UNOPS

# GUIDELINES

## Implementing the Resilience Pathways Model (RPM)

November 2017

*“The RPM provides opportunity for resilience to be applied across a wide development and humanitarian context that extends beyond UNOPS’ core business associated with infrastructure systems”*

## Introduction

These guidelines are designed to provide an expanded understanding of the UNOPS Resilience Pathways Model (RPM) as it applies within the development and humanitarian contexts. While the issue of resilience is not new, the RPM represents a unique approach to addressing resilience within the context of all major global frameworks and in particular the Sendai Framework for Disaster Risk Reduction (SFDRR). In this regard it can be described as a ground-breaking tool that provides answers to questions around integration within and across the global frameworks including the issue of mainstreaming.

Although infrastructure, procurement and project management form the core pillars of UNOPS development assistance, the RPM framework and processes provides opportunity to engage at a strategic level with Government to influence the resilience agendas broadly and therefore create new opportunities. Key to this is assisting member states to better understand the concept of resilience and to determine who within the government systems owns the resilience agenda. This understanding involves a shift in thinking from focussing on disasters (being reactive) to recognising that many risks are created by new development and inherent in the existing built environment which need to be identified and managed (being proactive).

The diversity of the model will be demonstrated through its variable applications for achieving resilience outcomes within and across wider development and humanitarian contexts. This includes providing guidance for: 1) developing a national resilience framework utilising experiences drawn from ongoing work in Afghanistan; 2) designing a national resilience framework utilising experiences from ongoing work in Bangladesh and Tajikistan; and 3) developing a national infrastructure plan with experiences to be drawn from initiatives in Curacao.

The Guidelines will remain work-in-progress for much of 2016 in order to ensure that a continuous learning environment is maintained around the issue of resilience based on case-study lessons and other observations. Other modules will be identified and developed over time to explain and showcase how the RPM can be applied in differing situations and contexts as these evolve. This will lead to the strengthening of capacity building and knowledge management systems around the issue of resilience across UNOPS.

## Structure of the Guidelines

**Part one** of the Guidelines aims to provide principles, clarification and practical application of the following:

- The key global policy frameworks including programmatic relationships;
- Risk-informed decision making;
- Development Continuity;

**Part two** outlines the Resilience Pathways Model and provides guidelines and explanatory notes.

**Part three** covers case studies on specific applications of the RPM will be progressively developed and added to the guideline.

## Principles

The following principles are the foundations upon which the philosophy of the RPM are based and provide the guiding assumptions for its application within different contexts:

1. Resilience is an outcome. The basic premise is that for resilience to be achieved then all elements of development must be resilient.
2. Resilience is a "state of being" – Resilience is not an end goal in itself but a continuously changing state.
3. Development should learn from adversity. Understanding the reasons for failure as a result of the impact from specific shocks and stresses provides opportunity to extend the development trajectory to higher levels and avoid repeating the same mistakes.
4. Development and humanitarian actions are inseparable. Risks are inherent in existing development and new development often creates new risks. Well planned development can therefore minimize the extent of humanitarian response whereas poor development decisions can result in increased humanitarian needs in the event of shock and stresses occurring.
5. Promoting programmatic synergies. This is the key to achieving resilience objectives within and across the global development agenda's.

## Introduction

During 2015 and 2016, strategically important global decisions were made that will impact the way development is planned, funded, coordinated and implemented by governments of Member States and their development partners. However, the challenges associated with implementing each of the global frameworks, particularly for developing countries and Small Island Developing States (SIDS), are likely to be daunting. Similarly, for UN Agencies there will be challenges in achieving integrated synergies.

Climate change, climate change adaptation and disaster risk reduction are frequently referred to in the global frameworks, however, the causal relationships, knowledge and applied understanding of these cross-cutting themes within the development context are not well understood nor consistently articulated. For example, climate change and disaster risk reduction are listed as a separate Sustainable Development Goal[1] (SDG), rather than being seen as key elements for risk informed planning integrated into all SDGs.

In the same context, sustainability and resilience are terms that are often seen as being interchangeable, but in reality are very different in application. Despite this there are still many "resilience" initiatives being implemented, with a large percentage following single-sector approaches that tend to undermine the theory that for resilience to be achieved, all sectors must be resilient in a complimentary manner.

## Introducing the Resilience Pathways Model

In 2015, UNOPS endorsed its strategy for Disaster Risk Reduction for Resilience 2015-2016. The major objective of this strategy was to ensure that UNOPS had a risk-based culture, which was fully integrated into all of its activities around the world. A secondary objective is to ensure that UNOPS assistance supports member states to achieve outcomes associated with the global policy frameworks is better focused around the issue of resilience and in particular the SFDRR.

The resilience strategy emphasises that successful delivery of a project, product or service does not in itself constitute sustainability or resilience. Instead UNOPS contributions to national development should be measured in terms of how the deliverables interact with the external risk environment and the initiatives of other stakeholders, including governments and UN Agencies, to achieve resilience outcomes. The emphasis toward resilience therefore represents a transformational shift in both thinking and practise within and across UNOPS. The Resilience Pathways Model, as a vehicle to achieve the resilience strategy, has been created to guide and drive this shift.

