

NAPA Way Forward: Climate Change Adaptation Project Prioritization in Nepal¹

1. Background

Climate change can be seen as a multi-dimensional topic that interacts in various ways with other significant environmental issues such as stratospheric ozone depletion, desertification and land degradation, freshwater decline, and loss of biodiversity. All of these topics both impact human livelihoods directly and create reinforcing loops that increase the magnitude of socio-cultural impacts associated with environmental destabilization.

In spite of the recognized multi-dimensional nature of global climate change, climate adaptation programmes often focus exclusively on awareness programmes, energy efficiency and reducing greenhouse gas emissions. By ignoring the interplay between climate change and other environmental, social, cultural and economic concerns, these policies and plans address only a small fraction of the problem and are therefore ineffective, eroding public support for climate adaptation plans by increasing the perception that global climate change cannot be addressed using targeted measures.

National Adaptation Programme of Action (NAPA) to Climate Change project in Nepal proposes a more comprehensive approach to climate change adaptation at the local and national level by incorporating a key set of environmental indicators into the national adaptation Program's surveillance activities. NAPA's goal is to use the indicators on two scales:

- I. As the basis for projections of how climate variability would impact if no steps were taken to adapt the effects of climate change and
- II. As an indication of the overall improvement to local and national adaptation issues associated with the programmes proposed by the NAPA

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The power of the project is its compilation of already existing data- environmental hazard and risk data, local vulnerability information, climatic data, and national meteorological data-into a central location. By combining data sets that traditionally are not viewed together, NAPA in Nepal is piloting a new approach to climate change adaptation, expanding a topic that is often viewed as one-dimensional into a multi-dimensional and multi-scale problem with implications far beyond just addressing climatic hazards.

The project's success hinges on a partnership among the widespread stakeholders, their interests and experiences and Global Climate Change program that reflects in Nepal's national Climate Change Policy.

Several international agencies, not for profit organizations, and government agencies have begun to lay a framework for how an evidence-based, multi-dimensional response to climate change would be crafted and Nepal's NAPA is also one of the efforts to respond those concerns.

2. NAPA in General

According to Decision 28/CP.7 of the UNFCCC, NAPAs would serve as simplified and direct channels of communication for information relating to the urgent and immediate adaptation needs of the least developed countries. The hope was that formal NAPA documents would describe climate change adaptation strategies that would be:

- Easy to understand
- Action-oriented and country-driven
- Set clear priorities for urgent and immediate adaptation activities identified by the countries

Within this broad mandate, countries were given liberty to define specific criteria for selecting priority adaptation activities with several general categories, including:

- Level of degree of adverse effects of climate change
- Poverty reduction to enhance adaptive capacity
- Synergy with other multilateral environmental agreements: and cost-effectiveness

This last general criterion was important as there was an expectation in Marrakech, if not a commitment, that large

greenhouse gas emitting developed countries would financially assist the least developed countries to implement priority adaptation activities. Broad guidance was also given in Decision 28/CP.7 on the areas in which the ultimate selection criteria would be applied in order to identify priority adaptation activities. These included:

- Loss of life and livelihood
- Human health
- Food security and agriculture
- Water availability, quality, and accessibility
- Essential infrastructure
- Cultural heritage
- Biological diversity
- Land-use management and forestry
- Other environmental amenities

Decision 28/CP.7 also contained some broad procedural guidance that eventually led to the development of what became an eight step process towards the development of a NAPA. The steps are:

- Assemble a NAPA implementation team
- Define goals
- Synthesize available vulnerability assessments
- Conduct a participatory rapid integrated assessment
- Conduct public consultations
- Define selection criteria
- Rank potential adaptation activities
- Develop and submit NAPA project papers of selected adaptation activities

Within the sideboards provided by these steps, it is worthy to view how each country actually implemented its NAPA process.

Through NAPAs, a participatory process established by the UNFCCC, LDCs develop a list of adaptation activities including, *inter alia*, projects, capacity building, and policies that address the present and urgent adaptation needs of their most vulnerable areas. With a focus on enhancing adaptive capacity, NAPA provides a process for LDCs to identify priority activities that respond to their current vulnerability to climate variability, rather than focusing on assessments of future vulnerability. The NAPA process is country-driven and country-specific and, therefore, can be the basis for the development of national adaptation strategies.

