A Study of Post Disaster Reconstruction Recovery Framework (PDRF) From the Perspective of Theory of Change Thinking

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Abstract

Background

National Reconstruction Authority (NRA) is leading the reconstruction program. To rise again Nepal Government had prepared Post Disaster Need Assessment (PDNA) report before commencement the recovery. This was milestone for evidence based decision making. Based on PDNA, the reconstruction and rehabilitation policy formulated and formed NRA. Likewise, NRA developed Post Disaster Reconstruction Recovery Framework (PDRF) for reconstruction to be structural, institutional and systemic. PDRF set recovery goal as “Establishment of well planned, resilient settlement and prosperous society.” The framework has set five strategic recovery objectives: Safe structures, Social cohesion, Access to services, Livelihood support and Capacity building. Further, various activities and complementary frameworks are defined.

Recovery thrust is build back better, safer and greener. Framework approach fails in concisely define how and why desired changes occur and goal achieved. This limitation could be fixed from Theory of Change (TOC) thinking.

This paper presents a study of PDRF from the perspective of TOC. Building a TOC would be critical benchmark for evaluation and learning of Nepal recovery after completion of reconstruction program.

Research objective

- To analyze pre-work adopted for recovery
- To develop TOC of Nepal reconstruction program.

Research question

How PDRF could be perceived from the principal of theory of change?

Methodology

The literature review, secondary data collection and qualitative data analysis were the methodology. The appropriate tools and technique applied to develop TOC.

Key result

TOC narrative: “If resilient private housing re-built, resilient public infrastructure reconstructed, local capacity enhanced, cultural historic heritages preserved, public basic services restored and improved, renewable energy promoted and eco-system maintained, local economic infrastructure improved and rehabilitated, local labour market enhanced, and effectiveness of local government/community strengthen on disaster risk management Then resilient reconstruction, reduction in risk and vulnerabilities, restoration and improvement of services, reestablishment and development of economic sectors, and effectiveness on DRM of local body/community will be resulted. Then well planned, resilient settlement will be established with prosperous society.”

Key words: Assumption, Change, Community, Disaster, Goal, Local Government, Output, Outcome, Precondition, Impact, PDNA, PDRF, Recovery, Reconstruction, Resilient, Risk reduction, Result, Theory of Change

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Introduction

Earthquakes on 25 April and after shock on 12 May, 2015 devastated central part of Nepal. Nearly 9000 lives lost and more than half million homes have been destroyed. The physical destruction covered residential and government buildings, heritage sites, schools and health posts, rural roads, bridges, water supply systems, agricultural land, trekking routes, hydropower plants and sport facilities. The destruction effected social and economic life of country.

For systemic and planned recovery, Nepal Government initially prepared Post Disaster Need Assessment (PDNA) Report. This report gave evidences of breadth and depth of destruction. As of PDNA report, the total value of disaster effects was NPR 706 billion (equivalent US$ 7 billion). The social sector was most severely hit among other productive, infrastructure and Cross cutting issue sectors. Additional 2.5 to 3.5 % people estimated to be pushed into poverty. Nine of the 14 severely affected districts have human development index (HDI) scores lower than the national average. The disadvantaged social groups had suffered the largest damage and loss. The annual economic growth was estimated lowest in past eight years.

In this context Nepal had to rise from natural destruction. National Reconstruction Authority (NRA) framed Nepal reconstruction program into Post Disaster Recovery Framework (PDRF). The framework ensured reconstruction to be structural, institutional and systemic.

PDRF has set reconstruction goal as “Establishment of well planned, resilient settlements and a prosperous society.” Likewise, the framework defined five strategic objectives: Safe structures, Social cohesion, Access to services, Livelihood support and Capacity building. Further, PDRF defined policy framework, Institutional framework, and Implementation arrangements.

This research paper presents findings and conclusion of PDRF from the perspective of Theory of Change (TOC) thinking. Since framework fails to illustrate the desired change in concise and logically.

TOC is a principal that explains how and why activities are explicit to produce a series of results that contribute to achieving the desired goal/change.

PDRF thrusts change for build back better, safer and greener. This intended change of Nepal reconstruction has been presented in this paper concisely and logically from the perspective of TOC.

This paper presents research objective, research question, methodology used for research, applied tools and techniques, and finally research findings and conclusion with recommendation.
Based on the PDRF, Nepal Reconstruction and Recovery Theory of Change narrate as:

“If resilient private housing re-built, resilient public infrastructure reconstructed, local capacity enhanced, cultural historic heritages preserved, public basic services restored and improved, renewable energy promoted and eco-system maintained, local economic infrastructure improved and rehabilitated, local labour market enhanced, and effectiveness of local government/community strengthen on disaster risk management Then resilient reconstruction, reduction in risk and vulnerabilities, restoration and improvement of services, reestablishment and development of economic sectors, and effectiveness on DRM of local body community will be resulted. Then well planned, resilient settlement will be established with prosperous society.”

### Research Objective

The objectives of research are as follows:

- To analyze the pre-work adopted for recovery from Gorkha Earthquake
- To understand PDRF from the perspective of TOC thinking
- To develop TOC of Nepal reconstruction program
- To assist evaluation and learning of Nepal reconstruction program

### Research question

The single question was concentrated for the research as follow:

**How PDRF of Nepal reconstruction could be perceived from the principal of theory of change?**

### Limitation

The research carried out based on the available literature over the google search. The PDNA and PDRF documents were downloaded from the official website of National Reconstruction Authority. The results and conclusions of this report reflect the analysis and synthetization, interpretation of secondary data. Few tools and technique for development of TOC was utilized. The reconstruction program input and activities are not analyzed and discussed. Further, ongoing reconstruction efforts are not tested or examined against the PDRF documents. Due to time and resource limitation it happened to be out of scope.

