TRACKING ADAPTATION AND MEASURING DEVELOPMENT (TAMD) FEASIBILITY STUDY AND DEVELOPMENT OF FRAMEWORK FOR NEPAL

Study Inception Report
2013

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### Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>CADP-N</td>
<td>Climate change Adaptation Design and Pilot phase Nepal</td>
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<tr>
<td>CBS</td>
<td>Central Bureau of Statistics</td>
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<td>CCMD</td>
<td>Climate Change Management Division</td>
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<td>CCPCC</td>
<td>Climate Change Programme Coordination Committee</td>
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<td>CRM</td>
<td>Climate Risk Management</td>
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<td>DDC</td>
<td>District Development Committee</td>
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<td>DFID</td>
<td>Department for International Development of UK government</td>
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<td>DHM</td>
<td>Department of Hydrology and Meteorology</td>
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<td>DPMAS</td>
<td>District Planning and Monitoring Analysis System</td>
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<td>DRR</td>
<td>Disaster Risk Reduction</td>
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<td>EFLG</td>
<td>Environment Friendly Local Governance</td>
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<td>FGD</td>
<td>Focus Group Discussion</td>
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<td>IIED</td>
<td>International Institute for Environment and Development</td>
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<td>IDS-Nepal</td>
<td>Integrated Development Society-Nepal</td>
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<tr>
<td>LAPA</td>
<td>Local Adaptation Plan of Action</td>
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<td>LDC</td>
<td>Least Developed Country</td>
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<td>LFP</td>
<td>Livelihoods and Forestry Programme</td>
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<td>LGCDP</td>
<td>Local Governance and Community Development Programme</td>
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<td>MCPM</td>
<td>Minimum Conditions Performance Measurement</td>
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<td>MCCICC</td>
<td>Multi-stakeholder Climate Change Initiative Coordination Committee</td>
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<td>MoAD</td>
<td>Ministry of Agriculture Development</td>
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<td>MoE</td>
<td>Ministry of Energy</td>
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<td>MoFALD</td>
<td>Ministry of Federal Affairs and Local Development</td>
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<td>MoSTE</td>
<td>Ministry of Science, Technology and Environment</td>
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<td>MoSFC</td>
<td>Ministry of Forest and Soil Conservation</td>
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<td>MSFP</td>
<td>Multi Stakeholder Forestry Project</td>
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<td>NAPA</td>
<td>National Adaptation Programme of Action</td>
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<td>NCCSP</td>
<td>National Climate Change Support Programme</td>
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<td>NPC</td>
<td>National Planning Commission</td>
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<td>PAF</td>
<td>Poverty Alleviation Fund</td>
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<td>PEI</td>
<td>Poverty-Environment Initiative</td>
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<td>PPCR</td>
<td>Pilot Program for Climate Resilience</td>
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<td>RWSSFDB</td>
<td>Rural Water Supply and Sanitation Fund Development Board</td>
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<td>SPCR</td>
<td>Strategic Program for Climate Resilience</td>
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<td>TAMD</td>
<td>Tracking Adaptation and Measuring Development</td>
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<td>ToC</td>
<td>Theory of Change</td>
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<td>VDC</td>
<td>Village Development Committee</td>
</tr>
</tbody>
</table>
Table of Contents

INTRODUCTION .................................................................................................................................1
TAMD Framework ..............................................................................................................................2
    Figure 1: Basic representation of the TAMD Framework ...............................................................3
Development of TAMD Framework ..................................................................................................3
    Figure 2: Mapping Outputs, Outcomes, Impacts on TAMD ........................................................4
Theories of change ............................................................................................................................4
    Figure 3: The role of theories of change in attributing outcomes and impacts (Brooks et al. 2013) ..........5
    Figure 4: Hypothetical scenario whereby effects of different interventions can be compared (Brooks et al. 2013) ...........................................................................................................................................6
Contextualising TAMD in Nepal ......................................................................................................6
    Figure 5: National adaptation programme of the GoN .................................................................7
    Figure 6: TAMD Framework for Nepal .........................................................................................8
Methodology ......................................................................................................................................8
    Figure 7: Proposed methodology ...............................................................................................9
Selection of interventions ...............................................................................................................11
    Intervention Selection Criteria ..................................................................................................11
    Selected Interventions .................................................................................................................11
Site selection ....................................................................................................................................12
    Figure 8: Map of Nepal showing NCCSP LAPA, LFP LAPA and CADP-N .................................13
Ways forward ....................................................................................................................................14
Conclusion .......................................................................................................................................15
Reference .........................................................................................................................................16
INTRODUCTION

Maplecroft (2010) has ranked Nepal as the fourth most climate vulnerable country in South Asia with a consistent rise of temperature during the periods of 1971-1994 at an annual rate of 0.06 (MoSTE, 2012). It is leading the Least Developed Countries (LDCs) in an international arena and is also concentrating its efforts to address climate change issues at national level. Nepal has developed National Climate Change Policy which is approved by the Cabinet. It has also prepared the NAPA in 2010 and developed the LAPA framework in 2011, which is currently being implemented.