3. Formulating a NAPA

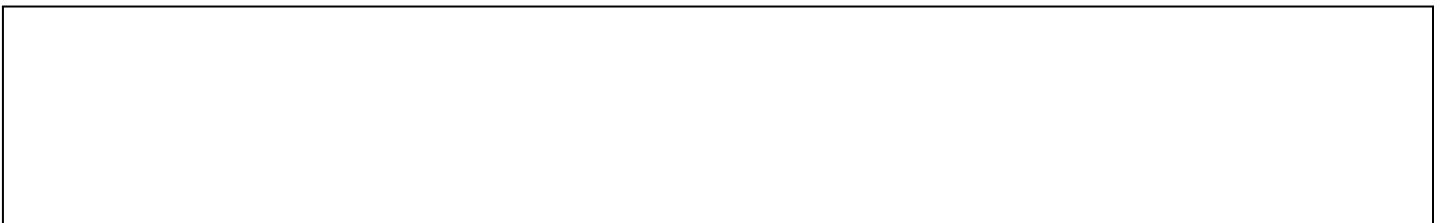
The NAPA guidelines list the following elements in the preparation of a NAPA:

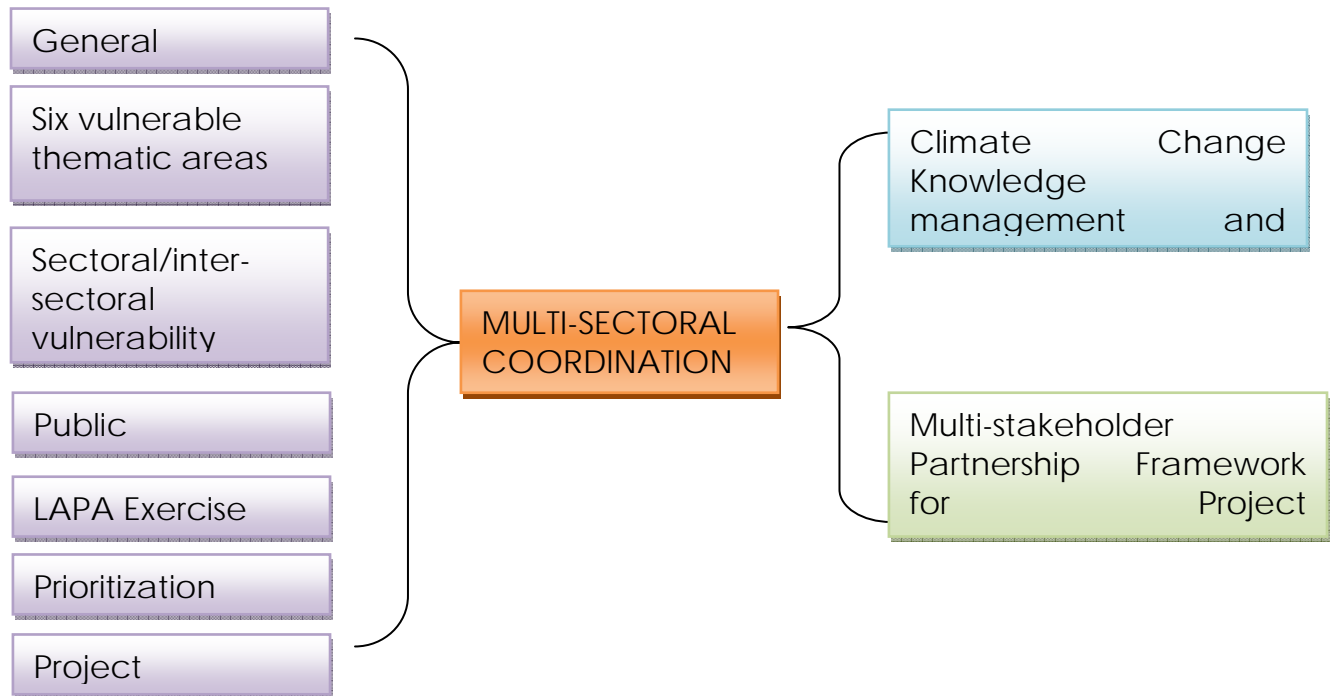
- A participatory process involving stakeholders, particularly local communities;
- A multidisciplinary approach;
- A complementary approach, building on existing plans and programs, including national action plans under the United Nations Convention to Combat Desertification, national biodiversity strategies, and action plans under the Convention on Biological Diversity, and national sectoral policies;
- Sustainable development;
- Gender equality;
- A country-driven approach;
- Sound environmental management;
- Cost effectiveness;
- Simplicity; and
- Flexibility of procedures based on individual country circumstances.