### Methodology

#### 1.1 Literature review

The literature review was core part of this research. The documents related to TOC were acquired internet search and online course class rooms. The snowballing method was used during the search of literatures. Also Key papers identified through personal knowledge of the author. Reconstruction related official documents obtained from the official website of NRA.
1.2 Qualitative Data Analysis

The secondary data was collected from research paper, academic documents and NRA documents. The deductive qualitative data analysis method was used. The code based on TOC principal was defined and analyzed with the contents of literature. The narratives were synthesized and generalized.

Literature Review

During the literature review, in depth study was carried out about Theory of Change. The papers and guidelines published by various organizations and researchers were vital documents. Likewise, PDNA and PDRF were base documents for derivation of qualitative data. References in this report presents list of documents and materials used.

The systematic reviews of literature on various subject matters for the research described here forth.

1.3 Concept on Theory of Change (TOC)

Danielle Stein and Craig Valters has written the concept of TOC in their paper “Understanding Theory of Change in International Development”. The concept of TOC approach first emerged in United States during 1990s. It has been emerged from the perspective of evaluation theory and describes TOC as part of broader program analysis or program theory. In the development field, it also grew out of the tradition of logic planning models such as the logical framework approach developed from the 1970s onwards.

The early conceptualization in 1995, TOC described as “a theory of how and why an initiative works.” ToC has been called a number of other things: “a roadmap, a blueprint, an engine of change, a theory of action and more. Beyond the initial conceptualization, the consensus in definition of TOC is very little.

ToC is most often defined in terms of the connection between activities and outcomes. The articulation of connection is the key component of the ToC. The ability to articulate this connection rests on the idea that, “social programs are based on explicit or implicit theories about how and why the program will work.” Articulating these theories commonly involves exploring a set of beliefs or assumptions about how change will occur. Though some consider these elements as components of ToC, others define ToCs as themselves beliefs and assumptions about change.

Although ToCs exist in endless variations of style and content, some basic ToC components often “include a big picture analysis of how change happens in relation to a specific thematic area; an articulation of an organization or programme pathway in relation to this; and an impact assessment framework which is designed to test both the pathway and the assumptions made about how change happens.” ToCs are also often presented in the form of a diagram.
In practice, many organizations are more comfortable viewing ToC as a modification of the 'logic model', and summarize their ToC through simple “if…then” statements.

The key issue of TOC as mentioned by Danielle Stein and Craig Valters presented in Box 1.

**Box 1: Key Issue - Confusion surrounding Theory of Change**

There is a basic problem that different organizations are using the term TOC to mean very different things. If there is no consensus on how to define TOC and it has endless variations in terms of style and content, how can anybody successfully grapple with it? Critics have argued that the failure of TOC proponents to tie it down to any tangible meaning has led people to make unrealistic promises on its behalf. If TOC is to be more than another development ‘Buzzword’, then greater clarity is needed on a number of levels, starting with common terminology, use and expectations of TOC approaches.

Patricia Rogres in “Theory of Change”, describes TOC explains how activities are understood to produce a series of results that contribute to achieving the final intended impacts. It can be developed for any level of intervention – an event, a project, a programme, a policy, a strategy or an organization.

A theory of change can be used for strategic planning or programme/policy planning to identify the current situation, the intended situation and what needs to be done to move from one to the other. This can help to design more realistic goals, clarify accountabilities and establish a common understanding of the strategies to be used to achieve the goals.

The major points Patricia Rogres highlighted on TOC as follows:

- A theory of change explains how activities are understood to contribute to a series of results that produce the final intended impacts.
- There are different ways of developing and representing a theory of change.
- In an impact evaluation, the existing theory of change should be reviewed and revised as needed to guide data collection, analysis and reporting.

Isabel Vogel had reviewed the use of TOC in international development. The key points Isabel Vogel has mentions in the paper are as follows:

- The concepts that are most common across theory of change thinking are: context, actors and a sequence of logically-linked events leading to long-term change, although there are many combinations and differently developed applications of these.
- Variations exist in the types, scope and level of detail of theories of change seen amongst donors, implementing agencies, civil society organizations and NGOs, and evaluators, reflecting their different purposes and needs
- Theory of change is viewed as a more realistic and flexible thinking tool than current logical framework approaches.

Further, Isabel Vogel reviewed, the TOC is considered to encompass the following elements:
- **Context** for the initiative, including social, political and environmental conditions and other actors able to influence change
- **Long-term change** that the initiative seeks to support and for whose ultimate benefit
- **Process/sequence of change** that is anticipated in order to create the conditions for the desired long-term outcome
- **Assumptions** about how these changes might happen, as a check on whether the activities and outputs are appropriate for influencing change in the desired direction in this context.
- **Diagram and narrative summary** that captures the outcomes of the discussion.

The term ‘theory of change’ itself has academic connotations. When practiced it understood as a set of principles.

Theory of change thinking is a habit not a product and a lot of benefit can be gained from simply starting to think more broadly about change and the context.

**HIVOS** has published Theory of Change Thinking in practice Guideline. The guideline mentions TOC as the ideas and beliefs that people have – consciously or not – about why and how the world and people change. How people perceive and understand change and the world around them is infused by their underlying beliefs about life, human nature and society. They are deep drivers of people’s behaviour and of the choices they make.

HIVOS defined TOC as “the ideas and hypotheses (‘theories’) people and organizations have about how change happens. These theories can be conscious or unconscious and are based on personal beliefs, assumptions and a necessarily limited, personal perception of reality.”

Theory of change as an approach is a guiding framework for all stages of thinking, action and sense-making when we intervene intentionally in social change processes.

Hivos distinguishes between ToC as a way of thinking (overall approach), a process (doing a ToC analysis/enquiry) and a product (the result of a ToC process).

### 1.4 Purpose of TOC

**Patricia Rogers** states a theory of change is useful for identifying the data that need to be collected and how they should be analyzed.

A theory of change is a building block for impact evaluations and should be used in some form in every impact evaluation. It is particularly useful when the intention is to learn from an impact evaluation conducted at one site and then apply these lessons to another site.

