Investing in rural people

Bangladesh

Char Development and Settlement Project IV

Additional Financing

Environmental and Social Impact Assessment Report

Contents

Executive Summary

Bangladesh is situated at the unique juxtaposition of the composite, sprawling, interlinked Ganges-Brahmaputra-Meghna (GMB) river systems, the second largest river system in the world, which drains an area of 1,086,000 km^2 from China, Nepal, India and Bangladesh with the annual discharge only second to the Mississippi delta. The eastern and central part of the delta is the most active and thus more vulnerable. The low-lying, newly accreted landmass – the char – is subject to regular flooding resulting in saline intrusion and keeping people constantly vulnerable. These chars are home of the Char Development and Settlement Project (CDSP). Over the past two decades, the CDSP has been implemented in four Southern coastal districts including Chittagong, Feni, Noakhali and Laxmipur. Till June 2018, the CDSP project has been implemented in four phases (CDSP I, II, III and IV). The four CDSP areas now contain a total population of more than 90,000 households, or 500,000 people. The CDSP with its presence in the most vulnerable part of the delta makes it an inevitable part of Bangladesh's development success story mainly by successfully demonstrating that hydrological dynamics of the estuary that makes the chars fragile can be controlled by climate resilient water infrastructures. The CDSP also demonstrated that implementation of carefully crafted development interventions can address the social, environmental and economic vulnerability of the inhabitants.

The CDSP-IV was approved by the International Fund for Agricultural Development (IFAD) Executive Board in 2010. The specific objective of the CDSP-IV was to improve the economic situation and living condition of the population in the coastal areas of South-eastern Bangladesh with reference to the poorest segment of the population. The project achieved its goal and objectives; a satisfactory score of five (5) was assigned following the assessment of its achievements. CDSP-IV's overwhelming success encouraged the Government of Bangladesh (GoB) to extend the project and requested Additional Financing. In response, IFAD agreed to an additional finance of US$20.636 million. The Government of the Netherlands will co-finance with a US$5.0 million grant. The GOB will provide US$ 9.44 million in cash and US$160,000 in tax. NGO and beneficiary contributions will be US$ 3.9 million and US$ 76,000, respectively. The project has been assigned a Category A for environment and social impact that required undertaking a thorough Environmental and Social Impact Assessment (ESIA).

Policy, Legal, and Administrative Framework

Environment and Climate: There are a few important GoB strategies that are most relevant: The **Bangladesh Delta Plan 2100** will integrate planning from delta-related sectors and from all across the country to come to a long-term, holistic and integrated plan for the Bangladesh Delta. The Plan will be grounded in a long-term vision of the Delta's future. The CDSP districts fall under one delta 'hotspots' and the implementing mechanisms of the Plan will provide leveraging and scaling up opportunities. The project is aligned with the goals of **Bangladesh Climate Change Strategy and Action Plan (BCCSAP)**. Implementation of the **Bangladesh Country Investment Plan (CIP) for Environment, Forestry and Climate Change (EFCC) 2016-2021** will also complement the CDSP goals. The GoB's **Southern Master Plan, 2016-2021** is a road map for an integrated agricultural development of the coastal districts of Bangladesh aiming at sustainable food security, poverty eradication and livelihood development for the poor in perfect harmony with the CDSP goals. The CDSP is anchored to the vision of the **Coastal Development Strategy, 2006**.

Social: Bangladesh has many important policy and legal provisions in the social field that are in alignment with the project and provide opportunities for the proposed Additional Financing project. The social audit confirmed that, as in many countries, Bangladesh faces challenges in ensuring full implementation of such policies on the ground; the CDSP interventions have been supporting the GoB to do just this with hard-to-reach rural poor in one of its most fragile areas. The most relevant ones are the **National Social Protection Strategy**, **Second Country**

Investment Plan 2016-2020 for food security and nutrition, and **National Youth Policy**. The **National Women Development Policy** sets out commitments to women in areas including farming, food security and nutrition, health and nutrition, the environment, and disaster management. The main relevant provision is the **Acquisition and Requisition of Immovable Property Act (GoB, 2017)**. This has only recently been passed and it has significantly increased the amount of cash compensation related to acquisition. This is very positive for all affected people in the proposed CDSP IV AF area.

The CDSP-IV Additional Financing Project

The **goal** of the Additional Funding Phase is to reduce poverty and hunger for poor people living on newly accreted coastal chars, through improved and more secure livelihoods for households living in coastal chars. The **objective** is the development of improved and more secure rural livelihoods in agriculture, provision of legal title to land, and through provision of climate resilient infrastructure.

The Additional Financing phase will cover five newly accreted chars: Nangulia, Noler and Caring, Urir and Ziauddin, but also CDSP I, II and III areas, and possibly extending certain preparatory activities to the new chars of Maksumul Hakim, Dhal, Kolatoli, and Mozammel for scaling up of good practices. The project has five components:

Component 1: **Protection from Climate Change**
Component 2: **Climate resilient infrastructure**
Component 3: **Land settlement and titling**
Component 4: **Institutional and livelihood support**
Component 5: **Technical assistance and management support**

The project partners with the Bangladesh Water Development Board (BWDB) under the Ministry of Water Resources (MoWR), Local Government Engineering Division (LGED) and Department of Public Health Engineering (DPHE) under the Ministry of Local Government and Rural Development (MoLGRD), Department of Agricultural Extension (DAE) under the Ministry of Agriculture (MoA) and Bangladesh Forest Department (BFD) under the Ministry of Environment, Forests and Climate Change (MoEFCC).

Anticipated Environmental, Social and Climate Change impacts/Risks and Mitigation Measures

Environment and Climate Impact

Bangladesh is at the receiving end in the event of Global Climate Change (GCC) and will be a major victim of the consequences of global warming (GoB, 2013). Climate change is an existential threat to the country. The project area is located in the river erosion prone, dynamic central part of the coastal zone where the GMB flow into the Bay of Bengal. The CDSP interventions modified the physical and environmental condition of the target areas. The change in hydrological realities due to the embankments reduced the adverse effects of storm surge and high tidal inundation of unprotected chars. The cumulative effect is the reduction of salinity, which in turn allows agricultural development as well as vegetative growth in the area. The built natural environment through social forestry development in the chars was also an outcome of CDSP's strategy for adapting to climate change.

The CDSP areas do not represent natural deltaic areas; the entire area is consisted of non-natural resources. However, the vegetative biodiversity of the CDSP area has increased in the past two decades. One of the natural resources is groundwater, which is extensively used for drinking purpose. The aquatic biodiversity has decreased due to complete detachment of the inner areas from outside river networks. Investment-intensive aquaculture practices have

replaced capture fisheries.

The overall impact of the additional funding phase is expected to be highly positive like the successful implementation of the previous CDSP phases have created. The tremendously successful social forestry program is a climate change adaptation strategy. In addition to improving the biophysical condition of the chars, the benefits accrued from the social forestry scheme will provide the participants with some serious economic benefit. The project is considering some additional appropriate technologies, which will help achieving the specific objectives of the project.

The CDSP has a positive contribution to improving the environmental health condition in the chars by providing water, sanitation and hygiene (WASH) services. The shallow tubewells installed for safe drinking water supply to the community. However, there are arsenic and labile iron contaminations.

The local abundance of vegetables and grains will ensure food and nutrition security of beneficiaries. The greater access to health services including child delivery/maternity services and neonatal health services will contribute significantly to achieve health-related outcomes.

Environmental/Climate Risks and Mitigation measures

Erosion: In an active delta, river erosion always remains a threat. River erosion has been a devastating problem. The southern-most areas are still undergoing morphological changes, which is perhaps typical in a sedimentary delta. The gradual rise in sea surface temperature and gradual build-up of potential energy on the estuarine surface is supposed to interplay with rising sea levels, which is expected to increase the tidal strength and resultant ability to erode sea facing lands including embankments. It is irrelevant of how strong the erosion control measures are, erosion threats will continue to stay in the new CDSP Additional Funding areas, including the old ones.

A part of the embankment has already failed under CDSP-IV, while one sluice gate has been found to be completely eroded and a few others are at risk of being eroded soon. The management anticipated no erosion at the beginning of CDSP-IV, which is proved to be wrong. Field observation suggests that, significant erosion could not be observed in the CDSP areas until the start of CDSP-IV. However, severe erosion suddenly took place during the CDSP-IV implementation. Part of the embankment in Noler char and a sluice gate has already been eroded.

It is fully understood that, unless the embankment itself is made erosion proof by means of engineering interventions, the objective of the CDSP might be severely compromised. Since the risk of further erosion is highly probable, the mitigation measure requires the following: (a) a two pronged approach that needs retirement of part of the embankment at risk, along with replacement of the sluice gate and other structures in the short run, and (b) erosion prevention infrastructure along the lower Meghna river in the longer run, the latter option being costly and beyond the scope of the Additional Funding phase. The management has already considered retirement of affected embankment, re-establishment/relocation of sluices for improved drainage, excavation/diversion of khals to maintain alternate drainage system, establishment of new closures to cease external hydrological influences, etc.

Continuation of social forestry will further improve the biophysical condition. The existing social forestry model may be improved. The BFD may consider conducting varietal trials to introduce other fast growing tree species and horticultural species in partnership with Bangladesh Forest Research Institute and the universities. The chars are newly accreted extremely fertile land and the growth rate of the plantations is tremendously high. The BFD may adopt a modified

silvicultural practice by increasing the thinning frequency. This will provide the beneficiaries at least one – and in some plantations perhaps two – additional harvests. The economic value accrued by the beneficiaries from the additional harvests will be huge.

Social Impacts

Poverty and Food Security: Poverty reduction is expected to be significant, and specifically to increase women's participation in income generation. Access to land and productive assets, finance and livelihoods development are key strategies. This assessment notes the Project's targeting approach, which differentiates between men and women. The Additional Financing Phase should work towards a time-bound graduation and resilience model. It may consider building on the social capital fostered by the FLIs and making selected community investments for value 'protection' and addition for both own consumption and sale (e.g. safe food processing and storage). Existing infrastructure could be explored as multi-functional sites e.g. cyclone shelters/schools/ processing and storage. Given significant internal/ international migration, consider analysing/mobilizing remittances in project areas in partnership with microfinance partners.

Impact is expected to be significant and lead to reduced hunger/increased dietary diversity. IFAD core indicators, including impact indicators, in results framework may be included as appropriate. An explicit focus on adolescent girls given the nexus of gender, youth and nutrition issues and in line with GoB CIP on Food Security and Nutrition (2017) and IFAD nutrition priorities may be considered. Build on CDSP social capital fostered through FLIs and consider community-based rice/seed banks or similar models that buffer food shortages and also cover some community social welfare needs. Also consider nutrition-sensitive value chains to enhance the local food system.

Agricultural Productivity: Productivity is expected to be very positive based on previous CDSP experience. As already planned, the Additional Financing phase will step up market linkages and explore some value chains. The livelihoods components will strengthen market access and improve market facilities for value protection and addition. Safe storage and processing facilities at improved markets should be explored.

Women and Youth: It is expected to be significant in economic empowerment, decision-making in the home and community, as well as reduced workloads (less time to fetch water, take children to school, etc.). Explore opportunities for developing diversified and off-farm livelihoods for both women and men that are environmentally friendly. The project should tackle intra-household decision-making towards more equitable voice for women. Young people (18 to 35 years) are likely a significant proportion of the target group, and in the area under-14 year olds made up 45% of the population. The project should explicitly target young people as agents of rural growth.

Social Risks and Mitigation Measures

The main risks identified are related to loss/damage resulting from erosion processes. There are two main scenarios: (i) some HHs with land titles lose land to acquisition by the BWDB in order to retire eroded embankments and (ii) some HHs lose land to the natural process of erosion - some with land titles and some without.

The GoB has recently enacted a relatively generous compensation scheme, which, provided the risks are managed, is even arguably an opportunity for the affected HHs due to receive compensation. However, those who lose their land to erosion rather than project interventions are not entitled to acquisition-related compensation and also need to be prioritized for rehabilitation. Both groups of households are still considerably better off than before as a result of CDSP interventions, and it was reported that many households facing erosion have already

used savings to relocate to safer ground, often with relatives. The biggest risk is delay in GoB/IFAD processes.

HHs have expressed preference for cash (300%) rather than land (field visit) and given their increased skills and confidence in decision-making as a result of CDSP interventions, this seems more appropriate than settling them in undeveloped areas as they would see this would be a step backwards. Nevertheless, there is a risk that (i) investment decisions will not be as gender-equitable as in the land titling that entitles them to the compensation (ii) the amount of money will make them targets of rent-seeking and unscrupulous agents purporting to be intermediaries.

Cumulative Environmental/Social Impacts

The cumulative social economic impacts of the Additional Financing phase of the CDSP IV are expected to be overwhelmingly positive. As it builds on years of investment, these impacts can be expected from the outset. The Economic Internal Rate of Return (EIRR) for the 20-years period is 37% with benefit cost ratio of 1.43. with regard to social impact, the project creates an enabling social environment where poor people can enjoy a transformative change of a remote/less accessible and environmentally non-livable area into a much improved and developed area, where land-based and culturally suited livelihood activities can be carried out without relentlessly fighting with nature. Moreover, the poor are given legal rights on a piece of productive land, which gives the poor not only a stable source of income, also dignity which is essential for a healthy living. The recipients of land entitlement form a commune (i.e., shamaj), where they tend to uphold fellow feelings and share social aspects of life with members of the shamaj. Such elements of social development occur gradually, where the positive impacts are cumulative and long-term. All these lead to social cohesion.

Analysis of Alternatives

The project is building on experience of what works, as well as an impressive set of institutional relationships. The current solution is the result of much deliberation of alternatives, which are mainly driven by environmental/climate realities as the basis for all social development. It is the result of assessing various trade-offs, such as: (i) whether to intensify efforts in existing project areas or expand to other chars through preparatory work, and (ii) whether to retire the embankment as planned or further in order to reduce risk of erosion for a longer period.
It is evident that the area is highly dynamic and that erosion is a reality. The CDSP has been a tremendously successful response to the vulnerability of landscape and people to the aggression of the unpredictable, dynamic Bay of Bengal in the most active part of the delta. The objective of the CDSP has been to stabilize the newly accreted landmass, prevent the land from further intrusion of saline water, increase productivity, and protect people and assets. The success has been remarkable. The chars are now productive agricultural systems and the built environment is forested and is providing enabling micro-climate for further natural resources growth. The landscape and the people are resilient. The threat of erosion and loss of assets and displacement of people will continue to happen and the protection measures must also be in place on a continued basis since this is the main development philosophy with which CDSP begun a quarter century ago. While the Additional Funding phase will bring under its domain new vulnerable chars and build water-resistant infrastructures similar to those of CDSP I-IV, this phase is crucial to continue the maintenance of the existing ones.

It is anticipated that about 291 hectares (about 3 km^2 area) will have to be brought under land acquisition. From field level discussions, it appears important to note that, despite a healthy policy to compensate affected people in the process of land acquisition, about 10 of the estimated 700 to 800 affected households will likely to lose all their land holdings and become landless/homeless again. This undesired outcome warrants the creation of a special provision

so that in the land titling process in Urir Char and other chars under the Extension phase takes into account these potential project-driven homeless households as a part of the extended compensation package. The social dimension is complex, but essentially would mean acquiring more land and displacing more people. The current decision by the BWDB is based on the minimum disruption to people before the cross-dam can realistically be expected to be effective.

The investment is more justifiable given the imminent approval of a major infrastructure investment i.e. the proposed Noakhali-Urir Char cross-dam, which will greatly stabilize the area. From a social perspective, the rationale is simple: the more land is available to be developed and settled, the more people IFAD can lift out of extreme poverty and make more resilient. Extending preparatory works to new chars means that the project can reach around 13,700 households or roughly 70,000 people. In time they may also be viable alternatives for people should more land be lost to erosion before the cross-dam is built.

Without the project as currently designed and including the changes recommended in project design, the social impacts will be overwhelmingly negative and present a significant missed opportunity. The following social impacts may reasonably be expected:
(i) HHs risk losing productivity and livelihoods to salinity/erosion before the cross-dam is built, resulting in a return to hunger and poverty. HHs on Urir char, who are waiting for land titling activities delayed from before, will be disappointed and remain vulnerable to exploitation by land-grabbers and more powerful interests.
(ii) HHs will miss out on the opportunity to become more resilient to a range of shocks, which is the emphasis proposed for the Additional Financing and future phases.

Recommendations for Changes to Design

Hydro-Geomorphological Monitoring: The CDSP is located at the most active part of the delta. The Additional Funding phase proposes a rigorous one time study of the hydro-geomorphological study, a regular monitoring protocol for monitoring periodic changes in the delta dynamics must be established. The monitoring protocol will also include monitoring of the small water infrastructures such as khals established by the project.

Social/Economic Resilience: the Additional Financing Phase design may consider establishing HH 'sufficient' savings target within a 'resilience' framework, e.g., enough to survive for 'number of months' without taking a loan, and promote saving culture in livelihoods component. Pilot simple community-based savings models, e.g. revolving funds can be developed and implemented,. The project may facilitate HHs to access local social protection services to counter uptake by non-poor and supplement income of HHS.

