Annex 23: Methodology of Beneficiary Calculation

RHL project

The adaptation practices proposed under the RHL project are climate resilient homesteads (not only the houses but also include the yards, sanitation and safe drinking water), pro-salinity livelihood practices including integrated fruit-fish-fiber (crab farming) farming, slatted houses for goat/sheep, saline tolerant vegetable cultivation, and storm resilient tree plantation. These interventions will create multiple adaptation benefits under different results areas of the Green Climate Fund (GCF) for the target communities.

Outcome 1 (Decreased risk of loss of assets and lives from extreme weather events) and Outcome 2 (Increased livelihood resilience to SLR/storm surge and salinity) of the project will contribute to GCF ARAs 1, 2 and 3. The logic is as follows:

Output 1.1 will increase climate resilience of buildings for 13,500 inhabitants (activity 1.1.1) (supplementary indicator 2.6, ARA 3) and increase the value of physical assets that are resilient to climate hazards (Core 3 indicator, ARA 3) and will provide water storage facilities thereby increasing water security (supplementary indicator 2.3, ARA2). Activity 1.1.2 will provide commercially viable fruit trees for 90,000 beneficiaries (including the 13,500 who will receive resilient homesteads) thereby contributing to increased livelihood options and food security (supplementary indicator 2.1, ARA 1 & supplementary indicator 2.2, ARA 2).

Output 2.1 (Traditional farming practices climate proofed) will support 90,000 people with climate-adaptive livestock shelters and finance to improve livelihood options and food security (activity 2.1.1 and 2.1.2) (supplementary indicator 2.1, ARA 1 & supplementary indicator 2.2, ARA 2, core indicator 3, ARA 3) and a further 90,000 people with saline-adaptive vegetable cultivation (activity 2.1.3) providing them with resilient livelihood options and food security (supplementary indicator 2.1, ARA 1 & supplementary indicator 2.2, ARA 2). All beneficiaries of this output will increase their resilience to climate hazards. Importantly, women of the selected households will be involved in the implementation of activities and thus will be financially empowered further increasing livelihood options.

Output 2.2 will also generate significant adaptation benefits that will include increased income from crab farming and trees, increased natural stock of crab in Sundarbans areas and increased access to finance etc. The project will support 225 hatchery owners through the establishment and operation of 50 crab hatcheries (activity 2.2.1) increasing their livelihood options and providing infrastructure improvements (supplementary indicator 2.1 ARA 1 and core indicator 3, ARA 3). The project will support 2,250 persons for nursing crablets in salinity affected ponds (activity 2.2.2) increasing their livelihood options (supplementary indicator 2.1, ARA 1). The project will promote the integrated fruit-fish-fiber model by engaging a further 90,000 beneficiaries which will include mangrove / fruit trees and crab growing/farming (activity 2.2.3), providing beneficiaries with resilient livelihood options and food security (supplementary indicator 2.1 ARA 1 & supplementary indicator 2.2, ARA 2). This activity will also generate multiple adaptation benefits that includes transfer barren lands (due to salinity) into productive farm, increased income and nutrition of the crab farmers, increase stock of natural crab in the Sundarbans areas etc.

Outcome 3 of the project will enhance capacity of all direct beneficiaries through organizing groups, providing trainings, conducting meetings and field level practices to support the intervention activities listed above.

Thus, total number of direct beneficiaries will be 375,975 persons. The 13,500 beneficiaries of resilient homesteads overlap with 90,000 beneficiaries of tree plantation which should be

deducted from the total beneficiaries. So, absolute number of direct beneficiaries are 362,475. The following table summarizes the beneficiaries by activities and ARAs:

Table 1. A summary of activities, beneficiaries and beneficiaries by results area.