The guidelines are not prescriptive and some countries have addressed more elements than those recommended by the NAPA process.

4. NAPA Implementation Process in Nepal

Soon after the Marrakech COP, being an LDC, to benefit from financial support provided by the Global Environment Facility (GEF), to assist in the development of its NAPA. The stated goal of this investment is to assist Nepal in identifying urgent adaptation needs and priorities in the face of its vulnerabilities to climate change. But due to some unavoidable circumstances the kick off of the project delayed for the significant time. However the Project floored with some extended activities that Nepal's NAPA became able to receive extra financial support from UNDP Nepal, DFID and DANIDA with some extended goals and objectives. Under this multi-donor support, NAPA activities in Nepal have been organized for three major objective frameworks namely i) preparation of NAPA, ii) Establishment of climate change knowledge management and learning centre and iii) development of multi-stakeholder partnership framework, tentatively as per following model and phases:





Within these phases, the NAPA team has been dedicated to following steps, which echo those presented above:

- Establish a NAPA team
- Synthesize impact studies, adaptation strategies, past consultations, and the projections of development frameworks already in place
- Formulation of six thematic working groups (forest and biodiversity, agriculture and food security, urban settlement and infrastructure, energy and water resources, public health and climate induced disaster) including key stakeholders from government agency, I/NGOs and academia)
- Implement a rapid participatory evaluation of actual vulnerabilities and the risk of increasing exposure associated with climate change through consultations, literature review, spot analysis and transect appraisal
- Consult with the public to identify potential adaptation activities
- Articulate potential NAPA activities in light of the consultations and vulnerability assessment. Begin the process of selecting prioritization criteria
- Collect long list of adaptation programmes from all kind of studies and activities

- Rank activities and collate their integration within national frameworks and strategic programs
- Prepare knowledge management platform and establish learning centres
- Develop multistakeholder partnership framework
- Prepare project documents for selected activities and submit NAPA

In order to complete project prioritization and ranking, the NAPA team overlaid the administrative and ecological regions of Nepal with a map of the eco-geographic regions of the country to develop a general framework for geography and eco-zone targeting priority adaptation activities that would emerge from the NAPA process. Equipped with the results of the scoping studies on all Six thematic areas and the framework for geographically targeting adaptation activities, several public and stakeholders' consultation events will be organized.

The consultation workshops have been serving to bring together representatives of stakeholders to review the progress and process and suggested set of adaptation activities provided by the consultations and to develop a set of priorities. Multi-criteria analysis is now to select as an appropriate method for ranking the adaptation activities.

In the public and stakeholders consultations (preferably in the wider reference groups) the following steps will be followed to implement the multi-criteria analysis:

- Determine appropriate ranking criteria
- Set the numeric importance, or weight, associated with each ranking criteria
- Score each of the potential adaptation activities suggested by the consultations against these criteria according to their expected levels of performance
- Sort the potential adaptation activities in order to define local and national priorities

By implementing this procedure, the NAPA team will become able to arrive at a series of priority adaptation activities for each of the thematic areas in each of the target zones. From this list of priority adaptation activities, project papers describing the implementation steps and costs of a considerable number of

options will be developed and submitted to the UNFCCC as the NAPA priority activities in Nepal.

5. The Challenge: Need for Project Prioritization

Some level of climate change is inevitable irrespective of current and future emission reduction strategies. This is reflected by the Intergovernmental Panel on Climate Change (IPCC) in its Fourth Assessment Report (2007a) that adaptation is now a necessary strategy to complement emission mitigation efforts, and vulnerability to the hazards associated with current and future climate variability can be reduced through specific policies and programs, participatory planning, and community approaches.

