



United Nations Development Programme
Country: Sri Lanka
PROJECT DOCUMENT

Project Title: Strengthening the Resilience of Post Conflict Recovery and Development to Climate Change Risks in Sri Lanka

UNDAF Outcome(s): 4.1 Policies, programmes and capacities to ensure environmental sustainability, address climate change mitigation and adaptation, and reduce disaster risks in place at national, sub-national and community levels

Expected CP Outcome(s):

Policies, programmes and capacities to ensure environmental sustainability, address climate change, mitigation and adaptation and reduce disaster risks in place at national, sub national and community levels

Expected CPAP Output (s)

Output 4.2: Government agencies, community groups and private sector are equipped with mechanisms and practices to promote sustainable use of natural resources, biodiversity conservation and climate change adaptation

Implementing Partner: Government of Sri Lanka, Ministry of Economic Development

Programme Period:	48 months
Project Title: Strengthening the Resilience of Post Conflict Recovery and Development to Climate Change Risks in Sri Lanka	
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Project ID:	00085983
PIMS #	4863
Start date:	1 July 2013
End Date	30 June 2017
Management Arrangement	NIM

Total resources required	60,216,818
Total allocated resources:	60,216,818
• Regular	
• Other:	
o GEF	3,121,818
o Government	46,065,000
o UNDP EU	11,030,000

Agreed by (Government):

Date/Month/Year

Agreed by (Executing Entity/Implementing Partner):

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Date/Month/Year

Brief Description

The Government of Sri Lanka has placed great emphasis on Uplifting of rural economy and living standards, particularly in post conflict areas. The Government currently implements two large-scale rural development programmes through the Ministry of Economic Development, funded through regular government budgets. The *Divi Neguma* or livelihood development programme delivers at household level, aiming to improve agriculture production and rural industry. The *Gama Neguma* or village development programme focuses on rural infrastructure such as roads, bridges, culverts, buildings, and water supply and irrigation systems. The programme is active in all 14022 Grama Niladhari (Village Administrative) units in 25 districts of Sri Lanka.

Climate change threatens the sustainability of both these programmes. Already the impacts of climate-related weather anomalies are manifest in reduced agriculture productivity, in crop losses, in flood and landslide related damage to infrastructure and in increased uncertainty for farm based livelihoods. Therefore the climate induced problem which the project seeks to address is that recurrent climate-related impacts are posing a serious threat to the government's stated aim of developing strong rural economies that bridge the urban-rural income disparity, particularly in post conflict zones.

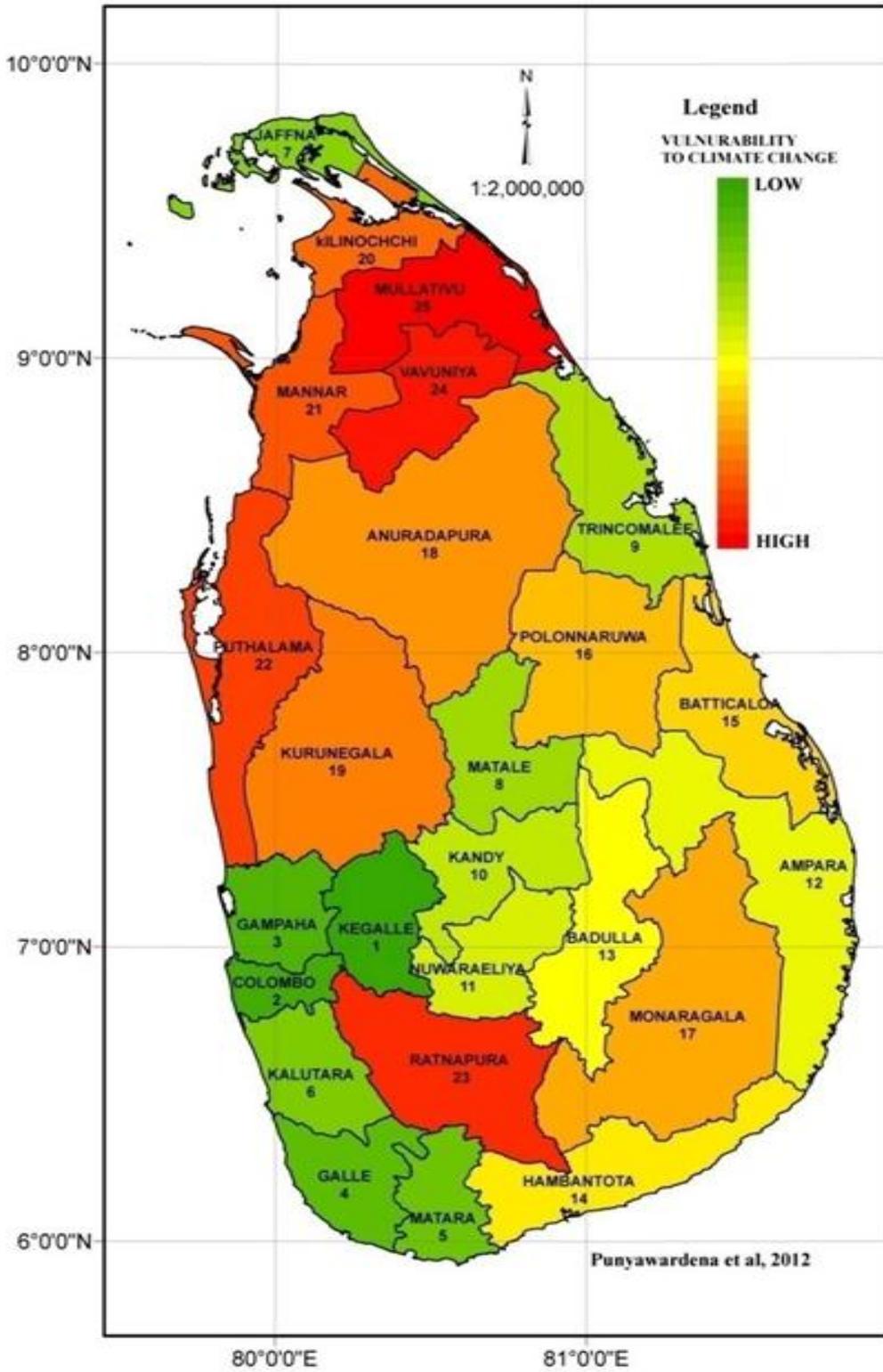
In order to address this risk, the project aims to build adaptability to climate change into the design and implementation of both Gama Neguma and Divi Neguma. Building resilience in rural development programmes to current and projected climatic change will include developing institutional capacities to assess risk, designing appropriate interventions and implementing adaptation actions with community participation. Through the Ministry of Economic Development's internal coordinating mechanisms the project will work with a range of technical partners- such as the Department of Agriculture, Irrigation, Livestock, and Disaster Management Centre. The project aims to conduct climate risk assessments in all 25 districts to identify areas with greater risk; and train district planning officials to manage climate risks. At village level, the project will support incorporation of climate risk assessments in to every GN-level Village Development Plan.

The project will deliver concrete adaptation measures in 12 districts with high vulnerability to climate change, building on the government-funded Gama Neguma and Divi Neguma rural development programmes. These measures will include enhanced water storage and rational use. conservation of soil.

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VULNERABILITY TO CLIMATE CHANGE IN SRI LANKA¹



¹ Punyawardena et al (2012) in Kadupitiya H.K et al. Climate Change Vulnerability Mapping in Sri Lanka 2012. UNDP and Natural Resources Management Centre, Department of Agriculture.

1. SITUATION ANALYSIS

1.1 Climate Change Induced Problem

1.1.1 Country Profile

1. Sri Lanka has a mainland area of 65610 km² and a coastline of around 1585 km. The south central part of the country is mountainous and gives rise to a number of perennial rivers. There are altogether 103 rivers, mostly originating from the central highlands and spreading cartwheel-fashion to the coast. The coastal area comprises of beaches, sand dunes, lagoons, estuaries, mangroves, marshes and deltas. There are a number of small islets off the north-north-western coast, only six of them over 1000 ha, many of them habituated.

2. On the basis of rainfall distribution, the country is classified into three climatic zones- wet, dry and intermediate zones. The wet zone covers the south-western region including the central hill country and receives relatively high mean annual rainfall over 2,500 mm without pronounced dry periods. The dry zone covers predominantly the north central, northern and eastern part of the country, receives a mean annual rainfall of less than 1,750 mm with a distinct dry season from May to September. The intermediate zone receives a mean annual rainfall between 1,750 to 2,500 mm with a short and less prominent dry season. The island has 46 different agro-ecological regions differentiated by monthly rainfall expectancy and distribution, soil type, elevation, land use and vegetation. Average temperature for the country is 27°C. However, there is a wide variation of minimum and maximum ranges across the differing topographic and climatic zones.



Figure 1: The main agro-climatic zones in Sri Lanka

3. In terms of water resources, the wet zone has a shallow water table and plenty of rainfall. In the dry and intermediate zones people depend on deep ground water sources for agriculture and industry. Cultivation in the dry zone is also supported by some 30,000 rainwater harvesting ponds and reservoirs created by ancient kings, and rehabilitated through the 19th and 20th centuries for seasonal cultivation of rice and other crops (maize, mung bean, vegetables)
4. The population estimate for 2012 is 20.2 million with a growth rate of 0.7 %. In terms of population spread, the wet zone has higher population density, and therein, the western province comprising of three urban and industrial districts, is the most densely populated with almost 30% of the total living in this Province. As yet, the population is heavily rural (over 70% live in rural areas and 6% in plantation areas) with very little urban migration.
5. Sri Lanka is a lower middle income country² and over the last 30 years, has maintained relatively strong economic growth rates (about 5% per year). The Sri Lankan economy grew strongly during 2011 (about 8%), largely due to the post-conflict rebound which helped all sectors on the supply and the demand side: agricultural land in conflict affected areas could once again be cultivated; double shifts in manufacturing became possible as workers no longer had to worry about security restrictions; domestic consumers' and investors' confidence was revived; and services related to tourism picked up as tourist arrivals surged at the end of the war.
6. As Sri Lanka's economy grew, unemployment and poverty rates fell. As of the second quarter of 2011, unemployment was only 4.2%, though higher among youth and women. Poverty rates have fallen from

² World Bank Country Overview 2012

15% of the population in 2006/7 to 9% in 2009/10. The most dramatic declines have been in the estate (tea) sector (from 32% to 11%) following a major wage increase at the beginning of 2010.

7. Although poverty rates have declined overall, pockets of poverty and social exclusion still exist. These are most prevalent in under-developed districts such as Moneragala and many of the post-conflict districts in the Northern and Eastern Provinces of the country where a long deprivation and exclusion to benefit from a steady economic growth and development resulted in greater social vulnerabilities.
8. Against this background, Sri Lanka is affected by a number of climatic hazards and extreme events, and these are projected to worsen with climate change. The most common are floods -both river (pluvial) floods and flash floods- and drought. Landslides occur in the central highlands triggered by heavy rainfall. Occasional cyclones affect the Eastern, North Central and Northern provinces.
9. Impacts of climate change are manifested through a slow but steadily rising temperature and more erratic and unpredictable seasonal rainfall. The number of warm days and warm nights has increased in all districts. An analysis of rainfall pattern over the past decade shows that the total annual rainfall in the three climatic zones remains unchanged. But special and intra-annual variability of rainfall has altered dramatically affecting seasonal cropping patterns, irrigation potential and hydropower generation. During 2010 - 2013, Sri Lanka suffered from a cycle of hydro-meteorological disasters. Droughts and flood incidents alternated within the same districts. . The drought of 2012 has been the worst in past 20 years in the Central Highlands, and one of the worst crop years for the country³.

1.1.2 Gender Analysis

10. Sri Lanka's gender development index is higher than average for an Asian country (89)⁴, however gender empowerment is relatively low (20%).⁵ Around 22% of all households in Sri Lanka are female-headed. Many women have been thrust into the role of breadwinner with little knowledge of income-earning methods and few coping skills. Social isolation and poverty are inevitable for this group, many of whom are widowed at a young age mainly due to the conflict. Just as rural poverty is a phenomenon in a middle income country, gender statistics disaggregated by location also show disparity. It appears that 'rich' females from urban areas are able to access education, employment and healthcare more readily than their rural counterparts.⁶ Female literacy in urban areas is 91%, while the rural rate is 78%. In rural areas there could be as much as 65% rate of anemia among women.⁷ While more women enter university than men, they tend to find employment at the bottom of the employment pyramid. When they do find work, it is usually in low-status, low-skilled and low-paying jobs in peasant and plantation agriculture. In addition to this, the female unemployment rate, at 22%, is double that of men in Sri Lanka. Besides garment workers and migrant workers⁸, the largest proportion of women in the informal sector is engaged in cultivation.
11. About 75% of the population live in rural areas, and whether rich or poor, depend on the natural resources available in these areas for water, fuel wood and supplementary foods. Climate change adds additional pressure to already poorly managed and deteriorating conditions of natural resources. More specifically, women are more significantly affected by climate change and disasters due to impacts on household water availability, health of family members and safety of domestic assets such as livestock. Women traditionally manage household water, family gardens and livestock and are in the frontline of managing impacts of reduced water availability; floods, landslides and drought; pests and disease outbreaks and reduced soil fertility due to salinization and erosion⁹.

1.1.3 Climate Change Projections and Scenarios for Sri Lanka

³ Department of Irrigation and Department of Agriculture

⁴ Human Development Report UNDP 2010-2011

⁵ World Vision Briefing Paper to the United Nations Commission on Status of Women 2006

⁶ Sri Lanka Case Study on Gender Equity UNICEF 2009

⁷ Sri Lanka Case Study on Gender Equity UNICEF 2009

⁸ Women consist 78% of the unskilled labour force leaving the country to work in Middle Eastern states

⁹ Progress review of Climate Adaptation small grants projects implemented by GEF SGP in Sri Lanka

12. Sri Lanka's existing climate is determined by monsoons. Four distinct rainfall seasons are observed as depicted below;

Season	Period	Average rainfall (mm)	Percentage of annual Total
First inter-monsoon (FIM)	March-April	268	14
South-west Monsoon (SEM)	May-September	556	30
Second Inter-monsoon (SIM)	October-November	558	30
North-east Monsoon (NEM)	December-February	479	26

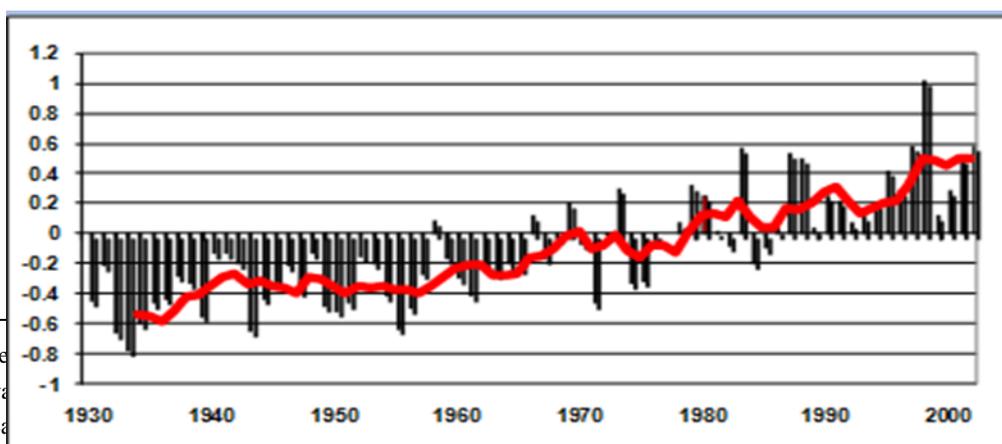
Table 1. Average annual rainfall (1961-1990)¹⁰

13. No clear trend is discernible in total annual rainfall (past 10 years compared to the 30 year average).¹¹ However, Climate-induced changes are already observed in the increased variability of monsoon behavior, pertaining to on-set time, duration, nature of rainfall and seasonal rainfall. Change in the temporal distribution of rainfall across these four seasons is already observable. Table 2 demonstrates increased variability in three out of four monsoons, but especially pronounced during the north-east monsoon which supports agriculture in the Dry zone, especially the staple crop-rice.

Season	1931-1960	1961-1990
First inter-monsoon(FIM)	23%	27%
South-west Monsoon(SEM)	21%	16%
Second Inter-monsoon(SIM)	22%	23%
North-east Monsoon(NEM)	31%	42%

Table 2. Coefficient of variation of rainfall in Sri Lanka Source: Chandrapala, (1997)

14. A number of meteorological studies point to a clear warming trend¹². An analysis of temperature regimes in the past 50-75 years show a distinct upward trend of both day-time maximum and night time minimum air temperature at most meteorological stations in the country. The predicted increase ranges from 0.46°C per decade for maximum day time temperature; and around 0.27°C per decade for minimum night time temperature.¹³ The highest warming trends have been recorded in Anuradhapura and Badulla districts in the Dry and Intermediate zones



¹⁰ Howe

¹¹ Punya

¹² Sri La

¹³ Punyawardena et al, Predicted temperature Change over Sri Lanka by FRECIS RCM 101 B2 scenario in combination with ECHAM4 GCM 2010

Figure 2. Change in mean annual temperature in Sri Lanka 1930 to 2000 (Chandrapala 2000)

15. Climate projections on the basis of General Circulation Models (GCM) point to an unabated warming trend and the likelihood of the dry-zone boundary being pushed outward, bringing more land under lower rainfall regimes (see Figure 2: Temperature Projections below). The projected precipitation change in Sri Lanka for the year 2080 (Figure 2: Precipitation Projections) indicates that the entire dry and intermediate zones, which represent 75% of the island, will become drier with lower rainfall regimes in already ‘drought-prone’ areas.
16. Some parts of the Dry and Intermediate Zones will experience 30% less rainfall in worst hit areas if the prevailing climate changes trends continue. Reduction of rainfall in the wetter parts of Sri Lanka, especially the mountainous central parts of the country, is expected to compound drought effects in the Intermediate and Dry zones due to trans-basin effects.
17. This is due to the ‘cartwheel’ nature of river formation where all major rivers feeding the Dry-zone agricultural areas originate from the wet mountainous region. During the 2011-2012 drought, the impacts of such rainfall anomalies in the catchment were keenly felt in the major irrigated ‘rice bowl’ areas of the Dry Zone (see below).