I. Introduction

A. Rationale

1. The Char Development and Settlement Project (CDSP) is proposed to obtain Additional Financing (AF) to bridge the gap between CDSP's fourth phase (CDSP IV) and a planned fifth phase to start in 2022. It is supported by the Government of Bangladesh (GoB), the Government of the Netherlands (GoN), and the International Fund for Agricultural Development (IFAD). IFAD requires all investments to be screened by its Social, Environmental and Climate Assessment Procedures (SECAP), and a SECAP note was duly prepared by an environment/ climate expert in June-July 2018. The SECAP Review note allocated the following ratings after following the screening checklist: Climate (moderate), Environment and Social (A).

2. **Climate**: despite being one of the world's most vulnerable countries with regard to climate change, the project has many adaptation initiatives and the project has already considered climate change impact reduction measures. Therefore, the climate change classification was rated as 'moderate', which warrants a basic climate risk assessment, to be conducted prior to commencement of activities.

3. **Environment and Social**: despite a project structure that builds on the significant social successes of CDSP IV[1], infrastructure works to protect the area from unusually aggressive erosion involves acquisition of the land of some CDSP beneficiaries, who lose all or part of their land with non-reversible impacts. Because of this, the rating is high risk or category A, and a separate Resettlement Action Plan (RAP) and Resettlement Action Framework (RAF) have been prepared in addition to this Environmental and Social Impact Assessment (ESIA). This ESIA also includes the results of a rapid Social Audit carried out in October 2018.

B. Methodology and approach

4. To summarize, the ESIA approach was to field a mission to 'ground-truth' the climate and environmental dimensions of the project, and carry out: (i) a basic climate risk assessment; (ii) a rapid environmental assessment; and (iii) a Social Impact Assessment including a rapid Social Audit particularly focussed on the RAP/RAF and related issues. The ESIA is also compliant with the SECAP proposed Terms of Reference for a Social Impact Assessment2. This approach was informed by the SECAP screening exercise and the SECAP Review Note, which contains detailed and high quality climate and environmental risk analysis. Particular weight was given during the mission to the social dimensions, as this ESIA notes a high degree of confidence in the climate and environment analyses in the SECAP Review Note. A rapid Social Analysis was considered appropriate given that this is not an ex nuovo project, and that there is considerable and generally high quality project documentation on which to draw. In late October 2018, therefore, IFAD fielded a small team consisting of a climate/ environment specialist and a social safeguards specialist, neither of whom had a conflict of interest due to not having worked on the project before.

C. Summary findings and recommended actions

5. The summary findings confirm the assessment of the SECAP Review Note, which is that the CDSP IV AF phase represents, overall, a large scale climate change adaptation and related risk reduction response from both climate and social perspectives. The risks and opportunities are related to each other, and the climate change, the environment and social dimensions are also closely interrelated. Although these have been presented under separate sections further on in the report,

[1] GoB. IFAD. 2018. Project Completion Report.

[2] IFAD. 2019. SECAP. (Terms of reference for a Social Impact Assessment).

their linkages have also been highlighted. Key integrated climate/ environmental and social risks and opportunities are set out below.

6. **Risks and opportunities arising as a result of project**

(i) **Climate change mitigation** is not a significant part of the CDSP AF IV design, but project-supported afforestation/ mangrove planting and clean cookstoves nevertheless represent opportunities to contribute to sequestering greenhouse gases, while also increasing incomes, longer-term food security and nutrition, and improving especially women's health. Recommended action: covered by current design.

(ii) **Water, sanitation and hygiene (WASH) services** supported by CDSP IV AF represent an opportunity as they contribute positively to improving environmental health conditions in the *chars*, by protecting the water quality in the area. Recommended action: tube-well water supply to communities should be monitored for arsenic and labile, which cause health risks to humans and cattle, and potentially contaminate crops.

(iii) **Agricultural development** present overwhelming opportunities for the very poor and vulnerable targeted by the CDSP IV AF phase, but also risks to the environment arising from increased use of pesticides and runoff. Recommended action: introduce safer agricultural techniques such as Integrated Pest Management (IPM), related sensitization and capacity development (as in SECAP Review Note).

(iv) **Infrastructure to protect from climate change, salinity and erosion** have been proven to create significant opportunities for food security and nutrition as well as boost livelihoods for *char* dwellers. Opportunities to increase benefits for the poor are suggested, primarily to ensure that Labour Contacting Societies (LCSs) are not only established but that advance planning ensures that actual income generation opportunities arise – currently, the Social Audit identified that sometimes LCSs were formed but works did not materialize. No significant risks to the environment/ hydrological cycle are expected. However, these works do mean the economic and social displacement of some households, whose land is acquired to set back embankments and sluice gates to renew protection against erosion, salinity and extreme weather for the wider CDSP area. A separate RAP has been prepared, which covers not only households that have already lost their land due to emergency works in 2017, but also a RAF for those households who will lose all or part of the land in the CDSP IV AF phase. There are also opportunities to step up risk management in terms of health and safety (e.g. eliminating headloads with use of simple handcarts) for LCS members, including by learning from IFAD –supported interventions in Coastal Climate Resilient Infrastructure Project (CCRIP) for example). Recommended actions: see RAP/RAF, which details compensation and early support measures.

(v) **Impacts of labour influx on gender-based violence and overall communal harmony** is not significant. Under the CDSP project larger works have been constructed by contractors (e.g. sluice gates) and minor works, including earthworks, embankments, road pavements and buildings, are constructed using labour intensive methods by Labour Contracting Societies (LCS). There has so far been no evidence of short-term or long term significant labour "influx" for the construction of major works in the duration of CDSP IV. As for the minor works undertaken by LCS, labour is locally recruited since the LCSes are local associations formed my households in the project areas. The project has dedicated gender focal point in the project coordination office, two gender facilitators and several gender coordinators at the field level, with established relationship of trust. These facilitators are in charge of undertaking gender rights training women in the project areas. A module of the training is dedicated to gender-based violence and the resources available to women to report it.

Furthermore, CDSP-IV has established strong community-based or field level institutions (FLIs), including 21 Water Management Groups (WMG); two Local Area Development Committees in Caring Char and Urir Char (substituting for WMG in areas where polders have not been constructed); 68 Labour Contracting Societies of various types; 90 Farmer Forums; 484 Social Forestry Groups; 984 "NGO groups" (primarily for savings and credit activities) and 1,388 Tube-well User Groups. In addition, six farmers associations and a farmers' federation were recently created. Finally, two higher-level Water Management Associations, a Water Management Federation, are in process of formation and start-up. CDSP-IV has also provided some ongoing support to Water Management Organisations formed with support from previous project phases. These FLIs have proven to enhance social harmony and sustainable management of common resources. This lays a strong foundation for communal harmony and the risk of community conflict due to presence of contracted workers during the dry season is not considered significant.

7. **Risks and opportunities inherent in broader project context**

(i) **Climate change adaptation** is a priority as Bangladesh, and particularly its coastal zone is highly vulnerable to climate change, which is likely to hit hard the coastal zone within the next three to four decades. All investments in the area, including the CDSP IV AF phase, therefore are vulnerable to climate change related risks, but the investments flowing from the GoB Delta Plan 2100 will significantly mitigate these through scale interventions to build the resilience of coastal areas. On the other hand, the project investments have been gradually building the adaptive capacities of the area and its inhabitants and can be considered an adaptation initiative. In terms of opportunities, the main ones are that of income generation (e.g. through afforestation to protect the area from storm surges), increased access to education, and freeing up of women's time thanks to investments in multipurpose cyclone shelters.

(ii) **Erosion and accretion** is characteristic of the project location, creating immense opportunity for the very poor and vulnerable, with nowhere else to go, to settle and build a prosperous and healthy life. Indeed, the GoB, GoN and IFAD approach through CDSP is to render accreted areas (*chars*) more habitable through a package of services ranging from livelihoods development, prevention of saline intrusion and erosion, protection from climate change impacts and disaster management, and the stabilization of *chars* through afforestation. The same phenomena also carry inherent risks, as the project is deliberately targeting an area which is still morphologically active. Erosion in the project areas has, for the first time since the start of CDSP, begun to affect several embankments and sluice gates that have been built to protect the *chars* from salinity and erosion. During CDSP IV the social impacts of environmental patterns and climate change (e.g. sea level rise, extreme weather) have been exacerbated by the lack of a monitoring system for these patterns. In the CDSP IV AF phase, there are two main risks for char dwellers. The first is that salinity and erosion is affecting some households living in the CDSP area, who were initially protected by embankments until their destruction by erosion. Some of these hold land titles granted under CDSP; their land is not being lost to acquisition and whilst there is an official compensation formula for them, it is modest and longer term (a relocation grant by the GoB and priority for settlement on newly developed *chars*). While many have used their savings to relocate, the CDSP IV AF phase will target these ultra-vulnerable households with livelihoods support designed to help them transition to a different location.

(iii) **An integrated CDSP graduation model.** The CDSP IV AF contains a holistic package of services and works to improve the lives of *char* dwellers, and the Project Completion Report highlights many achievements. As with all major initiatives, there are opportunities to learn and adjust, and one opportunity would be to consider a simple 'graduation' model for CDSP target groups. This entails articulating a clear picture, based on CDSP experience over the years, of what 'graduation' actually means for households, and then fine-tuning the interventions to support

a feasible pathway from baseline to graduation for households. Various models exist in Bangladesh that can be adapted, and CDSP IV AF phase already includes many typical elements (moving out of poverty, nutritional security, resilience to shocks etc). Such an approach, or a 'theory of change' is based on a household model with mentoring across a range of issues, and could allow a clear vision and time frame from the start, as well as the identification of risks/lessons learned/ gaps in the pathway. For example, whilst women's economic empowerment has undoubtedly increased, their power to decide how to spend their earnings has not necessarily followed[3]. And whilst households are saving, levels appear low and a stepped up savings model with targets would improve household resilience to shocks. If not feasible for the AF phase, this should be considered in a fifth phase.

B. Project Background

8. Building upon its long-term support to improving supporting infrastructure for agriculture, resilience and livelihoods in the region4, the CDSP IV AF phase aims to improve water management, build and rehabilitate internal infrastructure, promote land settlement and titling, and support livelihoods.

9. The CDSP-IV achieved its goal and objectives by significantly contributing to reducing rural poverty and hunger through improved and more secure livelihoods for 171,147 poor people in 29,008 households living in the project area of newly accreted coastal chars covering 25,553 hectares.5 A satisfactory score of five (5) was assigned following the assessment of the achievements of the project. However, there has been inadequate financing and focus on the maintenance of all the infrastructures built throughout the CDSP phases, which is perceived as a potential partial reason for gradual deterioration of the infrastructure. In a bid to streamline maintenance of infrastructure and to continue the activities of CDSP-IV in Urir Char and other areas, the Additional Financing Phase of CDSP-IV was conceived.

Table 1. Area and population coverage under CDSP-IV

Char	Area hectares		Population estimate in 2009		Updated estimate 2017	
	2008	2017	Households	Population	Households	Population
Nangulia	8,990	8,530	12,000	67,000	15.113	89,167
Noler	2,690	2,560	6,000	33,000	6,152	36,297
Caring	6,850	2,200	6,000	33,000	2,638	15,564
Ziauddin	1,943	1,943	2,000	11,000	2.380	14,042
Urir	10,300	10,300	2,000*	11,000	2,725	16,078
Total	**30,773**	**25,533**	**28,000**	**155,000**	**29.008**	**171,147**

* For Urir Char, population as per survey of 2008

10. The overwhelming success of CDSP-IV encouraged the GoB for extending the CDSP-IV to leverage and bridge into more substantive investments in the project areas and requested Additional Financing. In response to the request, the project has received in its new phase an additional finance of USD 20.6 million from IFAD. Co-financing of USD 5.0 million is provided by the Government of the Netherlands as grant. Domestic cofinancing consists of USD 9.6 million from the Government, USD 3.9 million from NGOs, and USD 0.1 million from beneficiaries.

11. Located in a region naturally vulnerable to climate change induced sea level rise (SLR) and erosion of the banks of the Meghna River, the project has been assigned Category A for environment

[3] GoB. IFAD. 2018. CDSP IV Gender Impact Assessment.
[4] CDSP I, CDSP II, CDSP III and CDSP IV.
[5] CDSP IV Progress Report 15 and Project Completion Report.

and social impact, primarily because it entails land acquisition and, of course, resettlement. The land acquisition is mostly related to the construction of embankments.

12. For a Category A project, IFAD is required to undertake a thorough Environmental and Social Impact Assessment (ESIA) to comply with its Social, Environmental and Climate Assessment Procedures (SECAP) (IFAD, 2017). Accordingly, IFAD has commissioned a small team of consultants to carry out the ESIA with a tight timeframe in close collaboration with IFAD staff and the CDSP IV technical assistance (TA) team.

II. Policy, legal, and administrative framework

13. Some key strategies are briefly presented below.

A. Environment and Climate

14. **United Nations Framework Convention on Climate Change (UNFCC) process.** The GoB is a signatory to this key global process and the various national commitments to adaptation and mitigation.

15. **Bangladesh Delta Plan 2100.** A holistic, long-term, vision-based plan for the Bangladesh Delta: The GoB, in cooperation with the Government of the Netherlands, developed the Bangladesh Delta Plan 2100. The Delta Plan integrates planning from delta-related sectors and from all across the country to come to a long-term, holistic and integrated plan for the Bangladesh Delta. The Delta Plan is grounded in a long-term vision of the Delta's future. The CDSP districts fall under one of the eight delta 'hotspots' identified in the plan. The significance of this plan for the CDSP is that major infrastructure is foreseen in the area and in particular cross dams, which will make the CDSP smallscale investments more sustainable even in the face of climate related impacts.

16. **Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2008 (revised 2009).** The focus of this strategy and action plan is on adaptation to maintain livelihoods in various sectors, including hazard warnings and strengthening flood protection infrastructure, as well as some mitigation measures. It proposes a systematic monitoring program to determine impacts on ecosystems and biodiversity. There is also a Gender Action Plan, though this is little known in the project area.

17. **Bangladesh Country Investment Plan (CIP) for Environment, Forestry and Climate Change (EFCC) 2016-2021.** The CIP endorsed by the highest level of the GoB, has the goal to increase the contribution of the EFCC sectors to national sustainable development through the enhanced provision of ecosystem services, thereby helping to reduce poverty, improve environmental and human health benefits, and increase resilience to climate change. The CDSP is aligned with Pillar 3 of the CIP: Resilience and Adaptation to, and Mitigation of, Climate Change and includes a Gender Action Pan.

18. **Southern Master Plan, 2016-2021.** The CDSP is in alignment with the GoB's Southern Master Plan (2016-2021).The objective of the Southern Master Plan is to provide a road map for an integrated agricultural development of the coastal districts of Bangladesh aiming at sustainable food security, poverty eradication and livelihood development for the poor.

19. **Coastal Development Strategy, 2006.** The work of CDSP and the AF phase continue to cover, to a greater or lesser extent, all nine of these priorities.

B. Social

20. Bangladesh has many important policy and legal provisions in the social field. A small selection is presented below, together with the alignment and opportunities of the proposed AF. The Social Audit confirmed that, as in many countries, Bangladesh faces challenges in ensuring full implementation of such policies on the ground; the CDSP interventions have been supporting the GoB to do just this with hard-to-reach rural poor in one of the most fragile areas.

21. **Social protection.** The Government has a number of policy instruments and programmes in place for the vulnerable. Specifically, the National Social Protection Strategy (GoB, Planning Commission, 2016) builds on successes in achieving greater coverage of safety net programmes that have helped to lower poverty.

22. **Food security and nutrition (FSN).** The Second Country Investment Plan 2016-2020 (GoB, 2016) builds on the significant achievements of the first, and the CDSP projects have been aligned through their work on food based approaches (e.g. integrated homestead production, promotion of own consumption, nutrition education) as well as non-food based approaches (e.g. WASH, prevention of early marriage). The AF carries forward these actions and is in line with GoB and IFAD priorities.

23. **Youth.** The National Youth Policy (GoB, 2015) states that 'special measures' will be taken for specific categories of youth, including rural youth, school drop-outs, illiterate and unskilled youth and young people with special needs. These measures are in employment and entrepreneurship, vocational training, environment-friendly agriculture and safe food and commodity marketing amongst others. The social audit indicated that young people appear to be well represented amongst the CDSP IV target group, so that the proposed AF may draw on IFAD Rural Youth Action Plan (expected to be approved in December 2018) and further articulate how proposed actions will target young women and young men.

24. **Gender.** Bangladesh ratified the Convention of the Elimination of All Forms of Discrimination Against Women (CEDAW, 1979) in 1984 and today, the National Women Development Policy (GoB, MOWCA, 2011) sets out GoB commitments to women in areas including farming, food security and nutrition, health and nutrition, the environment, and disaster management.

25. **Land.** The main relevant provision is the Acquisition and Requisition of Immovable Property Act (GoB, 2017). This has recently been passed, and has significantly increased the amount of cash compensation related to acquisition. This is very positive for all affected people in the proposed CDSP IV AF area. Although it does not provide for resettlement as such, the social audit confirmed that households feel empowered enough to make their own decisions, supported by the project, and prefer cash over land. This is partly because available land is minimal and households prefer to move to less environmentally fragile areas with better facilities.