The National Adaptation Programmes of Action (NAPAs) under the United Nations Framework Convention on Climate Change (UNFCCC) aims to assist least developed country (LDC) governments to identify and prioritize adaptation activities. The NAPA process is relevant because it proposes a tool to assess and rank adaptation options.

Adaptation in the context of climate change consists of actions people take in response to, or in anticipation of, projected or actual changes in climate with the objective of moderating harm or exploiting beneficial opportunities (Tompkins and Adger, 2003). Climate projections now enable us to adapt in anticipation of future change as opposed to only reacting to current conditions and planning based on historical climatic trends and risks. In fact, using statistical probabilities based on past climatic events can no longer necessarily be considered a reliable approach to gauging future risks.

The understanding of adaptation to climate change has evolved significantly in recent years from being conceived as a top-down process to one that also builds from the bottom up. Top-down approaches rely heavily on the analysis of future climate scenarios and projected impacts on various ecosystems and sectors, and have tended to recommend technological fixes to climate change risks (Tompkins and Adger, 2003; Klein et al., 2007). This approach has been increasingly challenged, mainly on the basis that, while it is useful in providing information regarding general trends, it is limited in its ability to provide useful information about projected regional or local impacts (in Adger et al., 2003; Dessai et al., 2003; Smith et al., 2003). The idea that a bottom-up,

vulnerability-driven approach should complement top-down analyses has emerged in recent years in an attempt to anchor adaptation planning at the local level, where the impacts of climate change are actually felt.

In this context, vulnerability is understood to be a function of *exposure* to climate change impacts and the *adaptive capacity* of a system (Smit et al., 2000; IPCC, 2001), that is, the ability to adjust to climate change, to moderate potential damage, to take advantage of opportunities, or to cope with the consequences. This, in turn, is a function of access to and application of economic resources, technology, information, skills, and infrastructure, as well as the strength of institutions and the equitable distribution and availability of resources (Smit et al., 2000). Hence, whereas the top down approach emphasizes climate scenario modelling, impact prediction, and technological solutions, the bottom-up, vulnerability approach stresses the need to address the underlying, non-climatic factors, be they economic, demographic, political, or environmental, which limit adaptive capacity and thereby increase vulnerability to change (Orindi and Eriksen, 2005).

6. Adaptation Planning

The process of assessing and prioritizing climate change risks for adaptation planning is inhibited to a large degree by the inherent complexity, long-time scales, and uncertainty of climate change impacts. Moreover, despite increased attention to climate change risks and potential adaptation options, there is little understanding of an option's feasibility, costs, effectiveness, and likely extent of actual implementation (IPCC, 2007a). Key barriers to integration include (IPCC, 2007a):

- Access to knowledge, data, and decision support tools
- Specific regulations or legislation that may limit adaptation options
- Policy makers and politicians (who are generally not scientists) struggling to understand sometimes complex scientific climate models
- Uncertainty about the prospects and feasibility of possible technological adaptations
- Financial barriers to implementing adaptation measures
- Difficulties in applying traditional risk management tools to climate change

- Social and cultural barriers (e.g., different risk tolerances and response preferences)
- The need for new decision-making tools to become common place (scenarios, adaptive management, community engagement, collaborative approaches, etc.)
- The range of time frames under consideration from the immediate to the long term and
- The inconsistency of time frames with decision-making processes

The emphasis on the context specificity of adaptation is not to say that any stakeholders have fewer roles. On the contrary, given the unique challenges of climate change, government policy and planning is critical to the formulation of an effective national adaptation response.

The NAPA Project priority framework tool assists stakeholders in the prioritization process by identifying and prioritizing climate risks in the face of uncertainty. Risks are identified and categorized (e.g., financial, technological, economic, structural), and then designated (and maybe ranked) as high or low priorities according to the following criteria to determine where an adaptation response may be required:

- High probability risks and risks that pose a significant threat (high impact);
- Risks that are already perceived;
- Risks that will increase most rapidly;
- Risks to areas that are very sensitive to climate changes;
- “Early mover” business opportunities; and
- Organizations/sectors/regions for which it will take time to implement an adaptation response

Once the highest priority risks are identified and the vulnerability to these risks established, the NAPA leads stakeholders through a process of vulnerability assessment in relation to climate sensitivity to determine how crucial the necessity of the project is and how it is feasible. In doing so, the NAPA provides a guidance tool to assess current vulnerability and identify critical thresholds which, if exceeded, will result in unacceptable consequences.