[1] SDG 13 – Take urgent action to combat the effects of climate change. Also incorporates DRR4R.

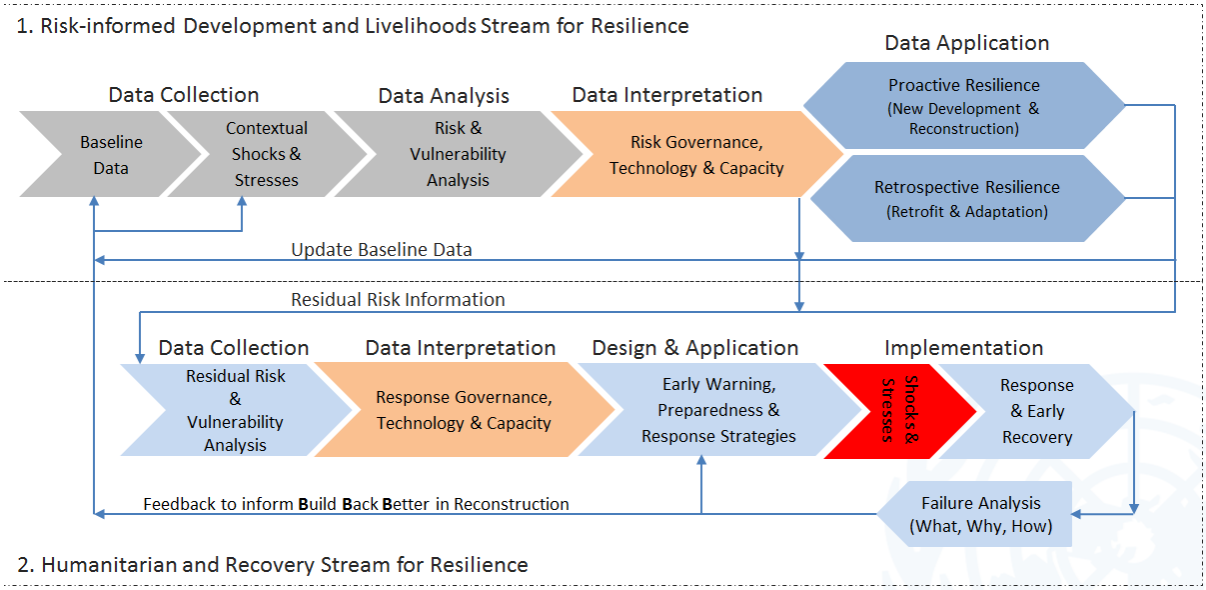



Figure 1.3: Resilience Pathways Model

The UNOPS Resilience Pathways Model is consistent with global resilience objectives and priorities. Its key attributes are that it fast-tracks applied thinking around current resilience discussions through articulating a unique set of actions that can be applied to a variety of development scenarios. Another feature unique to the Model is that it links both development and humanitarian contexts in a cohesive manner through adopting a three pathways approach for achieving resilience:

i. Proactively for new development through ensuring that planning and design are risk-informed;
ii. Retrospectively for existing development by ensuring that levels of risk exposure and vulnerability are analysed and mitigation measures are identified and implemented;
iii. Reactively through understanding residual risk to develop appropriate preparedness and response strategies. Also ensuring failure analysis is built into recovery processes to inform build-back-better strategies and therefore strengthen resilience opportunities proactively (during reconstruction) and retrospectively.

## Development Stream

The key message and concept in this stream is that risks are inherent in existing development and new development often creates new risks. In order to bring about a reduction in risk, member states should ensure that all relevant ministries and stakeholders:

- Baseline Data - Have access to up to date information on what currently exists in the built environment. In addressing this dimension it is important to consider a number of factors.

  **For example:** What data is required? Which agencies are responsible for providing the data? How do they collect, store and update the data? How is the data disseminated and who has access to it? What is the current status? What are the gaps?

- Contextual Shocks and Stresses - Have up to date information on contextual shocks and stresses that the country may be confronted with which could impact on the development agenda. This includes the effects of changes brought about as a result of climate change together with changes to the built environment and knowledge as to why these changes occurred. This covers sudden impact events (shocks) and slow onset events (stresses).

**Pertinent questions include**: What are the known hazards? What are the potentially unknown hazards? How is information related to hazards displayed and where? Who is responsible for providing, updating and managing the information? What skills and technology are required to perform these functions? What is the current status? What are the gaps?

- Risk and Vulnerability Analyses - Have access to risk and vulnerability information that not only informs any new development but also highlights risk inherent in the existing built environment.

  **Some of the discussion issues include**: What could happen? Where could it happen? What are the likely consequences if it happened? Who manages information around these questions? How is the information collected? Where is the information stored? Is it accessible? Are people trained to access and apply the information? What is the current status? What are the gaps?