Predicted Temperature change over Sri Lanka by PRECIS RCM in combination with ECHAM4 GCM for B2 Scenario

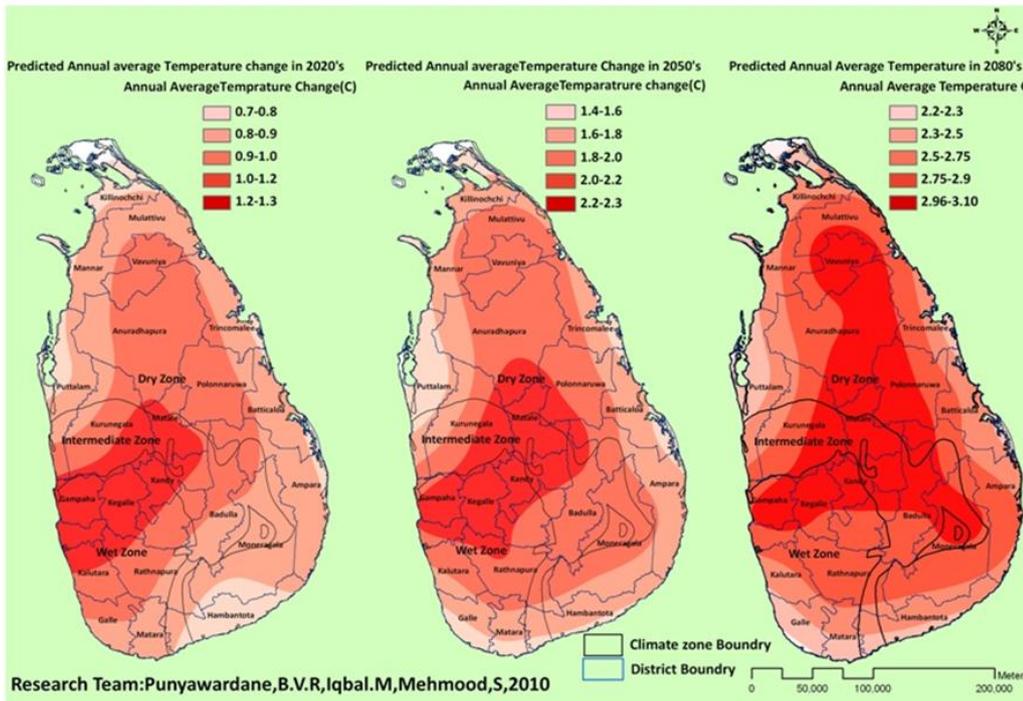


Figure 3: Temperature Projections

Projected Precipitation Changes over Sri Lanka by PRECIS RCM in combination with ECHAM4 GCM for B2 Scenario

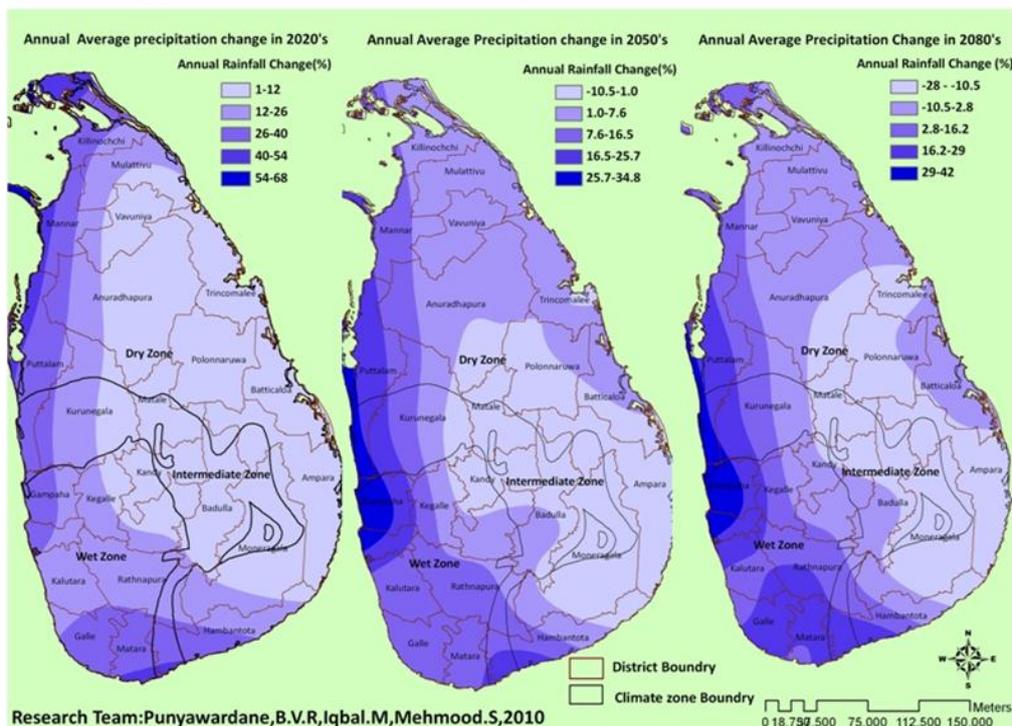


Figure 4: Precipitation Projections

BOX 1: Impacts of Climate Change on Weather Patterns in Sri Lanka

Increasing temperature

- Average air temperature in Sri Lanka has increased by 0.64°C over the past 40 years and 0.97°C over the last 72 years, which reveals a trend of 0.14°C per decade. However an assessment of a more recent time band has shown a 0.45°C increase over 22 years, suggesting a rate of 0.2°C per decade
- Consecutive dry days are increasing in the Dry and Intermediate Zones (please see agro-ecological zones of Sri Lanka)
- Ambient mean minimum and mean maximum temperatures have increased
- The number of warm days and warm nights has increased, while the number of cold days and cold nights has decreased

Rainfall Variability

- Precipitation patterns have changed but conclusive trends are difficult to establish
- A trend indicating decreased overall rainfall has been observed over the past 30-40 years, but the change is not statistically significant
- There is an increasing trend of one-day heavy rainfall events across the country
- An increase in the frequency of extreme rainfall events is anticipated, leading to more droughts, floods and landslides

Drought and dry periods

- Increased frequency of dry periods caused by consecutive dry days and droughts are expected
- The general warming trend is expected to increase the frequency of extreme hot days

1.1.4 Climate Change Impacts and National Adaptation Priorities in Sri Lanka

18. According to Sri Lanka's Second National Communication to the UNFCCC (2011) and the recent National Climate Change Adaptation Strategy, 2011-2016 (NCCAS), the sectors most affected by climate change are agriculture, water resources and public health.
19. The Second National Communication (SNC) warns that observable shifts in weather patterns, coupled with a continuous rise in average temperatures across the country and increasing variability of rainfall are projected to have large-scale effects on agricultural productivity, food and water security. Adaptation measures recommended in the Second National Communication and the National Climate Change Adaptation Strategy (NCCAS) for agriculture insist on changing current land and water management practices, including an introduction of a range of new agronomic measures that take into account both high intensity rainfall and longer dry periods. These include new crop varieties and combinations for different agro-ecological regions to counter current and predicted dry spells and greater rainfall variability, with improved ability to resist pests and diseases; varietal selection in favour of robust traditional crops; conservation farming methods to mitigate impacts of intense rainfall and periods of drought; soil moisture retention methods in all types of farmlands; promoting low water requiring crops such as finger millet and sesame and short-age crops; adjusting the present crop calendar and cropping sequence; improved extension services that convey climate risks to farmers and guide them on most effective adaptation solutions; improved weather and seasonal forecasting to prepare for extreme situations that can affect food crops; improved seed production and conservation of genetic stocks of crops and livestock are among the priority adaptation actions for the country.
20. Water and its rational use form another crucial area of adaptation both for urban and agriculture sectors. Recommendations for water management range from catchment protection to increase yields in reservoirs, controlling ground water extraction in areas with threat of saline water intrusion, protecting coastal water supply schemes, river augmentation and diversion to supplement drier areas.
21. SNC endorses these adaptation strategies, while elaborating the need to encourage the full continuum of physical water storage options from ground water, soil moisture, small tanks and ponds to large reservoirs. Rainwater harvesting is to be promoted for both agricultural and domestic use. Minimizing risk of floods and landslides, which are the major climatic hazards other than drought in Sri Lanka, comprise of the other important adaptation strategy. In the NCCAS climate-induced disaster management is spread over a number of strategic areas. Recommendations range from climate modeling, local-level hazard mapping, upgrading drainage, promoting land use planning and risk zoning, strengthening risk transfer options, update standards for infrastructure design and development.
22. In addition to key climate change induced threats and priority sectors requiring adaptation investments, SNC and NCCAS also flag the most vulnerable parts of the country where the adaptation efforts are the most urgent. In a study by the International Water Management Institute to determine impacts of climate change on water and agriculture¹⁴ indicates that districts of **Nuwara Eliya, Badulla, Moneragala Ratnapura** and **Anuradhapura** are most sensitive to impacts of climate change due to their reliance on primary agriculture and lack of infrastructural and socio-economic assets. The proposed project emerges as a direct response to these national priorities, but placed in the specific context of the most vulnerable districts that the project has established as a result of vulnerability assessment exercise conducted during the project feasibility phase.

PPG Vulnerability Assessment – Methodology and Results

23. During the PPG, a more detailed district level vulnerability mapping was conducted using published secondary data. The purpose of the assessment was to identify the most vulnerable districts and hence

¹⁴ Eriyagama N et al International Water Management Institute 2010

establish the geographic scope the project will have to take. The assessment therefore has been used as the basis for selecting target districts of the project.

24. The vulnerability assessment covered 25 administrative districts based on the most recent available primary and secondary data (2001- 2010 timeframe) from different published sources, largely based on data issued from government agencies especially from the Department of Census and Statistics. The analysis also used inputs provided by district planning officers of all 25 districts obtained through a Consultation Meeting held in Colombo in July 2012 (PPG Workshop). It should also be a pertinent record that in the absence of recent physical and socio-economic data from conflict-affected districts in the Northern Province, namely - Mannar, Kilinochchi and Mulativu- authors were compelled to substitute data from a neighboring district in the spatial analysis.
25. The analysis was based on the UNFCCC definition of vulnerability as a function of the three sub-indices – exposure, sensitivity and adaptive capacity- to determine district ranking of climate change vulnerability. The most representative variables for each sub-index were selected through extensive consultation and based on available data / information. Where data were incomplete or missing; expert judgment of a panel of academics and practitioners was sought to rank the districts.
26. The final ranking obtained through this vulnerability assessment was used to select project focal districts and also support the government to prioritize certain risk reduction activities in most vulnerable areas to safeguard development investment. See Annex 2 for details of the variables under each vulnerability sub-index and maps for exposure, sensitivity and adaptive capacity.
27. Nine districts emerged as being highly vulnerable in the composite score. Three of them are conflict affected northern districts. Eight districts emerged as ‘moderately vulnerable’ and these include all three districts in the eastern province, central hill districts and dry zone agricultural districts of Hambantota, Moneragala and Polonnaruwa. There is a clear geographical ‘clustering’ of vulnerable districts. All districts in the northern and north-western provinces are highly vulnerable, according to this assessment. This correlates to the fragility of non-irrigated, rain-fed upland cultivation that is the dominant livelihood in these districts. Despite irrigation availability to large parts of the districts, Hambantota, Moneragala, Polonnaruwa, Batticaloa and Trincomalee that form the south-eastern sector are all moderately vulnerable to climate change. Districts with low vulnerability lie in the Wet zone and generally display a higher level of socio-economic development and infrastructural assets representing a higher level of adaptive capacity.
28. The anomalies are; Jaffna district in the Northern Province (ranking low in the vulnerability index with other more developed wet-zone districts; and Ratnapura, a mid-country wet zone district that ranks among the highly vulnerable districts. Ratnapura district is highly exposed to disaster and displays low human development that negatively impacts on adaptive capacity. The project will target the 12 top ranked districts listed below. More expanded analysis of vulnerabilities in the target districts are provided in the sections below.

Rank¹⁵	District
25	Mulaitivu
24	Vavuniya
23	Ratnapura
22	Puttlam
21	Mannar
20	Kilinochchi
19	Kurunegala
18	Anuradhapura
17	Moneragala
16	Polonnaruwa
15	Batticaloa
14	Hambantota

Table 3: Districts ranked according to their vulnerability to climate change

¹⁵ Higher rank denotes greater vulnerability

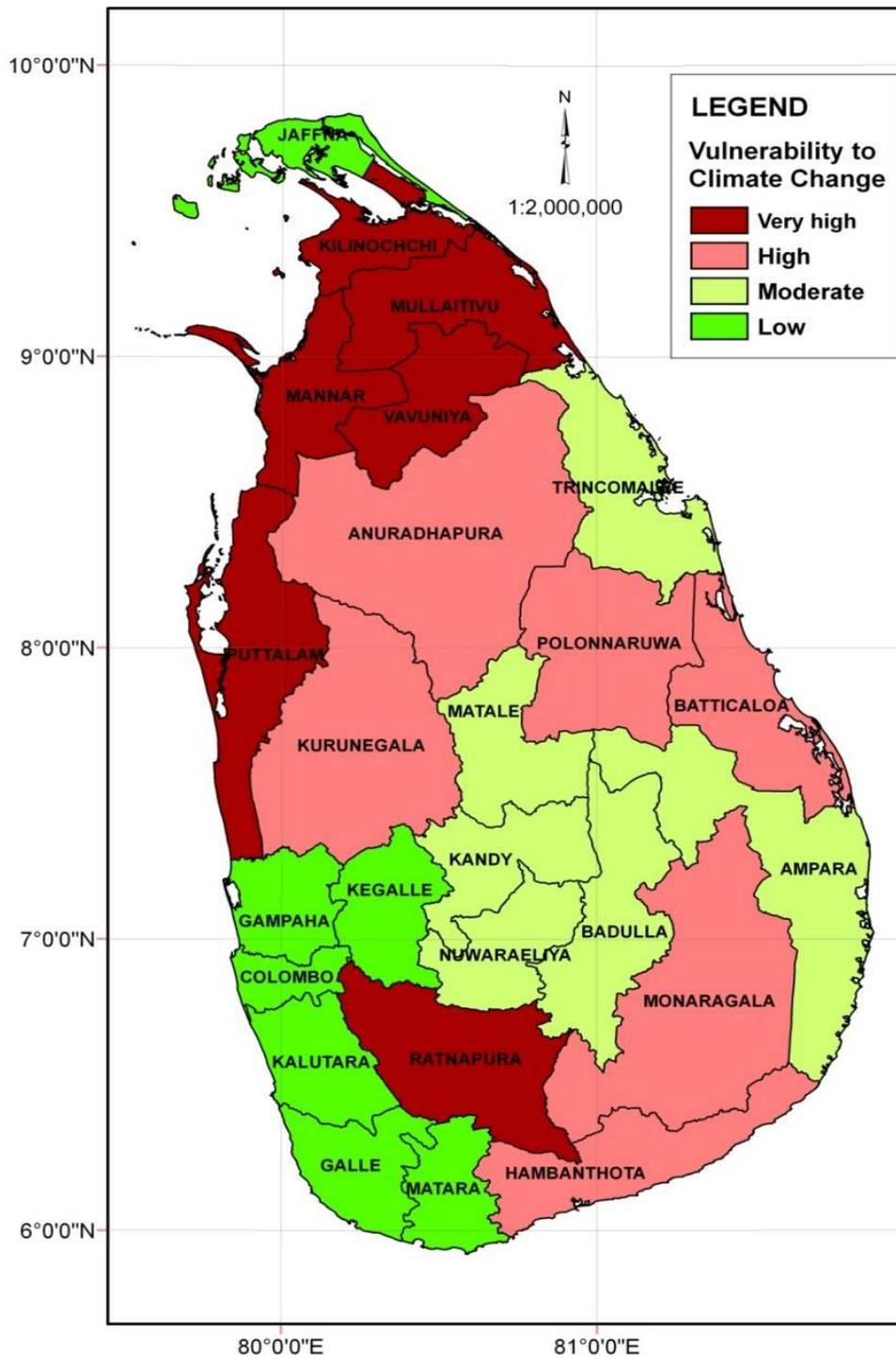


Figure 5: Spatial clustering of vulnerability to climate change in Sri Lanka

Vulnerability of target districts to current impacts of climate change and variability

29. Sri Lanka has a large rural population base with very little urban migration. The mainstays of the rural livelihood are agriculture, livestock and fisheries.
30. Climate change and climate variability is expected to trigger serious impacts on water resources and agriculture, fisheries and livestock that may pose serious risks to the country's food production, livelihoods and the economy. Already impacts of increased rainfall variability are impacting rural livelihoods. The last two years in particular have recorded high levels of climatic variability and unusual monsoon patterns. Between September, 2010 to March, 2011, unusually high rainfall caused flash floods, and landslides in the wet zone including Ratnapura, However, it was the dry zone that suffered the major damage, specifically between December, 2010 and December, 2012, recording at least five major flood events, affecting multiple districts and displacing thousands of people. The damages were particularly felt in the following target districts: Mulaitivu, Mannar, Kilinochchi, Batticaloa, Anuradhapura, Polonnaruwa, Kurunegala, Puttlam, and Hambantota.
31. Furthermore, from June 2011 onwards most parts of the country suffered dry conditions, which extended beyond the regular period and beyond the dry zone. With the failure of both monsoon and inter-monsoon seasons after September 2011, drought became chronic in several dry zone districts leading to crop failure, including the following target districts: Mulaitivu, Vavuniya, Mannar, Kilinochchi, Batticaloa, Anuradhapura, Polonnaruwa, Kurunegala, Puttlam, Hambantota and Moneragala. The upper catchments that feed major rivers received very low rainfall (according to analysis by Department of Irrigation lowest in 25 years)¹⁶ affecting both hydro power generation and major irrigation systems. At least 50,000 hectares of rice cultivation were destroyed by drought during the second cultivation season of April-July due to lack of timely irrigation. The worst affected districts included: Polonnaruwa, Anuradhapura, Kurunegala and the northern districts.
32. Rice is the staple crop and crop of choice where irrigation is available. While rice farming is vulnerable as a whole¹⁷, farmers with access to assured, irrigation (supplemented by trans-basin diversions from wet to dry zone) are much more able to withstand seasonal rainfall anomalies, hence considered 'less vulnerable' than farmers depending purely on rainfall.
33. The clustering of districts most impacted by climate change demonstrates two key determinants of vulnerability: major livelihood activity and socio-economic conditions. Districts with rain-fed, upland¹⁸ farmers such as Vavuniya, Mulaitivu, Mannar, Kurunegala, Anuradhapura, Puttlam, Moneragala and Hambantota are most at risk because they are totally dependent on rainfall. Districts with a large number of small irrigation tanks such as Kurunegala, Anuradhapura, Batticaloa, Puttlam and Moneragala are also exposed to climatic variability because small village irrigation systems are rain-dependent. While the situation of these farmers is marginally better than rain-fed upland farmers, small irrigation systems do not provide the necessary buffering against long term weather aberrations. This was amply demonstrated during the drought of 2011-2012, when all small irrigation reservoirs in these districts dried up, preventing farmers from cultivating 2-3 consecutive seasons. Many farmers abandoned farms for other short-term employment or migrated to urban centers in search of income. Rural water supply schemes dried up, and drinking water became increasingly scarce. In worst-affected districts, rural households were supported by government-funded cash-for-work programmes to rehabilitate irrigation infrastructure as a means of income. The worst affected districts included: Kurunegala, Polonnaruwa, Vavuniya and Anuradhapura.
34. Meanwhile districts with large populations dependent on coastal fishing (such as Mulaitivu, Batticaloa, Mannar and Puttlam) have emerged vulnerable. This is due to declining coastal fishery productivity and coastal eco-systems exposure to sea level rise and erosion; in addition to the regular climate related hazards

¹⁶ Meegastenna, J. In a Presentation at National Water Professionals Day 2012. University of Peradeniya Sri Lanka

¹⁷ Kurukulasuriya, P., and M. Ajwad. 2006. 'Application of the Ricardian Technique to Estimate the Impact of Climate Change on Smallholder Farming in Sri Lanka. *Journal of Climatic Change*. doi: 10.1007/s10584-005-9021-2; Seo S, Mendelsohn R, and Munasinghe M. (2005) Climate Change and Agriculture in Sri Lanka: a Ricardian Valuation. In *Environment and Development*, volume X Cambridge University Press.