7. Objectives of project prioritization

The key objective of project prioritization is to optimize the utilization of limited resources (human, material or financial). Given this objective, it is important to know the relative importance of a set of projects so that resources can be allocated appropriately. As most organizations have more project requests at any given time than resources to work on all of them, project priorities also provide one method of deciding which project should be pipelined, and which to defer. Finally, once projects are actively executing, project priorities provide a means to resolve resource contention issues when a project requires additional or replacement resources.

8. Prioritization Process for Adaptation Actions

The identification of priority adaptation activities is the main goal of the Nepal's NAPA. The NAPA document itself is not intended to be an end, but rather a means for the dissemination of an LDC's proposed program of action to address its urgent needs for adaptation ([UNFCCC, 2002](#)). The NAPA serves as a simplified and direct means of communication with a country's stakeholders, policy makers, and population, and with potential funding organizations.

Although the NAPA guidelines do not include a formal process for ranking the relative importance of risks, most NAPAs contain a sensitivity analysis carried out by the NAPA team, which flags those activities that are particularly sensitive to climate change depending on location, current and projected climate, and the type of adaptation response proposed. The methods used for vulnerability assessments range from stakeholder consultation (through surveys, interviews, questionnaires) and participatory appraisals to modelling of resource allocations under different scenarios. These activities are subsequently deemed to be the most urgent priorities for adaptation action.

The participatory process underlying the preparation of NAPA involves the collaboration of local, regional, and national stakeholders of vulnerable sectors. As recommended by the NAPA guidelines, particular attention should be given to local communities that are the most affected by climate variability. In prioritizing adaptation measures to be adopted by a specific country, NAPAs make the following assumptions ([UNFCCC, 2002](#)).

Numerous criteria and indicators must be considered in any adaptation response. However climate change costs and their

valuation in monetary terms are not always possible. There is often insufficient data to conduct a cost-benefit analysis (CBA) or cost-effectiveness analysis (CEA). Therefore in a proposed project, the view of local people must be considered and the most appropriate adaptation response is likely that which is understandable and accessible to the greatest number of participants in decision making.

Taking this rationale into account, the UN advocates the multi-criteria analysis (MCA) as the preferred method for LDCs to prioritize and select adaptation policies and measures. This type of analysis is becoming increasingly popular in formulating adaptation strategies as it is considered to be more useful than traditional vulnerability management tools for structuring problems and decisions (Willows and Connell, 2003). The difficulty in using traditional risk management tools in dealing with the challenges of climate change lies in the fact that the level and types of risk uncertainty tend to be very different compared to more typical and better understood vulnerability. Tools and techniques that can help to analyze both the risk and the uncertainty that climate change poses may prove more useful. Once a vulnerability and hazards assessment has been carried out, NAPA will use the MCA to help rank preferences for adaptation activities and projects, as it is a particularly useful tool when many criteria are relevant to the decision-making process, and the valuation of costs and benefits is difficult due to inherent uncertainty and, therefore, some degree of subjective judgment is required.

The MCA Process

Through the MCA process, the various adaptation options are scored against selected criteria. The scores can either be quantitative (corresponding to an estimate and expressed in monetary unit, rate, coefficient, etc.) or qualitative (based on the judgment of the NAPA team, the multidisciplinary team, or various stakeholders and expressed in a variety of scoring scales). In the submitted NAPAs, scoring has been established by discussion and consensus, by expert consultation or by a combination of both. The scores are then standardized and weighted to allow the options to be compared by expressing the value of each score in the same measuring unit on a common scale, and to allow the scores to be ranked by taking into account the relative weight of each criterion. Participatory methods

The guidelines for the preparation of NAPA suggest a set of criteria for selecting priority adaptation activities and projects, and a list of sectors and ecosystems to be examined (Conference of the Parties, 2002). A set of locally driven criteria are used to select priority adaptation activities. These criteria should include:

- The level or degree of adverse effects of climate change
 - Poverty reduction to enhance adaptive capacity
 - Synergy with other multilateral environmental agreements
- and
- Cost effectiveness.

