the preparation of the VRA and AP should identify new opportunities to decentralize decision-making and approval.

The tool below can be used to list policies, plans, and programmes relevant to the VRA and AP process, providing an explanation of how the project is consistent with these. If appropriate, it can also include how it complements wider national strategic objectives, policies, or programmes. Where necessary, the tool may also note areas that will require coordination with other initiatives underway in the subject community (e.g., WASH programs already under development by a government agency or NGO). See Case Study 1 for an example of how this was conducted in the context of Fiji.

#### Tool Prep 1 Consistency with policies, plans and programmes

| Policies, plans and programmes         | Strategy alignment and key assessment criteria for consideration in planning |
|----------------------------------------|------------------------------------------------------------------------------|
| e.g., National Climate Change Strategy |                                                                              |
|                                        |                                                                              |

As part of the desk review that forms the basis of identification of policies, plans, and programmes, also extract relevant rules, regulations, standards, and procedures of relevance to both the climate and disaster vulnerability of the subject communities and any prospective actions that may be undertaken. Note that this activity will need to be revisited during the action planning phase as both vulnerabilities and proposed actions become more detailed (for instance, specific regulations may need detailed examination relating to roofing materials, or engineering assessments for housing in landslide risk zones).

#### Tool Prep 2 Compliance with rules, regulations, standards and procedures

| Relevant rules, regulations, standards and procedures | Compliance, procedure, documentation, authorizing offices and potential for decentralization of decision making |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| e.g., Building code                                   |                                                                                                                 |
|                                                       |                                                                                                                 |

# CASE STUDY 1

## Alignment with national strategies and policies

### Vulnerability Assessment (VA) in Wainivokai Lami, Fiji

An in depth institutional and policy context assessment is essential in ensuring that the assessment and action planning process occurs within the parameters of and in alignment with current and forthcoming policy frameworks at the national and/or local level. Furthermore, it is important that suggested actions complement national and/or local climate change and planning strategies. A thorough analysis of administration and governance was conducted in the process

of the VA for Wainivokai (Fiji). This has ensured that the AP subsequently developed for the area is strongly aligned to the Fiji Informal Settlement Upgrading Strategy (FISUS). This example further highlights the integrated and complementary nature of the VA and the AP processes. The details of some aspects of this alignment can be observed in the extract from the Wainivokai AP shown below.

**Table 3.1.** Alignment with the Fiji Informal Settlement Upgrading Strategy (FISUS)

| Relevant FISUS Actions                                                                                                                                                                                          | Alignment to Wainivokai actions                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Matrix A: Land Action Plan<br>2.4 Successful participatory planning and squatter community involvement in upgrading works.<br>2.4.1) Training on community financing, sweat equity and effective participation. | U2.2. Construction training.                                                                                                   |
| Matrix C: Basic Services Action Plan.<br>1). Access to sustainable and safe drinking water.<br>1.0 Provision of proper up to standard water reticulation in incremental or full upgrading.                      | U1.3. Establishment of community water tanks to harvest rainwater.<br>U3.1. Legal and financial support for reticulated water. |
| 2). Access to adequate sanitation<br>2.0. Provision of alternative sanitation means besides water borne reticulated system in areas not reticulated and connection of all homes to the system.                  | U2.6. Design for a system to control black water and graywater for the households with poor sanitation and hygiene facilities. |

### 3.3. Context analysis

During the preparation phase, data can be gathered at multiple levels to get a comprehensive overview of the context. Information on climate change (e.g., projections, long-term historical records, etc.) is often available at the national or local level, and may frequently be accessed upon written request. Satellite imagery may also be obtained from multiple sources and provide valuable data. For example, satellite imagery may be used to compare a specific location before and after a disaster event or urban growth patterns over time. The images below show an example of a settlement in the Solomon Islands that was affected by a major flood event.



**Koa Hill floodplain before the flood**

© Google Earth



**Koa Hill floodplain after the flood**

© Google Earth

Among the aspects that can often be collected from various secondary sources (e.g., National entities, meteorology service office, reports from development partners, etc.):

- Information on observed changes in local climate and its variability, as well as trends in frequency and magnitude of climate extremes (e.g., trends in average, minimum and maximum monthly and seasonal temperatures and precipitation; change in the length of monsoon period; change in frequency and severity of extreme events, etc.)
- The current risk level of climate hazards.
- Expected intensity, frequency and timescale of climate hazards.
- Expected future impacts of the identified hazards.
- Vulnerable groups in the area and how these are affected by the identified hazards.
- Major climate hazards that occurred in the past years. Related information on the intensity, scale of the hazard, casualties, economic impacts, etc. in the area.
- Sectors, assets, or services that were impacted the most due to major climate hazards which occurred in the past years in the area.
- Vulnerable population groups that were affected the most by major climate hazards in the past.



If available, gathering data on the socio-economic and cultural context such as demographic characteristics of the community, levels of literacy, healthcare, or the status of women in the area may help with identifying groups of people in vulnerable situations. Obtaining this information before engaging with the community can be useful to design an appropriate strategy for equal participation and to ensure that a culturally sensitive approach is taken.

## 3.4. Stakeholder analysis

Effective participatory processes rely upon developing a comprehensive understanding of the range and types of stakeholders and stakeholder groups within a community. This may be done through a stakeholder analysis and mapping. Usually, the first step in carrying out a stakeholder analysis is identifying key stakeholder groups and individuals. It is recommended to identify as many stakeholders as possible for a comprehensive analysis.

Some examples of key stakeholders include:

- Local institutions (non-governmental organizations, community-based organizations, educational institutions, etc.)
- Local government
- Community leaders or gatekeepers
- People in vulnerable situations (women, youth, the elderly, people with disabilities, indigenous peoples, etc.)
- Community or social mobilizers
- Neighbouring communities (that may be affected by the project, or may share similar issues and concerns)

Many methodologies and tools are available to carry out a stakeholder analysis. Mapping stakeholders or using matrices can be useful to assess and prioritize the engagement of specific groups based on their different roles in relation to the project, level of vulnerability, levels of influence, how they could contribute to the project, etc. Mapping levels of influence will help, for example, understanding the distribution in decision making, and identifying gaps inclusion in decision-making processes. Data for the stakeholder analysis can often be collected from secondary sources (e.g., information available online), through interviews with key informants, focus group discussions, etc.

Based on the level of stakeholder and community engagement that the project is aiming for, the team can use the stakeholder analysis when prioritizing engagement with specific groups. It will also help choose the best methodologies and activities to engage with these groups. Tools Prep. 3, 4 and 5 can support the stakeholder analysis and mapping.

### Tool Prep 3 Stakeholder analysis

The tool below can be used to analyse stakeholders that may be relevant to the VRA and AP processes. Stakeholders are listed, including details on their stake, influence, and capacity. This tool can be combined with other methods, such as snowball mapping. The snowball mapping method helps to complete the list of stakeholders by starting with a few and asking those to identify new stakeholders and provide further contacts.

| Stakeholder<br>(Name of specific person,<br>institution or group) | Stake<br>(Why should they be<br>engaged in the process?) | Influence<br>(In what ways and how<br>much can they contribute to<br>decision-making?) | Capacity<br>(What knowledge/ skills/<br>resources can they<br>contribute to the process?) |
|-------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1.                                                                |                                                          |                                                                                        |                                                                                           |
| 2.                                                                |                                                          |                                                                                        |                                                                                           |
| 3.                                                                |                                                          |                                                                                        |                                                                                           |
| 4                                                                 |                                                          |                                                                                        |                                                                                           |

### Tool Prep 4 Stakeholder mapping

Once stakeholders have been listed, Tool Prep. 4 can be used to map stakeholders based on their level of influence and stake. This mapping exercise will help identify those stakeholders that are to be prioritized for engagement during later phases. Those stakeholders with a high stake and high influence should be involved in the VRA process. Those with a high stake and low influence should be engaged and empowered throughout the process. Those with a high influence but low stake could potentially be high assets in advocacy and communication. Lastly, stakeholders with low influence and low stake may be engaged but would have a lower priority than the other groups.

|            | Low influence | High influence |
|------------|---------------|----------------|
| Low stake  |               |                |
| High stake |               |                |

### Tool Prep 5 Stakeholders' perspectives mapping

Once stakeholders have been identified, this tool can help to explore the perspectives and expectations of each key stakeholder in relation to the VRA and AP. It will help to gather information about their values, their main interests in areas of assessment, and how they are linked to other relevant actors. Understanding the different perspectives will be useful to define the way in which each stakeholder is engaged in the subsequent phases. Lastly, identifying relations between stakeholders and other actors.

**VRA & AP**

Links: \_\_\_\_\_

Assessment areas: \_\_\_\_\_

Values: \_\_\_\_\_

Name: \_\_\_\_\_

Links: \_\_\_\_\_

Assessment areas: \_\_\_\_\_

Values: \_\_\_\_\_

Name: \_\_\_\_\_

Links: \_\_\_\_\_

Assessment areas: \_\_\_\_\_

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Assessment areas: \_\_\_\_\_

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Name: \_\_\_\_\_

Values: \_\_\_\_\_

Assessment areas: \_\_\_\_\_

Links: \_\_\_\_\_

Name: \_\_\_\_\_

Values: \_\_\_\_\_

Assessment areas: \_\_\_\_\_

Links: \_\_\_\_\_

- **Values:** What is important for stakeholders in relation to the VRA and AP process?
- **Assessment areas of special interest:** What areas of the assessment are particularly interesting for these stakeholders?
- **Links to other relevant actors for the assessment:** How are these stakeholders related to other relevant stakeholders of the assessment?

## 3.5. First steps in engaging with the community

Engaging the community at all stages can potentially bring many benefits, including enhancing ownership of the process, getting consent and maintaining it, building a trust relationship, and preventing key stakeholders from feeling excluded. Furthermore, engagement will also provide valuable inputs that can help in planning the first stages of the VRA.

Following a human rights-based approach, obtaining Free Prior and Informed Consent (FPIC) from the beginning of the process is crucial. FPIC is required before the approval and/or commencement of projects that may affect the lands, territories, and resources that indigenous peoples customarily own, occupy or otherwise use in view of their collective rights to self-determination and to their lands, territories, natural resources, and related properties<sup>18</sup>. FPIC is not only important for indigenous peoples, it is a good practice that brings many benefits when engaging with local communities<sup>19</sup>.

### Box 3

### FREE PRIOR AND INFORMED CONSENT

“FPIC is a principle protected by international human rights standards that state, *all peoples have the right to self-determination* and – linked to the right to self-determination – *all peoples have the right to freely pursue their economic, social and cultural development*. Backing FPIC are the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), the Convention on Biological Diversity and the International Labour Organization Convention 169, which are the most powerful and comprehensive international instruments that recognize the plights of indigenous peoples and defend their rights”<sup>20</sup>.

Rather than just aiming at obtaining consent, FPIC is a process through which people are able to conduct their own independent and collective discussions and decision-making. It is an essential tool to protect communities’ rights and guarantees equal consideration through inclusive decision-making processes.

In relation to ESS mainstreaming, the first meetings organized with the community can provide the opportunity to raise awareness on their rights and the principles that must be followed throughout the entire process. This can form the first step in adequately disclosing information to all stakeholders that may be potentially affected by the projects. Figure 3.2. shows an example of graphics that were used for posters and flyers handed out to the community members in Fiji to inform them of their rights in relation to the project being implemented. The posters were available in multiple languages (i.e., English, iTaukei and Hindi).

Some ways to start engaging with the community at this early stage are:

- Promoting social mobilization by community or social mobilizers.
- Assisting the community in holding initial meetings and encouraging them to build awareness around the power of organizing for collective action.
- Encouraging the formation of primary groups in the settlement of clusters of 10 to 15 houses.
- Facilitating the use of local knowledge and removing barriers that prevent the engagement in decision-making of non-traditional participants that are preventing their engagement in decision-making, particularly vulnerable groups.
- Linking the community with neighbouring and comparable communities elsewhere in the city to identify shared issues and concerns.
- Engagement with settlement communities to explain the project, outline options for their potential involvement, assess the community’s interest, gain consent, and shape the project design. It is important that the project objectives are clearly communicated, as well as the scope and expectations of the project, phases, and timeline. At this stage, community leaders, committees, and people in vulnerable situations may be identified.

<sup>18</sup> Food and Agricultural Organization of the United Nations. (2016). Free Prior and Informed Consent - an indigenous people’s right and good practice for local communities. Retrieved from: <http://www.fao.org/3/a-i6190e.pdf>

<sup>19</sup> Ibid, p. 5

<sup>20</sup> Ibid, p. 11

### 3.5.1. Community governance scan

The governance scan is meant to identify existing community governance structures and key community representatives. It may also identify gaps and find opportunities to strengthen community governance throughout the next phases.



#### Community governance scan

##### CARRYING OUT THE COMMUNITY GOVERNANCE SCAN

- A useful approach to carry out the governance scan is to contact and interview key informants who have knowledge about existing governance structures at the community-level (e.g., a representative from a local NGO).
- In order to get a comprehensive overview, it may be necessary to carry out several key informant interviews. The stakeholder analysis can help determine who it may be useful to interview.

#### Tool **Prep 6** Community governance scan

##### Question

Are there:

- (a) Community leaders supported by a committee?
- (b) Only leaders?
- (c) Only committees?
- (d) Other representatives?

How are community leaders and/or representatives selected?

How many committees are there? What types of committees? (e.g., women committee, youth committee, etc.)

Are there other important external groups that are influential in community organization that can be easily accessed and involved in the planning? (e.g., church groups, political representatives)?

What focus do committees have? (e.g., construction, collecting donations/savings groups, environmental management)

Do these committees have a history of projects? Did these projects achieve their intended goals?

Have these projects included substantial community organization and problem/conflict resolution?

Have these projects included substantial financial management?

Have these projects included substantial construction works (either as community sweat equity or with private, formal or informal contractors)?

Have these projects included substantial networking with external players to access resources?

# RIGHTS & PRINCIPLES

1. The project aims to improve access to resilient infrastructure & services such as water and sanitation. Project activities must not leave you worse off.



7. Everybody has the right to freedom from arbitrary evictions.

When resettlement is unavoidable, you must be informed on your rights, consulted on your options & offered fair & adequate alternatives.



6. There must be appropriate consultations on matters that affect the rights, interests, lands, resources, territories & traditional livelihoods of indigenous peoples.



8. Natural habitats must be protected from degradation or unjustified conversion.



9. Biological diversity must be protected, conserved and promoted.



10. The project aims to improve your capability to adapt to climate change impacts, regardless of your gender or age.



12. Healthy practices & processes that enhance health outcomes should be promoted, avoiding any significant negative impacts on public health.



11. Waste production, pollutants and the use of resources must be minimized.



**Figure 3.2. Environmental and Social Safeguards: Rights and principles<sup>21</sup>**

<sup>21</sup> This poster was targeted at communities that are part of the Fiji Resilient Informal Settlements Adaptation Fund project. The principles included in the poster are aligned with the Adaptation Fund's and UN-Habitat's Environmental and Social Safeguards Policies and Systems. Designed by author.



2. The rights & needs of children, women, girls, the elderly, people with disabilities, displaced people, people living with HIV & AIDS, & other vulnerable groups must be respected at all times.

3. All human rights, as set forth in the Universal Declaration of Human Rights, must be respected at all times.



5. Core labour standards must be followed, avoiding forced & compulsory labour, child labour & discrimination.

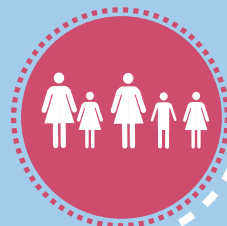


4. Women & men must be able to participate equitably & receive comparable social & economic benefits throughout the project.



13. Soil conservation must be promoted, avoiding degradation or conversion of productive lands

14. Physical & cultural heritage conservation must be promoted, avoiding any damage or permanent alterations.



15. Everybody will have equal opportunities throughout project implementation regardless of their age & gender.





Floods in Sri Lanka  
© UN-Habitat



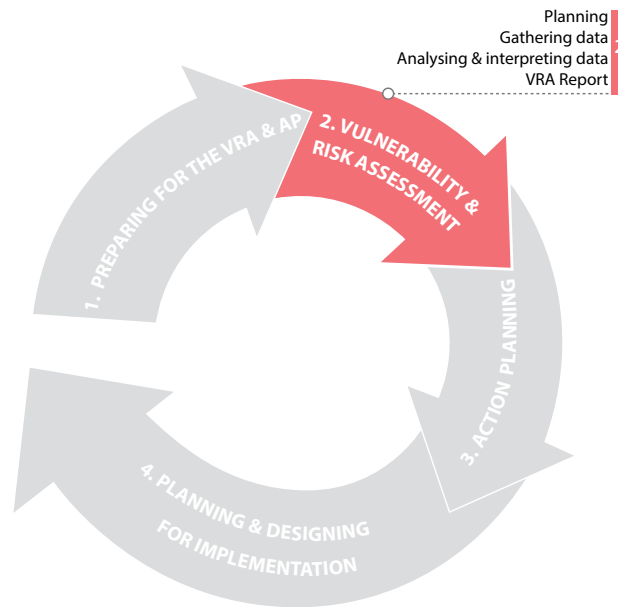
4

## **VULNERABILITY & RISK ASSESSMENT**

# VULNERABILITY & RISK ASSESSMENT

## 4.1. Vulnerability and Risk Assessment

Once the preparatory phase has been covered, the second phase described in this guide consists of the VRA. Developing the VRA is an essential part of the process, laying the foundation for the AP.



**Figure 4.1.** Phase diagram: Vulnerability and Risk Assessment

This involves understanding the community's vulnerability as well as considering the risks related to shocks and stresses. Assessing the risks will mean looking both at the likelihood of occurrence of climate variability and extreme events, as well as their impacts.

Given the multiscale approach followed, the methodology looks at the socio-economic, cultural, environmental, and institutional context in the community. On the one hand, pre-existing, underlying vulnerabilities related to the socio-economic context, ecosystems and infrastructure will interact with climate change and climate-related hazards enhancing risk and vulnerability. On the other hand, uncertainties about future vulnerability and risks also require following a multiscale approach.

Once the preparatory actions have been carried out, conducting the community-based vulnerability and risk assessment will follow four stages: (1) Planning the assessment; (2) Gathering data; (3) Analyzing and interpreting data; and (4) Elaborating the VRA report.



**Figure 4.2.** Stages of the Vulnerability and Risk Assessment

Given this guide's emphasis on the community-level and its participatory approach, this chapter will focus on methods and analyses that are carried out in a participatory way. It must be noted that there are other data collection and analyzing processes that may be carried out by the experts, either in parallel or consecutively (examples are included in Annex 6). A number of data collection methods and related tools that have been used and tested throughout a wide range of projects are included in this chapter. Case studies will exemplify how these methods were applied in different contexts.

Both qualitative and quantitative data may be collected at the community and household level. Looking at the community and household level will provide valuable information when analyzing who and what assets are particularly vulnerable to the risks of current and future climate impacts. It will also evidence the community's level of awareness and perception of current and future risks. Once all the data is gathered, the expert team will analyze and interpret it and then document it in the VRA report (the reporting format for the VRA report is outlined in Annex 3).

## 4.2. Planning the assessment

Before starting to collect data, the team should decide on the level of assessment they want to achieve based on factors such as the project's objectives, resources, time constraints, scale of the intervention, etc. When planning the assessment, the first step is to decide whether data will be collected at the community level, at the household level, or both. The second step is to decide what data collection methods are most appropriate in the project's specific context. Lastly, the third step would be designing the sequence in which these methods are applied, which could be consecutively or in parallel.

Even though the order in which methods are applied will depend on each situation, there are some general recommendations. Conducting the community screening and transect walk at the beginning of the process can help the team to get an overview of the community's characteristics and main challenges in order to narrow down the focus. Building on that, the team may want to carry out a hazard and exposure mapping activity with the community to identify the most locations and groups of people that are exposed to hazards (e.g., steep slopes prone to landslides, dumping sites, group of households that are located in a flood-prone area, etc.). After the mapping exercise, focus group discussions can be used to collect qualitative data on matters such as how the community perceives climate-related risks, or their level of awareness on current and future impacts. The household survey will allow the team to quantify aspects such as level of access to services, perception of climate-related risks, etc.

### Box 4

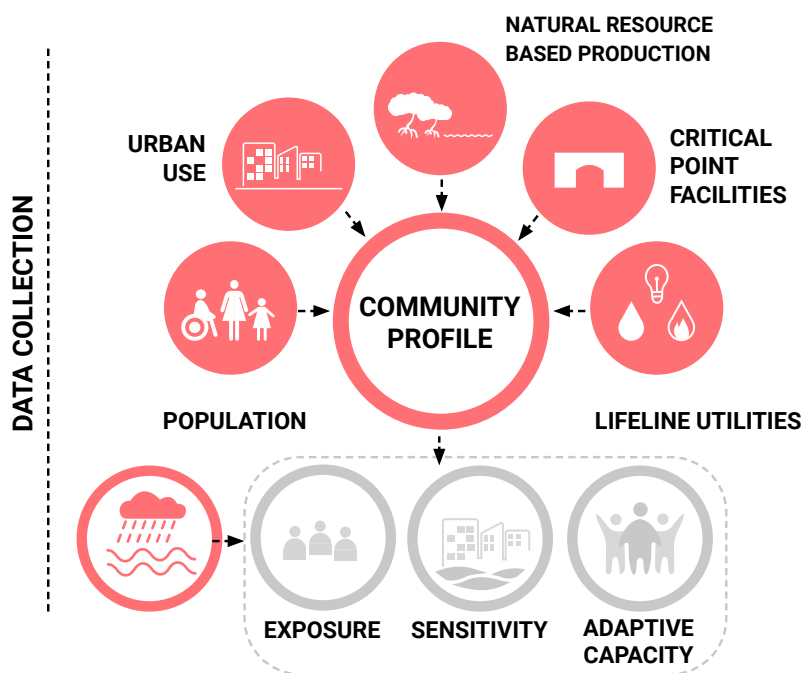
### COMBINING METHODS FOR THE ASSESSMENT

Benefits of starting to collect data at the household or community level are mentioned below:

- **Household level:** Starting by collecting data at the household level will provide detailed and comprehensive information that will enable the identification of specific vulnerabilities, needs, and strengths. The aggregation of this data will provide an understanding at the community level. Based on this understanding, the team can identify the themes at the community level that should be discussed further. It may also help to identify people in vulnerable situations within the community (e.g., women, youth, the elderly, people with disabilities, etc.) that may require special attention. In this way, the results from the HHS can help in choosing adequate methods to gather more data at the community level.
- **Community level:** Starting by collecting data at the community level can help to stimulate community mobilization and motivate participation since the very start of the process. Additionally, having an understanding of the community's perceptions will help to prepare and contextualize the household survey. Furthermore, if people are motivated to participate in the organized sessions, they might be more eager to participate in the HHS.

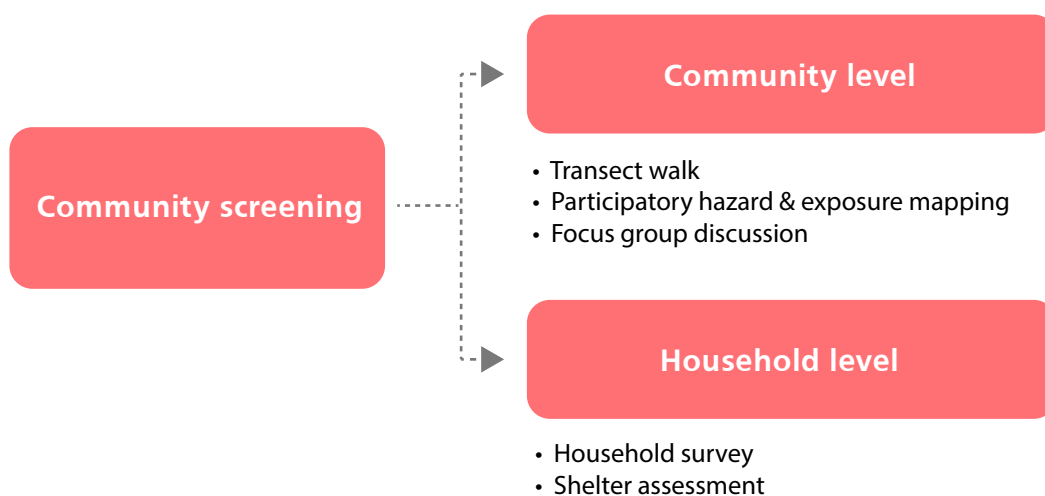
### 4.3. Gathering data

Data is collected for the five key areas in order to create the community profile that will form the basis of the analysis. The next sections present and explain a number of participatory qualitative and quantitative data collection methods that have been tested throughout projects in different geographic regions.



**Figure 4.3.** Vulnerability and Risk Assessment overview: Key areas for data collection

The methods and tools presented in the next sections can be used to collect data at the community level or household level, as shown in the figure below:



**Figure 4.4.** Suggested methods for data collection at the community and household level

### 4.3.1. Community screening

The community screening is intended to provide an overview of the settlement. It may include general information such as the settlement's demographics, basic services, main challenges, and needs. The information gathered during the previous phase (e.g., governance scan) will inform the community screening. Once the data has been collected, it may be validated with community focal points.



## Community Screening

### CARRYING OUT THE COMMUNITY SCREENING

The data needed for the community screening can often be collected from secondary sources (e.g., information on demographics can often be found in the census or local planning documents, GIS data repositories, etc.). Nevertheless, it must be noted that in the context of informal settlements, this data may not be available or may not be up to date. Other methods such as drone imagery, interviewing key informants who have access to this information, and conducting transect walks, may be useful.