Activity	**TOTAL direct beneficiary households**	**TOTAL Direct Beneficiaries[1]**	**Expected adaptation benefit**	**Beneficiaries by GCF Results Area**	**Comments**
Activity 1.1.1: Design and building of homesteads	3,000	90,000	Increased water security; increased number of people living in buildings resilient to climate hazards and increased value of assets made more resilient to climate change.	ARA 1 90,000 ARA 2 90,000 ARA 3 13,500*	3000 homesteads to be built by project end. The average water storage volume for new homestead will be about 270 litres (Consideration: Family members 4.5, disaster days duration 5, per capita water use 12 litres) Each homestead has a value of USD 6,600 (see feasibility study). Homestead beneficiaries will overlap with tree plantation beneficiaries.
Activity 1.1.2: Homestead tree planting	20,000		Increased resilience and livelihood options; increased food security		
Activity 2.1.1: Construction of slatted houses for goat/sheep rearing	20,000	90,000	Increased livelihood options and income; increased food security; increased value of assets made climate resilient.	ARA 1 90,000 ARA 2 90,000 ARA 3 90,000	Cost of infrastructural improvements to hatcheries USD Construction cost of each slatted houses $112 and 20,000 will get the support and additional $150 will be given to purchase the goat/sheep.
Activity 2.1.2: Provide financial support for					

[1] Average household size is 4.5 (population census 2011)

goat/sheep rearing					
Activity 2.1.3: Introduce the cultivation of saline tolerant vegetables within homestead areas	20,000	90,000	Increased livelihood options and income; increased food security.	ARA 1 90,000 ARA 2 90,000	
Activity 2.2.1: Development of crab hatcheries Activity 2.2.2: Financial support for producing crablets	50	225	Increased livelihood options and income; increased value of physical assets made more climate resilient.	ARA 1 225 ARA 3 225	Cost of infrastructural improvements to hatcheries USD Average construction cost of each crab hatchery is $10,000 and 50 crab hatchery will be constructed in the project area.
Activity 2.2.3: Technical and financial support for “crab nursers”	500	2,250	Increased livelihood options and income	ARA 1 2,250	
Activity 2.2.4: Technical and financial support to “crab farmers”	20,000	90,000	Increased livelihood options and income; increased food security	ARA 1 90,000 ARA 2 90,000	
TOTAL	80,550	362,475			
TOTAL ARA 1				362,475	
TOTAL ARA 2				360,000	
TOTAL ARA 3				103,775	

*Targeted 13,500 beneficiaries are included in the activity 1.1.2. That is why, we deducted this number to the total row.

The male-female ratio is 100.3 male per 100 female (Bangladesh Population Census, 2011). That is why we consider 50 percent of women direct beneficiaries. However, considering the number of household heads or CCA members, the ratio will be different for different activities. For example, 100 percent of hatchery owners will be men because, to the best of our knowledge, the owners of existing shrimp hatcheries and other fisheries are men. On the other hand, we will only consider women for goat or sheep rearing with the intention of increasing women's home income so that they may actively participate in family decision-making.

Indirect Beneficiaries:

Indirect beneficiaries were calculated per indicator (see log frame) as in Table 2 below.

Table 2. Calculation of indirect beneficiaries per results area and supplementary IRMF indicator.

Indicator	Indirect Beneficiaries	Justification
TOTAL INDIRECT BENEFICIARIES	770,050	Resilient homesteads: Considering the national average population density (1265/sq.km), at least 3 neighbouring households will take shelter in one resilient homestead during a cyclone or flood. The 3 households will have about 12 members. Thus, 3000 homesteads will provide shelter to **36,000** people during cyclones or floods. These people will also have improved access to water during cyclone events in the resilient houses. Tree planting: In the targeted areas, tree plantations in 20,000 homesteads will serve as a wind buffer for a larger community. It is anticipated that the presence of these trees will boost the 60,000 or so neighbouring home-farms' ability to withstand cyclonic storms. These household farms will be in addition to neighbouring households that included in the resilient homestead activity. Therefore, **270,000** (60,000 X 4.5) people will be beneficiaries for this intervention in total. Goat/sheep rearing: 20,000 CCAG members will receive training on goat/sheep rearing in the context of climate change and they will receive support for making climate-resilient livestock shelter. It is expected that at least 5 people among their neighbours and relatives will visit these