These criteria for prioritization are then applied to:

- The loss of life and livelihood
- Human health
- Food security and agriculture
- Water availability, quality, and accessibility
- Essential infrastructure
- Cultural heritage
- Biological diversity
- Land-use management and forestry
- Other environmental amenities

It has already been clear that an in-depth understanding of the possible effects of climate change is critically important to the development of a comprehensive adaptation strategy. Yet projections of future climate changes still occupy a relatively broad range of possible climate outcomes, and the associated socio-economic impacts remain unclear. Moreover, adaptation response measures that may be desirable for one region or sector may not be so for another. Tools, techniques, and indicators that can assist in minimizing and clarifying the extent of climate vulnerability and uncertainty are needed to help guide the formation of adaptation programmes.

The initial step in prioritizing projects is to assess which sectors, regions, or programs are most vulnerable. An evaluation must also be made of the ability of a system (social, economic, political, institutional, ecological) to adjust to change, to moderate potential damage, to take advantage of opportunities, or to cope with the consequences (IPCC, 2007a). The identification of risks inevitably needs to be based on some level of understanding of

historical and present climate, projections of climate change, and the current and future implications of vulnerability and impacts.

The end outcome of the prioritization process is to support decision making i.e. to strengthen the proposed programmes to determine the action to take; the NAPA MCA tool could be useful in that it guides stakeholders through a process of ranking their preferences for adaptation activities and projects. The optimal response would be several possible actions and would depend on the nature and extent of the vulnerabilities identified. The best options tend to be those that help to build the required adaptive capacity to deliver adaptation actions that would maximize welfare over time. Strategies in which benefits would be maximized that contribute to desired outcomes while improving the ability to adapt in the future are the most desirable.

Some elements that might be considered when defining actions to address priority include understanding the resources or time needed to develop an adequate response, the state and accessibility of any required technologies, and the potential for conflict due to public or political resistance to the proposed measures.

Finally, adaptation actions and subsequent funding allocation decisions will be a discretionary matter for the government. Climate change presents both risks and opportunities for Nepal, and there are a number of important trade-offs to consider. The allocation of limited time, effort, and resources in a way that is most likely to minimize the adverse impacts of climate change and reap benefits from new opportunities will require a combination of the risks and vulnerabilities with a thorough examination of potential costs and benefits to determine how much risk is acceptable and which risks will require an adaptation response.

9. A Generic Approach to Prioritizing Projects

There are various methods and tools for Project prioritization. Even there are many computer programmes and softwares for this purpose. Here is a simple and generic approach to prioritizing the project list:

1. Determination of criteria and create a ranking scale for discriminating among projects. For example:
 - Strategic Value: Is it important to programme's overall strategies? [1= highly important, 5= not important]

- Ease: Will this project be fairly easy to complete (i.e. ease to approach for funding)?
[1= very easy, 5= very difficult]
- People's participation: Shall this project generate people's (beneficiary's) involvement in project implementation?
[1= active participation, 5= no participation]
- Co-benefit: Will the project's deliverables likely yield co-benefits?
[1= highly likely 5= not likely]
- Cost effective: Will this project likely cost effective?
[1= low cost 5= high cost]
- Resource Impact: Will this project have a great impact on our resources (people, equipment, etc.)?
[1= low impact/high sustainability, 5= high impact]
- Multiplier effect: Does the project create multiplier effect (like adaptation to climate change and co-benefit to mitigation)
[1= high effect, 5= no effect]
- Financial benefit: Will the project's deliverables likely yield financial benefit?
[1=highly likely, 5= not likely]

Of course, we can be more creative and logical on the basis of our experiences and knowledge that we can add and change criteria. We can also weight certain criteria to give them more value in the overall score.

2. To make a grid or table with the names of your prioritization criteria across the top and the names of potential projects down the left column.
3. Revision of each project and apply a value (based on the ranking scale) for each of the criteria. Then add up the total scores for each project, divide them by the number of criteria and determine their priority. This step might be completed in two stages: First, individually, by managers or supervisors from various organizations that provide resources (people, facilities, equipment, and money) to projects. Second, as a group effort with these managers and supervisors getting together to compare notes on their prioritization results to develop a master list of prioritized projects that everyone agrees on.