#### Tool VRA 1 Community screening

Tool VRA1 can be used as a reference to collect general information on the community and review data that is already available. If needed, additional fields may be added to provide a more comprehensive overview.

| Community screening           |                                                                                       |
|-------------------------------|---------------------------------------------------------------------------------------|
| Element                       | Type of data                                                                          |
| Settlement name               | Name of the settlement under study                                                    |
| Location (GPS coordinates)    | Latitude and longitude                                                                |
| Settlement area               | Total area within the boundaries of the settlement (in hectares, square meters, etc.) |
| Administration and governance | Governance structure and capacities                                                   |
| Land tenure                   | Land tenure characteristics                                                           |
| Number of households          | Total number of households                                                            |
| Population                    |                                                                                       |
| Element                       | Type of data                                                                          |
| Population                    | Total number of people living in the settlement                                       |

## VULNERABILITY & RISK ASSESSMENT

|                                                                              |                                                                                                                                      |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Distribution by gender                                                       | Number / percentage of females                                                                                                       |
|                                                                              | Number / percentage of males                                                                                                         |
| Distribution by age <sup>22</sup><br>(where possible disaggregate by gender) | Number / percentage of children (0-14 years)                                                                                         |
|                                                                              | Number / percentage of youth (15-24 years)                                                                                           |
|                                                                              | Number / percentage of adults (25-64 years)                                                                                          |
|                                                                              | Number / percentage of elderly (65 years and above)                                                                                  |
| People with disabilities (where possible disaggregate by gender)             | Number / percentage of people with disabilities                                                                                      |
| Informal settlers                                                            | Number / percentage of people that can be considered informal settlers                                                               |
| Urban land use                                                               |                                                                                                                                      |
| Element                                                                      | Type of data                                                                                                                         |
| Formal urban land use categories                                             | Total land area under land use categories within the settlement boundaries (e.g., residential area, industrial area, etc.)           |
| Informal urban land use categories                                           | Total land area which is being used for different categories within the settlement boundaries (e.g., residential area, civic, etc.). |
| Natural resource-based production                                            |                                                                                                                                      |
| Element                                                                      | Type of data                                                                                                                         |
| Crops                                                                        | Crop varieties, total area used to grow crops (in hectares, square meters, etc.)                                                     |
| Fishing, marine products, etc.                                               | Fish varieties, marine products being used/produced                                                                                  |
| Livestock                                                                    | Livestock reared, total area used for livestock (in hectares, square meters, etc.)                                                   |
| Forest products                                                              | Forest products being used/produced by community members                                                                             |
| Critical point facilities                                                    |                                                                                                                                      |
| Element                                                                      | Type of data                                                                                                                         |
| Educational facilities                                                       | Types of facilities the community has access to, distance to facilities                                                              |
| Health facilities                                                            | Types of facilities the community has access to, distance to facilities                                                              |
| Local government buildings                                                   | Types of facilities the community has access to, distance to facilities                                                              |
| Religious buildings / community halls                                        | Types of facilities the community has access to, distance to facilities                                                              |
| Evacuation centres                                                           | Types of facilities the community has access to, distance to facilities                                                              |
| Other critical point facilities                                              | Identify other types of facilities that are relevant, distance to facilities                                                         |

<sup>22</sup> The age classifications included correspond to those specified in the *Provisional Guidelines on Standard International Age Classifications*, 2003 (<https://unstats.un.org/unsd/publications/catalogue?selectID=134>). Age classifications may be adjusted based on the national census.

| Lifeline utilities        |                                                                  |
|---------------------------|------------------------------------------------------------------|
| Element                   | Type of data                                                     |
| Water supply              | Access to drinking water, water supply network coverage, etc.    |
| Wastewater and sanitation | Access to sanitation, wastewater network coverage, etc.          |
| Stormwater management     | Drainage network coverage                                        |
| Energy                    | Access to energy, electricity supply network coverage, etc.      |
| Solid waste management    | Access to waste collection system, waste collection points, etc. |
| Transport                 | Access to transport (including public and private modes)         |
| Road network              | Access roads to the settlement, types (paved/unpaved), etc.      |

### 4.3.2. Community level: Transect walk

The transect walk is carried out by the assessment team in order to get an overview of the settlement's condition and main characteristics. The purpose is to get more information about the built environment (e.g., roads and access to the community, buildings, sanitation, etc.), areas that are prone to hazards (e.g., steep slopes that may be prone to landslides) and other key issues. In those cases where there is a lack of information from secondary sources, the transect walk can be used to obtain additional information to complement the community screening.



## Transect walk

### CARRYING OUT THE TRANSECT WALK

#### 1. Plan and prepare:

- Given the technical focus of this activity, it is recommended that it is prepared and carried out by technical experts.
- Decide on the level of detail and the aspects that will be included.
- It is recommended to carry out this survey together with a community leader and other representatives (identified during the stakeholder analysis). The community leader can guide the technical experts through the settlement, point out the most vulnerable locations, and explain the main issues. Transect walks can also be carried out with children or other groups, in order to identify, for example, locations where they play, routes to school, and potential risks in these areas.

#### 2. Conducting the transect walk:

- This is done by walking through the settlement with community leaders and/or members, taking pictures, taking notes on risk areas, and mapping them.
- The data collected may then be documented in a report that can be used by the team to plan and prepare for the next steps.
- If a community leader/member is present while conducting the field survey, his/her contact details may be recorded by the survey team for future reference.

## VULNERABILITY & RISK ASSESSMENT

### Tool VRA 2 Transect walk

Tool VRA 2 includes a list of elements that may be assessed during the transect walk. Community leaders and representatives will be able to provide valuable information related to the listed elements.

| Transect walk                                                                    |                                                                                                                                                                       |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element                                                                          | Type of data                                                                                                                                                          |
| Community leaders (e.g., Chairperson, church leader, youth representative, etc.) |                                                                                                                                                                       |
| Contact details and photo                                                        |                                                                                                                                                                       |
| Assessment team details                                                          |                                                                                                                                                                       |
| Hazards                                                                          |                                                                                                                                                                       |
| Element                                                                          | Type of data                                                                                                                                                          |
| Hazards                                                                          | Identification of areas that are exposed to climate-related hazards (e.g., areas prone to floods, steep slopes that are prone to landslides, eroded areas, etc.)      |
|                                                                                  | Identification of areas that are not exposed to climate-related hazards (safe havens)                                                                                 |
|                                                                                  | Identification of non-climate related hazards in the settlement (e.g., environmental pollution)                                                                       |
|                                                                                  | Areas prone to water stagnation                                                                                                                                       |
|                                                                                  | Identification of hazard impacts based on past events and feedback from community members (e.g., flood levels reached, most affected areas during past cyclone, etc.) |
| Population                                                                       |                                                                                                                                                                       |
| Element                                                                          | Type of data                                                                                                                                                          |
| Housing stock                                                                    | Identification of houses in exposed areas (consider the different hazards that are relevant in the context)                                                           |
|                                                                                  | Identification of houses that are in a precarious condition                                                                                                           |
|                                                                                  | Building materials being used (proportion of houses using salvageable materials)                                                                                      |
|                                                                                  | Adaptation techniques being used (e.g., houses built on stilts)                                                                                                       |
| Urban land use                                                                   |                                                                                                                                                                       |
| Element                                                                          | Type of data                                                                                                                                                          |
| Land use                                                                         | Land usage (formal or informal)                                                                                                                                       |
|                                                                                  | Exposed areas (consider the different hazards that are relevant in the context)                                                                                       |

| Natural resource-based production |                                                                                                                                                                                            |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element                           | Type of data                                                                                                                                                                               |
| Crops and livestock               | Identification of areas used for crops and livestock                                                                                                                                       |
|                                   | Exposed areas (consider the different hazards that are relevant in the context)                                                                                                            |
| Fishing                           | Identification of access to fishing areas, storage buildings, etc. and their exposure to hazards                                                                                           |
| Other natural resources           | Identification of natural resources being used by the community (e.g., mangroves, nearby forests, etc.)                                                                                    |
|                                   | Exposed areas (consider the different hazards that are relevant in the context)                                                                                                            |
| Critical point facilities         |                                                                                                                                                                                            |
| Element                           | Type of data                                                                                                                                                                               |
| Critical point facilities         | Identification of critical point facilities within the settlement's boundaries (e.g., kindergarden, religious buildings, evacuation centre, etc.)                                          |
|                                   | Identification of facilities in a precarious conditions                                                                                                                                    |
|                                   | Identification of facilities in exposed areas                                                                                                                                              |
| Lifeline utilities                |                                                                                                                                                                                            |
| Element                           | Type of data                                                                                                                                                                               |
| Water supply                      | Parts of the network that are exposed to hazards and potential risks (e.g., contamination issues)                                                                                          |
| Wastewater and sanitation         | Types of sanitation facilities and presence of wastewater networks and potential risks (e.g., inadequate sanitation facilities in flood prone areas that can lead to contamination issues) |
| Stormwater drainage               | Identification of drainage systems and potential issues (e.g., blockages)                                                                                                                  |
| Electricity network               | Identification of network system and potential issues (e.g., network located in exposed areas and being affected)                                                                          |
| Solid waste management            | Access to waste collection, dumping sites, issues (e.g., waste blocking drainages)                                                                                                         |
| Road network and transport        | Identification of areas that are in a precarious condition                                                                                                                                 |
|                                   | Identification of areas that are exposed to hazards and impacts (e.g., access road cut off by floods)                                                                                      |
| Other issues, concerns and needs  |                                                                                                                                                                                            |
| Element                           | Type of data                                                                                                                                                                               |
| Main problems / issues            | Summary/conclusion from assessment                                                                                                                                                         |
| Main concerns                     | Summary/conclusion from assessment                                                                                                                                                         |
| Main needs                        | Summary/conclusion from assessment                                                                                                                                                         |

## CASE STUDY 2

### Community transect walk

#### Climate Resilient Honiara Project<sup>23</sup> Honiara, Solomon Islands

The Solomon Islands is one of the world's fastest urbanizing countries and highly vulnerable to a number of climatic and non-climatic hazards. The onset of climate change is expected to further exacerbate these existing threats. Its capital, Honiara, attracts increasing numbers of youth and adults from other islands seeking employment, leading to a rapid urban growth. The limited access to land, formal housing and high rental costs are enhancing the growth of informal settlements, which are home to almost 40 per cent of the city's population.

Carrying out transect walks in the informal settlements that are part of the *Climate Resilient Honiara* Project, implemented by UN-Habitat and financed by the Adaptation Fund, was one of the first steps of the data collection process. A team of 12 experts with different backgrounds visited the different locations in order to assess the local priority needs and to scope possible designs of engineering solutions.

A consultation workshop was organized with community members and leaders before conducting the transect walks, in order to introduce the team, explain the project and identify key issues. The transect walk allowed the assessments of aspects such as access to water and sanitation, areas that are particularly exposed to hazards, construction materials and techniques common in the area, risk locations, etc. Furthermore, community members and leaders provided information on aspects such as land tenure arrangements, governance structures, etc.

This allowed for a comprehensive set of data to be collected and provided valuable information in preparing for other activities related to the vulnerability assessment, such as the household survey and the drone mapping. The profiling team identified existing data sets and requested formal access from the relevant bodies.



**Community leaders with UN-Habitat & RMIT technical scoping team** © Iyer-Raniga



**Transect walk Aekefo Zone 19**  
© Lehmann



**Traditional architecture**  
© Lehmann



**Waste blocking river flow**  
© McEvoy

<sup>23</sup> Case study material based on the Climate Resilient Honiara Field Mission Report (21st – 26th February 2019)

### 4.3.3. Community level: participatory hazard and exposure mapping

The purpose of this mapping exercise is to complement other processes described in this chapter by looking at the spatial component of vulnerability. This involves identifying areas where hazard exposure is stronger or more frequent, mapping the specific location of community assets, and looking at the spatial vulnerabilities related to the communities' livelihoods. This approach will generate data that can be used in planning and in identifying ways of reducing vulnerabilities. It can provide insight into community perspectives and concepts for specific solutions that respond to the communities' needs while building local awareness on the current situation, trends related to climate change, and future climate-related risks.

Participants will be asked to map those areas and community assets that are particularly vulnerable to hazards or climate-related risks. This means, for example, identifying houses that are most vulnerable during events such as floods. Including historical narratives of past events into the process will help identify trends and how these relate to the specific risk locations. Have the identified locations always been at risk, or did these risks worsen over time? It is also possible that these spots became less at risk if resilience-building measures were adopted. If this is the case, it is important to explore what was done to improve the situation. Other aspects such as pollution, garbage dumps, or unsafe areas should also be included in the map.

The mapping exercise will also involve locating valuable infrastructure and environmental assets and analyzing their exposure to changes in climate and hazards. These include, for example, roads, key community infrastructure (e.g., churches, halls, etc.), mangroves, water sources, etc. When looking at these, participants may be asked to provide details on how assets are being affected. When, for instance, drainage is being discussed, it is important to map the specific locations where blockages occur.

Understanding the spatial dimension of vulnerability with respect to livelihoods is also important at this point. Some communities might depend on a limited number of natural resources, and thus understanding how these are affected by climate extremes and hazards will be important. For example, a community located in a coastal area may depend largely on fisheries. If this is the case, aspects such as fishing ground access areas or fishing storage boxes may be mapped.

Communities may be asked, for example, to draw on tracing paper overlayed on satellite imagery or to draw the maps themselves on large format paper. Transect walks and historical narratives can be organized to complement the mapping process. Involving the community in the process will help gather qualitative data and draw out location-specific issues that could otherwise be overlooked by the technical team. In this way, the information gathered during this exercise can largely benefit and support resilience and adaptation planning processes.



## Participatory hazard and exposure mapping

### CARRYING OUT THE PARTICIPATORY HAZARD AND EXPOSURE MAPPING

#### 1. Plan and prepare:

- Location: choose a meeting venue that is adequate for the session, preferably an enclosed space that is spacious enough to hold a large number of participants.
- Prepare a list of things that need to be mapped and discussed.
- Bring the necessary materials: printed aerial map of the area (e.g., satellite imagery, drone imagery, etc.), coloured markers and pencils, tracing paper, sticky notes, tape, etc.
- There will be at least two facilitators per group: one will ask the questions, and the other will

record the answers. Facilitators must be able to communicate in the local language.

- The ideal number of participants for the activity is usually between 5 and 8 participants. It is possible to manage groups of up to 10-15 people. (If the number of participants is higher, these should be split into groups, or other methodologies for large groups should be employed).

## 2. Facilitating the session:

- Firstly, participants may take their time to understand the map and to orient themselves. This may be facilitated by highlighting critical infrastructure and buildings such as community halls, religious buildings, etc.
- The participants may be encouraged to discuss the main hazards that affect their community and to identify the most vulnerable areas to the impacts of these hazards. Make sure that all the participants are engaged, providing opportunities for everyone to present and express their ideas.
- Make sure to keep track and write down what people say while drawing. This can provide valuable inputs for the VRA.
- A different color and tracing paper may be used for each hazard and for the different elements within the key areas. This way, the different elements can be overlaid.
- Present the results, or let the participants present them and facilitate the discussion on the findings.

## 3. After the session

Information collected through the community-based hazard exposure mapping may be processed into GIS format.

Complementary methods:

- Transect walks
- Historical narratives

### Tool VRA 3 Participatory hazard and exposure mapping

Tool VRA 3 includes a list of items that can be mapped, namely areas exposed to climate-related hazards and elements under each of the five key areas. Overlaying the areas that are exposed to hazards and key elements under each key area will help to identify the most at-risk locations, assets, and people, based on community's experience from past disaster events.

| Hazard and exposure mapping                                                       |
|-----------------------------------------------------------------------------------|
| Hazards <sup>24</sup>                                                             |
| Areas affected by flooding (coastal, river, etc.)                                 |
| Areas affected by landslides                                                      |
| Eroded areas (river, coastal or hillsides)                                        |
| Areas prone to stagnation of water (that can increase risk to dengue and malaria) |

<sup>24</sup> The climate-hazards included in the tool are meant as examples and should be adapted to include the hazards that are most relevant to each specific context.

| Population                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------|
| Houses that are most affected by climate-related hazards (e.g., houses located next to a river may be more affected by river floods). |
| Location of poorest households                                                                                                        |
| Location of houses that are in precarious conditions                                                                                  |
| Unsafe areas (e.g., related to crime). Take into consideration vulnerable groups such as women, youth, children, etc.                 |
| Urban land use                                                                                                                        |
| Land usage (formal or informal)                                                                                                       |
| Possible areas for housing or infrastructure expansion                                                                                |
| Natural resource-based production                                                                                                     |
| Location of crops/farming areas                                                                                                       |
| Crops/farming areas that are affected by climate-hazards                                                                              |
| Location of fishing ground access areas                                                                                               |
| Location of natural resources being used by the community (e.g., mangrove areas, forests, etc.)                                       |
| Critical point facilities                                                                                                             |
| Critical point facilities (e.g., evacuation centres, religious buildings, commercial premises)                                        |
| Critical point facilities in precarious conditions                                                                                    |
| Lifeline utilities                                                                                                                    |
| Water sources, storage and distribution networks                                                                                      |
| Key drainage lines and locations where blockages occur                                                                                |
| Waterlogged areas                                                                                                                     |
| Sanitation facilities (e.g., community toilet block)                                                                                  |
| Main transport routes and problems (e.g., regular wash always)                                                                        |
| Electricity supply network, damages to network                                                                                        |

## CASE STUDY 3

### Hazard and exposure mapping

#### Improved Resilience in Coastal Communities Ghana and Cote d'Ivoire<sup>25</sup>

Urban settlements in West Africa are growing at unprecedented rates and it is estimated that already 40 per cent of the people living in Ghana and Cote d'Ivoire are settled in coastal zones, totaling more than 20 million people. In these areas, uncontrolled and unplanned urban growth patterns and poverty lead to the rapid development of substandard houses, assets, infrastructures and settlements in locations that are highly vulnerable to climate change. These areas will be strongly affected by sea-level rise and other drivers leading to coastal erosion and reduction of livelihood options, which mainly rely on natural resource-based activities.

In order to better understand the challenges faced by communities, discussion with its inhabitants is paramount. For this purpose, local partners organized workshops at the community-level, one per pre-selected town. The objective of these sessions is not only to obtain relevant data to inform the vulnerability and risk analysis but also to start engaging with the community. Understanding their needs and priorities and promoting the long-term sustainability of the programme by giving them ownership over the process is key.

During a one-day workshop, information was gathered and agreed upon per community, providing valuable information about the local context. This process entailed introducing community members to the objective of the project, individual and group discussions and community mapping that would help spatialize the discussed issues. A data matrix was developed to gather relevant information related to environmental, social and economic conditions. This matrix included disaggregated population data, main climate change impacts and hazards, effects on communities, underlying vulnerabilities, barriers to adapt, and climate-resilient building needs.

Challenges related to this process are varied, from logistics, to lack of attendance or reduced local trust. Hence, local partners who are in close contact with communities and understand their dynamics play a critical role in leading the process. While enabling universal participation, it is also very important to target relevant people within the community who can help orient the conversation in the right direction and with meaningful results.



**Figure 4.5.** M'Badon community mapping, Côte d'Ivoire

<sup>25</sup> Case study material developed by UN-Habitat's Planning and Design Lab

### 4.3.4. Community level: Focus group discussion

The Focus group discussion (FGD) is frequently used as a method to collect qualitative data. The purpose of the FGD is to gather a relatively small group of people to discuss a number of topics, guided by a facilitator. It can be used to identify general issues and needs, understand the participants' perceptions on climate change, current and potential future climate-related risks, and identify capacities and assets that can be enhanced to strengthen resilience. It uses a semi-structured approach, asking predominantly open-ended questions that will allow the participants to express their views on different topics.

This method can be particularly useful in cases where specific groups of people in vulnerable situations are identified (e.g., women-only FGDs in contexts where women might not want to speak up or contradict the views of men in a whole group).



## Focus group discussion

### CARRYING OUT THE FOCUS GROUP DISCUSSION

#### 1. Plan and prepare:

- Location: choose a meeting venue that is adequate for the session, preferably an enclosed space that is spacious enough to hold a large number of participants.
- Prepare a list of key issues in advance.
- Obtain information on climate change and trends specific to the location to narrow down the focus of this session (e.g., if the area of studies has no problems related to droughts, then drought-related questions may be skipped).
- Prepare materials and equipment
- There will be at least two facilitators per group: one will ask the questions, and the other will record the answers. Make sure that the facilitators can communicate in the local language.
- The ideal number of participants for FGDs is usually between 5 and 8 participants. It is possible to manage FGDs with up to 10-15 people. (If the number of participants is higher these may be split into groups, or other methodologies for large groups should be employed).

#### 2. Facilitating the session:

- The briefing:
  - > Introduction to the project and an ethical briefing to ensure that communities fully understand the purposes, goals and processes of the VRA activities and to manage the communities' expectations by clearly communicating them. This is meant to avoid mismatched expectations and potential frustrations.
  - > Purpose of the session itself and the expected outcomes.
  - > Provide information on climate change and disaster risk.
- Make sure that the participants understand the information explained and give them enough time to ask questions.
- Ask open-ended questions to stimulate the discussion among the participants and ask them to provide specific examples.
- Ensure equal participation and encourage participants to talk one at a time.
- Encourage quieter people to be involved by providing them with opportunities to participate. Maintain a neutral attitude and appearance, listening to the participants' interventions without judging what they say.
- Present the results to the community and make sure that all the different perspectives are represented.

It is important to ensure that the community is represented in its diversity. In some cases, it might be better to split participants into groups according to gender or age to ensure full participation of all.

Furthermore, engaging in community processes can be challenging, especially in those cases when there are several local languages and the content of the activities has to be translated several times. To avoid communication issues, the content, briefing and questions should be kept as clear and simple as possible. Keep in mind that complex technical/scientific terms might be difficult to translate into local languages.



Guiding questions organized around themes are included in the next sections. This does not mean that all questions should be covered during one session. Also, depending on the specific context, more issues may have to be added. The themes covered in the next sections are:

- **Climate change and hazards:**  
These questions will explore the participants' perception of climate trends and changes (related to both rapid and slow onset events), their perception of associated impacts, their level of awareness on possible future risks, and their willingness to cope, adapt or transform to future conditions.
- **Interactions between shocks and stresses and system interdependency:**  
The tools presented can support discussions on the interactions and interdependencies between existing shocks and stresses that affect the community, including both climate and non-climate related hazards.
- **Resources, issues and needs:**  
The questions related to this topic will identify deficiencies related to development, climate- and non-climate related issues organized by sector.
- **Community assets and capacities:**  
To identify individuals'/households' assets and capacities that could be strengthened and harnessed to cope with shocks and stresses.

The FDG will be designed in accordance with the context and the participants. One example of how a FDG could be designed is to start by discussing more general matters related to climate change. Second, to identify assets, needs, and issues per sector. Third to look at the current impacts of climate-related hazards on the identified assets and discuss how the participants think it would affect the community if these were to increase.

## Climate change and hazards

Before starting with the questions in this sub-section, it might be useful to review certain concepts such as climate change, exposure to hazards or adaptation. Depending on the context, it might also be necessary to explain certain scientific terms. For example, ocean acidification might be very relevant in coastal communities that largely depend on fishing, as it might impact their livelihoods in the near future. Given that the level of awareness on these topics will vary across different communities, translating scientific information into easily communicated messages might be necessary. Diagrammatic illustrations and photos can be used to support communication. Below is an example of climate-hazard cards created to conduct exercises in a game format, providing definitions for each of the hazards.



**Figure 4.6.** Climate-related hazard cards with definitions

### Tool **VRA 4** Identification of climate-related hazards and major events in the past years

This tool will help identify the climate-related hazards that are relevant within the context of the settlement<sup>26</sup>. Facilitators may ask participants to reflect on the most significant events in the past, to discuss the scale of this event (including casualties, economic losses, etc.) and how the community responded. Annex 5 includes a scoring table that may be used in combination with this tool to obtain a vulnerability score for each hazard.

| HAZARDS                    | IMPACTS<br>COMMUNITY<br>(Yes / no) | MAJOR CLIMATE HAZARDS<br>OCCURRED IN THE PAST YEARS | HOW DID THESE AFFECT THE<br>COMMUNITY? (e.g., loss of human lives,<br>economic losses, environmental impacts,<br>etc.) |
|----------------------------|------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Storm & wind               |                                    |                                                     |                                                                                                                        |
| Cyclone                    |                                    |                                                     |                                                                                                                        |
| Storm surge                |                                    |                                                     |                                                                                                                        |
| Lighting /<br>thunderstorm |                                    |                                                     |                                                                                                                        |
| Extreme precipitation      |                                    |                                                     |                                                                                                                        |
| Rainstorm                  |                                    |                                                     |                                                                                                                        |
| Monsoon                    |                                    |                                                     |                                                                                                                        |
| Flood & sea level rise     |                                    |                                                     |                                                                                                                        |
| Coastal flood              |                                    |                                                     |                                                                                                                        |
| River flood                |                                    |                                                     |                                                                                                                        |
| Flash / surface<br>flood   |                                    |                                                     |                                                                                                                        |
| Water scarcity             |                                    |                                                     |                                                                                                                        |
| Drought                    |                                    |                                                     |                                                                                                                        |
| Extreme hot temperature    |                                    |                                                     |                                                                                                                        |
| Heat wave                  |                                    |                                                     |                                                                                                                        |
| Extreme hot days           |                                    |                                                     |                                                                                                                        |
| Wild fire                  |                                    |                                                     |                                                                                                                        |
| Forest fire                |                                    |                                                     |                                                                                                                        |
| Land fire                  |                                    |                                                     |                                                                                                                        |
| Other                      |                                    |                                                     |                                                                                                                        |
| Landslide                  |                                    |                                                     |                                                                                                                        |

<sup>26</sup> The climate-hazards included in the tool are meant as examples and should be adapted to include the hazards that are most relevant to each specific context. Other hazard types could include: heavy snow, fog, hail, salt water intrusion, ocean acidification, water-borne diseases, air-borne diseases, etc.

