

Understanding
Cost-Effectiveness
of **Gender-Aware
Climate Change
Adaptation
Intervention in
Bangladesh**

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LIST OF ABBREVIATIONS

BBS	Bangladesh Bureau of Statistics
CCA	Climate Change Adaptation
CEA	Cost Effectiveness Analysis
FY	Financial Year
IGA	Income Generating Activity
M&E	Monitoring and Evaluation
MGO	Mega-outcome
MO	Meta-outcome
MSL	Mean Sea Level
NAPA	National Adaptation Programme of Action
NGO	Non-Governmental Organisation

EXECUTIVE SUMMARY

The objective of this study is to test if along a spectrum of gender-aware design approaches, projects that adopt a more gender-transformative approach tend to exhibit more cost-effective climate change adaptation outcomes. Broadly, climate change adaptation (CCA) outcomes include aspects pertaining to improved access to resilient livelihoods, strengthening local institutional and community capacities and, women's empowerment.

The aim of this study is not to provide conclusive evidence on the relationship between gender-transformative design and cost-effectiveness. Rather, it is to use the evidence that is generated from the study of selected projects relevant to the Bangladesh context, to focus on potential hypotheses on the relative effect of gender-aware programming in achieving outcomes pertaining to climate change adaptation strategies. Therefore, while our analysis provides insights on the 'performance' of the shortlisted climate change adaptation projects in terms of how a gender-aware design contributes to the effectiveness and cost-effectiveness in relation to the projects being compared in this study, the emphasis is to understand: (1) how such results can be used to influence future programmatic decisions across implementing agencies and a wider audience, and (2) how projects can be monitored and assessed on their progress, not just in terms of them achieving their stated outputs and outcomes, but also in terms of how effectively they use the funds that are invested in activities that result in these outputs and outcomes.

This is the first study to adopt a cost-effectiveness methodology to evaluate gender-responsive interventions for climate change adaptation planning and implementation, in the context of Bangladesh. Our results are primarily informed by data collected across three shortlisted projects that have an explicit intent to achieve climate adaptation outcomes and are placed distinctively on the gender-aware continuum. The mapping is as follows:

Project A: Gender-transformative

Adopts a comprehensive understanding of gender in project implementation

Project B: Gender-specific

Relatively limited in comparison to gender-transformative approaches as it demonstrates greater emphasis on economic empowerment, but nevertheless acknowledges the differential needs of men and women in development

Project C: Gender-neutral

Gender equality is not an explicit objective of the project and the gender component may be implemented in silos

In order to make the project outcomes more comparable, outcomes were aggregated at a meta-level (8 indicators) which were then mapped against three thematic areas: improved access to resilient livelihoods; strengthening local institutional and community capacities and; women's empowerment for evaluation. Our analysis indicates the following results:

- Across the mega-outcomes on **gender** (which includes increasing women's opportunities to access economic resources and participation in leadership and decision-making) and improved access to resilient **livelihoods** (building resilience to climate change through increased awareness and adoption of resilient practices), **gender-transformative** Project A appears as the most cost-effective project
- For the mega-outcome on **community capacities** (strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts), gender-specific Project B is marginally more cost-effective than Project A

As per the evidence collected through this study, projects that adopt a more gender-transformative design exhibit greater effectiveness in terms of gender, community capacity and resilience building (three critical aspects of climate adaptation response). While this is an important insight, the study's critical contribution is in terms of what these insights translate to, in terms of programmatic and structural decision-making on how climate change adaptation projects can better integrate gender responsive intervention to achieve their environmental as well as social equity outcomes.

Scope	Recommendations
Methodological	<ul style="list-style-type: none"> • There is a need to promote greater capacity initiatives at the design as well as implementation level. This is required to inform gender integration into climate adaptation programmes among the research, strategy and design teams as well as project implementation staff • Monitoring and evaluating must consider gender equality results. Project staff's capacity to adopt a gender-aware results framework and select and design appropriate gender-aware indicators must be enhanced • Project managers must be encouraged to record detailed cost information in line with standard templates, to facilitate higher quality cost-effectiveness evaluations. This provides a strategic opportunity for UN Women to coordinate with researchers and climate change practitioners in arriving at standardised outcome and cost measures for greater comparative cost effectiveness analysis
Design	<ul style="list-style-type: none"> • Creation of a self-assessment tool that enables scientific classification of climate change adaptation projects across the gender continuum prior to project design finalisation to allow for changes towards a more gender transformative approach • Develop tools for proposal evaluation for a gendered perspective on climate change adaptation
Scope for further research	<ul style="list-style-type: none"> • Studies that undertake a multi-country approach, drawing comparisons across projects performed in different countries, by different organisations, and in different years will provide more robust evidence and will prove to be a useful decision-making tool for policy-makers • As a continuation to this study, efforts must be undertaken to review gender-specific strategies' role in broader development mandates and interventions and identify promising, cost-effective climate change adaptation as well as gender-aware interventions that merit consideration as critical enablers in climate adaptation investment approaches • Operational research that explores avenues to make efficient incremental additions or design tweaks that could be made to existing large-scale climate adaptation interventions, to optimise their impact on gender equality must be pursued
Policy action points	<ul style="list-style-type: none"> • Create an agenda to better integrate gender dimensions in programme designs into Bangladesh's NAPA's strategy to give it institutional impetus • Bangladesh's Bureau of Statistics must be encouraged to collect climate change adaptation related data at Upazila, Union and Village level, that is also gender disaggregated. This will support a more robust and comprehensive evaluation of CCA projects

The report commences with establishing the relationship between gender and climate change adaptation in the context of Bangladesh, based on existing literature. It outlines the objective of the study and the importance of evaluating climate change adaptation initiatives, as well as exploring more effective ways of evaluating. Chapter 2 explains the research methods that have been adopted to conduct this study, the rationale for the approach and related caveats and assumptions. Chapter 3 provides the narrative and interpretation of the findings and the report concludes with Chapter 4 outlining the key discussion points and next steps.

CHAPTER

1

Introduction

Summary:

- Relationship between gender and climate change in the context of Bangladesh
- Gendered aspects of climate change adaptation
- Relevance, need and challenges of climate change adaptation evaluation
- Need for and objective of this study

1.1. Background

Bangladesh is one of the most climate vulnerable countries in the world. According to Germanwatch's Climate Risk Index (2016), Bangladesh ranks 6th among 183 countries, that were ranked on the extent to which countries have been affected by natural disasters (Kreft, Eckstein, Dorsch, & Fischer, 2016). Furthermore, the World Bank (2017) estimates that:

Bangladesh is one of the most climatically vulnerable countries of the world. It is also the densest country (excluding city states), exposing a higher proportion of the population (especially women) to these climate vulnerabilities.

- 60% of the global deaths resulting from cyclones in the last 20 years have occurred in Bangladesh
- 10% of the country is only 1 meter above sea level resulting in nearly one-third of the country being prone to tidal inundation
- Approximately 70% of the land area is susceptible to flooding during heavy monsoons

To exacerbate the physical vulnerabilities, Bangladesh is also one of most densely populated countries in the world with greater intensity of poverty in climate change affected areas. 26% of the population is below the upper poverty line, 13.7% of the overall population is in extreme poverty (Bangladesh, 2015), and over 1,000 people live on 1 sq. km. of land (Ministry of Environment and Forest, 2005). This increases the risk exposure of a higher proportion of the population to such socio-economic and environmental vulnerabilities (refer Figure 1). It is precisely this segment of the

population that is also the least able to cope with consequences of climate change, given their socio-economic vulnerabilities such as social status, gender, class, access to and control over resources (Habtezion, 2013). Most of Bangladesh's poor are women—28% of female-headed households live in extreme poverty. This is more than double the national average, and the value of assets in female-headed households is estimated at 56% that of male-headed households. Women face multi-dimensional risks in the advent of disasters. The following are some of the identified barriers to women's coping capacity in the advent of climate-induced disasters (IUCN, n.d.). Neumayer and Pluemper (2007), IUCN (n.d.), Ahmad (2012) and Habtezion (2013) underscore the differential impact of the consequences of climate change on women due to socially constructed gendered norms embedded in daily socio-economic patterns.

For instance, **mobility** includes physiological as well as socio-economic aspects (Neumayer & Pluemper, 2007). Physiological capabilities such as swimming and tree climbing are gendered and in many instances only taught to males, thus making the females disadvantaged. Similarly, women's mobility in terms of migrating to less vulnerable locations is a function of their socio-economic ability to do so, i.e. having the financial ability to migrate, being 'allowed' to migrate, etc. Similarly, **cultural and socio-economic aspects** embedded in everyday patterns reflect the socially constructed gender norms that result in differential impact of climate change consequences on women. Lack of **awareness among political decision-makers** on the realisation of women as both, those differentially impacted by climate change as well as those who have the potential to be significant agents of change, demands the need for greater representation and transfer of political power to vulnerable groups such as women. Women are innately disadvantaged when it comes to having the necessary socio-cultural infrastructure to



Figure 1: Barriers to women's coping ability towards climate change influenced disasters

access and use education and information. This is exacerbated with the advent of disasters, when they are forced to drop out of schools as well as, they do not possess specialised knowledge, information and skill with respect to coping with disasters. Women are exposed to limited access to critical services and facilities (such as emergency shelters with adequate spaces for women and with proper sanitation), early warning information and disaster preparedness, further aggravating their vulnerabilities. Women's **limited control over productive resources** makes them more economically vulnerable in comparison to men, thus limiting their response options to disasters. Furthermore, lack of access to financial security (since loans provided to women often demonstrate unfavourable repayment conditions, they are the largest recipients of micro-credit), lack of accumulated assets such as savings, land, etc., and, limited market and communication access and access to relief goods, exacerbate their economic and material vulnerability.

There are two prominent approaches to tackling climate change – mitigation¹ and adaptation². Mitigation involves strategies to reduce the causes that exacerbate climate change, such as Green House Gas (GHG) emissions and primarily involves a technical, non-human focus. Adaptation, on the other hand, involves developing strategies and approaches to adapt to the environmental changes and are centred around the human impact of climate change.

People's ability to respond to and cope with climate adaptation innately become a function of their social status, gender, class, access to and control over resources (Habtezion, 2013).

Historically, there has been greater emphasis on mitigation-related interventions, in the global context. Responses to climate change have demonstrated greater emphasis on the scientific and economic aspects while neglecting the social/ people-centred and gender-aware aspects of climate policy and action, since mitigation's emphasis was more on the technical, scientific and economic solutions to climate change (Skinner, 2011). This has created a need to acknowledge the differential impact of climate change on people as well as adopt a more people-centric approach to addressing climate change challenges. The fundamental nature of adaptation interventions compels it to accommodate the various socio-economic and cultural dimensions of human behaviour that will be influenced and will be influential in people's response to climate change.

¹ IPCC defines mitigation as an anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks

² According to IPCC, adaption is the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities

Therefore, people's ability to respond to and cope with climate adaptation innately becomes a function of their social status, gender, class, access to and control over resources (Habtezion, 2013).

Women have a pivotal role to contribute to climate change adaptation outcomes. Using evidence from Bangladesh, Ahmad (2012) argues that climate change adaptation (CCA) is innately gendered, given the unique nature of vulnerability that women are exposed to as well as the specific roles that they play in the household and society. This demands a gender-aware approach to addressing aspects such as exposure to vulnerability, capacity to adapt to climate-induced changes (such as migration) and access to institutions to create longer-term, institutional responses to climate change. Therefore, women need to be recognised not just as instruments but also as participants in development, specifically CCA.

The accumulation of gender-differentiated knowledge on the changing climate is important to prevent loss of biodiversity and livelihoods (Skinner, 2011). As such, the role that women play in conservation and sustainable use of resources

has assumed importance in climate change planning. Further, given the gendered impacts of climate change, Skinner (2011) argues that a gender transformative approach and design to development implementation is fundamental to achieve equitable CCA and poverty reduction outcomes for women and men. Therefore, this study assesses if a gender-transformative³ approach can effectively translate project costs into effective CCA outcomes vis-à-vis other approaches.

A gender-transformative approach and design to development implementation is critical to achieve equitable CCA and poverty reduction outcomes for women and men.

The focus of this report is to understand the relationship between gender and climate change adaptation, as women bear a disproportionate burden of the consequences of climate induced events and are also critical agents of interventions.

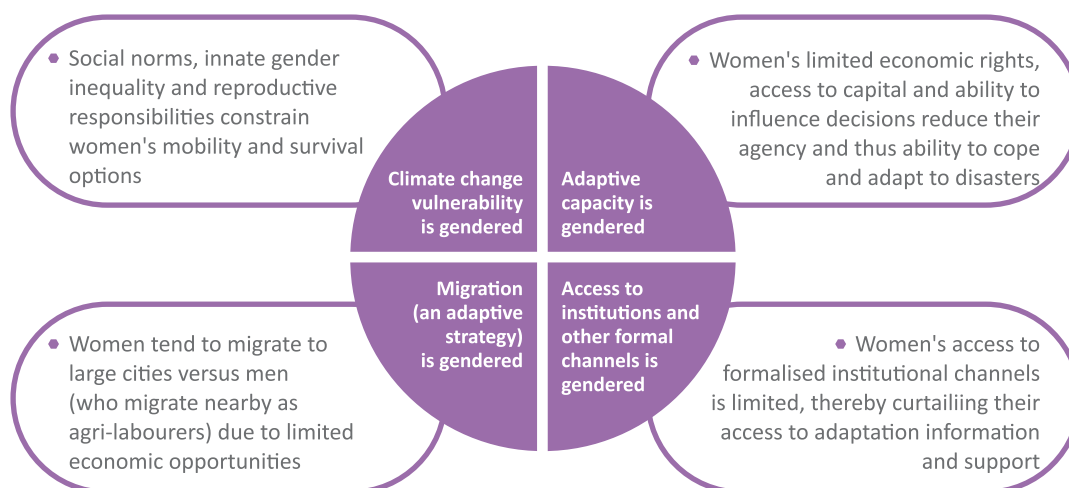


Figure 2: Climate change adaptation is gendered (Ahmad, 2012)

³ Gender-transformative is explained in greater detail in Chapter 2

This study aims to provide evidence whether incorporation of gender into the design of CCA projects, leads to more cost effective CCA outcomes. The aim of this analysis is not to determine which programme has the best gender outcomes but rather, to demonstrate that programmes with a focus on transformative gender outcomes are the most cost effective in terms of CCA outcomes.

1.2. Motivation for the study

1.2.1 Evaluation of climate change adaptation interventions

Climate Change Adaption (CCA) provides a unique dimension to the implementation of development

projects. Adaptation efforts need to rely heavily on local contexts and must be customised to the threats, challenges and opportunities that the specific local context provides. This makes scalability, replicability, and documentation of learning and best practices particularly unique in the context of climate adaptation (Bours, McGinn, & Pringle, 2013). Furthermore, there are certain characteristics of CCA projects (though not necessarily exclusive) that need to be considered when developing an evaluation framework for these projects. Several these challenges are outlined below in Table 1.