Nepal has leaped forward in combating Climate Change since 2009 onwards by establishing Climate Change Council in 2009. Nepal has formed MCCICC and established Climate Change Management Division in MoSTE, initiating Climate Resilient planning by NPC including PEI and DRR planning in 3 Year Plan 2010, approved NAPA/LAPA by the Cabinet and submitted NAPA to the UNFCCC, and also submitted Nepal status paper in Rio +20.

Amongst this progress, the Government of Nepal needs to have a way of tracking progress against these national objectives and ensuring development is kept on track despite the stresses of climate change. The Tracking Adaptation and Measuring Development (TAMD) initiative seeks to support this process.

Tracking Adaptation and Measuring Development (TAMD) is an evaluative framework for assessing the effectiveness of adaptation and adaptation-relevant interventions. Existing frameworks often focus on efficiency - ratios of outputs to inputs rather than outcomes, spending over results (IEG, 2013). TAMD seeks to address outcomes and longer term impacts. One of the challenges in evaluating the success of adaptation interventions is to attribute observed (and intended) development and adaptation outcomes to specific Climate Risk Management (CRM) interventions. TAMD can be used to address this using a quasi-experimental approach by estimating development and well-being indicators on populations before, during and after interventions, and/or with and without interventions.
In this context, tracking adaptation to climate change and measuring development to evaluate the effectiveness of the interventions in the country is of great interest for both the Government of Nepal and development partners. The International Institute for Environment and Development (IIED) with financial support from DFID - UK has completed a scoping study in September 2012 - March 2013. As a follow up to the previous study, the TAMD feasibility study has now been started by IIED - UK and Integrated Development Society (IDS) - Nepal as a small study project (April 2013 - March 2014) to develop an evidence based TAMD framework for Nepal.

Realizing the importance of a TAMD tool to adopt in the Nepalese context, the Government of Nepal, Ministry of Science, Technology and Environment (MoSTE) has formed a ten member TAMD Coordination Committee (TCC) headed by the Joint Secretary of Climate Change Management Division/MoSTE. Under the advice and guidance from the TCC, the study team will develop tools and conduct feasibility study in selected districts (i.e. Rukum and Nawalparasi) to see the linkages between the set of selected interventions (i.e. LFP, CADP-N/NCCSP and LGCDP) and identifying changes in vulnerability of the appropriate sites - VDCs/communities. Based on the study, evidence based TAMD framework will be developed for Nepal.

**TAMD Framework**

The TAMD framework offers a 'twin track' framework illustrating climate risk management on Track 1, the development performance on Track 2 for use in a variety of contexts and at different scales to assess and highlight linkages and the effectiveness of interventions. It is a cutting edge initiative to help build national evaluative frameworks for climate adaptation that aims to focus on efficacy (IIED, 2013). It is based on the theory of change that, (i) improved climate risk management decisions will lead to better development outcomes; and (ii) M&E of climate risk management and climate vulnerability proxies in beneficiary population will enable them for improved decision making (Brooks *et al.*, 2013). Hence, it will help to achieve effective planning and implementation of climate interventions and documentation of evidence.

M&E frameworks demonstrate the adaptation project impact on household or community vulnerability including their ability to cope with the adverse consequences of climate change. TAMD seeks to support governments to track these changes using indicators based on local realities and data systems.
It seeks to facilitate learning around climate change adaptation, develop methodologies for measuring vulnerability changes effectively and attempt to develop linkages between interventions and into the national system.

**Figure 1: Basic representation of the TAMD Framework**

![TAMD Framework Diagram](image)

**Development of TAMD Framework**

The hypothesis of TAMD is that improved climate risk management decisions will lead to better (less damaged) development outcomes and that the monitoring and evaluation of climate risk management and climate vulnerability proxies in beneficiary population enables improved decision making. Wherever outputs, outcomes and impacts are located on the TAMD framework, attributing outcomes to outputs, and impacts to outcomes, is crucial in order to demonstrate that adaptation and development interventions have achieved the intended results (or not). It is particularly important that interventions aimed at enhancing CRM in Track 1 are based on sound evidence that will have a high probability of achieving the desired adaptation and development results in Track 2.