## VULNERABILITY & RISK ASSESSMENT

### Tool **VRA 5** Trend analysis

Based on the information already collected on the most relevant hazards, facilitators may ask the participants to discuss aspects such as current frequency, observed trends, the consequences and impacts of these hazards, etc.<sup>27</sup>

| HAZARDS                    | FREQUENCY | PERCEIVED TRENDS<br>(increase/decrease in<br>intensity & frequency over<br>the last 10 years) | PERCEIVED TRENDS<br>(increase/decrease in<br>intensity & frequency<br>prior to the last 10 years) | COMMENTS |
|----------------------------|-----------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------|
| Storm & wind               |           |                                                                                               |                                                                                                   |          |
| Cyclone                    |           |                                                                                               |                                                                                                   |          |
| Storm surge                |           |                                                                                               |                                                                                                   |          |
| Lighting /<br>thunderstorm |           |                                                                                               |                                                                                                   |          |
| Extreme precipitation      |           |                                                                                               |                                                                                                   |          |
| Rainstorm                  |           |                                                                                               |                                                                                                   |          |
| Monsoon                    |           |                                                                                               |                                                                                                   |          |
| Flood & sea level rise     |           |                                                                                               |                                                                                                   |          |
| Coastal flood              |           |                                                                                               |                                                                                                   |          |
| River flood                |           |                                                                                               |                                                                                                   |          |
| Flash / surface<br>flood   |           |                                                                                               |                                                                                                   |          |
| Water scarcity             |           |                                                                                               |                                                                                                   |          |
| Drought                    |           |                                                                                               |                                                                                                   |          |
| Extreme hot temperature    |           |                                                                                               |                                                                                                   |          |
| Heat wave                  |           |                                                                                               |                                                                                                   |          |
| Extreme hot<br>days        |           |                                                                                               |                                                                                                   |          |
| Wild fire                  |           |                                                                                               |                                                                                                   |          |
| Forest fire                |           |                                                                                               |                                                                                                   |          |
| Land fire                  |           |                                                                                               |                                                                                                   |          |
| Other                      |           |                                                                                               |                                                                                                   |          |
| Landslide                  |           |                                                                                               |                                                                                                   |          |

<sup>27</sup> The climate-hazards included in the tool are meant as examples and should be adapted to include the hazards that are most relevant to each specific context. Other hazard types could include: heavy snow, fog, hail, salt water intrusion, ocean acidification, water-borne diseases, air-borne diseases, etc.

**Tool VRA 6** Most problematic climate-related hazards and current impacts

Participants can rank the 3 most problematic climate-related hazards (both rapid and slow onset). These would include the climate-related hazards with the highest impacts in the community.

| Top 3 most problematic hazards | Who is most affected? | How does the hazard affect the community? |
|--------------------------------|-----------------------|-------------------------------------------|
| 1                              |                       |                                           |
| 2                              |                       |                                           |
| 3                              |                       |                                           |

**Tool VRA 7** Most problematic climate-related hazards and future impacts

This tool can be used to raise awareness among participants on how the most problematic hazards being faced can potentially change in the future. For this, the team can use information from climate change projections obtained during the preparation phase to present to the participants. This can be the starting point for a discussion on what impacts these changes in hazards could have in the community.

| Most problematic climatic hazard | How will these hazards change in the future? | How could this affect the community in the future? |
|----------------------------------|----------------------------------------------|----------------------------------------------------|
| 1                                |                                              |                                                    |
| 2                                |                                              |                                                    |
| 3                                |                                              |                                                    |

**Tool VRA 8** Adaptation to climate change

This tool can help discuss what the community has already done to adapt to certain hazards (e.g., elevating their houses in flood-prone areas, planting mangroves in coastal areas, etc.) and existing barriers that challenge their adaptation.

| Most problematic climatic hazard | Ways in which the community already adapts | Barriers to adaptation |
|----------------------------------|--------------------------------------------|------------------------|
| 1                                |                                            |                        |
| 2                                |                                            |                        |
| 3                                |                                            |                        |

### Interactions between shocks and stresses and system interdependency

As already mentioned, communities, and other systems, are often exposed to a range of shocks and stresses, such as pandemics, earthquakes, or environmental degradation, which can be further exacerbated by climate extremes. The definition of shocks and stresses is included in section 1.8. Key Concepts.

The following tools can support discussions on interactions between existing shocks and stresses that affect the community, including both climate and non-climate related hazards, and system interdependency.

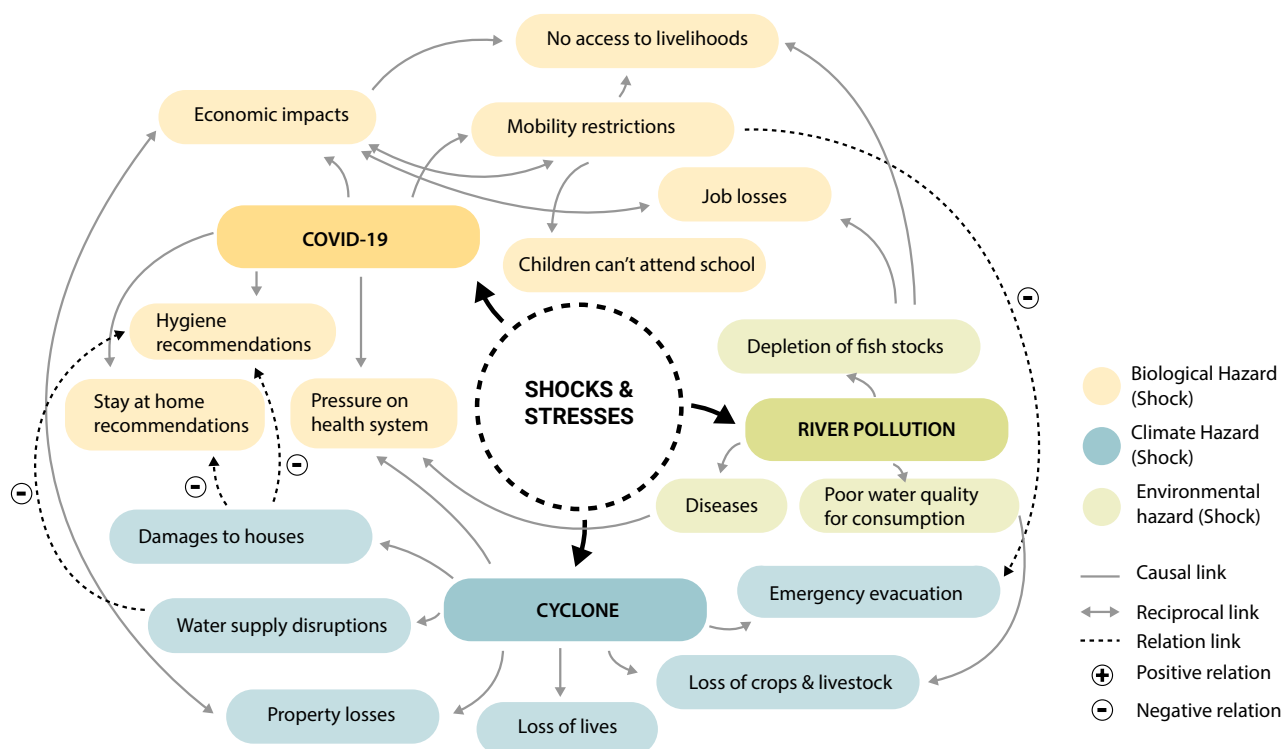
#### Tool VRA 9 Non-climate related shocks and stresses

This tool can help identifying shocks and stressors that are affecting the community, and related impacts.

| Shocks and stresses (non-climate related) | Categorization                  | Impacts                                                              |
|-------------------------------------------|---------------------------------|----------------------------------------------------------------------|
| e.g., COVID-19                            | e.g., Biological hazard (shock) | e.g., loss of income, mobility restrictions, etc.                    |
| e.g., Earthquake                          | e.g., Geological hazard (shock) | e.g., structural damages to buildings, road traffic disruption, etc. |
| e.g., Financial economic crisis           | eg., Economic (stress)          | e.g., job losses, unemployment, etc.                                 |

#### Tool VRA 10 Interactions and interdependencies

This tool can be used to guide discussions on interactions between shocks and stresses and interdependencies between systems. Below is an example of potential interactions between three different types of shocks, including causal links, reciprocal links and relations. When identifying potential relations between the different elements, these may be categorized as positive or negative. It is important to consider that potential impacts can affect multiple systems, such as water supply, sanitation, transport, livelihoods, etc.



## Resources, issues and needs

### Tool VRA 11 Resources, issues and needs per key area<sup>28</sup>

This tool can be used to identify the main assets and resources available in the settlement, issues faced by community members related to such assets, including those related to nature resource based production, lifeline utilities, etc. Furthermore, needs to overcome issues identified are emphasized.

| Assets, needs and issues                |                                                                                                                                                                                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Population                              |                                                                                                                                                                                                 |
| Household income and financial capacity | What are the main sources of income of the community? (e.g., wages/salary, sale of products, etc.)                                                                                              |
|                                         | Is unemployment an issue in the community?                                                                                                                                                      |
|                                         | What are the existing barriers to access employment? Are there any gender and/or age differences related to these barriers? If so, why?                                                         |
|                                         | Are there particular groups of people who face more difficulties in terms of employment or financial capacity? (e.g., women, youth, elderly people, etc.)                                       |
|                                         | In relation to gender, are there any differences in access to employment and/or level of income?                                                                                                |
|                                         | Are there any barriers to access to credit, loans and/or insurance?                                                                                                                             |
|                                         | What would be needed to overcome issues related to income and financial capacity?                                                                                                               |
| Health and education                    | Are there any barriers to access health services? Are there any gender and/or age differences related to these barriers? If so, why?                                                            |
|                                         | Are there any barriers to access education services (e.g., there are no adequate facilities, facilities are too far, etc.)? Are any of those barriers related to gender and/or age? If so, why? |
|                                         | What is the approximate percentage of children/youth in the age of going to school (6-18 years old) that do not have access to education?                                                       |
|                                         | What is the approximate percentage of youth (over 18) who continue education after high school?                                                                                                 |
|                                         | What would be needed to overcome issues related to health and education?                                                                                                                        |
| Natural resource-based production       |                                                                                                                                                                                                 |
| Natural resources                       | What are the main natural resources available in your community?                                                                                                                                |
|                                         | Are any of these negatively affected by environmental degradation, pollution or resource depletion?                                                                                             |
|                                         | What is the level of use of mangroves for fuelwood or housing materials, etc.?                                                                                                                  |
|                                         | To what extent does the community depend on these natural resources?                                                                                                                            |

<sup>28</sup> Informed by focus group discussion tool in the Climate Change Vulnerability Assessment Manual. UN Environment, UN-Habitat, European Union, Ministry of Natural Resources and Environmental Conservation (Myanmar). Climate Change Vulnerability Assessment Manual. Methodological Framework for Townships of Myanmar.

|                             |                                                                                                                                                                                                                                                |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agriculture and livestock   | What is the most dominant form of farming? (small, medium or large scale farms)                                                                                                                                                                |
|                             | What is the main purpose for growing crops in your community?<br>a. Subsistence (for own use)<br>b. Semi-commercial (a part is for own use and another part is sold)<br>c. Entirely commercial (everything that is harvested is sold)          |
|                             | What are the main crops that are used as food sources by the community? Is there a large economic dependency on a specific crop?                                                                                                               |
|                             | What are the main crops that are used for income by the community? Is this one of the main sources of income for the community?                                                                                                                |
|                             | What are the productivity levels of the crops listed?                                                                                                                                                                                          |
|                             | What is the main purpose for rearing livestock in your community?<br>a. Subsistence (for own use)<br>b. Semi-commercial (a part is for own use and another part is sold)<br>c. Entirely commercial (all the livestock is sold)                 |
|                             | What are the main types of livestock reared by the community?                                                                                                                                                                                  |
|                             | Are there any traditional knowledge-based practices that the community uses to manage food resources (e.g., planting techniques, etc.)?                                                                                                        |
|                             | Are there any climate-related hazards that impact your crops and/or livestock (e.g., cyclone, floods, etc.)? Please describe the impacts.                                                                                                      |
|                             | Are there any specific actions being carried out by community members in order to address these issues?                                                                                                                                        |
|                             | With regards to gender, who has access to and manages the resources mentioned?                                                                                                                                                                 |
| Fishing and marine products | What is the main purpose of fishing for your community/community members?<br>a. Subsistence (for own use)<br>b. Semi-commercial (a part is for own use and another part is sold)<br>c. Entirely commercial (everything that is fished is sold) |
|                             | What are the main types of fish that are used for food/sold by the community?                                                                                                                                                                  |
|                             | What are the productivity levels of the main types of fish listed?                                                                                                                                                                             |
|                             | What are other marine products that are used for food/sold by the community?                                                                                                                                                                   |
|                             | What are the productivity levels of the main types of marine products listed?                                                                                                                                                                  |
|                             | How many fishing boats are owned by the community?                                                                                                                                                                                             |
|                             | What are the fishing techniques used?                                                                                                                                                                                                          |
|                             | Are there any observed trends in catch (increase/decrease)? What are the trends in catch for specific species?                                                                                                                                 |
|                             | With regards to gender, who has access to and manages the resources mentioned?                                                                                                                                                                 |
|                             | Are there any hazards that impact fishing/managing the resources mentioned (e.g., cyclone, floods, etc.)? Please describe the impacts.                                                                                                         |
|                             | Are there any specific actions being carried out by community members in order to address these issues?                                                                                                                                        |

| Critical Point Facilities             |                                                                                                                                                                            |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disaster-resilient infrastructure     | Is there disaster-resilient infrastructure in the community? (e.g., food storage, shelters for livestock, etc. )                                                           |
| Cultural heritage                     | Are there sites, structures, or objects with historical, cultural, artistic, traditional or religious values in the settlement/proximity?                                  |
| Critical point facilities and hazards | Are there critical point facilities (e.g., health center, school, church) that are affected by climate-related hazards (e.g., floods)?                                     |
| Lifelines Utilities                   |                                                                                                                                                                            |
| Access to lifeline utilities          | How do most of the households access water?<br>How do most of the households access electricity?<br>How do most of the households access sanitation?                       |
| Issues                                | Are there any issues related to these services? (e.g., lack of clean water, inadequate maintenance of latrines, lack of adequate sanitation, solid waste management, etc.) |
| Road network and accessibility        | What are the main issues related to the road network (if available) and accessibility across the settlement? (e.g., access is blocked during floods)                       |
| Lifeline utilities                    | What would be needed to overcome these issues? (related to all questions under lifeline utilities)                                                                         |
| Solid waste management                | Is there access to waste collection? Are there any issues related to solid waste management?                                                                               |
|                                       | Is solid waste being used as a source of income (e.g., through recycling)?                                                                                                 |

## Community assets and capacities

### Tool VRA 12 Community assets and capacities<sup>29</sup>

| Assets                               | Questions                                                                                                                                                                                                                                   |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Motorbike / bicycle / other vehicles | How are these used? (e.g., transport to/from work)<br>Are these a source of income?                                                                                                                                                         |
| Housing                              | Are houses being used exclusively as living places or do they also serve as workspace?                                                                                                                                                      |
| Job skills                           | What are livelihood opportunities that can strengthen adaptive capacity?<br>What skills are available to strengthen housing resilience and risk reduction?                                                                                  |
| Social networks                      | Are there social networks that provide support during and after shocks such as earthquakes, floods, etc.?                                                                                                                                   |
| Savings                              | Are there saving groups that can provide loans for livelihoods? Are there specific saving groups for women?                                                                                                                                 |
| Collective capacity to organize      | Are there any groups within the community that are responsible for organizing activities (e.g., resource mobilization)?                                                                                                                     |
| Collective labour                    | What are the skills that community members have that could be used to implement resilience-building actions?<br>Is there history of projects that have been collectively implemented by community members that involved using these skills? |

<sup>29</sup> Based on UN-Habitat's Guide: UN-Habitat. 2019. Thematic Guide: Pro-poor Climate Action in Informal Settlements

## Tool VRA 13 Disaster preparedness and response

## Disaster preparedness and response

Please describe the last disaster event that affected the community (e.g., cyclone, floods). How did the community respond?

Is there a disaster management plan in the settlement?

How is the community warned of an impending extreme weather event?

Do you use technology or social media to obtain information on climate change and/or DRR?

What sources of information (e.g., mobile phones, internet, radio, television, etc.) do you use to obtain information on climate change and/or DRR?

Is there a community evacuation centre?

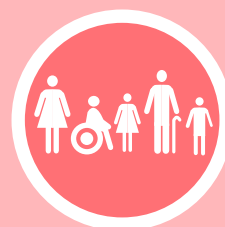
Are there any issues with regards to the evacuation centres? Are there any community groups/members who cannot access these?

Are there any traditional knowledge-based practices that the community uses to address climate-induced disasters?

Are there external organizations that support the community in preparing and responding to disasters?

As already mentioned, it is very important that differentiated vulnerabilities are reflected in the VRA. Age, gender, health and ability are factors that will influence people's vulnerability and that should be considered during the assessment. However, in some cultures and contexts, it might be difficult to reach people in vulnerable situations. For instance, people with disabilities might not attend FGDs or other organized activities because they might find it hard to get there, people with HIV might not want to reveal their condition, and so on. If it is not possible to engage with them during FGDs, other ways of reaching people in vulnerable situations or getting access to information on their specific needs and vulnerabilities include:

- Door-to-door visiting at different times throughout the day: women are usually responsible for the day-to-day care of children, the elderly, or sick people. For this reason, they might not be able to join FGDs or other participatory processes organized. In order to reach them, door-to-door visiting during day hours may be useful. On the other hand, men might be away from home during day hours. If you want to reach them, door-to-door visiting during the evening might be better.
- Wheelchair simulation exercise: when it is not possible to reach people with disabilities to discuss the barriers that they face in their daily life, it is possible to do a wheelchair simulation exercise. This will help identifying existing barriers which can then be mapped.
- Contacting peak bodies: there might be some cases when people don't feel comfortable discussing their issues in front of other people or with the survey team. The team may consider contacting peak bodies (working with LGBTQ, people with disabilities, members of the community living with HIV, etc.) to gather information.



## CASE STUDY 4

### Focus group discussions and consultations

#### Climate resilience for emerging settlements Lao PDR

Lao People's Democratic Republic (PDR) has a high dependence on climate-sensitive natural resources. Floods, droughts, and storms, which often trigger secondary hazards such as landslides, fires, infestations and outbreaks of disease, cause each year loss of life and severe damage to livelihoods and infrastructure. Considering the expected impacts of climate change, with wet seasons getting wetter and dry seasons getting dryer, these hazards are likely to increase in frequency and intensity.

The project in Lao PDR conducted integrated vulnerability assessments in the three provinces of Atappeu, Sekong and Saravan, 8 districts and 189 villages. FGDs were organized in the 189 villages. Due to the scale of this project and the large volume of data to be collected, it was decided to collect data at the village level rather than at the household level. Many of the

189 villages are located in remote areas, and data was required to be collected within specific time parameters – adding to the complexity of the assessment process. To ensure each of the villages was visited in the assessment process, it was decided to conduct one session in each of the 189 villages. The data collection period ran for just under 10 weeks. It was conducted by eight teams, and the total area covered an approximate 17,500 square kilometers.

Focus group discussions and consultations were conducted among groups of 10-50 residents, and answers to the questions were collected using tablet technology. Once collated, a comprehensive database was produced, as well as infographics (see Figure 4.7). These infographics are available online in English as well as Lao language and provide a concise summary of the initial data collected at the village level<sup>30</sup>.



Figure 4.7. Infographic for Talunglalao, Ta Oy district, Salavan (Lao PDR)

<sup>30</sup> Available at: <https://www.arcgis.com/apps/MapSeries/index.html?appid=2195a7a66b5b4a71a69b51b807e10504>

### 4.3.5. Household level: Household survey

The household survey (HHS) will provide predominantly quantitative data at the household level. Collecting data in this way will allow disaggregating data per household characteristics (e.g., according to level of income, a particular location, etc.). It must be noted that the household unit is a broader categorization than the family unit. In many contexts, there might be more than one family living in a household, which means that there might be more than one head of household, more than one married couple, etc. The purpose of the HHS is to obtain general and specific information about the characteristics of the household unit, and of the community once aggregated. This includes, composition of the household, socio-economic situation, perceptions of climate change and disaster risk, etc.

Some of the data referred to in this chapter can often be found in censuses, government entities, available household survey information collected by non-governmental groups and community organizations, among others. The assessment team may wish to access this data from secondary sources in the interest of saving time. If this data is not available from secondary sources, the below table supports the team to do primary data gathering.



## Household survey

### CARRYING OUT THE HOUSEHOLD SURVEY

#### 1. Designing the survey

- Decide on the topics that should be covered by the survey and design the questions (a set of questions is included in this section that may guide the design of the survey. These questions should be adapted to each context).
- Check secondary sources that may have information such as demographics, access to infrastructure, etc. Related questions can then be excluded from the survey.
- If possible, ask a local/someone from the community to review the questions and give feedback on whether these are clear.
- It might be necessary to provide additional explanations when carrying out the survey.

#### 2. Defining the target population and sampling method when needed

- In small communities, surveys should cover 85-100% of the community. In this case, it will not be necessary to follow a sampling method.
- In those cases where it is not possible to reach the whole community, defining the target population and choosing a representative sampling method will be needed.

#### 3. Prepare the format

Using tablets to conduct the surveys can largely benefit the way in which data is collected and

analysed. If tablets are used, the enumerator team should be trained on how to set up the survey online, how to conduct the surveys on location and how to interact with survey data online.

#### 4. Pilot

The team may run a pilot before carrying out the survey in the whole community. For example, choose ten households, conduct the survey and analyse the results. This will allow the identification of appropriate questions, if the instructions are clear, etc. This is to ensure that errors are not overlooked, such as questions that do not make sense in the context, that the language being used is too complex, or that there are questions that the community does not want to respond to.

#### 5. Collecting the data

Ethical Briefing:

In order to ensure that households have a clear understanding of how the overall process and expectations are managed, the following aspects must be briefed before the activity:

- Purpose of the survey and explain what kind of information is being collected.
- What the collected data will be used for and who will have access to it.
- Provide an explanation about the process (collection, verification and confidentiality).

#### 6. Introduce the data in the database and database cleaning

Introducing the data into the database and cleaning it will vary based on the method through which the household survey is carried out (e.g., tablet, paper-based, etc.).

#### 7. Statistical analysis

The statistical analysis will be carried out to obtain the information needed for the project and in alignment with the overall analysis for the VRA process.

Enumerations and mapping the settlements using drone imagery can be combined with the survey to provide detailed spatial data that can inform planning processes (see case study 5).

The following sections present suggested questions organized by key areas. These are meant to provide guidance and examples for the survey, but this does not mean that all should be included in the survey. Furthermore, questions are to be adapted to the specific context. The key areas are:

- **Household characteristics:** the questions under this section will provide an overview of the household composition (disaggregating data by gender and age), its members and the house. This includes, level and schooling status, level of income, basic characteristics of the shelter, etc.
- **Livelihoods:** to understand the sources of livelihoods and income at the household level.
- **Lifeline utilities and services:** to understand the level of access to basic services at the household (e.g., access to water supply, sanitation, energy, etc.).
- **Housing characteristics:** to understand the physical characteristics of the house, including things such as number of rooms and approximate surface area.
- **Land tenure:** to understand the types of land tenure arrangements in place as well as the level of tenure security and its influence at the household level.

## VULNERABILITY & RISK ASSESSMENT

- **Climate change and disaster risk:** related questions will help in analyzing current and future climate risks, barriers to adaptation and factors that facilitate coping strategies at the household level.
- **Problems, needs and strengths:** The related questions aim to obtain information about the general problems households might be facing (e.g., lack of access to water), their most urgent needs as well as strengths and skills of household members. It is important to look at the broader issues that go beyond climate- or hazard-related problems, since development deficits can also exacerbate the households' vulnerability. Identifying skills and strengths is important to identify opportunities for building adaptive capacity.