Table 1: Challenges faced in evaluating CCA projects

Long time-frames	CCA's real impact may take much longer than the lifecycle of the project to manifest. Therefore, defining and measuring these outcomes and impacts pose a challenge. Moreover, comparison of pre- and post-intervention data is challenging given the constantly changing impacts of climate change, which often leads to shifting baselines
Understanding the impact of broader Climate Change impact on specific locations	Climate change is unpredictable and its impact, especially when it is indirect (such as pollution-induced loss of labour productivity), on a specific location is difficult to estimate and measure
Standardisation and aggregation	It is difficult to develop universal indicators for CCA given its context-specificity. This makes aggregation of indicators (especially factors such as capacity building, behavioural change, etc.) at a regional or national-level difficult
Interpretation of terminology	Evaluation of CCA projects runs the dual risk of misinterpretation of commonly used technical terms (e.g. vulnerability, adaptation) and the use of highly localised and specialised terms that become irrelevant to larger contexts
Defining 'success' and improvements	Success in the context of CCA interventions might mean efforts to maintain status-quo or improved preparedness to disasters. This might seem unambitious in the traditional evaluation context
Assigning attributability	Attribution is a critical aspect of most evaluations, becomes particularly challenging in CCA given its multi-sectoral nature as well as externality of climate change impact such as increased severity of already occurring natural disasters. This requires discretion in the use of process and proxy indicators

Source: (Bours, McGinn, & Pringle, 2013)

While evaluation of climate adaptation interventions is an emerging area, cost-effectiveness of CCA interventions is an even more recent and under-explored evaluation approach. Given the unique characteristics faced by climate change adaptation and the scope for opportunity that this presents to evaluation methodologies as outlined in Table 1, this study aims to evaluate CCA outcomes using a cost effectiveness analysis approach. This will help determine the relevance of cost-effectiveness to investigate if CCA interventions are able to deliver on their outcomes. Evaluating how gender-aware the design and outcomes are, faces similar challenges in terms of constructing measurable and meaningful outcomes that can be assigned straightforward attribution (Mikkelsen, 2003). Specifically, the study aims to understand the influence of gender-aware⁴ project designs on broader climate change adaptation outcomes. The result will determine hypotheses on the relative effect of gender-aware programming in achieving climate change adaptation outcomes.

Evaluation of CCA interventions is relatively new area and there is an openness to explore evaluation methods that would be particularly suitable to the challenges posed by CCA as outlined in Table 1 above. Cost-effectiveness has been used extensively to assess climate mitigation interventions (UNDP, 2013) but less so with respect to CCA interventions. In this study, we are particularly interested in understanding the effect of gender-specific programming in achieving CCA outcomes. The emphasis of this study is on generating evidence, knowledge and learning collateral to inform and guide this emerging approach of evaluating CCA projects and programme interventions.

1.2.2 Rationale for this cost-effectiveness analysis study

On 11th – 12th May, 2015 UN Women organised a think-shop to determine a research methodology that would demonstrate the costs of climate change action in relation to issues of gender equality, and develop markers that could also be used as instruments to measure more gender aware climate change interventions (UN-Women, 2015). Key questions addressed in the think-shop included:

- Would placing an ‘economic cost’ on non-economic aspects provide a valid hypothesis to support an economic argument for gender and climate change?
- What costing methodology will be suitable for studying the relationship between gender and climate change and at what point in the discourse?
- How effective are climate change action investments in addressing gender inequalities?
- What are the gender equality issues in climate action?
- How can we influence those who have decisions over resources that climate change action can produce more positive outcomes for women on the ground if done in a more gender-aware way?

Based on deliberations on these questions and consultations, Dr. Nata Duvvury, Senior Lecturer, National University of Galway, Ireland recommended the use of a comparative cost-effectiveness approach to develop a narrative to present to stakeholders who have influence over resources based on the relationship between climate change adaptation and gender equality.

⁴ The theoretical framework for the gender-aware continuum is presented and explained in detail in Section 2.1

Cost-effectiveness seeks to understand how the finances invested into a project translate into the outcomes of the project

Cost-effectiveness seeks to understand how the finances invested into a project translate into the outcomes of the project (refer Figure 3). This is represented as programme/ project cost spent per units of effectiveness (usually scored in terms of performance of the programme/ project outcomes). Any project's theory of change broadly pertains to (A) finance/ investments that is allocated for the execution of a project to achieve a certain outcome or impact; (B) inputs that are activities that need to be undertaken to achieve

these outcomes and impacts; (C) outputs that are tangible deliverables that result in outcomes over a period of time; (D) outcome/ impact, the long-term predominantly intangible consequences of realising an intervention. Figure 3 below, maps the progression of a project from finance to outcome.

As per Figure 3, the objective of this cost-effectiveness study is to understand the translation of finance to CCA outcomes depending on the gender-design of the projects under evaluation. As per the progression articulated in Figure 3, the translation of finance into project inputs determines the economy, the conversion of inputs to outputs reflects the efficiency, the translation of finance to outputs determines cost-efficiency, the conversion of outputs to outcomes is a function of effectiveness and finally, the translation of finance to outcomes is the cost effectiveness of the project.

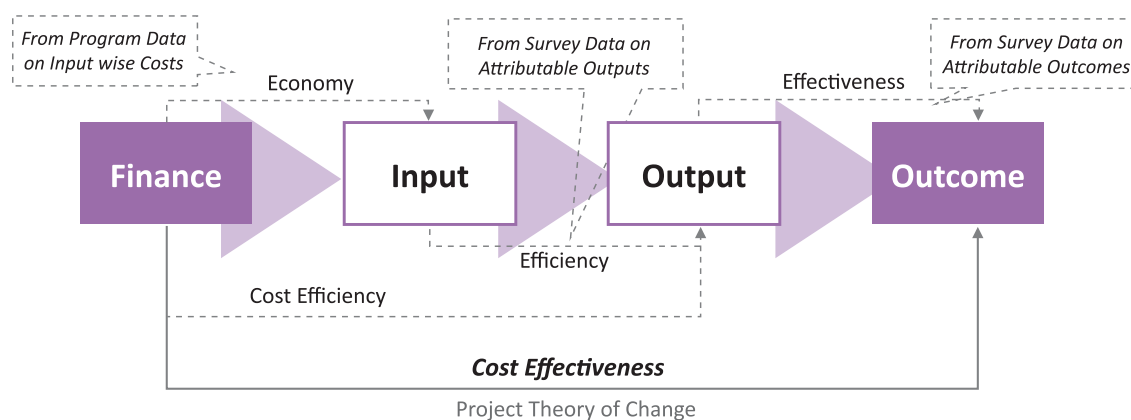


Figure 3: Understanding Cost-effectiveness across a programme's theory of change

1.3. Objective of the study

The purpose of this study is to assess if the adoption of more gender-transformative approaches to implementing CCA projects result in enhanced climate adaptation outcomes, using a cost-effectiveness approach. In other words, do gender-transformative approaches support more

effective translation of the financial investments into climate adaptation outcomes, versus interventions that are gender-specific or gender-neutral⁵. The study does so by comparing three CCA projects that have been implemented by NGOs in Bangladesh.

⁵ Refer Chapter 2 on Research Methods for an explanation of these terms



CHAPTER

2

Research Methods

Summary:

- Theoretical framework for classification of projects along a gender continuum
- Outline of the overall study approach including identification of study indicators, data collection techniques, rationale for shortlisting of projects, overview of the shortlisted projects
- Caveats and assumptions undertaken to conduct the research

2.1. Theoretical framework for classification of the projects along a gender continuum

This study adapts from Kabeer and Subramanian (1996)'s structuring of the two key approaches to gender-based policy design – gender blind and gender aware to inform analysis. Gender aware policies can then be classified as neutral, specific and transformative interventions, as illustrated in Figure 4.

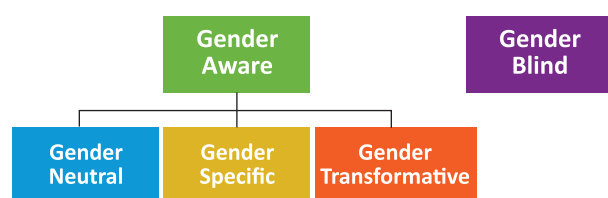


Figure 4: Structuring gender-based approaches to policy design and intervention (Kabeer & Subramanian, 1996)

Broadly, there are two policy approaches to undertaking development, as represented in Figure 4 (Kabeer & Subramanian, 1996). Gender-blind

approaches, typically do not identify or acknowledge the differentiated influence of gender on development outcomes or differentiated impact of development interventions on men and women. Such an approach is indifferent to gender as an instrument and target of developmental change. Gender-blind policies and programmes will often disadvantage women, and exacerbate gender disparities with resultant losses in equity, efficiency and welfare (Kabeer & Subramanian, 1996). On the other hand, gender-aware approaches recognise that women face different constraints than men and therefore may have differing needs, priorities and interests.

Within the gender-aware policy approach, Kabeer and Subramanian (1996) articulate a spectrum that exists with varying degrees of attention paid to gender. This report has adapted this structure of gender-blind and gender-aware approaches (refer Figure 4), and re-articulated in the context of the projects evaluated in this report, as follows in Figure 5:

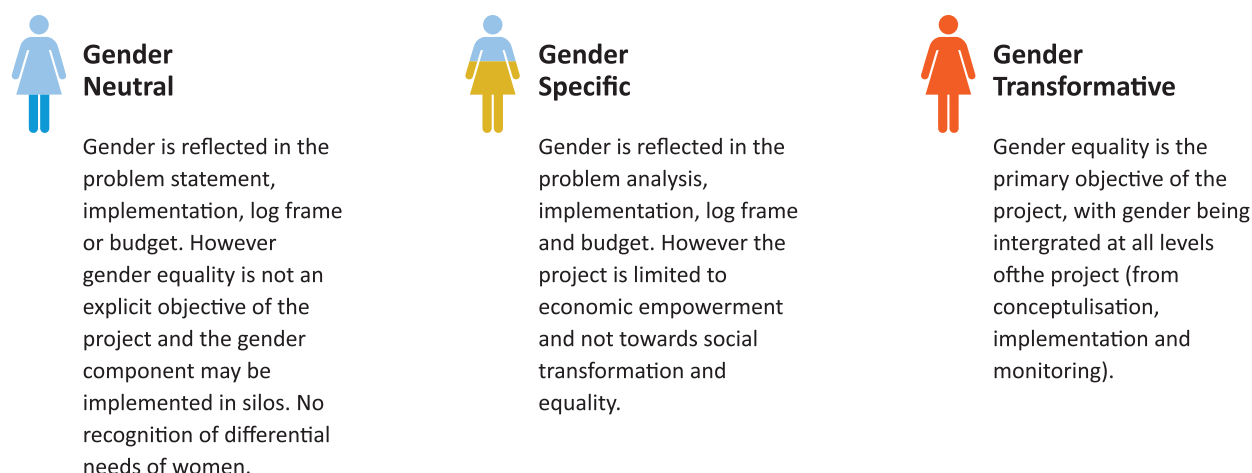


Figure 5: The gender-aware spectrum

2.1.1 Mapping the projects along the gender-aware spectrum

With the advocacy on gender mainstreaming since the Fourth World Conference on Women held in Beijing in 1995, most development interventions that engage with people address gender in some way and as a result a review of project documents will find few interventions that can be identified as ‘gender blind’. However, there is a wide variation in the way in which gender differences are

understood and addressed in implementation. This report draws structurally from Kabeer and Subramanian (1996) in articulating the various components and approaches to gender that are adopted in development implementation. The report has adapted and redefined these components in congruence with their suitability in defining the shortlisted projects under this study.

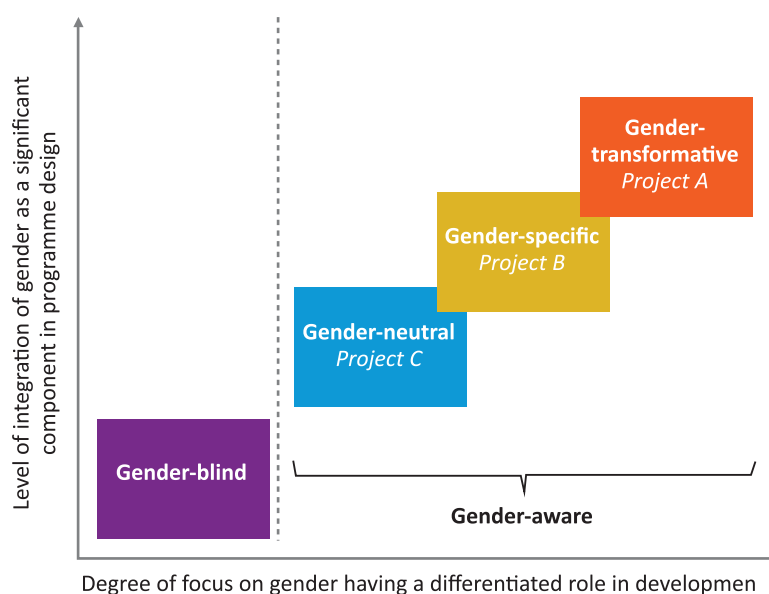





Figure 6: Mapping projects across the gender-aware spectrum

Based on an extensive review of climate change adaption (CCA) implementation projects across Bangladesh, three projects have been shortlisted for conducting the cost effectiveness analysis

(CEA). Table 2 provides a detailed rationale as to why each of the identified projects have been labelled as either gender neutral, specific or transformative.

Table 2: Rationale for classification of identified projects across the gender-awareness spectrum

	Project	Gender-aware category	Rationale
	A	Gender-transformative	Classified as gender transformative as gender equality was one of the primary objectives of the project, in which, the gender components were consciously integrated at project planning and implementation phases in recognition of the differential gender needs. The project recognised women as most vulnerable to climate change and also focused on empowering them as leaders as part of the social empowerment objective.
	B	Gender-specific	Two out of the three outcomes identified as part of the project acknowledge women as critical stakeholders. The project is also relatively comprehensive (in comparison to Project C, specifically), in terms of its gendered interventions—it includes mitigating livelihood risk (Outcome 1: to support marginalised small-scale producers and landless labourers, primarily women, to develop increasingly profitable and resilient livelihoods) as well as empowering women by enhancing their role in the public sphere (Outcome 2: to influence national and sub-national policy & practice to promote profitable and resilient livelihoods for marginalised small-scale producers and landless households, especially women).
	C	Gender-neutral	The gendered aspects of this project are restricted to material components in terms of improving women's economic situation as well as focusing on tangible improvements in maternal and child health (specifically nutrition). While the overall impact envisaged for the project is with respect to achieving the Millennium Development Goals, it does not have explicit and nuanced approaches towards incorporating gender into the project design. Moreover, while the project focused on women entirely as beneficiaries of the programme, the intention to target women was not because of their differential needs and their abilities as potential agents of change, but was more on the grounds of ensuring project efficiencies; women were believed to have more time to participate in the intervention as compared to male counterparts (who were predominantly migrant workers).