- Risk Governance, Technology and Capacity - Have the policy, compliance standards, institutions, technical capacity and technology to effectively apply the risk information to drive risk based development agendas. By making risk informed decisions a balance can be achieved between cost and acceptable levels of risk and the mitigation measures and strategies that should be adopted and by who and how they will be enforced.

  **Some key questions might include**: Is the acceptable level of risk clearly defined? Who is responsible for designing, agreeing and implementing risk mitigation measures? Have mandates been clearly defined across stakeholder groups? Are they known? What policy and institutional systems are in place and/or required? Are systems for Coordination, Monitoring and Evaluation, Quality Control and Quality Assurance functions established? What capacities including technology are required to ensure the mandates (enforcement of mitigation measures) can be undertaken? What is the current status?

- Proactive and Retrospective Resilience - ensure new developments or reconstruction is resilient by applying risk–informed planning and decision making to the design processes. Applying adaptation solutions to reduce existing risks to achieve retrospective resilience.

  **Relevant questions may include:** Who is responsible for setting standards and enforcing compliance? How is this compliance work undertaken? Are stakeholders skilled in risk-based planning approaches? What is the current status? What are the gaps?

The outcome of effective coordination across all ministries and ensuring implementation of risk-based approaches on a whole-of-Government basis will be the application of appropriate mitigation measures to reduce risk inherent in the existing built environment and reduction of risks created through new development.

## Humanitarian Stream

The humanitarian actions are also referred to in the context of Disaster Risk Management. The key objective of linking the humanitarian stream and the development stream is to recognise that quantification of residual risk inherent in the built environment (both existing and created by new development) will enable emergency responders to better prepare and respond and help communities to better understand risks and prepare in the event of a significant shock or stress. This will allow government to understand the scale or magnitude of potential events and develop appropriate response strategies. It will facilitate planning and preparedness across whole of Government, including immediate response, early recovery and then reconstruction.

**Example:** Risk-informed decision making in humanitarian contexts can be achieved through the application of GIS (and other) mapping that highlights the risk zones for specific shocks and stresses; the population demographics, together with other vital information such as the location, functionality and physical status of critical infrastructure systems (i.e. schools, shelters, clinics, water and power supply, etc.). If we understand the level of risk exposure and vulnerabilities it is then possible to anticipate the likely consequences for a specific event.

Within the humanitarian context, risk-based decision making applies to the management of residual risk, or in other words, risk that cannot be eliminated through development and/or adaptation solutions. This is commonly achieved through strategies that are designed to "take people away from the risk" when it materialises and includes: early warning systems; preparedness programmes, response systems including relocation and evacuation planning; and recovery processes.

The steps for creating the residual risk management planning and response systems vary slightly from those described in the development stream. The main difference is primarily in the sequencing of some steps given the importance of understanding the effectiveness of policy, institutional systems and the capacity of key stakeholders (step 2) prior to entering the design and planning phase.

Traditionally UNOPS does not have a lead role in humanitarian response. Instead it supports humanitarian operations primarily with the procurement of goods and services through its extensive procurement management system. It can have an active role in recovery and reconstruction by undertaking damage assessments, particularly in relation to analysing infrastructure systems and their reasons for failure and in Building-Back-Better.

***"In damage assessment UNOPS must lead the transition away from counting physical losses to understanding the reasons for failure"***

A risk-informed humanitarian approach can provide UNOPS with the opportunity for "crystal balling" the potential consequences that may arise from the impact of shocks and stresses in specific countries and locations within countries. Engagement in this process would therefore enable UNOPS to pre-plan "in anticipation of likely consequences" and thus avoid delays in responding to major events.

## Failure Analysis

In damage assessment, UNOPS must lead the transition away from counting physical losses to understanding the reasons for failure. The UNOPS failure analysis methodology (sometimes referred to as "forensic analysis") to inform and strengthen damage assessment processes is a critical step in supporting member states and other UN Agencies in strengthening build-back-better actions.

Failure analysis involves conducting investigations to ascertain why systems or the built environment (infrastructure and otherwise) fail during specific shocks and stresses. Too often the visual impacts of a single asset (e.g. destruction or major damage of a road, bridge, culvert, hospital, etc.) are seen as "the failure" and yet in reality they may be the consequences of more deep-seated problems that are linked to design, construction, maintenance issues and/or changing risk contexts and other locality issues. If these hidden problems are not exposed then it is highly likely that failure will re-occur when these assets are simply replaced.

If build-back-better is a goal, then it is important to understand what "better" is and how it can be achieved. The primary aim of failure analysis is therefore to distinguish between the "root causes and the consequences" of failure so that base-line data and risk contexts can be reviewed and thus better inform proactive and retrospective resilience strategies in the future.

An opportunity that is often (if not always) overlooked relates to how the results of failure analysis (in an impact area) can be utilised to inform retrospective resilience for "like systems" in similar risks zones in non-affected areas within the same country. This is one way of strengthening retrospective resilience while also minimizing the challenges associated with building-back-better strategies.