### Tool VRA 14 Household survey question bank

| Household characteristics                                                            |                                                          |
|--------------------------------------------------------------------------------------|----------------------------------------------------------|
| Questions                                                                            | Answer                                                   |
| First name head(s) of household (both male and female to be collected where present) | Insert name(s)                                           |
| Last name head(s) of household (both male and female to be collected where present)  | Insert last name(s)                                      |
| What is the age of the head of household?                                            | Number                                                   |
| What is the gender of the head of household?                                         | Female, male                                             |
| If respondent is not the head of household: What is the gender of the respondent?    | Female, male                                             |
| What is the ethnicity of the head of household?                                      | (Include relevant options based on the specific context) |
| Marital status                                                                       | Married                                                  |
|                                                                                      | Never married                                            |
|                                                                                      | Widowed                                                  |
|                                                                                      | Divorced                                                 |
|                                                                                      | Separated                                                |
|                                                                                      | Can't say                                                |
|                                                                                      | Other, please specify:                                   |

|                                                                              |                                                                                            |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Total number of people living in this household                              | Insert number                                                                              |
| How many males and females are living in this household?                     | Insert number of females                                                                   |
|                                                                              | Insert number of males                                                                     |
| What are their ages?                                                         | Insert number of people per age range/Insert age for each person living in the household   |
| Are there any members of the household with a disability?                    | Yes/no                                                                                     |
| (If yes), specify type(s) of disabilities                                    | (Include options)                                                                          |
| How many years have you been living here?                                    | Insert number                                                                              |
| Where did you live before coming here?                                       | (Include relevant options - e.g., rural area / urban area - based on the specific context) |
|                                                                              | Born in settlement                                                                         |
|                                                                              | Other, please specify:                                                                     |
| Do you have access to any of the following? (multiple answers are possible)  | Health post/dispensary                                                                     |
|                                                                              | Medical centre                                                                             |
|                                                                              | Hospital                                                                                   |
|                                                                              | Other, please specify:                                                                     |
| How many children (of school age) are not going to school in this household? | Insert number (disaggregate per gender and age)                                            |
| What is the main reason for this?                                            | Financial difficulties                                                                     |
|                                                                              | Distance                                                                                   |
|                                                                              | Peer pressure                                                                              |
|                                                                              | Lack of interest                                                                           |
|                                                                              | Other, please specify:                                                                     |

## VULNERABILITY & RISK ASSESSMENT

|                                                                                                                 |                                                                            |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| What is the main language in the household?                                                                     | (Include relevant options based on the specific context)                   |
| What religious community does the household belong to?                                                          | (Include relevant options based on the specific context)                   |
| How long has this household been living in this community?                                                      | Insert number of years/include ranges as options                           |
| Where did the first member of the household come from?                                                          | (Include relevant options - e.g., provinces based on the specific context) |
| What was the main reason for moving to this settlement?                                                         | Environmental problems in the home province/area of origin                 |
|                                                                                                                 | Social/economic problems in the home province (e.g., no work, conflict)    |
|                                                                                                                 | Improved opportunities (e.g., work, education)                             |
|                                                                                                                 | To be with family                                                          |
|                                                                                                                 | Can't say                                                                  |
|                                                                                                                 | Other, please specify:                                                     |
| <b>Livelihoods</b>                                                                                              |                                                                            |
| <b>Questions</b>                                                                                                | <b>Answer</b>                                                              |
| How many members of the household currently work? (Number of people bringing a cash income)                     | Insert number (disaggregate per gender and age)                            |
| Of the people that work, how many work inside or outside the settlement?                                        | Insert number of people working inside the settlement                      |
|                                                                                                                 | Insert number of people working outside the settlement                     |
| What was the total amount for the monthly income in the last month (time-frame can be changed to suit context)? | Insert number/include ranges as options                                    |
| Is this a regular income?                                                                                       | Yes/no                                                                     |
| (If no) Why is this income not regular?                                                                         | (Open text field )                                                         |
| Is your household able to save from the monthly income?                                                         | Yes/no                                                                     |

|                                                                                                                          |                                                                             |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| (If no) Why is your household not able to save from the monthly income?                                                  | (Open text field)                                                           |
| What is the main source of income for this household?                                                                    | Wages/salary                                                                |
|                                                                                                                          | Own business                                                                |
|                                                                                                                          | Informal income (e.g., fishing, farming, market vending, handicrafts, etc.) |
|                                                                                                                          | Property income                                                             |
|                                                                                                                          | Transfer income (e.g., remittances, pensions, etc.)                         |
|                                                                                                                          | Can't say                                                                   |
|                                                                                                                          | Other source, please specify:                                               |
| Does the household receive additional income or financial assistance from other sources? (Multiple options are possible) | Relatives in household                                                      |
|                                                                                                                          | Relatives outside household                                                 |
|                                                                                                                          | Religious/charitable                                                        |
|                                                                                                                          | Gifts in cash or kind                                                       |
|                                                                                                                          | Compensation                                                                |
|                                                                                                                          | Social welfare                                                              |
|                                                                                                                          | None                                                                        |
|                                                                                                                          | Other, please specify:                                                      |
| Does the household grow any crops?                                                                                       | Yes/no                                                                      |
| What is the main reason for growing crops?                                                                               | Subsistence (for own consumption)                                           |
|                                                                                                                          | Semi-commercial (partly for own consumption and partly to sell)             |
|                                                                                                                          | Commercial (to sell)                                                        |

## VULNERABILITY & RISK ASSESSMENT

|                                                                           |                                                                                                                                                        |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Which members of the household are involved in this activity?             | (Add groups as options disaggregated by gender and age - e.g., male youth, female youth, both male and female youth, male adults, female adults, etc.) |
| If for subsistence, do your crops generally give you:                     | Less than half the food we eat                                                                                                                         |
|                                                                           | Half of the food we eat                                                                                                                                |
|                                                                           | More than half of the food we eat                                                                                                                      |
|                                                                           | All of the food we eat                                                                                                                                 |
| Is this your main source of income?                                       | Yes/no                                                                                                                                                 |
| Are the crops grown within or outside the settlement?                     | Within the settlement boundaries                                                                                                                       |
|                                                                           | Outside the settlement boundaries                                                                                                                      |
| Are the crops used by the household only or shared with other households? | Used by households only                                                                                                                                |
|                                                                           | Shared with other households                                                                                                                           |
| Does the household rear any livestock?                                    | Yes/no                                                                                                                                                 |
| Is this your main source of income?                                       | Yes/no                                                                                                                                                 |
| What is the main reason for rearing livestock?                            | Subsistence (for own consumption)                                                                                                                      |
|                                                                           | Semi-commercial (partly for own consumption and partly to sell)                                                                                        |
|                                                                           | Commercial (to sell)                                                                                                                                   |
| Which members of the household are involved in this activity?             | (Add groups as options disaggregated by gender and age - e.g., male youth, female youth, both male and female youth, male adults, female adults, etc.) |
| Does the livestock you rear generally give you:                           | Less than half the food we eat                                                                                                                         |
|                                                                           | Half of the food we eat                                                                                                                                |
|                                                                           | More than half of the food we eat                                                                                                                      |
|                                                                           | All of the food we eat                                                                                                                                 |

|                                                                              |                                                                                                                                                        |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Is the livestock kept within or outside the settlement?                      | Within the settlement boundaries                                                                                                                       |
|                                                                              | Outside the settlement boundaries                                                                                                                      |
| Is the livestock used by the household only or shared with other households? | Used by households only                                                                                                                                |
|                                                                              | Shared with other households                                                                                                                           |
| Does the household fish frequently (including shellfishing)?                 | Yes/no                                                                                                                                                 |
| Is this your main source of income?                                          | Yes/no                                                                                                                                                 |
| What is the main reason for fishing?                                         | Subsistence (for own consumption)                                                                                                                      |
|                                                                              | Semi-commercial (partly for own consumption and partly to sell)                                                                                        |
|                                                                              | Commercial (to sell)                                                                                                                                   |
| Which members of the household are involved in this activity?                | (Add groups as options disaggregated by gender and age - e.g., male youth, female youth, both male and female youth, male adults, female adults, etc.) |
| What is the main reason for fishing (including shellfishing)?                | Less than half the food we eat                                                                                                                         |
|                                                                              | Half of the food we eat                                                                                                                                |
|                                                                              | More than half of the food we eat                                                                                                                      |
|                                                                              | All of the food we eat                                                                                                                                 |
| Lifeline utilities and access to services                                    |                                                                                                                                                        |
| Questions                                                                    | Answer                                                                                                                                                 |
| Water                                                                        |                                                                                                                                                        |
| What is the main source of drinking water for your household?                | Piped into dwelling                                                                                                                                    |
|                                                                              | Piped into yard/plot                                                                                                                                   |
|                                                                              | Piped connected to neighbour                                                                                                                           |
|                                                                              | Public tap/standpipe                                                                                                                                   |

## VULNERABILITY & RISK ASSESSMENT

|                                                   |                                                      |
|---------------------------------------------------|------------------------------------------------------|
|                                                   | Protected well                                       |
|                                                   | Protected spring                                     |
|                                                   | Rain water                                           |
|                                                   | Bottled water                                        |
|                                                   | Unprotected well                                     |
|                                                   | Unprotected spring                                   |
|                                                   | Tanker truck/cart with small tank                    |
|                                                   | Open surface water (e.g., river, stream)             |
|                                                   | Can't say                                            |
|                                                   | Other, please specify:                               |
| What is the quality of this water?                | Good (no need to treat for drinking)                 |
|                                                   | Average (need to treat for drinking)                 |
|                                                   | Poor (results in ill health, for example, diarrhoea) |
| Do you treat water prior to drinking it?          | Yes/no                                               |
| (If yes) Do you treat water prior to drinking it? | Boiled                                               |
|                                                   | Bleach/chlorine added                                |
|                                                   | Strained through cloth                               |
|                                                   | Ceramic, sand or other filter                        |
|                                                   | Can't say                                            |
|                                                   | Other, please specify:                               |

|                                                                            |                                                          |
|----------------------------------------------------------------------------|----------------------------------------------------------|
| How much time do you need to spend to obtain drinking water (round trip)?  | Water on premises                                        |
|                                                                            | Less than 30 minutes                                     |
|                                                                            | 30 minutes or longer                                     |
| How often does your water supply run out?                                  | Never                                                    |
|                                                                            | Once a month                                             |
|                                                                            | Once a year                                              |
|                                                                            | Other, please specify:                                   |
| Is your house connected to a meter?                                        | Yes, own meter                                           |
|                                                                            | Yes, shared meter                                        |
|                                                                            | No                                                       |
| Sanitation                                                                 |                                                          |
| What kind of sanitation facility do members of your household usually use? | Flush/pour flush to piped sewer system                   |
|                                                                            | Flush/pour flush to septic tank                          |
|                                                                            | Flush/pour flush to pit latrine                          |
|                                                                            | Ventilated improved pit (VIP) latrine                    |
|                                                                            | Pit latrine with slab                                    |
|                                                                            | Pit latrine without slab/open pit                        |
|                                                                            | Compost toilet                                           |
|                                                                            | No facility (e.g., bush, field, sea, ocean, beach, etc.) |
|                                                                            | Other, please specify:                                   |

## VULNERABILITY & RISK ASSESSMENT

|                                                                                |                                     |
|--------------------------------------------------------------------------------|-------------------------------------|
| How many households do you share this sanitation facility with?                | Insert number                       |
| Is there any maintenance of your sanitation facility carried out?              | Yes/no                              |
| If yes, please describe                                                        | Insert text                         |
| Energy & cooking fuels                                                         |                                     |
| Is your house connected to power?                                              | Yes, connected to own meter         |
|                                                                                | Yes, connected to a shared meter    |
|                                                                                | No                                  |
|                                                                                | Other, please specify               |
| Which of the following do you use for cooking? (Multiple answers are possible) | Cooking gas                         |
|                                                                                | Kerosene                            |
|                                                                                | Firewood                            |
|                                                                                | Electric stove                      |
|                                                                                | Other, please specify:              |
| Waste management                                                               |                                     |
| Where do you usually dispose your household rubbish?                           | Dispose in river/creek              |
|                                                                                | Into town/city council provided bin |
|                                                                                | Burn our rubbish                    |
|                                                                                | Bury our rubbish                    |
|                                                                                | Dump in the nearby surroundings     |
|                                                                                | Other, please specify:              |

| Housing characteristics                                                                                                                   |                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Questions                                                                                                                                 | Answer                                                      |
| When was this house built?                                                                                                                | (Open field to fill in number of years / add range options) |
| Are you renting this house?                                                                                                               | Yes/no                                                      |
| Do you have a house insurance?                                                                                                            | Yes/no                                                      |
| Has it been improved or extended?                                                                                                         | Yes/no                                                      |
| What was the approximate cost of this investment?                                                                                         | Open field to fill in with amount                           |
| How was this investment mainly paid for?                                                                                                  | Household savings                                           |
|                                                                                                                                           | Remittances                                                 |
|                                                                                                                                           | Loan from the bank                                          |
|                                                                                                                                           | Other, please specify:                                      |
| How many rooms are there in this house? (including kitchens, bedrooms and bathrooms, but not outside toilets or structures without walls) | (Open field to fill in number of rooms/add range options)   |
| How many separate bedrooms are there in this house?                                                                                       | (Open field to fill in number of rooms/add range options)   |
| What is the inside floor of the house made of?                                                                                            | Earth/sand                                                  |
|                                                                                                                                           | Coral/pebbles                                               |
|                                                                                                                                           | Wood planks                                                 |
|                                                                                                                                           | Palm/bamboo                                                 |
|                                                                                                                                           | Parquet or polished wood                                    |
|                                                                                                                                           | Concrete                                                    |
|                                                                                                                                           | Ceramic tiles                                               |
| Other, please specify:                                                                                                                    |                                                             |

## VULNERABILITY & RISK ASSESSMENT

| Land tenure                                                                                       |                                                          |
|---------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| Questions                                                                                         | Answer                                                   |
| Who do you understand owns this land?                                                             | (Insert options based on country's types of land tenure) |
| Do you have an agreement with the landowner or a leaseholder to occupy this land?                 | Yes, with the landowner                                  |
|                                                                                                   | Yes, with the leaseholder                                |
|                                                                                                   | No                                                       |
|                                                                                                   | Can't answer                                             |
| What is the form of this agreement with the landowner/leaseholder?                                | Formal                                                   |
|                                                                                                   | Informal (e.g., verbal agreement with landowner)         |
|                                                                                                   | Other, please specify:                                   |
| Please specify type of agreement                                                                  | (Open field to fill in with text)                        |
| Do you pay any fee for living on this land?                                                       | Yes/no                                                   |
| Have you ever been asked to resettle or sell your land?                                           | Yes/no                                                   |
| (If yes) please explain by whom and why                                                           | (Open field to fill in with text)                        |
| Does the household feel insecure about being relocated/evicted from this land?                    | Yes/no                                                   |
| (If yes) please explain by whom and why                                                           | (Open field to fill in with text)                        |
| Have there been any disputes while you have lived here about the ownership or lease of this land? | Yes/no                                                   |
| (If yes) who else claimed ownership of this land?                                                 | (Open field to fill in with text)                        |
| Is this dispute still ongoing?                                                                    | Yes/no                                                   |
| (If no) how was this dispute resolved?                                                            | (Open field to fill in with text)                        |

|                                                                                                                                                              |                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Are there any barriers that impede people in vulnerable situations (e.g., women, indigenous people) from accessing secure land tenure and/or land ownership? | Yes/no                                                                         |
| (If yes) please explain:                                                                                                                                     | (Open field to fill in with text)                                              |
| Are there any barriers based on gender, age, ethnicity, etc. that impede members of this household ensuring tenure security when inheriting land?            | Yes/no                                                                         |
| (If yes) please explain:                                                                                                                                     | (Open field to fill in with text)                                              |
| <b>Climate change and disaster risk</b>                                                                                                                      |                                                                                |
| <b>Questions</b>                                                                                                                                             | <b>Answer</b>                                                                  |
| What is the most problematic climate-related hazard for your household? <sup>31</sup>                                                                        | Extreme heat                                                                   |
|                                                                                                                                                              | Droughts (e.g., resulting in lack of water for household use, damage to crops) |
|                                                                                                                                                              | Flooding (river)                                                               |
|                                                                                                                                                              | Flooding (coastal)                                                             |
|                                                                                                                                                              | Flash flooding                                                                 |
|                                                                                                                                                              | Landslides                                                                     |
|                                                                                                                                                              | Storms/cyclones                                                                |
|                                                                                                                                                              | Storm surge                                                                    |
|                                                                                                                                                              | Rainstorm                                                                      |
|                                                                                                                                                              | Vector-borne diseases                                                          |
|                                                                                                                                                              | Water-borne diseases                                                           |
|                                                                                                                                                              | Salt water intrusion                                                           |
|                                                                                                                                                              | Other, please specify:                                                         |

<sup>31</sup> The climate-hazards included in the tool are meant as examples and should be adapted to include the hazards that are most relevant to each specific context. Other hazard types could include: heavy snow, fog, hail, salt water intrusion, ocean acidification, water-borne diseases, air-borne diseases, etc.

## CASE STUDY 5

### Spatial analysis

#### Climate Resilient Honiara Wind Valley (Honiara), Solomon Islands

As part of the Adaptation Fund project *Enhancing Urban Resilience to Climate Change Impacts and Natural Disasters in Honiara*<sup>32</sup>, in-depth assessments are being carried out for five informal settlements to inform the design of appropriate local climate actions.

Spatial information is key to the elaboration of the assessments and was collected through different methods. Spatial data in the household survey was collected using the Survey123 application with a GARMIN GLO2 GNSS receiver, which provided the spatial data with an accuracy of between 2-5 metres. The household survey was conducted in partnership with Cadasta Foundation as a pilot of its suite of technologies<sup>33</sup>.

Local youth were trained to act as enumerators, and were provided with tablets and safety equipment to carry out the household survey in Wind Valley community. Data captured through the survey app was immediately available in the GIS platform for processing. Geopoint questions allowed the team to capture specific locations in the survey, such as houses, water sources, toilet facilities, and other types of facilities. After the survey, the information was processed and used for the community profile and to create maps that presented a wide range of information. For example, maps showing the location of the sanitation facilities categorized by whether they were shared by multiple households or used by only one household (see Figure 4.9.).

The survey was divided into several sections. The pre-survey section included general information on the informal settlement being surveyed and the consent process. Other sections included questions on the characteristics of the household, livelihoods, housing, utilities, land tenure, climate change and disaster risks, and the housing stock. Furthermore, using tablet technology also allowed the team to take geotagged photos, providing valuable information for the assessment.

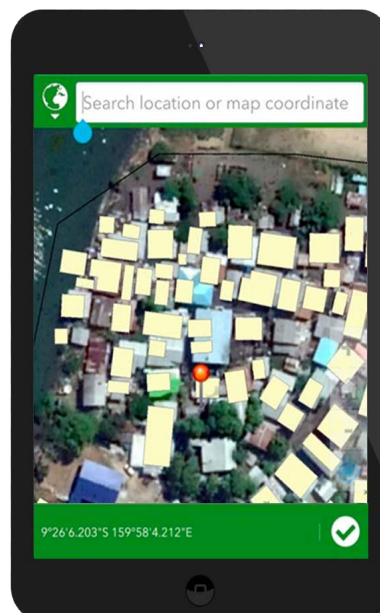


Figure 4.8. Tablet technology used for geotagging



Figure 4.9. Sanitation facilities map

<sup>32</sup> The project is implemented by UN-Habitat in partnership with the Ministry of Land, Housing and Survey, the Ministry of Environment, Climate Change and Disaster Management, and Honiara City Council. The geospatial data used in the assessment report was derived from a LIDAR dataset provided by the Ministry of Health and Medical Services (MHMS). Scientific advice to the project is provided by RMIT University, Australia.

<sup>33</sup> Ho, S., Dias, Baptista, M. Lehmann, T. Wind Valley Community Profile. UN-Habitat, Solomon Islands Government, 2020.

| Climate change & disaster risk                                                               |                                                                                |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Questions                                                                                    | Answer                                                                         |
| How often is your household affected by this hazard?                                         | Once a week                                                                    |
|                                                                                              | Once a month                                                                   |
|                                                                                              | Once per year                                                                  |
|                                                                                              | Once every five years                                                          |
|                                                                                              | Other, please specify:                                                         |
| Are the impacts resulting from this hazard staying the same or getting worse?                | Getting worse                                                                  |
|                                                                                              | Staying the same                                                               |
| What is the second most problematic climate-related hazard for your household? <sup>34</sup> | Extreme heat                                                                   |
|                                                                                              | Droughts (e.g., resulting in lack of water for household use, damage to crops) |
|                                                                                              | Flooding (river)                                                               |
|                                                                                              | Flooding (coastal)                                                             |
|                                                                                              | Flash flooding                                                                 |
|                                                                                              | Landslides                                                                     |
|                                                                                              | Storms/cyclones                                                                |
|                                                                                              | Storm surge                                                                    |
|                                                                                              | Rainstorm                                                                      |
|                                                                                              | Vector-borne diseases                                                          |
| Water-borne diseases                                                                         |                                                                                |

<sup>34</sup> The climate-hazards included in the tool are meant as examples and should be adapted to include the hazards that are most relevant to each specific context. Other hazard types could include: heavy snow, fog, hail, salt water intrusion, ocean acidification, water-borne diseases, air-borne diseases, etc.

## VULNERABILITY & RISK ASSESSMENT

|                                                                                             |                                                                                |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
|                                                                                             | Salt water intrusion                                                           |
|                                                                                             | Other, please specify:                                                         |
| How often is your household affected by this hazard?                                        | Once a week                                                                    |
|                                                                                             | Once a month                                                                   |
|                                                                                             | Once per year                                                                  |
|                                                                                             | Once every five years                                                          |
|                                                                                             | Other, please specify:                                                         |
| Are the impacts resulting from this hazard staying the same or getting worse?               | Getting worse                                                                  |
|                                                                                             | Staying the same                                                               |
| What is the third most problematic climate-related hazard for your household? <sup>35</sup> | Extreme heat                                                                   |
|                                                                                             | Droughts (e.g., resulting in lack of water for household use, damage to crops) |
|                                                                                             | Flooding (river)                                                               |
|                                                                                             | Flooding (coastal)                                                             |
|                                                                                             | Flash flooding                                                                 |
|                                                                                             | Landslides                                                                     |
|                                                                                             | Storms/cyclones                                                                |
|                                                                                             | Storm surge                                                                    |
|                                                                                             | Rainstorm                                                                      |
|                                                                                             | Vector-borne diseases                                                          |
|                                                                                             | Water-borne diseases                                                           |

<sup>35</sup> The climate-hazards included in the tool are meant as examples and should be adapted to include the hazards that are most relevant to each specific context. Other hazard types could include: heavy snow, fog, hail, salt water intrusion, ocean acidification, water-borne diseases, air-borne diseases, etc.

|                                                                                            |                                                                                |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
|                                                                                            | Salt water intrusion                                                           |
|                                                                                            | Other, please specify:                                                         |
| How often is your household affected by this hazard?                                       | Once a week                                                                    |
|                                                                                            | Once a month                                                                   |
|                                                                                            | Once per year                                                                  |
|                                                                                            | Once every five years                                                          |
|                                                                                            | Other, please specify:                                                         |
| Are the impacts resulting from this hazard staying the same or getting worse?              | Getting worse                                                                  |
|                                                                                            | Staying the same                                                               |
| Of the hazards selected, what problems do they cause for the household? (select the top 3) | Impact on ability to earn income                                               |
|                                                                                            | Impact on crops                                                                |
|                                                                                            | Impact on fishing                                                              |
|                                                                                            | Damage to property                                                             |
|                                                                                            | Impact on physical health (e.g., injury, disease or death)                     |
|                                                                                            | Impact on mental health (e.g., anxiety, depression)                            |
|                                                                                            | Negative impacts on community relationships                                    |
|                                                                                            | Temporary relocation                                                           |
|                                                                                            | Other, please specify:                                                         |
| How does your household currently respond to these impacts?                                | (Open field to fill in with text)                                              |
| What are other climate-related hazards that your household is affected by? <sup>36</sup>   | Extreme heat                                                                   |
|                                                                                            | Droughts (e.g., resulting in lack of water for household use, damage to crops) |
|                                                                                            | Flooding (river)                                                               |

<sup>36</sup> The climate-hazards included in the tool are meant as examples and should be adapted to include the hazards that are most relevant to each specific context. Other hazard types could include: heavy snow, fog, hail, salt water intrusion, ocean acidification, water-borne diseases, air-borne diseases, etc.

## VULNERABILITY & RISK ASSESSMENT

|                                                                     |                          |
|---------------------------------------------------------------------|--------------------------|
|                                                                     | Flooding (coastal)       |
|                                                                     | Flash flooding           |
|                                                                     | Landslides               |
|                                                                     | Storms/cyclones          |
|                                                                     | Storm surge              |
|                                                                     | Rainstorm                |
|                                                                     | Vector-borne diseases    |
|                                                                     | Water-borne diseases     |
|                                                                     | Salt water intrusion     |
|                                                                     | Other, please specify:   |
| From where would you usually seek help to respond to these impacts? | Family members           |
|                                                                     | Immediate neighbors      |
|                                                                     | Community groups         |
|                                                                     | Chief / community leader |
|                                                                     | City council             |
|                                                                     | Home province            |
|                                                                     | NGOs                     |
|                                                                     | National government      |
|                                                                     | None                     |
|                                                                     | Other, please specify:   |

|                                                                                                                                                |                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| From where would you seek help to prepare for a changing climate?                                                                              | Family members                                                                                            |
|                                                                                                                                                | Immediate neighbors                                                                                       |
|                                                                                                                                                | Community groups                                                                                          |
|                                                                                                                                                | Chiefs                                                                                                    |
|                                                                                                                                                | City council                                                                                              |
|                                                                                                                                                | Home province                                                                                             |
|                                                                                                                                                | NGOs                                                                                                      |
|                                                                                                                                                | Other, please specify:                                                                                    |
| What are other types of hazards affect your household?                                                                                         | Earthquake                                                                                                |
|                                                                                                                                                | Tsunami                                                                                                   |
|                                                                                                                                                | Volcano                                                                                                   |
|                                                                                                                                                | Pollution                                                                                                 |
|                                                                                                                                                | Epidemics                                                                                                 |
|                                                                                                                                                | Other, please specify:                                                                                    |
| This is a question about disaster preparedness: which of the following statements are true for your household? (multiple answers are possible) | We have access to early warning systems through SMS alerts, radio alerts, community notification systems. |
|                                                                                                                                                | We have access to early warning systems through radio alerts                                              |
|                                                                                                                                                | We have access to early warning systems through community notification systems.                           |
|                                                                                                                                                | We have an evacuation plan, either for our household or settlement.                                       |
|                                                                                                                                                | We are connected to formal town council or ward-level disaster risk reduction networks.                   |
|                                                                                                                                                | None of these                                                                                             |
|                                                                                                                                                | Other, please specify:                                                                                    |

## VULNERABILITY & RISK ASSESSMENT

| Problems, needs and strengths                                                                                                    |                                |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Questions                                                                                                                        | Answer                         |
| Problems                                                                                                                         |                                |
| What are the main problems you face in your daily life and what would you need to overcome these problems?<br>(select the top 3) | Lack of employment/income      |
|                                                                                                                                  | Crops failed                   |
|                                                                                                                                  | Livestock problems             |
|                                                                                                                                  | Fishing problems               |
|                                                                                                                                  | Lack of food                   |
|                                                                                                                                  | Victim of crime                |
|                                                                                                                                  | Lack of education              |
|                                                                                                                                  | Diseases/health                |
|                                                                                                                                  | Lack of clean water            |
|                                                                                                                                  | Lack of adequate drainage      |
|                                                                                                                                  | Lack of adequate sanitation    |
|                                                                                                                                  | Lack of electricity            |
|                                                                                                                                  | Lack of solid waste management |
|                                                                                                                                  | Poor road infrastructure       |
|                                                                                                                                  | Poor mobility                  |
| Lack of natural resources                                                                                                        |                                |
| Other, please specify:                                                                                                           |                                |

| Needs                                                                                             |                                                              |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Thinking about the characteristics of your house, what are the main things you need help with?    | Better quality housing materials                             |
|                                                                                                   | Access to finance to improve housing                         |
|                                                                                                   | Better skills to improve housing                             |
|                                                                                                   | Other, please specify:                                       |
| Thinking about your crops, what are the main things you need help with?                           | Better crops                                                 |
|                                                                                                   | Better irrigation                                            |
|                                                                                                   | Better training/education on possible impacts and techniques |
|                                                                                                   | Other, please specify:                                       |
| Thinking about lifeline utilities, what are the main things you need help with?                   | Better quality water                                         |
|                                                                                                   | Better quality sanitation                                    |
|                                                                                                   | Better drainage system                                       |
|                                                                                                   | Better solid waste management                                |
|                                                                                                   | Better access to power                                       |
|                                                                                                   | Better access to telecommunications                          |
|                                                                                                   | Other, please specify:                                       |
| Thinking about your household and land tenure, what are the main things you would need help with? | More secure land tenure                                      |
|                                                                                                   | Having access to fair conflict resolution processes          |
|                                                                                                   | Access to land information                                   |
|                                                                                                   | Other, please specify:                                       |

## VULNERABILITY & RISK ASSESSMENT

| Strengths                                                                                                                                |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Are there people in your household who:                                                                                                  | Work / have worked in construction activities                                                    |
|                                                                                                                                          | Have any / basic skills in construction (e.g., carpentry concreting, plumbing, electrical)       |
|                                                                                                                                          | Have done community organizing                                                                   |
|                                                                                                                                          | Environmental management activities (e.g., planting trees, digging drainage)                     |
|                                                                                                                                          | Have experience in using computers                                                               |
|                                                                                                                                          | Have experience in managing money for anything other than the household (e.g., a small business) |
|                                                                                                                                          | Have experience in farming, gardening or livestock rearing                                       |
|                                                                                                                                          | Have child care experience (e.g., looking after non-family children).                            |
|                                                                                                                                          | Have experience in managing people (e.g., at a workplace)                                        |
|                                                                                                                                          | Other, please specify:                                                                           |
| Is there be anyone in this household who would be willing to work as a volunteer on a community upgrading project in any of these areas? | Yes/no                                                                                           |
| In case of non-remunerated volunteering, would you still be interested?                                                                  | Yes/no                                                                                           |
| (If yes) in which areas would you like to work?                                                                                          | Construction                                                                                     |
|                                                                                                                                          | Carpentry                                                                                        |
|                                                                                                                                          | Farming, gardening or livestock rearing                                                          |
|                                                                                                                                          | Administration                                                                                   |
|                                                                                                                                          | Community organizing, community liaison, trouble shooting                                        |
|                                                                                                                                          | Other, please specify:                                                                           |

## CASE STUDY 6

### Household Survey

#### Fiji Resilient Informal Settlements Vulnerability Assessments and COVID-19

The project *Increasing the Resilience of Informal Urban Settlements in Fiji that are Highly Vulnerable to Climate Change and Disaster Risks*, implemented by UN-Habitat and funded by the AF, targets 16 informal settlements in four urban areas. The community-based VRAs use a mix of community-scale consultations and household surveys.