Note: The projects have been anonymised to maintain confidentiality of the project details especially with respect to the administrative and financial details

2.2. Overall Study Approach

The overall study was conducted in two phases: 1) the Inception Phase, to plan and scope the evaluation and develop the data collection tools; and 2) the data collection, analysis and reporting phase. The detailed overview of the study design is presented in Figure 7:

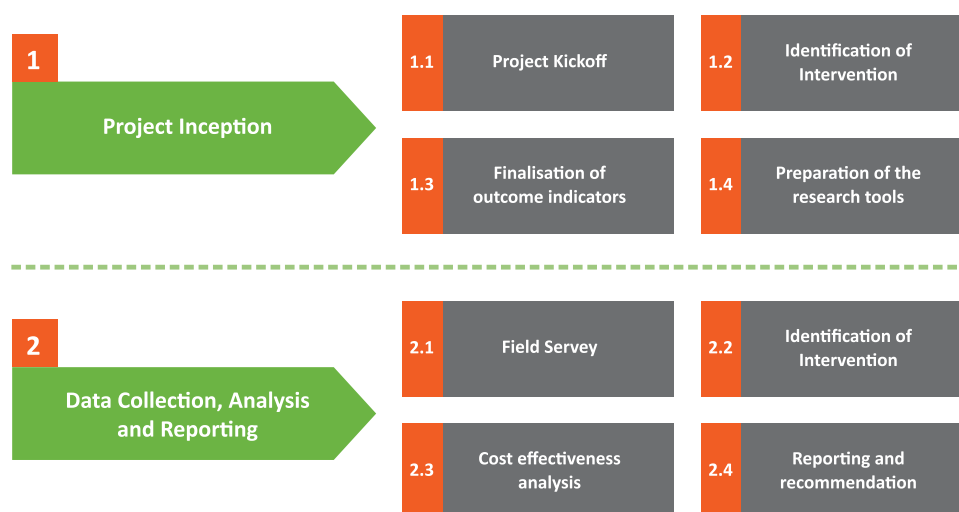


Figure 7: Overall study approach

2.2.1 Phase 1: Project Inception

Project Kick-off

As the first step, the consultants along with UN Women and the technical advisors finalised the scope of work for the study to develop a common understanding of the project objectives, tasks and expected results. A review of articles, international and national publications on climate change and gender was undertaken to improve the conceptual

understanding and identification of the issues; this also aided in the development of data collection tools. Further, literature review also mapped the climate change and women empowerment indicators, which formed the basis for identifying specific outcome indicators to be measured during the evaluation. A template for the evaluation of the intervention projects was also developed during this stage and finalised with inputs from the client. An illustration of the project review framework is presented in Table 3, below:

Table 3: Project Review Framework

NGO	Project Name	Nature of intervention (along the gender continuum)	Project Locations	Output Indicators	Baseline data availability	Number of beneficiaries	Time Period
				List of gender specific indicators	Yes/No	Number of women beneficiaries	

Intervention Identification

To identify the appropriate interventions and potential partners for the study, the consultants with support from UN Women undertook a detailed review of various climate change adaptation interventions in Bangladesh. The projects were classified based on the framework presented in Section 2.1. The project screening and classification process included two stage:

- In the first round of projects screening, the consultants placed the projects along the gender continuum based only on secondary review of the project documents available in the public domain. In the initial screening of climate change adaptation interventions in Bangladesh, it was found that most of the interventions recognised women as project participants. However, most project documents failed to shed light on the extent of gender integration. During this phase a total of 18 projects were evaluated and 4 projects shortlisted for the second phase.
- After consideration of a list of programmes across multilateral donors, the second round of screening of identified potential projects included in-depth consultations (in the field and via teleconferencing) with the partner NGOs, project managers and UN Women. These consultations complemented the desk review and allowed the consultants to synthesise greater information regarding project objectives and activities as well as possible methods to gender equality outcomes. Interactions with the project managers allowed the consultants to gain insights not only into project objectives but also rationale for their gendered theory of change, gender components and strategies in the interventions and measurement of outcome and impact. Evidence was collected from the partner NGO whose projects were finally selected for evaluation, on gender components of the projects' design and implementation and approaches toward gender equality (sample questions posed to the project managers is listed in Table 4 below); this allowed the finalisation of the project classification:

Table 4: Diagnostics questions to place the projects along the continuum

- Is the project looking at women only as participants and thereby seeking focusing only reducing barriers to participation?
- Did the project design consider gendered needs, preferences and constraints to ensure that women benefit from the project activities?
- Do project activities seek to enhance women's decision making power in households/ communities?
- Is the project seeking to shift gender norms and attitudes? Is there an attempt to combine capacity and asset building strategies with dialogues that engage men and women on social norms and household decision-making?

Based on the variables illustrated in Figure 8, three project interventions, undertaken by one large NGO, were finalised for the evaluation study. Each project can be placed along the gender continuum and represents various levels of gender sensitivity.



Figure 8: Project Selection Criteria

- **Project location:** Interventions implemented in similar eco-zones and areas of cultural similarity were identified, to ensure effective comparability across crucial project characteristics and outcomes
- **Availability of Data:** Willingness of the NGO to reveal sensitive information and project documents with respect to the intervention rationale, progress and cost was also an important variable that was accounted for while finalising the intervention for the evaluation

Based on the above criteria, three interventions were identified for the evaluation study:

Project A's focus is to build the resilience of beneficiaries by promoting economic empowerment of all beneficiaries that focuses on leadership and learning especially of women

Project B aims is to mitigate vulnerabilities by integrating adaptation and mitigation strategies into local development and focuses on leadership and learning especially of women

Project C targets to improve the condition of coastal communities specifically in managing their natural resources

A detailed overview of the selected interventions is provided in Section 2.3 of this chapter.

Finalisation of the outcome indicators

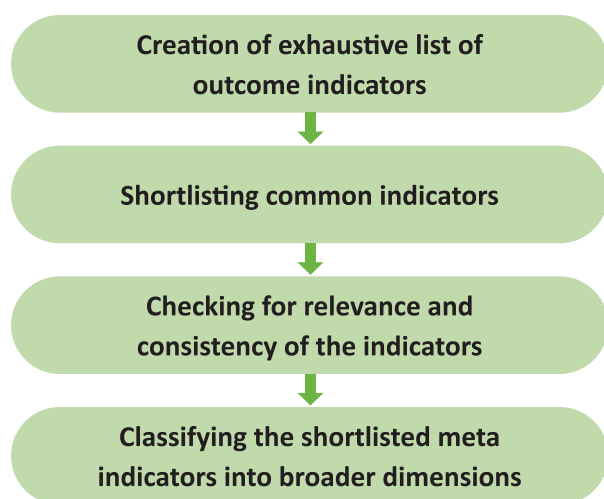


Figure 9: Steps in finalisation of outcome indicators

A crucial part of the study approach is the identification of relevant and measurable outcome indicators relating to climate change and gender outcomes at the intervention level. Our approach consisted of four main steps:

As the first step, the consultants developed an exhaustive list of outcome indicators based on project activities and their respective theories of change. To identify and select indicators for the evaluation, various sources were reviewed including project proposal documents, baseline and other evaluation reports, annual progress reports, among others. The list of outcome indicators includes those variables, which were directly targeted by the project and those related to the project's intervention logic.

As the next step, common outcome indicators across the three interventions were shortlisted as meta indicators. These indicators closely represent the project intervention activities and measure resilience and adaptive capacity to climate change and disaster risk as well gender empowerment indicators.

Effort was also made to compare the list of selected outcome indicators against those mapped through a review of literature to ensure relevance and consistency of the indicators. The desk review provided a set of commonly used indicators (climate change specific and gender specific indicators) in monitoring and evaluation of CCA programmes as illustrated in Annexure 2. The gender Indicators have been sub-divided into a) vulnerability measures that reflect the impact of

climate change on women and b) adaptive capacity which reflects women's power to take decisions, power over resources and power to work along with institutions to adapt to the impacts of climate change and ultimately act as agents of change for climate change adaptation (refer to Annexure 3).

The shortlisted indicators were further classified into three dimensions based on (a) availability of cost data, (b) quality of collected data and (c) thematic similarity of meta-outcomes (indicators representing similar issues were categorised together).

Table 5 presents three larger dimensions that informed the cost evaluation study. Data on climate change and gender outcome indicators was captured through primary data collection with the beneficiaries of the programmes.

Table 5: Dimensions that informed the evaluation

Mega Indicator 1: Building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries
Mega Indicator 2: Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts
Mega Indicator 3: Increasing women's opportunities to access economic resources and participate in leadership and decision making

Preparation of the research instruments

A detailed research plan for conducting the survey was formulated and approved in conjunction with UN Women. Questionnaires for household survey were developed by the consultants and translated by the field research partner to capture data on various outcomes and intervention measures associated with the measurement of climate change outcomes. The central components covered in the household survey instruments include:

- Demographic and socio-economic profiles of respondents
- Data against each identified outcome indicator that captures vulnerability and adaptive capacity of the respondent and changes over time, based on recall
- Based on data and information availability, insights on differential impact on those who were part of the intervention and a similar population which were not part of the intervention

A team of nine enumerators was recruited locally and trained by the consultants along with their field research partner in Dhaka. These training workshops were led by the consultants with support from UN Women. The workshop focused on providing an overview of the study context and objective, overview of the interventions identified for the evaluation, sampling, respondent selection and the questionnaire. The workshop also included practical exercises on administering the questionnaire followed by critically reviewing the performance of the enumerators. Further, a detailed field plan for the data collection was developed by the field research partner in consultations with the partner NGO.

2.2.2 Data collection, analysis and reporting

The evaluation was carried out in two Upazilas – Shyamnagar and Kalaroa from Satkhira district where the project activities were implemented. A total of 225 beneficiaries who had directly participated in the selected interventions were targeted to be interviewed for the evaluation. The list of direct project participants was obtained from the implementing NGO's record and the survey respondents were selected at random from the beneficiary list.

For comparability, similar villages from neighbouring areas had to be selected. The survey team worked with the project staff of the partner NGO to identify the communities for the control group which were thought to have similar characteristics in all respects to those communities where the project was implemented.

Table 6 shows the numbers of households interviewed in each community in the survey

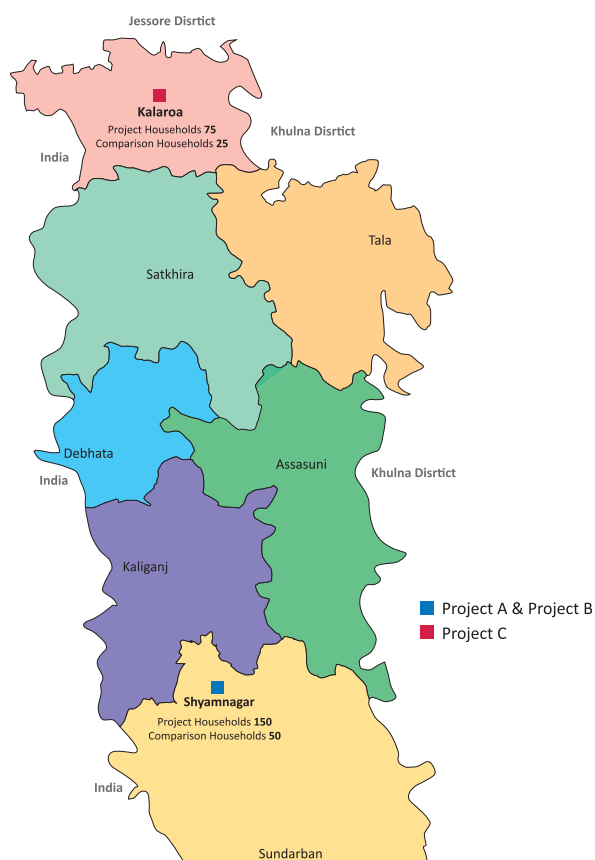


Table 6: Sample Distribution

District	Upazila	Intervention			Project Households	Comparison Households
		Project A	Project B	Project C		
Satkhira	Shyamnagar				150	50
Satkhira	Kalaroa				75	25
Total					225	75

Cost Effectiveness Analysis

Data sources: For the computation of the cost effectiveness ratio, the data sources include cost data from the identified projects and the primary inputs from surveys across the beneficiaries and non-beneficiaries of the identified projects.

Identification and sourcing of cost data: Programme cost associated with the interventions were directly sourced from the implementing NGO's financial records. The analysis of the cost followed a top down approach where the consultants identified total amounts and allocated portions to different programme activities, which were attributable to specific outcomes. All costs were aggregated, including direct and indirect costs over the evaluation period of each intervention.

Cleaning of the Quantitative Data: The responses from the survey were correlated with the questionnaire and their completeness was determined using summary statistics. Errors in variable coding, missing values and any anomalies in the skip logic were flagged and rectified.

Computations of the outcome score: Data which captured the change (between pre-intervention and post-intervention) was used to calculate the outcome scores. The score for the outcomes was computed as a function of different data points from the survey. Further, the individual outcome effectiveness scores were then normalised to a value between zero and one and consistent coding was adopted for each input variable across interventions and the control group.

Difference-in-difference estimation: To estimate the impact of an intervention, the difference in change of outcomes across time in Treatment (T) and Control (C) groups was measured. This is captured through difference in outcome variables across time periods as per the equations below.

$$\text{i. } \Delta T = (T_1 - T_0)$$

$$\text{ii. } \Delta C = (C_1 - C_0)$$

Where,

T_1 is the outcome value in the year of evaluation in the Treatment group

T_0 is the outcome value in the base year in the Treatment group

C_1 is the outcome value in the year of evaluation in the Control group

C_0 is the outcome value in the base year in the Control group

Significance test: Though the mean effectiveness scores were different for the identified samples, their significance needs to be tested. The approximate sample size was between 25-75 so a two-sample z-test was conducted to test the significance of the means of the three treatment groups from the control group. The known variance was approximated to the sample variance of the effectiveness scores of the treatment and control responses. A mean difference of zero was set between the sample means for the null hypotheses. The alternate hypotheses were defined as an inequality of the means at a 5% level of significance. A two-tailed z test was executed at a 5% level of significance. For pairwise comparisons with a p-value less than 0.05, the means were deemed to be significantly different from each other.

2.3. Overview of the selected projects

Project Name	Project A	Project B	Project C
Project Location (s)	Shyamnagar Upazila under Satkhira District	Munshigonj and Atulya Unions under Shyamnagar Upazila in Satkhira District	Keshobpur: Jessore, Shyampur: Satkhira, and Amtoli: Borguna
Approx. No. of HH covered by the project	2,670 households out of a total population 12,228 (Female: 6,156 and Male: 6,072)	2,766 households (Female: 1,568 and Male: 1,355)	10,500 households
Project Summary	The project aims to assist the targeted households in adapting to the adverse impact of climate change and also in reducing the risk factors of disasters so that they can sustain their livelihood. The project also seeks to develop replicable model of resilient community in three agro-ecological zones and linking with urban settings and develop community leadership, specially of women ensuring access to and control over resources, services and opportunities.	The project seeks to achieve major, measurable and sustainable improvements in livelihoods for the most marginalised communities in areas of extreme vulnerability. Its primary interventions include developing and empowering farmer producer groups, train all categories of vulnerable groups (including specifically identified 'hardcore' groups) in IGA, disaster preparedness and empowered ability of vulnerable groups	The project aims to address poverty in the southwest coastal region in Bangladesh. The project is designed broadly to enhancing income levels by improving livelihood situations by providing access rights to natural resources, khaslands, water bodies; improving nutritional status through food security and nutrition, and social organisation.
Objectives	<p>The project seeks to directly contribute towards the development a resilient community through enhanced leadership, livelihoods and equipped to face impact of climate change and disaster. The project impact can be measured in terms of :</p> <ul style="list-style-type: none"> Greater number of women, men and children able to anticipate risks and address them effectively Greater number of household are adopting climate resilient livelihood 	<ul style="list-style-type: none"> The communities are capable to anticipate the risk associated with climate changes and disaster and respond accordingly Producer group emerge from targeted communities develop wider markets linkage and able to gain fair price for their products Communities are aware about disaster risk reduction (DRR), disaster preparedness and are able to manage and adapt with climate variability Women leadership emerged and they are active in family, community and public sector decision making with recognition 	<p>The project sought to contribute directly to progress of the country in achieving the MDG targets 1 and 2 on income poverty reduction and hunger achieved by 2015. The achievement of this objective can be measured by specific indicators including:</p> <ul style="list-style-type: none"> Percentage of household moving out of extreme poverty Improved nutritional status of targeted under 2 children, adolescent girls and pregnant and lactating women

Project Name	Project A	Project B	Project C
	<ul style="list-style-type: none"> Community organisations and partners have greater capacity to effectively respond to disasters and implement socially inclusive and innovative community based climate change adaptation and mitigation Improved policy and institutional arrangements to plan and deliver climate resilient development approaches at local level Greater acceptance of women leadership at both household and community level 	<ul style="list-style-type: none"> Local governments especially UP equipped with adequate skills to cope with disasters and climate change effectively. Increased accountability and transparency in all stake holders Formal social safety net programs redistribute resources to poor people to reduce their economic hardship Local experience from the programme is captured and informs national policy dialogue and simultaneously the extreme poor are able to access services from the government and service providers Sadhikar/Shusomoy CBOs for capacity enhancement and intertwined between employment generation and enterprises as core mechanism for improving resilience 	
Project Outcomes/Outputs	<ul style="list-style-type: none"> Capacity built communities are in place and able to anticipate possible impact of climate change and disaster Livelihoods, income options of women and men based on climate variability are enhanced and empowered through ensuring access to information, building capacity and market link up Targeted communities are aware about own entitlements, rights and ensured access to local services, opportunities Developed poor women social and political leadership and ending violence against women 	<ul style="list-style-type: none"> Supported marginalised small-scale producers and landless labourers, primarily women, to develop increasingly profitable and resilient livelihoods Supported marginalised and vulnerable communities to manage key resources and adapt livelihoods strategies to respond to climate trends and other key risks Influenced national and sub-national policy and practice to promote profitable and resilient livelihoods for marginalised small-scale producers and landless households, especially women 	<ul style="list-style-type: none"> Improved rural livelihood strategies of the vulnerable communities through introduction of climate adaptive livelihood measures Build capacities of the household to cope with climate change and disasters through access to public and private services Improved access to productive resources for household to engage in natural resource based enterprises Creation of group enterprises that can enable and sustain natural resource based enterprises Improved health status through direct nutritional interventions