For this to happen, failure analysis must form part of the recovery standing operating procedures around build-back-better and resilience.

# PART ONE
## Global Frameworks

During 2015 and 2016, six global policy frameworks or initiatives were introduced either as replacements and/or as new initiatives. These include the Sustainable Development Goals, Climate Agenda, Sendai Framework for Disaster Risk Reduction, Habitat III and the World Humanitarian Summit.

Even though exhaustive consultation processes were undertaken, some lasting up to 12 – 18 months and more, there is still a significant dearth of knowledge and applied understanding associated with the implementation of many these frameworks within Member States and the UN System, particularly in terms of programmatic synergies and how to meet obligations under the frameworks. Much of this is due to the insular approaches associated with the framing and implementation of the respective frameworks. At the country level, in particular, it will be difficult to achieve integrated planning simply because of the challenges associated with ownership and management of the resources and identifying who is responsible for implementing the frameworks.

### Summary of key global frameworks

| Framework | Agency | Goals |
|---|---|---|
| Climate Change | UNFCCC | • Limit average global temperature increases<br>• Strengthen global response to climate change |
| Disaster risk Reduction for Resilience | UNISDR | • The substantial reduction of risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries. |
| Housing and Sustainable Urban Development | UN Habitat | • Reinvigorate global commitment to sustainable urbanization<br>• Focus on implementing the “New Urban Agenda”. |
| Humanitarian Summit | UN Refugees Agency /UN Office for the Coordination of Humanitarian Affairs | • Working together to save lives and reduce hardship around the globe |
| Sustainable Development Goals | UN Secretary General /General Assembly | • 17 SDG’s have been set. A number are aspirations; others are outcomes and the remaining goals and sub goals. |

### Linkages between global frameworks

If the adage “to achieve resilience then every aspect of the system must be resilient” holds true, then it is critical that when considering resilience, we do so from a systems perspective. This means that the causal relationships and programmatic linkages of every aspect of the work being undertaken must be evaluated separately and then collectively to determine the level of resilience. If we apply this analogy to the interactive nature of the global frameworks it becomes evident that weaknesses in one area can have a major impact and possibly result in the cascading failure of the whole process or system. Each of the global frameworks cannot operate in isolation to one another as to do so would undermine the primary rationale for their existence.

Understanding the linkages within and across the global frameworks is a critical first step to achieving resilience, however creating an enabling environment for this to happen requires innovation that is underpinned by transformational shifts in policy and practice. Figure 1.1 below demonstrates these system linkages.

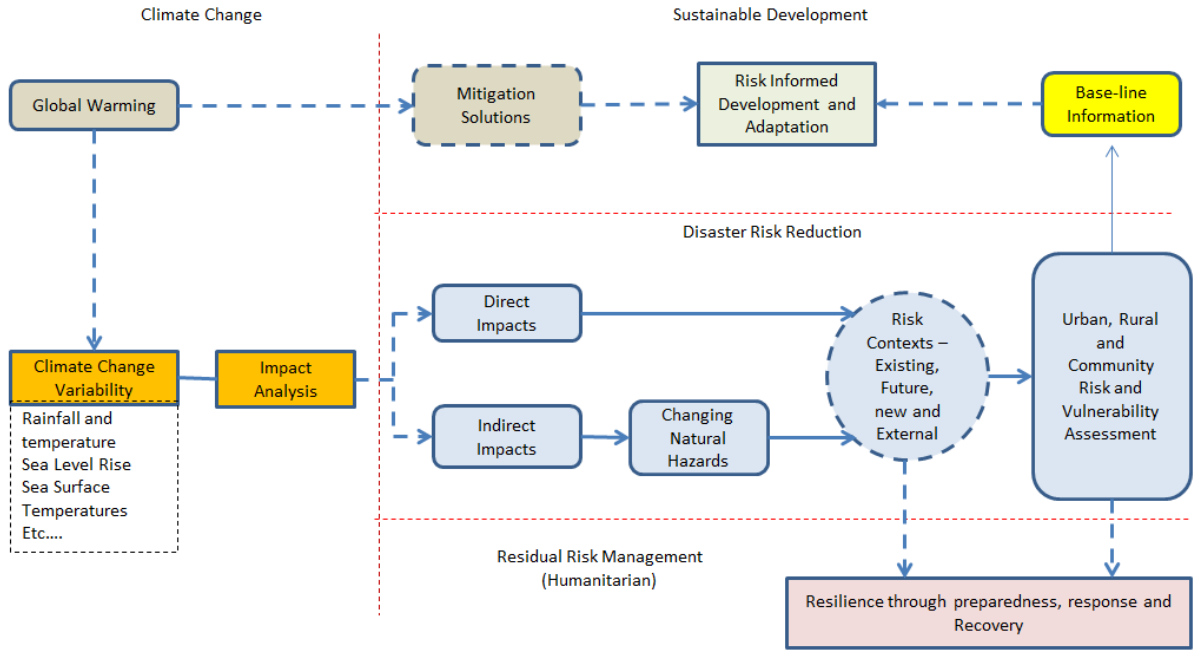



Figure 1.1

Operationalising this system requires not only consistent and agreed understanding of the nature of the work to be undertaken, but also the skills, competencies and technology to implement each of the processes. For example, countries should have the capacity to:

- Identify, access and analyse climate variability data to ascertain its single and interactive direct and indirect impacts and how these change existing risk, create new risk and trigger potential future risks;
- Access accurate and up-to-date information and apply this for sector and cross sector risk and vulnerability analysis within the rural and urban settings;
- Create and maintain risk information databases;
- Access and apply risk information within development, adaptation and sector planning.
- Identify residual risk and to formulate humanitarian response plans and systems.

## Development Continuity

Business continuity is a term used widely in the private sector, particularly in terms of shocks and stresses and how these can disrupt core business activities.

In development, this concept seems to have been lost. It could be construed that governments put more emphasis to managing the fall-out from the impacts of shocks and stresses, than they do to prevent or minimize damage and losses to development including infrastructure systems and services.

In this context the primary function of a government is to manage development in a way which reduces the risk of failure in the built environment in the first instance. When an event occurs that becomes a disaster situation, it is important for governments to understand the reasons for the failure of assets and systems and to utilise this information to build and strengthen resilience. Resilience plays a critical role in promoting and supporting development continuity, in addition to demonstrating how humanitarian action following the impact of shocks and stresses can contribute reactively to risk-informed development and particularly build-back-better initiatives.

This association is highlighted in the schematic below and discussed in paragraphs that follow.

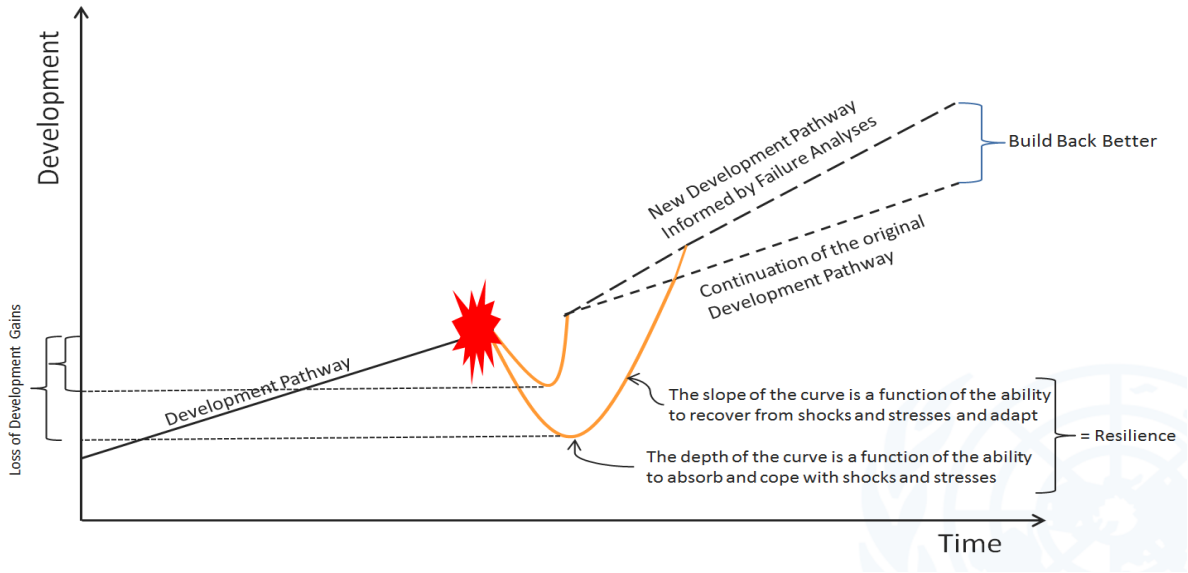



Figure 1.2: Development Continuity Schematic

Figure 1.2 highlights that normal development pathways will continue to evolve until such time there is a specific shock or stress[2] on the system. At this point a number of scenarios are likely:

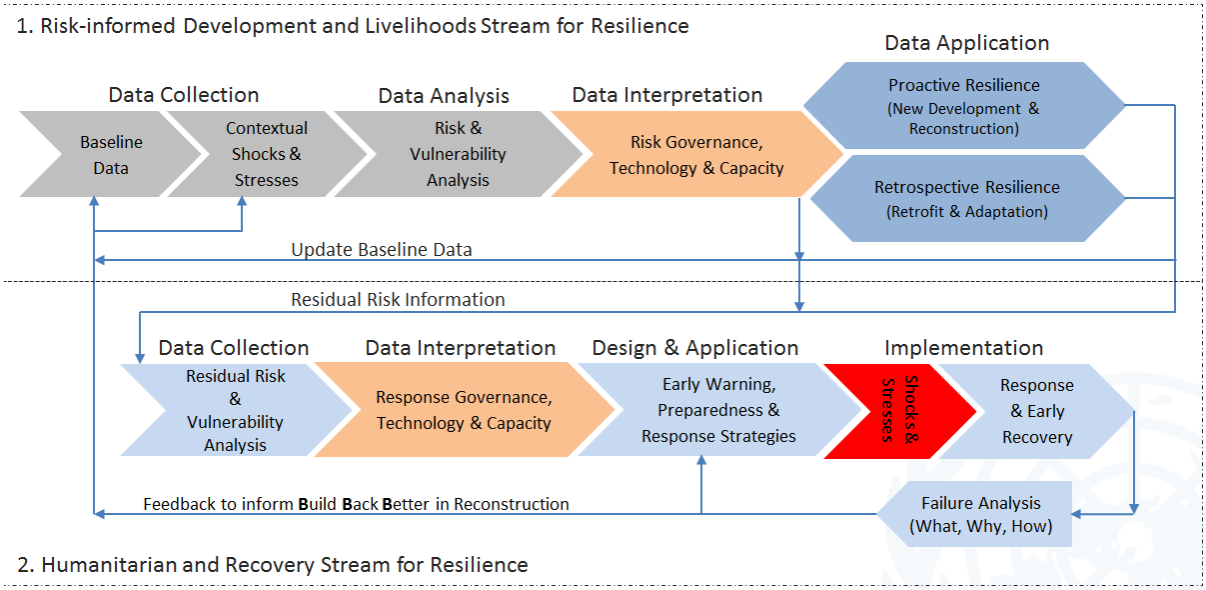
1. The impacts may be shallow, the losses to development gains minimal and recovery back to development rapid. This is usually associated with a situation where the level of risk is low and the level of preparedness is high which demonstrates a high level of resilience within the system.
2. The impacts may be significant (deep), development losses may be extensive and the recovery back to the original development pathway may be long. These traits are a direct reflection of low levels of resilience underpinned by high levels of risk exposure and vulnerability.

[2] A shock or stress may come from such events as climate-induced or natural hazards, conflict, political, economic or social impacts or any other issue that changes the development paradigm.

3. The reasons for the failure (regardless of the depth) of the system may remain unknown and thus limit the trajectory of the new development pathway. This will restrict build-back-better opportunities and the ability to strengthen resilience to future shocks.

Resilience is therefore the ingredient that is needed to change the characteristics of development so that it is able to better anticipate and absorb shocks and stresses, be prepared to recover from them and incorporate lessons learned to improve development practice.

# PART TWO
## Applying the Resilience Pathways Model



## Introduction

This section has the greatest linkage and influence on UNOPS core business and is the main strategy for achieving proactive and retrospective resilience which is consistent with the UNOPS DRR4R goal of establishing a risk-based culture. The RPM provides a framework to guide the thinking and create the opportunity for UNOPS to achieve a transformational shift from operating as a "building contractor" to becoming a valued development partner who can also advise and provide strategic guidance on delivering against the key global policy frameworks in an integrated and cohesive way.

## Development Stream

The processes outlined here can apply to a variety of design issues including infrastructure systems and technical assistance projects, or they can target a specific issue such as determining resilience around gender. There are many applications and changes to the baseline data will charter the course that is needed.

The information in this section has been presented in a way to avoid repetition however it must be noted that for retrospective and reactive resilience there may be a need for additional and/or new base-line data requirements. In this regard it is not possible to capture every single consideration to guide the processes but the general principles remain the same. Some initiative and foresight is also required based on the specific country contexts.

## Proactive and Retrospective Resilience

The RPM identifies nine steps that collectively contribute to achieving resilience outcomes within the development and humanitarian contexts. The model is thus an implementation tool that provides a framework around which to organise an approach to building resilience in a comprehensive manner. The steps within the development stream are ***designed to minimise or remove risk***, thereby protecting development investments. The focus here is on strengthening resilience 1) proactively for new initiatives and 2) retrospectively for existing assets and systems.

The first range of questions that require answers are: "What is it that we want to achieve (purpose)?" What results are we looking for (impact)? "What is the behavioural shift that we are looking for and where (objective)? And what is the scope of the project, particularly when considering a multi-phased approach?

The table below represents a range of questions that could be applied for each step in the RPM process.

### Step One: Data Collection

**Base-line Data:** There has to be a reliable start point for the design of new initiatives and or the assessment of existing assets and or systems. Base-line data is either known or can be readily identified from the objectives, scope and outputs being sought. The aim is to ensure that base-line data is grounded in the past (from lessons), present (from what we know) and future (based on where we want to go). The prompts below can be interchangeable.

**Desired Outputs:**
1. Clear understanding of the design and built environment contexts;
2. An up-to-date asset management system

**Proactive Resilience:**
What is the objective and scope of the work to be undertaken?
In which geographical area will the work be conducted?
What are the key functions and activities to be performed?
What level and standard of capacities, resources and or services are required?
What are the demographics of the primary users of the output/asset?