¹⁸ Upland farming is a common term for non-irrigated seasonal farming

of flood and drought.¹⁹ Productivity of lagoon and brackish-water fishery, which is a mainstay of coastal populations in these districts, is seriously compromised by changing weather patterns that affect water quality; and hence the breeding conditions of economically important species such as shrimp, prawn and crab.²⁰

35. In terms of water resources, all these districts show high levels of vulnerability to water-based hazards. A water hazard score was developed for the selected districts during Project Preparation. Based on indicators such as land to man ratio (pressure on water resources); percent surface water area (water availability); rain erosivity and soil erodibility a hazard score was assigned to each district (see Annex 08 for further details of the analysis). This analysis shows that Mulaitivu, Mannar, Vavuniya and Kilinochchi, Puttlam, Kurunegala and Hambantota all dry-zone districts with prominent rain-fed agriculture demonstrate high risk of climate related water stress. Ratnapura emerges as the top district for water-related risk due to its exposure to a number of climate related hazards; and the sloping nature of land.
36. Low socio-economic development of these districts also translated in to higher levels of vulnerability to climate change. The northern cluster of districts- Mulaitivu, Mannar, Vavuniya and Kilinochchi- are emerging from three decades of conflict which has severely eroded their social and economic base. Human development, in terms of health, education, housing conditions and income, remain under par and exacerbated by lack of infrastructure in many rural areas of these districts. Anuradhapura, Puttlam and Polonnaruwa are 'border-districts' to the conflict zone. These districts were impacted by displacement, refugees and occasional fighting. Large areas suffered instability and villages closer to the border abandoned due to security threats. Therefore human development in these districts also remains under par, undermining the ability to face and overcome climate-related risks.
37. Generally districts with higher percentage of rain-fed farmers and low penetration of large-scale irrigation are under-developed. Rain-fed farming families are poorer, less educated, with fewer assets and have less access to technology and services. Therefore districts of Moneragala, Batticaloa (also conflict-affected district in the Eastern Province) Hambantota and Kurunegala display high levels of vulnerability to climate change. Human development is also low in Ratnapura, the only wet-zone district among target districts due to a high proportion of low-wage earning plantation workers, remote villages without roads, electricity and healthcare.

Sector specific variability in target districts

Water Resources and Agriculture:

38. Prolonged and more frequent drought is expected to reduce the availability of water for irrigation and this in turn could lead to a drop in crop production. There have been several studies on rice productivity under predicted climate conditions. The combined effect of higher temperatures and highly variable rainfall is projected to lead to a greater than 11 percent loss in revenue from paddy by 2050²¹. A number of other field crops including coarse grains, grain legumes, oil seeds and condiments are grown on rain-fed upland areas in the Dry Zone. The production of these crops will also be adversely affected by severe fluctuations in rainfall.²²
39. The main challenge posed by climate change on agriculture relates to increasing rainfall variability and seasonal uncertainty.²³ Changed rainfall regimes will impact freshwater resources on the island in many ways. Drying up of springs, deepening ground water and salinization in coastal areas are increasingly common. Higher evaporation driven by higher temperature regime also impacts the shallow village

¹⁹ Sectoral Vulnerability Profiles developed as part of the National Climate Change Adaptation Strategy 2010-2014

²⁰ Discussion with Director General Coast Conservation Department, Dr. Anil Premaratne during PPG Consultations

²¹ Kurukulasuriya, P., and M. Ajwad. 2006. 'Application of the Ricardian Technique to Estimate the Impact of Climate Change on Smallholder Farming in Sri Lanka. 'Climatic Change. doi: 10.1007/s10584-005-9021-2; Seo S, Mendelsohn R, and Munasinghe M. (2005) Climate Change and Agriculture in Sri Lanka: a Ricardian Valuation. Cambridge University Press

²² Department of Agriculture, Natural Resources Management Centre (2009)

²³ Basnayaka, B.R.S.B. and B.V.R. Punyawardena, 2003. Investigation of coefficient of variation

of southwest monsoon rainfall in recent two decades at some selected location. Department of Meteorology, Colombo, Sri Lanka. As quoted in National Atlas of Sri Lanka (2007), Survey Department, Colombo, Sri Lanka.

reservoirs called tanks that store irrigation water in the dry zone.²⁴ Heavy, intense and short duration rainfall that is increasingly common during rainy seasons generates run-off and very little infiltration to the ground. It causes soil erosion and increases the risk of landslides and flash floods downstream. These observable impacts are expected to exacerbate under any likely future climate change scenario.²⁵ Dry periods and drought²⁶ are considered the most pervasive and widespread impact of climate variability. According to projections²⁷, and observed changes both drought and prolonged dry periods will worsen in all agro-climatic zones.

40. Target districts have different agricultural systems and cropping patterns. The northern districts of Vavuniya, Mannar, Mulaitivu and Kilinochchi produce rice on irrigated lands, and annual vegetables on rain-fed uplands. Very few major irrigation systems are available in this area therefore; farmers are greatly dependent on rainfall. Seasonal variability prevents farmers from cultivating and harvesting on time. Frequent flood and drought result in crop loss. Elephant attacks on farms and homestead increase during drought periods. In the north-western districts of Puttlam and Kurunegala and the south-eastern districts of Batticaloa, Moneragala and Hambantota the same situation prevails. Kurunegala district has the highest density of small tanks (water harvesting structures) for village irrigation, but these tanks are used only to supplement rain-fed farming. Higher temperature dries up village tanks faster, decreasing irrigation availability. Often farmers can cultivate only one season per year, resulting in food and livelihood insecurity for at least 6 months of the year.
41. In Anuradhapura and Polonnaruwa districts, large scale irrigation support intensive rice farming. Irrigation availability however depends on rainfall in the upper catchment (Central Highlands). Farmers are affected by flood events in the major cultivating season (October to January) and unexpected rainy spells close to harvest (which can substantially decrease yield). All target districts suffer drinking water shortages during May-September. During a drought year (such as 2012), competition for drinking and irrigation cause conflict between water users.
42. Ratnapura district's major livelihood is annual farming and small-scale tea plantations on very fragile sloping land. Vegetable farming is entirely dependent on rainfall. Climate variability has disrupted the farming potential in this district. Small tea holdings are also impacted by climate-related soil conditions. Productivity of tea decreases as sloping lands lose top soil with intense rainfall. Landslides and floods are common in this mid-elevation district, bringing down yields and destroying farms.

Plantations:

43. Sri Lanka has large areas under plantation crops. The main crops are tea, rubber, coconut, sugarcane and spices. A number of research studies were carried out under simulated conditions of elevated carbon content and temperature for tea, rubber and coconut showing positive co-relation; however coconut show decreased yields under higher temperature regimes and water stress, while tea shows positive growth under elevated carbon content and temperature, but this is offset by high vulnerability to rainfall changes.
44. In the target districts, only some plantation crops are commercially grown. Puttlam and Kurunegala districts produce much of the country's coconuts (used both for local cooking and for export). Generally coconut grows on well drained soils but is affected by drought. Drought years generally result in low crop. The drought of 2012 was severe enough to actually destroy coconut plantations in Puttlam and Kurunegala.

²⁴ Eriyagama, N Smakhtin, V Chandrapala, L Fernando, K(2010) Impacts of Climate Change on Water Resources and Agriculture in Sri Lanka. IWMI Research Report 135

²⁵ Eriyagama, N Smakhtin, V Chandrapala, L Fernando, K(2010) Impacts of Climate Change on Water Resources and Agriculture in Sri Lanka. IWMI Research Report 135

²⁶ Drought is considered a marked negative deviation from the norm (failure) of the rainfall season. A single failure of a rainfall season could cause an 'agricultural drought' affecting crop production significantly. Consequent failures of seasonal rainfall could cause a 'hydrological drought' as was experienced in 2011-2012 due to failure of three consecutive rainfall seasons. Dry periods on the other hand are expected periods of low rainfall where crops cannot be cultivated without additional irrigation input. However, climate change causes 'dry periods' to lengthen. Meteorological observations in Sri Lanka point to an increased number of consecutive dry days, affecting soil moisture and crop irrigation needs.

²⁷ Puniyawardena et al (2007) Silva, Shanthi (2010) and IWMI (2010)

45. Ratnapura and parts of Moneragala district cultivate tea. Tea is cultivated on sloping lands with little potential for flooding. But tea lands are prone to landslides and erosion. Prolonged drought can bring down yields affecting incomes. In 2012 tea yields dropped drastically in all tea growing districts including Ratnapura and Moneragala.

Livestock and Fisheries:

46. Limited research has been conducted on fisheries and livestock. However, during project preparation meetings, representatives from sector agencies pointed to the likelihood that currently observable impacts would worsen. These include, low production from lagoon and brackish water systems due to weather-related biotic changes, increased pests and diseases in livestock attributed to temperature increase, stress on livestock feed during periods of drought, low inland fishery production due to high temperature, and fish breeding affected by higher temperature.
47. Coastal fisheries are under threat in Puttlam, Mannar, Mulaitivu, Kilinochchi, Batticaloa and Hambantota.²⁸ Reduced fish and prawn catch has been recorded from all these districts directly impacting the poorer lagoon-based fisherman. Sea fishing is also impacted by changed seasonal wind patterns reducing optimal fishing period.²⁹
48. In all Dry Zone districts livestock keeping is impacted by drought and flood. Losses of livestock to floods in 2011 and 2013 have been huge. In January-February 2011 when 14 districts were affected by floods and landslides some 48,679 cattle, 22,279 goats, and 172,884 poultry have been lost.³⁰ The damage to livestock by recent floods in 2013 has not been estimated. All target districts are affected but especially Batticaloa, Vavuniya, Kilinochchi, Mulaitivu, Puttlam and Polonnaruwa. Drought period in the same districts impacted on food availability for livestock, forcing farmers to encroach upon reservation for forests, stream and reservoir catchments and mangroves in coastal areas.

Rural and Urban Infrastructure:

49. Increasing rainfall variability and intensity is already causing localized disasters such as droughts, floods and landslides³¹. 2011 and 2012 produced widespread flash floods damaging head works of irrigation schemes, canals, roads, railway and flooding homes, schools and offices.³² Flood damage to irrigation structures, roads and markets was especially pronounced in districts of Puttlam, Anuradhapura, Polonnaruwa, Vavuniya and Hambantota. Kilinochchi and Mulaitivu suffered damaged homes, culverts, flooded schools and contaminated drinking water wells etc.
50. Landslides triggered by high intensity rains are common in hill country districts and Ratnapura district is especially prone to flash floods and landslides. Damage to coastal infrastructure such as roads, railway and housing from storm surges and erosion could worsen in districts such as Puttlam, Hambantota and Batticaloa.³³
51. Rural populations in Sri Lanka are already facing changed climatic conditions and seasonal weather patterns. As outlined above, the impacts are visibly affecting rural livelihoods, based on agriculture, fisheries and rural enterprise. Projected future aggravation of these impacts could spell disaster for climate-dependent rural populace, and place the country's food security at risk.
52. The government is fully cognizant of rural development challenge, especially in the context of post-conflict recovery and rehabilitation. It therefore invests heavily in rural development, envisioning an agriculture-based rural economic base supported with technology and infrastructure. The main rural development programmes of the government are Gama Neguma (Village Development) focused on improved rural infrastructure and Divi Neguma (Livelihood Uplifting). However, recurrent climate-related

²⁸ Coast Conservation Department 2012

²⁹ Discussions during PPG consultations

³⁰ United Nations Office for the Coordination of Humanitarian Affairs (OCHA) report

³¹ Disaster Management Centre. Disinventar database

³² Disaster Management Centre (2011) and WFP Flood Relief Data (2012)

³³ Disaster Management Centre and Coast Conservation Department. Coastal Hazard profile 2012

disasters pose a serious threat to these development programmes undermining the government's aim of developing strong rural economies that bridge the urban-rural income disparity, particularly in post conflict zones. As seen above, climate related disasters negatively impact on all sectors that draw government investment through these programmes- agriculture, livestock, irrigation, water supply, roads, fishery and coastal buildings, particularly in the 12 districts targeted by this project. Hence the future sustainability of these investments could be seriously threatened by uncertainty of weather and increased disaster events related to climate change.

53. Table 4 below presents a summary of the key impacts of climate change and climate variability in Sri Lanka; most affected areas, vulnerable sectors and communities developed through expert consultation during project preparation (PPG).

Climate Related Hazard	Exacerbating Climate Change factor	Vulnerable areas	Vulnerable sectors	Vulnerable communities
1. Longer periods of dry spells and drought	Combined impact of temperature rise, and rainfall variability (negative anomalies)	Entire dry-zone but especially Puttlam, Kurunegala, Mannar, Hambantota, Moneragala	Rain fed Agriculture, Water for irrigation Water for drinking/ household	Rain-fed farmers and farmers under minor irrigation Rural households dependent on ground and surface water drinking water systems
2. Increased flash floods and river flood(Fluvial flood)	Short duration, and very intense spells of rainfall – Flash flood Rainfall over extended period and extended area – River flood(Fluvial flood)	Urban areas in Colombo and Gampaha, Flood plains of Mahaweli, Kālu, Gin, Nilwala, Attangalu Oya and Deduru Oya	Urban infrastructure: buildings, roads, Irrigation schemes, drinking water schemes Health: epidemics, increased vector spread	Urban communities living in flash-flood prone areas Communities that live on river deltas, flood plains and river banks Agricultural land in the flood plains
3. Increased coastal erosion and salinity	Sea level rise and increased storm surges due to Sea level rise	All coastal DS Divisions but especially those in Mannar, Puttlam, Batticaloa, Mulaitivu	Drinking water supply Agricultural lands, Fishing community	Coastal communities dependent on ground water or seasonal rivers for drinking water Coastal paddy cultivators Dwellings of fishing communities
4. Landslide	Short, and very intense spells of rainfall	All Landslide prone districts but especially DS-divisions with Immature	Housing Roads and railways Schools and urban infrastructure	Communities living in areas already designated as being high landslide prone

	Rainfall over extended period of time	Brown Loam soils where road slips cutting failures could happen (Kandy and Matale) All Landslide prone districts especially, Nuwara Eliya, Matale, Badulla, Ratnapura, Kandy	Housing Roads and railways Schools and urban infrastructure Agriculture, Plantations	
5. Cyclones	Increased cyclonic activity over the Bay of Bengal due warming sea surface temperature above 26.5 °C	Eastern Coastal Area. Batticaloa, Trincomalee Ampara, districts	Housing Urban Infrastructure Coastal fisheries Coastal agriculture	Coastal communities Fishermen
6. Land degradation including erosion, salinization and desertification	High intense rainfall. High rates of evaporation induced by increasing ambient temperature	Wet zone: Nuwara Eliya, Kandy, Ratnapura, Kegalle, Matale Intermediate zone: Nuwara Eliya, Badulla districts Dry Zone: Hambantota, Mannar and Puttlam districts (salinity)	Agriculture productivity Water resources and hydropower generation (siltation of streams and tanks)	Farmers, especially small scale subsistence farmers Farmers with small land holding where homestead and cropland is combined

Table 4: Climate Hazards and their Impacts: on sectors and communities

1.2 Underlying causes of vulnerabilities affecting rural development

54. Sri Lanka's development investment is heavily targeted at reducing rural poverty, improving services and agricultural productivity. The previous section details how climate change and variability are already impacting on key development sectors, such as agriculture, fisheries, human health, coastal areas and infrastructure (especially roads, irrigation and water supply). This implies that currently observed and predicted climatic change and variability will negatively impact on the progress of rural economic development.