When planning an impact evaluation and developing the terms of reference, any existing theory of change for the programme or policy should be reviewed for appropriateness, comprehensiveness and accuracy, and revised as necessary.

**Danielle Stein and Craig Valters** have identified four broad categories of TOC purposes as follows:
a) **Strategic planning**: ToC helps organizations practically to map the change process and its expected outcomes and facilitates in project implementation. For these purposes, ToC is often used in conjunction with logframe approaches.

b) **Monitoring and Evaluation**: ToCs articulate expected processes and outcomes that can be reviewed over time. This allows organizations to assess their contribution to change and to revise their ToC.

c) **Description**: ToC allows organizations to communicate their chosen change process to internal and external partners. A simple description of an organization’s TOC can be understood as minimal way of engaging with TOC.

d) **Learning**: TOC helps people to clarify and develop the theory behind their organization or programme. This relates to an understanding of TOC as a thinking tool.

*Isabel Vogel* states: the most important criterion to guide how to approach theory of change is to be clear about the purpose for which it will be used. Theories of change should help to generate understanding and clarity, be useful in supporting different aspects of the project cycle and be proportionate to the scale of the initiative (Funnel and Rogers 2011).

As of *HIVOS* TOC guideline the purpose of TOC is to make the common understanding among the multi-stakeholder setting about the desired change. Why the anticipated change is desired and how it could and should happen. If these different views are not shared, misunderstandings can arise and stakeholders may start off on the wrong foot when working together. A joint ToC exploration can help to understand what drives each stakeholder and how they understand the situation. It helps identify common ground for action, as well as opportunities and obstacles. It lays the basis for collaboration with clear definition of roles and responsibilities as well as for joint monitoring, evaluation and learning processes.

Likewise, TOC analysis can help to narrow the gap between the often ambitious change goals of an organization and its actual potential, as it leads to more realistic objectives and more appropriate strategies.

### 1.5 Levels of TOC

TOC can perceive the change at different levels, ranging from world views to project level.

*Isabel Vogel* categorized TOC level into three broad levels:

a) **Country, sector and/or policy archetypal theories of change**

This type of TOC includes high-level mapping of drivers, key contextual or issue conditions, examples of archetypal sequences and pathways of change that might be informed by evidence and learning from multiple sites. This kind of mapping might describe high level changes like policy area.

This type of high-level theory of change tend to be related to donor agencies, foundations and other funding type organizations, as well as head office-based policy departments within large organizations.
b) Implementing agencies’ theories of change

Implementing agencies’ theories of change tend to develop all TOC elements in much more detail to support their decision-making and to underpin performance management and evaluation frameworks.

c) Causal maps for evaluators

TOC for evaluation purposes tend to drill down into the detail of theories about cause-effect, the different pathways, actors and mechanisms the programme has influenced or could have influenced, as well as significant contextual conditions that had an influence.

Danielle Stein and Craig Valters have viewed defining the level(s) at which a ToC approach is meant to function is crucial for the clarity and practicality of a given ToC and its associated intervention. This concept of levels is also useful in examining how a ToC functions within an organization, as there may be an implementation ToC for a specific intervention as well as an organizational ToC to guide programming decisions.

One way of understanding the concept of levels in ToC is to look at the actors and targets of the intended change process like

- Changing **individuals**
- Changing **relationships**: individuals as structures
- **Structural, institutional and systemic** changes

HIVOS has distinguished three levels of TOC thinking. **Figure 1** illustrates how these different levels relate to each other.

![THEORIES OF CHANGE @ DIFFERENT LEVELS](image)

Figure 1. HIVO's different level of TOC, its relationship and process.
1.6 Components of TOC

The following are core components of TOC that reflected in various literatures:

a) Long term change or goal:
This is the desired lasting impact that the organizations/programs/projects aim to support.

b) Pre-conditions and pathways of change
The mapping of pathways in terms of: Who and what needs to change in order to realize the longer-term desired change? How do we think the change process might evolve from where we are now? The answers of these questions reflect the preconditions that must exist for the long-term change to take place.

Pathways of change identify the connections between preconditions, how they relate to each other, and in what order. Most initiatives have multiple pathways that contribute to the long-term goal.

c) Assumptions
Assumptions are the conditions or resources that are outside the direct control of organizations/programs/projects, but that nevertheless must be met for progress to be made toward the eventual achievement of the long-term goal. Assumptions provide a reality check for the ToC.

Isabel Vogel states quality of TOC rest on explicit assumptions. the importance of assumptions in TOC highlighted as:
- Assumptions are important because they are the ‘theories’ in theory of change thinking.
- Assumptions are hard to access because they are deeply held perceptions that have become ‘rules of thumb’ that are taken for granted
- Focusing, checking and testing assumptions can improve them and inspire new ways of addressing issues

HIVOS has stated the type of assumptions as follows:
- Assumptions about the context and the actors and factors at play
- Assumptions related to the pathways of change
- Assumptions related to conditions for and quality of implementation

d) Connections between pathways of change
Pathways of change are connected towards the long term goal. The some preconditions contribute to more than one pathway of change in the TOC.

1.7 Approaches for development of TOC

The different organizations and programs/projects have adopted different approach to develop the TOC.
Isabel Vogel mentions: All interviewees emphasized that a group discussion-based approach was needed to make the process worthwhile. The people involved in the programme will have different views, depending on their perspective. Iterative consultation and development of theory of change thinking is considered key to the quality and robustness.

Danielle Stein and Craig Valters highlights key issue in TOC approaches are accuracy, honesty and transparency. The extent, to which political and institutional concerns allow power to be honestly discussed, and end users to be involved in ToCs, is seldom addressed in the guidance literature. As international development is inherently political, organizations that honestly present their understanding of the change process may at times risk alienating partners and local communities, losing country access and endangering staff.

Patricia Rogres states: A theory of change should begin with a good situation analysis. This involves identifying: the problem that the intervention seeks to address; the causes and consequences of this problem; and the opportunities. Even in situations where the theory of change is being developed or significantly revised well after implementation has commenced, it is important to review the situation that gave rise to the intervention to ensure that the intervention is attempting to solve the right problem.