Figure 4 shows an example of how an intervention could be mapped onto the framework. This example is of a local level climate risk management intervention.
Development of indicators for TAMD feasibility study will be based on:

- Use of indicators on extent and quality of CRM
- Assessing how, and how well the CRM benefits the climate vulnerable
- Use of standard development indicators to see if development is “on track”
- Indicators to show changes in vulnerability, resilience and adaptive capacity

**Theories of Change**

The Theories of Change (ToC) is playing an increasingly important role in programming adaptation and development interventions. ToCs have a role to play in attribution of interventions to outcomes and impacts, provided they are empirically robust, and are based on sound, transparent evidence. While many To Care “global” in nature, they may be developed or adapted for use in programming at national and sub-national levels, through the analysis of contextually relevant data at the relevant scales. Such empirically grounded ToC can identify potential causal mechanisms linking outputs, outcomes and impacts.

Hence, it is important to establish the "Theories of Changes (ToC)" in programming and for evaluating an adaptation and development intervention (see Figure 1). It helps to map the sequence of a
development intervention from inputs to outcomes by examining assumptions (i.e. links between inputs, output, outcomes and impacts), reflection and dialogues among stakeholders. It helps to identify indicators for evaluation and provide lessons for improvement.

- Evidence from empirical studies
- ToC based on empirical studies
- Evaluation process (i.e. within TAMD)

**Figure 3: The role of theories of change in attributing outcomes and impacts** (for detail please refer to: Brooks et al. 2013)

The Quasi-Experimental Model:

The application of the TAMD framework in a quasi-experimental model will allow comparison across populations with the same climate vulnerability characteristics and a similar range of adaptive capacity both within and outside the adaptation areas, thus allowing intervention effectiveness to be assessed (Brooks et al., 2013). Where populations that have the same climate vulnerability characteristics and a similar range of adaptive capacity located both within and outside of the adaptation (or adaptation-related development intervention) sphere of influence can be identified, linkages can be established that allow the effects of the interventions on the national development goals to be assessed. Levels of indicators in Track 2 can be generated for populations that are targeted by the interventions and those populations that are not targeted. By comparison of the indicator levels over time, assessments of intervention effects can be generated. This is equivalent to, with and without treatment effects in experimental methods.
Figure 4: Hypothetical scenario whereby effects of different interventions can be compared (Brooks et al. 2013)

Contextualising TAMD in Nepal

The TAMD Feasibility Study is a research-based project that builds on the previous study conducted by IIED - "Nepal TAMD Appraisal and Design Phase Report" (March 2013). This study analysed climate change adaptation and other closely related interventions that the TAMD tool could be tested upon. The report suggested that the TAMD framework could be a useful addition to the M&E of adaptation interventions in Nepal. It further suggested that the framework should focus on large development partner initiatives by comparing and linking outcomes from interventions in different geographical areas, using baseline and common indicators defined in the existing frameworks and government data system (IIED, 2013).

The objective of TAMD feasibility study is to develop a framework and methodology for linking the contributions of multiple interventions on adaptation and development in Nepal so that progress can be easily tracked and effectiveness and development outcomes can be measured. It will help to understand the contributions and linkages of a set of interventions to the adaptation priorities as defined in the NAPA and Climate Change Policy, 2011 and enable these to be tracked.

The framework takes as its starting point the emphasis on community based decentralised planning in Nepal and the NAPA Priority-1 i.e. ‘Promoting Community based adaptation through integrated
management of agriculture, water, forest & biodiversity sector. Many climate change and development interventions work within this model and many more will do so in the coming years. This framework seeks to track how these different efforts contribute to community/ward/VDC resilience.

The Government of Nepal has a wide-ranging climate change adaptation programme consisting of government programmes and development partner supported interventions that contribute to an overarching set of national goals outlined in the NAPA. This is illustrated in Figure 5. TAMD in Nepal seeks to provide a way of tracking and linking their contributions to national objectives.