Conflict:

55. The underlying causes of vulnerability are manifold. First and foremost it relates to the legacy of long lasting conflict. Sri Lanka has been through a 30 year conflict, largely confined to the northern and eastern provinces of the country (eight districts). These districts have been left out of the development mainstream until 2009, and many have been newly re-settled after the conflict. These districts have high proportion of non-irrigated agricultural lands (called uplands) where farmers eke out a subsistence living without access to technical extension services and to ready markets. The war had eroded human and social capital in affected districts, through death, displacement and disability. Livelihood assets such as irrigation canals, roads, markets and fish landing sites have been damaged and destroyed. The government, with donor support, has a range of programmes for the revival of the northern and eastern provinces, investing heavily in roads, schools, fisheries and irrigation. However, the majority of war-affected population is yet eking a marginal living from a fast-depleting natural resource base.
56. While war and its subsidiary impacts are important aspects of vulnerability, there are a number of other, underlying factors that impact rural livelihoods. For one, physical livelihood supporting assets in villages are commonly missing, in disrepair or partly completed. This is true of minor irrigation structures in the dry zone plains (small village reservoirs and canals) or in the hills (anicut and stream diversions); it is true of rural water supply schemes, rural roads and culverts and common buildings such as markets, clinics and cottage industry centres.

Environmental factors:

57. In many districts, environmental degradation has resulted in poor soil quality, poor water quality and quantity, reduction of catchment forests, reduction of ground cover in sloping areas, degradation of lagoons and brackish water systems, filling up of wetlands and sand mining in rivers and beaches. Coastal fisheries are increasingly threatened by poor catch and reduced diversity. In districts of the Central Highlands, including Ratnapura, Nuwara Eliya and Badulla soil erosion is exacerbated by cultivating sloping lands without land management. Hill slope degradation is a grave problem leading to reduced productivity of highland agriculture (especially vegetables) and siltation of reservoirs used for irrigation and hydro power. Forest cover has depleted in the central highlands, which is the catchment for all major rivers in the country, forcing the government to ban all logging activity above the 1000m contour line in 2010.
58. Pressure on land is high in Sri Lanka, with a population density of 329.3 persons per square kilometer.³⁴ Population pressure is especially high in the coastal zone, where 35% of the population resides. Impacts of such pressure is observed in destroyed mangroves, silted lagoons, reclaimed wetlands and depleted beaches and sand dunes. Wetlands are often used for dumping solid and liquid waste from urban centres and industrial estates.³⁵
59. Rivers, especially those that ply through industrialized districts of Colombo, Gampaha and Kurunegala are polluted by effluent from factories.³⁶ In the dry zone, districts such as Hambantota, Moneragala, Puttalam, Anuradhapura ground water quality is poor leading to health issues including high incidence of chronic kidney failure among young farmers. The dry zone of Sri Lanka is a veritable study in adaptation, with rainwater harvesting ponds –called village tanks- transforming an otherwise inhospitable land to its farming heartland. But many of these ‘tanks’ were built centuries ago and have depleted since then, due to poor maintenance and destruction of peripheral catchment forests. This has undermined the village tank’s ability to collect and retain sufficient rainwater to irrigate downstream lands, even under normal weather conditions.³⁷

Access to land and water:

60. Land for agriculture in Sri Lanka is increasingly scarce due to population pressure. Legislation to prevent land fragmentation is inadequately enforced, therefore 80% of agricultural lands are small holdings an

³⁴ World Bank Country Profile 2012, with 2010 data

³⁵ Sri Lanka National Environmental Action Plan 2010

³⁶ Sri Lanka National Environmental Action Plan 2010

³⁷ Panabokke C.R and Sakthivadivel R. Small Tanks in Sri Lanka: Evolution, Present Status and Issues. IWMI 2005. Department of Agrarian Services has mapped 35,000 functioning village irrigation systems including minor tanks or reservoirs and anicut systems. There are a further 5000 abandoned systems.

acre.³⁸ Smaller land holdings are inefficient with Land fragmentation is common bringing down income earning potential. Landlessness is a problem in Puttalam, Kurunegala, Anuradhapura, Polonnaruwa, Batticaloa and Hambantota districts due to fragmentation and population pressure. In the conflict-affected districts of the north, landlessness is caused by issues of access (possible mined areas and high security zones) and land disputes during re-settlement process. Encroachment on forest, wildlife and irrigation reservations is a huge problem in all target districts; and is especially acute in Ratnapura.

61. State land is regularly distributed to landless agricultural operators but with restrictive ownership. The lack of secure land rights negatively influences investment, access to credit, transferability and long term maintenance of the land. It prevents people from treating land as a safety net and prevents marginal farmers from moving out of agriculture.³⁹ Existing property legislation also discriminates against women. The Land Development Ordinance and Land Grants Law does not recognize the rights of women, especially widows, women who are displaced from their original lands and separated from their husbands in terms of right to land and secure title.⁴⁰
62. Poor irrigation constraints land use and cropping intensities. Water delivery policies are designed to support rice farming and are designed without much consultation with beneficiaries. Poor management of water resources excludes farmers who are furthest away from an irrigation source and impact on the ability to diversify in to high value crops. Both water and land are governed by a complex legal and governance systems of more than 30 legislative acts and as many government bodies and provincial institutions. Lack of understanding of the responsibilities of different actors and lack of clarity on the degree of decentralisation of management have obstructed efficient management.⁴¹

Access to economic centers:

63. Good quality infrastructure in terms of roads and transport options determines regions connectivity to economic centers, boosting employment opportunities and competitiveness. Geographic isolation and long travel times to the regional or national capital (where most economic activity is concentrated) were seen as key constraints to business in rural Sri Lanka⁴².
64. For accessibility, both availability and capacity of the road network is important. Currently capacity is an issue only in the highly urbanized districts of Colombo, Gampaha, Kalutara and the populated western coastal belt. Road availability however is low in districts in the north, north central and south-east, including project target districts of Mulaitivu, Mannar, Vavuniya, Kilinochchi, Batticaloa, Anuradhapura, Polonnaruwa, Moneragala and Batticaloa. Poor road conditions and weak transport facilities such as busses, trains, lorries etc are impediments to development in rural areas. In a recent World Bank funded survey 46% of rural respondents said that transport was a hindrance to economic activity, especially rural enterprise.

Technology:

65. Lack of technology for improvement of small scale agriculture, livestock, fisheries and their value added, including machinery, processing methods, new innovations in agronomy and new varieties of crops and animals impact on rural development. This has meant that grains, fish, fruit and vegetables are consumed with very little processing, hence storage is shorter and wastage greater. Rice milling, fish drying and yoghurt/curd making are the most prevalent processing activities in rural areas. Much of this is low-tech done primitively. Common village enterprises are very rare. Traditional enterprises such as pottery or weaving have died out in many villages instead of responding to emerging market needs.
66. In Sri Lanka, gaps in technological advancement and technology transfer are particularly acute in agriculture. Even in major irrigated areas, yields are lower than could be expected. Investment in agricultural research and dissemination was highest during the local “Green Revolution” between 1971-1977, but has since dropped to 0.05% of GDP. The result has been a weakening of agricultural extension

³⁸ Sri Lanka Human Development Report 2012, UNDP and GoSL

³⁹ World Bank Sri Lanka 2008

⁴⁰ Pinto Jayawardena and de Almeida Gunaratne 2010

⁴¹ Sri Lanka Human Development Report 2012, UNDP and GoSL

⁴² World Bank 2010

services that form a bridge between technological advancements in agricultural science and the farmer. In conflict affected districts this gap is even more pronounced, as one officer has to oversee impossibly large geographical areas. Landless and marginal farmers have the least access to these services because of geographic distance and connectivity issues.

Finance:

67. In terms of financial capital, the country has a good network of banks and rural financial institutions. Villages also have women's savings groups, village societies and farmer organizations that lend to members. But all these financial instruments have not been satisfactorily revitalized the rural economy. For one, interest rates for borrowing are much higher than for savings - by as much as 10 percentage points. For another, banks and formal institutions demand collateral in form of tangible assets, leading farmers to mortgage their land, and other livelihood assets such as tractors, harvesters, boats and agricultural equipment. This leads to rising rural indebtedness and loss of assets, especially when shocks and stresses affect crop yields and income. On the other side, rural insurance and crop/livelihood protection programmes are not well developed. This leaves farmers to bear the brunt of crop failure whether from pest attack, weather event or from large animals (elephant, boar or cattle).

Political factors:

68. While a degree of social capital is present in villages, in terms of organizations and groups supporting livelihood or welfare, there have been recent critiques of the effectiveness of such village organizations in achieving development goals. Village level decision-making capacity is eroded through years of welfare, government and NGO intervention and political divisions. Even in villages with access to information, education and with a fair level of development, there is tendency to depend overly on government to 'deliver' benefits and also to maintain assets that is commonly owned by the village community (such as rural water supply scheme or a village tank). Social organization is especially weak in villages in the north and east, where decades of war and NGO intervention has eroded social organization and created high levels of dependency. Weakness of elected rural local authorities (called *Pradeshiya Sabhas* or Rural Councils) to meet basic services (water, sanitation, drainage etc) has meant that communities depend on external support, and national agencies to offer 'solutions'. These socio-political conditions preclude vulnerable communities from organising themselves around shared issues and from taking direct actions/ or seeking solutions from local and regional governance levels. Over dependency on a third party has precluded autonomous adaptation to climate change related risks in many rural communities.

1.3 Long Term Solutions and Barriers

Preferred Situation

69. In the preferred situation, livelihood related investments of government will support longer term resilience of the target populations to climate-related risks. Rural development programmes such as Divi Neguma and Gama Neguma, will be better targeted to address the differentiated vulnerability created by the interplay of exposure, sensitivity and capacity to adapt. Projects that are geared towards rehabilitation of conflict stricken and highly vulnerable parts of the country, will consider climate risks in their design and implementation, ensuring long term sustainability of development gains under anticipated impacts of climate change. Future phases of Gama Neguma and Divi Neguma will be based on substantial assessment of sub-district level climate related risks to the objectives of rural development.
70. To this end, practical and easily applicable climate risk assessment tools are available at district and sub-district planning levels. Climate hazard, risk and vulnerability analysis carried out by technical departments of Ministry of Environment and Ministry of Disaster Management would underpin rural development investments made through the Ministry of Economic Development. There would be sufficient inter-ministerial coordination to share data and information on climate risks and vulnerability, especially in sectors that draw large investments from state and donors- agriculture, fisheries and rural infrastructure. Adequate skills on climate risk assessment and economic valuation are developed among technical staff of ministries of Agriculture, Fisheries, Irrigation, Livestock and Economic Development. These new skills enable responsible agencies at all levels of decision-making and planning to design locally appropriate climate risk reduction measures easily implemented through regular development programmes.

71. For Gama Neguma and Divi Neguma this means that disaster and climate risk information generated by other Ministries (or agencies) will be used for informed, climate sensitive decision-making. It will mean that district level plans of these programmes will be fine-tuned with recommended adaptive actions in irrigation, fisheries and agriculture. Technical agencies such as Disaster Management Centre, Climate Change Secretariat of the Ministry of Environment and Departments of Agrarian Development, Livestock Development, Coast Conservation and Fisheries would be routinely consulted in assessing climate risks to districts/sectors. Technical agencies would be closely engaged with Divi Neguma and Gama Neguma to implement recommended adaptation actions leading to greater water efficiency in irrigation, effective water harvesting methods and technologies, robust and stress resistant local varieties and range of farm-based agronomic measures related to tillage, cropping methods etc.
72. In the preferred situation implementers of rural development programmes at national, sub-national and grassroots levels, will have required capacities to identify and manage adverse impacts of climate change, keeping in mind the ultimate goals of rural prosperity.
73. At grassroots, risk evaluation for climate and common disasters would be integral to the village development planning process. The village development plan that emerges through this process would identify high risk households and livelihoods, identify safe locations, build in social and physical safety nets and prioritise development-oriented adaptation measures. The associated Village Resource Management Plan (VRMP) would map out village physical and natural resources, analysing climate related risks to water, forests and soil of the local area. Adaptation priorities identified at village level will be reflected in local plans for Gama Neguma and Divi Neguma, ensuring that investment in rural infrastructure and livelihood development is climate-resilient.
74. Rural infrastructure, funded through state and donor projects, would be constructed through a process of risk evaluation with adequate community participation. Infrastructure building codes and development controls developed by the Ministry of Disaster Management will be used by divisional and district planners to reduce impact of climate related disasters and ensure longer term sustainability of infrastructure. Investments in livelihood development will therefore be tailored to agro-climatic region, to withstand specific current and future climatic risks and to be resilient to frequent climate-related disasters.
75. In the preferred solution there is a widespread awareness of adaptation alternatives specific to various geographical and ecological zones, enabling quick integration into development projects and plans under a design or implementation phase. A trained cadre of extension officials is able to deliver risk information and risk management methods to the grassroots. Importantly, community to community information sharing ensures that those at risk have access to information, technology and tools that could support adaptation. Projects and programmes are tailored to meet specific climate change challenges of the particular geographical and agro-ecological zone and incorporate adaptation best practices that build resilience and secure rural livelihoods in the face of climate change.

Barriers to Achieving the Preferred Situation

There are a number of informational, technical and institutional capacity barriers to realising the preferred situation.

Information and technical capacity:

Climate risk assessments are not practiced systematically as part of the planning and decision-making routine, especially at the district level.

76. The use of climate risk assessment tools is rare even at technical departments such as Coastal Conservation, Agriculture and Irrigation. There are no tools or related skills currently available with district and divisional planning officers who are tasked with implementing rural development programmes. Participatory Rural Appraisal - PRA is practiced for community needs assessments leading to village development plans VDPs and Gama Neguma projects, but these tools ignore new challenges posed by climate change.

77. District-level hazard profiles (at the Disaster Management Centre) and climate change vulnerability maps (done through the project preparatory grant for this project) are currently available. However, more localised risk information has to be generated in order to enable district planners to design locally appropriate adaptation interventions. Cost-benefit analysis of alternative adaptation options need to be considered. As a result, District and Divisional Development Plans prepared by the respective planning departments do not incorporate cost-effective and bankable climate risk management measures. Similarly, the process followed in developing Village Development Plans (VDPs) and Village Resource Management Plans (VRMPs) does not consider current or future climatic risks, including related economic costs and benefits to livelihood, infrastructure or natural resources availability at village level. VDPs are formulated through community consultation process that does not involve any kind of risk, economic and vulnerability assessment for climatic hazards or other disasters. Some climatic hazards that cause regular damage and displacement are reflected in development plans, but there is no regular review of climatic risks and remedial actions integral to the planning process.
78. Information to support adaptation planning such as climate resilient infrastructure controls or guidelines on crop selection remains confined to the technical Ministries and Departments that develop them. This technical information (including estimates of the costs and benefits of options) is not available to planners in a form that can be readily applied in rural development decisions.

There is limited technical skills and knowledge of the climate risk assessment methods and adaptation planning.

79. Planning departments and its officers alone do not possess the capacity to conduct risk assessments, nor related cost-benefit analysis of probable adaptation options and design interventions. District planners should have access to technical information generated by Ministries, departments and even academia. Key Ministries that drive rural development remain unaware of cost-effective climate risk reduction strategies that could be applied to improve climate resilience and long term sustainability of investments. Opportunities to develop such skills and knowledge necessary for integrating climate risks into the rural investments, broader climate risk management and adaptation planning, including economic valuation of adaptation options are almost non-existent. Lack of systematic training on climate risk assessment and economic cost-benefit analysis tools for sectoral and project level analysis and adaptation planning methods was recognised as a key barrier to integrating climate risk management into on-going rural development programmes. This is particularly relevant to the cadre of officials at Ministry of Economic Development; Departments of Agriculture, Agrarian Development, Fisheries, Livestock and Irrigation; divisional and district planning secretariats. This is equally relevant to the local mobilisers that are tasked with updating Village Development Plans (VDPs) and Village Resource Management Plans (VRMPs) and therefore inability to identify and address local climate risk-related issues lead to poor local planning.

Institutional capacity: Institutional silos are a common characteristic of an organisational set up at national, district and village levels in the country precluding adaptation planning and decision-making that demands more cross-sectoral approaches.

80. Urgent need to adapt to mounting risks of climate change exerts pressures on the key institutions to work across the sectors and departments, especially technical departments and planning units. Currently, even if relevant climate risk information is generated at certain technical departments no inputs have been provided to the key decision-making ministries. Due to a lack of effective institutional coordination, sustainable natural resource management solutions that are devised at technical departments are not disseminated widely enough to be assimilated into national-level projects such as Gama Neguma and Divi Neguma. There are limited working collaboration between the planning departments and technical agencies and research partners. Neither is there any established institutional mechanism to enable the planners to call on academia or non-governmental organisations as need arises. Multi-disciplinary rural development planning is a recognised need but yet lacks a solid platform in any district.

81. Although some measures with inherent adaptation value have occasionally been implemented there are no deliberate adaptation practices that have been designed to specific socio-economic, geographic and agro-ecological conditions and introduced.
82. Financing for climate risk reduction activities, related to natural resources management or natural hazards, are still considered additional investment in development programmes and projects. Planners are aware that climate risk integration can really improve sustainability of built infrastructure or productivity of agriculture investments. However, budgets for Gama Neguma or Divi Neguma do not incorporate the additional costs required due to a lack of appreciation of cost-benefit of such investment.
83. A rapid assessment of capacity needs was conducted during the project preparatory grant phase to determine individual and institutional capacity-related barriers specific to this project. Capacity needs were assessed at Ministry of Economic Development and its district, division and village level rural development delivery mechanism; and in other related Ministries such as Agriculture, Agrarian, Livestock, Aquatic Development and Environment through interviews, workshops and questionnaires. This is summarized in Annex 04. Some of the capacity and training needs that emerged are presented in the table below segregated into different levels of implementation.