Theory should illustrate how to get in desired situation from current conditions. This should be in two parts – a theory about how this change will come about and a theory about how the intervention will trigger this change.

HIVOS has put forward eight steps approach to develop TOC. The eight steps with brief description are as follows:

a) Clarify the purpose of TOC process  
b) Describe desired change  
c) Analyze the current situations  
d) Identify domains of change  
e) Identify strategic priorities  
f) Map pathways of change  
g) Define monitoring, evaluation and learning priorities and process  
h) Use and adoption of TOC

The publication “Theory based Methodology: Using theories of change in educational development, research and evaluation.” states: There are three key approaches generally used in order to develop a theory of change that is either researcher driven or project driven such as

a) Deductive model  
b) Inductive model  
c) Mental model
1.8 Tools for development of TOC

The different tools can be utilized while developing Theory of Change. The tools discovered during literature review briefly described here forth.

1.8.1 Cynefin Framework

Scholar David J. Snowden has developed Cynefin Framework in 1999 based on the concept of Knowledge Management and organizational strategy.

The Cynefin Framework helps to sense the desired change in four categories as exhibit in Figure 2.

![Figure 2. The Cynefin Framework](image)

a) Obvious: In "obvious" contexts, the options are clear and cause-and-effect relationships are apparent to everyone. Here, explicit steps are in place that dictate the next stage of the process.

Snowden argues to "Sense – Categorize – Respond" to obvious decisions. There is often one established "correct" answer, based on an existing process or procedure.
b) **Complicated:** In this context several possible correct solutions emerged. Here, there is a clear relationship between cause and effect, but it may not be visible to everyone, because the problem is... complicated.

The decision-making approach here is to "Sense – Analyze – Respond."

c) **Complex:** It might be impossible to identify one "correct" solution, or spot cause-and-effect relationships, in "complex" situations.

Complex contexts are often unpredictable, and the best approach here is to "Probe – Sense – Respond."

d) **Chaotic:** In "chaotic" situations, no relationship between cause and effect exists, so primary goal is to establish order and stability. Crisis and emergency scenarios often fall into this domain.

The decision-making approach here is to "Act – Sense – Respond."

If the problem or situation doesn’t fit in the four categories then it is a disorder. The center disorder means the situations where no one has ideas on how to sense the situation.

**1.8.2 Problem tree analysis**

Problem tree analysis helps to find solutions by mapping out the anatomy of cause and effect around an issue.

The focal problem is written in the center that becomes the trunk of the tree. Then the root causes of the focal problem are identified. The identified causes are termed as roots of the tree. The consequences of causes are spread along the branches of tree.

**1.8.3 Result chain**

The results should be clearly defined for development programs. The results are the effect of the activities carried out from the development programs. Each development intervention has different levels of results. These levels of results are generally categorized as **outputs, outcomes, and impact.**

- **Outputs:** short term results, which are achieved immediately after an activity has taken place. These results are in sphere of control of the programme.
- **Outcomes:** medium term results, which may take a few years to achieve. These results are within the sphere of influence of a programme.
- **Impact:** the highest level result, and is often the ultimate goal of the programme, that may take many years to change. This is often something that is outside the sphere of control or influence of the programme, but by working with a wide range of stakeholders, the programme hopes to build a likely story that it is making a contribution to impact.

The connection of outputs, outcomes and impact builds a result chain. This results chain establishes causal pathways between activities and results, and summarizes what a programme hopes to achieve.
TOC should ensure result chain accurately articulate in the process.

1.8.4 Analyzing assumptions and evidences

Assumptions are central element of TOC. The assumptions should be explicit. Assumptions are often referred to as the necessary conditions for change, or the underlying conditions or resources that need to exist for planned change to occur. Identifying and analyzing assumptions are linked to evidence. This avoids assumptions to be superficial.

*Laing, K. and Todd, L* have mentioned the evidence can be collected by the method:

- Literature review
- Documentary analysis
- Individual interviews
- Group interviews or workshops
- Visual and participatory methods

From the evidences the assumptions could be assessed and categorized into hold true, likely to hold true or will not hold true. Depending on the categories further steps could be taken as

- If evidences shows the assumptions hold true, then this should not be included in the TOC
- If evidence indicates that the assumption is likely to hold true but there is some risk, then it should be included in the ToC and commit to monitoring its status.
- If evidence indicates that the assumption will NOT hold true, part of the program/project should be redesign.

1.8.5 TOC Visualization

The complex issues or situations are easier to understand and to remember when supported by meaningful visualization. The visualization engages people with a visual learning style, complements dialogue and text and stimulates critical thinking.

Drawing, sharing the views of the desired change and how the current situation looks, for example helps to bring out inner thinking and to discover what others think. It helps to surface and overcome differences in perception and to ensure that we are talking about the same issues.

*Isabel Vogel* marks key points for TOC visualization as:

- Visual representations are useful to communicate the conceptual analysis, but should be regarded as only one aspect of the ‘theory of change’, a narrative and on-going review processes are also needed
- Important assumptions are often revealed when the diagram is created through a group process
- The visual representation should stand up to scrutiny so that concepts and meaning can be grasped by others and stimulate discussion
1.9 Post Disaster Need Assessment (PNDA) Report

Gorkha earthquake stimulate to plan for long-term reconstruction of lost assets as well as restore the livelihoods. The preparation of a comprehensive reconstruction plan needs proper assessment of the damage, loss and recovery needs. Government of Nepal has prepared PDNA report. It helps identify recovery needs as well as strategy required for its implementation.

In the assessment, 23 thematic areas were covered and grouped into four broad sectors. (Presented in Table 1) Based on the findings, recovery need were identified and recommended the implementation arrangements with cost estimate.