**Figure 5: National adaptation programme of the GoN**

![National adaptation programme of the GoN](image)

The main purpose of the TAMD feasibility study is to look at the effectiveness of different interventions on adaptation and development by going beyond the reported outputs and assessing how they have affected households/community resilience. It is to understand the contributions and linkages of a set of interventions to climate resilience and climate risk management in Nepal. Figure 6 shows how the framework will be applied in Nepal with a focus on District and VDC vulnerability and progress within the context of national M&E and reporting frameworks such as the NPC, MoSTE, MoFALD and MoFSC.
Figure 6: TAMD Framework for Nepal

Methodology

The study will aim to sample 6 VDCs (and communities within them matched for climate risk, vulnerability and poverty) to look at three adaptation/development interventions and their different approaches to local development planning and the links between this and climate resilience. The study will sample 2 VDCs for each hazard using standard sampling technique, so there will be 2 VDCs with a high vulnerability to flood, 2 VDCs with a high vulnerability to drought and 2 VDCs for landslides. The study will develop both contextual indicators specific to the interventions outputs and hazards faced, and a method for converting this contextual information into unit less scores for linkages and aggregation. The study will also track a set of development indicators and changes in climate hazards.
To give a historical perspective, the study will reconstruct a baseline from primary and secondary sources across Track 1/Track 2 (T1/T2) indicators. This historical picture will allow an assessment of climate risk in development interventions that may lack climate-specific indicators and create a “before” data point for the TAMD analysis. While collecting data in the matched communities that have experienced the implementation of an intervention, local theories of change related to selected interventions for attribution/contribution will be explored. The key added value of this approach is that it will go beyond output (and some partially outcome based) approaches to understand changes in vulnerability in the target communities through a set of proxies. It will also add the element of linkage between interventions through a matching methodology and unit less scores, and will test the
contextualizing baselines to add climate risk to development interventions. It will align with national systems of data collection and M&E at appropriate levels, and use these as a starting point, considering the possibility and feasibility within the current systems.

The study will also contextualise the institutional (T1) indicators for VDCs and DDCs and consult widely on these.

**Proposed research steps:**

i. Attempt to create a development and climate risk baseline (T2) across the selected intervention areas;

ii. Assess the possibility of an institutional (T1) baseline through project baselines, Minimum Condition/Performance Measurement (MCPM) data etc.

iii. Choose selected intervention locations that were selected for either the piloting or the main phase of project intervention;

iv. Match communities or settlements for climate risk, socio-economic data, etc. within intervention locations;

v. Design and conduct HH survey/participatory well-being ranking (PWR)/Theory of Change (ToC) assessments at community level in different intervention locations both using the baseline components, T1 indicators and supplementary, intervention-specific T2 indicators. Convert this data to unit-less scores;

vi. Analyse the attribution component, utility of T1/T2 approach, validity of matching;

vii. Analyse components that might dissolve into a national system (LAPA, local development, DPMAS).

Climate change interventions such as the PPCR and the NCCSP have an aim to increase the number of resilient households in Nepal but each use different ways to measure this (IIED, 2013). The contextual indicators developed in this methodology will contribute to how the number of resilient households or households that are less vulnerable can be robustly calculated and then tracked at VDC level. Other interventions also lead to better decentralised planning and may also contribute to the overall objective of resilience.
The TAMD framework developed in Nepal could contribute to: supporting the tracking of adaptation through core indicators by MoSTE including provision of evidence on standardising household changes in resilience between interventions and further research on key indicators that are in use at national and intervention level; it could also support inclusion of climate resilience in MCPM/EFLG indicators.

**Selection of interventions**

Different interventions have been re-examined and information availability of particular interventions was assessed to analyse the possibility and suitability for the TAMD feasibility assessment and review of relevant documents and project objectives were carried out. Further review of the status and scale of baseline data was carried out – such as whether it was collected or not, baseline survey reports, evaluation report, M&E framework/tools and indicators to select interventions. During scoping, CADP-N/NCCSP start-up-phase, Hariyo Ban programme, LFP, MSFP, LGCDP, PAF, RWSSFDB and PPCR were explored as possible interventions.

**Intervention Selection Criteria**

For the TAMD feasibility study purpose, short-listing of interventions is done based on the following criteria, in order of priority:

i. Objective of intervention,

ii. Status of implementation,

iii. Scale of intervention,

iv. Wider significance of the intervention in the future,

v. Availability of baseline data /tools indicators/report,

vi. Availability of M&E framework/system – tools/indicators,

vii. Location of intervention - climate vulnerability,

**Selected Interventions**

Based on the assessment of interventions, LFP, CADP-N/NCCSP start-up-phase and LGCDP are recommended as the most relevant intervention for TAMD feasibility study since they meet the criteria set and are selected for the study.
These three selected interventions also have continued implementation or planned to be implemented as a successor/next phase intervention for current/future adaptation/development interventions in Nepal such as the MSFP, the NCCSP and LGCDP II respectively. Indicators of other major programmes such as the SPCR and those chosen by MoSTE to track the Climate Change Programme (CCP) will also be incorporated to better understand their use in tracking adaptation and measuring development.