National Level		
Institution	Need	Type of Capacity
Ministry of Economic Development, Rural Economy Unit	-Awareness raising on importance and benefits of climate risk management; -Risk screening and assessment tools for macro planning at a unit that supports sustainability of Gama Neguma and Divi Neguma (staff/ funds) -Advisory services for improved rural development design incorporating climate change	Institutional/ Individual skill building and establishing climate risk management related institutional service and practice;
Ministry of Agriculture, Natural Resource Management Centre	-Crop modelling for different agro-climatic regions	Institutional/ Individual tools, skill building and establishing a practice;
Department of Livestock Development	- Technical improvement of training material for extension officers	knowledge and skill building
Department of Agrarian Development	- Awareness for extension officers about the new extension service products that the climate change risks demand; - Climate-related training for all field extension staff	Institutional/ Individual Skill and tool development; additional products and functions at the extension services
Department of Coast Conservation	-Modified risk assessment tools to evaluate impacts on coastal livelihoods	Institutional/ Individual Skill and tool development
District Level		
District Planning Secretariats	-Using climate risk assessment tools as part of regular planning	Institutional / Individual

	<p>exercise</p> <ul style="list-style-type: none"> -Information on new technologies pertaining to urban or rural development -Planning staff that are trained to conduct specific climate and disaster risk assessments 	
District Representatives of Line Agencies	<ul style="list-style-type: none"> -Technology transfer on adaptation options in sectors such as irrigation, livestock, plantations, fisheries and agriculture -Training on new technologies, risk assessments and adaptation action design and monitoring 	<p>Institutional/ Individual</p> <p>Knowledge and skill building, technology transfer and adoption.</p>
Sub-District Level		
Divisional Secretaries and Planners	<ul style="list-style-type: none"> -Planning tools including risk assessment tools at local level - Training on climate change, how to use these tools, and designing and monitoring adaptation 	<p>Institutional/ Individual</p> <p>Tools and skill development</p>
Community-mobilisation group	<ul style="list-style-type: none"> -Tools and training on conducting community level risk and vulnerability assessments -Training on designing actions and integrating (budgeting) climate adaptation actions in to VDPs and VRMPs - Training on monitoring results of climate risk management actions at local level 	<p>Institutional/ Individual</p> <p>Knowledge, tools and skill development</p>

Table 5: Capacity needs for mainstreaming climate change risks in to rural development

1.4 Stakeholder Analysis

84. A broad range of stakeholders were consulted during the project preparation period. These included politicians, policy makers, officials and technical staff of key Ministries and Departments, district secretaries and directors of district planning secretariats, district level officers implementing *Divi Neguma* and *Gama Neguma*, and community-based organisations. Several national and international non-governmental organisations engaged in adaptation research and implementation were also consulted.
85. Three key workshops were held during the project preparatory period with multiple objectives of information dissemination, awareness raising, obtaining expert inputs and feedback, and validate project strategy and interventions. The first workshop held in May 2012 brought together senior officials from key government ministries, including Ministry of Finance. At this forum the Ministry of Economic Development presented their objective of strengthening rural development with climate-resilient practices. The Ministry of Environment presented the National Climate Change Adaptation Strategy and how each

sector adaptation plan was being developed. The group of technocrats from Ministries of Agriculture, Department of Coast Conservation and Ministry of Finance then reviewed the project objectives and commented on the viability of mainstreaming cross-sectoral climate change adaptation actions in to regular rural development programmes.

86. The second workshop in June 2012 brought together the planning directors and Divi Neguma administrators from all 25 districts for two-days of participatory planning of project interventions. This workshop also brought together a broader range of agencies engaged in rural development and climate risk management, this included Ministry of Local Government, Department of Meteorology, Disaster Management Centre, Department of Agriculture, Department of Agrarian Development, Department of Livestock Development, Coast Conservation Department, National Aquatic Development Authority, Department of Agriculture and Department of Minor Export Crops.
87. District officials worked in groups to produce a brief vulnerability analysis of their administrative units including key livelihood sectors at-risk and a list of possible interventions in the key sectors, and identified capacity/training needs to implement these interventions. Annexes 5 and 6 provide the detailed reports and attendance of the above mentioned workshops.
88. Officials from state agencies reviewed climate risks to their specific sector or sub-sector, presenting currently implemented climate risk management measures and those that could be easily integrated in to Gama Neguma and Divi Neguma. During this workshop, participants contributed their ideas to a rapid capacity assessment to determine capacity-related project interventions at national, district and sub-district levels.
89. Civil society organizations engaged in climate change/ disaster risk reduction activities such as Practical Action, CARE, Oxfam and Ethical Tea Partnership were consulted on a bilateral basis through meetings and discussions. Local NGOs representing grassroots communities were consulted in the field (though focused group discussions) and at workshops at a regional level. Communities impacted by recent drought and flood were surveyed through the Disaster Management Centre, and the survey results have been used in project design. Research institutions such as International Water Management Institute (IWMI) were consulted extensively during project design.
90. The third workshop was held in November 2012, to verify the project implementation framework and strategy. This workshop brought together Directors of Divi Neguma and Gama Neguma, with the Additional Secretary of the Ministry of Economic Development, officials of the climate change secretariat, Ministry of Environment with planning directors from the most climate change vulnerable districts to discuss project deliverables (outputs and activities) and implementation strategy. The final list of Outcomes and Activities were formalised at this meeting.
91. The proposed project will coordinate closely with public, private and grassroots stakeholders involved in the '*Gama Neguma*' and '*Divi Neguma*' programmes of the **Ministry of Economic Development**, which makes this Ministry the most suitable government entity to execute the proposed project. Other key government entities involved in the project include:
 - The **Ministry of Environment**, which has been instrumental in consolidating the Integrated Strategic Environmental Assessment for the Northern Province and promoting environmental safeguards in a variety of infrastructure planning processes;
 - The **Ministry of Disaster Management**, which is operationalizing the Road Map towards a Safer Sri Lanka, coordinating disaster management stakeholders in the country and has a stake in promoting and disseminating disaster risk reduction principles and tools as broadly as possible;
 - The **National Planning Department** which sets policy guidance on which the **Ministry of Finance** approves fiscal flows to Ministries, decentralized budgets and projects. The NPD has a stake in ensuring that regional development is balanced and not undermined by environmental risks;
 - The **Coast Conservation Department**, which has a role reviewing and applying hazard maps in the coastal belt, preserving natural buffer zones and integrating considerations of sea level rise into coastal zone development and management plans. The CCD conducts training programmes for in-service officers to raise their knowledge on the potential impacts of sea level rise, and for coastal communities on the protection of coastlines through mangrove afforestation, coral reef conservation

and construction monitoring. The Department of Coast Conservation is not linked to rural development programmes as yet. In coastal areas the Department holds authority over construction and natural resources management therefore will be an important implementing entity in coastal districts.

- The **Department of Agriculture** is the knowledge hub for drought risk assessment and trains farmer communities on adopting strategies to mitigate negative impacts of climate change on crop production. The Department has the expertise to train in-service officers on climate change impacts on agriculture and water resources. These programmes are conducted at schools of agriculture and in-service training institutions of the Department.
- The **Department of Agrarian Development** manages all small village irrigation systems, distribution of seeds and fertilizer and has an extensive grassroots presence. The Department is already a key collaborator of Divi Neguma, supporting the project's ground level implementation in villages.

92. Departments handling sub-sectors such as inland fisheries, export crops and livestock are important for knowledge generation and dissemination through the project. These Departments often have sub-district extension services that could collaborate in risk assessments and adaptation planning at village level.
93. The proposed project will work closely with Sri Lankan Universities at Peradeniya (agriculture and water management) and Moratuwa (Engineering solutions for disaster resilience) and professional bodies for engineering, architecture, environment, agriculture and others as appropriate to source technical expertise. Partnerships with public sector training institutions such as the Sri Lanka Institute for Development Administration (SLIDA) will support training of civil servants.
94. Vulnerable communities and local authorities are key stakeholders of this project at village level and will be engaged in all project components. They will contribute in local level climate risk identification, and integration of risk management options into village development plans; Implementation of identified adaptation measures will be done through community-based organizations and direct engagement of men and women in the target districts and communities. Community-based organizations such as women's groups, farmer organisations, village savings and lending institutions will be trained to work as local partners in villages where adaptation actions will be demonstrated. Women and women's groups have been identified as important stakeholder group for the project. They will be engaged in the design and implementation of in-situ adaptation measures. Engagement of women is particularly critical in relation to water collection and storage infrastructure. More specifically, women in Sri Lanka are often in charge of water management, but if they are not consulted about the location of new water collection and storage infrastructure, or their views about household water shortages during dry periods are not integrated into the dimensioning of new buffer capacities, the new infrastructure may fail to provide sufficient water security in times of the greatest need. In addition, improper land use planning of new water infrastructure may actually increase women's burdens. The complementarity of men's and women's knowledge and skills are important and will be fully considered for designing and implementing effective and sustainable adaptation initiatives

2. PROJECT STRATEGY

2.1 Project Rationale and GEF/ Country Eligibility

The project is consistent with the eligibility criteria for the SCCF, as laid out in GEF/C.24/12 (paragraph 40), in that the project is:

1. Country-driven, cost-effective and integrated into national sustainable development and poverty-reduction strategies; and
2. Takes into account national communications and other relevant studies and information.

Eligibility:

3. In alignment with programming guidelines for the Special Climate Change Fund (GEF/C.24/12), and in accordance with paragraph 2 of decision 7/CP.7, the proposed project is targeting climate change adaptation measures that are complementary and additional to those funded by the GEF or other bilateral and multilateral sources. The project focuses on adaptation measures in the context of developing rural infrastructure such as roads, water supply, irrigation and coastal infrastructure systems, which is in accordance with paragraph 8 of decision 5/CP.7 and eligible under SCCF guidelines.
4. The project is aligned with Objective CCA-1 of the updated Results-Based Management Framework for the LDCF and the SCCF: “Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level”. Within this Objective, it aims to integrate climate change adaptation into a range of broader reconstruction and development frameworks, which makes it compliant to Outcome 1.1 of this Framework: (“Mainstream adaptation in broader development frameworks”) as well as Outcome 1.2 (“Reduce vulnerability in development sectors”).
5. Sri Lanka ratified the UNFCCC in November 1993 and submitted its Initial National Communication in 2001 and the Second National Communication in 2010. Conformity of the project with country environmental and development policies is detailed below.

Country-driven:

6. The project will be housed at the Ministry of Economic Development and co-financed chiefly through the budgetary allocation of the rural development programmes it supports. A description of the two main rural development initiatives that form the project baseline is provided in the next section.
7. The project is proposed by the Ministry of Economic Development in order to improve sustainability and climate resilience of the rural development investments; and by the Ministry of Environment to achieve a full-fledged integration of adaptation strategies in to the national development agenda.
8. The project will work with national technical agencies to design location specific adaptation actions, and obtain their support in implementing and monitoring these actions.
9. The project will focus on locations (districts and divisions) that demonstrate high level of vulnerability to climate change impacts as per the analysis described in Section 1 and especially those with high rates of poverty and income inequality. Districts that are emerging from conflict will receive special attention, as they demonstrate a high level of vulnerability to climate change due to geophysical characteristics and subverted human development.

Cost-Effective:

The project is cost effective chiefly due to the following factors;

- Project interventions focus on improved, risk integrated planning and coordination that will result in optimal use of local development resources, including technical expertise and finances;
- Well-funded baseline projects with the financial capacity to absorb cost of adaptation as part of the replication and up-scale;
- A menu of practical, locally tailored adaptation options developed based on district level vulnerability assessments, particularly those having high return value compared to input’s per unit cost.

2.2 Strategic considerations

10. The project will implement priority adaptation interventions as identified by Sri Lanka's Second National Communication to the UNFCCC (MoE, 2010) and Sri Lanka's National Climate Change Adaptation Strategy (NCCAS, 2011-2016). The project supports Sri Lanka's National Climate Change Policy (MoE, 2011); Sri Lanka's Development Policy Framework *Mahinda Chintana* (Department of National Planning / Ministry of Finance and Planning, 2010); and Sri Lanka's Roadmap for Disaster Risk Management 'Towards a Safer Sri Lanka' (Ministry of Disaster Management, 2006)
11. SCCF funds will improve the resilience of on-going and future government investment in rural development in districts that are more vulnerable to impacts of climate change. The project is expected to reduce the risks of losses and damages to these investments from climate change-related shocks and stresses.
12. The project is fully compliant with UNDP's environmental and social safeguards defined by integration of precautionary principle into programme/project management cycles. The very design of this project correlates to the main objectives of the safeguards to **prevent and mitigate undue harm** to the environment and people at the earliest possible planning stage, and **to identify and realize opportunities** to strengthen environmental and social sustainability, including climate resiliency, of programming.
13. The project will serve as a catalyst to leverage additional resources, and efforts have been made to maximize co-financing from other sources (GEF/C.24/12, paragraph 25). The selected sectors (agriculture, water resources management; infrastructure development; integrated coastal zone management) are in line with priorities outlined in paragraph 44 of the GEF/C.24/12 document.
14. Sri Lanka's **Second National Communication** to UNFCCC (2010) recognizes that given the predicted climate change, variability of rainfall will increase and inequality in spatial distribution of the quantum of water will become more pronounced. Average temperature is expected to increase by more than 1 degree Celsius in some parts of the country within the next 50 years, resulting in increased soil moisture evaporation, water scarcity, pest infestations, and growth in invasive species and changes in biodiversity and eco-system services. All of these will directly or indirectly affect development efforts that are currently under way, as they are targeting improved rural livelihoods based on agriculture and fisheries. To address these emerging problems, the SNC is recommending measures to increase water storage and conservation for agriculture in dry regions; adjust the design of irrigation systems to handle longer dry spells and more intensive rainfall events; and promote rainwater harvesting for communal, agricultural and domestic uses.
15. In alignment with Sri Lanka's **National Climate Change Adaptation Strategy (NCCAS)**, the proposed project represents a systematic follow-up action to Strategic Thrust 1 of the NCCAS, which is to 'Mainstream Climate Change Adaptation into National Planning and Development'. The NCCAS recognizes that climate change considerations are not yet included in most development planning and reconstruction processes, and that while many planners are aware about climate-related risks, most don't know enough about adaptation choices and measures to take resilient investment and planning decisions. This gap is addressed under Outcome 1 of the proposed project. The NCCAS emphasizes the urgency to increase financing to protect Sri Lanka from climate change impacts, and to inform and mobilize stakeholders at multiple levels of reconstruction and development planning about climate change impacts. Under Strategic Thrust 2, which is to 'Enable Climate Resilient and Healthy Human Settlements', the NCCAS emphasizes the need for an integrated approach to address adaptation priorities in land-use planning, housing, water supply and drainage. The NCCAS confirms that various mechanisms for climate-resilient settlements, such as improved construction methods, are already developed but not widely in use. It also confirms the need for participatory processes through which communities as the primary agents and stakeholders for climate change adaptation can be more systematically engaged, mobilized and trained to undertake resilient planning decisions. Under Outcome 2, the project will build a strong thrust of awareness and education to improve the understanding among, district and local planners and rural development actors on dealing with climate change. It will provide tools to identify and quantify the climate change-related risk, and introduce appropriate adaptation measures, technologies and best practices to address those risks.

16. The proposed project is compliant with Sri Lanka's **National Climate Change Policy (2011)**. The National Climate Change Policy articulates the vision of a future in which climate change will not have adverse impacts on Sri Lanka, and in which climate change adaptation and mitigation are promoted within the framework of sustainable development. More specifically, the Climate Change Policy recognizes the need to assess climate change vulnerability in the national development agenda, develop an information dissemination strategy to enhance adaptive capacities at all planning levels, and adopt multiple approaches to enhance knowledge and skills of different stakeholders to address current and emerging issues of climate change. Together with demands to strengthen institutional coordination and strategic partnerships between Ministries, these pillars of the Climate Change Policy are fully compliant with Outcome 1 and 2 of the proposed project. Outcome 3, which is focusing on concrete investments in resilient water resources, coastal zone development and agricultural planning, is fully compliant with the policy statement to minimize the impacts of climate change on water resources, promote water efficiency technologies, take timely action to minimize the effects of too much or too little water on agricultural production, and enhance the climate change resilience of natural ecosystems.
17. The proposed initiative is systematically aligned with the *Mahinda Chintana Idiri Dekma* (Vision for the Future), which serves as Sri Lanka's key development strategy and sets out Sri Lanka's development vision for the period 2006-2016. The development strategy sets out a broad macroeconomic framework, and within those parameters establishes 10-year policy frameworks for various sectors of the economy, including broad vision, situation analysis and strategy. It aims for an ambitious acceleration of growth through a scaling up of investment and increasing productivity. Under the *Mahinda Chintana* framework, the 'Gama Neguma' ('Village Reawakening') Community Development and Livelihoods Improvement Programme and the Divi Neguma ('Building Livelihoods') Household Economy Programme represent large-scale community development and livelihood improvement programmes in rural areas. The project will be closely aligned with these baseline initiatives.
18. The project is compliant with a number of priority actions recommended by the Road Map for Disaster Risk Management '**Towards a Safer Sri Lanka**' (Ministry of Disaster Management, 2006). The Road Map is a guiding document to achieve the vision of comprehensive and effective disaster risk reduction and emergency response, in line with the Hyogo Framework for Action (2005-2015). It aims to establish a culture of safety against disasters through the systematic strengthening of institutional mandates and capacities for risk reduction, and enhance the quality of disaster risk and hazard assessments. Chapter 6 of the road map ('Mitigation and Integration of Disaster Risk Reduction into Development Planning') emphasizes the need for dedicated projects to protect existing and future infrastructure from extreme weather events, and advance disaster mitigation in the development of new housing schemes, industrial estates, tourist resorts, coastal and water management plans.
19. Finally, the project is aligned with the **National Action Plan for Haritha (Green) Lanka** (National Council for Sustainable Development, 2009). The Green Lanka strategy was developed by the National Council for Sustainable Development in 2009 under the chairmanship of H.E. the President of Sri Lanka. The strategy has ten broad missions, including 'Saving the Fauna, Flora and Ecosystems', 'Meeting the Challenges of Climate Change', 'Wise Use of the Coastal Belt and the Sea Around', 'Responsible Use of the Land Resources', 'Water for All' and 'Knowledge for Right Choices'. One mission is specifically related to climate change adaptation, but all environmental strategies for the period 2009-2016 are relevant to, and in line with, the proposed technical assistance actions that will be financed by the proposed SCCF initiative.