III. Project description

26. The AF phase will maintain the same development goal and objectives as CDSP IV, but with a focus on fostering sustainable programmatic approaches. The goal of the AF phase is to reduce poverty and hunger for poor people living on coastal chars through improved and more secure livelihoods for households. The project objective is the development of improved and more secure rural livelihoods in agriculture, provision of legal title to land, and provision of climate resilient infrastructure.

27. Project components, institutional arrangements and implementing agencies will remain the same[6] as for CDSP IV for the sake of continuity in implementation and preparation of DPPs by respective agencies. Therefore the extension of CDSP consists of five components.

Component 1: Protection from Climate Change

1.1 Water management

- Retired embankments and embankment repairs and maintenance in CDSP I to IV areas
- Protection, maintenance and replacement of eroded sluice gates
- Construction and re-excavation of *khals*
- Riverside protection of embankment
- Water Management Group centre construction and improvement
- Land acquisition in the CDSP IV area (ref. RAP/RAF)
- Climate change research and studies including hydro-morphologic studies.

1.2 Social forestry

- Mangrove plantation
- Strip plantation along *khals*, roads and embankments and
- Formation and support for Social Forestry Groups

Component 2: Climate resilient infrastructure

2.1 Market access infrastructure and cyclone shelters. Such infrastructure includes rural markets, paved roads, earthen roads, drainage facilitating structures such as box culverts, pipe culverts, U drains, earthen *killas* and multi-purpose cyclone shelters.

2.2 Water and sanitation which includes establishment of deep tube wells, test tube wells and sanitary structures such as single pit latrines.

Component 3: Land settlement and titling

- Settlement and land titling on Urir char
- Resolution of district boundary disputes
- Upgrading and extension of digital LRMS and associated systems.

Component 4: Institutional and livelihood support

- Strengthening and support for community organizations (Water Management Organizations, Farmers' Forum (FF), Social Forestry Groups (SFG), Tubewell Users Groups, Market Management Committees (MMC)
- Support livelihood activities via FF and other groups
- Enhanced production and post-production management including value chain development, support for community service providers and links to private sector
- Support to agricultural extension services
- Support in food security and nutrition.

Component 5: Technical assistance and management support

- Support in planning and quality control of overall implementation
- Implementation of component 4, especially in contracting NGOs, Government agencies and other service providers as needed
- M&E, knowledge management, reporting.

28. **Organizations Involved and Institutional Framework for the AF Phase:** Organization and management arrangements will remain the same as for CDSP-IV. The project partners with the Bangladesh Water Development Board (BWDB) under the Ministry of Water Resources (MoWR), Local Government Engineering Division (LGED) and Department of Public Health Engineering

[6] With a possible omission of Department of Agricultural Extension (DAE) as the driver of agricultural extension support, while the similar functions are planned to be delivered by NGOs.

(DPHE) under the Ministry of Local Government and Rural Development (MoLGRD), Department of Agricultural Extension (DAE) under the Ministry of Agriculture (MoA) and Bangladesh Forest Department (BFD) under the Ministry of Environment, Forests and Climate Change (MoEFCC). To comply with updated IFAD requirements, monitoring and evaluation functions (M&E) and knowledge management (KM) sub-components will be adapted.

29. The AF Phase will rely on the already established structure of management, coordination and oversight, adopted by CDSP-IV. An Inter-Ministerial Steering Committee (IMSC) will be established, which will meet annually or biannually, chaired by the Secretary of the MoWR, providing overall guidance and making decisions on policy issues. The Project Management Committee (PMC) will meet periodically, chaired by the Project Coordinating Director (BWDB PCD). PMC meetings will continue to provide a good flow of information and cooperation between the IAs, while the operational independence of each IA (with its own PD and Development Project Pro-Forma, DPP) will ensure each IA has ownership and full responsibility for the implementation of the component/sub-component under its purview.

30. The five components of the project will be implemented by different technical agencies and teams:

(1) Protection from climate change
Water management – BWDB Social forestry - BFD

(2) Climate-resilient infrastructure
Internal infrastructure - LGED Water and sanitation infrastructure - DPHE

(3) Land settlement and titling
Land/plot survey and titling records –MoL (in cooperation with the Office of District Commissioner)

(4) Livelihood support
Agricultural support (advice, inputs, etc.) - NGOs
Social and livelihoods support - NGOs

(5) Technical assistance and management support – The Technical Assistance (TA) Office.

31. Each of the implementing agencies as mentioned above is led by a Project Director and has its own implementation plan – the DPP. In addition, supported by GoN funding, there is a technical assistance (TA) team and four Partner NGOs (PNGOs).

32. The Deputy Commissioner Noakhali will be PD of the MoL component. As lead agency, the PD for BWDB will be the PCD and convene regular meetings of a PMC with the other PDs to ensure coordination.

33. The TA team will be selected and contracted by GoN in consultation with BWDB. The TA team will be responsible for implementation of components 4 and 5 and will also advise and support the PCD and each of the IA PMUs.

34. The AF phase is designed to involve all the proven institutional actors, as they contributed to the CDSP-IV. However, DAE will not be a part of this phase, despite the fact that agricultural extension is considered to be a major deliverable under this extension phase. It is anticipated that local NGOs who have been working on similar activities will be invited to do the job and they will seek guidance from the Sub-Assistant Agriculture Officers (SAOs) deployed at the grassroots by the DAE, in a bid to offer extension services to the poor farming communities.

IV. Baseline data

35. The fact that the proposed AF phase is building on a long track record means that it has access to good baseline data and lessons learned on the project itself. The project website has a comprehensive set of reports including supervision reports, baseline data and Annual Outcome Surveys, as well as good practice reports and specific reports e.g. on gender equality. In addition, this ESIA draws on working papers from the project AF phase design mission in July 2018, notably that on Water Management, as well as the SECAP Review Note. Environmental climate baseline data is presented first, followed by social data.

A. Climate change, geophysical setting, and environment

36. Bangladesh is situated at the unique juxtaposition of the composite, sprawling, interlinked Ganges-Brahmaputra-Meghna (GMB) river systems, the second largest river system in the world, which drains an area of 1,086,000 km2 from China, Nepal, India and Bangladesh and has an annual discharge only second to the Mississippi delta. Being located just at the foothill of the Himalayan massif in the north with a 6% south-north gradient meeting the Bay of Bengal in the south. Almost the entire landform of Bangladesh, except for 10% of hilly area, is like a sheet of paper, making it more vulnerable to climate change. The U.S. National Oceanic and Atmospheric Administration image in Figure 1 shows a pictorial view.

Figure 1. The Geophysical Setting of Bangladesh (Courtesy: National Oceanic and Atmospheric Administration)

37. Bangladesh is one of the world's most vulnerable countries to climate change[7] and some analyses conclude that it is the most vulnerable economy in the world (Maplecroft, 2011; UNDP, 2004). There is growing body of literature indicating that climate in Bangladesh is changing. The temperature range has been showing a rise of about 0.74˚C above the normal, irrespective of season, for the period 1950 to 2010. Although the total average rainfall does not show any discernable change, the micro-structure of monsoons has been exhibiting a number of important changes. For example, the rainfall is exhibiting a bi-modal distribution over the monsoon, the first peak coming a lot earlier than expected (shifted from middle of July to early June). There are increasing numbers of extreme rainfall episodes during the monsoon with prolonged rainless days in between, while the late-October monsoon (Kaitani) has almost disappeared.

[7] 160th of out 181 countries according to the Notre Dame GAIN Country Index, which summarizes a country's vulnerability to climate change and other global challenges in combination with readiness to improve resilience https://gain.nd.edu/our-work/country-index/rankings/

38. **Climate:** The CDSP-IV AF areas fall under a monsoon-influenced tropical climate area with an average annual rainfall of 2,700mm, over 85% of which falls during June and October. Average day time temperature varies between 23 to 27 degrees Celsius, while the average night time temperature ranges between 18 and 22 degrees Celsius. While winters are generally dry and mild, summer months are wet and moist, the relative humidity is generally over 85% during monsoon season. During late April and mid-November, the sea surface temperature often rises above a threshold of about 27˚C, which creates an ideal climatic condition to form tropical low and depressions. Sometimes, such tropical weather fronts give rise to the formation of cyclones and super-cyclones. Such climatic phenomena have tremendous devastation power, due to the very high speed of swirling wind. During landfall, the windspeed can surpass 200km/hour, which destroys dwellings, infrastructure, standing crops and vegetation. Moreover, cyclones are accompanied by prolonged rainfall episodes and high storm surge8, the latter drowning human beings and livestock. When a cyclone passes through an area, it generally leaves visible scars.

39. The built natural environment through social forestry development in the chars was also an outcome of CDSP's strategy for adapting to climate change. The 620 Social Forestry Groups (SFG) established by the BFD under CDSP-IV have 15,495 members. A total of 7,400 ha of mangrove were planted, 200 ha of foreshore plantations developed, and 268 km of roadside strip plantations raised involving 95 institutions. A total of 16 killas have been built and 134 km of canals excavated.

40. In the climate change discourse on Bangladesh, there is no conclusive evidence that cyclone frequency will increase. However, there is agreement in almost all climate modeling suggesting that cyclonic intensity will significantly increase due to higher wind speed and with rising temperatures. On an average, one major cyclone hits Bangladesh in every three years. Although cyclone-related human deaths have been reduced significantly due to improved warnings and pre-hazard preparedness programme, cyclones in the past have killed many coastal citizens, including inhabitants of CDSP areas.

41. There is evidence to suggest that sea surface temperature has been increasing, which has caused an increase in the formation of lows and depressions in the Bay of Bengal, affecting lives and livelihoods of estuarine and deep sea fishers. Moreover, the sea facing/near-sea polders (low lying land enclosed with no connection to outside water) are facing stronger waves, which have been putting such infrastructures at risk, if left unprotected. The sea level has also exhibiting a rise along the coastal areas of the country. The net rise is sea level along the central coastline is found to be in the order of 7mm/year.

42. The CDSP itself may be regarded as an adaptive response to climate change related hazards. Its water infrastructure not only resists saline inundation due to diurnal tidal effects, but also dampens the devastating power of an incoming water surge, accompanied by a cyclone9. The revived canal networks and the sluice gates safeguard the area from water logging. The multi-purpose cyclone shelters allow safeguarding of human lives, while the killas built in sea-facing chars allow livestock to be relocated during a cyclonic surge. The green vegetation not only enhances carbon stock and increases sequestration potential, but also helps reduce cyclonic wind speed, thereby safeguarding people's lives and assets in the immediate vicinity. In addition, CDSP activities allowed people to increase cropping intensity from well below 100 to over 250, with at least three-fold increase in agriculture related income per beneficiary household, which tremendously increased the overall adaptive capacity of local people.

[8] An abnormal rise of peak water level, over and above the usual astronomical tide.

[9] Such structures are common in Bangladesh. The GoB policies for water management, disaster risk reduction and climate change adaptation consider these as essential to safeguard people's wellbeing.

43. The CDSP IV areas have been adversely affected by a combination of sea level rise and an increased wave interaction induced by rising sea surface temperature. As a consequence, even the areas which were thought to be 'established' and not at risk of erosion are now been facing severe forms of erosion10. Severe erosion has threatened the embankment built in Noler Char, which needs emergency retirement (repositioning at a distance) of a section of the infrastructure, which may leave some households homeless due to land acquisition for re-building the retired embankment.

44. **Accretion and erosion.** The eastern and central part of the delta is the most active and thus more vulnerable. This area is subject to constant changes with lands simultaneously accreting and eroding because of tidal action. Satellite pictures show that each year about 52 km2 of newly formed land accretes, while about 32 km2 erodes from the coasts, with a resultant net growth of about 20 km2 per year. The net gain of the newly emerged landmass is called char in Bangla.

45. Target groups were observed during the Social Audit to have variable but generally good awareness of the impacts of climate change in the medium and longer term e.g. were aware of rising temperatures, erratic rainfall, extreme weather, sea level rise etc and their likely impacts on their livelihoods.

46. **Soil salinity**. The CDSP interventions modified the physical and environmental condition of the target areas. The change in hydrological realities due to embankments reduce the adverse effects of storm surges and high tidal inundation of unprotected chars. A cumulative effect is the reduction of salinity, which in turn allows agricultural development as well as vegetative growth in the area.

47. **Groundwater.** A key natural resource is groundwater, which is extensively used for drinking purposes. At shallow levels, tubewells were found to have water with high levels of arsenic. Moreover, there is wide-spread availability of labile iron in tubewell water. Following the development of chars in the CDSP areas, the newly sunk tubewells are regularly being monitored to ensure that arsenic concentrations are below the GoB permissible limits. Indeed, the monitoring report clearly shows that the water being received by the beneficiaries for drinking purposes does not have a high concentration of arsenic, although the presence of iron is still there. People, however, know how to treat such water using alum to remove iron from the water.

48. **Natural resources and biodiversity.** The CDSP areas do not represent natural deltaic areas; rather these chars are highly regulated in terms of hydrology and hydraulics, where seasonal variation and even diurnal tidal variations are absent. However, since these areas mimic rural riverine areas elsewhere in the country, the similar ecosystem services can be accrued by the inhabitants inside such highly regulated char areas. Moreover, engineering solutions such as closures and sluice gates further allow the local hydrology to be completely regulated. Thus the entire area consists of non-natural resources, unlike the resources available in non-regulated chars as in the case of Urir char. However, the vegetative biodiversity of the CDSP area has increased in the past two decades, thanks to the project interventions. The aquatic biodiversity, has decreased due to complete detachment of the inner areas from outside river networks – this is not as a result of the project.

B. Social[11]

49. This section provides a description of the social, cultural, historical and political context, specifically:

[10] Along Char Nangulia and Noler Char; while two thirds of Caring char was eroded between 2013-2018.
[11] Most data is from CDSP Annual Outcome Survey 2017. Technical Report No. 19. April 2018.

- Project location, history of the area and political context including governance structures;
- Settlement pattern (villages, towns) and infrastructure in the project area (roads, power, water supply and sanitation, health care facilities, etc.);
- Demographic structure of affected communities (age, gender, population growth);
- Education and skills levels;
- Local economy and economic drivers, including employment in formal and informal sectors, and poverty status;
- Livelihoods and livelihood options (reliance on ecosystem services, vulnerability to change, including climate change, etc.);
- Land use and land tenure;
- Culture, gender roles and social equity;
- Cultural heritage.

50. **Project location.** The AF phase will cover: (i) the CDSP IV chars, which are five newly accreted chars: Nangulia, Noler and Caring, Urir and Ziauddin; (ii) some CDSP I, II and III areas; and (iii) possibly extending certain preparatory activities to the new chars of Maksumul Hakim, Dhal, Kolatoli, and Mozammel for scaling up of good practices. CDSP areas that have already been developed with water infrastructure are now relatively well served by roads, markets and cyclone shelter-cum-schools. However, the project's Annual Outcome Survey for 2017 highlights that there may be a lack of secondary schools in CDSP III and IV areas. Although vocational colleges (e.g. for agriculture and textiles) exist in Noakhali, they are not in the char areas, therefore presenting a challenge for an explicit youth targeting strategy.

51. **History of the area.** Over the past two decades, the CDSP has been implemented in four southern coastal districts including Chittagong, Feni, Noakhali and Laxmipur. Until June 2018, the CDSP project was implemented in four phases (CDSP I, II, III and IV). Phase IV (CDSP-IV) was approved by the IFAD Executive Board in 2010. Its specific objective was to improve the economic situation and living condition of the population in the coastal areas of south-eastern Bangladesh, with focus on the poorest segment of the population. Taken together, the four CDSP areas now contain a total population of more than 90,000 households, or 500,000 people across the Noakhali, Laxmipur, Feni and Chittagong Districts of the southeastern coastal areas

52. **Political structure including governance structures.** Although the newly emerged chars legally belong to the Government12, many landless people, particularly the inhabitants – estimated to be about 4,500 households or 26,000 people – of the eroded chars, immediately moved to the new chars before they were officially declared suitable for human settlement. The settlers are deemed by the Government (particularly Bangladesh Forest Department) as 'illegal' occupants, making the lives of the people uncertain. Because of their remote geographic location and absence of law enforcement agencies, the law and order situation of the chars is largely fragile. The new inhabitants established their own religious and social institutions (Samaj). However, the absence of formal institutions, basic health, drinking water and sanitation, agricultural support and communication makes life in the chars all the more challenging. Despite efforts by GoB, inhabitants of undeveloped chars are often at the mercy of armed gangs (bahini).

53. The situation is very different in chars already developed by the CDSP, which has placed particular emphasis and efforts in developing a participatory and community owned governance system. The project has fostered community governance structures for water development and boosted local social cohesion and empowerment by convening various field level institutions (FLIs). Women from all households were given the opportunity to joint micro-credit groups formed by partner NGOs - these also gave the groups support for livelihoods, legal rights and disaster management, along with health services. Households were also members of Tubewell User Groups based around

[12] The new *chars* are transferred to the Bangladesh Forest Department (BFD) for a period of 20 years for planting mangroves to stabilize the land and protect it against storms.

deep tubewells installed by CDSP to provide drinking water. A detailed evaluation of Water Management Groups (WMGs)13 looked at various aspects, including their ability to meet regularly, organize income-generation activities, women's participation, accountability and other governance dimensions, communications and decision-making, problem solving capacities, sustainability. It found that though variable, the WMGs are particularly strong on communications and problem solving (see box), for example. Women's participation and good management practices (record-keeping, etc.) are amongst areas to be strengthened. WMG performance depends on the amount and quality of the training initially received. A similar report on Farmers' Forums14 found that these also play a key governance role, undertaking activities that include collective farming, advice on social forestry and support on land titles.