Project Name	Project A	Project B	Project C
Nature of Intervention	<ul style="list-style-type: none"> Capacity building of CBOs on <ul style="list-style-type: none"> Awareness of the vulnerabilities including potential risk and impact of natural disaster and climate change Organisational management, networks for advocacy and local early warning system Climate resilient livelihood strategies <ul style="list-style-type: none"> Training Provision of productive assets Market linkages Capital Support Enterprise/producer group formation Exposure visit Creation of climate resilient infrastructure Policy advocacy Dissemination and awareness creation 	<ul style="list-style-type: none"> Producer group formation and capacity strengthening across homestead gardening, livestock management, resilient agriculture to promote climate resilient livelihood practices Material support/ market access for IGA Training: <ul style="list-style-type: none"> Income-generating activities Climate Change Awareness Mock Drills to enhance disaster preparedness Hard Core Group empowerment Improving capacities on climate change adaptation through frequent consultations at Union Level, CBO, UDMC Hygiene promotion through BCC strategies such as picture drama shows 	<ul style="list-style-type: none"> Training and provision of assets to adopt alternative climate adaptive livelihood options Access to safety nets, water, sanitation and health services Public health awareness on MCH Provision of nutritional supplements
Project Period	1st Phase: 2010-2013 2nd Phase: 2014-2016	1st phase: 2011-2013 2nd phase: 2014-2016	July 2013 - December 2015

2.4. Caveats and assumptions

Assumption	Rationale for assumption
EFFECTIVENESS	
Convenience and purposive sampling was used in this research	Since this is a comparative study between projects, no extrapolation is intended and therefore minimum sampling size rules are not applicable in this case
Selection of three thematic dimensions	<ul style="list-style-type: none"> • Availability of cost data • Quality of primary survey data • Thematic similarity between meta-indicators resulting in some one input-indicators being mapped to multiple outcomes
Use of recall questions to collect baseline data	Lack of availability of baseline report for selected interventions and/or failure to track beneficiaries over time necessitated the need to capture baseline data through recall questions
Baseline values of control and treatment were assumed to be comparable in select cases	Difference in Difference was attempted wherever possible. Wherever baseline data obtained through recall questions was found to be unsatisfactory, the analysis was limited to calculating the effectiveness score for the treatment and control group only for the year of evaluation.
Normalisation of the score	Irrespective of the nature of questions (yes or no/ number/ agree/disagree statement), the score has been normalised to 0-1
Distribution of weights is such as that common input variables were given higher weightage and almost equal across programs	As there were inherent differences in the aims/goals of the three programs, the activities and support provided were also different. For this reason, the data for certain questions are not available across all programs. For instance, there might be 6 input variables for MGO1 for programs A and B. However, program C might have only 3 input variables. In such a situation, giving equal weightage for all variables will skew the results. To avoid this, we have ensured the weightage given for similar questions are approximately the same
COSTS	
The activity costs are exclusive to the outcome and do not have any spill-over effects	Efforts have been made to ensure that costs are mapping exclusively to a single meta-outcome to allow for ease of aggregation and attribution
Per-capita calculation for cost was done at a household level	In the absence of comparable unit data at an outcome level. Hence, the outcome level costs were divided across the total beneficiary households with the assumption that each outcome impacted all the beneficiary households
Project specific operational costs that were not specific to any project outcome were divided equally among the meta-indicators	These activities have an equal bearing on all the outcomes as they are fundamental to the running of the project
Indirect/administrative cost has been distributed on a pro-rata basis	These costs are necessary for the implementation of all the activities, however, their utilisation (e.g. human resources) is a function of the scale and emphasis that activities under an outcome possess—hence they have been added to the outcome cost on a pro-rata basis
The evaluation period for the projects is 2014-2015 for Project A and B while it is 2013-2015 for Project C	Due to the unavailability of the cost data for the financial year 2016, the evaluation period of all the three projects were taken till 2015

CHAPTER

3

Cost-Effectiveness Analysis

Summary:

- Understanding the components and indicators that inform the analysis: how do you calculate the cost, effectiveness and cost-effectiveness
- What is the relationship between gender-design and CCA gender outcomes?
- Do gender-transformative adaptation projects lead to more favourable climate change adaptation outcomes?
 - o Building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries
 - o Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts

3. Findings from the cost-effectiveness analysis

Discriminatory gender norms and inequalities are critical structural barriers to effective climate change adaptation planning and implementation. However, there are a limited number of studies establishing whether in fact overcoming these barriers in CCA intervention does result in more cost-effective climate resilient outcomes. One such study undertaken by Ahmad (2012), establishes that women's adaptive capacity and their role as critical change agents in society can be enhanced if institutions promote gender inclusion. This chapter presents the results of our analysis that has focused on exploring the effectiveness of gender components in selected climate change adaptation outcomes and their cost-effectiveness in achieving climate change outcomes.

Our analysis first attempts to establish the relationship between how gender was addressed in design and subsequently, the contribution that a more gender-aware project can have on adaptation outcomes. Therefore, the first section of the analysis compares the effectiveness of the gender outcomes across the projects and maps it against their respective positions on the gender awareness spectrum. Once the relationship between design and outcomes related to gender are established, the chapter further explores the role of integrating gender-awareness in design on other climate adaptation outcomes to eventually establish that gender-transformative projects are most cost-effective in comparison to gender-specific and gender-neutral projects.

The analysis is broadly structured into two key parts – the first established the relationship between gender-awareness as a project input in the form of project design and its interaction with gender as a climate adaptation outcome. The aim of this section is to explore if gender-transformative projects perform more

effectively in comparison to gender-specific and gender-neutral projects. Following this, the chapter explores the relationship between gender responsiveness of project design and other CCA outcomes, including increased access to climate resilient livelihoods and local capacities. The analysis narrative follows the steps as undertaken in the analysis. Therefore, the results are presented outcome-wise (at a mega level) in the order of effectiveness (translation of project outputs into outcomes), the per-capita cost calculation to understand the budgetary emphasis of the projects, and finally the cost-effectiveness (the translation of finance/inputs into outcomes). While most of the analysis provides diagnostic and descriptive information on how the projects 'perform' against the control group and what a 1% improvement over the control group would translate as, in terms of investments; the analysis also provides some prescriptive insights on how much investment is expected from the two projects that aspire to be as cost-effective as the best project, across outcomes.

3.1 Understanding the key components that inform the analysis

3.1.1 Evaluating effectiveness:

For this review, the outcome indicators were grouped into three broader thematic areas frequently found in gender-aware CCA planning and implementation projects. The selected outcome indicators are mapped across the three thematic areas. A brief description of the list of indicators that were used alongside the thematic areas is presented in Table 7:

Table 7: Indicator Table

Thematic Area for Evaluation	Indicators
Mega Outcome 1: Building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries	<ul style="list-style-type: none"> Household livelihood strategies are strengthened in relation to climate change impacts Diversified and strengthened livelihoods and sources of income in response to climate change Physical infrastructure improved to withstand climate change Development of early warning systems Reduced risks to extreme weather events Greater awareness among the household on the impacts of climate change and of appropriate responses Farmers have access to, and utilize, wide range of seed varieties both to improve performance in the face of climate shocks in the short-term and to successfully adapt to climate change in the long term Food insecurity resulting from climate change minimized or reversed
Mega Outcome 2: Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts	<ul style="list-style-type: none"> Number and type of risk reduction activities/actions at local levels Local government/CBOs responsive to the needs of the community to address climate change and disaster related events Greater integration of climate resilient practices in the CBO plan
Mega Outcome 3: Increasing women's opportunities to access economic resources and participate in leadership and decision making	<ul style="list-style-type: none"> Reduced vulnerability of poor women to climate change impacts, and strengthened capacity to manage these changes Strengthen women's access to resources for sustainable food production, renewable energy, and clean water sources Increased access to employment or increase in women's incomes due to climate change adaptation activities Greater participation of women in developing and managing local adaptation plans Increased community awareness of women's rights and capacities

3.1.2 Measuring Cost:

For analysing cost and calculating the cost-effectiveness, the total cost of delivering an intervention or programmes and the cost per unit of outcome measure is required. In general, costing followed the process as described below:

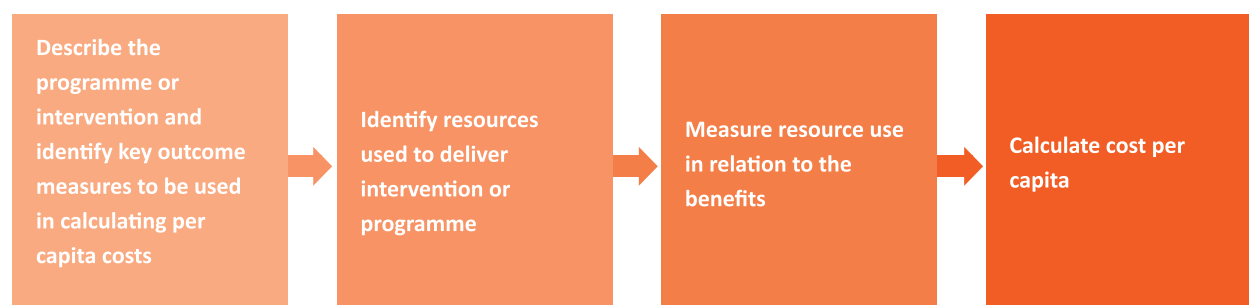


Figure 10: Costing Method

The scope of cost-effectiveness analysis is restricted to financial cost and includes all expenditure that has contributed towards achieving actual outcomes. Cost data was taken from programme financial records and the programme budget documents including quarterly progress reports and were classified as:

- a) **Activity cost:** which refers to the quantity of resources used in delivering programme services,
- b) **Indirect/administrative cost:** which included operational expenditure on staff costs, programme support and other overhead expenditure including utilities, rent and supplies

The financial costs were collected retrospectively from the partner NGO to generate total and unit cost estimates over the years of intervention programming. From the line items in the financial records, the total project amount different project activities were allocated thereby computing **cost per outcomes**. Annexure 1 presents the mapping of the cost against each mega outcome for each project. Further, cost data represents the full cost of implementing the intervention over the evaluation period. Costing of programmes and the corresponding period of evaluation is presented below:

Table 8: Costing of programmes and the corresponding period of evaluation

Project A	2014-2015
Project B	2014-2015
Project C	2013-2015

For making an analytical comparison, cost per outcome per household was estimated across the programmes. While projects had data on the households that were targeted, it did not have uniform data on the number of participants per household. Hence, for comparability, the costs were averaged at the household level. This divides programme cost per outcome by the number of households covered by the project.

where Project A is the more effective measure for a particular mage outcome and B is the second most effective.

The incremental cost effectiveness analysis considers the difference in costs divided by the difference in effectiveness that result from comparing one intervention option to the next most effective intervention

3.1.3 Calculating cost-effectiveness:

The cost-effectiveness of the selected CCA projects was assessed to identify the least costly adaptation intervention for achieving the outcome and were compared to a 'status quo' alternative. This is represented by the outcome and cost associated with the control group. By assessing the interventions in terms of the cost per unit of outcome, the approach allows for the identification of those projects that deliver highest benefit at lowest cost. The CEA were compared on two levels:

1) Overall cost effectiveness analysis: The overall cost effectiveness was calculated as follows

$$\text{Cost Effectiveness for Mega Outcomes 1} = \frac{\text{Per unit cost per mega outcome 1 + intervention}}{\text{effectiveness}}$$

Using this approach the per unit cost of the intervention to achieve the outcome is divided by the intervention effectiveness. An overall cost-effective analysis simply compares the cost per unit of effectiveness for each intervention

2) Incremental Cost Effectiveness Analysis: An incremental cost effectiveness ratio is expressed by

$$\frac{(\text{Cost Option for Project A} - \text{Cost Option for Project B})}{(\text{Effectiveness of Project A} - \text{Effectiveness of Project B})}$$

3.2 Results from the analysis

3.2.1 What is the relationship between gender design and the gender mega-outcome on increasing women's opportunities to access economic resources and participate in leadership and decision making?

The relationship between gender, development and climate change is not a new subject and there are several studies that allude to the need for CCA efforts to address the nexus between climate change and the wide-ranging socioeconomic sources of vulnerability, including poverty and gender inequality (Habtezion, 2013). The United Nations Millennium Development Goals and Sustainable Development Goals emphasize a clear linkage between gender equality and achieving all other goals, including sustainable development.

However, there is limited evidence on the extent to which gender specific/ transformative approaches to CCA contributes to greater gender equality. Hence, it is important to understand the potential effectiveness gain of a gender-specific or gender-transformative approach vis-à-vis a

gender-neutral approach to achieve the simultaneous objectives of building resilience in communities and promoting gender equality. To address this knowledge gap, the first step of the study was to assess the gender dimension of CCA and examine if adaptation initiatives that are gender-aware effectively promote gender equality.

Adapting from an established framework (Kabeer & Subramanian, 1996), projects were classified along a 'gender continuum' according to the level of change with respect to gender that they seek to achieve - ranging from gender-neutral; through to being gender-specific or gender-transformative (Refer Chapter 3). The larger gender outcome that was considered for the evaluation **"Increasing women's opportunities to access economic resources and participate in leadership and decision making"** is based on the premise that women's unequal participation in decision-making processes and labour markets compound inequalities and often prevent women from fully

contributing to climate-related planning, policy-making and implementation.

To assess the impact of the programmatic interventions on gender equality, intermediate outcomes to gender equality were identified. Figure 11 illustrates the components that were designed based on the review of the interventions, to identify the intermediate outcomes that connect to the broader gender equality outcome. These are the components through which projects theorise that improvement in gender equality can contribute to climate change adaptation. The problem statement and gendered vulnerabilities identified in the first two columns identifies the root causes that the project seeks to address. This is mapped against the set of meta-outcomes that look at the various gender aspects across the three identified projects and that combine to form the mega outcome on gender – increasing women's opportunities to access economic resources and participate in leadership and decision making.

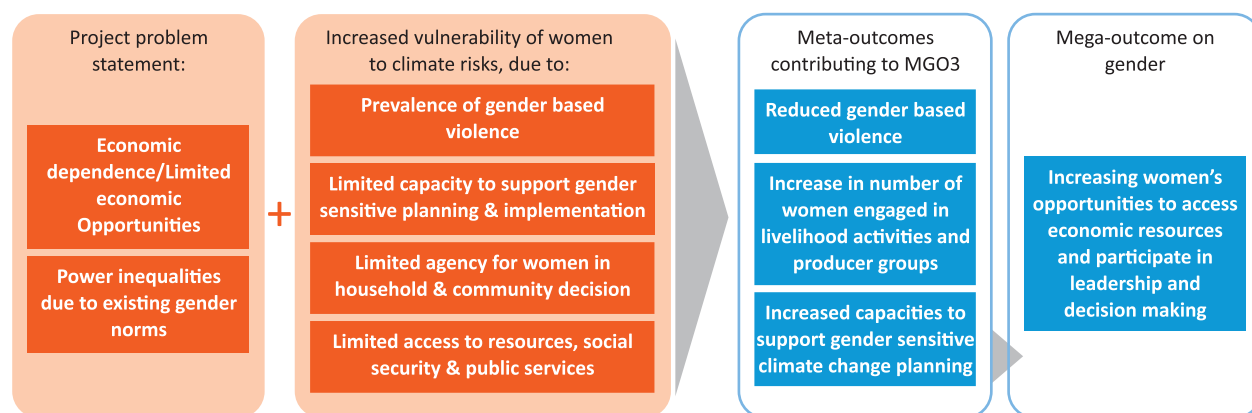


Figure 11: Pathways between gender inequality and climate change vulnerability

To measure effectiveness, gender aware outcome indicators that measure the beneficiaries' perception on changes were defined and covered the following dimensions:

- Participation in decision making in public and private domain on a more equal basis
- Access to and control over economic resources and basic social services
- Fewer women suffer from gender based violence
- Gender stereotypes and discriminatory attitudes towards women and girls are challenged and begin to change;
- Women have increased capacity to organise and become active agents of change

Specific areas of inquiry that were included in the survey tools are:

- Gendered division of labour
- Household decision making
- Participation in public decision making
- Control over productive resources
- Access to livelihood opportunities and social services

- Adaptive capacity and resilience to climate change

The survey questions on gender outcomes were structured as a 'set of statements' describing the changes in action/ behaviour/ relationship over the evaluation period and the respondents were questioned on whether they agree or disagree with the statements. Table 9, below presents the statements that were used in the survey instruments to explore gender dimensions including norms and power structures.