2.3 Baseline Projects

Gama Neguma and Divi Neguma: Key Rural Development Programmes of the Ministry of Economic Development

Total funding for Divi Neguma in target districts 2013-2016	: USD 32 million
Total funding for Gama Neguma in target districts 2013-2016	: USD 14 million

20. Gama Neguma (translated as ‘Village Reawakening’) and Divi Neguma (translated as ‘Livelihood Upliftment’) are large-scale community development and livelihood improvement projects under the *Mahinda Chintana* framework. Both programmes are implemented by the Rural Development branch of the Ministry of Economic Development and have a community focus. Gama Neguma was launched in 2006, and has an annual budget of around USD 100 million. It focuses on construction of rural roads, culverts and bridges (40%), development of minor irrigation schemes (30%), provision of water supply (15%), common buildings and recreational areas (8%) and investments in sanitation (7%). The programme follows a successful World Bank funded predecessor programme (Gemidiriya – ‘Village empowerment’) which has focused primarily on rural poverty alleviation in the central and southern parts of Sri Lanka. In recent years, the programme integrated the Eastern, North Central and North Western Provinces aiming to reconstruct the economic base of formerly conflict affected districts. Its most enduring contributions have been concreted rural roads and community water supply schemes for drinking water.
21. Gama Neguma is rooted in the vision of a community driven development model: It assists communities to identify their priority needs and design village development plans for implementation. The required funds are directly provided to community-based organizations in each district. In 2012 Gama Neguma disbursed Rs. 1 million (approx. US\$8000) each to 13,100 (out of 14022) GN divisions in 20 districts⁴³ for rural infrastructure on the theme of ‘one project per village’. This amounts to an annual budget of USD 104.8 million. Each infrastructure project should be completed within the year, and could also be co-financed by local authority, community or private sector financing.
22. ‘Divi Neguma’ or Livelihood Upliftment, which is a sister programme of Gama Neguma, focuses on the establishment of one million “household economy units including home gardening, animal husbandry, fisheries and domestic industry covering all villages on the island” (MoED, 2011). Divi Neguma has an annual budget of around US\$60 million, which is invested in household-level agricultural production (60%), fisheries & animal husbandry (20%) and the rehabilitation of cottage industries (20%).
23. Gama Neguma and Divi Neguma have been successful establishing rural infrastructures and providing some livelihood support for rural communities across Sri Lanka. However, it is clear (as explained in Section 1.1.4) that the lack of climate risk integration has undermined the sustainability of certain investments. There is no consideration of climate resilience in financing of new communal infrastructure, rehabilitation of water supply and storage systems, promotion of small-scale irrigation systems and the improvement of agricultural production systems etc. This can lead to a long-term situation in which a substantive part of reconstruction and development progress is set back by climate change-induced hazards, such as the effects of sea level rise (salinization of soils and groundwater; coastal erosion and inundation; disappearance of mangrove greenbelts and wetlands), longer dry spells and drought periods, more intense tropical storms, and accelerated soil erosion. Recognizing these risks, the proposed SCCF project will integrate principles of climate-resilient land-use planning, climate resilient construction of physical infrastructure, climate-resilient water resources management and ecosystem-based adaptation into the continued rollout of new investment projects under the Gama Neguma and Divi Neguma programmes.

EU-funded Support to Reconstruction and Development in selected Districts in North and East Sri Lanka

Total funding for six districts overlapping with project target districts: USD 11.03 million

24. In conflict affected areas a number of state-and-donor funded initiatives are implemented to regain missed opportunities in the Northern Province and Eastern Province and position these provinces for an ‘economic take-off’ based on their untapped natural resources. To date, these large-scale investment programmes/projects have achieved substantive progress in the fields of demining, resettlement, and restoration of basic facilities (such as electricity grids), road reconstruction, and a gradual normalization of civil administration. That said, considerations of climate risk resilience in the development of housing schemes, communal water supply and coastal infrastructure have yet to be addressed. Recognizing these

⁴³ Five districts if the Northern Province were excluded from Gama Neguma due to the absence of local GN level representatives and CBOs. They will be included in 2013 Gama Neguma Programme

risks, the proposed SCCF project will integrate principles of climate-resilient land-use planning, climate resilient construction of physical infrastructure, climate-resilient water resources management and ecosystem-based adaptation into the continued rollout of new investment projects in conflict-affected areas. In the climate change vulnerability analysis of districts, a number of conflict affected districts were ranked high, this includes four out of five districts in the Northern Province, Batticaloa in the Eastern Province, and adjacent Moneragala district, Anuradhapura, Polonaruwa and Puttlam in the North-Central and North-Western Provinces.

25. A multi-agency UN initiative providing ‘Support to Reconstruction and Development in selected districts in the North and East’ is parallel complementary project supported by the Ministry of Economic Development and implemented by the Ministry of Public Administration. The EU-funded project with a full budget of €59 million is implemented through five UN agencies⁴⁴ and the IFC. The project will implement in seven districts, namely Ampara, Batticaloa, Mannar, Vavuniya, Anuradhapura, Puttlam and Moneragala. The overall objective is poverty reduction in North and East Sri Lanka and specific objectives are to make a substantial contribution to the transition from post-conflict relief and reconstruction to sustainable development by supporting selected districts in North and East Sri Lanka, in alignment with their local development plans, through pursuing three specific but interconnected objectives: To support poverty reduction and the provision of basic infrastructure and services for vulnerable populations; to support local economic development; and to strengthen local governance. In this, this project complements the efforts of the proposed climate change adaptation initiatives by building adaptive capacity-related social and physical infrastructure in these districts. Six of the seven EU-SDDP project districts overlap with selected SCCF-project districts.
26. UNDP implements the ‘Livelihood Development and Local Governance Strengthening’ component of the EU-SDDP Project. There are two distinct interventions: 1. Livelihood related skills and infrastructure improvement; 2. Support to improve development planning capacity in district, divisional and local government levels in the target districts.

⁴⁴ UNDP, UNOPS, UNICEF, FAO and ILO

2.4 Project Components, Outcomes and Outputs/Activities

Project objective is to increase the resilience of communities to climate change induced hazards through integration of climate smart policies and actions into rural development planning and budgeting. To achieve the objective the project is organised in to three components each with a corresponding outcome and set of outputs.

Project Outcomes:

1. National rural development programmes *Divi Neguma and Gama Neguma* integrate climate risk information and adaptation measures in 12 vulnerable districts
2. National, district, divisional and local technical staff have sufficient technical capacity to identify and integrate climate risk considerations in designing, approving and implementing development projects under the Gama Neguma and Divi Neguma programmes
3. Concrete adaptation actions defined and implemented in selected vulnerable villages/ village clusters in the 12 target districts to increase resilience of rural development programmes to climatic risks

Outcome 1: National rural development programmes *Divi Neguma and Gama Neguma* integrate climate risk information and adaptation measures in 12 vulnerable districts

SCCF Budget: US\$ 316,105

Co-finance

UNDP through EU-SD

: US\$ 3,030,000

MoED through Divi Neguma

: US\$ 3,150,000

Baseline situation:

27. Divi Neguma and Gama Neguma programmes led by the Ministry of Economic Development (MoED) are the main rural development initiatives of the Government of Sri Lanka. As explained above, Divi Neguma or Livelihood Upliftment has an annual budget of around US\$60 million, which is invested in household-level agricultural production (60%), fisheries & animal husbandry (20%) and the rehabilitation of cottage industries (20%). Investments are made at household level, in improved home gardening (through provision of seeds, planting material and farm implements), in small farms (through planting material and implements) in livestock and small ruminants (through provision of animals) and cottage industries such as yoghurt making, basket weaving and pottery (through provision of simple machines or tools).
28. Gama Neguma or Village Upliftment invests approximately US\$8000 every year for a selected development activity in every Grama Niladhari (GN) division (a GN is a defined administrative unit that includes one village or a cluster of several small villages). This support is channeled mainly in to rural roads, rural water supply and rehabilitation of irrigation schemes. Other projects include school sanitation projects,
29. The Government has pledged over Rs. 20 billion (US\$ 154 million) annually for these programmes and is investing in expanded local extension services to ensure effective delivery. Gama Neguma and Divi Neguma planning is done through the district and divisional planning units supported by village-level team of extension officers. For example, to implement and monitor these rural development programmes the MoED has appointed a graduate officer to each of the 14,022 GN divisions in Sri Lanka. This resident officer will report to the Divisional Secretary on Gama Neguma and Divi Neguma implementation in each village.
30. Amidst this massive drive for investment and infrastructure planning is a renewed concern about the effects of climate change-expected to have substantial impacts on human settlements and the country's development trajectory⁴⁵. However, at present, neither Divi Neguma nor Gama Neguma is integrating climate risk considerations into their design. Development planning in Sri Lanka largely ignores climate change-related hazards, especially in relation to the availability of too much and too little water and the

⁴⁵ Sri Lanka's Second National Communication to UNFCCC (2010) and the National Climate Change Adaptation Strategy (2010-2014)

projected changes in temperature. Awareness about the impacts of climate change on rural development in Sri Lanka is limited among district and divisional planning departments, technical service providers including local authorities and grassroots level extension officers of the government.

31. In conflict affected districts, even higher levels of investments are being made in rural development, without adequate risk assessment. The EU-funded ‘Support to Reconstruction and Development in selected Districts in North and East Sri Lanka’ (EU-SDDP) will invest US\$56million in seven districts through multiple UN agencies to develop community livelihood and related physical, social and governance infrastructure. The UNDP component of the joint-UN project in the north and east supports improved decentralised development planning and will work directly with District and Divisional Planning Departments to support a sustainable automated service delivery system in the four target districts, of which three overlap with SCCF districts. In this regard, UNDP will support the district and divisional secretariats to establish the District Information Centres to own a transparent, validated information base, starting at village level and including a projected household survey. This baseline initiative will support district and divisional secretariats to improve gathering and sharing data for more informed development planning. This information platform will be strengthened with climate risk-related information at village, division and district level through the proposed project.
32. The current, target driven and delivery focused method of programme execution in the Ministry of Economic Development emphasizes short term results. There is limited scope for planners and programme administrators to take a long term view of sustainability of interventions. There is little information being generated on climate vulnerability and impacts at national, district and sub-district (Divisional) level. There are no trained officers to conduct risk or vulnerability assessments in districts or sub-district areas that are currently facing climate related hazards. There is little experience and data generated in effective management of climate risks and cost-effective adaptation strategies.
33. The UNDP supported Disaster Risk Management (DRM) Programme has developed district-wide hazard profiles for key natural disasters – drought, coastal hazards, landslide, lightning, cyclone and flood. Coastal hazards include storm surges, coastal erosion, sea level rise and tsunamis. These hazard profiles and associated GIS maps were launched by end of 2012 and further developed in to risk and vulnerability profiles. The maps were developed with technical input from related national agencies and their respective GIS units. Accordingly, the Department of Agriculture developed the drought hazard map; the Department of Coast Conservation- the coastal hazard map; the Department of Irrigation - the flood map; Department of Meteorology - the cyclone hazard map and the National Building Research Centre - the landslide map. These maps will provide a basis for climate change vulnerability mapping within districts using a hazard-based approach. UNDP’s Disaster Risk Management Programme, under the Ministry of Disaster Management, is developing disaster-resilient building codes and infrastructure controls with key academics in the field. The Ministry will promote the use of these building codes through Local Authorities and District Disaster Management Committees. These include codes for roads, bridges, school buildings, public buildings, homes and irrigation systems.
34. *Adaptation alternative:* The aim of Outcome 1 is to integrate climate change considerations into the design and rollout of the new phases of *Divi Neguma* and *Gama Neguma* which will be implemented post-2013. By working with district and divisional planning units, SCCF financing will promote and disseminate tools and controls for climate resilient rural development planning in large-scale baseline programmes. Using the hazard maps and profiles created for each district by the Disaster Management Centre and the vulnerability assessment conducted during PPG, this outcome will develop climate risk profiles for each district detailing;
 - Geographical and spatial exposure to climate impacts including their economic costs and benefits of alternative adaptation options
 - Location of climate sensitive natural resources (expert opinion and district consultation)
 - Location and density of vulnerable populations (district consultation and ground verification)
35. In the 12 target districts, district and sub-district (divisional) level climate change risk assessments, including consideration of economic costs/benefits (with a focus on agriculture and water resources) will be conducted and vulnerability maps developed with planning units. This will support the identification of climate sensitive areas within district and divisions in order to tailor adaptation actions to particular locations of greater exposure to risks and vulnerability. Component 1 will support the identification of 05

Grama Niladhari (GN) Administrative units (in a cluster of villages displaying similar risk characteristics), in each district to implement concrete adaptation actions as outlined under Component 3. The selected GN Units would already be targeted for investment in livelihoods, infrastructure and food security through the baseline projects described above.

36. Activities under Output 1.2 will help Sri Lanka operationalize a multi-sector task force to review local adaptation needs and strategies. This includes a review of technical norms and cost-benefit analysis of proposed adaptation actions to inform the project's adaptation investment under Component 3. These adaptation guidelines will improve sustainability of rural development investments in each target village. This will be achieved by supporting planners to overcome the current deficit in tools and methods for improved and climate resilient rural developing planning.
37. Local, divisional and district officers responsible for Gama Neguma and Divi Neguma will receive practical training and accumulate experience of applying of climate risk and vulnerability assessments, including economic estimation of the costs/benefits of adaptation under Outputs 1.1 and 1.2. The activities will be carried out with the participation cooperation of technical departments that support livelihood initiatives of Divi Neguma, such as the Departments of Agriculture, Agrarian Services, Livestock Development, Minor Export Crops and Small Industries. Other ongoing UNDP programmes, such as the Capacity Building Programme on the Economics of Adaptation, conducted in partnership with USAID, Asian Development Bank and Yale University, will provide technical assistance support to Sri Lanka in realizing these outputs.
38. Water resources conservation and rational use is prioritised by adaptation strategy in the context of agriculture. Therefore, water resources related adaptation actions will receive special consideration in the project. This includes incorporating into Divi Neguma, a range of water conservation measures that could be adopted in home gardens and small farm plots; and in to Gama Neguma investments in village irrigation systems and water supply schemes and flood control projects. An analysis of water availability, issues and irrigation infrastructure in each focal district prepared through consultative workshops by a water resources specialist is presented in Annex 8. These adaptation recommendations will also be analysed in terms of their costs and benefits through Output 1.2 prior to their implementation.
39. The concrete adaptation actions that will be incorporated in to Gama Neguma and Divi Neguma are derived from SNC and NCCAS; and the outcome of consultative workshops (Please see Annex 6) The main recommendations of expert and stakeholder consultation is summarised in Table 04 below. Under Component 1, Output 1.2 these adaptation actions will be prioritised through economic (cost-benefit) analysis. Guidelines for implementation –such as crop recommendations and infrastructure controls for climate resilience will also be produced by Output 1.2 to support actual implementation.

40. Addressing barriers related to better extension services to support farmers, Outputs 1.2 and 1.3 include activities to build the knowledge base of rural service providers. Output 1.2 looks at updating the agrarian services crop recommendation list. Updated climate resilient crop recommendations will then form an integral part of training programmes in Outcome 2 (Output 2.1.2) providing village extension officers with necessary knowledge on crops suited to specific agro-ecological regions under current climatic variability.
41. As a result of Output 1.3, existing village development plans (VDPs) and village resource management plans (VRMPs) will be updated with climate risk information generated by Output 1.1. The community-level assessments will be conducted with villagers, local administrators and Divi Neguma/ Gama Neguma mobilisers so that actions could be supported through regular rural development finance. While risk assessments carried out in output 1.1 will provide a broader view of risk and vulnerability in a district; this Output will conduct community-based vulnerability and risk assessments at *GN level* especially targeting Village Development Plans. Principles of climate-resilient land-use planning and results from climate change-related assessments (such as agriculture water stress or sea level rise scenarios and corresponding suggestions for salt tolerant crops and alternative agriculture management practices) will be integrated into VDPs and VRMPs. Through this process village adaptation needs and technology requirements will be assessed, and inform the planning of new phases for Gama Neguma and Divi Neguma programme.
42. Integrating climate risk assessment and adaptation planning tools to village and district planning processes in Output 1.2 will result in robust multi-year plans that include preparedness, contingency and risk transfer mechanisms. Such plans, as opposed to the normal development planning (which is simply a physical development needs analysis) will demonstrate greater sustainability and resilience of development investment. It will ensure that climate change-related risks and hazards are recognized before communal infrastructure is constructed in hazardous zones, and that new physical infrastructure has sufficient structural integrity to withstand extreme weather events. It will ensure that investments in livelihood, especially farming, enable communities to withstand climate variability/ and provide income during periods of climatic uncertainty.

Table 06: Outputs and Activities under Outcome 1:

Output	Indicative Activities
1.1 Climate risk assessments conducted in 12 vulnerable districts detailing climate related hazards, vulnerability hot spots and sensitive natural resources including the economic costs and benefits of alternative adaptation options	1.1.1 Develop climate exposure and sensitivity maps detailing geographical and physical concentration of risk and taking into account economic costs/benefits of alternative adaptation options in the agriculture and water sector for each division in 12 target districts ⁴⁶
	1.1.2 Adapt existing climate risk assessment and cost-benefit analytical tools for irrigation and rural water supply to support district and divisional planners and engineers to identify risks and adaptation options for the water sector
	1.1.3 Modify existing risk assessment and economic cost benefit analysis tools used for coastal area planning such as Coastclim and agriculture such as FAOClim2.0 or Agricultural Water Stress Mapping/ or multi-sector tools such as CCAV ⁴⁷ and Uncertainty and Risk Analysis to support national and sub-national development planning
1.2 Climate risks incorporated in to District and	1.2.1 Strengthen Divi Neguma/Gama Neguma Task Force at District and Divisional level with multi-

⁴⁶ This activity will support the selection of the 60 target villages where climate smart VDPs would be implemented. The methodology would base on the Vulnerability Assessment conducted to select target districts, but gather a wider set of data including natural hazards, resources and use GIS tools for spatial resolution and risk zoning.

⁴⁷ Climatic Change and Variability Tool.