54. The Social Audit nevertheless identified that, other than the DC's office and the BDWB, there is scope to improve implementation of GoB services at field level through better linkages with other Government agencies. The expanded role of the LGED will be important in ensuring timely repair and maintenance of roads on embankments. Better links with agencies responsible for social safety net payments to CDSP beneficiaries need to be established.

Box: Report on a Water Management Group (WMG) initiative in Boyer char

Gabtoli *khal* (canal) plays an important role in drainage and communications for Boyer char. There are two bridges over Gabtoli khal, one at Mohammadpur bazaar, and another at Mirpur samaj. The bridge at Mohammadpur bazaar connects Boyer char to Ramgati upazila. These bridges form a major artery of communication between Boyer char and the rest of Bangladesh. Every day, thousands of people move across these two bridges.

In 2016, due to heavy rainfall, the approach roads to the two bridges were badly eroded. As a result, vehicular communication between Boyer char and Ramgati, and across the khal at Mirpur samaj was blocked. In this situation four WMGs (Gabtoli khal-1, Gabtoli khal-2, Gabtoli khal-3 and Tankir khal-2) came forward to take the initiative to restore communications. They discussed the problem within their groups and with other local people. Everybody was eager to solve this problem within a short time. Th WMG calculated that BDT 36,000 would be needed for temporary repairs to the two approach roads. Local business persons from Mohammadpur market donated BDT 15,000, with the remaining BDT 21,000 contributed by the WMGs. In addition, the WMG members worked voluntarily to make the repairs using bags filled with earth. After completion of repairs, communication was restored between Boyer char and Ramgati.

Before repair

Communication restored

Source: GoB/GoN/IFAD. 2018. Evaluation of Water Management Groups. Technical Report No.15.

55. **Road communications.** The project's Annual Outcome Survey for 2017 assessed the ease of mobility of a sample household members in relation to access to primary schools and madrasas, and to the local market (hat/bazar). Indicators included distance (more schools and markets have

[13] GoB/GoN/IFAD. 2018. Evaluation of Water Management Groups. Technical Report No.15.

[14] GoB/GoN/IFAD. 2018. Assessment of Farmers Forums in CDSP IV. Technical Report No.18.

been built, and new bridges and embankments provide more direct routes), the type of road used, and the time taken for the trip during the rainy and dry seasons. In the CDSP IV area, the distance and time needed to travel to schools has more than halved, with the distance and time to markets now being little more than one quarter of the baseline situation. In the CDSP IV area, over 60% of travel is on brick and bitumen roads that did not exist before the project. There is still opportunity to improve road connectivity with reference to farm/market linkages, as the project survey of farmer forums in 2018 noted that the relatively small number of responses highlighting marketing problems are mostly related to transport and communications – roads do not yet reach all parts of the chars, and bulky vegetable crops are best produced where trucks can be loaded close to the field where they are grown.

56. **Settlement.** This is largely regularized through the project's land titling initiative. According to the project's Annual Outcome Survey for 2017, In the CDSP IV area the settlement activities show good progress, with around 71% of CDSP IV households with khatian land titles. In CDSP- I, II and III areas most people have land titles via CDSP, but some 'purchased' land, and a few inherited - as selling of newly received land titles is not allowed, it is assumed that these sales were mostly informal. The average area operated is almost two acres (196 decimals = 0.79 ha) in CDSP IV, with slightly smaller areas being operated in the older CDSP areas. Most households have homestead land, and almost all have a pond – so interventions in homestead agriculture and aquaculture have the potential to reach virtually all households. There is no settlement program on Urir char, but this is planned during the AF phase.

57. The picture is very different in the new chars; feasibility studies have shown just a smattering of tubewells, roads and very little infrastructure. Lack of land security, saline intrusion and lack of protection against extreme weather means that people living in these areas are highly vulnerable to the elements as well as exploitation.

58. **Demographic structure** (age, gender, population growth). The composition of households in all four CDSP areas is shown in the table below. Average household size is over six persons – larger than the typical 5 persons in rural Bangladesh, despite CDSP support in family planning. Most children aged 5 to 16 are at school – an achievement given that the law only requires children have to go to school up to the age of 10. The fact that 12% of children are not going to school in the CDSP III and IV areas may reflect a scarcity of secondary schools. The table also shows that 29% of CDSP IV women are not earning (or elderly or in education). Although this may be an opportunity for increasing female employment, the fact that there are 34% not earning in the more developed CDSP I and II areas could be because fewer women choose to work as households become more prosperous, in line with socio-cultural norms. The field visit informal interviews also indicated that when women chose to stop work it was often to look after their children - this may be a case of traditional gender norms, but there are also nutritional benefits to consider.

Table: Household composition in CDSP areas

	No. of people per household	Percentage of household members				
		Earning	elderly & disabled	in education	other	Total
CDSP I&II						
Men 16+	1.99	89%	6%	3%	1%	100%
Women 16+	1.93	56%	8%	2%	34%	100%
Child 5-16	1.76	0%	1%	95%	4%	100%
Child under 5	0.78	0%	0%	1%	99%	100%
Total member	6.46					
CDSP III						
3.1 Men 16+	2.01	88%	3%	4%	5%	100%
Women 16+	1.88	69%	9%	2%	21%	100%
Child 5-16	2.00	0%	1%	88%	12%	100%
Child under 5	0.83	0%	1%	3%	96%	100%
Total member	6.71					
CDSP IV						
Men 16+	1.94	94%	4%	2%	0%	100%
Women 16+	1.74	64%	6%	1%	29%	100%
Child 5-16	1.85	1%	0%	88%	12%	100%
Child under 5	0.69	0%	0%	2%	98%	100%
Total member	6.22					

59. **Education and skills level.** Before CDSP IV there were no Government schools on any of the five CDSP IV chars, apart from one primary school on Urir char, and virtually no schools of any type on Caring char. There were also no NGO schools providing non-formal primary education. Now, on all chars, cyclone shelters have been built that are being used as schools, and other schools have also been established on public and private land. However, due to a lack of high schools, secondary education for both boys and girls is still uncertain, and women want such schools to be established on each char. When it comes to skills, the project has been the driver for upgrading skills of women and men in the project area, with 1,300 skills-related trainings.

60. **Land use and land tenure.** In chars that are not yet developed under CDSP, households live in a state of continual uncertainty with regards to the land they farm. Newly accreted chars are designated as Khas (state-owned) land under the MoL, but the Government maintains almost no presence across them. Settlers who occupy Khas land therefore do so in a largely undocumented manner. In the absence of functioning institutions, this informally occupied land generally falls under the de facto control of a wealthy local land grabber (or Bahini), whose armed brokers interact with arriving settlers to dictate where they settle and what prices they must pay to do so. The informal but autocratic power structure of the Bahini often leads to the wholesale exploitation of settlers, and in this context, women are particularly vulnerable to violence, harassment and livelihood insecurity[15].

61. There is a strong pro-poor focus to land settlement in established chars. Throughout CDSP I, II and III, the MoL granted roughly 4,500, 7,900 and 9,500 household Khatian land titles respectively, covering an area of over 31,000 hectares. Areas that have been settled are unrecognizable from the barren sandbanks of before. Smallscale farming, fish ponds and homesteads now cover the area, cyclone shelters also make schooling accessible and social forestry groups have helped plant trees that buffer high winds and stabilize the soil.

62. **Housing, water and sanitation.** In CDSP areas, floors are predominantly mud, but brick and cement are starting to be used. Over 80% of CDSP IV households now report tin (and sometimes brick/cement) walls and tin roofs, compared to only 13% of walls and 16% of roofs at baseline. This is due to increased household wealth and the stability of having secure access to land. The easy availability of building materials with lower transport costs due to better communications may also be a factor. Housing is now more resilient to bad weather (such as prolonged rains), although still no

[15] Judith Rosendahl and others, 'Environmental and Social Vulnerabilities of the Poor under Climate Change Conditions: The Char Lands in Bangladesh', in *Pro-Poor Resource Governance under Changing Climates*, ed. by Matheus Alves Zanella, Judith Rosendahl, and Jes Weigetl (Potsdam, 2015), 32–52.

match for extreme weather. Access to water has greatly improved in the CDSP IV area, with sources now being around 80 metres from the home as compared with 350 metres at baseline. This saves time in collecting drinking water, especially for women who usually perform this task. Almost all households now have sanitary latrines, compared to just 6% at baseline. Households reporting washing hands after using the bathroom and before meals has significantly improved. The benefits for nutrition, health and time savings for especially women are significant.

63. **Livelihoods and occupation of household heads.** The table below shows the main occupation of household heads. The main occupation in the CDSP IV areas is day labour, just ahead of farming. The main increase for CDSP IV households is in petty trade, from 9% at baseline to 20% now. Salaried jobs (services), along with driving, are also increasing across all CDSP areas. Agriculture and manual labour are complementary and a coping strategy for the poverty caused by environmental constraints and vulnerabilities to extreme weather events. Coastal Bangladesh has two main growing seasons -the wet season and the dry season. The main crop is rice, with three varieties that correspond to three different parts of the year: Aman (harvested in December-January, the beginning of the dry season), Boro (harvested in March-May, the beginning of the wet season), and Aus (July-August, wet season to autumn). In undeveloped chars, farms must cope with the regular intrusion of seawater and with poor or non-existent drainage from inundated fields. These conditions perpetuate an environment of high soil salinity and high risk to natural disasters in which only wet season rice cropping is economically viable, and the cultivation of other plant varieties and production of livestock is severely hindered. In this context, settlers often have no other choice but to engage in off-farm labour or short-term migration during the dry season. Women undertake the subsistence production of poultry, fish and basic horticulture while male household heads seek work elsewhere[16].

Table : Main occupation of household heads

Occupation	CDSP IV		CDSP I & II 2017		CDSP III 2017		CSP IV 2017	
	Baseline 2011	2016	primary	second	primary	second	primary	second
Agric/crop farming	37%	22%	26%	29%	24%	40%	28%	48%
Livestock			0%	3%	0%	5%	1%	8%
Day labour	31%	30%	22%	11%	28%	6%	29%	11%
Salaried job	3%	7%	14%	1%	8%	0%	3%	1%
Fish/PL catch/dry	3%	5%	3%	1%	6%	1%	5%	0%
Small trade	9%	19%	17%	2%	21%	3%	20%	1%
Rickshaw / boat	4%	2%	2%	0%	6%	1%	2%	0%
Driver	0%	3%	5%	1%	3%	0%	3%	0%
Handicraft			2%	0%	0%	0%	1%	1%
Housekeeping	3%	4%	3%	1%	3%	1%	5%	1%
Other	5%	6%	8%	2%	3%	2%	5%	4%
Total sample size (n)	1400	200	200	200	200	200	200	200

Note: not all household heads reported having a secondary occupation.

64. **Poverty.** Household incomes in CDSP IV also show remarkable results, as seen in the table below, with farm based incomes increasing by 328% and off farm incomes by 268%.

Table: Annual household income from different sources

[16] Interviews with female and male members of farmers' forums and water management groups on preliminary design mission.

Income source	Annual income Taka				Share of annual income				CDSP IV increase
	CDSP IV Baseline	CDSP I &II	CDSP III	CDSP IV	CDSP IV Baseline	CDSP I &II	CDSP III	CDSP IV	
Agriculture-related									
Field crops	15,617	41,408	32,337	41,976	60.1%	44.3%	37.9%	37.7%	169%
Homestead veg.	3,115	13,995	13,140	16,921	12.0%	15.0%	15.4%	15.2%	443%
Aquaculture	2,713	7,765	5,954	8,391	10.4%	8.3%	7.0%	7.5%	209%
Forestry/trees		45	324	312	0.0%	0.0%	0.4%	0.3%	
Livestock	2,666	21,649	24,427	31,676	10.3%	23.1%	28.6%	28.5%	1088%
Poultry	1,887	7,361	8,018	11,085	7.3%	7.9%	9.4%	10.0%	487%
Date juice		1,293	1,170	886		1.4%	1.4%	0.8%	
sub-total	25,998	93,515	85,369	111,247	100.0%	100.0%	100.0%	100.0%	328%
Non-farm									
Daily labour		44,208	49,150	55,897		20.6%	22.0%	33.1%	
Jobs	33,378	58,754	25,710	14,510	72.6%	27.3%	11.5%	8.6%	132%
Skilled work		18,375	7,585	7,106		8.5%	3.4%	4.2%	
Petty trade	6,879	24,270	30,555	28,254	15.0%	11.3%	13.7%	16.7%	521%
Business		19,565	17,005	14,492		9.1%	7.6%	8.6%	
Rickshaw etc	2,749	1,090	10,345	1,722	6.0%	0.5%	4.6%	1.0%	-37%
Fishing	2,093	7,227	22,065	13,598	4.6%	3.4%	9.9%	8.0%	550%
Remittance	601	16,143	42,760	15,445	1.3%	7.5%	19.1%	9.1%	2470%
Handicrafts	252	4,376	2,281	3,916	0.5%	2.0%	1.0%	2.3%	1454%
Pension & social		1,100	90	352		0.5%	0.0%	0.2%	
Begging		249	397	582		0.1%	0.2%	0.3%	
Other		19,636	15,407	13,122	0.0%	9.1%	6.9%	7.8%	
sub-total	45,952	214,989	223,349	168,995	100.0%	100.0%	100.0%	100.0%	268%
Total farm	25,998	93,515	85,369	111,247	36.1%	30.3%	27.7%	39.7%	328%
Total non-farm	45,952	214,989	223,349	168,995	63.9%	69.7%	72.3%	60.3%	268%
Total	71,950	308,504	308,718	280,243	100.0%	100.0%	100.0%	100.0%	289%

Income from farm and non-farm enterprises is estimated as being net of enterprise operating costs.
Average income in Taka is average for all sample households, not just the households with that income source

65. **Food security and nutrition.** CDSP IV households can meet household basic food needs (rice) from their own production for an average of 10.5 months, which is 3.5 months more than in the baseline situation. In the older CDSP areas it is similar, but a little less in CDSP III areas. Over two-thirds of CDSP IV households now produce enough basic food to last them the whole year. Over half of all households in all CDSP areas can cover the entire year of basic food needs, but some 14% to 20% still produce less than 6 months' worth. These households should be analyzed to check whether they are able to buy the rest comfortably (e.g. because they have more off-farm work) and if not, target them specifically to ensure their food security. In terms of acute food crises, where household members have to reduce food quantity (either less per meal or one meal less) or quality (usually cutting meat/eggs/fish), CDSP IV has been very successful in cutting down from 82% of households at baseline to just 10% in 2017.

66. In 2016, the project carried out a nutritional assessment that looked at three dimensions across the project area: production, access and utilization. In terms of production, households with greater food and nutrition security live in areas that are protected by water management infrastructure. Households that maintain stable and diverse homestead production systems are more resilient against income and production shocks. In the chars, the stability of these production systems depends on the effectiveness of the water management infrastructure that surrounds them. In terms of access, the extent to which a household is able to establish a diverse diet also depends on the availability of non-farm sources of income. The majority of household income throughout the CDSP area is now derived from non-farm sources, and the availability of lucrative off-farm opportunities changes the extent to which a household can purchase different varieties of food. Project staff note that access to transportation and market infrastructure plays an important role in facilitating more

lucrative off-farm work. Finally, households vary in the extent to which they are able to effectively utilize the food that is available to them, in two important ways. For one, project staff note that women and children in poorer households across CDSP are particularly vulnerable to under- and malnourishment because of the ways in which food is distributed within a household. Deep-seated differences in decision-making power and in the division of labour often force young women to cut back on their own food consumption and that of their children during times of food scarcity. The proper utilization of nutrients is also mediated by the presence of sanitation infrastructure and hygienic practices. Even when food is distributed equitably within a household, a lack of these two factors may inhibit its intake, and particularly so for young children[17].

67. **Farming systems**. Other common household and field crops – predominantly grown as complementary to rice – include spices, soy beans, okra, cucumber, and leafy greens. Households who cultivate these crops are now able to sell them through a combination of farm-gate buyers, wholesale warehouses, and nearby bazars. The expansion of the farm-gate buying system and the improvement of transit infrastructure has equalized rural and urban prices and has allowed the marketing of a wide variety of crops to other parts of Bangladesh. The basic cultivation of tree crops and trees for lumber remains important on plots of household land. Households often collectively manage trees on embankments via the social forestry groups set up by the project[18]. Beyond crop production, poultry, livestock and fishing remain important activities for households in the CDSP-I-IV project areas. Meanwhile, small-scale aquaculture is ubiquitous across the chars; between 97% to 99% of all households in the CDSP areas own a fish pond, and between 75% to 90% sell a portion of the fish that they produce. Fishing generally accounts for less than 15% of agricultural income, but fish ponds are often maintained by women and youth and serve as an important source of nutrition and food self-sufficiency[19]. Off-farm activities are also gaining in importance.