The household survey questionnaire was designed by a multicultural team with different backgrounds and refined in several steps to fit the needs of the Fiji programme. An open-source (Kobo Toolbox) was used as a platform. Once uploaded on tablets, it was piloted in a number of selected households.

Community leaders supported the survey by all means, mobilizing communities before and during the field work. The survey was carried out by a group of 12 volunteers, organized in 6 teams composed of university students.

The programme's focus on gender (with a special attention to particularly vulnerable groups such as transgender communities and youth was reflected in the team composition (where the balance of factors has been carefully considered from the beginning of the project).

The experience was very positive and the different background and age of the volunteers proved to be interesting and very efficient, and enriched the outcomes of the research, bringing different perspectives.

The household survey served as an awareness raising instrument, allowing the families to understand their vulnerabilities through the questions and discussions with the volunteers. Project brochures, including the main objectives and expected outputs, illustrating the environmental and social safeguards adopted, were distributed during the survey.

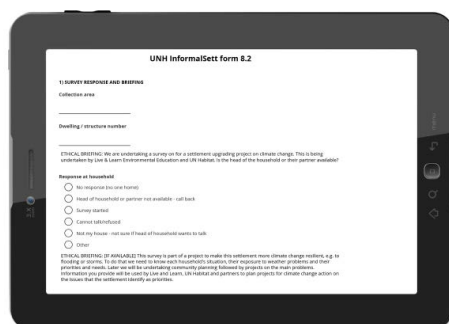


Figure 4.10. Tablet technology



Survey  
© UN-Habitat

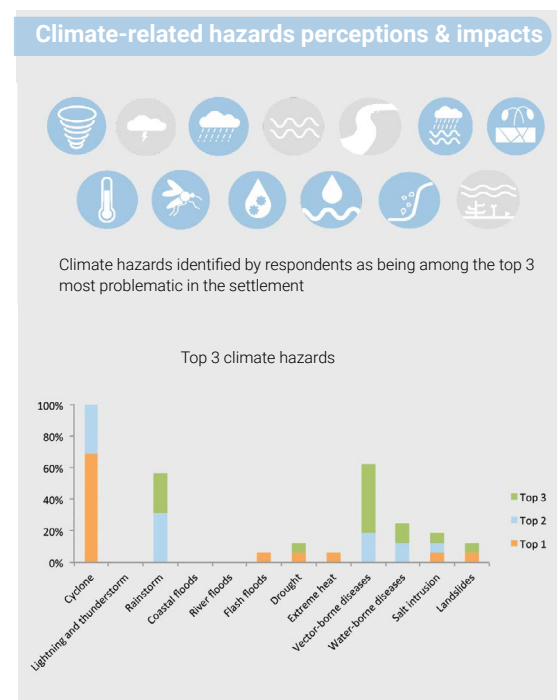


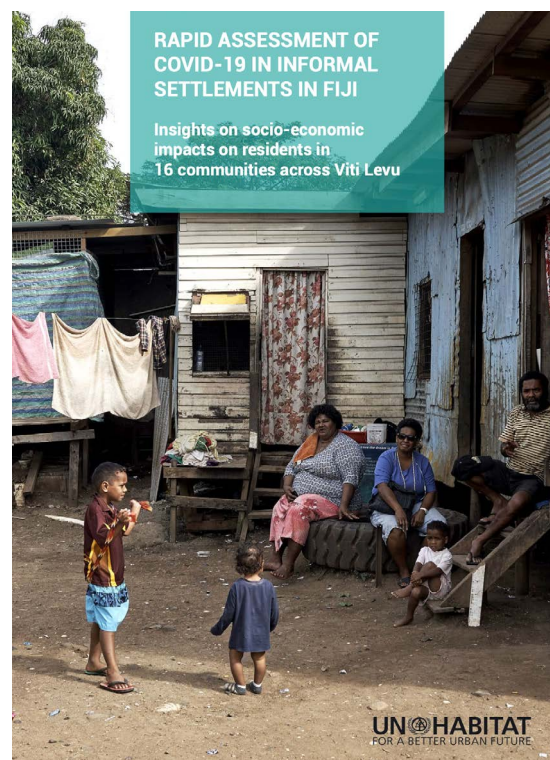
Figure 4.11. Fragment from the household survey analysis in an informal settlement in Fiji

The community climate action planning process was ongoing in the 16 informal settlements at the time when the Government of Fiji declared a national state of emergency due to COVID-19. After Tropical Cyclone (TC) Harold made a landfall in Fiji, a concurrent national state of emergency was implemented to manage the dual response to COVID-19 and TC Harold.

At this time, household level data collection for the climate change vulnerability assessments had already been finalized and compiled into community profiles. Given that the data was comprehensive, current and covered sample communities across four towns in Fiji it provided a solid baseline to inform UN-Habitat's rapid COVID-19 response covering over 70 settlements across the country. It also enabled the understanding of some of the most critical issues being faced in these settlements (e.g., poor sanitation, lack of access to handwashing stations, overcrowdedness, etc.).

As part of the startup to the rapid COVID-19 response, an additional rapid assessment was carried out to fully understand the socio-economic impact of COVID-19 in the 16 targeted informal settlements (see Figure 4.10.). In addition, community leaders, community representatives and groups were identified across the 70 target communities to facilitate the communication and coordination of the COVID-19 response despite the lockdown and associated mobility restrictions.

According to the data collected, 84 per cent of the households reported a loss of income, 82 per cent of the respondents were impacted by TC Harold during the pandemic, adding to existing vulnerabilities in the informal settlements<sup>37</sup>. The information from the HHS under the AF project and the Rapid COVID-19 Assessment also contributed to the Socio-Economic Impact Assessment of COVID-19 in Fiji<sup>38</sup>.



**Figure 4.12.** UN-Habitat's Rapid Assessment for COVID-19 in Informal Settlements in Fiji



<sup>37</sup> UN-Habitat. (2020). Rapid Assessment of informal settlements in Fiji. COVID-19 pandemic and its impact on residents in informal settlements.

<sup>38</sup> UNDP. (2020). Socio-Economic Impact Assessment Of COVID-19 In Fiji | UNDP In The Pacific. Available at: <https://www.pacific.undp.org/content/pacific/en/home/library/socio-economic-impact-assessment-of-covid-19-in-fiji.html>

### 4.3.6. Household level: Shelter assessment

The shelter assessment provides information of the overall condition of the shelter, the types of construction techniques and materials used in the community. This will help assess the adequacy of construction types and techniques in relation to the context's climate-related risks. The collection of this data will be integrated into the overall participatory process and build awareness on shelter safety issues. It will also help identifying resilient construction techniques that may have been developed by community.



## Shelter assessment

### CARRYING OUT THE SHELTER ASSESSMENT

#### 1. Plan and prepare:

- Given the technical focus of this assessment, it should be prepared and carried out by construction experts (e.g., architects, engineers).
- A basic assessment collecting general information on construction materials, site characteristics and conditions may be carried out (see Tool VRA 13).
- Decide on the level of detail of the assessment and the aspects that will be assessed.
- Decide on what shelters will be assessed. This assessment could be done for all the shelters of the community, but it could also be done for those shelters located in particularly vulnerable areas, or for those that were identified as being in a precarious condition during the field survey.

#### 2. Conduct the assessment

- Using tablets to conduct the assessment can largely benefit the way in which data is collected and analysed. If tablets are used, the assessment team should be trained on how to set up the survey and how to collect the information.

GIS and drone imagery may be combined with the assessment to provide detailed spatial data that can inform planning processes.



**Shelter in Fiji**  
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**Shelter in Myanmar**  
© UN-Habitat/Liam Fee

Tool **VRA 15** Shelter assessment

| Shelter Assessment                                       |                                                    |
|----------------------------------------------------------|----------------------------------------------------|
| Aspect                                                   | Answer                                             |
| Number of storeys                                        | (Open text field to fill in number of storeys)     |
| Roof: main material (more than 50% of the roof)          | Wood                                               |
|                                                          | Metal                                              |
|                                                          | Traditional materials (e.g., thatched/palm leaves) |
|                                                          | Tent / tarp                                        |
|                                                          | Other, please specify:                             |
| Roof condition                                           | Poor                                               |
|                                                          | Fair                                               |
|                                                          | Average                                            |
|                                                          | Good                                               |
|                                                          | Excellent                                          |
| Exterior walls main material (more than 50% of the roof) | Wood                                               |
|                                                          | Metal                                              |
|                                                          | Concrete blocks                                    |
|                                                          | Bricks                                             |
|                                                          | Traditional materials (e.g., thatched, bamboo)     |
|                                                          | Tent / tarp                                        |
|                                                          | Other, please specify:                             |

|                                                                |                                            |
|----------------------------------------------------------------|--------------------------------------------|
| Exterior walls condition                                       | Poor                                       |
|                                                                | Fair                                       |
|                                                                | Average                                    |
|                                                                | Good                                       |
|                                                                | Excellent                                  |
| Does the house have stilts?                                    | Yes/no                                     |
| (If yes) Main material of stilts (more than 50% of the stilts) | Wood                                       |
|                                                                | Concrete                                   |
|                                                                | Other, please specify:                     |
| Height of house floor from ground level                        | 0.5 metres                                 |
|                                                                | 0.5-1 metre                                |
|                                                                | 1-1.5 metres                               |
|                                                                | Over 1.5 metres                            |
| Slope of the site where the house is built                     | Low (mostly flat)                          |
|                                                                | Medium                                     |
|                                                                | High (takes substantial effort to walk up) |



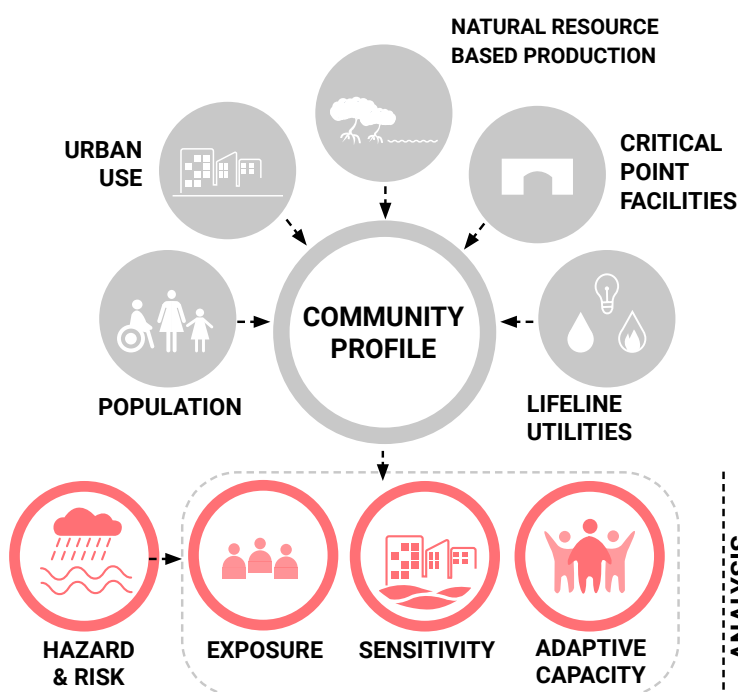
Building construction techniques and materials may differ largely across geographic areas. For example, houses on stilts may be common in coastal villages. The shelter assessment should be contextualized by, for example, including information on stilts materials, height, etc. Likewise, vernacular architecture may also be reflected in the assessment when present. Vernacular building techniques in disaster-prone areas tend to incorporate measures developed over many years to minimize impacts. These building techniques and the use of local materials may provide a lot of opportunities in strengthening the communities' resilience while bringing other benefits such as reduced costs, community acceptability, reduced carbon emissions, etc. These may be captured during the assessment so that they can be taken into account during the action planning and design phase.

## 4.5. Analyzing and interpreting data

The data collected during the previous steps will support the development of the analyses. As highlighted in chapter 2, in alignment with internationally recognized methodologies, the VRA analyses four key components: climate-related hazard characteristics (including risks), exposure, sensitivity and adaptive capacity.

The team may want to validate the main findings with the community before proceeding to analyze and interpret it. Also, it must be noted that collecting and analyzing data is an iterative process and will probably require several rounds. If any gaps are identified during the analysis, the team may need to collect more data (by, for example, organizing additional FGDs, interviewing key informants, etc.). If data is collected at both the community and household level, the interrelation between these two levels should also be considered for the analysis. Data collected at the household level can be aggregated to understand the community level (e.g., 20% of the households have no access to sanitation) and data collected at the community-level can also help understand the context at the household level. As mentioned previously, there are other data collection methods and related analyses within the wider context of the VRA that have not been described in this chapter (see Annex 6) and may be carried out by a team of experts from different fields.

The analysis will include specific information on vulnerable systems collected through the key areas. These could refer to specific groups of people (e.g., residents living in a flood-prone area), infrastructure (e.g., roads that are often waterlogged), ecosystems (e.g., deteriorated mangrove areas), etc. The spatial dimension of vulnerability will have also been identified and analysed throughout the process. Underlying vulnerabilities in socio-economic, infrastructure and ecosystems in interaction with climate change and climate related hazards will result in heightened levels of risk. Following the IPCC 5th Assessment Report's conceptualization of risk that results from the interaction of vulnerability, exposure and hazard (Figure 1.1.), the level of risk for the identified key areas will be assessed.



**Hazard analysis:** Looks at climate-related physical events or trends and their physical impacts. It explores the current risk level of these hazards and expected future impacts, based on climate change projections.

**Exposure analysis:** Identifies elements (e.g., people, livelihoods, species or ecosystems, services, etc.) that are located in places and settings that could be adversely affected. Understanding the spatial dimension of exposure will be important. Exposure mapping will support this process.

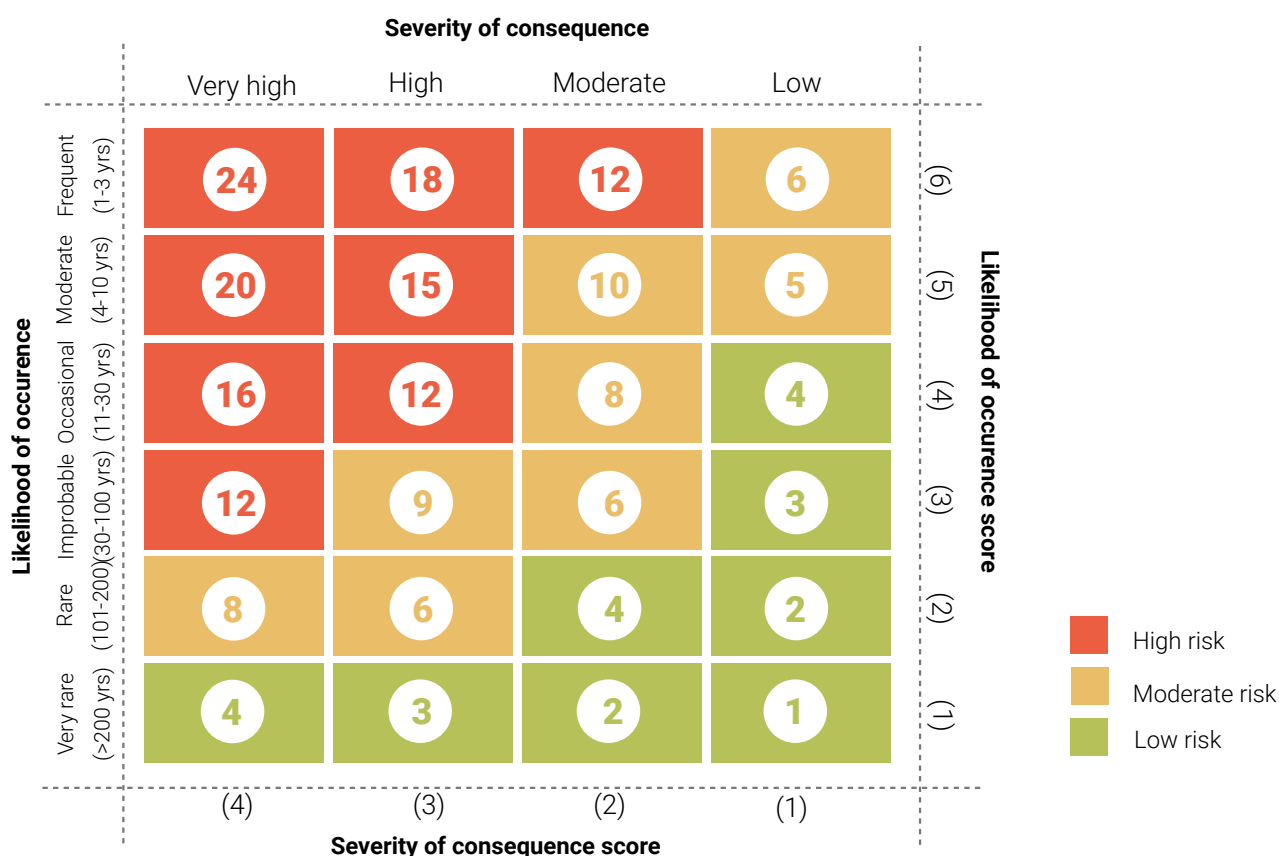
**Sensitivity analysis:** Evaluates the degree to which a system or species is affected, either adversely or beneficially, by climate variability or change.

**Adaptive capacity analysis:** Appraises the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.

**Figure 4.13.** Vulnerability and Risk Assessment overview: Analysis

### Tool VRA 16 Risk level

Tool VRA 16 may be used to determine the risk level based on the likelihood and severity of consequence scores. Areas in yellow and red are to be prioritized during the AP (red being the most critical)<sup>39</sup>.



## 4.6. The Vulnerability and Risk Assessment Report

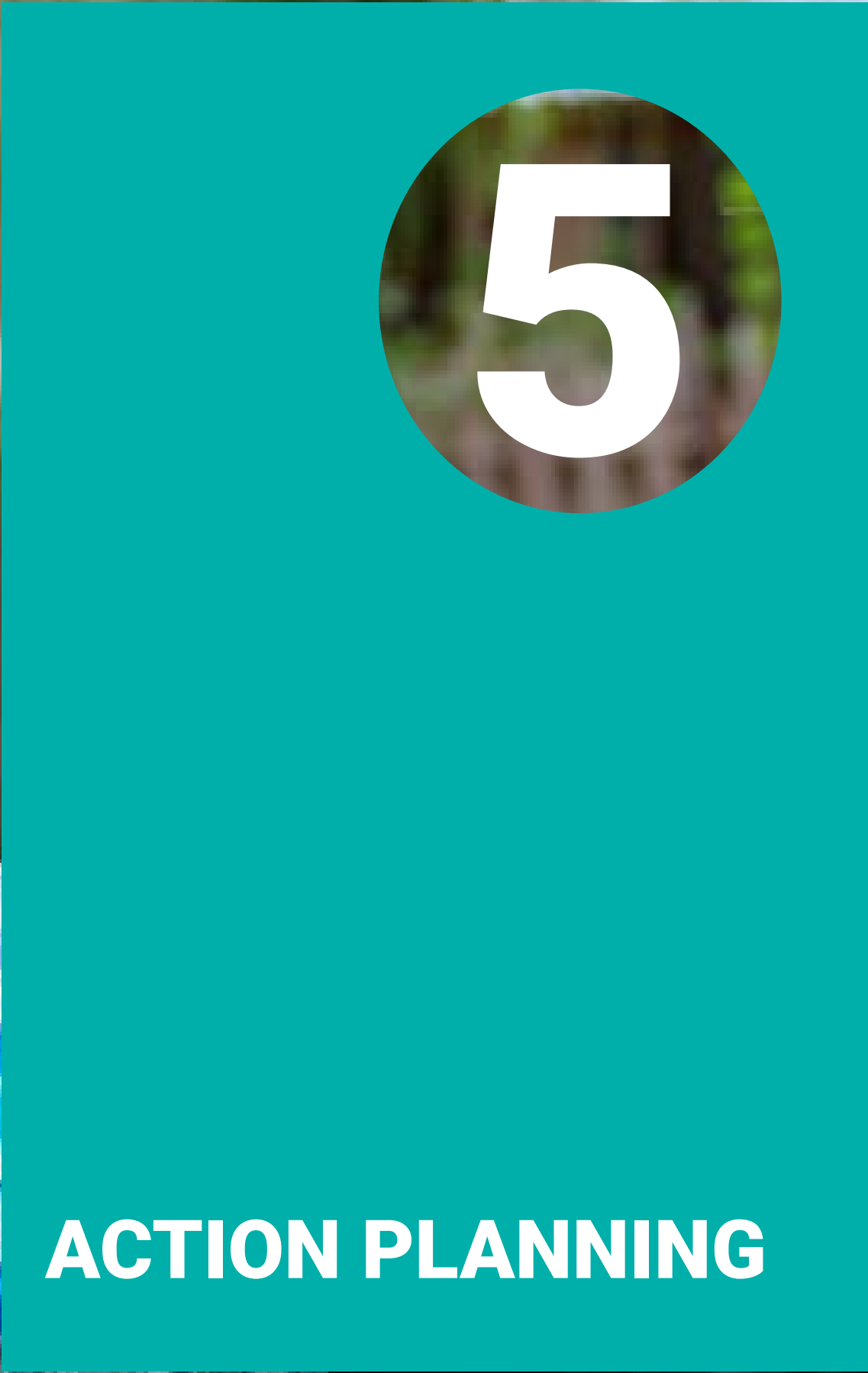
Once all the analysis is complete, the expert team will document it in the VRA report (the reporting format for the VRA report is outlined in Annex 3). As mentioned, it may include information on the most significant climate hazards faced by the community and related impacts, information on vulnerable population groups (e.g., poor, elderly, youth, people with chronic disease, unemployed, etc.) that are expected to be most affected by climate change, hazards occurred in the past, etc. This information will help in prioritizing the adaptation actions.



The results of the VRA will be the starting point for the community-based AP process. These will be summarized in the VRA report. Given the comprehensiveness and complexity of the assessment, before going into the AP phase the team may select the information that will be presented to the community in the AP phase and translate it into easily communicated messages.

<sup>39</sup> Example of risk matrix that may be used to score climate threats. UN-Habitat's *Planning for Climate Change, A Strategic, Values-based Approach* includes a similar tool, p.54. Available from <https://unhabitat.org/books/planning-for-climate-change-a-strategic-values-based-approach-for-urban-planners-cities-and-climate-change-initiative/>.





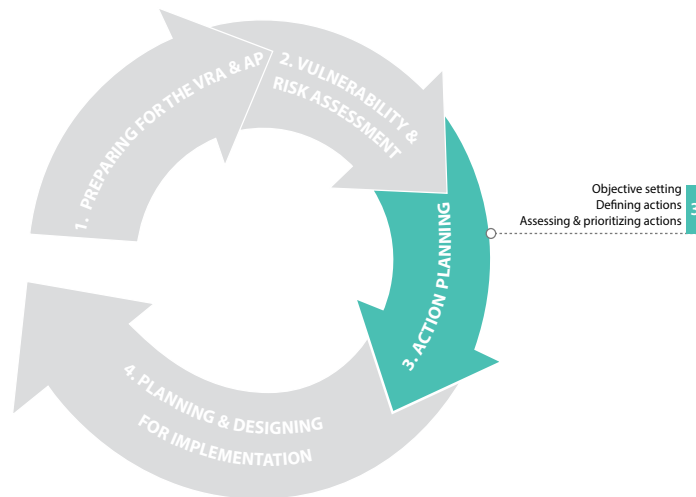
5

## **ACTION PLANNING**

# ACTION PLANNING

## 5.1. Action Planning

Following the VRA, the third phase of the process described in this guide is the AP Phase<sup>40</sup>.

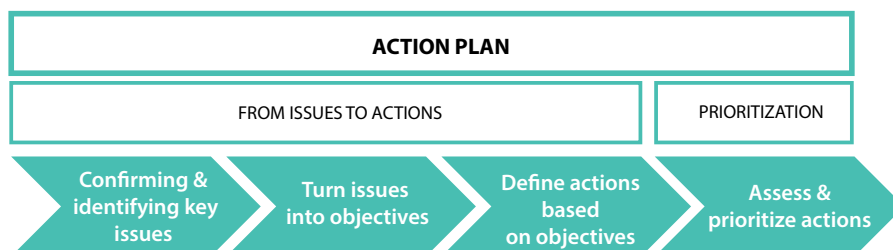


**Figure 5.1.** Phase diagram: Action Planning

The main purpose of the AP is to empower communities to identify community-based interventions that will strengthen their resilience to climate change while driving their development. Despite the main focus being at the community level, promoting the spatial and social integration of settlements within larger systems is key to increasing their climate resilience (particularly in the case of informal settlements). Identified actions may go beyond the boundaries of the settlement.