Divisional Development Plans in 12 target districts	sector representation to develop a menu of adaptation measures based on risk assessment (including consideration of costs/benefits of adaptation) on districts and divisions
	1.2.2 Climate-risk assessment and economic cost benefit analysis of adaptation options results incorporated into Divisional and District programmes for Divi Neguma and Gama Neguma in 12 target districts
	1.2.3 Climate resilient infrastructure controls and building codes applied to the revised district and divisional programme relating to infrastructure development
	1.2.4 Update the Agrarian Department Blue Book on crop selection in agro-ecological regions to incorporate climate risks
	1.2.5 Support District and Divisional-level Divi Neguma Task Force to conduct economic analysis of risk management options to support budgeting in to Divi Neguma and Gama Neguma programmes
1.3 Village Development Plans (VDPs) and Village Resource Management Plans (VRMPs) incorporate climate smart measures in all GN divisions in 12 target districts	1.3.1 Community-level climate risk assessment tools such as VRA, CRiSTAL and CEDRA ⁴⁸ including appropriate economic tools modified and adapted to be used as part of the participatory local planning process
	1.3.2 Provide guidance and tools to GN-level mobilisers (Graduate Appointees) to integrate participatory risk assessment in to regular VDP/VRMP process
	1.3.3 Conduct Community-based adaptation needs and technology gap assessments in all GN Divisions in the 12 target districts and incorporate climate risks in to VDPs and VRMPs of each GN
	1.3.4 Climate resilient land-use planning at village and local level promoted through revised VRMPs in the target villages

Outcome 2: National, district, divisional and local technical staff have sufficient technical capacity to identify and integrate climate risk considerations in designing, approving and implementing development projects under the Gama Neguma and Divi Neguma programmes

SCCF Budget: US\$ 557,140

Co-financing:

MoED Divi Neguma: US\$ 3,850,000

⁴⁸ CRiSTAL (Community Based Risk Screening Tool for Adaptation and Livelihoods) and CEDRA (Climate Change and Environmental Degradation Risk and Adaptation Tool) are commonly used to improve climate resilience in rural development projects. Climate Proofing Development is a tool developed by GIZ to be used for broader decision-making. In addition UNDP has its own frameworks for climate resilience in development planning and community based adaptation assessments.

Baseline situation:

43. In the capacity assessment conducted during project preparation with district planners and assistant commissioners, lack of awareness and training on climate change and climate risk management emerged as a key capacity gap (see Annex 03). This, coupled with a lack of simple, practical climate risk assessment tools (and training on their use) has resulted in development projects and programmes that do not consider impacts of current or future climate-related risks in their design and implementation.
44. Training opportunities in climate risk management, especially practical on-the-job training for national and district planners, technical officers of Local Authorities and extension officers of technical Departments such as Agriculture, Agrarian, Livestock, Fisheries, Irrigation are non-existent. The need for training and new technology for climate adaptation emerged as the top capacity needs at an assessment conducted with district planners and technical departments.
45. In the baseline projects of MoED and UNDP, there is no provision for climate risk assessment tools, or climate risk management training to any officials associated with implementation. This is true of national officers, district planners, divisional planners and Village administrators and mobilisers. Training of its officers in any aspect (even in the core business of livelihood improvement or rural infrastructure) is not an integral part of these programmes. This is because the programmes ‘borrow’ required technical expertise from related government Departments which are expected to invest in the capacity of their own cadre. However, these technical agencies in turn, do not fully evaluate climate-change related risks in their own sectors as yet. As a result, there are no associated functions and mandates and subsequently no training available at any government institution on managing current or future climate risks to development, especially agriculture-centered rural development.
46. Some district and national planning officers avail themselves of the 10-day certificate course on Disaster Risk Reduction offered free of charge for public officials by the Sri Lankan Institute of Development Administration (SLIDA). SLIDA is the country’s best known public sector training institute affiliated to the Ministry of Public Administration and Home Affairs. While the course deals with disaster risk and vulnerability assessment, GIS-based tools and disaster impact assessment of infrastructure projects, it does not introduce concept of climate change, climate-related risks and climate risk assessment tools and methods. There is no discussion of community-based risk assessment, economic valuation of impacts or climate adaptation planning tools in the programme.
47. Currently UNDP’s Project for DRR through Partnership has established a number of linkages to training institutes including universities, the Green Building Council (which brings together construction sector professionals –builders, architects and designers) and the International Water Management Institute (IWMI) headquartered in Sri Lanka. The IWMI has conducted and published research on rehabilitating village irrigation systems in a sustainable and climate-resilient manner. The organisation has expert capacity to develop master trainers’ on effective agricultural water management in village systems.
48. Baseline projects are affected by a lack of coordination at both national and district level. This includes linkage between Ministry of Finance and National Planning, and implementing Ministries- such as Ministry of Economic Development (for Gama Neguma and Divi Neguma) and Ministry of Public Administration (for EU-SDDP). Coordination is also weak between the implementing ministries and Ministry of Environment and Ministry of Disaster Management, where much of the knowledge pertaining to climate hazards are generated and stored.
49. Gama Neguma and Divi Neguma projects have no processes for learning and experience sharing among districts and within districts. Processes for community learning have not yet been established by the Ministry of Economic Development, or district planning departments despite professed interest. This is partly due to financial constraints (such as budgets for community travel and small workshops) and lack of technical support to package knowledge in a manner that is easily up-taken by the community.
50. Adaptation alternative: SCCF-funded technical assistance will develop individual and institutional capacities to support the government with integrating climate change risks into development planning and

monitoring, well beyond the lifetime of the SCCF financed project. Output 2.1 is designed to increase capacity within national, district and local implementing arms of the target development programmes- Divi Neguma and Gama Neguma. The key training programmes delivered by Peradeniya University for agricultural resilience and Moratuwa University for infrastructure risk reduction will focus on technical, functional and operational aspects of capacity development. The training programmes will be integrated into the practical roll out of Component 1 as much as possible, limiting seminar-type classroom time. The aim is to create a knowledge and experience base within the development planning sphere for climate risk assessment and adaptation planning and establish it as an institutional practice among the key target government organisations. Trained officials will be used as trainers for future replication of the approach to other districts. SCCF financing will create opportunity for training in regional countries for planners and programme managers. The main recipients of the capacity building outputs will be;

- Multi-disciplinary Divi Neguma Task Force based at the Ministry of Economic Development
- Directors and Assistant Directors of Planning of 12 target districts
- District officers representing technical line Ministries especially Agrarian, Agriculture, Coast Conservation, Fisheries, Irrigation and Livestock
- Officials of Divisional Planning Unit of 12 districts
- Grama Niladhari (Villager Administrator) and Graduate Officers/ village mobilisers in 12 districts
- Extension officers for livestock, agrarian services and agriculture related to 12 districts
- Other interested public sector officials (SLIDA Programmes)

51. Output 2.1 aims to directly support targeted officials of the 12 districts (at district and sub-district level). The activities under Output 2.1 will seek to create a ‘pool’ of individuals at different levels of implementation, familiar with climate risk assessment tools and methods. This includes community or village-level mobilisers, divisional planning officers, district planning officer in the 12 target districts.
52. At SLIDA, SCCF funds will be used to expand the scope of the current Disaster Risk Reduction in Development course to include climate risk (including sector- and project level economic cost/benefit analysis) assessment and management. SCCF funds will be used to hire specialist services for curriculum development to include climate risk and economic assessment tools in this on-going course. Public sector officials trained through other project specific outputs will be engaged as resource persons. This course will be accessible to district planners and officers of any Ministry or Department as a refresher, professional training programme.
53. Improved in-service training of technical agencies that provide advice and inputs to Gama Neguma and Divi Neguma is also envisioned in Output 2.1. The aim again, is to broaden the experience of climate risk assessment and adaptation planning in the target districts. In-service training programmes will benefit from the practical application of risk assessment tools and adaptation planning in sectors that are currently experiencing a high-level of vulnerability to climate change related impacts.
54. It is understood that training alone will not create the required capacity within an agency or department. The required institutional processes have to be established to complement training. Output 2.2 will strengthen those institutional processes, especially at national level to inform the next programming cycles for Gama Neguma and Divi Neguma or their successors in the Ministry of Economic Development. The Output aims to develop and institutionalize a ‘subcommittee’ of technically competent officials and experts within the National Divi Neguma Task Force (already convened at the Ministry of Economic Development) to advise the programming of new phases of current development projects/ or new rural development initiatives. Training of members of the task force, nationally and internationally will enable them to apply climate risk assessment methods and tools in the formulation and appraisal of development projects and programmes of the Ministry of Economic Development. The subcommittee will include members from the Ministry of Environment and Disaster Management Centre, in addition to the technical experts and national officers in charge of Divi Neguma and Gama Neguma. Exposure visits to project sites will demonstrate practical application of risk assessment/ adaptation planning on the ground. This field experience provides space for this task force to derive lessons from and monitor project implementation.
55. The lack of awareness of adaptation options is addressed in Output 2.3, through youth volunteer corps, community exchange visits and media exposure for successful adaptation practices. The youth volunteer corps will be established in secondary schools engaging students between 16-19 years, to support monitoring of project. The youth corps, supported by the graduate village mobiliser in each GN, will

engage in collecting soil, water samples for scientific analysis, keeping reports on local environmental quality and biodiversity as indicators of good adaptation practice. Partnership with UNICEF and other organization supporting youth empowerment and mobilization will be further explored during the implementation phase.

56. Exchange visits for community –based organizations under Output 2.3 will generate new interest among communities in the same district, or non-project target districts facing similar climate change issues; and generate new investment proposals from the corresponding Divisional Secretariats to District Planning Units. Case studies on successful practices are important to update the NCCAS of the Ministry of Environment. Such case studies will be broadly disseminated through media outlets to facilitate broader adoption and replication including the Adaptation Learning Mechanism to maximize outreach.

Table 07: Outputs and Activities under Outcome 2

Output	Indicative Activities
2.1 Development planners, district engineers, urban and rural infrastructure planners are trained to recognize climate risk problems and apply or recommend targeted risk reduction/ risk management measures	2.1.1 Divisional and district planners, technical department representatives in districts trained to use climate risk assessment tools developed in 1.1
	2.1.2 Selected officials trained as future trainers and formed in to 'resource pools' at provincial/ national level to support other districts
	2.1.3 Village officers implementing and monitoring Gama Neguma and Divi Neguma are trained to conduct participatory assessments of community-level climate risks and adaptation needs
	2.1.4 Support SLIDA Distance Learning Centre to develop a refresher course on using climate resilient planning tools for district and divisional planning officials
	2.1.5 Introduce climate resilient planning tools to regular in-house training programmes of Agrarian Development Department, Agriculture Department, Irrigation Department, Coast Conservation Department and Ministry of Local Government
2.2 Develop institutional processes to review climate risks in new rural development investment	2.2.1 Strengthen a multi-disciplinary Climate Change subcommittee within the National Divi Neguma/ Gama Neguma Task Force to provide technical support and guidance to project execution in the 12 target districts
	2.2.2 Conduct awareness and refresher programmes for subcommittee members from technical agencies and academia based on climate change risk assessments carried out in 1.1
	2.2.3 Conduct exposure visits and familiarization tours for officials of Ministry of Economic Development, National Planning Department, Ministry of Finance to target districts
2.3 Knowledge codified and shared to enable replication and up-scaling of climate risk management beyond <i>Gama Neguma and Divi Neguma</i>	2.3.1 Establish youth volunteer corps through Divi Neguma to support the best practice exchange between other villages within the district and province
	2.3.2 Conduct exchange visits and community workshops to share best practices on climate smart local planning and climate resilient rural investments implemented through VDPs
	2.3.3 Develop case studies on successful adaptive practices in water management, land management and coastal zone management at local level for media and public awareness in all national languages

Outcome 3: Concrete adaptation actions defined and implemented in selected vulnerable villages/ village clusters in the 12 target districts to increase resilience of rural development programmes to climatic risks

SCCF Budget: USD 2,091,860

Co-finance:

UNDP EU-SDDP: : US\$ 8,000,000

MoED (Gama Neguma and Divi Neguma Budgets for target districts): US\$ 39,000,000

Baseline situation:

57. A number of baseline projects are currently investing in livelihood, rural assets and infrastructure development without adequate risk reduction measures to counter climate change and variability; and associated hazards. Gama Neguma and Divi Neguma have a country-wide reach with projects in every village. For example, Divi Neguma in 2011 reached over 2 million beneficiaries through its home garden improvement project distributing inputs such as seedlings, farming equipment, livestock, and equipment and supplies for small enterprises. Gama Neguma in 2012 delivered in 13100 GN divisions in the country (except in Northern Province) creating rural infrastructure prioritized through village development plans.
58. This assistance is delivered with very little consideration of climate change impacts on the local area. Although there is some attempt at tailoring input packages to suit agro-climatic conditions, generally the same package of seeds and implements would be delivered to districts with different climatic and soil conditions. Results of the programme in terms of real productivity increase, change in household consumption and or/ income are not measured. Instead, progress of the programme is measured in terms of the number of households reached and number of assistance ‘packages; delivered. For instance, by July 2012 Divi Neguma had distributed 240,000 vegetable plants; 387,582 fruit plants and 272,291 coconut seedlings in 25 districts.
59. Rural investments through Gama Neguma include the rehabilitation of irrigation schemes, communal wells and hand-pumps, and communal drainage and sanitation services in schools. The integration of water efficiency and water mobilization measures into these projects (such as rainwater harvesting, buffer capacity in irrigation systems, communal water tanks and reservoirs, or the promotion of drought resistant crops), as well as flood protection measures (such as the elevation of hand-pumps, rehabilitation of buffer zones and emergency drains) is limited to non-existent. In addition, there is no connection between present investments in communal water supply and the ecosystem services that can provide in situations of too much or too little water. Especially, in the coastal belt, up to 300 meters inland of the coastline, ecosystems are heavily degraded and partly fail to serve purposes of flood control, water retention and natural filtration. Rural roads, culverts and bridges are constructed without adequate assessment of the increase in climate-related disasters such as landslides and floods. Rural buildings such as clinics, schools and pre-schools are constructed with little review of climate related threats such as drought impacts to water supply, flash floods and landslide or subsidence. Rural buildings rarely consider risks of natural hazards and extreme events that can pose serious threats to stability of structures and human safety.
60. In the EU-SDDP project investment in rural livelihoods, primarily target improved farming methods and value added rural industries. However, climate risk reduction activities are not incorporated in to these baseline interventions. There is very scant mention of environmental and disaster risk management in project implementation through government and non-government agencies. Some of the key activities implemented by UNDP under the EU-SDDP’s livelihood component are; 1) improved agricultural value addition (technology, starter capital, training etc) 2) strengthened extension services and 3) Developing producer groups for effective marketing. The project document outlines that the districts targeted for support are already under environmental pressures due to the demands for land and natural resources, and are prone to drought or flooding. In light of this assessment, the project will be guided by environmentally-friendly and disaster-risk-sensitive considerations. For example, it includes activities for promoting environmentally-friendly livelihood practices such as sustainable land use and organic farming techniques. However, the project does not place this ‘environmentally-friendly’ intervention within a framework of

climate risk analysis, therefore they would be adopted as one-size-fits –all approach across project districts and would not consider necessary additional measures for increasing resiliency.

61. Although, overall, Sri Lanka is not a water scarce country, it needs to manage its natural resources effectively to ensure future food and water security and maintain critical ecosystem services in a changing climate. Already, the availability of both ground and surface waters for human needs and ecosystem services is reduced, due to declining water quality in all climatic zones, and declining water quantity in the dry and intermediate zones. The use of water saving methods and rainwater harvesting is extremely limited, and principles of climate-resilient Integrated Water Resources Management (IWRM) are rarely implemented due to lack of awareness and capacity of agriculture extension services. With increasing temperature and changing weather patterns, there will be inevitable changes in the physical, chemical and biological composition of coastal greenbelts, dune systems, and wetlands. This, in turn, will limit the protective functions these ecosystems can provide to protect community settlements and livelihood assets from the effects of flooding, drought and sea level rise. Soil and land management are other weak areas where regulations, guidelines and extension services have failed to make necessary changes in land-use in home-gardens and farmlands. Divi Neguma support for home garden productivity does not mandate soil conservation measures. Therefore support packages are distributed with little advice or incentive to improve soil fertility and moisture that is important to counteract to increasing rates of evapotranspiration and greater aridity conditions in most of the target districts.

62. *Adaptation alternative:* SCCF assistance will be integrated with the implementation of Gama Neguma and Divi Neguma in 12 districts, selected through the vulnerability analysis conducted during the PPG and under Outcome 1, related stakeholder consultations and review of climate vulnerability with district planning officers⁴⁹.

Phase 1: 2013-2015

Geographical Cluster 1: Puttalam, Kurunegala, Mannar and Anuradhapura

Geographical Cluster 2: Hambantota, Moneragala, Badulla, Ratnapura and Batticaloa

Phase 2: 2014-2016

Geographical Cluster 3: Vavuniya, Mulaitivu, Kilinochchi

This proposed sequence and geographic clustering of interventions fully follow the implementation cycle of the targeted baseline project (investments through Divi Naguma and Gama Naguma programmes). This particular order of interventions was discussed and agreed at the consultation meetings with the purpose to maximize the effectiveness and secure the project results.

63. The three clusters represent climate risk and vulnerability hot-spots in Sri Lanka. According to the vulnerability index developed during PPG and disaster statistics of the past 20 years, nine of the selected districts are highly vulnerable to climate change and the other three – Kurunegala, Batticaloa and Moneragala- are high-to-moderately vulnerable. However, during consultations with the district planners it emerged that these three districts already demonstrate high level impact to current climate change (drought and flood mainly) and have low development status, and therefore qualify for intervention under the project.

64. Building on tools and planning exercises conducted under Component 1 and supported by training and capacity-building elements under Component 2, this component will deliver concrete adaptation measures in the sectors of agriculture, water management, irrigation, fisheries and coastal zone. This support will be delivered at GN Divisions with support from divisional and district planning departments, based on the village development plans (VDPs) and village resource management plans (VRMPs) developed in Output 1.3.

65. Gama Neguma and Divi Neguma cover the infrastructure rehabilitation and rural development respectively. Similarly, the SCCF introduces two clusters of adaptation measures tailored around these two baseline investments and coinciding with the scope and development objectives of the target investments.

⁴⁹ District Planning Directors attended a stakeholder workshop conducted during project preparation. See Annex 03 for details

For example, a first cluster of the rural livelihood related adaptation measures under the Output 3.1. include 3.1.1. climate resilient, farm based agronomic measures that promote water and soil conservation (e.g. contour systems, terracing, and other measures of conservation agriculture that promotes soil and water productivity and builds resilience); 3.1.2. intercropping and crop/livestock diversification, introduction of the local varieties and breeds that withstand increasing pressures of prolonged droughts and aridity; 3.1.3. mangrove restoration to protect lagoon systems and coastal districts.