68. **Gender roles and issues.** The project has paid great attention to gender issues from the start, and indeed has won an IFAD award. Traditionally, women have played significant roles as agricultural producers across the project area. During the informal settlement process, women lead efforts in clearing land, constructing homesteads, and in maintaining homestead production as men migrated outwards to work. Horticulture, poultry, livestock, and fishpond aquaculture are important sources of income for women because they can be undertaken in the immediate vicinity of the homestead while men work further away in rice paddies or off the farm in Noakhali town. In the context of informal settlement on undeveloped chars, women's lives are defined by a lack of access to infrastructure, education and health services, as well as deep divisions in labour and decision-making power. Outside of the household, women face the continual risk of harassment from local outlaws trying to grab land, severe limitations in producing and selling agricultural goods and few opportunities to interact with the world beyond the char. Within the household, women are tasked with managing finances and affairs without having any decision-making power over how to do so. Instances of child marriage, polygamy and physical threats are high, and women who are abandoned by their husbands have few means of regaining control over assets and land. As a consequence of abandonment or of the migration of male household members for work, a significant share of households in these areas are women-headed, facing alone all of disadvantages that are mentioned above.[20]

69. CDSP – particularly phases III and IV – fundamentally altered this situation and raised the economic and social profile of women in the chars. In particular, the project's infrastructural, institutional and livelihoods development components prioritized the improvement of women's earning

[17] GoB. Feasibility Study on Incorporation of Food Security Issues in the Context of Climate Change in the CDSP Project Areas.
[18] GoB. IFAD. 2018. CDSP IV. Annual Outcome Survey.
[19] GoB. IFAD. 2018. CDSP IV. Annual Outcome Survey.
[20] GoB. 2018. Gender Impact Assessment; IFAD, GoB. Char Development and Settlement Project – Phase IV (CDSP-IV): Project Completion Report.

abilities, voice in institutions and the household and overall health and wellbeing. Gender issues were made an integral part of all policies and guidance of CDSP IV. Gender specific questions and considerations have been systematically integrated into the programme planning, implementation, monitoring and evaluation. The project recognised that gender inequality posed a major impediment to achieving sustainable development outcomes. Hence, in CDSP IV the gender issues were addressed through: (i) provision of awareness creation on gender issues at all levels of all sectors, agencies and NGOs; (ii) appointment of sufficient female staff, especially at the field level to promote better communication with women; (iii) pursuing sufficiently representable percentage of women in all level of groups and committees, and their opinions and views have to be taken into consideration; (iv) access to productive assets such as land; (v) access to knowledge and opportunities are similar to men; and (vi) incorporation of gender training and gender sensitization programmes at all projects levels on a regular basis. The concept of 'gender mainstreaming' in the project has been ensured through active participation of men and women in all project activities during planning, implementation and for operation and maintenance.

70. At the conclusion of CDSP-IV, every land title granted with support from the project included the women's name as one of the primary title recipients. Following livelihood support activities, 68% of women in the project are direct income-earners who successfully interacted with markets to sell their produce. All local institutions supported through the project had a minimum requirement of 20 per cent involvement of women, with WMG's in particular averaging between 45 per cent to 50 per cent. By the conclusion of the project, over 80% of women in the CDSP-IV area reported that their sense of security in the household and greater community had "greatly improved". Concurrently, the project reports that there has been an 85 per cent reduction in child marriage and a 97% reduction in the incidence of polygamy[21].

[21] GoB. 2018. Gender Impact Assessment; IFAD, GoB. Char Development and Settlement Project – Phase IV (CDSP-IV): Project Completion Report.

Land settlement under CDSP IV

The land settlement process under the Char Development and Settlement Project IV (CDSP IV) has been one of the most innovative aspects of the project, in as much as being a key driver for women's empowerment. The land settlement process follows the provisions of agricultural khas land management and settlement policy, and can be divided into the following broad stages:

***1. Settlement surveys*:** During a plot-to-plot-survey (PTPS), cartographers, measure each and every plot on the respective char, draw an exact map of the land based on cadastral surveys and note down the details on the inhabitants. The maps and the information about the families are then deposited and published in the Upazila (sub-district) Land Office. Complaints against the findings can be submitted within 30 days.

2. Kabuliat signing. While in standard land settlement processes the settlers are requested to travel to the Upazila Land Office to look into the files, CDSP IV organizes public hearings at the village level. During these hearings, each case is called out to confirm that the family and all listed members are living on the plot. Other participants can object, for example if they know that an applicant owns a plot of land somewhere else. Once the hearing is concluded, the list with the identified landless households is transferred to the Upazila Land Office which prepares the official resolution of the meeting as well as the settlement record for every family. After receiving approval from the district level, the kabuliat (deed of agreement) has to be signed by both the selected landless households and the land authority. Under CDSP, the deed is registered at the village level due to a special arrangement (in other cases this is done at the Upazila Offices), which again saves the families time and costs for the often difficult travel to the Upazila Office.

3. Khatian distribution. Once registered, the details of the settlement cases are entered into the land database of CDSP IV. The project has developed a Land Records Management System (LRMS), which allows record keeping of every land attribution and helps to prevent double assignments. The LRMS produces computerized khatians (final records of right). As the last step in the process, this document is handed over to the beneficiary family, making them the owner of the respective plot on a permanent base. Khas land, once allocated, cannot be sold and only be transferred by heritage.

Women's empowerment. The wife's name is now written first in the legal document. As a result she is legally entitled to 50 percent of the owned land. This strengthens her position in the family, provides her uninterrupted access to the land and a legal position in many decision making processes. For example if the family wants to use the land as a collateral for credit. Also, if the husband should abuse his wife or it is proven that he is involved in illegal activities, legal steps against him can now result in him losing his share of land. If the woman is widowed, divorced or abandoned, she will get 100% ownership of the land. In the case of polygamous families, the deed is equally shared amongst the husbands and the socially recognised wives. However, there are rarely cases of polygamous families nowadays in the char areas.

71. A gender impact assessment noted that the following were especially effective pathways for women to strengthen their earning power, voice in the home and community, and wellbeing: Land ownership (component 3), new economic activities and technologies (component 4), transportation infrastructure (component 2), water and sanitation infrastructure (component 2), institutional engagement (components 1, 2 and 4) and education and awareness of legal rights (components 2 and 4).

V. Anticipated environmental, social and climate change impacts/risks and mitigation measures

A. Environment and Climate impacts and opportunities

72. The project will continue positively modifying the physical and natural environment by reducing saline intrusion and thus increasing natural growth and agricultural productivity. Climate in Bangladesh is changing. The temperature range has been exhibiting a rise of about 0.74˚C above the normal, irrespective of season for the period 1950 till 2010. Although the total average rainfall does not show any discernable change, the micro-structure of monsoon has been exhibiting a number of important changes. This will apply to the CDSP area as well.

73. The water management infrastructures drastically reduce the influence of saline inundation, protect the area from cyclonic storm surge, and gives rise to a non-saline condition that is conducive for crop agriculture. Drastic reduction of salinity on top soils also allows certain vegetation to thrive, including local varieties of fruit bearing trees. A guaranteed non-saline and inundation free condition

allows fish aquaculture and livestock rearing opportunities. Overall, such a condition brings transformative change in the production system, allowing poor people to boost their overall agricultural production. The LGED's climate resilient infrastructures on one hand accrue mobility benefits to the community and at the same time contribute to the disaster risk reduction processes.

74. The social forestry program implemented under the CDSP as a climate change adaptation (land stabilization and livelihood enhancement) strategy has been tremendously successful. The Additional Funding phase will continue to implement this strategy. The growth rate of the plantations raised during CDSP IV is astonishingly high. In addition to improving the biophysical condition of the chars, the benefits accrued from the social forestry scheme will provide the participants with some serious economic benefit. The project is considering some additional appropriate technologies, which will help to achieve the specific objectives of the project. The table below summarizes some key impacts and opportunities for further leverage from an environmental perspective.

Table: Expected environmental impacts & opportunities for further leverage

Expected Environmental impact[22]	**Opportunity for further leverage**
River erosion has been a devastating problem. The southern-most areas are still undergoing morphological changes, which is perhaps typical in a sedimentary delta. Field observation suggests that, significant erosion could not be observed in the CDSP areas until the start of CDSP-IV. However, severe erosion suddenly took place during the CDSP-IV implementation. Part of the embankment in Noler char and the sluice gate at DS-2 has already been eroded.	Since the risk of further erosion is highly probable, the mitigation measure requires the following: (a) a two pronged approach that needs retirement of part of the embankment at risk, along with replacement of the DS-2 and other structures in the short run, and (b) erosion prevention infrastructure along the lower Meghna river in the longer run, the latter option being costly and beyond the scope of the Additional Funding phase. This can be a menu for the anticipated CDSP-V.
The aquatic biodiversity has decreased due to complete detachment of the inner areas from outside river networks. Instead of finding natural estuarine fish biodiversity in inner khals, the local aquatic bodies now have only a handful of commercial species. Investment-intensive aquaculture practices have replaced capture fisheries. Therefore, the artisanal fishermen do not find adequate catch in the khals under closure and now go to open estuary for fishing.	Aquaculture should be scaled up leveraging other projects of the Ministry of Fisheries and Livestock (MoFL).
CDSP itself may be regarded as an adaptive response to climate change related hazards. While its water infrastructure not only resists saline inundation due to diurnal tidal effects, it also dampens the devastating power of an incoming water surge, accompanied by a cyclone[23]. The resuscitated canal networks and the sluice gates safeguard the area from water logging. The multi-purpose cyclone shelters allow people to safeguard human lives, while the killas built in sea facing chars allow livestock to be relocated to during a cyclonic surge. The green vegetation not only enhance carbon stock and increase sequestration potential, such vegetation ameliorate cyclonic wind speed, thereby safeguarding people's lives and assets in the immediate vicinity. On top of these, CDSP activities allowed people to increase cropping intensity from well below 100 to over 250, with at least three-fold increase in agriculture related income per beneficiary household, which tremendously increased the overall adaptive capacity of the local people.	In the Additional Funding phase, CDSP may leverage carbon benefits for the SFGs by leveraging collaboration from the Bangladesh UNREDD Programme implemented by BFD, which is a CDSP implementing partner as well.
Natural Resources Management. The interventions of the project	Continuation of social forestry will further improve the

[22] Based on IFAD Project Design Report and field mission, October 2018.

[23] Such structures are common in Bangladesh. The relevant policies for water management, disaster risk reduction and climate change adaptation consider these as essential to safeguard people's wellbeing.

will continue to prevent the chars from tidal inundation and thus the intrusion of salinity into the land that become productive as a result of CDMP interventions. With increasing areas under CDSP water infrastructures, more and more areas started becoming neutral (non-saline), which allowed the development of a conducive condition for agricultural practices including crops, horticulture, poultry, livestock, fisheries (i.e., aquaculture) and forestry. Gradually, the CDSP intervention areas have witnessed a near-normal presence of natural resources in terms of abundance, diversity and health on various elements as elsewhere in rural Bangladesh and the terrestrialization process will continue. ***Basis of assessment***. CDSP IV Completion Review and TA Team. Overall Progress achieved in afforestation is 98%. The 620 Social Forestry Groups (SFG) established by CDSP have 15,495 members. A total of 7,400 ha mangrove planted and 200 ha of foreshore plantations and 268 km of roadside strip plantations were raised involving 95 institutions. A total of 16 killas have been built and 134 km of canals excavated. The Bangladesh Forest Research Institute's research documented the terrestrialization process in the western coast and successful provenance trials with terrestrial tree species where soil salinity is much higher compared to the CDSP area.	biophysical condition. The existing social forestry model may be improved. The BFD may consider conducting varietal trials to introduce other fast growing tree species and horticultural species in partnership with Bangladesh Forest Research Institute and the universities. The BFD is also the implementing agency of the $185 million Sustainable Forest and Livelihoods (SUFAL) project. In the Additional Financing phase, CDSP may leverage SUFAL for scaling up the social forestry programme as well as collecting planting material. SUFAL may also help conducting provenance and varietal trial with terrestrial tree species to gradually replace casuarina with more valuable and multipurpose tree species. The chars are newly accreted extremely fertile land and the growth rate of the plantations is tremendously high. The BFD may adopt a modified silvicultural practice by increasing the thinning frequency. This will provide the beneficiaries at least one – and in some plantations perhaps two – additional harvests. The economic value accrued by the beneficiaries from the additional harvests will be huge. Additional Financing phase, CDSP may leverage SUFAL for scaling up the social forestry programme as well as collecting planting material.

B. Environment and climate risks and mitigation measures

75. **River Erosion**: In an active delta, river erosion always remains a threat. It is irrelevant of how strong the erosion control measures are, erosion threats will continue to stay in the new CDSP Additional Funding areas, including the old ones. A part of the embankment has already failed under CDSP IV, while one sluice gate has been found to be completely eroded and a few others are at risk of being eroded soon. The management anticipated no erosion at the beginning of CDSP IV, which is proved to be wrong. The gradual rise in sea surface temperature and gradual build up of potential energy on the estuarine surface are supposed to interplay with rising sea levels, which is expected to increase the tidal strength and resultant ability to erode sea facing lands including embankments.

76. Unless the embankment itself is protected against erosion proof by means of engineering interventions, the objective of the CDSP might be severely compromised. The management has already considered retirement of affected embankment, re-establishment/relocation of sluices for improved drainage, excavation/ diversion of khals (canals) to maintain alternate drainage system, establishment of new closures to cease external hydrological influences, etc.

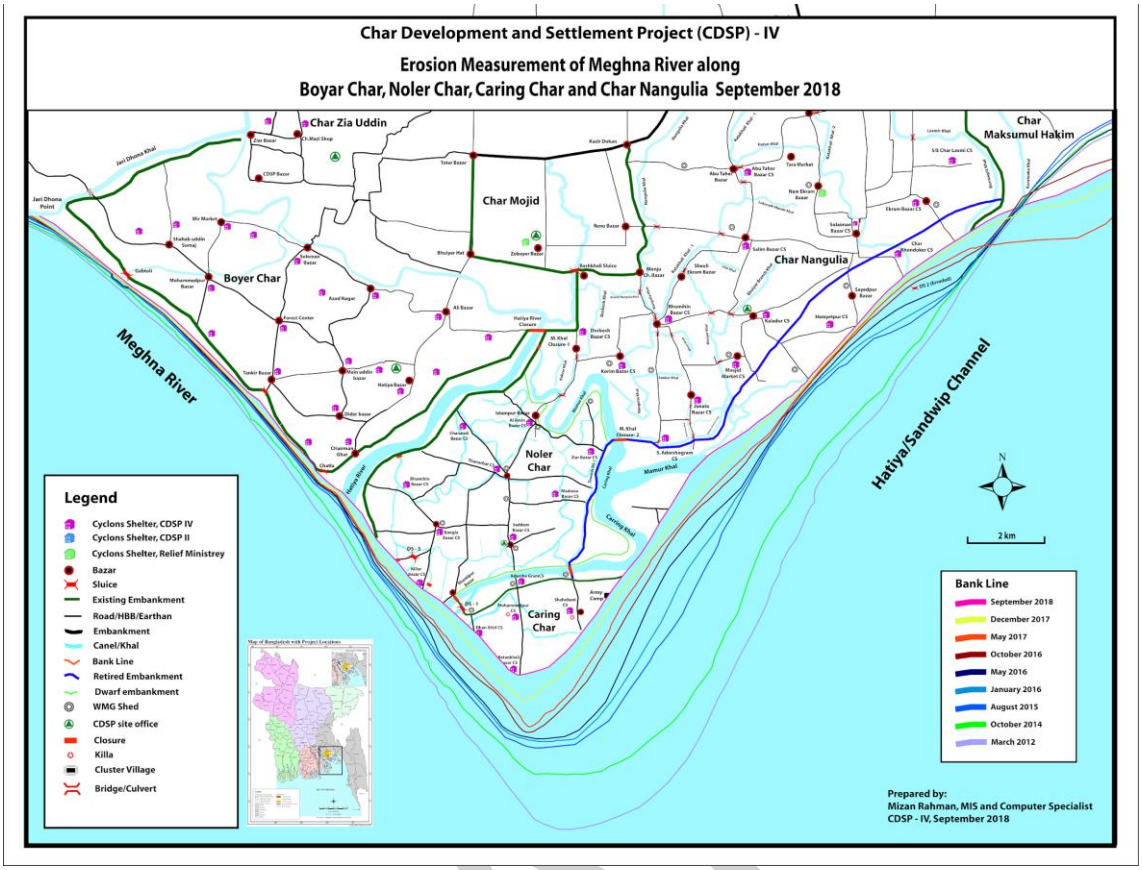

Figure 2. Erosion measurement of Meghna River along Boyer Char, Caring Char and Char Nangulia, September 2018 (IFAD, 2018).

77. During the project construction phase, it is anticipated that there will be a localized increase in dust pollution during earth works (embankment/road). However, these dusts are constituted with particle size above 10 micron (i.e., coarse particles), which is not regarded as a major pollutant source. Such negligible impacts are direct, immediate and short-lived. In the rainy season, dust pollution will be significantly subsided due to regular rainfall. The table below presents some risks from a climate/ environmental perspective.