<table>
<thead>
<tr>
<th>Broad sector</th>
<th>Social sectors</th>
<th>Productive sectors</th>
<th>Infrastructure sectors</th>
<th>Cross cutting sectors</th>
</tr>
</thead>
</table>
| **Thematic area** | • Housing and Human Settlements  
• Health and Population  
• Nutrition  
• Education  
• Cultural heritage  
• Agriculture  
• Irrigation  
• Commerce and industry  
• Tourism  
• Finance sector  
• Electricity  
• Communication  
• Community infrastructure  
• Transport  
• Water, sanitation and hygiene  
• Governance  
• Disaster risk reduction  
• Environment and forestry  
• Employment and livelihoods  
• Social protection  
• Gender equality and social inclusion |

1.9.1 Damage assessment

Due the earthquake more than 8,790 lives lost and injured more 22,300 persons. PDNA report estimated the lives of eight million people, almost one-third of the population of Nepal, have been impacted by the earthquakes.

The destruction was widespread covering residential and government buildings, heritage sites, schools and health posts, rural roads, bridges, water supply systems, agricultural land, trekking routes, hydropower plants and sports facilities.

Hundreds of historical and cultural monuments at least a century old were either destroyed or extensively damaged. Over half a million houses were destroyed. The damage exposed the weaknesses of houses that did not have any seismic-resistant features or were not in accordance with the building codes. The disaster also highlighted aspects of inequities in Nepali society spanning geography, income and gender. Poorer rural areas have been more adversely affected than towns and cities due to their inferior quality of houses. More women
and girls died than men and boys, partly because of gendered roles that disproportionately assign indoor chores to women.

**Figure 3** exhibits the share of disaster effect in four broad sectors.

![Figure 3](image)

**Figure 3. Share of disaster effects across the sectors**

### 1.9.2 Recovery strategy

The objective of the strategy is to develop a dynamic, flexible and responsive programme that will meet all the important priorities of recovery with an unwavering focus on building stronger communities.

The report mentions: The recovery strategy will be guided by a number of principles aimed at improving the quality and impact of recovery, emphasizing equity and inclusion, and promoting risk reduction. These guiding principles are enunciated below:

- Should be a collective effort of joint resources and expertise of the Government of Nepal, the private sector, cooperatives, civil society and development partners, united in the aim to build back better.
- Will implement a uniform policy and not discriminate against anyone.
- Should be implemented effectively in an open, accountable and transparent manner.
- Should create assets and skills for people affected by the disaster.
- Should emphasize gender equity and social inclusion with focus towards the most vulnerable.
- Should follow a people-based approach
- Should include the considerations of disaster risk reduction.
- Should be implemented in a resilience framework
- The recovery programme will primarily utilize local resources and expertise.

The guiding principles will be given a concrete outline through a policy formulated and approved by the Government of Nepal. The policy will emphasize strong government ownership of the recovery programme. The policy will recognize the need for targeted assistance in those areas where people have special needs such as the need for long-term physical rehabilitation due to the earthquake.

1.10 Post Disaster Recovery Framework (PDRF)

Launching a large-scale recovery programme following a major disaster takes a commitment of financial and human resources and a concerted multi-pronged effort to address short-term requirements and achievement of long term goal.

A system to coordinate and finance medium- and long-term recovery has been put in place with the establishment of the National Reconstruction Authority (NRA) and National Reconstruction Fund in late 2015 and with the approval of its governance structure from the GON.

The developed Reconstruction and Rehabilitation Policy 2016 provided the policy instrument for steering reconstruction and rehabilitation.

1.10.1 Preparation of PDRF

The PDNA forms the basis for the PDRF, with strategies, priorities and financial requirements updated as required.

PDRF was prepared to provide a systematic, structured and prioritized framework for implementing recovery and reconstruction. It is a common framework.

The PDRF lays out strategic recovery objectives and summaries in an integrated manner, the policy decisions, institutional arrangements, financing and financial management strategies, as well as implementation and monitoring systems that are being put in place to plan and manage recovery and reconstruction.

1.10.2 Recovery Vision

**Vision:** Establishment of well-planned, resilient settlements and a prosperous society

PDRF has stated the following vision guidelines:

- Central policy will provide the basis for de-centralised implementation of reconstruction.
- The principle of Building Back Better should guide reconstruction, and people should be provided the necessary means and information to re-build safely, but according to their own preferences, while avoiding pre-fabricated housing solutions.
- Non-discrimination and transparency must be maintained in providing assistance to earthquake-affected families. The specialised assistance will be needed for those with special needs.
- Relocation of villages will be avoided or kept to a minimum, while respecting local livelihoods, culture and traditions.
- Public buildings should be reconstructed safely, using local materials and practices, with the help of government, community members and donors.
- Both public and privately-constructed buildings should be accessible to children and people with disabilities.
- For larger infrastructure reconstruction projects, the greatest support possible will be sought from neighboring countries.

In Nepal’s recovery vision, there is a place for political parties, national NGOs, community organizations, professional institutions, social institutions, the international community and international NGOs (INGOs). By aligning their actions with government policy, all partners will help to build the social harmony that is the basis of resilience.

### 1.10.3 Strategic recovery objectives

The policy objectives defined by National Reconstruction and Rehabilitation Policy have been used to define five Strategic Recovery Objectives which translate these policy objectives, as well as sector priorities and outcomes, into a set of concrete, overarching recovery outcomes.

- **Strategic Recovery Objective 1**: Restore and improve disaster resilient housing, government buildings and cultural heritage, in rural areas and cities
  Disaster resilient housing reconstruction is a key priority, whereby the owners will be responsible for and will manage their own reconstruction, make their own choices and mobilize their own resources. Owners will be provided financial assistance in tranches, supported by timely provision of technical assistance, training and facilitation, so that people can rebuild as soon as possible.
  The reconstruction of resilient social and public infrastructure will entail focus on local architecture, local resource mobilization, safe, durable, comfortable and cost-effective buildings.