Table 9: Statement to measure gender outcomes

- Women at disaster and climate risks and shocks have and access to livelihoods and opportunities of coping with its climate risks
- Women's access to livelihoods opportunities for coping with climate risks has improved since the beginning of this intervention
- Women's agency and decision on division of labour in the household with respect to tasks such as such as cooking, cleaning, caring and fetching firewood and water has improved
- All financial decisions of the household are taken in consultation with the women and the decision is made jointly
- Women have gained more influence in household decisions
- Women have greater awareness/ knowledge regarding climate change, adaptation and disaster risk reduction
- Women are taking more leadership role in the CBOs
- Women in the community are more confident and independent
- Women face lesser vulnerable situation in access to health and hygiene care and have greater protection from diseases
- There are more women engaging in livelihood/ enterprise activities
- Women face lesser challenges in starting and running their business
- Women have improved access to social justice and legal aid
- Women have greater mobility
- There is greater inclusion of women in local government governance system
- Women should have equal rights
- Women's ability to have and demand equal rights has improved since the beginning of this intervention

3.2.1.1 Evidence of Effectiveness:

The findings from the evaluation study indicate that projects which incorporate issues of gender equality in their design of the intervention can be

more effective in achieving broader gender equality goals. Table 10 presents the effectiveness score of each of the projects for the mega outcome on increasing women's opportunities to access economic resources and participate in leadership and decision making.

Table 10: Effectiveness Score- Increasing women's opportunities to access economic resources and participate in leadership and decision making

	Project A	Project B	Project C	Control
Outcome: Increasing women's opportunities to access economic resources and participate in leadership and decision making	1.38 *	1.04 ^	1.24 *	1.00

Note: * refers to the significant scores whereas ^ indicates insignificance

The effectiveness score indicates that Project A which is classified as 'gender transformative' in the gender continuum is 38% more effective vis-à-vis the control group while Project B and C are 4% and 24% more effective in achieving their outcome, respectively. However, an interesting observation with scope for further exploration is that, Project B which is classified as 'gender specific' is observed to be less effective than Project C which is 'gender neutral'.

A plausible cause that could potentially explain the difference in the effectiveness score for the gender outcome relates to the effectiveness of strategies adopted under each project. In Project C (gender-neutral), gendered intervention strategies included improved access to livelihood opportunities through provision of women enterprise loans and creation of producers' groups for women, access to social services including legal aid, and maternal and child health service delivery and nutrition. However, there was little emphasis on addressing some of the systemic gendered barriers associated with social norms and perceived roles of women in society. On the other hand, activities in Project B were geared towards behaviour and social norm change as well as capacity building for adoption of resilient livelihood

opportunities, which often take longer to create change and hence, take longer to demonstrate effectiveness. Some of the core activities in Project B included a) promoting awareness regarding social rights, gender specific vulnerabilities associated with climate change and disasters and gender inclusive climate adaptation planning and implementation; b) promoting equal access in decision making process at household and community level through behaviour change campaigns; c) strengthening community-based organisations' (CBOs) capacity through training initiatives to address gender constraints and; d) encouraging women's participation in training workshops on market access and business linkages.

Table 10 helps us establish that gender-transformative projects indeed have the potential to perform on gender outcomes, a critical component of climate adaptation strategy, especially in Bangladesh (Ahmad, 2012). The next section of the report emphasises on understanding if such gender-transformative design also translates into cost-effectiveness for a broader set of climate adaptation outcomes that include livelihood empowerment as well as local institutional and community capacity strengthening.

3.2.2 Do gender-transformative adaptation projects lead to more favourable climate change adaptation outcomes?

Climate change adaptation requires a human-centric approach to tackle the impacts of climate change. This human-centric approach primarily involves livelihood protection and strengthening capacity of women, households, and communities to be active agents of change, as well as enhanced capabilities and awareness of the communities to respond to disasters. The nature of intervention strategies that have been undertaken by all the three projects follows the standard aspects of climate change adaptation planning and implementation.

Upon contextualising the broader climate adaptation theme with respect to the short-listed projects, CCA outcomes broadly include the following mega-outcomes:

This section presents the performance of the three shortlisted projects, across the above-mentioned mega-outcomes in terms of effectiveness, compares per capita costs and therefore the cost-effectiveness. These analysis results will be presented mega-outcome-wise and then, a final ranking of the projects across the mega-outcome indicators, both, in terms of effectiveness as well as cost-effectiveness will be presented and analysed.

Table 11: Climate Adaptation mega-outcomes mapped against respective meta-outcomes

Mega Outcomes	Meta-Outcomes
Building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries	Enhanced ability (of households and communities) to engage in Income Generation Activities
	Increased access to inputs and resources to engage in income generating activity
	Enhanced protection against climate-disaster related shocks including preparation for and better ability to adapt to climate extremes and disasters
	Enhanced medium, frequency and effectiveness of climate change related communication
Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation effortst	Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level
	CBOs have greater capacity to plan and manage operations

This section presents the performance of the three shortlisted projects, across the above-mentioned mega-outcomes in terms of effectiveness, compares per capita costs and therefore the cost-effectiveness. These analysis results will be

presented mega-outcome-wise and then, a final ranking of the projects across the mega-outcome indicators, both, in terms of effectiveness as well as cost-effectiveness will be presented and analysed.

3.2.2.1 Building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries

This outcome primarily deals with the economic and livelihood empowerment of the vulnerable communities. This involves activities pertaining to:

- **Material support:** to sustain livelihoods, either in the form of cash transfers or other forms of tangible support in terms of seed distribution, etc.
- **Training and capacity building:** to increase awareness and knowledge about the various climate adaptation relevant economic activities as well as resilient practices to enhance adaptive capacity
- **Networks and social capital support:** through the creation of producer groups and other networks that also improve the networks and linkages of the beneficiary communities with markets
- **Communication:** to promote normative change in behaviour of vulnerable communities to improve their adaptive capacities to respond more effectively to the consequences of climate change

Evaluating effectiveness

The effectiveness of a particular mega-outcome is measured based on how the projects perform against the identified meta- and mega- outcomes. Data pertaining to effectiveness is collected from the primary survey. The primary survey questionnaire sought to understand the change in the condition of the beneficiaries pre- and post- the interventions, as can be attributed to these interventions (refer Chapter 3). The effectiveness analysis has developed a ratio of effectiveness scores in reference to the control group, as highlighted in Table 12, below:

The gender-transformative Project A, exhibits the most effective performance with respect to achieving the outcome on building resilience to climate change through increased awareness and adoption of resilient practices. It performs 37% better than the control group where no such intervention was provided.

Table 12: Ratio of effectiveness scores to the control group - building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries

Project A	Project B	Project C	Control
Gender-transformative	Gender-specific	Gender-neutral	
1.37*	1.25^	1.04^	1.00

Note: * refers to the significant scores whereas ^ indicates insignificance

This implies that, in relation to the control group, Project A demonstrates 37% more effectiveness in achieving the outcome of building greater resilience and enhancing awareness to climate resilient practices, following by Project B with 25% greater effectiveness and Project C demonstrating only 4% more effectiveness in comparison to the control group. This indicates that Project A, the gender transformative project is most effective, followed by Project B (gender-specific) and Project C (gender-neutral) – thus keeping in line with our assumption about the relationship between role of gender in project design and its desired outcomes.

For a more disaggregated understanding of the factors impacting the effectiveness of the mega-outcome, effectiveness scores of the meta-indicators that aggregate as the mega-outcome have also been provided to understand which specific aspects contribute to overall mega-level outcomes. Table 13 maps the meta-outcomes that are relevant to the respective projects.

Table 13: Meta-outcomes contributing to the mega-outcome on building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries

S. No.	Meta Outcomes	Project A	Project B	Project C
MO: 1	Greater capacity (of households and communities) to engage with Income Generation Activities			
MO: 2	Increased access to inputs and resources to engage in income generating activity			
MO: 4	Enhanced protection against climate-disaster related shocks / People are more prepared for and better able to adapt to climate extremes and disasters			
MO: 5	Enhanced medium, frequency and effectiveness of CC-related communication			

Note: The green boxes indicate the presence of these outcomes in the Project and red indicates their absence. Table 13 indicates that Project A and Project B are comparable across all five identified meta-outcomes that contribute to the mega-outcome on building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries. On the other hand, Project C does not consider any outcomes pertaining to people's ability to prepare for climate-induced disaster (MO4) and effective community-level climate change related communication (MO5)—therefore, Project C's focus in terms of building resilience is restricted to improving beneficiary capacities through skilling and providing material support, versus Project A and Project B that also emphasise on greater preparedness and communication strategies at the community level.

Table 14 provides the rankings and significance of the effectiveness scores across the meta-outcomes that contribute to the mega-outcome on building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries.

An overall comparison indicates that Project A

demonstrates the most effective scores across all meta-outcomes since it consistently has the highest effectiveness scores. For instance, under meta-outcome 4 on enhanced protection against climate-disaster related shocks, Project A performs nearly 4 times better than the control group. Similarly, for MO5 on enhanced medium, frequency and effectiveness of CC-related

Table 14: Meta-outcome level effectiveness for MGO1 on building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries

Meta Outcomes	Project A	Project B	Project C	Control
MO: 1	1.18^	1.03^	1.06^	1.00
MO: 2	1.46^	0.84^	0.94^	1.00
MO: 4	4.65*	4.42*	-	1.00
MO: 5	1.63*	1.51*	-	1.00

Note: * implies a significant score and ^ implies insignificance

communication, Project A performs 63% better than the control group. In both the instances, the effectiveness scores are significant in comparison to the control group.

practices, as indicated in Figure 12. This highlights the significant importance of the mega-outcome in contributing to the overall project outcome and impacts.

Calculating Cost

To ensure comparability, per-capita costs are taken against each activity that is mapped against the corresponding outcomes. The per-capita costs are provided at two levels — (1) costs inclusive of indirect costs such as staffing and related overheads and, (2) costs exclusive of indirect costs.

89% of the overall outcome budget, aggregated across projects is assigned to outcome on building resilience to climate change through increased awareness and adoption of climate resilient practices.

First, we look at the proportion of costs that each of the selected projects has assigned to their respective activities corresponding to this mega-outcome. A comparison indicates that nearly 89% of the overall outcome budget, aggregated across projects is assigned to outcome on building resilience to climate change through increased awareness and adoption of climate resilient

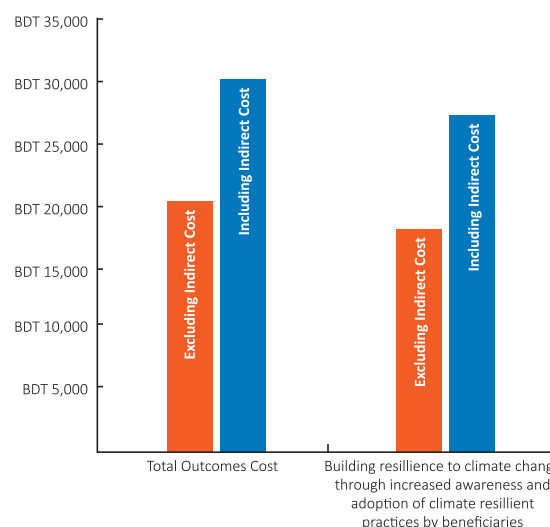


Figure 12: Comparing the proportion of project cost to outcome cost - Building resilience to climate change through increased awareness and adoption of resilient practices

Across projects, Project C has the maximum proportion of per-capita cost spent on this mega-outcome. A possible reason for this can be the nature of intervention. While Project A and Project B emphasise more on the capacity building and social capital enhancement approaches to achieving greater climate resilience, Project C is predominantly engaged in providing material support to its beneficiaries, thus increasing its project activity related expenses, even at a per-capita .

Building resilience to climate change through increased awareness and adoption of resilient practices

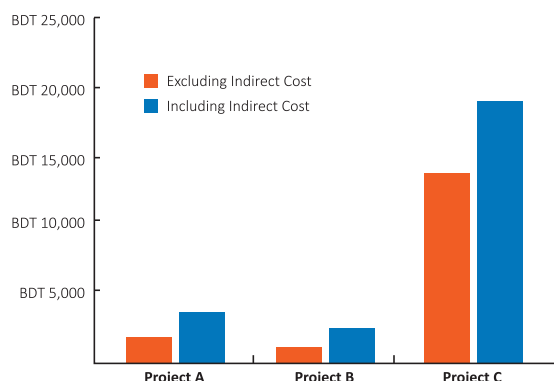


Figure 13: Comparing per-capita project costs against mega-outcome on building resilience to climate change through increased awareness and adoption of resilience practices

Calculating the outcome-wise per capita cost is an important step towards undertaking a cost-effectiveness analysis. An inter-project comparison (Figure 13) provides some sort of a financial indication of the proportion of budgets apportioned for the mega-outcome that is currently being evaluated. As indicated earlier, it also provides insight into the rationale for such

variations, owing to nature of intervention, etc. Comparing the proportion of outcome indicator budget to the overall outcome budget also provides insights into the emphasis/ orientation and each project in terms of the addressing the various dimensions of climate change adaptation (Figure 12).

Measuring cost effectiveness

As discussed in Chapter 3, cost-effectiveness measures the budgetary cost that is involved to realise a unit of project outcome effectiveness. It is calculated by taking the total per-capita cost for activities undertaken to realise the outcome of interest and divided by the units of effectiveness (in our case the effectiveness score as explained in Chapter 2 on Research Methods). This is across the duration of the project (the timelines and project phases must be similar) and at the per-capita cost level, to ensure comparability. This calculation for the building resilience outcome is presented in Table 15.

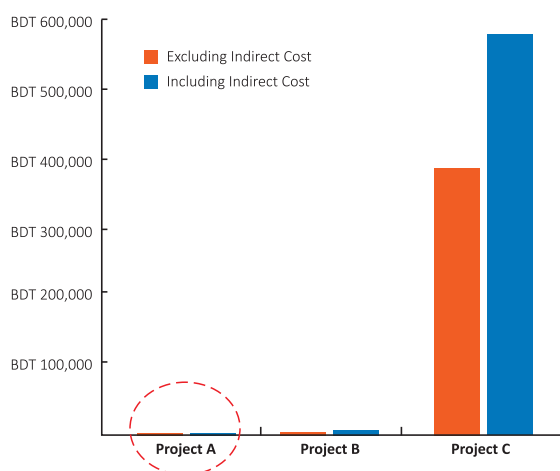
Table 15: Cost-effectiveness for Mega Outcome on building resilience to climate change through increased awareness and adoption of resilience practices

Meta Outcomes	Project A		Project B		Project C	
Without indirect cost	BDT	7,128	BDT	8,296	BDT	390,137
With indirect cost	BDT	9,200	BDT	14,377	BDT	563,511

The results indicate that Project A is most cost-effective, followed by Project B and Project C demonstrates the least cost-effectiveness. This is because **it takes BDT 7,128 under Project A, to bring about a 1 unit improvement in effectiveness of the resilience outcome; Project B is marginally more expensive at BDT 8,296 and Project C is the most expensive, where even a one unit improvement in the outcome requires incurring cost equivalent to BDT 390,137.** Including indirect

costs, the ranking remains consistent, however, the per-capita amount is most substantial for Project C (Figure 13), thus indicating the proportion of indirect costs being highest in the case of this project—this provides scope for further exploration to understand how the project design and structuring in terms of the share of direct and indirect costs, impact project outcomes. Diagrammatically, Figure 14 below provides a useful comparison across projects.