What tools, methodologies and resources are currently available to support the work? Are they still relevant? What are the gaps?
**Retrospective Resilience:**
What are the objectives or purpose?
Where are the assets and/or systems located?
What are the asset design and construction specifications?
What is the asset functionality[3] and operating standards?
What is the reliability[4] of the asset or systems?
Who are the primary users[5] of the assets or systems?
What is the Operations and Maintenance (O&M) history of the assets or system?
What is the current physical status of the asset (functionality and conditionality) or system?

**Contextual Shocks and Stresses:** A full range of the contextual shocks and stresses, moving beyond climate-induced and natural hazards to consider the built environment and other identified hazards that may impact on the supply and demand aspects within the base-line data. These are the potential issues that could impact on the integrity of the objectives, scope and outcome.

**Desired Outputs:**
1. A comprehensive and relevant assessment of the shocks and stresses in the given context.

**Proactive Resilience:**
- What are the known natural, climatic and geographical hazards? Have these altered or changed in scope and dimension?
- What are the [hidden] shocks and stresses from within the immediate built environment? What has changed? And Why?
- What are the supply limitations in terms of capacity, resources and services including standards?
- What are the lessons from similar design and/or construction?
- Are there additional shocks and stresses related to safety and security including armed conflict?

**Retrospective Resilience** (additional prompts):
- Are there any other factors other than known shocks and stresses or changes in the built environment?
- Are these significant? Have they affected the functionality, reliability and conditionality of the asset?
- What are the socio-economic changes over time that could place a stress on infrastructure systems?

## Step Two: Data Analysis

**Risk and Vulnerability Analysis:** involves an extensive analysis of baseline data and how the contextual shocks and stresses might affect the viability of the objectives and scope of the task. The key question is: Do the objectives, scope and outputs pass the test when validated against the range of shocks and stresses that could undermine the delivery, quality, sustainability and resilience of the outputs?

**Desired Outputs:**
1. The clear identification of risks and vulnerabilities relevant to the project design.
2. Clear identification of programmatic solutions (mitigation measures) that address identified risks to the project.
3. A clear understanding of the risks for which no clear programmatic solution can be identified.
4. A clear understanding of the residual risk once mitigation measures are applied

**Proactive Resilience:**
This involves a full analysis of baseline data and the potential impact on any new development arising from issues identified under contextual shocks and stresses. The aim is to 1) identify risk and vulnerabilities so

[3] Functionality indicators include: 1) level of service (performance against design standard); 2) reliability (performance against capacity); Population served (performance against total population needs)
[4] Reliability considers recent historical performance of the asset.
[5] Measuring the users or population served can determine if the asset is meeting its functional goal.

that the potential impact on objectives can be assessed, 2) Identify solutions (mitigation measures) to problems/challenges; and 3) highlight problems/challenges for which no immediate solution can be identified. 4) Identification of residual risk after mitigation measures have been applied

**Retrospective Resilience:**
The aim is to determine the level of risk exposure (broadly) and vulnerability of the existing asset/system and independently its functionality, reliability and conditionality.

The purpose is to ensure that the capacities exist to identify retrospective actions for strengthening resilience of the system or asset and its key functional elements against known and unknown shocks and stresses including those from policy, non-compliance and/or issues around unplanned land-use management. This also enables the identification of residual risk after retrospective mitigation measures have been applied.

### Step Three: Data Interpretation

**Risk governance, capacity and technology:** Is designed to assess the strength and relevance of the governance systems including policy, institutional, quality assurance, compliance, capacity and technology that are relevant to the design, management and implementation of the programme/project.

**Desired Output:**
1. Clear understanding of who the risk owner is, together with programmatic solutions for actively managing risk by implementing mitigation measures and identifying residual risk after mitigation measures have been implemented.
2. Clear identification of risks for which there are no readily available programmatic solutions and ensuring that the residual risk information is passed to the relevant stakeholders.

**Proactive Resilience:**
- Which element of government has responsibility for managing resilience? What is their capacity to lead?
- Do the capacities to access, understand and apply risk information within a planning context exist at appropriate levels and to appropriate standards?
- What relevant policies and standards exist? Are they still appropriate?
- What institutional systems exist? Are they appropriate and effective?
- Who are the key stakeholders? What is their capacity to support?
- Is technology required? Does it exist? What is its operational status?
- Is risk information available? Current?
- Do M&E, QA and QC systems exist? Are they effective?

**Retrospective Resilience:**
- Who is the risk owner of the asset or system?
- Who is the lead government agency responsible for O&M and compliance around the issue of resilience?
- What is the status of their policy, leadership and technical capacity?
- Are standards and compliance frameworks established? Effective? Enforced?
- Do M&E, QA and QC systems exist? What is their effectiveness?
- Is base-line data Available? Accurate? Accessible?
- Do the technical capacities and technologies exist to facilitate the planning, design and implementation of retrospective resilience?
- What is the risk appetite[6] for retrospective resilience?