The following interventions are selected for the TAMD feasibility study, as per above criteria.

i. **CADP-N/NCCSP** - piloting to develop LAPA framework and NCCSP is a current intervention implementing LAPAs as a next-phase.

ii. **LFP** - a historical project targeting the improvement of sustainability of forestry and natural resources and lessons drawn to develop MSFP as a successor intervention which is currently being implemented.

iii. **LGCDP** - Programme of MoFALD mainly focused on improving the local governance and promotes inclusive development, first phase completed and the second phase i.e. LGCDP II is in implementation.

**Site selection**
Selected interventions are tackling both development and climate vulnerability. The populations most in need of development interventions also happen to be the most climate vulnerable, and are mostly concentrated in the Far Western and Mid-Western regions of Nepal. Followed by selected intervention, climate vulnerability (flood, drought or landslide risk index) and secondary data availability are considered as an important aspect of district selection. For the TAMD feasibility study site selection, the following criteria are used:

i. Presence of intervention(s);

ii. Multiple interventions in the same district;

iii. Climate vulnerability index- flood, drought or landslide risk index from the NAPA - at least moderate or high as defined by the NAPA;

iv. Secondary data availability – baseline data, disaster data etc.

v. Ecological zone – aim to provide meaningful conclusions that can be extrapolated to national scale, thus multiple zones need to be covered
Considering the criterions (mentioned above), the following shortlist of 15 districts with the interventions are mapped in figure 8.

**Figure 8: Map of Nepal showing LFP, CADP-N and NCCSP LAPA**

![Map of Nepal showing LFP, CADP-N and NCCSP LAPA](image)

Based on the above, Rukum and Nawalparasi districts are selected for the TAMD feasibility study from TAMD Coordination Committee. These two districts cover three of the main climate risks of Nepal (flood, drought and landslide) and are identified as vulnerable in the NAPA. They also are sites of multiple interventions.

i. **Rukum** - Hilly district of the Mid-Western Development Region; has very high landslides and drought vulnerability according to the NAPA; vulnerability ranking with CADP-N LAPA piloted; NCCSP LAPA; LFP and presence of LGCDP interventions.
ii. Nawalparasi - Terai district of the Western Development Region; high vulnerability of flood and low drought vulnerability according to the NAPA; vulnerability ranking with piloted LFP, CADP-N LAPA and presence of LGCDP interventions.

**Ways forward**

After this study, a framework and simple indicators will be proposed to assess the progress and effectiveness of interventions to address the national climate change objectives. It will also help to understand how and where these are relevant to national systems of data collection and reporting, as well as what elements would be more relevant to be included in evaluations that may be commissioned periodically or undertaken by those implementing the interventions.

As a way forward, approval of intervention and district selection from the Coordination Committee/MoSTE is visualized. Data sets and M&E systems will be analysed and the survey tools prepared before pre-testing will be completed. Climate vulnerable VDCs will be selected in consultation with the interventions, the DDC and the VDC and lastly, the TAMD feasibility study will be conducted at the field level using the following steps.

- In depth analysis of the secondary and baseline data of the selected intervention(s) and analyse data gaps,
- Establish theory of change (ToC) for each selected interventions and develop TAMD indicators for feasibility study,
- Develop survey indicators/ tools based on TAMD indicators,
- VDC/location selection in consultation with selected interventions, DDC and field verification;
- Pre-test the tool,
- Conduct TAMD feasibility study,
- Analyse data, develop TAMD framework for Nepal and produce report,
- National level workshop,
- Final report
Conclusion

The main objective of the TAMD feasibility study is to develop a framework to understand the contributions and linkages of a set of interventions to track adaptation effectiveness and measure development outcomes in Nepal. For this purpose, the TAMD framework should fit within existing data and M&E systems. The set of interventions and districts are selected for TAMD feasibility study based on the criterion and the data availability of Rukum and Nawalparasi districts, particularly of the selected interventions (i.e. LFP, CADP-N/NCCSP and LGCDP) and data gaps will be addressed through contextual data and proxies. Furthermore, VDCs within these districts will be selected based on intervention, data availability, vulnerability of areas and community in consultation with the respective DDCs and VDCs stakeholders. Focus Group Discussion (FGD) or household survey will be carried out to generate required data. The result obtained from VDC and DDC level will be aggregated into national level. The TAMD framework will then be developed for Nepal and shared among the key stakeholders. A national level workshop will be organized to discuss and enrich the framework. Finally, a report will be produced with TAMD framework for submission to the MoSTE.
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