Building resilience to climate change through increased awareness and adoption of resilience practices



Therefore, what does mean in terms of insights and comparisons between the three shortlisted projects? In order to understand that better, an incremental cost-effectiveness was also calculated, anchoring the other two projects against the best performing project. In other words, the numbers in Table 16 will inform us on the additional per-capita amount of BDT that Project B and Project C must invest in this outcome to achieve the equivalent effectiveness as Project A.

Gender-transformative design results in the most cost-effective outcome of building resilience to climate change through increased awareness and adoption of resilient practices, followed by a gender-specific design. Gender-neutral project design results in the least cost-effective outcome.

The cost-effectiveness result for the outcome on building resilience to climate change through increased awareness and adoption of resilient practices is congruent with our gender spectrum, thus supporting the hypothesis that a gender-transformative design results in the most cost-effective outcome of building resilience to climate change through increased awareness and adoption of resilient practices.

Table 16: Incremental Cost for Project B and Project C, to achieve equivalent effectiveness as Project A

Project A is the most effective	Delta in effectiveness from		Cost effectiveness for 1% increase from control		Per capita cost to reach Project A	
	Project A	Control	Without indirect cost	With indirect cost	Without indirect cost	With indirect cost
Project B	0.12	0.25	BDT 83	BDT 144	BDT 1,028	BDT 1,782
Project C	0.34	0.04	BDT 3,901	BDT 5,635	BDT 131,953	BDT 190,592

The more gender-specific a project is, and the greater the integration in its design, of gender dimensions, the lower the amount of financial investment required to achieve the aspired levels of effectiveness.

From Table 16, we can interpret that for Project B (the gender-specific project) to achieve a cost-effectiveness of 1% more from control, it only requires BDT 83 (without including indirect cost) and BDT 144 (including indirect cost). In comparison, Project C needs BDT 3,901 (without including indirect cost) and BDT 5,635 (including indirect cost). Similarly, if Project B wants to achieve an equivalent level of effectiveness as Project A, then it should invest approximately BDT 1,028 per beneficiary (excluding indirect costs) and BDT 1,782 (including indirect costs). Whereas, Project C requires a more substantial investment per beneficiary – BDT 131,953 (excluding indirect costs) and BDT 190,592 (including indirect costs). This implies that greater the emphasis on gender in the project design, achieving aspirational levels⁶ of effectiveness becomes easier.

3.2.2.2 Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts

This outcome primarily deals with empowering communities through awareness programmes as well by improving the capacities of institutions such

as local civil society organisations and the government. From the point of the analysis, this outcome is an aggregation of the following meta-outcomes:

- Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level
- CBOs have greater capacity to plan and manage operations

Evaluating Effectiveness

As mentioned in the sub-section 3.1, the effectiveness of a specific mega-outcome is measured based on how the projects perform against the identified meta- and mega- outcomes. For the mega-outcome on strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts, the ratio of effectiveness, in comparison to the control group are presented as below in Table 17:

The gender-specific Project B, exhibits the most effective performance with respect to achieving the outcome on strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts and is followed closely by gender-transformative Project A.

⁶ Either in terms of a 1% improvement from the control or in terms of achieving equivalent levels of improvement as the most cost-effective option

Table 17: Ratio of effectiveness scores to the control

Project A	Project B	Project C	Control
Gender-transformative	Gender-specific	Gender-neutral	
5.12*	5.20*	1.14^	1.00

Note: * refers to the significant scores whereas ^ indicates insignificance

This implies that, in relation to the control group, Project B demonstrates 420% more effectiveness in achieving the outcome of strengthening local capacity of both the government and civil society in assisting the vulnerable communities in responding to adaptation efforts, very closely followed by Project A with 412% greater effectiveness and Project C demonstrating only 14% more effectiveness in comparison to the control group. This indicates that Project B, the gender-specific project is most effective, followed by Project A (gender-transformative) and Project C (gender-neutral). The difference in effectiveness between Project B and Project A is relatively marginal in comparison to Project C and hence broadly support the assumption that incorporating

gender dimensions into project design results in more effective outcomes in terms of strengthening the capacity of local institutions such as CSOs and the government in supporting the community's adaptation efforts.

For a more disaggregated understanding of the factors impacting the effectiveness of the mega-outcome, effectiveness scores of the meta-indicators that aggregate as the mega-outcome have also been provided to understand which specific aspects contribute to overall mega-level outcomes. Table 18 maps the meta-outcomes that are relevant to the respective projects.

Table 18: Meta-outcomes contributing to the mega-outcome on strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts

S. No.	Control	Project A	Project B	Project C
MO: 3	Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level			
MO: 8	CBOs have greater capacity to plan and manage operations			

Table 19 provides the rankings and significance of the effectiveness scores. An overall comparison indicates that Project B demonstrates the most effectiveness across all meta-outcomes.

Table 19: Meta-outcome level effectiveness for MGO1 on strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts

Meta Outcomes	Project A	Project B	Project C	Control
MO: 3	4.19*	4.20*	1.05^	1.00
MO: 8	9.48	10.26*	-	1.00

Note: * refers to the significant scores whereas ^ indicates insignificance

For the outcome on strengthened awareness and ownership, Project B performs 320% better than the control and Project A is a close second at 319%, where Project C is only 5% better. For the outcome on enhanced CBO capacities, Project B performs 926% better and Project A 848% better than the control.

7% of the overall outcome budget, aggregated across projects is assigned to the outcome on strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts resilient practices.

Calculating Cost

To ensure comparability, per-capita costs are taken against each activity that is mapped against the corresponding outcomes. The per-capita costs are provided at two levels — (1) costs inclusive of indirect costs such as staffing and related overheads and, (2) costs exclusive of indirect costs.

First, we look at the proportion of costs that each of the selected projects has assigned to their respective activities corresponding to this mega-outcome. A comparison indicates that 7% of

the budget allocated across the three mega-outcomes, as provided in Figure 15 below.

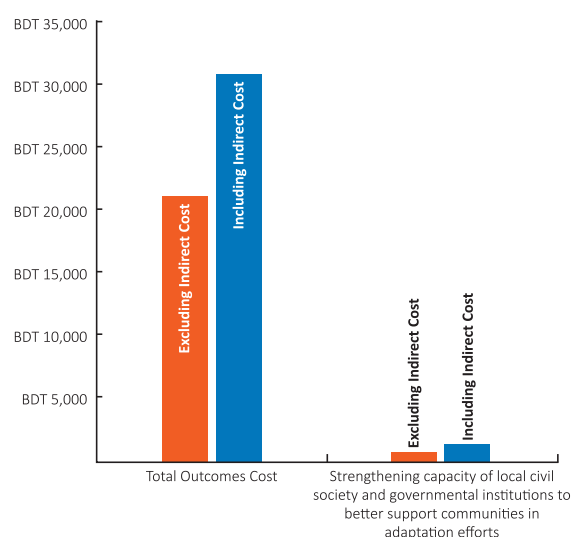


Figure 15: Comparing the proportion of project cost to outcome cost – Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts

Across projects, Project A has the maximum proportion of per-capita cost. A possible reason for this can be the nature of intervention and the focus of project objectives. Both, Project A and Project B explicitly articulate their objective of strengthening community capacities and this is featured in their outcome and impact definitions. Project A's share of per-capita cost is also high, given that its proportion of material support among communities is higher than that of Project B that focuses primarily on training and capacity building of the communities and is hence relatively less capital intensive than Project A, as demonstrated in Figure 16.

Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts

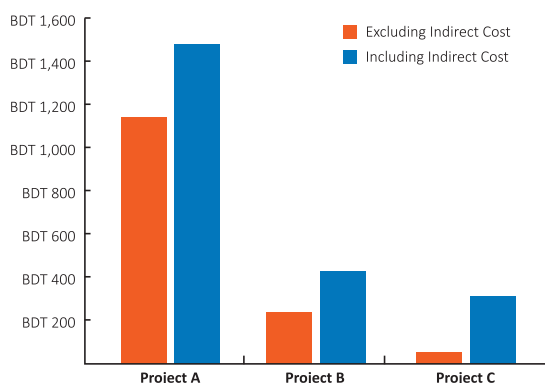


Figure 16: Comparing per-capita project costs

Measuring Cost-Effectiveness

The cost-effectiveness calculations presented in this report are across the duration of the project (the timelines and project phases must be similar) and at the per-capita cost level, to ensure comparability. The calculation for the outcome on strengthening community capacities is presented in Table 20.

Table 20: Cost-effectives for Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts

Meta Outcomes	Project A	Project B	Project C
Without indirect cost	BDT 278	BDT 60	BDT 524
With indirect cost	BDT 361	BDT 104	BDT 2,193

The table indicates that Project B is most cost-effective, followed by Project A and, Project C demonstrates the least cost-effectiveness. It takes BDT 60 under Project B to bring about a 1 unit improvement in effectiveness of the community capacity outcome; Project A is more expensive at BDT 278 and Project C is the most expensive, where a one unit improvement in the outcome requires incurring cost equivalent to BDT 524. Inclusive of indirect costs, Project C again demonstrates a disproportionate share of indirect costs, thus pushing a case for further exploration of how project design and programme structuring impact an outcome's cost-effectiveness. Diagrammatically, Figure 17 below provides a useful comparison across projects.

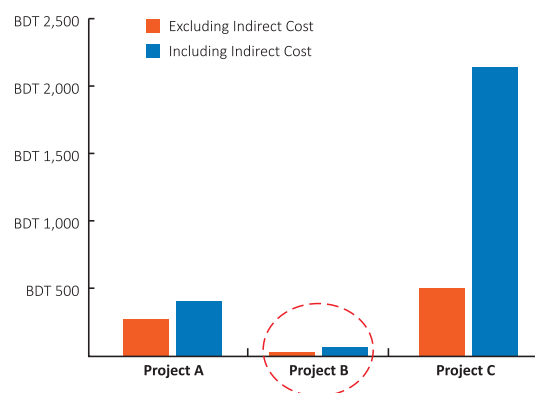


Figure 17: Comparing project-wise cost-effectiveness for the outcome on strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts

To identify prescriptive aspects, an incremental cost-effectiveness was also calculated, anchoring the other two projects against the best performing Project B. In other words, the numbers in Table 21 will inform us on the additional per-capita amount of BDT that Project B and Project C must invest in this outcome to achieve the equivalent effectiveness as Project B.

Gender-specific and transformative designs result in more cost-effective outcomes in terms of strengthening communities' capacity to adaptation response. Gender-neutral project design results in the least cost-effective outcome.

Table 21: Incremental Cost for Project A and Project C, to achieve equivalent effectiveness as Project B

Project B is the most effective	Delta in effectiveness from		Cost effectiveness for 1% increase from control		Per capita cost to reach Project A	
	Project B	Control	Without indirect cost	With indirect cost	Without indirect cost	With indirect cost
Project A	0.07^	4.12*	BDT 2.78	BDT 3.61	BDT 22	BDT 29
Project C	4.06	0.14^	BDT 5.24	BDT 21.92	BDT 2,128	BDT 8,899

Note: * refers to the significant scores whereas ^ indicates insignificance

From Table 21, we can interpret that achieving a 1% increase in cost-effectiveness from the control is very nominal and easily achievable by the projects – for Project A (the gender-transformative project) to achieve a cost-effectiveness of 1% more from control, it only requires BDT 2.78 (without including indirect cost) and BDT 3.61 (including indirect cost); in comparison, Project C needs BDT 5.24 (without including indirect cost) and BDT 21.92 (including indirect cost). Hence, in terms of intervention strategy, the community capacity outcome can be perceived as a 'low-hanging-fruit' in terms of adaptation strategies because implementing agencies require only a nominal per-capita investment to achieve a 1% improvement over the control group.

Similarly, if Project A wants to achieve an equivalent level of effectiveness as Project B, then it should invest approximately BDT 22 per

beneficiary (excluding indirect costs) and BDT 29 (including indirect costs). Whereas, Project C requires a more substantial investment per beneficiary – BDT 2,128 (excluding indirect costs) and BDT 8,899 (including indirect costs). Furthermore, the difference in the effectiveness scores between Project A and Project B were determined to be insignificant. Therefore, though

Projects that adopt a more sensitive and transformative outlook on gender in their implementation activities, tend to receive more cost-effective outcomes in terms of strengthening community capacities in responding to climate change.

in terms of ranking of cost-effectiveness between the short-listed projects, Project B is more cost-effective than Project A, the difference between the two is only marginal, thus strengthening our hypothesis that gender-transformative design leads to more cost-effective outcomes in comparison to those projects that do not focus on a more comprehensive role for gender in their project design.

3.3. Synthesising our analysis

To answer the question that was set forth at the beginning of this chapter: do gender-transformative projects result in cost-effective climate change adaptation outcomes? Yes, as per the evidence collected through this study. Projects that adopt a more gender-transformative design exhibit greater

effectiveness not only in terms of gender, but also climate change adaptation outcomes such as community capacity and resilience building (critical aspects to CCA response).

A critical aspect in the interpretation of these results is the statistical significance of these results. Therefore, a two-sample z-test was conducted to test the significant divergence of the means of the three treatment groups (Projects A, B and C) from the control group. The known variance was approximated to the sample variance of the effectiveness scores of the treatment and control responses. A hypothesised mean difference of zero was set between the sample means for the null hypotheses. The alternate hypotheses were defined as an inequality of the means at a 5% level of significance. For pairwise comparisons with a p-value less than 0.05, the means were deemed to be significantly different from each other. Based on this, the following results were obtained with respect to the z-test:

Table 22: Project-wise significance (against the control group) of outcomes using z-test

	Project A	Project B	Project C
MGO1 (resilience) and control	Significant	Not significant	Not significant
MGO2 (community) and control	Significant	Significant	Not significant
MGO3 (gender) control	Significant	Not significant	Significant

Similarly, since the analysis has adopted an approach of ranking the three short-listed projects as most, moderately and least effective in terms of outcomes, a significance test was also conducted between the most and moderately effective rankings across the outcomes, to ensure that the rankings and conclusions were considerate of these factors. For instance, the difference between the most and second-most/moderately cost-effective project is significant with respect to MGO1 and MGO3 – Project A, the gender-transformative project is unambiguously the most outcome effective. However, with respect to MGO2, the difference between the most cost-effective (Project B) and moderately effective (Project A), emerges as insignificant in terms of project outcomes.

Therefore, it is reasonable to conclude that Project A, the most gender-transformative project emerges as one of the most effective projects, across outcome-indicators, thus supporting our hypothesis that gender-transformative designs result in effective climate change adaptation outcomes.

Whilst the analysis predominantly supports our hypothesis, there is still scope for recommendations emanating from both, the results of the analysis of the projects as well as in the manner in which the study was undertaken, given the practical constraints faced. These insights, recommendations and way forward are presented in the following chapter.

Table 23: Is the difference between first and second ranked projects, significant?