Table: Environmental risks by project component

Environmental risks arising from the project
Component 1: Protection from Climate Change (water infrastructure, social forestry)
Thoroughly covered in the 'social risk' section. The social risks will be compounded by environmental risks. Vulnerability of the landscape to disasters and of people to income loss. The CDSP-IV areas have been adversely affected by a combination of sea level rise and an increased wave interaction induced by rising sea surface temperature. As a consequence, even the areas which were thought to be 'established' and nor at risk of erosion, have already been facing severe form of erosion[24]. The foreshore plantations have been washed away in the affected areas exposing larger areas to tidal surge vulnerability in one hand and reduced future income of the participating SFGs. The species composition in the social forestry model has *Casuarina spp*. is the dominant species, but presence of *Acacia spp*. is also visible (according to the BFD, this is an outcome of popular demand since the timber value is high). However, *Acacia* has become an invasive species in the southern part of Bangladesh.

[24] Along Char Nangulia and Noler Char; while two-thirds of Carring char has been eroded between 2013-2018.

Host communities As above. Also covered in the 'social risks' section. The CDSP has a positive contribution to improving the environmental health condition in the chars by providing water, sanitation and hygiene (WASH) services. The shallow tubewells mean for safe drinking water supply to the community Human. Discovery of arsenic and labile may compromise the quality of water in the tubewells causing health risks, and hence water quality must be check from time to time.
LCS members Possible health and safety risks e.g. due to headloads, work burden. LCS groups formed but works are not carried out and planned income is not achieved.
Component 2: Climate resilient infrastructure (internal infrastructure, water and sanitation)
LCS members engaged for internal infrastructure As above
Component 4: Institutional and livelihood support (agricultural support/ social and livelihoods support)
Most HHs HHs lack 'sufficient' savings to buffer shocks,, as highlighted by field interviews (October 2018). However, diversification of livelihood has increased resilient capacity of HHs.
Component 5: Technical assistance and management support
Lack of TA continuity The knowledge, trust and social capital that especially locally based staff have built up is a likely critical success factor in helping the project achieve its potential. A totally new TA team would mean delays/ potential initial false starts. The TA Team lacks an essential expertise when the project locale features hydrology as the prime variable. A hydrologist position is crucial. Absence of a hydrological monitoring protocol is a gross lapse given the fact that all the excellent development interventions are prone to the dynamics of the active delta.
Integrated environmental/social impacts/ risks 'horizon scanning' could be more frequent and systematic The current organization of project management does not appear to have a clear mechanism to keep track of/ act on the social implications of project implementation in a dynamic environment. This is essential as future acquisition/ loss due to erosion is highly likely and also sensitive.
Other environmentally induced risks not arising from proposed project
HHs with land titles between river and new embankments, who lose homes/ land/ productivity to river erosion Covered in the social risks section.
CDSP HHs Covered in the social section. Environmental health hazards may become intense due to arsenic poisoning.

C. Social impacts and opportunities

78. This section summarizes the main anticipated positive social impacts and presents some opportunities for consideration. This section is supplemented with the RAP-RAF. It is recommended that the Project is selective as not all are possible in the time frame, but may be more appropriate for a future phase. Priorities are suggested in the ESMP below.

79. Given the innovative and holistic nature of the CDSP previous phases, as well as strong capacity at the national level, one overarching opportunity that the Project may consider is to frame the package of support within a time-bound graduation/ resilience model.

80. The table below presents some impacts and opportunities for further leverage from a social perspective.

Table: Expected social impacts & opportunities for further leverage

Expected social impact[25]	Opportunity for further leverage
Poverty reduction. Expected to be significant, and specifically to increase women's participation in income generation. Access to land and productive assets, finance as well as livelihoods development are key strategies. This assessment notes the Project's targeting approach, which differentiates between men and women. *Basis for assessment.* In CDSP IV the average annual household income for those living in the CDSP-IV area rose by almost 300% between the 2012 baseline survey and 2017, from Tk 72,000 to Tk 280,243. . Even if an allowance is made for inflation of 60% over this period, the increase is still 157%. 68% of women (a total of 33,200) earn an income. The average value of assets per household increased from Tk35,162 to Tk261,480. Allowing for inflation the increase is over 4.5 times. These assets include household goods and productive assets for farm and non-farm businesses, but not the value of land and houses.	Towards a **time-bound graduation and resilience model** - see above. Consider building on the social capital fostered by the FLIs and making selected **community investments for value 'protection' and addition for both own consumption and sale** (e.g. safe food processing and storage). Existing infrastructure could be explored as multi-functional sites e.g. cyclone shelters/schools/ processing and storage. Given significant internal/ international migration, consider **analysing/mobilizing remittances** in project areas in partnership with microfinance partners.
Food security and nutrition (FSN). Expected to be comparable to CDSP previous phases i.e. significant and lead to reduced hunger/ increased dietary diversity. *Basis for assessment.* The package of food-based and non food-based CDSP interventions[26] have helped to reduce the number of HHs suffering acute food shortage from 82% at baseline to only 4%. Now, 69% of households now produce enough for the entire year and other HHs have increased coverage of basic (rice) food needs from 7 to 10.6 months. Dietary diversity increased due to increased production and awareness[27]. Wasting dropped from 18% to 14%, and underweight rates from 58% to 43% at MTR.	Include IFAD core indicators in results framework as appropriate. Include FSN impact indicators as part of a **time-bound graduation and resilience model** - see above. Consider an explicit focus on **adolescent girls given the nexus of gender, youth and nutrition** issues and in line with GoB CIP on Food Security and Nutrition (2017) and IFAD nutrition priorities. Build on CDSP social capital fostered through FLIs and consider **community-based rice/ seed banks** or similar models that buffer food shortages and also cover some community social welfare needs[28]. Consider **nutrition-sensitive value chains** to enhance the local food system[29].
Agricultural productivity for both sale and consumption. Expected to be very positive based on previous CDSP experience. *Basis for assessment.* Despite the withdrawal of the DAE from CDSP, the package of Farmer Forums and associated training, high-yielding varieties (HYV),	As already planned, the Additional Financing phase will step up market linkages and explore some value chains, and it is recommended that the recommendations of the Technical report on farmer forums (no.16, 2018) and other relevant CDSP reports are explored. The anticipated role of the LGED in the livelihoods components is to be welcomed, given their proven success in other IFAD-supported projects in strengthening market access and

[25] Based on IFAD Project Design Report and field mission, October 2018.
[26] Food-based interventions include integrated homestead production, nutrition education and non food-based include WASH and sanitation, prevention of early marriage and childbirth, intra-HH gender norms.
[27] Significantly increase in consumption of eggs, roots/tubers/ fruits and vegetables. IFAD. Mid-Term. Review. 2017.
[28] See this example in Cambodia: https://trustbuilding.wordpress.com/2011/05/05/rice-banks-lessons-learned-in-cambodia/ and IFAD's own experience in India: https://asia.ifad.org/web/in1314/blogs/-/blogs/tribal-village-prospers-through-grain-bank?p_p_auth=f0WGNjH2&p_r_p_564233524_categoryId=10832&_33_redirect=https%3A%2F%2Fasia.ifad.org%2Fweb%2Fin1314%2Fblogs%3Fp_p_auth%3Df0WGNjH2%26p_p_id%3D33%26p_p_lifecycle%3D0%26p_p_col_id%3Dcolumn-4%26p_p_col_count%3D1%26p_r_p_564233524_categoryId%3D10832&
[29] See IFAD guidance at https://www.ifad.org/web/knowledge/publication/asset/40805038

integrated crop and livestock models, water infrastructure to remove salinity and waterlogging amongst other interventions, have contributed to often impressive increases in production. For example, 98% of farmer forums surveyed in CDSP IV reported 2 to 3 times more production using HYV crops, and 44% reported increased productivity due to control of waterlogging. Market actors were included in the farmer forums to facilitate linkages, contract farming etc[30].	improving market facilities for value protection and addition. Safe storage and processing facilities at improved markets should be explored, either for the Additional Financing phase or a future phase. Techical studies for climate-resilient market facilities could possibly be financed by ASAP 2, a climate finance facility of IFAD. Unlike Water Management Groups, Farmer Forums have no legal status; legal status should be considered to enable farmers and market actors to handle money and contracts with confidence.
Gender equality and women's empowerment. Expected to be significant in economic empowerment, decision-making in the home and community, as well as reduced workloads (less time to fetch water, take children to school etc).	Explore opportunities for developing **diversified and off-farm livelihoods for both women and men** that are environmentally friendly (see above). Tackle **intra-household decision-making** towards more equitable voice for women.
Youth. Young people (18 to 35 years) are likely a significant proportion of the target group, and in the area under-14 year olds made up 45% of the population at MTR i 2015.	Establish the demographic basis ie. number of 18 – 35 year old rural youth in the project areas, and explicitly target young people as agents of rural growth with (green) **job/ income generation and related skills development opportunities** in line with GoB youth policy and IFAD Rural Youth Action Plan. Consider building on IFAD successes elsewhere[31].
Disabled. The desk review and mission did not reveal any focus on supporting people with disabilities but these many have been missed.	Consider **decent work options** that can increase their/ HH income as well as reduce dependence on hard-to-access social protection.
HHs to be settled on undeveloped chars The expected social benefits are overwhelmingly positive, based on past CDSP experience. Some risks to plans (note: not as a result of the project) may include: ● Possible requisition of land for other GoB purposes as in CDSP IV (low/high/high) ● Until the process is complete, HHs are vulnerable to more powerful interests (medium/high/medium) ● Possible delay due to conflict over district / upazila boundary demarcation as Urir char is between 2 administrative areas (low/low/medium)	● Clarify as far as possible GoB intentions for Urir char ● Mapping of HHs to commence as soon as possible so as to fix this data ● Resolve demarcation as fast as possible

D. Social risks and mitigation measures

81. The main risks identified are related to loss/damage resulting from erosion processes. There are two main scenarios: (i) some HHs with land titles lose land to acquisition by the BWDB in order to retire eroded embankments and (ii) some HHs lose land to the natural process of erosion - some with land titles and some without. The table below sets out social risks and suggested mitigation measures for these; for acquisition-related risks, more detail is given in the Resettlement Action Plan (RAP). The GoB has recently enacted a relatively generous compensation scheme, which, provided the risks are managed, is even arguably an opportunity for the affected HHs due to receive compensation. However, those who lose their land to erosion rather than project interventions are not entitled to acquisition-related compensation and also need to be prioritized for rehabilitation in the proposed project. Both groups of households are still considerably better off than before as a result of

[30] GoB. IFAD. 2018. Technical Report no.16. Assessment of Farmers Forums in CDSP IV.
[31] See IFAD experience in Mali, where youth jobs and skills are kick-started by diaspora: https://www.ifad.org/web/latest/story/asset/39640148

CDSP interventions, and it was reported that many households facing erosion have already used savings to relocate to safer ground, often with relatives.

82. It should be noted the 'no project scenario' could entail no action to protect people from erosion and that the projected, as well as, past social benefits of all the CDSP phases are at risk. Given these trade-offs, the decision to acquire land and retire the embankment is an active measure to ensure compensation for affected HHs with land titles (estimated at 99% as the area has been settled through CDSP) and protect HHs throughout the entire CDSP area. Moreover, the GoB is in the process of approving significant investment under the Bangladesh Delta Plan 2100 that involves building a cross dam to stabilize the area against erosion. This makes the IFAD infrastructure investment more sustainable. Even without this, the employment opportunities arising from building the embankments and broader social impacts that CDSP has proved able to achieve in a few years - despite not having been reflected in the EFA – are arguably a worthwhile investment. The table below sets out potential social risks.

Table: Social risks by project component

Social risks arising from the project
Component 1: Protection from Climate Change (water infrastructure, social forestry)
<u>Economic and social displacement of HHs with land titles, who lose homes/ land/ productivity to acquisition to prevent damage to entire CDSP area</u> Lengthy process for GoB compensation for first group due to change in law (although new law is twice as generous) and because of lack of funds in CDSP IV due to project closure. The biggest risk is delay in GoB/IFAD processes. Most households face a dip in farm-related livelihoods (incomes) - the CDSP support of off-farm activities is helping considerably – as well as a reduction in the quality of meals (e.g. meat/fish/eggs several times a month rather than a week), though few reported less intake. They have largely managed to remain in their homes or transport them to nearby areas as they await compensation. HHs have expressed preference for cash (300%) rather than land (field visit) and given their increased skills and confidence in decision-making as a result of CDSP interventions, this seems more appropriate than settling them in undeveloped areas as they would see this would be a step backwards. Nevertheless, there is a risk that (i) investment decisions will not be as gender-equitable as in the land titling that entitles them to the compensation (ii) the amount of money will make them targets of rent-seeking and unscrupulous agents purporting to be intermediaries.
<u>Host communities</u> In the scenario of cash compensation rather than a formal resettlement programme, the risk for a host community is often less critical. There may even be benefits if many HHs choose to settle in the area in more stable chars e.g. their participation in the local economy.
<u>LCS members</u> Possible health and safety risks e.g. due to headloads, work burden. LCS groups formed but works are not carried out and planned income is not achieved.
Component 2: Climate resilient infrastructure (internal infrastructure, water and sanitation)
<u>LCS members engaged for internal infrastructure</u> As above
Component 4: Institutional and livelihood support (agricultural support/ social and livelihoods support)
<u>Most HHs</u> HHs lack 'sufficient' savings to buffer shocks, as highlighted by field interviews (October 2018).

Component 5: Technical assistance and management support

Lack of TA continuity

The knowledge, trust and social capital that especially locally based staff have built up is a likely critical success factor in helping the project achieve its potential. A totally new TA team would mean delays/ potential initial false starts.

Integrated social impacts/ risks 'horizon scanning' should be more frequent and systematic

The current organization of project management does not appear to have a clear mechanism to keep track of/ act on the social implications of project implementation in a dynamic environment. This is essential as future acquisition/ loss due to erosion is highly likely and also sensitive.

Other potential social risks

Gender-based violence resulting or labour influx is not expected to be a significant risk in consideration of the fact the works to be undertaken are not large enough in scope to envisage the influx of a significant contingent of outside labour.

Mitigation. Though the number of outsider workers will considerably low, compared to the community population, BWDB will be vigilant to any potential social risks related to gender-based violence and sexual exploitation and abuse. LGED will adopt a series of measures to prevent, mitigate, and respond promptly and adequately to any case of gender-based violence. The project will design and implement a risk management Program including GRM for gender based violence, in collaboration with all project-related agencies - client, community, TA and contractors – to prevent, mitigate, and, if the situation arises, expeditiously respond to project-related instances of GBV and SEA during project implementation.

The Project will plan and undertake gender rights training, informing women in the project areas of resources available and procedures established to report gender-based violence. Establish relationship of trust through field gender coordinators to provide safe space for women to discuss and report violence or abuse either by family members, community members or outsiders.

The project has dedicated gender focal point in the project coordination office, two gender facilitators and several gender coordinators at the field level, with established relationship of trust. These facilitators are in charge of undertaking gender rights training women in the project areas. A module of the training is dedicated to gender-based violence and the resources available to women to report it.

Elite capture. The project has a thorough and effective targeting strategy based on needs of the rural poor and vulnerable people including landless and settlers who do not have proper title to the land they are now occupying, marginal and small farmers, female headed households and women particularly targeted for NGO activities and LCS.

Mitigation. Establish further criteria under targeting strategy, prioritising access to services provided for early measures exclusively targeted to registered HHs who have been identified for land acquisition and compensation. Training programmes for off-farm livelihoods activities and access to microcredit will have to be priority activities for HHs who will entirely or partially lose their lands. Therefore, it is recommended that the first 6 months of project activities focus exclusively on the approximate 1000 households that will be affected.

Governance and management of natural resources and community structures have so far been successful and sustainable. Assessment by the Institute for Advanced Sustainability Studies (IASS)[32] Potsdam reflects that effective governance of natural resources in such an extreme environment have been made possible by comprehensive and long-term support from government and NGOs.

CDSP has required the active participation of six government departments from five different Ministries. The Department of Agricultural Extension not be part of the AF phase, and it is vital that the remaining five departments ensure that no other gaps open up. Lack of an efficient governance and management structure is a very low risk as the five departments are fully committed to the AF project.

Other social risks not arising from proposed project

Economic and social displacement of HHs with land titles between river and new embankments, who lose homes/ land/ productivity to riverbank erosion

HHs with land titles acquired in CDSP who lose their land as a result of riverbank erosion, do not have entitlement to any compensation as there has been no acquisition of their lands by the Government for works. The HHs settled in the *char* areas are fully aware of the nature and risks of erosion-related land loss in the chars. Although, the CDSP IV project has improved the social and productive infrastructure of the char areas and the subsequent resilience of the project beneficiary HHs, enabling many to move elsewhere, this setback, due to unexpectedly aggressive environmental characteristic, still adversely impacts HHs who lose assets, homes, livelihoods, etc. Evidence from project supervision show that Mmny such HHs have already used savings to relocate to safer areas. This issue is not connected with the proposed project, the Additional Financing phase will make specific efforts to rehabilitate HHs that remain in the project area in spite of loss of agricultural land. The project

[32]Matheus Alves Zanella, Judith Rosendahl, Jes Weigelt, Pro-poor Resource Governance under Changing Climates (2015), IASS.

design also envisages non-farm livelihood support for families who have lost agricultural land to erosion, but choose to stay in the project areas.
CDSP HHs Potential loss of productivity and access to drinking water/ social conflict due to potential over-extraction of water from deep tube wells. According to the project Annual Outcome Survey 2017, 'there appears to have been a considerable expansion of boro in all CDSP areas. This expansion has been driven by the current high paddy prices following losses due to severe flooding in much of Bangladesh in 2017) and adoption of hybrid seeds. Farmers have been investing considerable sums in irrigation - sinking tubewells to a considerable depth. There is a considerable risk of over-abstraction, posing a threat to fresh water supplies for domestic use, and making irrigation non-sustainable.'