		households and learn about the climate-resilient livestock rearing activity. Thus, through these demonstration effects, the indirect beneficiaries of this activity will be **100,000** (5X20,000). Vegetable cultivation: 20,000 CCAG members will receive support for saline-tolerant vegetable cultivation. Like goat/sheep rearing, that at least 5 people among their neighbours and relatives will visit these households and learn about the climate resilient livestock rearing activity. Thus, the indirect beneficiaries of this activity will be **100,000** (5X20,000). Crab hatchery: The project will establish 50 crab hatcheries in the selected coastal districts. It is expected that about 50 shrimp hatchery owners will learn about these crab hatcheries. So, the indirect beneficiaries of the activity will be **50**. Crab Nursing: The project will implement crab nursing activity with 500 farmers. It is expected that 2500 shrimp farmers will learn about this activity (5X500). Thus, the indirect beneficiaries of this activity will be **2500**. Integrated fruit-fish-fibre (3F) farming: The project will promote 20,000 3F farms in the selected districts. According to Bangladesh Shrimp and Fish Foundation, about 1,500,000 farmers are engaged in shrimp farming. We expect that 20% of them will learn about this integrated farming. Hence the indirect beneficiaries of this activity will be **300,000**. Overlap of the indirect beneficiaries: It is assumed that those indirectly benefitting from resilient homesteads will also indirectly benefit from water security and tree plantings. Also, indirect beneficiaries for crab nursing will overlap with integrated 3F farming.
ARA 1: Total indirect beneficiaries reached with greater livelihood options	770,050	Tree planting: **270,000** (60,000 X 4.5) Goat/sheep rearing: **100,000** (5X20,000).

		Vegetable cultivation: **100,000** (5X20,000). Crab hatchery: **50**. Crab Nursing: **2500** (5X500). Integrated fruit-fish-fibre (3F) farming: **300,000.** Overlap of the indirect beneficiaries: It is assumed that indirect beneficiaries for crab nursing will overlap with integrated 3F farming. Total number of indirect beneficiaries for ARA 1 will be **770,050**.
Supplementary 2.1: Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options	770,000	These indirect beneficiaries will be the same as above for ARA 1
ARA 2 total indirect beneficiaries reached with greater food and water security	770,000	Resilient homesteads (with water security): **36,000** (12x3000) Tree planting: **270,000** (60,000 X 4.5) Goat/sheep rearing: **100,000** (5X20,000). Vegetable cultivation: **100,000** (5X20,000). Integrated fruit-fish-fibre (3F) farming: **300,000.** Overlap of the indirect beneficiaries: It is assumed that those indirectly benefitting from water security from homesteads will also indirectly benefit from tree planting. Total number of non-overlapping indirect beneficiaries for ARA 2 will be **770,000**.

Supplementary 2.2: Beneficiaries (female/male) with improved food security	770,000	These indirect beneficiaries will be the same as for ARA 2, except for those with increased water security from resilient homesteads.
Supplementary 2.3: Beneficiaries (female/male) with more climate-resilient water security	36,000	These indirect beneficiaries will be those benefitting from water security from resilient homesteads.
ARA 3: Total indirect beneficiaries reached with climate resilient infrastructure	136,050	Resilient homesteads: **36,000** (12x3000) Goat/sheep rearing: **100,000** (5X20,000). Crab hatchery: **50**. Total number of non-overlapping indirect beneficiaries for ARA 3 will be **136,050**.
Supplementary 2.6: Beneficiaries (female/male) living in buildings that have increased resilience against climate hazards	36,000	These indirect beneficiaries will be those benefitting from resilient homestead construction.