Meta Outcomes	Most effective in terms of outcomes	Moderately effective in terms of outcomes	Is the difference between first and second significant?
MGO1 – resilient practices	Project A	Project B	Significant
MGO2 – community capacities	Project B	Project A	Not significant
MGO3 – gender	Project A	Project C	Significant





CHAPTER

4

Conclusions

Summary:

- Limitations of the study and rationale for methodological and analytical assumptions
- Next steps and points of discussion: methodological recommendations, inferences from the analytical results on project design, scope for further research and policy action points

4. Conclusions

The results of our study indicate that gender is central to determining the effectiveness of any climate change adaptation intervention. The study examines the impact of gender-aware adaptation planning and implementation and, shows that gender matters not only for the equity of CCA programmes but also for their effectiveness and cost-effectiveness. As presented in Chapter 3, the results of our analysis broadly support the hypothesis that a gender-transformative project design can result in cost-effective climate change

adaptation outcomes. The findings of the study have important implications for the debate on how best to improve gender and climate change outcomes in the developing countries. However, it is important to highlight the limitations of the study in order to study the results of the analysis in the light of the limitations posed. Drawing from the findings (presented in chapter 3) and limitations encountered by the research team in conducting the CEA analysis in the areas of gender and climate change, certain directions are presented in this chapter which summarised below:

Table 24: Parameters for structuring the discussion points

Parameters	Description	Discussion points
Development policy and practice	This section will present discussion points emerging from the limitations of the current scope of the study to encourage future research in the specific thematic areas of climate change adaptation and gender empowerment. This section will also present potential entry points for gender-aware planning and policy making with respect to climate change adaptation.	<ul style="list-style-type: none"> • Create an agenda to better integrate gender dimensions in programme designs into Bangladesh's NAPA's strategy to give it institutional impetus • Bangladesh's Bureau of Statistics must be encouraged to collect climate change adaptation related data at Upazila, Union and Village level, that is also gender disaggregated. This will support a more robust and comprehensive evaluation of CCA projects
Implications for further development and application of the research methodology	Drawing from the current limitations of the project with respect to the research design, techniques and tools, suggestions have been presented. These seek to contribute towards enhanced robustness of establishing evidence with respect to the effectiveness of gender awareness on CCA outcome	<ul style="list-style-type: none"> • There is a need to promote greater capacity initiatives at the design as well as implementation level. This is required to inform gender integration into climate adaptation programmes among the research, strategy and design teams as well as project implementation staff • Monitoring and evaluation must take into account gender equality results. Project staff's capacity to adopt a gender-aware results framework and select and design appropriate gender-aware indicators must be enhanced

Parameters	Description	Discussion points
		<ul style="list-style-type: none"> • Project managers must be encouraged to record detailed cost information in line with standard templates, to facilitate higher quality cost-effectiveness evaluations. This provides a strategic opportunity for UN Women to coordinate with researchers and climate change practitioners in arriving at standardised outcome and cost measures for greater comparative cost effectiveness analysis • Creation of a self-assessment tool that enables scientific classification of climate change adaptation projects across the gender continuum prior to project design finalisation to allow for changes towards a more gender transformative approach • Development of tools for assessment of project proposals especially from a gender perspective in climate change • Studies that undertake a multi-country approach, drawing comparisons across projects performed in different countries, by different organisations, and in different years will provide more robust evidence and will prove to be a useful decision-making tool for policy-makers • As a continuation to this study, efforts must be undertaken to review gender-sensitive strategies' role in broader development mandates and interventions and identify promising, cost-effective climate change adaptation as well as gender-aware interventions that merit consideration as critical enablers in climate adaptation investment approaches • Operational research that explores avenues to make efficient incremental additions or design modifications that could be made to existing large-scale climate adaptation interventions, to optimise their impact on gender equality must be pursued

Note: Detailed description of the suggestions is presented in Section 4.2 of this chapter.

4.1 Limitations of the study

The following limitations were encountered in conducting the study and hence have a bearing on the assumptions made as well as the results and inferences obtained. The limitations are broadly around issues pertaining to availability of data, methodological limitations, and comparability of projects as discussed in further detail below.

Availability of data: The availability of data, at both, the budgetary level as well as primary survey on project performance, were challenging. With respect to budgetary data, the lack of annual actual expenditure data for FY (Financial Year) 2016 for Project A and Project B compelled the analysis to be limited to evaluating project performance only for the years of FY 2014 and FY 2015, while the project duration is till FY 2016. This limitation provides an incomplete picture of the costs that have been portioned out across the various activities throughout the project duration.

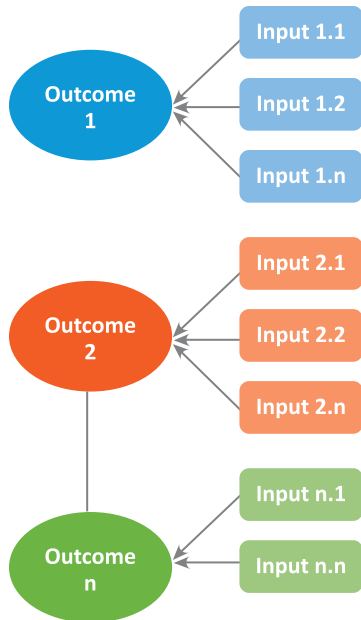
Project selection and comparability: The selection of projects was also largely constrained by the limitations in data (unavailability of key project documents such as project proposal, baseline report, etc.) and more importantly in the incorporation of the definitions of the various aspects of the gender-aware continuum. For instance, Project A and Project B demonstrate high levels of comparability with respect to the nature of their interventions as well as the outcomes and impacts that their interventions aspire to achieve. The size and demography of their target beneficiaries is also comparable, versus Project C which looks exclusively at women beneficiaries and targets more than three times the beneficiaries of the other two projects. Furthermore, the intervention period for Project A and Project B is identical whilst Project C has a slightly earlier start

date. Given these differences, Project A and Project B demonstrate greater similarities in comparison to Project C, therefore potentially impacting the analysis across standardised templates.

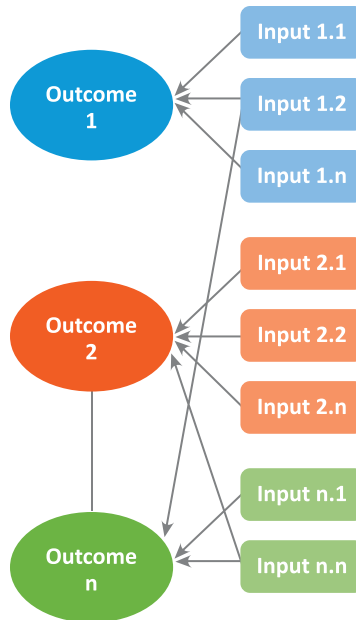
Geographic factors: The region of Bangladesh where these interventions are being carried out is one of the most vulnerable to climate change and natural disasters. Therefore, this region also has a high presence of donors implementing similar projects across the region. This increases the risk of contamination as well as of data not adequately capturing the spill over effects of the short-listed projects and their earlier phases. However, on the other hand, this meant that deflators and other normalising factors did not have to be employed to make the costs across projects comparable.

Methodological iterations: To ensure comparability across projects, as well as to ascribe cost variables exclusively to each outcome, the outcomes were first aggregated at a meta-indicator level. Under an ideal scenario, a single outcome is mapped to discreet inputs (or cost-heads as in the case of this study); however in reality, multiple project outcomes were being derived from a single input. Therefore, the solution lay in the creation of meta outcomes that can bundle outcomes with overlapping costs together. Next, the meta-indicators were aggregated at a mega-indicator level, to avoid thematic similarity between the outcome indicators, while ensuring that our climate change outcomes are mutually exclusive and collectively exhaustive. This has meant that the analysis and narrative are primarily focused at a mega- and meta-outcome indicator level, i.e. highly aggregated and hence unable to conduct an analysis on the cost-effectiveness at a more granular level that looks at activity categories.

Ideal scenario: one outcome mapped to discrete inputs



In reality, multiple outcomes are derived from a single input



What is the solution?

The creation of meta outcomes that can bundle outcomes with overlapping costs together

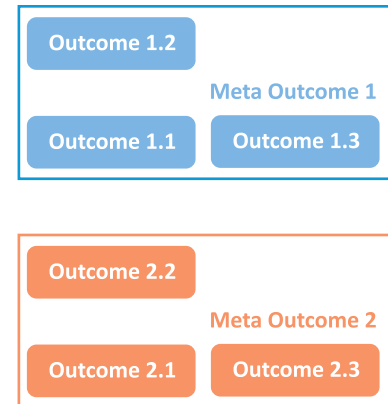


Figure 18: Rationale for creation of meta-indicators

Another methodological challenge lies fundamentally in undertaking a cost-effectiveness analysis of climate adaptation projects – a relatively emerging domain with scope for methodological improvements. The challenges associated with evaluating climate change adaptation interventions are already highlighted in Chapter 1.

Therefore, the results and insights presented in Chapter 3 have to be understood in reference to

these limitations that have also informed our assumptions to conduct the analysis. Given this background, the next section lays out the key discussion points and next steps that can be undertaken by UN Women in response to the results of this study.

4.2. Discussion points and next steps

4.2.1 Methodological recommendations

A. Capacity building for better gendered integration into climate change programmes:

In the classification of projects along the gender continuum, efforts were also made to understand the extent to which organisations involved in climate change and resilience work are incorporating gender-sensitive approaches into their programmes. Even the 'transformative' project lacked gender-sensitive approaches to planning as sufficient attention has not been placed on equitable sharing of the costs and benefits of CCA investments, and balanced data collection from men and women. **Insights from undertaking this study show that while organisations and project manager(s) are cognisant of the gendered impact of climate change and disaster risks, more capacity initiatives are required to ensure gender integration into climate change adaptation programmes.**

B. Greater emphasis on monitoring and evaluating gender related data:

Emphasis must be placed on monitoring and evaluating gender equality results. Even the gender-transformative project failed to include indicators and capture data relating to gender equality outcome as part of the monitoring and evaluation system. Project staff must be encouraged to adopt a gender-sensitive logical framework or results framework and select and design gender aware indicators. Capacity of the project staff must be built to enable better monitoring and evaluation of gender-related issues and collection gender-aware data

C. Standardised templates for capturing cost and outcome measures:

Further, the process of doing more and higher quality comparative

cost-effectiveness work in the climate change adaptation sphere will be greatly enhanced if project managers are encouraged to record detailed cost information and there are standard ways/ templates to collect data on costs and climate change and gender outcomes. To this end, consensus must be sought on the standardised indicators that measure climate change and related gender outcomes. UN Women can play a strategic role to coordinate with researchers and climate change practitioners to arrive at standardised outcome and cost measures for greater comparative cost effectiveness analysis.

4.2.2 Project design inferences

A. Self-assessment tools for measuring gender integration in climate change adaptation projects

To guide the project managers on how to integrate gender and examine the impact of gender on the project outcome, a self- assessment tool can be developed that enables the classification of the projects along a 'gender continuum'. The tool can lay out a series of questions that could help implementers assess how well climate change adaptation interventions are currently addressing gender considerations, and to determine how best to move along the continuum toward more transformative gender programming. These tools can guide the project managers to:

- a) set standards against which projects can be assessed (by themselves or others)
- b) facilitate identification of gender and climate change issues and provide entry points for mainstreaming gender-related issues in climate change projects

Lessons can be drawn from other tools including IGWG Gender Integration Continuum and USAID EQUATE (Gender Equality in Education Framework) to design a specific assessment tool for gender and

climate change. **Table 25 presents an illustrative list of sample questions that can be used to measure gender transformation in the context of climate change adaptation interventions:**

Table 25: Illustrative list of questions that can be used to measure gender-transformation in the context of CCA

Illustrative list of questions	Yes	No	Unsure
Explicit focus women's and men's experiences of climate change on the ground			
Takes into account the multiple dimensions of gender inequality and promote gender equality and women's voice as a core approach in the programs			
Engage with the complexity of gender to support women and men to act on the norms, attitudes and wider structural constraints that limit their opportunities and outcomes			
Program has a gendered Theory of Change (ToC), with specific gender goals and objectives, informed by a gender analysis			
Address power and resource imbalances in the household and community, and transform gendered roles and responsibilities			
In mixed interventions targeting women and men, at least 50% representation of women in project activities, and within this, prioritisation of marginalised or particularly vulnerable women (for example, people with disability, poor and very poor, female-headed households, ethnic minorities, elderly, land poor, households that have lost assets, pregnant and lactating mothers).			
Use of participatory risk assessment tools (the Climate Vulnerability and Capacity Analysis), gender analysis and gender action plans to better understand the vulnerabilities and capacities of target communities.			
The programmes support women and girls to increase their confidence, self-esteem, knowledge, skills and capabilities			
Systems in place to track progress towards gender equality, including the collection of sex-disaggregated data, use of indicators that specifically measure changes in gender norms, and the inclusion of women and men in project monitoring and evaluation reflection activities			

* This list is for illustrative purposes only and not exhaustive.

B. Gender Assessment Tool for Proposal Evaluation

While the above tool will aid partner institutions (NGOs) in the project formulation and monitoring, a similar tool can be developed to enable donor agencies to assess and review climate change related project proposals from a gender transformative perspective. The tool can help the evaluators to score the project proposals on a series of parameters with respect to the involvement of women in the project and the impact on women.

A survey to identify similar tools indicate that there aren't many such tools for assessment of project proposals especially from a gender perspective in climate change. In the recent years, however APEC

has introduced a gender criteria checklist as part of APEC Project Proposals and Evaluation Form. However, in the current format the gender criteria is not be scored or ranked, and therefore, not be used in the assessment of project proposals. USAID-EQUATE project on the other hand lays down guidelines for reviewing proposals/applications to ensure that gender considerations are incorporated into education activities. It also provides suggestions for evaluating proposals and applications, including a sample evaluation form that enables the evaluation committee to assess the extent to which gender concerns have been incorporated into proposals/applications. The USAID Sample evaluation form is presented here as a reference:

Table 26: USAID Sample Evaluation Form

Factor	Rating
1. Technical Understanding and Approach (30 points)	
a. project activities integrate gender considerations throughout	
b. innovative, creative approach	
2. Key Personnel: Education Specialist (15 points)	
a. amount and type of experience in gender and education	
b. amount and type of experience in curriculum design or classroom management	
3. Institutional Capability (15 points)	
a. relevant experience in gender and education	
b. clarity of management plan	

Source: USAID (2008). *Tips For Gender Integration In USAID Education Sector Solicitations*. Assessed from http://pdf.usaid.gov/pdf_docs/Pnadm805.pdf

4.2.3 Scope for further research

A. Undertake multi country study on CEA of gender integration in climate change adaptation projects: The current study is limited to programmes carried out by the same organisation in the same country. This has its merits as it is easier to ensure that costs and impacts are calculated using the same methodology. The purposive sampling adopted in the identification of the projects also allowed for selection of projects with varied range of interventions. However, the cost estimates are from single sites and hence it is difficult to generalise and use current unit cost data to inform future budgeting at a national or global level on gender transformative intervention. **However, drawing comparisons across projects performed in different countries, by different organisations, and in different years holds the promise of being a more useful tool for future budgeting and therefore, policymakers.**

B. Undertake evaluation study to identify cost effective gender-sensitive intervention strategies that will inform future programme design: Another limitation of the study is that the costing analyses were of varying quality, and used a range of intervention strategies that were undertaken to achieve the similar outcome. Further, a wide range in unit costs for similar interventions – such as gender training sessions or entrepreneurship development was also observed. This variation could be attributed to difference in costing methods or may indicate potential for efficiency gains and merits greater exploration. Hence in the current scope, it is difficult to compare the relative efficiency of different intervention strategy and provide evidence on the cost- effectiveness of specific programme components or strategies that seek to address women’s needs in climate change adaptation and implementation. **As a continuation to this study, efforts must be**

undertaken to review gender-sensitive strategies and interventions and identify promising, cost-effective interventions that merit consideration as critical enablers in climate adaptation investment approaches. Such study may involve the following steps:

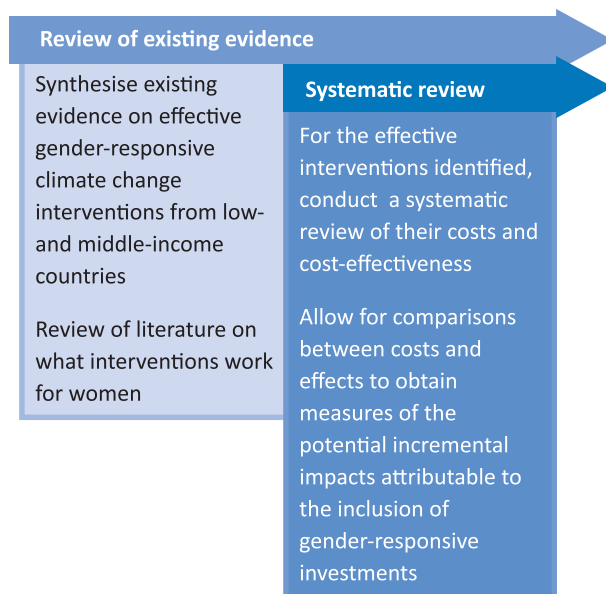


Figure 19: Steps suggested to undertake a robust costing analysis

C. Encourage operational research to understand avenues for integrating gender transformative approach: Future research should also explore avenues to make efficient incremental additions or design tweaks that could be made to existing large-scale climate adaptation interventions (gender neutral projects), to optimise their impact on gender equality. Operational research will help to this end, as it will help understand ways to deliver gender transformative climate adaptation planning and implementation by examining how and why these projects achieved positive outcomes relating to gender equality and climate adaptation. The research will provide evidence on gender transformative approaches that can be incorporated into broader programmatic strategies at lower cost and examine models are likely to be more adaptable and replicable, and more efficient to scale up.