Here is an example of a completed project prioritization worksheet:

Sample Project Prioritization Worksheet

Project	Strategic value	Ease	People's participation	Cost effective	Resource impact/ sustainability	Multiplier effect/ co-benefit	Financial benefit	Overall priority	Note
A									
B									
C									
D									
E									

NB: The lower the score the higher the project's priority

10. Review and Overview

The project scoping will identify the characteristics of a ready-to-go project. Before looking at project prioritization in a little more detail below, it may be helpful to review some of these characteristics of the proposed projects.

A project is ready-to-go because it has:

- A well-defined scope that is sufficiently detailed and has clear parameters
- A realistic and reliable budget
- No problems that would prevent implementation once a commitment of funds has been made

The project demonstrates local commitment through:

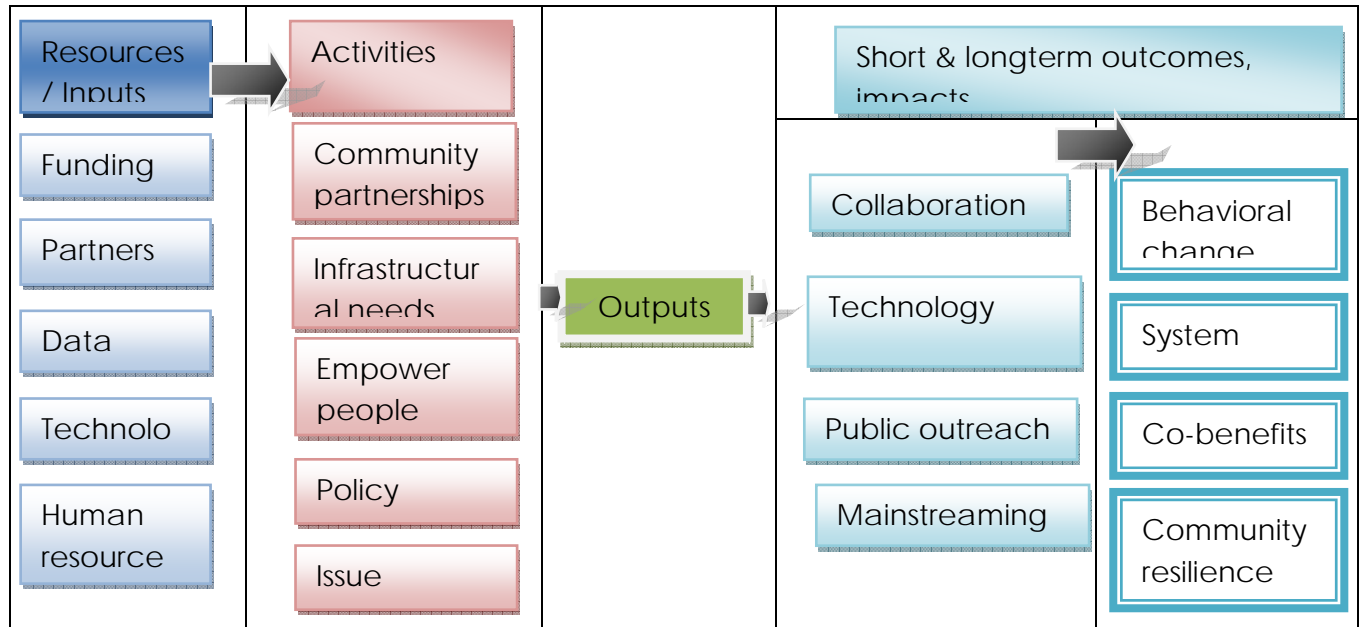
- Planning that involves interested and affected members of the community
- Public participation and involvement
- Local in-kind and/or other contributions
- Documentation as a local priority

The project matches clearly defined needs with desired outcomes in terms of:

- Job retention and/or creation
- Economic diversification
- Capital facilities
- Environmental investment
- Local capacity building

Other factors make a particular adaptation project compelling, such as compliance orders, timing requirements for investment,

availability of other funding. It's particularly important that climate change adaptation project prioritization criteria be locally-developed, since these should reflect organization's unique strategic directions, values, and service priorities. To follow this mechanism we could use a logical model for the project as following:



Now the beginning.....

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