Although the main focus is on identifying actions that increase resilience to climate change, it is important to recognize that existing development deficits exacerbate communities' vulnerability to climate change. To address these issues, the action plan seeks to prioritize actions that build climate resilience while presenting sustainable development co-benefits. Enhancing climate resilience within the context of informal settlements at the community-level will enable improved adaptive capacity and progress of many of the SDGs. During this phase and throughout the whole process, special attention must be paid to people in vulnerable situations such as women, youth, children, the elderly, or people living in particularly hazardous locations.

The action planning phase follows four steps: (1) Confirming and identifying climate change issues; (2) Turning these issues into objectives; (3) Defining actions based on the objectives; and (4) Assessing and prioritizing the identified actions. These steps will be carried out in a participatory manner through different activities in the target communities and can be organized as part of one or several workshops.



**Figure 5.2.** Action Planning process flow

<sup>40</sup> The methodology applied is largely based on the process described in the Planning for Climate Change Guide and Tool documents. Available online: <https://unhabitat.org/books/planning-for-climate-change-a-strategic-values-based-approach-for-urban-planners-cities-and-climate-change-initiative/>



The process of defining the action plan will be influenced by a number of factors, such as the scale of the intervention, the size of the communities or the number of settlements involved. The approach should be flexible and facilitators must be ready to adapt the system from one community to another. Some practical matters to consider are that communities in close geographic proximity may be clustered for time and cost efficiency. In some cases, the team may decide to conduct the VRAs for all the settlements in the project before starting the AP phase. Workshops can be implemented over the course of 1-2 days by the field teams and should be facilitated in the local language. The number of participants may vary greatly, but it should be selected as a representative sample of age, gender and, where appropriate, ethnicity.

## 5.2. From issues to actions

This section will allow the identification and confirmation of issues that were identified in the VRA, to turn these issues into objectives. The participatory approaches described in this section aim to ensure that the action planning process is driven by community's values. Three steps are explained in the following sections. Before describing each of the steps in detail, information on how to facilitate the workshops is provided below:



### From issues to actions

#### FACILITATING THE ACTIVITY

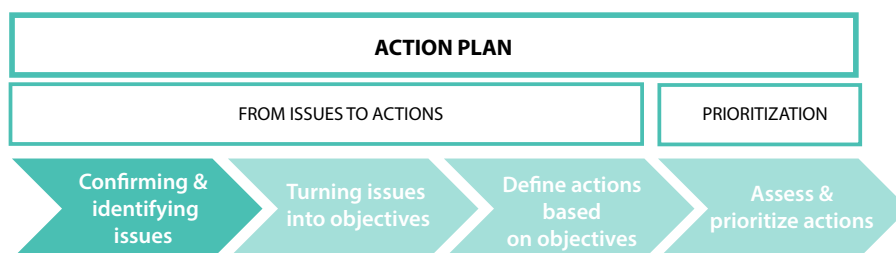
- Location: choose a meeting venue that is adequate for the session, preferably an enclosed space which is spacious enough to hold a large number of participants.
- Prepare a summary of the VRA's key findings and maps to present to the community.
- Technical advisors should be engaged throughout this process in order to observe, inform and advise on key technical issues and solutions.
- Prepare materials and equipment: flip charts, sticky notes, markers, large format paper sheets, etc.
- As part of the briefing, the following aspects are to be explained at the beginning of the activity:
  - > Participation is not compulsory
  - > Introduction to the project to ensure that communities fully understand the purposes, goals and processes of the AP and to manage the communities' expectations by clearly communicating them. This is meant to avoid mismatched expectations and potential conflicts.
  - > Explain the purpose of the session and the expected outcomes.
  - > Projects will be based on community-agreed priorities and will be implemented by the community to the largest extent possible. Given the focus on climate resilience strengthening, community development priorities that contribute to this will be prioritized.

Turning issues to actions can be done through three steps:

- 1 Confirming and identifying issues**  
The facilitator will present the key findings of the VRA, asking the community to confirm these and encouraging them to bring up any issues that may be relevant. Presenting vulnerabilities grouped into sectors/key areas or spatially defined in a map will help setting a structure to guide the action identification process.
  - 2 Setting objectives**  
Depending on the number of participants, participants can be split into groups or asked to individually write down objectives. After, these can be discussed with the whole group, pointing out those goals that are shared and emphasizing whether they enhance a collective vision.
  - 3 Defining actions**  
Participants may be asked to propose climate-resilience strengthening options related to the previously set objectives, thinking about possible co-benefits related to these actions. All actions are to be captured, and facilitators may go through them with the community. At this point, those actions that are not climate-related will be set aside for later consideration.
- In order to support the process, the technical team may identify options beforehand to be presented during the workshop. These can then be discussed, obtaining inputs on appropriateness and acceptability and giving participants the opportunity to identify other actions that they might consider important.

### 5.2.1. Confirming and identifying issues

This first activity seeks to confirm the major issues and risks identified during the VRA phase, and to identify any potential additional risks that may have been overseen. Achieving a common understanding on the issues will form the basis to define objectives in the next step.



**Figure 5.3.** Action Planning process flow: Confirming and identifying key issues



As mentioned previously, there are many factors that influence people's vulnerability and risks to climate-related events. The VRA aimed at identifying those groups of people who may be particularly vulnerable and at risk of these impacts and capturing their specific needs, problems and strengths.

The AP phase aims to identify actions that will address and mitigate those risks. If separate focus group discussions were carried out during the VRA it may be convenient to carry out the AP workshops in the same separate groups.

Women's perspectives are often overlooked due to limitations in public participation. Both women and men should have the opportunity to participate to be able to voice their issues and find solutions to address them. Women-only workshops can be organized to create an adequate environment for them to participate.

Confirming the issues and opportunities identified through the VRA and identify any potential gaps can be done by:

- Presenting key findings from the assessment: This step ensures that the community continues to be familiar with the findings of the assessment.
- Confirm the key issues: This takes the form of a facilitated group discussion through which participants will agree on the main issues being faced. These discussions should be inclusive, involve women and men, young and old, people with disability, ethnic minorities as other members of the community in vulnerable situations to ensure balanced perspective as well as differentiated responsive issue identification.
- Identify new issues that might not have been identified during the VRA or that might have emerged after the assessment: It is important to encourage participants to identify all issues that the community faces, rather than limiting the identification to climate change related issues. This is to avoid overlooking issues that at first may not seem related to climate change, but that in fact are related.
- Confirm and identify opportunities (e.g., increased precipitation may not necessarily lead to floods. In this case, this could be seen as an opportunity if water is, for example, stored for domestic used).

The next step is to organize issues by categorizing them. Two options that can assist facilitators in ensuring that participants stay focused throughout the different steps are described below:

- Categorizing issues by sector or key areas: The same structure followed in the VRA may be used to ensure consistency. Current and future issues will be included (referring to current and future risks of climate change).
- Using the community issues maps and risk analysis: At this point, the maps made during the VRA may be revised. Going through the issues that were identified will help refine the risk analysis and identify options in the later steps. If a specific area was identified for being particularly vulnerable to a hazard, actions can be proposed to mitigate the risks in that location. For example, if specific points in key drainage lines have been identified for regularly getting blocked, then solutions can be proposed to address those issues. The community-based maps made during the previous phase may have also identified safe locations that could be useful at this point. If one of the resulting activities is improving food storage facilities, then the community can help locate adequate and safe spots by using the map.

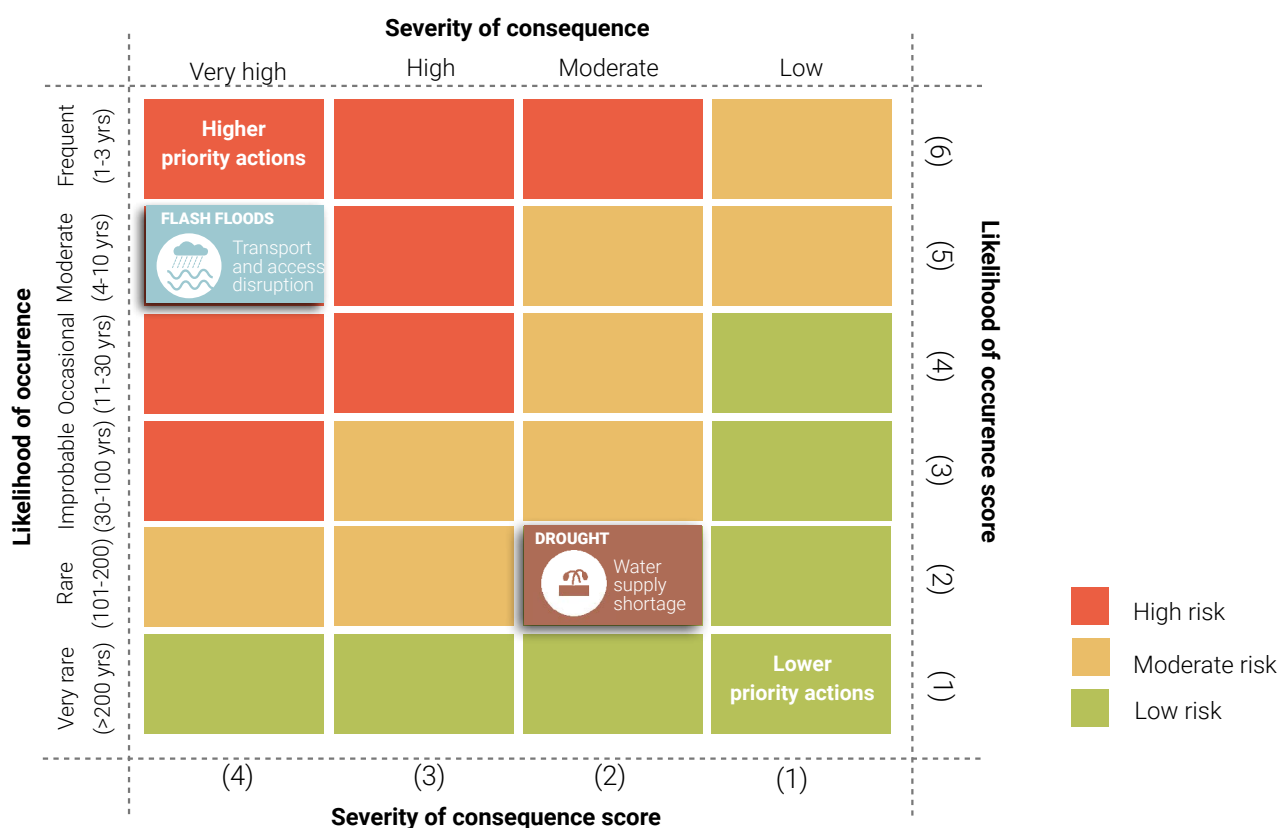
**Tool AP 1** Categorizing climate-related issues

This tool helps categorizing climate-related issues based on key areas. Facilitators can start by discussing current impacts from climate-related hazards on a specific key area (e.g., lifeline utilities - wastewater) or sector. The assessment team may present climate change projections based on the assessment done during the context analysis (phase 1) to discuss how these issues could worsen in the future.

| Key Areas / sectors                            | Climate change stressor / driver | Issues                                                                                                 |                                                                                                                |
|------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|                                                |                                  | Current                                                                                                | Future                                                                                                         |
| Natural resource based production (rice yield) | e.g., Sea water intrusion        | e.g., High economic dependency on rice (cultivated as mono-crop) being affected by sea water intrusion | e.g., Increase in level of sea salinity intrusion leading to total loss of rice fields in worst affected areas |
| Lifeline utilities (wastewater management)     | e.g., Coastal flooding           | e.g., Inadequate wastewater management leading to incidences of water-borne diseases                   | e.g., More frequent floods may lead to an increase in risk of disease due to water contamination               |

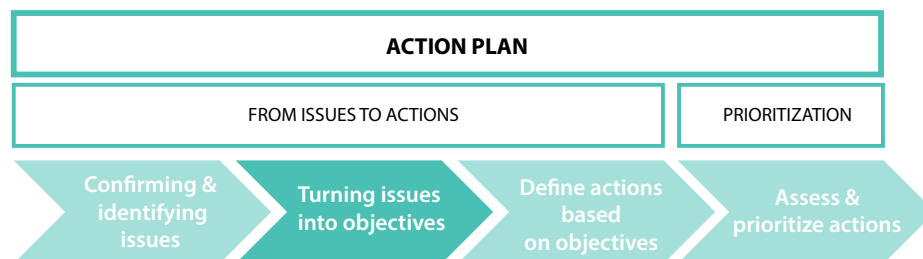
**Tool AP 2** Risk level and priority

Once issues have been categorized, these may be organized according to their level of risk through a facilitated exercise. This tool is similar to the one used during the VRA by the expert team. The aim is to understand the community's perception of climate risks and to raise awareness among the participants both on current and future risks. The community may start by distributing current issues based on their severity of consequence and likelihood (examples are shown in the tool below). Then, the facilitator may show how these could move to higher or lower areas of risk over time based on climate projections. The community's local knowledge can be particularly useful for the team to obtain information on the potential severity of consequences related to a specific hazard.



## 5.2.2. Setting objectives

Once issues have been reviewed and organized according to their level of risk, the second activity will explain how these can be turned into objectives. Objectives describe the desired outcome and will be used to assess and prioritize potential climate resilience options and actions.



**Figure 5.4.** Action Planning process flow: Turning issues into objectives

Objectives will be set to address issues, prioritizing those that presented higher risks during the previous exercise. Setting objectives with communities in a participatory way will allow to capture the community's values and local knowledge. For this reason, it is crucial to ensure at this stage an equal involvement and participation of different groups, especially people in vulnerable situations including women, youth, people with disabilities and the elderly.

- **Objective Setting:** As part of a facilitated group discussion, participants will take the issues and create a set of objectives, stated in straightforward terms, such as 'protect water supply during floods and droughts'. The facilitator may ask participants to formulate objectives that are, to the largest extent possible, specific, measurable, attainable, realistic and time-bound (SMART). The result of this will be a simple table, such as the one below:

### Tool AP 3 Turning issues into objectives

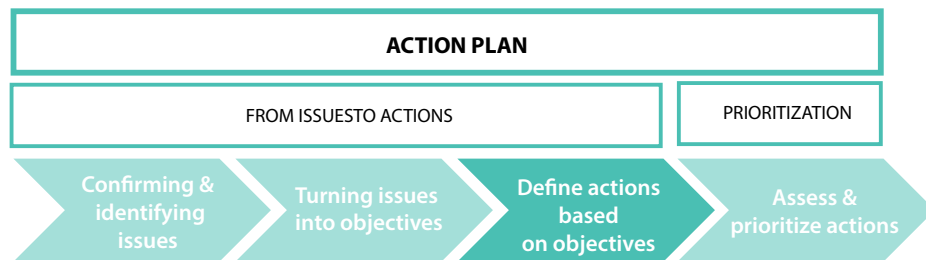
| Key Areas / sectors               | Issue                                                                    | Objective                                                                                                                                                               |
|-----------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Population                        | e.g., High incidence of water-borne diseases related to regular flooding | e.g., By 2025 the incidence of water-borne diseases will be reduced by 20%                                                                                              |
| Natural resource based production | e.g., High economic dependency on a single crop                          | e.g., By 2025 the diversification of crops being harvested by the community will be increased, with a 30% of the cultivated land being used for climate-resilient crops |

To ensure that the main focus remains on climate resilience, the facilitators can ask the participants to identify how each of the issues listed relate to climate related threats. Facilitators can refer to this when identifying and prioritizing actions. This will also promote a wider discussion about understanding climate processes. If needed, facilitators can explain again concepts that were explained in previous phases, such as what are climate impacts and barriers, and remind the participants what was agreed on during the previous sessions.

Before going to the next phase, it is important to check the objectives listed in order to make sure that there are no gaps. Furthermore, all the identified groups of people in vulnerable situations should be represented throughout the process and their needs should be captured by the objectives.

### 5.2.3. Defining actions based on objectives

Once the objectives have been established, options to achieve these may be identified. Options that may have been identified during the VRA and through formal and informal communication with communities will be presented and discussed here. When coming up with the list of options, these should refer to the objectives previously defined.



**Figure 5.5.** Action Planning process flow: Defining actions

Once again, participants should be reminded that the focus is on identifying climate resilience-building initiatives. However, drawing the line between what is climate-related and what is not might be challenging. Communities that face large development deficits will be eager to propose options that respond to those needs. In some cases, options may respond to both development and climate adaptation needs maximizing co-benefits, while other times this may not be the case. In those cases in which activities proposed do not clearly show a link to climate adaptation, these can be set aside to be reconsidered during the prioritization exercise. When activities are clearly not linked to climate adaptation or key vulnerabilities, these can be dismissed. Nevertheless, all activities are to be acknowledged and tracked.

Similarly to the categorizing logic followed in the previous section, options can be identified for the sectors/key areas identified or respond to specific locations mapped by the community. For example, if a location has been particularly identified as having poor accessibility during the risk mapping, activities such as improving footpaths, safety and disability access can be proposed.

This phase should involve architects, planners, engineers, etc. to support the process. Technical experts can provide valuable inputs with regards to the technical feasibility of the options, potential costs, ease of implementation, etc. Furthermore, involving other key stakeholders (e.g., from the local government, housing departments, NGOs, private sector, etc.) can be beneficial, as they can provide relevant inputs on how to implement actions. This will ensure that the interests, ideas and skills of all the relevant actors are taken into account and, in that way, to produce a well-considered plan. However, non-community actors are expected to contribute and to facilitate but not to dominate or control the process which must be community-driven.



## CASE STUDY 7

### Setting objectives and identifying actions

#### Myanmar Climate Change Alliance Programme (MCCA) Labutta, Myanmar<sup>41</sup>

A large part of Myanmar's population and productive assets in terms of land, ecosystems and infrastructure are concentrated in the Ayeyawady Delta and the Dry Zone Area. These are also the two physio-geographic regions most exposed to recurrent cyclones and tropical-storms, storm-surges and floods; and droughts and heat waves respectively. Labutta, being located at the southern tip of the Ayeyawady Delta Area region, is vulnerable to many of these hazards.

The VA conducted in Labutta proposed three scenarios that describe the potential impact of climate change based on the level of adaptation action taken. Building on these scenarios defined during the VA, recommendations were issued to avoid the worst case future scenario. Similarly to the VA process that included community consultations, participatory planning exercises with communities and local authorities were conducted during the AP phase.

When conducting the action planning exercises, potential adaptive measures were identified to counter, prevent and mitigate the current and

future impact of climate change. These were grouped under three categories: (1) Eco-system; (2) Infrastructure and connectivity; and (3) Socio-economic actions.

While using categories may help guide the process, it is important to avoid that these become compartmentalized. If, for example, infrastructure is improved without protecting and enhancing the eco-system services deriving from mangroves, actions will not generate resilient communities. Systemic approaches that recognize the interaction and interdependent nature of cities, considering the interconnections between systems and multiple issues simultaneously is critical.

A SWOT analysis was conducted in order to initiate the process. This enabled the identification of strengths, weaknesses, opportunities and threats for the three main categories. The MCCA technical team was involved in the process and co-designed potential adaptive measures with the participants. These included, for example, the use of tanks for more durable rainwater harvesting.



**Ideas for improved watertanks**  
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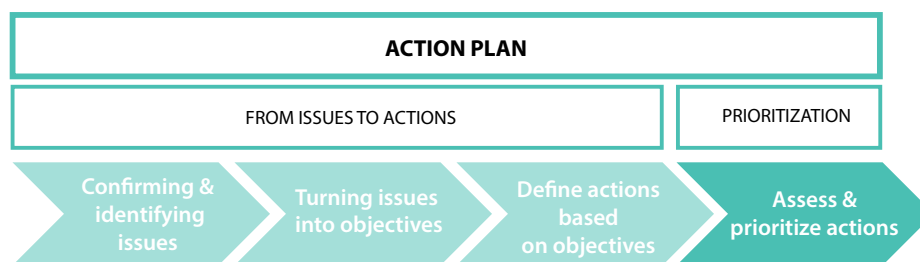


**MCCA Team in Labutta**  
© Capizzi/MCCA

<sup>41</sup> The Climate Change Vulnerability Assessment of Labutta Township, Ayeyawady Region (Myanmar), is available online: <https://myanmar.un.org/sites/default/files/2019-11/Labutta-SCENARIOS-FOR-RESILIENCE-BUILDING.pdf>

### 5.3. Prioritizing actions

Following the process described in this chapter means that many potential adaptation options will be generated, far more than the project allows to be implemented. The previous steps will have, to a certain extent, already prioritized actions (e.g., the risk level and priority exercise will have already prioritized actions that respond to high level risks). This section will guide the process of prioritizing activities based on further criteria for cost effectiveness, ensuring the maximum adaptation benefit, avoiding mal-adaptation and risks to environmental and social safeguards, etc. The activities will be prioritized through a participatory, bottom-up approach that ensures that communities have full ownership of activities they feel they need.



**Figure 5.6.** Action Planning process flow: Assessing and prioritizing actions



## Prioritizing actions

### FACILITATING THE ACTIVITY

- Location: choose a meeting venue that is adequate for the session, preferably an enclosed space which is spacious enough to hold a large number of participants.
- Prior to the workshop:
  - > Review the identified options and screen out those that are duplicate and those that are already being implemented by other stakeholders.
  - > Group options into those that are climate-related and those that are not.
  - > Decide the assessment criteria.
- If there is a large number of participants, they can be split into groups in order to carry out the ranking exercises.
- Technical observers/advisors should be engaged throughout this process, in order to observe, inform and advise on key technical issues and responses.

Some examples of exercises that can be carried out as part of the ranking activity are:

**1**

#### Using the SDGs as a framework to rank actions

Facilitators will present the 17 goals and high level messages and participants will be asked to identify what SDGs are being addressed by each action and write it down. This exercise will help capture wider development needs.

**2**

#### Community acceptability

Participants will be asked to vote for their preferred options. This can be done, for example, by handing out colored sticky dots/markers, etc. and asking them to mark in green those actions that they fully agree on, orange those that they relatively agree on, and in red the actions that they don't agree on.

3

**Urgency**

Similarly to the previous activity, participants will be asked to vote for options based on how urgent they believe they are. The following color code could be used: in red those options that they believe are the most urgent, orange those that they believe are relatively urgent and in green the options that are the least urgent.

4

**Community support**

This activity can be used to scope whether the community would be able to support the implementation of the identified options (e.g., community members having the capacity and skills to support construction works).

5

**Identifying potential ESS risks and opportunities**

This exercise can help raise awareness on the ESS principles (Figure 3.2) and identify related potential risks and opportunities.

6

**SWOT analysis**

This exercise can be used to initiate the prioritization exercise, allowing participants to identify strengths, weaknesses, opportunities and threats specific to each option.

Prioritizing options may be done as a standalone one-day workshop, or back-to-back with the objective setting workshop. Prior to the workshop, a number of preparatory activities may be conducted by the team:

- Screen out duplicate options and those that are already being pursued/implemented by other stakeholders.
- Separate non-climate related options: Despite focusing and building on VRA findings, options identified may not directly relate to climate adaptation, mitigation or disaster risk reduction.
- Organizing options according to sectors/key areas and time frames will help set time horizons and coverage over the short, medium and long term (Tool AP 4)
- Decide on the criteria against which options will be assessed: These criteria should be responding to the project (Tool AP 5 includes examples).

#### Tool AP 4 Organize actions according to sectors and time frame

| Sector<br>Time frame              | Short-term options<br>(1-3 years) | Medium-term options<br>(4-6 years) | Long-term options<br>(6+ years) |
|-----------------------------------|-----------------------------------|------------------------------------|---------------------------------|
| Natural resource-based production |                                   |                                    |                                 |
| Lifeline utilities                |                                   |                                    |                                 |
| Critical point facilities         |                                   |                                    |                                 |

## ACTION PLANNING

Once this has been done, implementing the workshop follows a process of scoring each proposed activity on a scale (e.g., 1-3 scale, being 1= lowest score against the criteria, 3=the highest score against the criteria). Tool AP 5 provides a set of criteria and scoring indicators that may be used for this exercise. The scoring activity will be guided by facilitators. If some of the criteria are too complex to rate during the exercise, these may be completed by experts after the exercise.

Some options might present additional opportunities that may be considered. For example, quick start options that are easy to implement can help bring quick results to the work. “Low regret” options can contribute directly to larger community development goals and to climate change related issues. Options that target multiple sectors can provide benefits in multiple areas. Once options are assessed according to the different criteria, scores are added up to obtain the total score.

### Tool AP 5 Prioritizing activities

| Options | Stakeholder acceptability | Co-benefits | Urgency of implementation | Technical feasibility | Ease of implementation | Cost | Adaptation effectiveness | Mainstreaming potential | Multisectoral relevance | Total score |
|---------|---------------------------|-------------|---------------------------|-----------------------|------------------------|------|--------------------------|-------------------------|-------------------------|-------------|
|         |                           |             |                           |                       |                        |      |                          |                         |                         |             |
|         |                           |             |                           |                       |                        |      |                          |                         |                         |             |

| Criteria                  | 3                                                                                                    | 2                                                                                                             | 1                                                                                                           |
|---------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Stakeholder acceptability | 3 = High (more than 70% of participants agree)                                                       | 2 = Medium (50-70% of participants agree)                                                                     | 1 = Low (less than 50% of participants agree)                                                               |
| Co-benefits               | 3 = High (presents many co-benefits)                                                                 | 2 = Medium (presents several co-benefits)                                                                     | 1 = Low (does not present any co-benefits)                                                                  |
| Urgency of implementation | 3 = High (more than 70% of participants ranked option as urgent)                                     | 2 = Medium (50-70% of participants ranked option as urgent)                                                   | 1 = Low (less than 50% of participants ranked option as urgent)                                             |
| Technical feasibility     | 3 = High (design already available)                                                                  | 2 = Medium (design can be adapted based on existing options)                                                  | 1 = Low (design needs to be fully developed)                                                                |
| Ease of implementation    | 3 = High (action can be implemented within the project's timeframe and can without external support) | 2 = Medium (action can be implemented within the project's timeframe but would require some external support) | 1 = Low (action cannot be implemented within the project's timeframe and would require significant support) |
| Cost                      | 3 = High (action can be fully covered by the project's funding)                                      | 2 = Medium (action can be mostly covered by the project's funding but would require some external funding)    | 1 = Low (action requires significant external funding)                                                      |

When the exercise is complete, a facilitated whole-group plenary session may be organized to discuss the options, especially those that scored high or low. By doing this, communities will have the chance to review the assessment and suggest changes. Once complete, the team compiles these results into a spreadsheet, that shows the prioritized activities. An example of such a spreadsheet, from a draft action plan developed for Bilo, Fiji, is presented in Case Study 8.