- **Strategic Recovery Objective 2**: Strengthen the capacity of people and communities to reduce their risk and vulnerability and to enhance social cohesion.
  The priority attention is the promotion, adoption and expansion of social protection where it is absent or where coverage and levels of benefits are low through social assistance, social insurance and work-related measures.
  An approach to Community Based Organizations (CBOs) will be made. This enhances social cohesion to build resilient communities. This process will also facilitate community assistance for the most vulnerable.

- **Strategic Recovery Objective 3**: Restore and improve access to services and improve environmental resilience
This will be achieved by sequencing recovery activities in the basic services sectors. Similarly, all measures will be taken to enhance resilience of ecosystems and vulnerable communities to face future anthropogenic and natural hazards, including climate change impacts.

- **Strategic Recovery Objective 4:** Develop and restore economic opportunities and livelihoods and re-establish productive sectors. With regard to the on-farm economy, efforts will centre on the re-establishment of agricultural livelihoods of vulnerable earthquake-affected smallholder farmers, as well as meeting the most urgent recovery needs of the agriculture, livestock and irrigation sector and of the families reliant on it. Another key consideration will be that all recovery programmes should contribute to the restoration of basic operational systems and structures essential to restart sector growth.

The large owner-driven housing reconstruction programme will also support local livelihoods, businesses and products, thereby strengthening the local economy. In the commerce and industry sector, the aim is to implement a comprehensive response involving the promotion of rights, decent employment, social protection and social dialogue for ensuring representation of the informal sector.

- **Strategic Recovery Objective 5:** Strengthen capacity and effectiveness of the state to respond to the people’s needs and to effectively recover from future disasters. One of the key considerations in strengthening the capacity and effectiveness of the state will be decentralization of decision-making and service provision to the lowest appropriate level, so that local authorities are enabled to address diverse conditions and needs.

### 1.10.4 Policy framework

The Reconstruction and Rehabilitation Policy brings together all the important actors, government, NGOs, international agencies, private sector, communities and volunteers—to plan and implement the earthquake recovery and reconstruction programme.

### 1.10.5 Approaches for Policy implementation

NRA led and coordinates for the policy implementation. The essential aspects of policy implementation are as follows:

- **Owner driven reconstruction:** Cash assistance is being accompanied by government-instituted support mechanisms for technical, material, supervisory, training and social facilitation, by which homeowners will build back better.

- **Relocation of villages:** Only where it is unavoidable will the government relocate villages.

- **Integrated habitat approach:** Housing recovery will be implemented through an integrated habitat approach, leading to improved community and civic infrastructure and better living conditions.
• **Urban reconstruction** to improve cultural or historical settlements.

• **Application** of building codes and disaster risk reduction measures

• **Cash transfers:** Cash transfers to earthquake-affected people will be a central part of the recovery and reconstruction effort. Such transfers are critical for housing and other interventions related to livelihoods and the revival of small businesses.

• **Livelihoods support:** The NRA will work with the private sector, NGOs and international agencies. The livelihood recovery strategy will follow a two-pronged approach—a livelihood restoration package and employment creation.

• **Community outreach:** The programme will promote community-centred recovery through actively involving communities and households in the design and reconstruction of their own homes.

• **Social inclusion:** The NRA will develop solutions that benefit the poorest and ensure that interventions are tailored to meet their needs. Particular efforts will be made to organize community groups to support reconstruction of houses of single women, persons with disabilities, senior citizens, marginalised groups and communities living in remote and inaccessible areas and to help them access recovery assistance from the government and its partners.

• **Capacity building:** The NRA will undertake capacity building efforts to augment its own functioning and to strengthen the capacities of various implementing agencies in the programme.

• **Environmental and social safeguards:** The NRA and implementing agencies will observe these EIA requirements in the course of the programme. The NRA will also develop social safeguards when implementing relocation of villages, ensuring that peoples’ rights are respected and that they have equal access to basic services.

### Results/Findings

TOC describes how and why change happens and what program intends to achieve the goal. PDRF was vital documents for reconstruction and recovery from Gorkha Earthquake. The framework lacks the logical definition on how and why change happens. To fulfill this gap, this research performed the qualitative data analysis from the literatures of TOC, PDNA report and PDRF. The findings from the analysis presented here forth.

#### 1.11 Goal

PDRF states recovery vision as **“Establishment of well planned, resilient settlement and a prosperous society.”**

This is the ultimate goal of Gorkha Earthquake reconstruction. This could be termed as intended impact of reconstruction program.
1.12 Application of Cynefin Framework

Out of five categories of Cynefin Framework, the contexts or situation for Gorkha reconstruction falls under complicated domains. This domain consists of the "known unknowns". The relationship between cause and effect requires analysis or expertise on the issue. The framework recommends "sense–analyze–respond".

PDNA has sensed the damage of the Gorkha Earthquake. Assess the damage in 23 thematic areas and group into four broad sectors: Social sectors, Productive sectors, Infrastructure sectors and Cross cutting issues. The social sector is highly damage effected among the four broad sectors. It accounts 58% as of total damage effects. Within social sectors, housing sector accounts 86%.

This reflects houses built before Gorkha earthquake were weak. Either the weakness is due to lack of any seismic-resistant features in building construction or did not follow building construction codes.

The disaster has also exposed inequities in Nepali society spanning geography, income and gender.

PDNA report estimated the lives of eight million people, almost one-third of the population of Nepal, have been impacted by the earthquakes.

PDNA has estimated damage value of NPR 706 billion which equivalent to US$ 7 billion. It is also estimated an additional 2.5 to 3.5 percent people will push into the poverty. Rural central hills and mountains should contribute 50 to 70% increase in poverty since vulnerability in these areas was high though before earthquake. Also the damage effect on multi sector should lead to a bigger impact on multi-dimensional poverty.

PDNA has estimated the annual economic growth suppressed by 1.5%. But the political consensus in promulgation of new constitution restores the trajectory of higher economic growth. The Strong political will, sustained resource mobilization and continuous dialogue with the affected people, are among the most important prerequisites of a recovery programme.