4.2.4 Potential policy actions

A. Undertake policy advocacy to integrate gender dimensions in programme designs into Bangladesh's NAPA's strategy: The results of this study support the hypothesis that gender-transformative implementation design contributes to greater cost-effective climate change outcomes compared to gender-specific and gender-neutral project designs. This provides sufficient evidence to create an agenda to better integrate gender dimensions in programme designs into Bangladesh's NAPA's strategy to give it institutional impetus. It also suggests that interventions focused on women solely can be important in making resources and inputs available to women, such as in Project C, but may not necessarily translate into effective CCA outcomes. To reduce the disproportionate burden on women due to climate change, it important that even

women-focused interventions need to have a gender transformative project design to ensure women are active agents in climate change adaptation with adequate voice and resources.

B. Encourage state agencies to collect gender disaggregated data related to climate change at Upazila, Union and Village level: The observations in terms of the data limitations affords scope for creating a data template that is suitable for conducting evaluations in the space of climate change adaptation; this can be integrated within the current scope of Bangladesh's Bureau of Statistics (BBS) data collection work. Specifically, BBS can be encouraged to collect climate change adaptation related data at Upazila, Union and Village level. Efforts must also be taken to collect gender disaggregated level to support more robust evaluation.



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CHAPTER

5

Annexures

Summary:

- Cost Mapping
- Climate change specific indicators
- Women empowerment specific indicators

Annexure 1 – Cost Mapping

Project A: Gender Transformative

	Cost Categories
MG1: Building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries	Volunteers Training on search and rescue
	Community contingency stock maintenance at local level by partners
	Homestead and Public place raising
	Community based semi-structural work
	Community plantation (sapling support)
	Community Seed/Food Bank Development
	Deep hand Tube well installation in Costal & Harbour area (disability features inclusion)
	Pond Excavation/ponds excavation and lining for coastal areas
	Pond Send Filter (PSF) with Solar Power
	Information Education and Communication Materials (Including billboards)
	Mass mobilization and awareness (including street dram and cultural events)
	Publication and dissemination (project learning, knowledge, information)
	Update/review/ new Community based Marketing Extension Plan-MEP
	Training for representatives of producers on business planning and management
	Facilitate workshop with input suppliers/traders/association/buyers
	Facilitate matchmaking workshop with traders/association/buyers at Upazila level
	Training by public and private sectors for Local Service Providers (LSP)- Lead farmers and input retailers
	Exchange visit to identify innovative
	Institutionalisation and Business contact with different market actors
	Facilitate CBOs to establish assemble market/trade fair at district/UPZ level
	Demonstration of new technology and sharing information on variety of product based on climate variability
	Lobbying/workshop with financial services providers/Micro finance institute
	Facilitate Technical training for specific value chain/livelihood options through public and private sector
	Training to beneficiaries on advanced agriculture technologies
	Vegetable Seeds for Homestead Gardening
	Cattle support to beneficiaries for asset building
	Organise Media visit and Ensure publication of report, feature in electronic and print media
	Day Observation (materials)

	Cost Categories
MG2: Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts	Community Based Organisation -CBO formation and Review the existing
	CBO reviewed their annual action plan including PCVA and Contingency
	Capacity building of CBO leaders with inclusion of disability feature
	Issue based Regular meeting and annual general meeting
	Contingency planning and update at community level
	Conduction of Participatory Vulnerability & Capacity Assessment (PVCA)
	Base line for new and extended areas
	Training on Disaster Management and climate change adaptation for community members (at least 2 from each CBO)
	House Hold (HHs) profile
	Support UP on Open Budget Session
	Capacity building of CBOs (consultation/Meetings)
	Mobile sets for the CBO members
	Mobile phone recharging cost (SMS and Phone Call cost)
	Orientation (and refresher) of the CBOs on the use of IT
	Action Research trainings
	Review workshops
	Review and strengthen CBOs financial management system
	Phase out workshop with relevant stakeholders (Community & UP)
	Phase out workshop with relevant stakeholders (Upz, District)
	Establish joint project monitoring cell/committee at union & upazila level
	Organize meeting /workshop with duty bearers, DAE and DLS, UP, UZ department for inclusion in different committee, avail services
	Training on rights and social justice for supporting alliance activities
	Char, Haor and Coastal Alliance which are already existing will be supported for strengthening
	Lobby, advocacy and research at partner level at local level (Union to Upazila level)
	Adolescent Group Meeting
	Mobilization community people for Change Makers
MG3: Increasing women's opportunities to access economic resources and participate in leadership and decision making	Identify interested women/girls who are seeking employment at garments or interest to work as homemade. Provide necessary training and orientation and link up with the employers with necessary follow up/Entrepreneurship training to female producer group members (jorry-chumki, Block, Batic, embroidery etc.)
	Capital support for women entrepreneurship development
	Review/update social and cultural power structure mapping and analyse to include women in different committees, AND Gender policy
	Women Adda Group Meeting

	Cost Categories
	Orientation on women rights, social structure and gender analysis
	Meeting/workshop/lobby with UP level different committees for inclusion of poor women representatives in the standing committees
	Campaign ('WE CAN') & Different Day Observations to make people aware about women rights
	Formation of Women WASH Platform (WWP)

Project B : Gender Specific

	Cost Categories
MG1: Building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries	Training on IGA for Farmer Group- 1St year 2000 farmers two union, x 2 days x Tk. 350 (Lu-150+Ref. 25+ mat.25 + conv.150)
	Fish farming
	Household based homestead gardening
	Saline tolerant rice cultivation
	Training to the farmers about seed cultivation of saline tolerant rice for 2 days.
	Established demonstration plots on MVs
	Organize field day
	Training to the farmers on compost plant for 2 days.
	Established demonstration of compost plant
	Training to the farmers on saline tolerant rice production and its preservation.
	Established demonstration plots of seed production
	Develop federation for marketing channel
	Produce linkage with the upper market
	Awareness to the seed dealers
	Training on IGA & Organization for Hardcore (Lu-150+Ref. 25+ mat.25 + conv.150)
	IGA Support for New Hardcore
	IGA Support for Old Hardcore
	IGA Support for Old Hardcore (Sweet Box)
	Mass Awareness-Mock drill, Picture drama shows
	Producer group association-400 producers
	Market Development Plan
	Turmeric Culture
	Market Equipment Support

	Cost Categories
	Workshop for Value chain Develop MOU with crab producer and crab association Volunteer development - 12 (1 per ward) Paining meeting with farmer and hardcore group Media campaign-Poster, paper clippings, bill board, hoarding/B Linkage between farmers & sectoral agency
MG2: Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts	Shusomoy Union level meeting UP-Shusomy coordination meeting Court yard meeting for CCA & Hygiene promotion Conduct PVCA at Ward level Review/update PVCA at ward level Action based on the PVCA at Union level Action plan Validation at Union level Block grand for selective Action plan implementation UDMC Meeting with sector agency for ensuring quality service Meeting with Upazilla level Govt. Officials Meeting with District Level Govt. Officials Advocacy meeting with DPHE
MG3: Increasing women's opportunities to access economic resources and participate in leadership and decision making	Coordination meeting with (Shusamaj, Shuvoshakti, Sadhikar, Swa-unnyan) Sadhikar Woman group Shuvoshakti (ward level) Shuvoshakti (Union level) Local Initiatives by shuvoshakti

Project C : Gender Neutral

	Cost Categories
MG1: Building resilience to climate change through increased awareness and adoption of climate resilient practices by beneficiaries	Preparation and submission of khasland application
	Development of new household micro plan
	Amount spent on transferring assets as per micro plan
	Cost of canal re-excavation
	Facilitate workshop for market linkage
	Organise and develop group enterprises
	Vegetable seeds and rice banks development
	Skill development training on agriculture, livestock, fish cultivation
	Facilitate the opening of bank account
	Publication of agriculture and livestock fact sheet
MG2: Strengthening capacity of local civil society and governmental institutions to better support communities in adaptation efforts	Organizing Project progress and coordination workshop at Upazila level
	Organizing Project progress and coordination workshop at Union level
	Organizing Learning visit
MG3: Increasing women's opportunities to access economic resources and participate in leadership and decision making	Gender mainstreaming training
	Campaign for providing medical treatment to Adolescent girls
	Organizing Awareness raising session on nutrition (with special care on IYCF) and health hygiene
	Provision of legal aid support

Annexure 2: Climate change specific indicators

Indicator	Type	Rationale
Social		
Density of Population	Sensitivity	The indicator represents no. of people per unit area. Areas with higher population density and migration are more vulnerable to climate change owing to lack of quality housing and hygienic living conditions. Hence, an increase in this indicator may increase the magnitude of adverse responsiveness of the system in view of climate change impacts.
Sex Ratio	Sensitivity	Women can have a more difficult time during recovery than men, often due to sector-specific employment, social and cultural structures that place them in inferior socio-economic positions: namely, lower wages, education, public voice and family care responsibilities thus limiting their adaptive capacity;
Proportion of child population in the age group 0-6	Sensitivity	The demographic group most affected by disasters are children because of limited adaptive capacities,
Number of slum dwellers per slum	Sensitivity	Increase in this indicator is a sign of deteriorating living conditions in urban areas
Percentage share of marginal workers	Sensitivity	Global warming is expected to heavily impact agriculture, the dominant source of livelihood for the world's poor. Agricultural dependency is measured by the percentage of the district workforce employed in agriculture. A high level of agricultural dependency will increase an area's vulnerability to climate variability and fluctuations in agricultural terms of trade; and hence treated as sensitive to climate change.
Percentage of Households owning radio, transistor, television and telephones	Adaptive Capacity	Increased overall communication networks reduce people's vulnerability by obtaining information on early warning systems in disaster risk management strategies there-by increasing their ability to cope with adversities
Road density, Population Served per Health Centre and Number of Educational Institutions	Adaptive Capacity	Education level of a population is seen as an important determinant of its quality of life. Higher education is critical in improving the health practices. Quality of infrastructure is an important measure of relative adaptive capacity of an area, and areas with better infrastructure are presumed to be better able to adapt to climatic stresses hence they are included under adaptive capacity.

Indicator	Type	Rationale
Literacy rate	Adaptive Capacity	Human capital is measured by the literacy level in the population. Increased overall literacy levels is expected to increase people’s capabilities in processing information better and thus reduce their vulnerability to cope with adversities hence it is taken under adaptive capacity.
% of HH with access to safe drinking water and sanitation facilities	Adaptive Capacity	Greater the value of this indicator, lower would be the frequency and severity of associated diseases to climate change hence it is taken under adaptive capacity.
% of HH with access to safe drinking water and sanitation facilities	Adaptive Capacity	Access to electricity is almost fundamental to daily life and socioeconomic development, in general. Because it is central to all aspects of our lives - lighting, heating, pumping and purification of water, agricultural productivity, refrigeration of food and medicines, sterilization of equipment and many others - there is an expected correlation between access to electricity and quality of life. Hence it is taken under adaptive capacity.
Economic		
Wealth/asset possession	Adaptive Capacity	Wealth enables communities to absorb and recover from losses quickly due to insurance, social safety nets, and entitlement programs.
Access to banking services	Adaptive Capacity	Greater number of banks per Lakh of a population in an area is indicative of greater access to credit to small and marginal farmers (than otherwise), which play a pivotal role in the development and transformation of the rural and agrarian economy .
Loan disbursements credit societies		
Agriculture		
Percentage of Net Irrigated Area To Geographical Area By Ground Water	Sensitivity	Groundwater is the primary source of drinking water to nearly half of the world's population and, as the dominant source of water to irrigated land, is critical to global food security.
Percentage of Land Holdings below 1 Hectare	Sensitivity	The incidence of poverty is much higher among the landless and marginal farmers. Areas with a greater percentage of land holdings below 1 hectare do not have the ability to cope with adversities
Yield of All Crops	Adaptive Capacity	Higher crop productivity and yield is indicative of higher income for farmers; and thus their increased ability to cope with adversities

Indicator	Type	Rationale
Crop diversity (number of crops grown)	Adaptive Capacity	Higher the crop diversity better is the coping in case of climate related disasters like flood, drought and pest incidences. It helps to mitigate climate change risks hence treated as Adaptive Capacity.
Cropping intensity	Adaptive Capacity	Cropping intensity is defined as a ratio between net sown area (NSA) and gross cropped area (GCA). Higher the index, greater is the efficiency of land use.
Water Resources		
Surface and Ground Water Availability	Sensitivity	While these two variables have a direct (intuitive) relation to climate/temperature changes, they are also indicative of the time that a woman may need to spend on fetching water from sources outside of the household.
Health		
Percentage of People with Diarrhea and Pneumonia	Sensitivity	It is believed that when weather conditions permit new vectors to establish themselves, it is easy for a vector-borne pathogen to establish itself in the area where its vector currently resides.
Incidence of Malaria	Sensitivity	Changes in temperature and rainfall may change the geographic range of vector-borne diseases such as malaria exposing new populations to it. Young children as well as pregnant women and their unborn children are especially vulnerable to malaria. Hence it is treated as sensitive to climate change.
Climate		
Average annual rainfall No. of Rainy Days Frequency of Drought Flood discharge Cool Days - Cool nights days when maximum temperature < 10th Percentile Warm Days - Cool nights days when maximum temperature > 90th Percentile	Exposure	Climate extreme indicators related to temperature and rainfall have been treated as exposure since Exposure refers to the exposure of a system of interest to external stimuli which act on the system. Exposure could be conceptualized as climate variability or changes in the climate system.

Annexure 3: Women empowerment specific indicators

Vulnerability (Women as Victims)	Adaptive Capacity (Women as Agents)
Food security (Crop and livestock production)	Power To:
Access to water (Ground and surface water levels) <i>[Implications on time available for leisure and other activities]</i>	Make decisions with respect to i) household spending ii) husbands income iii) investment/savings iv) Borrowed income/loans v) Type of fuel usage
Access to fuel wood [Implications on time available for leisure and other activities]	Access services (health, transport, electricity), Freedom of mobility
Incidence of violence against women and girls	Access education (literacy rates)
Health effects (Spread of vector and water borne diseases, maternal mortality rates)	Generate independent sources of income, engage in employment or entrepreneurship (women's share of income & labour force participation rates)
Access to sanitation	Power Over:
Migration rates (Higher rates of migration among men increases work load and vulnerability among women)	Control and access over resources/ capital (legal rights), agricultural production
	Power With:
	Access to public institutions and participation in activities involving CCA, strengthened capacity of women groups
	Representation of women in politics and local governance, integration of gender equality into regional policies



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