E. Cumulative impacts

83. **Environmental.** The overall impact of the additional funding phase is expected to be positive like the successful implementation of the previous CDSP phases have created. The project will continue to implement its four main components across all previous CDSP areas as well as new chars that have been identified for CDSP IV AF. The project is expected to modify the physical and environmental condition of the target areas. The change in hydrological realities due to the embankments will reduce the adverse effects of storm surge and high tidal inundation of unprotected chars. The cumulative effect is the reduction of salinity, which in turn allows agricultural development as well as vegetative growth in the area. The changed conditions are conducive to grow vegetables, which have high market demand. The sluices allow reduction of water logging during excessive rainfall episodes, further contributing to the improvement of physical condition for agriculture to flourish. Moreover, the physical protection will enhance the sense of physical security against storm surge, while the tree plantations across the chars will have positive environmental co-benefits in terms of air quality and biological diversity. All these possibilities offer both direct and indirect, cumulative and long term positive impacts.

84. However, the continued erosion along the Meghna river and Mamur Khal is threatening the realization of these benefits by putting the protection infrastructure at risk. The planned GoB investment in cross dams will significantly boost the sustainability of the proposed project and is an important factor that will enable the GoB-IFAD- Government of Netherlands partnership to continue changing the social landscape along with the physical landscape.

85. **Economic.** The cumulative economic impacts of the Additional Financing phase of the CDSP IV are expected to be overwhelmingly positive. As it builds on years of investment, these impacts can be expected from the outset. The Economic Internal Rate of Return (EIRR) for the 20-years period is 37% with benefit cost ratio of 1.43. The EIRR in the AF CDSP IV is notably higher than the CDSP IV at the design, which was 17%. The main reason for that is that AF CDSP IV beneficiaries start getting benefits as early as in the first project year and the number of beneficiaries are considerably higher than that of CDSP IV in relation to the investments of CDSP IV.

86. **Social.** The project creates an enabling social environment where poor people can enjoy a transformative change of a remote/less accessible and environmentally non-livable area into a much improved and developed area, where land-based and culturally suited livelihood activities can be carried out without relentlessly fighting with nature. Moreover, the poor are given legal rights on a piece of productive land, which gives the poor not only a stable source of income, also dignity which is essential for a healthy living. The recipients of land entitlement form a commune (i.e., shamaj), where they tend to uphold fellow feelings and share social aspects of life with members of the shamaj. Such elements of social development occur gradually, where the positive impacts are cumulative and long-term. All these lead to social cohesion.

87. The internal road communication network allows quick relocation of an ailing patient to a nearby hospital, which was impossible to perceive before the implementation of CDSP. Children can now go to a school, since schools are built in the neighbourhood. Women can easily move around, not being wet while taking a stroll. This enables them to socialize, form a group, learn from a few successful smallholder producers living in the neighbouring shamaj. All these contribute to a social and economic well being of communities.

88. The water management infrastructures drastically reduce the influence of saline inundation, protect the area from cyclonic storm surge, and gives rise to a non-saline condition that is conducive for crop agriculture. Drastic reduction of salinity on top soils also allows certain vegetation to thrive, including local varieties of fruit bearing trees. A guaranteed non-saline and inundation free condition allows fish aquaculture and livestock rearing opportunities. Overall, such a condition brings transformative change in the production system, allowing poor people to boost their overall agricultural production.

89. Since internal infrastructures are built inside the embankment, poor farmers can bring their freshly harvested produces to the market and can enjoy higher selling prices for their products. Such higher prices make agricultural efforts financially profitable, which eventually contribute heavily to their economic emancipation. Such a positive effect of the project is directly contributing to economic progress of the beneficiaries. The cumulative benefits provide for a springboard effect on economic well being of the households, while the overall positive impact is synergistic and contribute to a long-term outcome.

VI. Analysis of alternatives

90. The guidance on preparing this note highlights that this is an area in which ESIAs are often weaker, as they fail to identify and analyse genuine alternatives. With this in mind the mission members discussed at length the possible alternatives with the TA team to ensure due diligence on this front. There are several issues that were raised. Firstly, this that this project is not an ex nuovo project and as such it is building on experience of what works, as well as an impressive set of institutional relationships. Secondly, the current solution is the result of much deliberation of alternatives, which are mainly driven by environmental/ climate realities as the basis for all social development. It is the result of assessing various trade-offs, which can be summarized as follows:

(i) whether to intensify efforts in existing project areas or expand to other chars through preparatory work

(ii) whether to retire the embankment as planned or further in order to reduce risk of erosion for a longer period.

The analysis below focuses on these and the 'no project scenario'.

6.1 Intensify efforts in existing project areas/ no preparatory activities in shortlisted chars for development:

(i) **Environmental dimension**. It is evident that the area is highly dynamic and that erosion is a reality. The investment is more justifiable given the imminent approval of a major infrastructure investment i.e. the proposed Noakhali-Urir Char cross-dam, which will greatly stabilize the area.

(ii) **Social dimension**. From a social perspective, the rationale is simple: the more land is available to be developed and settled, the more people IFAD can lift out of extreme poverty and make more resilient. Extending preparatory works to Maksumul-Hakim, Allaudin-Samitir Cluster, Dhal, Kola Toli, Mozammel chars means that the project can reach around 13,700

households or roughly 70,000 people. In time they may also be viable alternatives for people should more land be lost to erosion before the cross-dam is built.

6.2 Project retires embankments by more than 3 km in order to reduce risk of erosion for a longer time period:

(i) **Environmental dimension.** A key issue is the unpredictability of erosion patterns, and indeed the working paper on water management for the CDSP IV draws attention to likely shifts in patterns. Without appropriate monitoring protocols, retiring the embankments further is not an investment that guarantees protection from erosion, but the negative social impacts are considerable in comparison. The major infrastructure planned by GoB would boost erosion protection, so that over-investment at this stage appears to have too many negative consequences without a certain outcome.

(ii) **Social dimension.** Essentially this would mean acquiring more land and displacing more people. The current decision by the BWDB is based on the minimum disruption to people before the cross-dam can realistically be expected to be effective as a project under the national Delta Plan. Part of the issue appears to be also that the current GoB guidelines for such embankments now requires a proven resistance over 100 years, whereas this is highly unrealistic in the project area and requires considerable expense. But taking into account the standards of the previous of 20 years, at least until the cross dams are built, could mean a slope that takes up less space and therefore reduce the number of households to be displaced.

6.3 No project scenario

(i) **Environmental dimension**: The CDSP has been a tremendously successful response to the vulnerability of landscape and people to the aggression of the unpredictable, dynamic Bay of Bengal in the most active part of the delta. The objective of the CDSP has been to stabilize the newly accreted landmass, prevent the land from further intrusion of saline water, increase productivity, and protect people and assets. The success has been remarkable. The chars are now productive agricultural systems and the built environment is forested and is providing enabling micro-climate for further natural resources growth. The landscape and the people are resilient. The threat of erosion and loss of assets and displacement of people will continue to happen and the protection measures must also be in place on a continued basis since this is the main development philosophy with which CDSP begun a quarter century ago. While the Additional Funding phase will bring under its domain new vulnerable chars and build water-resistant infrastructures similar to those of CDSP I-IV, this phase is crucial to continue the maintenance of the existing ones. No project option is not an option.

(ii) **Social dimension.** Without the project as currently designed and including the changes recommended in project design (see below) the social impacts will be overwhelmingly negative and present a significant missed opportunity. The following social impacts may reasonably be expected:

- (HHs risk losing productivity and livelihoods to salinity/ erosion before the cross-dam is built, resulting in a return to hunger and poverty. HHs on Urir char, who are waiting for land titling activities delayed from before, will be disappointed and remain vulnerable to exploitation by landgrabbers and more powerful interests.
- HHs will miss out on the opportunity to become more resilient to a range of shocks, which is the emphasis proposed for the Additional Financing and future phases.

VII. Recommendations for changes to design

91. Long-term monitoring of hydro-geomorphological changes The CDSP is located at the most active part of the delta. The Additional Funding phase proposes a rigorous one time study of the hydro-geomorphological study, a regular monitoring protocol for monitoring periodic changes in the delta dynamics must be established. The monitoring protocol will also include monitoring of the small water infrastructures such as khals established by the project. Updated information made available to the mission indicate that this recommendation has already been incorporated in the design.

92. Further recommendations are set out in the ESMP and RAP.

VIII. Institutional aspects

93. Current plans are that organization and management arrangement will remain broadly the same as for CDSP IV. The Additional Financing Phase will rely on an established structure of management, coordination and oversight. An Inter-Ministerial Steering Committee will be established, which will meet annually or biannually under chairmanship of the Secretary of the Ministry of Water Resources, providing overall guidance and making decisions on policy issues. The Project Management Committee will meet periodically under the chairmanship of the Project Coordinating Director. PMC meetings will continue to provide a good flow of information and cooperation between the Implementing Agencies, while the operational independence of each implementing agency (with its own PD and Development Project Pro-Forma) will continue to ensure it has ownership and responsibility for the implementation of the component/sub-component under its purview.

94. The five components of the project will be implemented by the following:

(1) Protection from climate change: Water management – BWDB/ Social forestry - DOF
(2) Climate-resilient infrastructure: Internal infrastructure - LGED/ Water and sanitation infrastructure - DPHE
(3) Land settlement and titling: Land/plot survey and titling records – MoL (with Office of District Commissioner)
(4) Livelihood support: Agricultural support (advice, inputs, etc.) - NGOs/ Social and livelihoods support - NGOs
(5) Technical assistance and management support – Technical Assistance Office.

95. The TA team will be selected and contracted by GoN in consultation with BWDB. The TA team is responsible for implementation of components 4 and 5 and will also advise and support the PCD and each of the implementing agencies.

96. **Assessment of institutional arrangements.** This assessment confirms the SECAP Review note findings that this is an appropriate arrangement for project delivery. Indeed, the smooth functioning of so many agencies in order to deliver a truly multisectoral approach is remarkable and worthy of documentation as a case study for other countries in the region and further afield.

97. The expansion of the role of LGED is appropriate given their expertise in market development and in creating income generation activities for LCS groups. Their institutional gender strategy is also an indicator of continued gender equity in implementation, as is the experience of IFAD and GoB in other projects in Bangladesh.

98. An analysis of the institutions involved clearly suggests that, the project will deliver various components and sub-components involving national institution with appropriate mandates in all aspects of the project (with an exception of agricultural extension). The BWDB is the national institution to deliver all major infrastructures involving water resources sector, which also supports disaster risk reduction aspects and infrastructural resilience building to climate change. Even for the

maintenance of existing water resources and surge protecting infrastructures, BWDB is the designated agency on behalf of the GOB and has the legal mandate to deliver relevant services.

99. On similar notes, LGED and DPHE are the two national agencies having legal mandates of the GOB to (a) develop rural infrastructures including rural roads, markets, multi-purpose cyclone shelters, etc. and (b) provide for drinking water supply and sanitation services, respectively. The Department of Forest (DOF) has the national mandate to inspire general mass to plant trees, management national forests and facilitate 'social forestry' on behalf of the GOB. The project finds the right institution to manage the afforestation programme involving local stakeholders.

100. The newly developed chars/lands fall under the legal jurisdiction of the Ministry of Land (MOL). Therefore, any attempt to resettle poor people in Government owned Khas lands, arranging for their legal rights to own and utilize the lands for dwelling and cultivation, the only institution having legal mandate is the Ministry of Land. There is a land settlement office in every Upazila (i.e., sub-district). The involvement of the MOL in the project is appropriate. However, the MOL does not adequate manpower to deliver the project objectives without the support of the District-level Administration. This is why, the component involving land resettlement and titling will be delivered under the aegis of the Office of the District Commissioner.

101. The TA Office will be set of involving consultants. The TA Office and its personnel will not only establish linkages with all the major actors as above, they will ensure delivery of Components 4 and 5, while most of the activities under component 4 will be delivered by engaging NGOs. NGOs working at the grassroots in Bangladesh have developed expertise in providing support to local people in agricultural development including fisheries, livestock and forestry, in social development that includes gender empowerment, capacity building on rights and legal issues, health and nutrition services, non-formal education, on group formation and accessing credit support, etc. In some parts of the country, NGOs have been engaged in enhancing human capacities by means of running skills enhancement trainings and helping poor producers to link up with markets and value chains. The TA personnel will build partnership with local NGOs having similar track records to deliver component 4.

Summary of activities and measures to be considered to address climate change, environment and social issues

(Potential) Problem/Issue	**Remedial measure**	**Potential actor to implement**	**Comment(s)**
Erosion leading to failure of infrastructure	Retirement of embankment	BWDB	Provision created within the Extension Phase
	Reconstruction of sluices	BWDB	
	Resuscitation of canal network	BDWB	
	Establishment of new closures, as needed	BWDB	
Potential inundation by CC induced cyclonic storm surge	Increase in crest height, compensation for SLR and compaction	BWDB	Provision needs to be created in design and additional finance need to be allocated
Embankment failure	Embankment slope adjustment (especially, outside slope should be 1:7)	BWDB	
Relocation of affected population/HHs	Ensuring compensation and preferential titling in Urir Char	BWDB, MOL (in association with local Administration)	Provision needs to be created; TA Team must engage with MOL
	Preferential LH training and input support	NGOs & TA Team	Provision generally created within the project; needs special attention

Drainage congestion due to inadequate drainage capacity	Increase in drainage infrastructure in rural roads	LGED	The Chief Engineer's directives to be translated into action
Road slope failure	Roadside afforestation	LGED, DOF	Mobilization of SFG
Gradual degradation of earthen road due to rain cut etc.	Increased monitoring by employing LCS groups	LGED	The Chief Engineer's directives to be translated into action; LGED best practices (Ref: CCRIP) need to be emulated

102. **Opportunities to consider in institutional arrangements.** At the national level it may be worthwhile to further build joint understanding of land-related issues with the MoL/ DC and IFAD. At the project local level, there is scope to (i) expand the range and depth of partnerships and (ii) further develop capacities of/ empower the various field level organizations. The former should notably include the private sector in developing a more market-oriented/ value chain approach but also national financial actors like PKSF to negotiate a better deal for project beneficiaries. Proactive linkages with local service providers (e.g. of IPM, seeds, other inputs) are also be needed to make a market orientation work. With regard to the former, providing the various FLIs such as SFGs and WMGs with a small endowment to meet and resolve smaller issues, training/ empowering local groups to carry out simple environmental monitoring actions, setting up village savings groups/ revolving funds for smallscale community initiatives etc. are all examples of the kind of community action that the Project could stimulate. These actions may be more appropriate for more developed chars, rather than Urir char - but potential could be assessed. These actions are unlikely to be feasible during the AF phase, but the foundation could be built so as to prepare for a fifth phase/ sustainability in the event of no further phase.

IX. Complaints procedure

Proposed complaints procedure.

103. **Overall project activities.** Considering the need, BWDB will establish a procedure to answer to queries and address complaints and grievances about any irregularities in application of the guidelines adopted in SECAP guidelines for assessment and mitigation of social safeguard impacts. Based on consensus, the procedure will help to resolve issues/conflicts amicably and quickly, saving the aggrieved persons from having to resort to expensive, time-consuming legal action. The procedure will however not pre-empt a person's right to go to the courts of law. A Grievance Redress Committee (GRC) formed for each char to ensure easy accessibility by the affected persons. The GRC membership will include representation from: (i) char-level community representative; (ii) women's group representative; (iii) representative of local NGO; (iv) representative of community institution like school teacher or community health worker. The gender and community development advisor of the project coordination unit will be the secretariat of the committee. The upazila engineer of BWDB will be the convenor of the committee.

104. IFAD has a zero tolerance approach to sexual harassment and corruption. The IFAD complaints procedure for SECAP is a key resource33. IFAD has established a complaints procedure to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance of its environmental and social policies and the mandatory aspects of its Social, Environmental and Climate Assessment Procedures in the context of IFAD-supported projects. The procedure allows affected complainants to have their concerns resolved in a fair and timely manner through an

[33] https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&cad=rja&uact=8&ved=2ahUKEwiQ1IiL-Y3fAhXOKiwKHRDiC8QQFjADegQIBRAB&url=https%3A%2F%2Fwww.ifad.org%2Fweb%2Fguest%2Faccountability-and-complaints-procedures&usg=AOvVaw1irb6jnuih0LzVp00JRBd8

independent process. IFAD may be contacted by e-mail at SECAPcomplaints@ifad.org or via its website at (click here for page). Any complaints of sexual harassment and/or SEA received through the complaints procedures shall be forwarded to IFADs Ethics Office for further action. The project should write, translate into Bengali and communicate through FLIs and field coordinators in chars a complaints procedure with the following elements. The procedure should be elaborated in the Project Implementation Manual.