Further, PDNA recommended the recovery strategy that should base on multi-prong effort. The Government should led, plan, organize and facilitate the recovery programme. The Government should be supported by other stakeholders of Nepalese society and economy — the private sector, NGOs, philanthropic organizations, and international partners, including agencies and INGOs. The recovery will be uniquely Nepali way.

On the basis of PDNA, PDRF was developed. This provided a systematic, structured and prioritized framework for implementing recovery and reconstruction. PDRF enhanced the common understanding on Gorkha earthquake recovery and reconstruction.
1.13 Problem tree analysis

PDNA report was analyzed utilizing the problem tree analysis tool. Figure 4 exhibits the findings of the analysis.

Figure 4. Findings from the application of problem tree tool in PDNA report
1.14 Result Chain

The components of result chain are interpreted from the PDRF. Table 2 presents output, outcome and Impact of Nepal reconstruction program that framed in PDRF.
Table 2. Result Chain interpreted from PDRF

**Impact:** Establishment of well planned, resilient settlement and a prosperous society

<table>
<thead>
<tr>
<th>Intermediate outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1:</strong> Improved disaster resilient housing, Government buildings and cultural heritages in reconstruction</td>
</tr>
<tr>
<td><strong>Outcome 2:</strong> Reduced risk and vulnerabilities and strengthen capacity of people and communities with enhanced social cohesion</td>
</tr>
<tr>
<td><strong>Outcome 3:</strong> Restoration and improved access to services and environmental resilience</td>
</tr>
<tr>
<td><strong>Outcome 4:</strong> Re-established productive sectors and developed economic opportunities and livelihoods</td>
</tr>
<tr>
<td><strong>Outcome 5:</strong> Strengthen effectiveness of state in responding peoples need and recovery from the future disaster</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output 1.1:</strong> Houses got technical and financial support</td>
</tr>
<tr>
<td><strong>Output 2.1:</strong> Social protection program promoted/adopted/expanded</td>
</tr>
<tr>
<td><strong>Output 3.1:</strong> Basic services such as education, health, communication and WASH restored</td>
</tr>
<tr>
<td><strong>Output 4.1:</strong> Economic infrastructures rehabilitated and reconstructed</td>
</tr>
<tr>
<td><strong>Output 5.1:</strong> Local Government received training on recovery and reconstruction policies and standards, common programming approaches, monitoring and reporting mechanisms.</td>
</tr>
<tr>
<td><strong>Output 1.2:</strong> Physical and community infrastructure reconstructed following disaster resilient</td>
</tr>
<tr>
<td><strong>Output 2.2:</strong> Vulnerable groups benefited from cash transfer programs.</td>
</tr>
<tr>
<td><strong>Output 3.2:</strong> Electricity and renewable energy services restored/provided</td>
</tr>
<tr>
<td><strong>Output 4.2:</strong> Labour market information and employment services focused on youth</td>
</tr>
<tr>
<td><strong>Output 5.2:</strong> Departments and community institutions strengthens to plan, manage, monitor and</td>
</tr>
</tbody>
</table>
features

<table>
<thead>
<tr>
<th>Output 1.3: Urban heritage, unsafe neighborhoods and affected market towns are restored</th>
<th>Output 2.3: Risk reduction capacity of education system strengthen/prepared</th>
<th>Output 3.3: Critical ecosystem services restored without crowding out regular natural resource management strategies.</th>
<th>employability enhanced evaluate recovery strategies and actions, address preparedness against future disasters and develop efficient and timely response mechanisms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output 1.4: Reconstruction promoted for local capacity enhancement, architecture and knowledge</td>
<td>Output 2.4: Closing the gender-based and social group development gaps supported</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1.15 Pre-condition and pathways of change

For the defined results, the pre-condition and pathways of change analyzed and interpreted from PDRF. Table 3 presents the findings of pre-condition and pathways of change.

Table 3. The required pre-condition and pathways of change

<table>
<thead>
<tr>
<th>Pre-condition</th>
<th>Impact: National reconstruction and rehabilitation policy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 1</strong></td>
<td><strong>Output 1.1</strong></td>
</tr>
<tr>
<td>- Strengthen the effectiveness of municipalities and other stakeholders to plan and enforce safe and resilient rebuilding and expansion of settlements will be undertaken to ensure sustainability.</td>
<td>Owner driven approach</td>
</tr>
<tr>
<td><strong>Outcome 2</strong></td>
<td><strong>Output 2.1</strong></td>
</tr>
<tr>
<td>Accountability and transparency</td>
<td>Provision of social assistance, social insurance and work-</td>
</tr>
<tr>
<td>Outcome 3</td>
<td>Output 3.1</td>
</tr>
<tr>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td>- A holistic approach</td>
</tr>
<tr>
<td></td>
<td>- Institutional capacity Strengthen.</td>
</tr>
</tbody>
</table>

**Pre-condition**

<table>
<thead>
<tr>
<th>Outcome 4</th>
<th>Output 4.1</th>
<th>Output 4.2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Community driven approach</td>
<td></td>
</tr>
</tbody>
</table>

**Pre-condition**

<table>
<thead>
<tr>
<th>Outcome 5</th>
<th>Output 5.1</th>
<th>Output 5.2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Required trainer developed</td>
<td></td>
</tr>
</tbody>
</table>
1.16 Assumptions and evidences

The Assumptions that should be exist to achieve desired changes, analyzed and interpreted from PDRF presented in Table 4.