[6] Risk appetite means – what is the level of funding that governments are prepared to commit toward achieving resilience retrospectively.

**Step Four: Data Application**

**Design and Implementation:** The aim is to capture the key issues arising from each step in the process to facilitate the design of an asset/system and/or project. During this phase it is important that all key aspects of the design process are validated and that solutions have been identified where design risks have been highlighted.

1. Capacity and technology to create and manage risk-informed decision making within design and planning processes

Are there significant issues within the planning and design stages that cannot be resolved and will have a major bearing on the achievement of the primary objectives? If so, can they be resolved? If not refer back to the design objectives and make changes as necessary?

Is the implementation risk informed – does the risk management process drive key decisions which will ensure compliance with risk-informed decision making? Do we know what the risk appetite is or the level of risk that is being accepted? Are the consequences known?

In this section the decisions and responses to issues in the data analysis and data interpretation processes are critically analysed and remedial actions determined that will 1) create the operating framework for retrospective resilience to be undertaken and 2) provide the solutions for achieving retrospective resilience and/or 3) provide the guidance for risk-informed project design.

## Humanitarian Stream

Humanitarian actions are often referred to as the Disaster Risk Management. The key objective of linking the humanitarian stream and the development stream is to recognise that quantification of residual risk inherent in the built environment (both existing and created by new development) will enable emergency responders to better prepare and respond, communities to better understand risks and prepare in the event of a significant shock or stress. This will allow government to understand the scale or magnitude of potential events and develop appropriate response strategies. It will facilitate planning and preparedness across whole of Government, including immediate response, early recovery and then reconstruction.

The steps within the humanitarian stream are ***designed to remove people from the risk*** and thereby saving lives and protecting livelihoods.

For UNOPS, the key function associated with this stream is failure analyses which “closes the loop” by ensuring that causes and reasons for failure during the impact of specific shocks and stresses are clearly identified and understood and that this information is used to update and inform the development stream through a build-back-better approach.

This means that UNOPS must engage in the humanitarian processes, by ensuring that the tools, methodologies and capacities to undertake failure analysis are firmly entrenched in national recovery plans and operating procedures.

The processes outlined in the retrospective resilience strategies above provide the base-line data which is essential for undertaking failure analysis. This is because the history of the asset and/or system or its DNA will be a critical start point for understanding how and why assets and systems react when under stress. In this context the findings of failure analysis have a two pronged scope:

- Firstly, they influence proactive resilience actions by ensuring that lessons including those associated with design and construction are informing base-line data and through this future design and construction processes;
- Secondly, the findings can be utilised retrospectively to strengthen resilience in geographical areas not affected by a specific event but where similar risks and structures exist.

Some of the considerations for the design of a humanitarian system include:

### Step One: Data Analyses

**Residual Risk and Vulnerability Analyses:** Humanitarian systems should be grounded in the past, present and future and therefore the analyses should provide information on what has happened; what is happening; and what could happen.

- What systems are in place to provide the relevant residual risk information?
- What are the existing management and institutional systems/structures? How effective are they?
- Who are the key stakeholders that require the information? What are the technical skills and technology requirements??
- Who are the target audiences? What is their knowledge and understanding of the residual risks they face?
- What residual risk information is available? How reliable is it? What are the residual risks within the immediate built environment? Have these changed over recent years? How and why?
- Is there a comprehensive risk database and/or network? Is the information reliable and available?
- What are the lessons[7] that have been learned from similar/different events?
- Are their conflict or other civil unrest related risks?
- What tools and methodologies are available? Are they relevant?

### Step two: Data Interpretation

**Risk governance, technology and capacity:** This section explores the leadership, stakeholders, policy, institutions and technology capacities based on the objectives and key outputs of the risk and vulnerability analyses. The important task is to build and maintain capacity to utilise the information to design and manage risk-informed early warning, preparedness, response and recovery systems

- Who will provide the strategic and operational leadership?
- What is their capacity to undertake this task?
- Who are the key stakeholders? What is their technical capacity?
- What policies and institutional systems are required? Are these in place? What is their effectiveness?
- Is risk information: Available? Accessible? And do the skills exist that provide the capacity to apply this for risk-informed planning and design of humanitarian systems?
- Are QA/QC and M&E systems established? What is their effectiveness?
- What is the level of buy-in/ownership/commitment?
- What governance lessons have been learned from similar humanitarian experiences?

### Step Three: Design and Application

Early warning, preparedness and response strategies: Steps one and two provide critical information that is relevant to what has to be done and also the enabling environment about who and how the work will be undertaken. The key issue is related to the availability of residual risk information and knowledge on how to apply it in a programmatic and planning sense. This provides an indication of the potential scale of impact and consequences together with the actions that might be required to respond to such an event.

Response planning including early warning systems, evacuation planning, recovery and damage assessment systems all need to be developed and tested so that they are ready for use when needed. Failure analysis procedures are built into this section.

[7] Important to distinguish between lessons and the consequences that might come from hidden or unknown lessons