105. The following would be proposed as modalities to raise grievances:

- First option: CDSP HHs or partners can raise complaints together with any ideas on how issues can be resolved with the field level coordinators, who should document them and refer them to the TA team in writing.
- Second option: If the complaint is about the field level coordinator, CDSP HHs or partners can complain directly to the Team Leader or a delegated Bengali-speaking of the TA team. The rest of the procedure is as above.
- Third option: If the complaint is about the Team Leader or other TA team member, CDSP HHs or partners can complain to the field level coordinator, who should document them and refer them to the IFAD country office in writing. An appointed country team representative will ensure adherence to IFAD relevant processes including IFAD's Code of Ethics.
- Fourth option: if the complaint is about the project rather than an individual, CDSP HHs or partners can complain via any of the above options.
- Fifth option: if the complaint is about a sub-contractor, CDSP HHs or partners can complain as under option 1.

106. General provisions:

- The final complaints procedure should be translated and included in the PIM, placed on the project website and communicated widely.
- All project staff and contractors should be familiar with it and IFAD's Code of Ethics.
- A file with written complaints and written resolutions should be kept in a safe place with restricted access by named individuals for the life of the project and then passed to the IFAD country team for safekeeping.
- All complaints will be in strictest confidence, including names of plaintiffs, and breach of confidence will entail disciplinary procedures.
- The Project Coordinating Director will review complaints every quarter and document progress.

107. **Land acquisition related disputes.** With regard to the land acquisition related disputes, the established procedure of Ministry of Land (implementing agency), will apply. Per the 2016 assessment by UNDP of the grievance redressal mechanisms available in Bangladesh, found the MoL's GRM sufficiently efficient. The MoL maintains a Citizen's Charter and an online grievance submission system. Contact details of task based redressal officers are available online and at the local MoL offices. If grievance not handled, instruction provided to use GRM developed by Cabinet Division. Detailed citizen's charter developed with specific task details and their deadlines. Anyone can submit grievance without any registration process. Follow up on the subsequent grievances are not and updates on cases are not available online, but a date-wise Grievance Summary Report is archived in a downloadable PDF format from the MoL website. Per data available on the Cabinet Portal of Bangladesh, MoL has an online complaint disposal rate of 70%.

X. Environmental & Social Management Plan

108. The ESMP is presented in the table below, and includes implementation arrangements as well as performance indicators. For both environmental and social issues, risks associated with the project (i.e. as a result of the project or as a result of a possible 'gap' in initial project design) are presented. It is recommended that the IFAD country team remains closely involved in the Additional Financing phase, working with the TA team and IFAD implementation support missions to stay on track. This is not only proposed to minimize risks but also to ensure that opportunities are acted upon where feasible.

Environmental/ Social risks	Recommended mitigation action	Respons -ibility	Means of verification	Timing/ Frequency	Marginal cost estimation
Environmental					
The CDSP-IV areas have been adversely affected by a combination of sea level rise and an increased wave interaction induced by rising sea surface temperature. As a consequence, even the areas which were thought to be 'established' and not at risk of erosion, have already been facing severe form of erosion[34].	Since the risk of further erosion is highly probable, the mitigation measures are: (a) retirement of part of the embankment at risk, along with replacement of the DS-2 and other structures in the short run, and (b) erosion prevention infrastructure along the lower Meghna river in the longer run, the latter option being costly and beyond the scope of the Additional Funding phase. This can be a menu for the anticipated CDSP V in line with the GoB Delta Plan. (c) a feasibility study before initiating infratsructure works	AF TA Team BWDB	Updated PDR	December 2018	Minimal, from AF funding
Social Forestry model to replace Acacia spp.	Immediately prioritize silvicultural trial	BFD with CDSP TA Team.	Updated PDR	December 2018	Minimal, from AF budget
Arsenic contamination in tubewells	Establish arsenic monitoring protocol that DPHE has for other areas	TA Team and DPHE	Update PDR	December 2018	Minimal, AF funding
Social					
Component 1: HHs with land titles between river and new embankments, who lose homes/ land/ productivity to river erosion	Quantify/ identify HHs	CDSP TA team	Annex to final PDR	early 2019	Minimal, from AF budget
	Immediately prioritize for livelihoods rehabilitation and also give them the option of settlement in undeveloped chars, after existing settlers, in line with GoB policy.	IFAD BGD country team	Updated PDR	CSDP IV AF, to start as soon as possible.	USD 50 per HH
	Project to negotiate with microfinance providers for better terms for those with loans, and seek other partners to support these	TA team	Agreement from NGOs	CSDP IV AF, to start as soon as possible.	-

[34] Along Char Nangulia and Noler Char; while two-thirds of Carring char has been eroded between 2013-2018.

	HHs.				
Component 1: HHs with land titles, who lose homes/ land/ productivity to acquisition to prevent damage to entire CDSP area	Project to ensure full FPIC process and public meetings to ensure that HH are aware of their rights and processes including grievance mechanisms enshrined in law.	BWDB with TA team support	FPIC documentation (see RAP)	1 public meeting per char, November 2018 for those already affected and as soon as identified for next cohort.	Marginal extra cost
	Support GoB and facilitate dialogue/ resolution of any disputes.	TA team, land policy advisor lead	Documentation of all disputes, to be kept on file	Ongoing	-
	Project to work with HHs to ensure land title owners have separate bank accounts and do not give up husband/ wife rights to separate cheques.	TA team, land policy advisor lead	Project documentation, to be kept on file	Sensitization meetings (Dec 2018 , and at AF project start for those yet to be identified) Ongoing	Minimal marginal costs
	Project to encourage HHs to plan and make good and equitable investments with compensation, where assets purchased are in same joint names as in land titles that entitle them to compensation.	TA team, land policy advisor lead	Project documentation, to be kept on file Follow up survey to see if assets are in joint names, IFAD supervision	2 public sensitization meetings (Dec 2018 , and at AF project start for those yet to be identified) 6 months after compensation received	USD 150 USD 1000
	Project to develop incentive(s) to encourage HH equity in how compensation is used e.g. legal support to make those investments, possibly through the relevant field level organization.	IFAD BGD country team and TA team	Inclusion in final IFAD PDR IFAD supervision	Detailed design/ before PDR approval	USD 1000
Component 1: Host communities	Project to sensitize local authorities in neighbouring areas as many HHs are likely to stay in broader area.	TA team	IFAD supervision	For HHs receiving compensation from acquisition: 1-2 months before compensation received For HHs losing land to erosion: as soon as AF project starts	-
Component 1: LCS members may run health and saftey risks	Check IFAD and LCS experience (a study was done in early 2018) and introduce measures e.g. handcarts to avoid headload, regular rests, on-site WASH etc. Actively seek income opportunities for LCS groups	BWDB	IFAD supervision	Ongoing	-
Component 2: LCS members engaged for internal	As above	LGED	IFAD supervision	Ongoing	-

infrastructure may run health and safety risks					
Component 4: Most HHs lack 'sufficient' savings and are still vulnerable to shocks and slipping back into poverty	Project to consider establishing HH 'sufficient' savings target within a 'resilience' framework e.g. enough to survive for x months without taking a loan, and promote saving culture in livelihoods component.	IFAD BGD country team/ TA team	Updated PDR pays attention to savings	IFAD BGD country team to update PDR TA team to implement during project	Can be incorporated into livelihoods approach
	Project to pilot simple community-based savings models e.g. revolving funds	IFAD BGD country team/ TA team	Updated PDR pays attention to savings	IFAD BGD country team to update PDR TA team to implement during project	USD 2000 for study and report already envisaged
	Project to facilitate HHs to access local social protection services to counter uptake by non-poor and supplement income of HHS.	IFAD BGD country team/ TA team	Updated PDR pays attention to accessing available social protection	IFAD BGD country team to update PDR TA team to implement during project	USD 1000 mapping of vulnerable HHs for dialogue with local authorities
Component 4: HH productivity and access to drinking water/ social conflict due to potential over-extraction of water from deep tube wells.	Project to identify more sustainable options to increase irrigated area / or regulate water extraction.	IFAD BGD country team/ TA team	Updated PDR pays attention to water use regulation	IFAD BGD country team to update PDR TA team to implement during project	Covered by project's livelihoods intervention
Component 5: lack of TA continuity	Project to explore how to ensure some continuity, especially at field level, whilst respecting GoB and IFAD guidelines	IFAD BGD country team	Updated PDR pays attention to TA continuity within GoB/IFAD guidelines	IFAD BGD country team to update PDR	-
Component 5: need for greater in-country presence of Team Leader	Consider greater physical presence, at least 2 consecutive months per quarter, to promote proactive and integrated horizon scanning of social risks and opportunities	IFAD BGD country team/ Government of the Nether-lands	Updated PDR	IFAD BGD country team to update PDR	Extra cost of in-country presence at least 8 months a year
Priority social impacts to be leveraged	Gender: tackling entrenched intra-HH gender bias in decision-making, possibly as part of HH mentoring under a timebound resilience model	IFAD BGD country team/ TA team	IFAD updates PDR TA team to implement	IFAD BGD country team to update PDR	Can be initiated as part of gender coordinator's role and/ through FLIs
	Climate-resilient market/ storage/ processing facilities: if not possible to implement in this Additional Financing Phase, the technical studies could be supported through climate finance.	IFAD BGD country team LGED/ BUET	IFAD updates PDR LGED/ BUET carry out studies and implement	IFAD BGD country team to update PDR Potential studies to start as soon as possible	Cost of study estimated at USD 20,000 but envisaged from ASAP 2 or other climate fund.

XI. General conclusion and recommendations

109. The CDSP IV, like its previous phases is overwhelmingly a success story in both environmental, climate adaptation and social terms. The targeting of very poor and vulnerable people is very much in line with GoB, IFAD and GoN priorities, and the CDSP IV draft design can reasonably be expected to continue delivering transformational change for both the char dwellers as well as their natural resource base. These expected achievements are all the more remarkable given the highly vulnerable project location, which nevertheless offers life-changing development potential for people with nowhere else to go. The positive return on investment in both economic and financial terms, as well as in terms of empowerment and nutrition, can be expected to continue in CDSP IV's AF phase. The GoB is also planning to scale up the success and envisioning a CDSP V, and is moving forward with significant investments in infrastructure that will ultimately make CDSP ones in the area more sustainable.

110. The major risks in the AF phase as a result of the project planned actions are associated with river erosion and climate change, which, the project is managing with a package of infrastructure and water management works that has been tested in previous phases but with the added safeguard of an enhanced monitoring system to learn the lesson of recent and more unpredictable patterns. A major social impact is that in order to protect the CDSP broader investments, a number of households stand to lose all or part of their land and this has warranted a RAP to clarify the issues and actions that will be taken in the spirit of Free and Informed Prior Consent and of IFAD SECAP Guidance Note 13 relating to resettlement. A significant mitigating factor is the GoB's recent change in policy to grant a higher cash compensation to acquisition affected persons with or without land titles granted by CDSP (300 per cent compared to the previous 150 per cent), which should leave them better off than before. See separate RAP. Another risk is the gap between the end of CDSP IV and the AF phase, and all partners are aware of the need to expedite approval, whilst carrying out due diligence. A number of lesser (less impact on fewer people and reversible) risks are outlined in the ESMP together with proposed mitigating actions. The TA team is highly committed and has a deep knowledge of the area and people, and have gained the trust of both implementing partners as well as that of beneficiaries. Nevertheless, some adjustments are suggested, in order to reflect the emerging risks and dynamic nature of the project natural and social environment. It should be stressed that, overall, the entire CDSP IV AF phase is itself a climate, environmental and social risk management strategy for vulnerable people.

111. The AF phase also offers a number of opportunities to innovate, such as to consider developing a holistic graduation model that builds on the current approach but has a clearer theory of change towards resilience (economic, social and climate) at the household level.

112. Key recommendations are set out in the ESMP and RAP, and an overarching one is to the expedited approval of the Additional Funding so as not to lose the momentum and because the CDSP context is so dynamic.

Appendix 1: Composition of ESIA mission

Azharul Mazumder, Team Leader. Experience with USAID, UNDP, IUCN etc.

Soma Chakrabarti (Ms). Sociologist. Independent consultant. 20 years experience in international development and social issues (education, gender, social inclusion, all stages of project cycle with various organizations including UK Government, European Union, Asian Development Bank, Food and Agriculture Organization of the United Nations, IFAD, Global Environment Facility, Convention on Biological Diversity and of working on USAID financed climate and environment initiatives in Bangladesh.

Appendix 2: Consultation and participation

Environment and Climate mission

Site	Dates	Program	Technical Output
Dhaka	September 10-15	• Review of reports and available literature • Preliminary meetings with IFAD, TA Team, Dr. Ahsan U. Ahmed, Harold Liversage (virtual)	• Understanding the genesis, phases and accomplishments of CDSP • Issues and concerns – environment, land tenure and settlement, climate change, resilience…
	September 4	• Meeting with Dr. Ahsan U. Ahmad, Center for Global Change	• SECAP Review Note and coastal environment
	September 12	• Skype with Mr. Harold Liversage, IFAD	•
	September 13	• Mr. Shamsuddoha, Project Coordinating Director, CDSP-IV, Bangladesh Water Development Board	• History, threats, future plans
		• Engr. Rezaul Karim, Project Director, CDSP-IV, Local Government Engineering Division	• LGED achievements and plans, erosion projections and preparedness
	September 20-27	Follow up meetings with IFAD; GoB partners, in particular, Bangladesh Water Development Board (BWDB), Local Government Engineering Division (LGED), Bangladesh Forest Department (BFD), Department of Public Health Engineering (DPHE) and Department of Agriculture Extension (DAE) (optional); International Union for the Conservation of Nature and Natural Resources (IUCN), Government of the Netherlands (GoN) (optional); climate think tank (for example, Dr. Saleemul Huq of International Center for Climate Change and Development); etc.	Discussion on issues and mitigation for CDSP IV.
Noakhali	September 15-20	• Meetings with GoB actors • Group discussion with local government and communities • Visit to the sites and CDSP activities (Boyar Char, Noler Char, Caring Char)	• Physical understanding of issues • Stocktaking of achievements and challenges, expectations and concerns • Mitigation mind-mapping

	September 16	• Travel from Dhaka to Noakhali • Meeting with the CDSP-IV TA Team	• Discuss itinerary, September 16-19 • Discuss technical resource needs and availability • Discuss information collection format
	September 17	• Field visit (Noler Char, Boyer Char)	•
	September 18	• Field visit (Noler Char) with Harold Liversage and Sherina Tabassum • Initiation of RAP	•
	September 19	• Meeting with the CDSP-IV TA Team Leader	• Achievements, strengths, challenges, lessons learned
	September 20	• Travel from Noakhali to Dhaka with the TA Team Leader	•

Social Audit (mission undertaken after consulting documents in Appendix 3).

Pre-mission, during October 2018:

Enika Basu, Programme Analyst, IFAD
Andrew Jenkins, Team Leader
Harold Liversage, Land Lead Technical Specialist, IFAD
Azharul Mazumder, Team Leader
Tabassum Sherina, Country Programme Officer, IFAD
Omer Zafar, Country Programme Manager, IFAD

In Dhaka:
Ahsan Uddin Ahmed, climate and environment specialist and author of SECAP review note
Peter de Vries, First Secretary, Embassy of Netherlands
Tabassum Sherina, Country Programme Officer, IFAD

In Noakhali:
Mr. Tanmaya Das, Deputy Commisisoner, Noakhali
Mr. Abdur Rouf Mondal, Assistant Deputy Commisisoner, Noakhali
Mohammad Nasir Uddin, Executive Engineer, BWDB
Mihir Kumar Chakroborty, Deputy Team Leader, CDSP
Md. Bazlul Karim, Deputy Team Leader, CDSP
Mohammad Rezaul Karim, Land Settlement Advisor, CDSP

Discussions with households including site visits of homes:
In-depth interviews with 20 households and 2 focus group discussions with total approximately 50 people in Boyer, Caring, Nangulia and Urir chars. Profile of households interviewed:

- Male headed
- Women headed
- Youth household heads
- Very vulnerable (including families with elderly, sick, disabilities)
- Households losing land to acquisition
- Households losing land to erosion.

Content of consultations:

IFAD, Dhaka, Technical Assistance Team and Noakhali GoB: Lead question: 'what, in your opinion, are the main risks and opportunities of the Additional Financing phase arising as a result of the project, as well as in the broader context' and probing questions.

Households losing land to acquisition:

- Ask about overall satisfaction with the proposed AF phase, explaining key thrusts
- Establish status with regard to shelter, food security and nutrition, livelihoods options, health and wellbeing
- Confirm whether BDWB consulted with affected households as soon as reasonably possible, gave full explanations and kept up communications in FPIC manner
- Check whether households prefer cash or resettlement
- Check future plans, and whether households plan to maintain gender equity after receiving compensation.

Households losing land to erosion:

- Ask about overall satisfaction with the proposed AF phase, explaining key thrusts
- Establish status with regard to shelter, food security and nutrition, livelihoods options, health and wellbeing
- Check future plans
- Other households: Check project benefits and risks identified in various project reports/ ask for open-ended feedback.