As a result of this process, a number of prioritized activities will emerge in each location or under each sector/key area. At a later phase, activities should be fully screened in order to ensure that there are no environmental and social risks, particularly risks that may affect people in vulnerable situations. However, an initial participatory assessment can be done at this stage together with the community to identify any ESS-related risks (an overview of the ESS principles is provided in Box 5 in the next chapter).

## 5.4. Setting objective indicators to develop a monitoring framework

Setting objective indicators for monitoring will help assess and prioritize the actions when developing the monitoring and evaluation framework. This exercise aims to ensure that actions will meet objectives.

Indicators can be quantitative or qualitative. Quantitative indicators will provide a quantifiable measure for the objective. When these are difficult to determine, qualitative measures can be used. These can be measured by using constructed scales, for example, using scales such as high-medium-low to measure progress and whether the objective has been met.

### Tool AP 6 Objective indicators

| Objective                                       | Sub-objectives                           | Objective indicators                         |
|-------------------------------------------------|------------------------------------------|----------------------------------------------|
| e.g., Protect ecosystems to increase resilience | e.g., Protecting existing mangrove areas | e.g., Hectares of mangrove forests protected |
|                                                 |                                          |                                              |

## 5.5. Defining actions

At this point, options will have been identified for the key vulnerabilities and risks through the aforementioned steps and activities. Before going to the next phase a number of parameters may be explored in further detail for the options that obtained the highest scores in the prioritization exercise. Some examples of parameters that can be explored at this stage with the community include:

- The specific location of the intervention
- Design preferences for identified actions
- Stakeholders that will likely be affected by the intervention, exploring whether they could be negatively or positively affected
- Potential ESS risks and opportunities
- Resources (both human and material resources)

Discussing these aspects with the community will provide valuable information for the technical team to consider during the next phase. Receiving inputs on the preferred location for the intervention, or design preferences, will help the technical team to plan and design the options. As described in the next chapter, this phase will also greatly benefit from further community engagement and participation.

## CASE STUDY 8

### Prioritizing actions

#### Fiji Resilient Informal Settlements<sup>42</sup> Bilo Settlement, Fiji

Bilo is one of the informal settlements under the Adaptation Fund project Increasing the Resilience of informal urban settlements in *Fiji that are highly vulnerable to climate change and disaster risks*. It is a small settlement located near the coast in Lami Town, next to a mangrove area. It is affected by a number of climate-related hazards, including cyclones, extreme heat, flash flooding, water-borne and vector-borne diseases, among others. Furthermore, residents in Bilo do not have access to utilities such as water and electricity supply.

Following the VRA, the AP identified options targeting six key areas: (1) Population; (2) Urban land use; (3) Natural resource-based production; (4) Critical point facilities; (5) Lifeline utilities; and (6) Vulnerable groups. A total of 37 actions were identified and prioritized. The risk matrix (tool VRA 16) was used to determine risk levels associated with the hazards that had been identified during the vulnerability assessment. This enabled the identification of actions during the action planning phase that were targeted at reducing the highest risks.

The prioritization followed a multi-criteria analysis, based on five criteria: (1) Sustainable development co-benefits; (2) Ease of implementation; (3) Community acceptance; (4) Urgency; and (5) Cost. An analysis looking at SDG targets and the issues identified in the informal settlement supported the identification of co-benefits. The assessment was carried out in a participatory way, through the action planning workshops organized. A total of eleven actions were shortlisted based on the prioritization.

These actions were explored in further detail during the participatory workshops. Community representatives identified potential locations where the interventions could be placed and co-designed some of the options. Table 5.1. lists the shortlisted actions, including, for example, an evacuation centre that would also serve as an early childhood development centre, cyclone-resistant storages for livelihood materials, and off-grid sanitation facilities.

Furthermore, community mobilization activities aimed at supporting the implementation of the shortlisted actions were also identified. In addition to the multi-criteria analysis, community representatives were also asked to rank the shortlisted actions. It is important to note that the actions shown in table 5.2, where those that had already been shortlisted, which is why these actions scored high for urgency and community acceptance. The scoring system used is shown on page 99 (Tool AP5).

**Table 5.1.** Shortlisted actions Bilo settlement

| Shortlisted actions                                                                            |         |
|------------------------------------------------------------------------------------------------|---------|
| Trainings and awareness raising                                                                | Ranking |
| Training on waste management                                                                   | 5       |
| Livelihoods (urban farming)                                                                    | 3       |
| Trainings on safe construction for hazard proof shelters for low-income residents              | 2       |
| WASH trainings for adults and children                                                         | 4       |
| Financial literacy training                                                                    | 6       |
| Disaster preparedness and response related activities                                          | 1       |
| Physical and natural assets                                                                    |         |
| Construction of evacuation centre (combined with early childhood development centre)           | 1       |
| Low-cost, off-grid sanitation facilities                                                       | 2       |
| Rainwater harvesting tanks                                                                     | 3       |
| Storage of livelihood materials                                                                | 4       |
| Community mobilization                                                                         |         |
| Establish youth community groups                                                               |         |
| Engagement through design process of the evacuation center, following a participatory approach |         |
| Awareness raising and trainings on maintenance requirements of rainwater harvesting tanks      |         |
| Awareness raising and trainings on maintenance requirements of sanitation facilities           |         |

<sup>42</sup> Based on information from the *Bilo Community-based Vulnerability Assessment and Action Plan*.

**Table 5.2.** Action prioritization of shortlisted actions<sup>43</sup>

| Options                                                                              | SDG co-benefits                                                                                                                                                                                                                                             | Technical feasibility | Community acceptance | Urgency | Cost | Total Score |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------|---------|------|-------------|
| Construction of evacuation centre (combined with early childhood development centre) |                                                                                           | 1                     | 3                    | 3       | 2    | 9           |
| Low-cost, off-grid sanitation facilities                                             |                                                                                           | 2                     | 3                    | 3       | 2    | 10          |
| Rainwater harvesting tanks                                                           |                                                                                           | 2                     | 3                    | 3       | 2    | 10          |
| Storage of livelihood materials                                                      |                                                                                       | 2                     | 3                    | 3       | 2    | 10          |
| Training on waste management                                                         |    | 2                     | 3                    | 3       | 3    | 11          |
| Livelihoods (urban farming)                                                          |                                                                                       | 2                     | 3                    | 3       | 3    | 11          |
| Trainings on safe construction of hazard proof shelters for low-income residents     |                                                                                       | 2                     | 3                    | 3       | 3    | 11          |
| WASH trainings for adults and children                                               |                                                                                       | 2                     | 3                    | 3       | 3    | 11          |
| Disaster preparedness and response activities                                        |                                                                                       | 2                     | 3                    | 3       | 3    | 11          |
| Financial literacy training                                                          |                                                                                       | 3                     | 3                    | 3       | 3    | 12          |



<sup>43</sup> A limited number of options have been included in the table as an example (the full list of options is included in the project report).



Nasoata settlement  
© UN-Habitat/Bernhard Barth



# **PLANNING & DESIGNING FOR IMPLEMENTATION**

# PLANNING & DESIGNING FOR IMPLEMENTATION

This chapter describes the process of preparing for and planning for the implementation of community-level interventions. It highlights the different steps that may be taken before going into the actual implementation of projects.



**Figure 6.1.** Phase diagram: Planning and designing for implementation

There is a number of steps needed when designing and planning for the implementation after having developed an action plan. These include a stakeholder analysis, designing the selected interventions, effectively identifying and managing environmental and social risks and opportunities, setting solid monitoring and evaluation frameworks and adequately disclosing information to all relevant stakeholders. Like the previous phases, community-based participatory methods will be involved throughout the process and projects will be implemented by the community as much as possible.

The result of the AP phase is a list of activities proposed and agreed upon by the community that aim to increase their resilience to climate change. At the end of the action planning and before the project design phase, the project team should go through the proposed activities to ensure that they respond to the risks identified during the VRA, responding to the identified objectives and making sure that no trade-offs were overlooked. When the list of activities has been reviewed, a selection will be made of those that may be implemented. Once this is done, the design of the different interventions will be carried out. This will be done through a participatory approach where community members play an active role, through community-level consultative processes, engaging all relevant stakeholders in an inclusive manner.

## 6.1. Analyzing stakeholders' positions

Before implementation it is important to be aware of how different stakeholders position themselves in relation to the different interventions. If, for example, an intervention involves building drainage infrastructure in a context of high land tenure insecurity, ignoring the views and position of affected stakeholders with respect to the intervention might lead to problems. One of the criteria during the prioritization exercise was "stakeholder acceptance". Ideally this means that the actions that were prioritized have a high community acceptance. Nevertheless, a stakeholder analysis at this point may allow the identification of any oversights on stakeholders that may not have been present

during the AP process. On the other hand, there might also be groups of people who strongly support the project. To avoid potential risks and maximize benefits, a stakeholder analysis looking at the ways in which each stakeholder/stakeholder groups supports or opposes the project can be done. This can be done in the form of a matrix, a diagram or a table, and should consider where each stakeholder/stakeholder group stands, highlighting their importance, knowledge, interests, etc.

## 6.2. Project design

Projects to be designed in support of the prioritized actions may range from community resilience building infrastructure such as flood protection or evacuation routes, to softer activities that increase awareness on local adaptation and climate risk reduction processes. Experts in relevant fields will be involved for the design of the different interventions. Regardless of the type of intervention, all sub-projects should mainstream ESS as well as gender and youth considerations into the design process. Fully integrating ESS implies designing with “ESS thinking”. Possible project-related risks should be identified and assessed while looking for opportunities and maximizing benefits. All relevant stakeholders should be involved in this process (e.g., engineers, environmental and social specialists, community representatives, etc.) to ensure a holistic understanding of any impacts that interventions may have.

The information from the VRA and AP should drive the ultimate design of the project in order to ensure that the intervention contributes to increasing the community's adaptive capacity towards achieving resilience. Moreover, project design should consider the criteria covered in the prioritization exercise (tool AP 5) in order to cover the important aspects such as co-benefits, cost, etc. Project design should consider the vulnerability of the people at risk relative to their age, gender, ethnicities, cultural, and economic backgrounds. Traditionally under-represented groups such as women or youth have often been excluded from design and decision-making processes, where male perspectives are generally dominating. In order to address this issue and to ensure that all perspectives are considered, gender and youth aspects should be fully mainstreamed into the design process. Integrating the different perspectives will involve a community-based participatory approach where needs are differentiated by gender, age and ability. For example, if one of the sub-projects involves building flood resilient latrines, the design must go beyond responding to technical requirements. Aspects such as choosing a location with adequate spatial and social visibility to ensure safe access for girls and women, adequate ergonomics for the elderly or safety measures so that these can be used by children must be considered. Each sub-project will have specific design requirements: The design of an evacuation route will be particularly sensitive to people with disabilities, an awareness raising programme will have different communication requirements depending on the target audience, etc. Some projects will be more sensitive than others, but all must consider gender and youth-related aspects. Incorporating gender and youth into the design will help address and mitigate identified vulnerabilities at previous stages, particularly addressing those of people in vulnerable situations.

## 6.3. Identifying and managing environmental and social risks and opportunities

Once sub-projects have been designed and intervention details are known, these are to be screened against ESS in order to identify potential risks and mitigation measures. As mentioned earlier, this process must also allow to go beyond the idea of “doing no harm”, seeking for opportunities and maximizing benefits. For this process to take place, a solid system must be put in place since the beginning of the process. If the activities prioritized present a safeguarding risk, mitigation measures will be explored and presented to the community and other relevant stakeholders. If risks are too great, alternative activities from the prioritization exercise will be selected and tested until a suitable and effective selection of activities has been chosen and agreed upon by the community. If ESS have been adequately mainstreamed into the process and project cycle, potential risks identified at this stage will have already been minimized.

## CASE STUDY 9

### Designing and planning implementation

#### Urban Development Initiative<sup>44</sup> Canaan, Haiti

High levels of migration towards Canaan causes uncontrolled urbanization in the area. Since 2011, several actions were raised solely with a view to finding the best approaches for restructuring the territory according to urban standards and principles and lining them with the international vision of urban development.

An Environmental Risk Assessment was carried out in order to identify land which is devoid of any environmental risks or constraints and where a possible development can occur. Once environmental site conditions were analysed (topography, agriculture, flooding and erosion), the most suitable locations were selected by overlapping the areas with the lowest risks. Land availability is limited in Canaan due to the risks related to topography, floods and erosion prone areas. Agriculture does not represent a very high percentage of the land use, and is generally in high risk areas. Once these variables were crossed, several areas were identified as being the most suitable for a planned city extension: St.Christophe, Philadelphie, Corail, Onaville and some areas of Canaan.

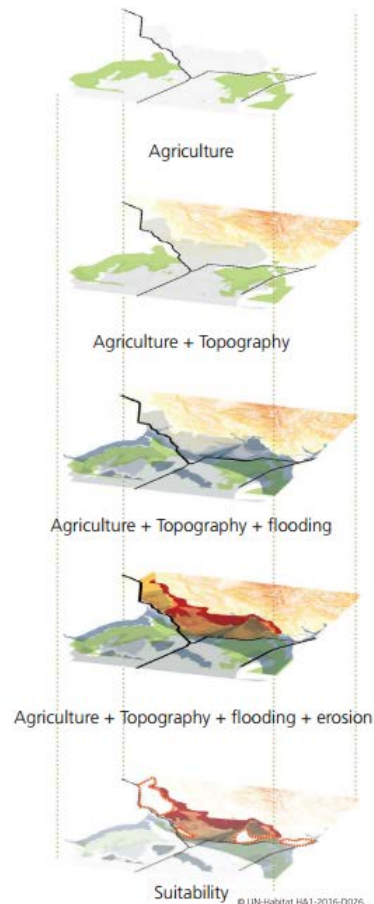


Figure 6.2. Environmental risk overlaying

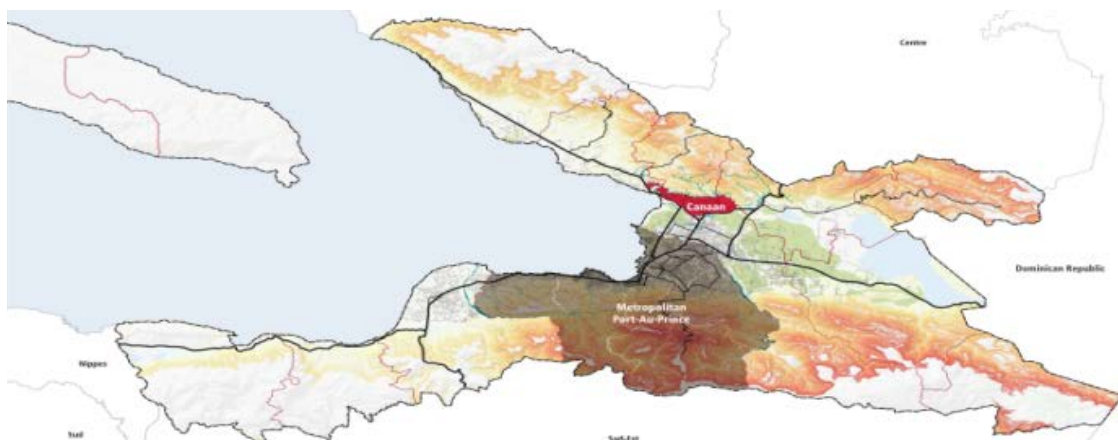


Figure 6.3. Map of Canaan

<sup>44</sup> Case study material developed by the Planning and Design Lab & Climate Change Planning Unit, UN-Habitat

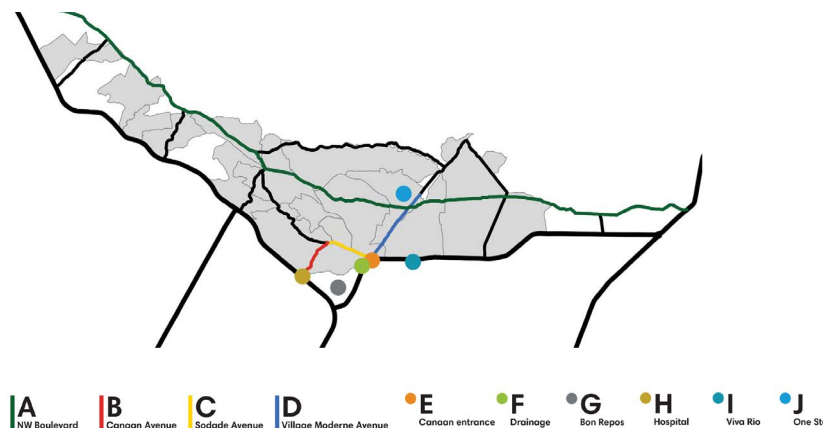
Based on the previous analyses and key areas identified, neighbourhood plans were designed. From the very beginning, the community's participation was promoted to ensure successful projects. The neighbourhood maps developed by UN-Habitat's Urban Planning and Design LAB with the support of UN-Habitat's Office in Haiti were presented to community representatives. Community members gathered to review, validate, amend and make alternative proposals when necessary. This approach to community mapping of the main social, spatial, economic

and environmental characteristics of the area enabled multidisciplinary working groups to draft a strategic vision and an urban structure for Canaan.

As a result, several social and infrastructure projects that respond directly to the priorities of the local residents have attracted funding for the improvement of streets and public spaces and some are currently being selected for implementation.



**Figure 6.4.** Design process of neighbourhood plans



**Figure 6.5.** Catalytic projects for Canaan

**Box 5****ENSURING COMPLIANCE WITH KEY POLICIES ON ENVIRONMENTAL AND SOCIAL SAFEGUARDS**

Environmental and social safeguards policies seek to prevent, or when avoidance is not possible, to minimize and mitigate adverse project impacts on the environment and affected people. Identified actions that lead to project interventions should avoid ESS risks, while seeking for ESS opportunities (with a particular emphasis on gender and youth) and maximizing co-benefits. Before and during the design phase it is important to go through the safeguarding process with the community and other relevant stakeholders. The following principles must be ensured<sup>45</sup>:

- All projects must comply with national and local laws and regulations.
- All projects shall provide fair and equitable access to benefits in an inclusive manner and without impeding access to basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions and land rights.
- Projects shall not impose any disproportionate adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities and people living with HIV/AIDS.
- Projects shall respect, and where applicable, promote international human rights.
- Projects shall be designed and implemented in such a way that both women and men are able to participate fully and equitably, receive comparable social and economic benefits; and do not suffer disproportionate adverse effects during the development process.
- Projects shall meet the core labour standards as identified by the International Labour Organization.
- Projects shall not be inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples.
- Projects shall not involve involuntary resettlement or eviction. However, if housing issues are identified as key community priorities then projects may provide options for people to move to less hazardous areas. Due process should be observed so that displaced persons shall be informed of their rights, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation.
- Projects shall not involve unjustified conversion or degradation of critical natural habitats.
- Projects shall be designed and implemented in a way that any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species is avoided.
- Projects shall not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.
- Projects shall be designed and implemented in a way that meets applicable international standards for maximizing energy efficiency and minimizing material resource use, waste production, and pollutant release.
- Projects shall be designed and implemented in a way that avoids potentially significant negative impacts on public health.

<sup>45</sup> The principles listed are based on Adaptation Fund's Environmental and Social Safeguards Policy and aligned to UN-Habitat's ESSS and have been applied on a number of AF projects implemented by UN-Habitat. Retrieved from: <https://www.adaptation-fund.org/wp-content/uploads/2015/09/Environmental-Social-Policy-approved-Nov2013.pdf>

- Projects shall be designed and implemented in a way that avoids the alteration, damage or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level. Projects should not interfere permanently with existing access and use of such physical and cultural resources.
- Projects shall be designed and implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services.
- All gender and youth have equal opportunities to build resilience, address their differentiated vulnerabilities and increase their capability to adapt to climate change impacts through the project implementation.

## 6.4. Monitoring and Evaluation

The monitoring and evaluation framework presents a logical framework against which project results can be measured. It will also allow to ensure accountability and track whether risks are effectively being managed. The objective indicators set during the action planning phase and the ESS assessment will guide this process. On the one hand, objective indicators set before defining actions should be reviewed, updated and incorporated into the framework to ensure that actions are adequately responding to the objectives set. On the other hand, all principles triggered during the ESS risk and opportunities screening should be reflected in the monitoring framework by developing adequate indicators. This will allow tracking progress, including progress in mitigating risks.

The monitoring and evaluation strategy must include a gender perspective through the development and inclusion of gender-sensitive indicators that can be measured through gender disaggregated data. Selecting monitoring criteria, setting baseline measures and targets, defining data collection frequency, assigning clear roles and responsibilities for monitoring should be carried out at this point. Depending on the project, the team may decide to carry out monitoring and evaluation planning in a participatory way. Techniques on how to set a monitoring framework in a participatory manner can be found in the document *Community Action Planning: Mobilizing People to Plan for Development and Reconstruction*<sup>46</sup>.

## 6.5. Information disclosure and grievance mechanisms

Following a community-driven and participatory approach will provide opportunities for continuous and regular engagement with the communities. All information related to the project activities and environmental and social safeguards should be properly disclosed to project stakeholders. In addition to adequate information disclosure procedures, a grievance mechanism must also be put in place. This will allow for people affected by the project to file any concerns or complaints about the project and for remedial actions to be taken. Resources and procedures should be in place to respond to these concerns.

All relevant stakeholders, such as employees and people affected by the project will be made aware of the grievance mechanism. These mechanisms will consider the special needs of different indigenous groups as well as gender considerations. Some examples of grievance mechanisms include hotlines, mailboxes, postal addresses, reference people, etc. These must be made available in all local languages present in the communities, and project staff should be trained in procedures for receiving information and reporting on any grievances.

<sup>46</sup> UN-Habitat. (2008). *Community Action Planning: Mobilizing People to Plan for Development and Reconstruction*.

## CASE STUDY 10

### Implementation

#### Resilience-building water supply system Lao PDR

Bongnam (88 households, 604 population) and Pitian (37 households, 286 population) are among the 189 small towns and villages that have or will receive resilience building community infrastructure in a partnership between the Government of Lao PDR, UN-Habitat and the Adaptation Fund. As part of the VA, the neighbouring villages identified prolonged droughts, food insecurity and unsafe drinking water during the periodic floods among their key concerns related to climate change.

Participatory community action plans identified year-round water supply as the most compelling climate change adaptation option as it has the potential to address the key local vulnerabilities – unsafe water during floods, food insecurity during droughts – while having significant development co-benefits. During the dry season, the water source that is located at a 30-minute walk distance from the village dries off. As a result, people from the villages, and in particular women and girls, have to walk further in search of water. Improving their access to water would allow for increased school attendance, productive and

possibly resilient livelihood activities and better health outcomes.

UN-Habitat experts in consultation with the provincial water utility, opted for an innovative solution that is easy to maintain. This solution consists of hydraulic ram pumps that supply water to the two villages of Bongnam and Pitian.

The engineers, with the two communities, conducted the Environmental and Social Safeguards Assessment. Given that significant risks were not identified, construction began. A hydraulic pump at the water source was installed, providing water to two community level tanks. From there two distribution networks provide water to all the households.

In order to ensure the sustainability of the system, community members have been trained in its operation. Furthermore, a water management group has been set up and the partnership with the district water utility ensures that maintenance is assured.