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Outcome 1</th>
<th>Output 1.1</th>
<th>Output 1.2</th>
<th>Output 1.3</th>
<th>Output 1.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>- National land use policy in place</td>
<td>- There is a uniform approach to support and implementation for universal coverage.</td>
<td>Consideration taken in sustainability and environmental friendly technologies and techniques. On-site reconstruction will be ensured, except where relocation is necessary.</td>
<td>Engagement of small and medium-sized businesses and cooperatives to increase investment in the revival of historic settlements and market towns</td>
<td>The intangible dimensions of living heritage must continue being practiced.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Outcome 2</th>
<th>Output 2.1</th>
<th>Output 2.2</th>
<th>Output 2.3</th>
<th>Output 2.4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Long term policy measures will be in placed</td>
<td></td>
<td></td>
<td>The meaningful participation of women, vulnerable and marginalized groups</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Outcome 3</th>
<th>Output 3.1</th>
<th>Output 3.2</th>
<th>Output 3.3</th>
</tr>
</thead>
</table>
Realistic and efficient sequencing of recovery will be ensured through alignment with other sectors, clear policy directions and guidelines for non-governmental contributions.

<table>
<thead>
<tr>
<th>Assumptions</th>
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</thead>
<tbody>
<tr>
<td><strong>Outcome 4</strong></td>
</tr>
<tr>
<td>Labour intensive and local technologies will be used.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 5</strong></td>
</tr>
<tr>
<td>The decentralization of decision-making and service provision to the lowest appropriate level.</td>
</tr>
</tbody>
</table>
1.17 Development of TOC

**Figure 5** presents the visualization of TOC. The diagram explains: to achieve the recovery goal for *establishment of well planned, resilient settlement and prosperous society*, five mid term changes on “resilient reconstruction, reduction of risk and vulnerabilities, restoration and improvement on services, reestablishment and development of economic sectors and Effectiveness of local body/community on DRM” should occurred. This should be supported by short term (immediate) changes on “reconstruction of resilient housing and public infrastructures, enhancement of local capacity, preservation of cultural heritages, restoration and improvement of public basic services, promotion of renewable energy, maintenance of ecosystem, rehabilitation of economic infrastructures, labour market enhancement and effectiveness strengthening of local body/community.”

For the effectiveness of theory of change the preconditions that should be fulfilled are:

a) **For mid term change**: Enforcement of plan and action for resilient construction by Local Government and stakeholders, and maintenance of accountability and transparency.

b) **For short term change**: Owner driven approach, maximization of local initiatives, community based organization approach, provision of social safety net, risk assessment and mapping, improvement of service delivery system, holistic approach for basic services and development of human resources.

Likewise, assumptions consider for success of TOC are:

a) **For long term change**: National land use policy will be in place, The decentralization of decision-making and service provision to the lowest appropriate level.

b) **For short term change**:
   - A uniform approach will be adapted.
   - Government will made partnership with private sectors, NGO and INGOs
   - The sustainable and environment friendly technologies and techniques will be considered.
   - The small and medium-sized businesses and cooperatives will engage to increase investment.
   - The intangible dimensions of living heritage must continue and being practiced.
   - Long term policy measures will be in place.
   - The meaningful participation from women, vulnerable and marginalized groups.
   - Realistic and efficient sequencing of recovery will be ensured through alignment with other sectors, clear policy directions and guidelines for non-governmental contributions.
   - Build back better, safer and greener approach will be adopted.
   - Labour intensive and local technologies will be used.
   - Government will work closely with private sectors.
Figure 5. Theory of change diagram
Discussion

PDRF is foundation of Gorkha earthquake reconstruction and recovery. Like every program/project desired the changes from its intervention, Nepal reconstruction desired changes in establishment of human settlement that destroyed by Gorkha Earthquake. The ultimate impactful change envisions is well planned and resilient settlement. The thrust for this change is to be structural, institutional and systemic. Additionally this should be prosperous.

PDRF was perceived and analyzed from TOC thinking. The beauty of theory of change perspective is exhibition of how and why desired changes happen.

The result/findings presented in above sections present contextual domains of Nepal reconstruction which was in “Known unkown” state. The focal problem that reconstruction program should addressed was loss of lives and assets, additional poverty and increment of economic and social vulnerabilities. Some root causes for these focal problem was social inequalities, non-resilient construction practice and others. These have consequences of low economic growth, disastrous damages and others.

As of PDRF, Nepal reconstruction program wants to address the focal problem, understand the root causes and mitigate the effect, and want to achieve desired change as of “Establishment of well planned, resilient settlement and a prosperous society.”

Result chain presented in above Results/findings section demonstrates how the desired change could happened. The result chain presents requirement of 15 outputs and 5 outcomes to achieve the desired change. Further, the pre-conditions and assumptions for outputs, outcomes and impact were inferred from PDRF.

The developed TOC diagrammed for visualization. The visualization of TOC reflects the achievement of desired change was much more emphasized on outputs from resilient reconstruction of private housing and public infrastructures, and on disaster risk reduction measures. Also the visualization presents the associated pre-conditions and assumptions of outputs and long term results.
Conclusions and recommendations

TOC for Nepal reconstruction from Gorkha earthquake has been developed in Deductive model with evidences gathered from the literatures of TOC, PDNA and PDRF. The developed TOC reflect the country level TOC.

The impactful desired change of Nepal reconstruction program is “Establishment of well planned, resilient settlement and a prosperous society.”

From the perspective of Theory of Change thinking this change could take place “If resilient private housing re-built, resilient public infrastructure reconstructed, local capacity enhanced, cultural historic heritages preserved, public basic services restored and improved, renewable energy promoted and eco-system maintained, local economic infrastructure improved and rehabilitated, local labour market enhanced, and effectiveness of local government/community strengthen on disaster risk management Then resilient reconstruction, reduction in risk and vulnerabilities, restoration and improvement of services, reestablishment and development of economic sectors, and effectiveness on DRM of local body community will be resulted Then well planned, resilient settlement will be established with prosperous society.”

For realization of TOC, the associated pre-condition and assumptions should be fulfilled. The success of TOC highly depends on achievement of results in resilient reconstruction and reduction in risk and vulnerabilities.

TOC is a living product. Continuous Monitoring and Evaluation gives life and dynamism to TOC. Further research on TOC of Nepal Gorkha earthquake reconstruction program from NRA is recommended. As reconstruction program is completion phat, the updating the precise TOC would be critical basis for evaluation and learning of Nepal Reconstruction program led by NRA.
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