**Bongnam Village**



**Water inlet and hydraulic pump**



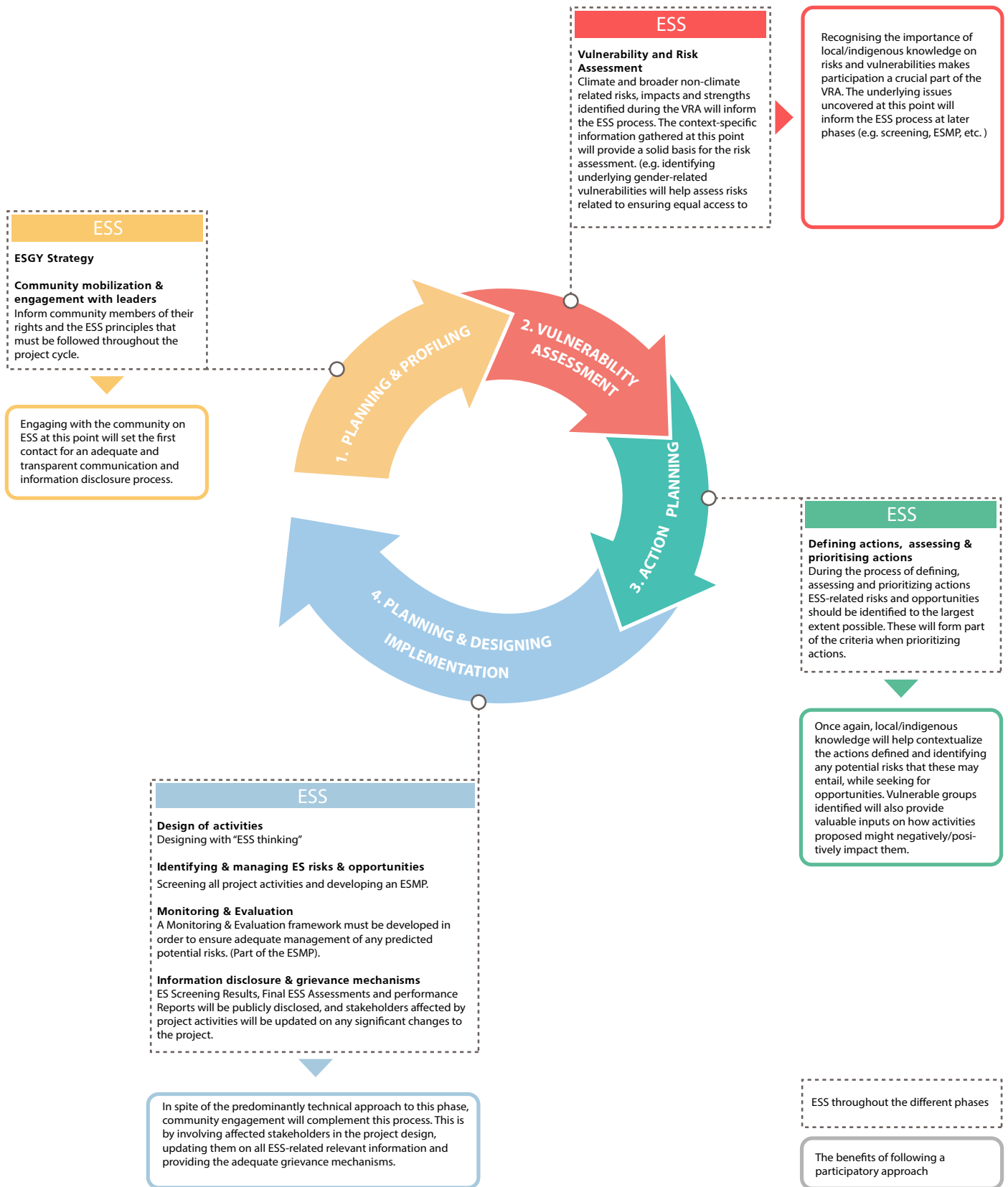
**Water storage tanks and filtration systems ensure continuous and safe water**



**Children play in a newly set up kitchen garden in Bongnam village**

# Annex 1

## Mainstreaming Environmental and Social Safeguards (ESS)



**Figure A.1.** Mainstreaming Environmental and Social Safeguards into the process

## Annex 2

### Examples of participation arrangements via the VRA/AP and implementation process

**Table A.2.** Partnerships for informal settlements upgrading programmes

|                          | Planning                        |                     | Implementation   |                   |                     |                                        |                         |                    |        |
|--------------------------|---------------------------------|---------------------|------------------|-------------------|---------------------|----------------------------------------|-------------------------|--------------------|--------|
|                          | Shelter & infrastructure design | Settlement planning | Land preparation | Finance provision | Materials provision | Housing (construction and improvement) | Physical infrastructure | Community services | Labour |
| Time frame ►<br>Sector ▼ |                                 |                     |                  |                   |                     |                                        |                         |                    |        |
| Central government       |                                 |                     |                  |                   |                     |                                        |                         |                    |        |
| Local government         |                                 |                     |                  |                   |                     |                                        |                         |                    |        |
| Private sector           |                                 |                     |                  |                   |                     |                                        |                         |                    |        |
| Community                |                                 |                     |                  |                   |                     |                                        |                         |                    |        |
| Household                |                                 |                     |                  |                   |                     |                                        |                         |                    |        |

## Annex 3

### Vulnerability and Risk Assessment and Action Plan report: Contents

#### **VULNERABILITY AND RISK ASSESSMENT REPORT - CONTENTS**

Example of a vulnerability assessment template.

It must be noted that this template is not an exhaustive list of questions and can be modified to accommodate projects of varied nature, size, scope and scale.

##### Contents

##### Executive summary

1. Purpose of the report
  - 1.1. Background
  - 1.2. Objectives of the assessment
  - 1.3. Principles and methodology
2. Profile of the assessment area
  - 2.1. Physical and environmental
  - 2.2. Demographic overview
  - 2.3. Administration and governance
3. Vulnerability analysis and risk profile
  - 3.1. Exposure
  - 3.2. Sensitivity
  - 3.3. Adaptive capacity
  - 3.4. Spatial structure
  - 3.5. Summary of vulnerabilities
4. Climate change and future risks
  - 4.1. Climate change projections
  - 4.2. Future vulnerabilities
5. Overall findings

#### **ACTION PLAN REPORT - CONTENTS**

It must be noted that this template is not an exhaustive list of questions and can be modified to accommodate projects of varied nature, size, scope and scale.

##### Contents

##### Executive summary

1. Purpose of the report
  - 1.1. Background
  - 1.2. Objectives of the report
  - 1.3. Principles and methodology
2. Alignment to policies, plans and programmes
  - 2.1. Climate resilience and the Sustainable Development Goals
  - 2.2. Vertical integration (e.g., with National / subnational levels)
3. Overall findings from the VRA
4. Climate resilience objectives
5. Climate resilience actions
6. Action prioritization
7. Prioritized actions: initial design recommendations
8. Overall conclusions and recommendations

# Annex 4

## Briefings

### A) Example briefing for vulnerability and risk assessment

#### 1. Introduction:

We are here to work with you and to identify what the most problematic climate change issues are for your community. The main questions are: What is happening? What matters most? What can we do about it? Are we doing it? We, collectively, will see what we can and should take forward into an action plan. UN-Habitat has a small amount of funding for small community-based actions, but these actions will need community members and committees, leaders, supporters and advocates to take them forward. Most importantly we will need to hear the voices of women, young people, people with a disability and older people who may find coping with the climate change problems particularly difficult, and make sure their needs ideas and desires are on the list of actions we take forward. We need to do this, as sometimes these groups don't get their voices heard and can be left out of planning, but often they feel the impacts the most.

Today we will be asking you about how you experience climate change in your community, what the most problematic issues are, and we will draw on a map where these issues and their effects are located. We will be talking about how these problems impact people - particularly vulnerable people. We will be talking about how you have been coping with these issues but also what is stopping your community in dealing with them better. We will then start to talk about the priority activities and infrastructure to deal with them. Here we will also talk about what the community has done successfully in the past and also what groups there are in the community who may be able play a role.

#### 2. Discrimination Briefing:

Also, if you feel there has been an instance of discrimination in the course of this vulnerability and risk assessment process or action planning process, you have a right to report that to the Fiji Human Rights and Anti-Discrimination Commission. They provide a safe and anonymous channel to report issues or instances of discrimination.

### B) Climate Change briefing

#### 1. Introduction:

Climate change refers to changes to the average weather and weather variability of a region or the planet over time. It is measured by changes in temperature, precipitation, wind, storms and other indicators like sea level rise.

#### 2. Exposure to hazards:

The changes in temperature and precipitation are leading to worse storms and droughts, sea level rise and associated coastal erosion and flooding, and increased or intensified flash flooding. However, these changes vary a lot from region to region around the globe, within a city and also within a small area.

- Increased temperatures: groundwater depletion, water shortages, drought
- Increased rain: increased flooding (local or river), increased risk of landslides or mudslides on hazardous slopes.
- Sea level rise -- coastal flooding, salt water intrusion into groundwater supplies in coastal areas, increased storm surge hazard, coastal erosion
- Increased and more extreme storms, cyclones, hurricanes: Intense and disastrous wind Speeds, more intense flooding, higher risk of landslides/ mudslides on hazardous slopes

#### 2. Sensitivity:

Problems with climate change hazards depends on your circumstances which we call "sensitivity". For an area, this depends on how much development has occurred on steep or unstable slopes, or on low lying, storm exposed or flood prone areas. It depends on the quality of development in those areas, e.g., poorly built informal settlements or higher quality houses built to national construction standards. It depends on whether there are vulnerable populations, such as the poor, women, youth, the elderly living in hazard-prone areas are more likely to be affected by climate change impacts than other, less vulnerable groups. These groups are more vulnerable and find it difficult more to respond to climate change impacts.

#### 3. Adaptation:

Adaptation is how communities prepare to cope with an uncertain future climate. This can be better planning of

development to avoid hazardous areas, to protecting certain environments to minimize potential climate impacts (e.g., flooding and erosion. There are four aspects that are important:

- Improving the people's awareness, knowledge, skills and resources (adaptive capacity).
- Addressing socio-economic impacts of climate change, particularly their effect on vulnerable populations.
- Enhancing cooperation between and amongst communities, other institutions and municipal councils and national governments.
- Building climate change adaptation into existing city plans

### **C) Briefing for Action Planning**

#### **1. Process Briefing**

Yesterday we understood the climate change situation and defined the key issues in your community. We also started to create a long-list of actions. Today we are going to reconfirm the main issues, set main-objectives and sub-objectives, we will then prioritize our long list of actions and then collectively analyse them to see which ones will be the best to take action on.

#### **2. Compliance Briefing**

All the projects we do will have to be legal and/or have permission of the relevant authorities. None of the projects UN-Habitat is involved in will force people to move from their house (eviction/involuntary resettlement), but we may together decide on a housing project that can give people choices if they want to move to a safer place. The main criteria for the projects is that they must respond to climate change issues, they are chosen by you the community and respond to the needs of vulnerable people. We are here to listen and guide your discussion and to document it for funding purposes.

#### **3. Participation Briefing**

It is important to note that it is not compulsory to participate, but this is a good chance to have your say. At different points we will be making sure issues, ideas and project desires of vulnerable groups (women, young people, elderly, people with a disability or the very poor) are included. This is not because they are more or less important, just because sometimes these groups aren't among the decision makers and can sometimes get left out, but they often feel the impacts of climate change and poverty worse than others. We will need to make sure project ideas reflect everyone's needs.

#### **4. People's Process Briefing**

UN-Habitat People's Process is about building community organization, skills and knowledge to be active doers and managers of projects themselves, so we'll be looking for people who want to be involved in organizing groups, learning new skills, working on projects and helping with administration on projects. We will (hopefully) have technical advisors here to listen to what people's issues are, to observe the situation, provide information on and advise us on our options list and our analysis of them. They are not here as decision makers today, but to share their knowledge and to help us understand the issues and options better. UN-Habitat has a small amount of money to contribute to projects, but we also hope that other resources, such as labour, technical support, and hopefully counterpart funds can also be brought into these projects.

#### **5. Discrimination Briefing**

Also, if you feel there has been an instance of discrimination in the course of this vulnerability and risk assessment process or action planning process, you have a right to report that to the Fiji Human Rights and Anti-Discrimination Commission. They provide a safe and anonymous channel to report issues or instances of discrimination.

# Annex 5

## Vulnerability scoring

**Table A.5.** Vulnerability scoring<sup>47</sup>

| Threat level | Descriptive examples (to be adjusted as required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High         | <p>Examples:</p> <ul style="list-style-type: none"> <li>- Large numbers of serious injuries or loss of lives</li> <li>- Regional decline leading to widespread business failure, loss of employment and hardship</li> <li>- Major widespread damages and loss to environment and infrastructure, with progressive irrecoverable damage</li> <li>- Local government services would cease to be effective</li> </ul>                                                                                                                              |
| Medium-High  | <p>Examples:</p> <ul style="list-style-type: none"> <li>- Isolated instances of serious injuries or loss of lives</li> <li>- Regional local economic development impacts and stagnation. Serious impacts on livelihoods</li> <li>- Severe and widespread decline in the quality of life within the community</li> <li>- Severe damages and a danger of continuing damage to infrastructure and environment</li> <li>- Local government services struggle to remain effective and would be seen to be in danger of failing completely</li> </ul> |
| Medium       | <p>Examples:</p> <ul style="list-style-type: none"> <li>- Small numbers of injuries involving the public</li> <li>- Significant general reduction in livelihoods</li> <li>- Isolated but significant instances of environmental and infrastructure damage that might be reversed with intensive efforts</li> <li>- Local government services under pressure on several fronts</li> </ul>                                                                                                                                                        |
| Medium-Low   | <p>Examples:</p> <ul style="list-style-type: none"> <li>- Minor injuries to public</li> <li>- Individually significant but isolated livelihood impacts</li> <li>- Minor instances of environmental and infrastructure damage that could be reversed</li> <li>- Isolated instances of government services being under severe pressure</li> </ul>                                                                                                                                                                                                 |
| Low          | <p>Examples:</p> <ul style="list-style-type: none"> <li>- Appearance of a threat but no actual harm to public safety</li> <li>- Minor impact on livelihoods</li> <li>- No or insignificant infrastructure and environmental damage</li> <li>- Minor instances of disruption to local government services</li> </ul>                                                                                                                                                                                                                             |

<sup>47</sup> UN-Habitat. 2014. Planning for Climate Change. A Strategic Values-based Approach for Urban Planners.

## Annex 6

### Vulnerability and Risk Assessment: methods and analyses

Below is a list of methods and analyses that may be used when developing Vulnerability and Risk Assessments<sup>48</sup>:

#### Potential impact pathways graph

The potential impact pathways graph is a visual presentation of the complex relationship between projected climate changes, potential hazards and multiple primary and secondary impacts. This may be developed through a combined approach of reviewing secondary data and conducting consultations with communities.

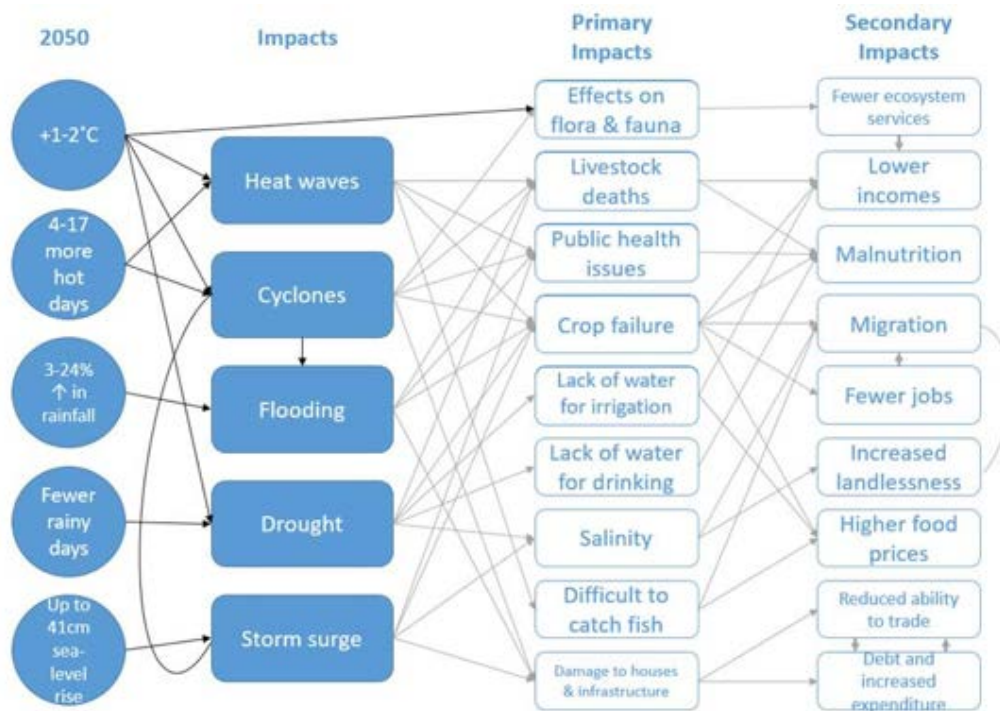


Figure A.6a Pathways to potential climate change impacts in Labutta Township (2050)<sup>49</sup>

#### Infrastructure and connectivity system analysis using GIS<sup>50</sup>

Provides a spatial analysis of the sensitivity of the built environment and relation to natural hazards and changing climatic conditions. To conduct this spatial analysis, data collected through primary methods (e.g., mapping exercise) or secondary sources (e.g., census) is processed using GIS. The analysis provides a description of:

- Predominant construction design, techniques and materials: with the objective to understand the vulnerability of critical assets such as housing, schools, and health facilities to climate-related hazards (e.g., droughts, cyclones, and floods).
- The availability/access to basic services (e.g., water, sanitation, electricity) that could be affected by climate change and hazards such as types of sanitation facilities and water harvesting capacities;
- The spatial distribution of transport network and communities' access to services and economic activities through roads and waterways with the objective of understanding how isolation and distance contribute to vulnerability, and how climate change exacerbates this.
- The distribution of, and access to key safety infrastructure: the analysis should highlight issues such as cyclone shelter availability and whether shelters are strategically located.

<sup>48</sup> UN Environment, UN-Habitat, European Union, Ministry of Natural Resources and Environmental Conservation (Myanmar). Climate Change Vulnerability Assessment Manual. Methodological Framework for Townships of Myanmar.

<sup>49</sup> The Climate Change Vulnerability Assessment of Labutta Township (<https://myanmar.un.org/sites/default/files/2019-11/Labutta-SCE-NARIOS-FOR-RESILIENCE-BUILDING.pdf>) may be consulted as many of the methods in this annex have been used for the assessment.

<sup>50</sup> UN Environment, UN-Habitat, European Union, Ministry of Natural Resources and Environmental Conservation (Myanmar). Climate Change Vulnerability Assessment Manual. Methodological Framework for Townships of Myanmar.

## Matrix of Functions (MoF)<sup>51</sup>

The MoF is used to determine a functional hierarchy of human settlements (e.g., wards/village tracts) based on the availability of critical infrastructure and socio-economic services. It helps visualizing how balanced the infrastructure and socio-economic development is and the degree of territorial linkages between settlements. This will support national, regional and local government decision-making to prioritize strategic interventions towards more balanced territorial development patterns.

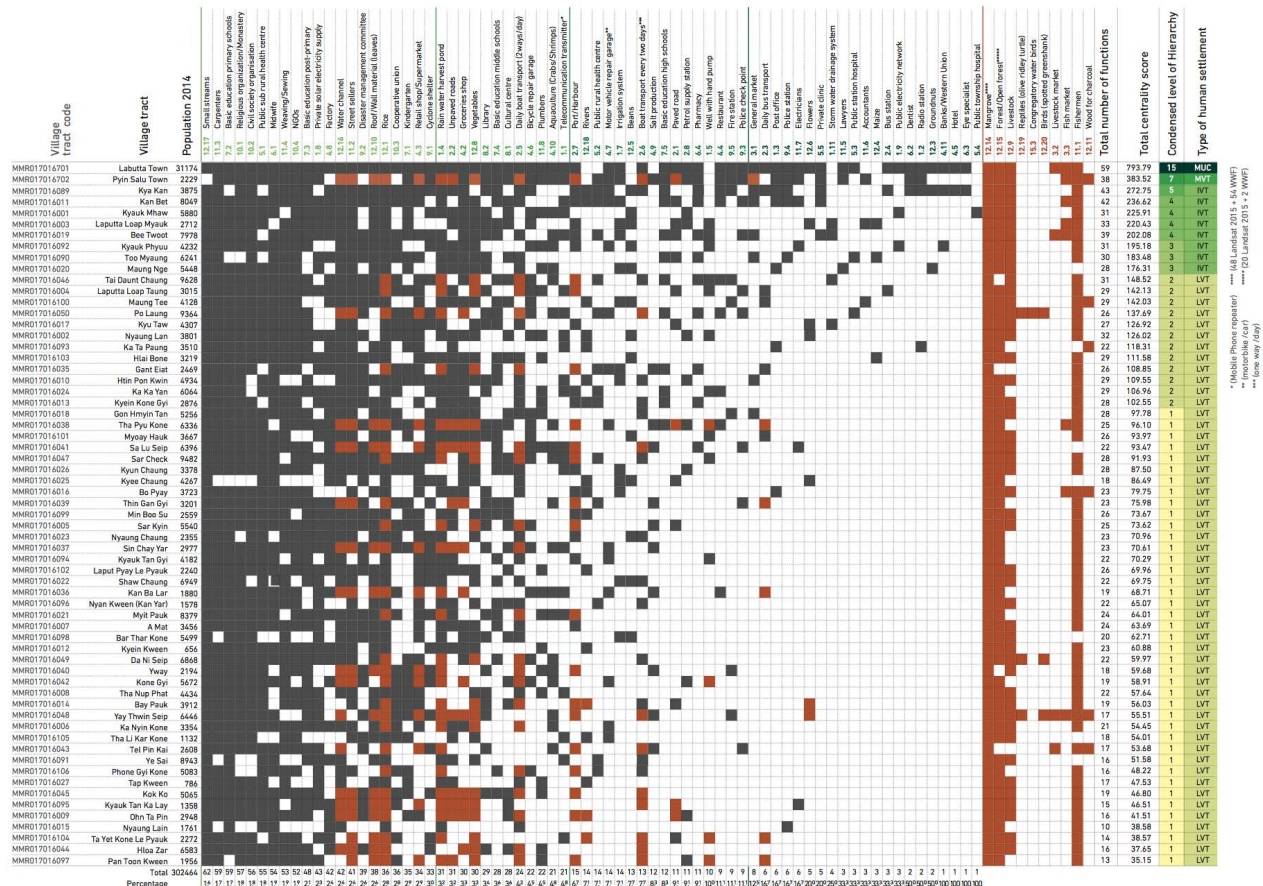


Figure A.6b Matrix of functions<sup>52</sup>

<sup>51</sup> Fee, L.; Gibert, M.; Bartlett, R.; Capizzi, P.; Horton, R.; Lesk, C. (2017) Climate Change Vulnerability Assessment of Labutta Township, Myanmar, 2016-2050: scenarios for building resilience. UN-Habitat - UN Environment

<sup>52</sup> Ibid

## Annex 7

### UN-Habitat People's Process<sup>53</sup>

The following outlines the process for successful UN Habitat Peoples Process projects which was used in the Philippines where there was a strong house construction focus due to storm destruction of dwellings. Resilience action planning and implementation aims to follow a similar process, however will focus on broad climate change vulnerabilities which may also include: early warning systems and education, land use management, livelihood development, environmental protection, and a wider range of construction project types.

**Table A.7. Stages of the People's Process**

| Five stages of the People's Process (order can be flexible) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Socialization and integration                            | <ul style="list-style-type: none"> <li>a. Courtesy call to province, city/municipality and community leaders</li> <li>b. Community orientation and profiling</li> <li>c. Discussion with possible design parties</li> <li>d. Design conceptualization</li> <li>e. Preliminary schematic drawings</li> </ul>                                                                                                                                                                                                                        |
| 2. Community project identification and prioritization      | <ul style="list-style-type: none"> <li>a. Community action planning</li> <li>b. Installation of community project committees</li> <li>c. Shelter household partner profiling</li> <li>d. Household partner shelter application</li> <li>e. Household partner validation</li> <li>f. Community association/household partner posting</li> <li>g. Community/partners consultation on house design</li> <li>h. House technical assessment</li> <li>i. Drafting of construction drawings, details, work plan</li> </ul>                |
| 3. Community strengthening                                  | <ul style="list-style-type: none"> <li>a. Community contracting</li> <li>b. Finalization of household partner listing</li> <li>c. Community training on project and financial management</li> <li>d. Construction of model unit</li> <li>e. Assessment of model unit</li> <li>f. Adjustments of design</li> <li>g. Presentation and approval of the house design</li> </ul>                                                                                                                                                        |
| 4. Project implementation and monitoring                    | <ul style="list-style-type: none"> <li>a. Site preparation</li> <li>b. House construction</li> <li>c. Ocular inspection</li> <li>d. Workers orientation</li> <li>e. Site cleaning</li> <li>f. Actual construction</li> <li>g. House inspection and defect listing</li> <li>h. House turnover</li> <li>i. Toolbox meetings</li> </ul>                                                                                                                                                                                               |
| 5. Participatory project evaluation                         | <p>As the final stage in the People's Process, a consultative evaluation is done with the community to gather their challenges and learnings from the project. This process gauges how empowered community members have become after the whole experience of building their houses as a community. An empowered community is one of the best assurances of sustainability upon culmination of the project partnership with UN-Habitat. The final audit of the funds released to the community is also conducted at this point.</p> |

<sup>53</sup> UN Habitat 2015, People's Process in Shelter Recovery - Volume #1 Communities Coming Together, UN Habitat, Manila) (adapted from the Philippines housing project)

# Annex 8

## Further suggested readings and resources

### 1. Key Reference Documents:

#### **IPCC Fifth Assessment Report chapter on urban areas:**

Revi, A., D.E. Satterthwaite, F. Aragón-Durand, J. Corfee-Morlot, R.B.R. Kiunsi, M. Pelling, D.C. Roberts, and W. Solecki, 2014: Urban areas. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 535-612.  
[http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap8\\_FINAL.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap8_FINAL.pdf)

#### **Background paper prepared for IPCC-Cities conference (2018):**

David Satterthwaite, Diane Archer, Sarah Colenbrander, David Dodman, Jorgelina Hardoy and Sheela Patel (2018). "Responding to climate change in cities and in their informal settlements and economies". Background paper prepared for IPCC Cities conference, March 2018.  
<https://citiesipcc.org/wp-content/uploads/2018/03/Informality-background-paper-for-IPCC-Cities.pdf>

#### **Collected papers from Environment and Urbanization journal addressing climate change in cities in low- and middle-income countries.**

<http://journals.sagepub.com/page/eau/collections/climate-change-papers>

### 2. UN-Habitat Publications

#### **2.1. Books**

- Sustainable Urbanization in the Paris Agreement  
UN-Habitat, (2017). Sustainable Urbanization in the Paris Agreement. Nairobi: UN-Habitat
- Analytical perspective of pro-poor slum upgrading frameworks  
UN-Habitat, (2006). Analytical Perspective of Pro-Poor Slum Upgrading Frameworks. Nairobi: UN-Habitat
- Building urban safety: Through slum upgrading  
UN-Habitat, (2012). Building Urban Safety: Through Slum Upgrading. Nairobi: UN-Habitat
- Slums of the world: The face of urban poverty in the new millennium?  
UN-Habitat, (2003). Slums of the World: The face of urban poverty in the new millennium? Nairobi: UN-Habitat
- Slum Almanac  
UN-Habitat, (2016). Slum Almanac. Nairobi: UN-Habitat.

#### **2.2. Guides**

- Quick Guide for participatory, city-wide slum upgrading: Participation for inclusive, city-wide slum upgrading  
UN-Habitat, (2018). Quick Guide for participatory, city-wide slum upgrading [online]. Nairobi: UN-Habitat.  
<https://unhabitat.org/quick-guide-for-participatory-city-wide-slum-upgrading-participation-for-inclusive-city-wide-slum-upgrading/>

#### **2.3. Articles**

- Prosperity for all: Enhancing the informal economy through participatory slum upgrading.  
Kioe Sheng, Y., Brown, A., & Gachie, G. (2018), Prosperity for all: Enhancing the informal economy through participatory slum upgrading. Nairobi/Cardiff: UN-Habitat/Cardiff University

#### **2.4. Websites**

- Participatory Slum Upgrading Programme  
UN-Habitat, (2012). Participatory Slum Upgrading Programme (PSUP) [online]. UN-Habitat. Available from: <https://unhabitat.org/urban-initiatives/initiatives-programmes/participatory-slum-upgrading/>





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