66. The second cluster of the infrastructure related adaptation measures under the Output 3.2. include 3.2.1. Protection of local watersheds and catchment forests to reinforce water retention and filtration functions essential for flood control and securing stability of rural infrastructure, farms and settlements; 3.2.2. Introduction of simple engineering solutions (e.g. elevation structures, location selection, buffers etc) to protect rural infrastructure (roads, bridges, culverts) from floods and landslides; 3.2.3. improve building code and engineering standards to protect from flood risks and ensure thermal comfort during the dry periods.

67. None of the above has been considered by the baseline investments and represents necessary adjustments in the face of anticipated climate change impacts associated with increased climate variability and volatility of flood and drought events. SCCF funds will be used to demonstrate concrete adaptation actions that will be implemented along with Gama Neguma, Divi Neguma and EU-SDDP support to communities as detailed in the table below;

Table 08: Adaptation benefit of SCCF investments in target villages

Baseline Project	Baseline Activity	Adaptation value added through SCCF-funds
Divi Neguma/ EU-SDDP UNDP Community Livelihood Development Support	Home garden development through supply of seeds, planting material, simple farm tools and technical support	<ul style="list-style-type: none"> - Increase species mix by providing seeds of local hardy vegetable and fruit species to spread climate risks; - promote multipurpose trees (providing food, fuel and fodder); - Integrate water storage and conservation measures: run-off ponds, eyebrow bunds and pitcher irrigation, drip irrigation for farms and home gardens; - Introduce soil conservation, soil moisture protection and soil enriching techniques to minimize negative impacts of dry spells; - Improve garden diversity and monitored programme for garden maintenance training and tools on IPNS and IPM.
	Small commercial farms < 1 hectare supported with planting material and implements such as hoe, spade, shovel, axe,	<ul style="list-style-type: none"> - Address soil erosion in vegetable farms, small holder tea plots and home gardens; - Introduce a mix of hardy and high value perennials to supplement farmer income (arecanut, cinnamon, vanilla, pepper in wet and intermediate zones; and cashew, timber in dry zone); - Support and increase high value fruit production, especially locally adapted varieties of banana, papaya, pineapple and mango, and coconut cultivation to increase farm capital accumulation for better climate shock absorption; - In some areas climate controlled (protected agriculture / greenhouses) for very high value crops such as cut flowers, greenhouse vegetables; - Integrate water storage and conservation measures: run-off ponds, drip irrigation etc.
	Livestock farming by supply of poultry and small	<ul style="list-style-type: none"> - Cross bred more resilient livestock to improve household nutrition and income;

	<p>ruminant stock (goats) and financial support to construct pens</p>	<ul style="list-style-type: none"> - Training in livestock and other farming options preferred by community as means for breed diversification (goat keeping, inland fish rearing); - New fodder management techniques to secure fodder availability during the dry seasons; - Introduction of drought tolerant fodder species in home gardens;
	<p>Coastal Fishery supported by provision of nets, canoes and insulated boxes for fish selling</p>	<ul style="list-style-type: none"> - Restore and protect mangrove belts as a measure of coastal protection and specifically to protect fish breeding sites - Construct freshwater ponds to improve water quality in lagoons; - Fish/ shrimp ponds in near coast areas especially north and east to ease pressure on natural systems.
<p>Gama Neguma/ EU-SDDP UNDP Community Livelihood-related Infrastructure Development Support</p>	<p>Rural water supply schemes and Community wells/village tanks for agriculture</p>	<ul style="list-style-type: none"> - Improved infiltration near groundwater source –well or tube well; - Ensure infiltration of ground water to well source/catchment; - Better salinity barriers to protect inland streams (structural and biological); - Flood proofing of water supply schemes located in flood prone areas; - Protect catchment and watershed of village irrigation sources; - Improved domestic rainwater harvesting - Improve reservoir storage by regular maintenance/ de-silting with community participation.
	<p>Rural roads- road rehabilitation generally involving laying concrete on existing gravel or tarred surfaces. Culverts, small bridges etc</p>	<ul style="list-style-type: none"> - Conduct a risk assessment of flood/landslide conditions of the area before new road construction to minimize exposure; - integrate the costs of slope stabilization /in road expansion projects; - Protect earth cutting and embankments in landslide prone areas; - facilitate roadside drainage Raise concrete roads in flood prone areas; - Larger culverts and deep drains in flood prone areas.
	<p>Multipurpose buildings including markets, preschools and clinics</p>	<ul style="list-style-type: none"> - Conduct risk assessment to minimize exposure by selecting the locations that are not in in a landslide or flood prone location; - In flood and landslide prone locations, incorporate prescribed building safety measures; - Incorporate rainwater harvesting where applicable; - In coastal locations (east, south east) put in place measures to protect from cyclones gale winds.

68. More specifically, Activities in Output 3.1 are designed to strengthen Divi Neguma and EU-SDDP's livelihood support to conflict communities. The project will build resilience to climate change in farming and land management practices in households targetted by both programmes, in areas identified as having high levels of climate risk. Homegardens are already considered climate resilient to the extent they contain a diverse range of crops and a mix of species that can withstand variability⁵⁰ and broaden the pool of crop failure risks. By upgrading Divi Neguma agricultural support programme to include incentives for water conservation and soil conservation, SCCF funds will promote home gardens that can withstand higher levels of climate-related variability expected in the future.
69. Concrete adaptation actions delivered on the ground include;
- 1) Soil conservation measures such as live fences, terraces, trenches and contour drains to prevent erosion caused by intense rainfall. To protect soil moisture during drought, practices such as mulching, organic matter addition will be promoted. These will be applied in home gardens and small farms adjacent to the household, in which Divi Neguma will invest in providing primary support such as seeds, agricultural tools, livestock and perennial crop planting material.
 - 2) Water conservation at household and community level include roof-water harvesting in to ponds and cement tanks, carving out small agricultural water harvesting ponds, micro irrigation, rehabilitating community ponds and village tanks.
70. For Divi Neguma households, this would mean project-supported investment in establishing/improving these resource management practices. Financial support would be provided through registered CBOs such as a Farmer Organisation with an established accounting system, and monitored by village level agrarian development officer. Households targetted through the EU-SDDP project will be similarly supported to improve agriculture related natural resources management.
71. Activities 3.1.2 will build on the crop recommendations developed under Output 1.2, and the training received by village extension officers in Output 2.1, to promote climate sensitive cropping/farming practices. This includes drought and flood resilient rice and annual crops; promotion of traditional crops bred with improved resistance to climatic extremes; revival of integrated systems of crop-livestock; perennial high value crops (fruit, timber, spices) in home gardens; and protected agriculture for specialised markets. These interventions will demonstrate the adaptation benefit of climate-smart farming through selection of resilient crops, resilient livestock breeds, diversifying farms to broadbase risk, ensuring income through perennials and livestock if crop loss occurs and ability of traditional varieties to withstand climatic stresses.
72. Activities under 3.1.3 are designed to support coastal communities living by; and living off brackishwater systems. Lagoon-based coastal livelihoods are increasingly at risk from rising salinity, drought and flood. The activity aims to improve coastal natural resource management, based on recommendations of the Village Resource Management Plan. Concrete adaptation activities will include mangrove area conservation and restoration and management of lagoon system with community based fishing organisations. These activities will support the longer term sustainability of coastal livelihoods dependent on brackishwater fish and prawn. The improved natural resources will help maintain the balance of the fragile ecosystem which supports these communities; it will also provide a natural buffer against flood and coastal erosion exacerbated by climate change. Target households/communities will benefit from Divi Neguma baseline support for fisheries such as fishing tackle, ice boxes and small canoes etc.
73. Table 09 provides an overview of recommended adaptation actions that could be integrated in to Divi Neguma and EU-SDDP's livelihood support work. However, this broad menu of actions will be tailored to

⁵⁰ Marambe et al; Farmer Perception and Adaptation to Climate Change in Home Gardens of Sri Lanka. Faculty of Agriculture, University of Peradeniya 2011

each location through risk-integrated VDPs and prioritisation based on economic and technical feasibility (conducted in Output 1.2). These adaptation actions were developed through PPG consultations, the sectoral adaptation action plans of the Ministry of Environment⁵¹ and disaster management guidelines developed for infrastructure and roads. The actions have been reviewed by an expert panel that includes water resource professional, agriculture specialists, crop scientists, civil engineers involved in protecting structures against disaster risk during PPG. The actions have been endorsed by the Ministry of Economic Development as practical and applicable in their rural development programmes.

74. In Output 3.2, concrete adaptation measures detailed in Table 08 above will be integrated in to Gama Neguma investments in irrigation rehabilitation, rural water supply, roads and rural buildings in 60 villages in the target districts. The integration will be based on community-based risk and vulnerability assessments conducted through VDP and VRMP processes; and guidelines developed in Output 1.2. In each district 5 villages with high climate risk will be identified to implement adaptation actions. SCCF funds will be used, additionally to the Gama Neguma allocation per village project, to ensure sustainability and climate resilience of planned infrastructure development in each location. Climate resilience measures such as wide culverts, side drains, gabions and bunds will be built in to rural roads built through Gama Neguma or EU-SDDP, buildings such as markets, schools and community halls will be designed according to standards set out by the Disaster Management Centre for common climatic hazards. Irrigation infrastructure will be climate-proofed by protecting catchment areas, preventing erosion in to storage reservoirs and increasing storage depth of village tanks where possible. All these measures will support rural communities to withstand better the impacts of flood and drought.
75. The actual ground level work will be sub-contracted to community based organisations such as Farmer Organisations (FO), Welfare Societies and other CBOs that will be established through project, and approved by the Ministry of Finance. The sub-contracting procedure will follow Gama Neguma guidelines established by the Ministry of Economic Development.

Table 09: Outputs and Activities under Outcome 3

Output	Indicative Activities
3.1 Increasing climate resilience in rural livelihoods through climate smart VRMPs	3.1.1 Implement climate resilient water and soil conservation measures through an upgraded Divi Neguma support package 12 districts
	3.1.2 Promote intercropping and crop/livestock diversification for improved livelihood resilience in Divi Neguma households 12 districts
	3.1.3 Implement mangrove restoration to protect lagoon and coastal fishery in 7 lagoon and brackish water systems in target coastal districts
3.2 Rural Infrastructure constructed through the <i>Gama Neguma</i> Programme in 60 villages incorporating climate and disaster resilience measures	3.2.1 Protect local watersheds and catchment forests to ensure resilience of minor irrigation works and rural water supply schemes implemented through Gama Neguma in 60 villages
	3.2.2 Protect rural roads, bridges, culverts from climate induced floods and landslides through simple engineering techniques in 60 villages
	3.2.3 Protect rural buildings from climate induced natural disasters such as flood, drought and

⁵¹ Seven Sectoral Plans are under development. These include agriculture and food security; water resources; health; infrastructure; coastal; urban planning and disaster risk reduction. Climate Change Secretariat, Ministry of Environment 2012. Under review

	landslide through improved climate resilient engineering
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2.5 Key Indicators, Risks and Assumptions

75. The results framework in Section 3 provides greater detail on indicators, including baseline values, project targets and means of verification. Risks and assumptions are presented in this logical framework analysis, and analyzed below. The key project risks and measures to mitigate those risks include the following:
76. The proposed project will be successful if it can successfully facilitate a shift in thinking within national government entities (Ministry of Economic Development, Department of National Planning), district/divisional administrations and local authorities that the integration of climate change adaptation with reconstruction and development planning makes economic sense in the long term. The greatest risk here is inertia within key stakeholders towards change, and a preference to prioritize speed over quality of infrastructure investments. Especially in the target oriented development programmes in the Ministry of Economic Development, it will be a challenge to adjust mindsets to focus on quality and not just quantity of inputs and investment.
77. This risk will be mitigated by creating highest political and geographic visibility for local-level adaptation activities, which are closely connected and co-branded with the reconstruction efforts undertaken by the Ministry of Economic Development. Involvement of the National Planning Department and Finance Ministry will ensure that there is a financial incentive for district planning secretariats to propose annual plans which take climate risk issues into account. Media reports, ministerial communications, videos and widespread dissemination of project-related lessons will provide incentives and positive feedback to local authorities for doing things differently. UNDP, through its track record working with local NGOs and CBOs in the target areas of the proposed project, has already established a network of partners who have been engaged in disaster risk assessments and community action for disaster risk reduction.
78. In addition, even among technical departments that recognise climate change risks, coordination and cooperation needs to improve. Coordination is strengthened through project activities in Outcome 1 and 2, and again in the implementation modality where national and district-wise advisory groups will be set up to support planning.
79. In terms of environmental risks, unfavorable climatic conditions may occur during the project life cycle and impact on the investments made by the project. This is especially relevant for Component 3 which deals with tangible investments in community-based water resources management and the rehabilitation/restoration of ecosystem-based adaptation services in climate risk hot spots. An important assumption is that these climatic extremes will remain within local coping ranges, and that existing institutions and community groups will rapidly absorb and act on the new skills, technical approaches and knowledge acquired.
80. A detailed risk analysis was conducted during the project phase and both the risks and mitigation measures are outlined in the risk and mitigation table below.

Table 10: Risks to Project Delivery and Countermeasures Identified

Description of Risk	Impact and Probability ⁵²	Risk Management Strategy	Owner	Date Identified
1. Strong focus on hardware delivery in rural development programmes of MoED without climate risk assessment and 'soft' interventions for capacity	I= 3 P=4	The project funds mainly aims to overcome this deficit in current rural development planning and implementation through activities in component 1	MoED	June 2012

⁵² Range 1-5, where 5 is highest

building		and 3		
2. Impacts of climate change are not assessed at district or local level making it difficult to design for location-specific adaptive actions	I=3 P=3	At the PPG stage an assessment of vulnerability at district level was conducted and verified by district planning officials. Similar exercise has to be conducted at sub-district level and village-level during project implementation. Each infrastructure project will have its own risk assessment	MoED, UNDP and MoLG	June 2012
3. Simplified risk assessment methodologies are not available for training purposes	I=2 P=3	Project funds will be invested to design and train officials in simplified risk assessment methodologies. There is sufficient funding for this activity	UNDP	June 2012
4. Inter-agency coordination and data sharing is weak and could hamper effective delivery	I=3 P=2	The TAC established under the project management arrangements will try to overcome this risk. Technical agencies will be engaged directly in implementing and monitoring project activity	MoED UNDP	June 2012
5. Continued financing for climate risk assessment and adaptation does not continue after the project	I=3 P=2	Demonstrating the cost-effectiveness of adaptation interventions is part of project activity in Component 3. This, coupled with exposure visits to project districts by officials of Ministry of Finance and National Planning Department will ensure continued financing for climate risk reduction	UNDP MoED	June 2012
6. Future maintenance of community structures created/ modified through SCCF funds	I=3 P=3	The project will be adding value and climate resilience to investments already planned and carried out through baseline projects. In that sense, the investments are sustained through the maintenance agreement of the baseline activity. Community infrastructure is either maintained through the Local Government (roads, buildings, markets) or by the CBO (Farmer	MoED	May 2013

		Organisation/ Women's Organisation). In terms of household-level investments such as home gardens, small farms future maintenance will be part of the monitoring programme of village level extension officers; and beneficiaries will be incentivised to up-keep investments in soil and water conservation (see Annex 9 for details)		
7. Building codes and guidelines developed through the project are not adopted by planners, architects and local authorities	I=2 P=3	This project will work with other related donor-funded initiatives in disaster risk reduction and local service delivery improvement to ensure that building codes and design guidelines are integrated in to practice. Working with the Green Building Council the project will ensure that climate smart planning and climate risk reduction is fully integrated in to regular training programmes for builders, planners and architects.	MoED	June 2012

Table 11: The main indicators for the project objective and each outcome

Objectives	Indicators
Increase the resilience of communities to climate change induced hazards through integration of climate smart policies and actions in to development planning and budgeting.	No of sectoral adaptation strategies recommended by Ministry of Environment approved and budgeted by the Departments of Agriculture, Agrarian Development, Coastal Conservation and Ministry of Economic Development
	Climate risk assessment is an established procedure and an integral part of development planning at national and district level
Outcomes	Indicator/s
Outcome 1: National rural development programmes Divi Neguma and Gama Neguma integrate climate risk information and adaptation measures in 12 vulnerable districts	<ul style="list-style-type: none"> No of Gama Neguma and Divi Neguma projects modified through climate risk assessments at GN and Divisional Level in 12 vulnerable districts.

<p>Outcome 2: National, district, divisional and local technical staff have sufficient technical capacity to identify and integrate climate risk considerations in designing, approving and implementing development projects under the Gama Neguma and Divi Neguma programmes</p>	<ul style="list-style-type: none"> • Number of staff within national, district, divisional and local planning units in 12 vulnerable districts reported to apply climate risk assessment tools and methods to new rural investment projects • No of stakeholder groups reporting enhanced awareness of climate change risks and adaptation measures at national, district and village levels in 12 vulnerable districts
<p>Outcome 3: Concrete adaptation actions defined and implemented in selected vulnerable villages/ village clusters in the 12 target districts to increase resilience of rural development programmes to climatic risks</p>	<ul style="list-style-type: none"> • % increase in annual yield of farmers (disaggregated by gender) as a result of project introduced adaptation measures implemented in home gardens and small farms • Total value of community driven rural infrastructure built following the building codes, construction controls and guidelines for climate and disaster risk reduction

2.6 Cost effectiveness of Interventions

81. Cost-effectiveness analysis of this project is based on the review of several alternative risk reduction measures to build resilience of communities facing climatic hazards. Plausible alternatives considered during the design of this project are described below, with an analysis of their cost effectiveness in relation to the proposed project strategy and resilience results it aims to deliver.

Investment in infrastructural climate risk reduction

82. Protecting rural and urban infrastructure from climate-related hazards involves mostly structural and engineering interventions related to disaster risk reduction; for drought and coastal erosion, some ecosystem level risk reduction methods are proposed such as protecting or re-foresting catchments, and in the case of coastal area, protecting sand dunes and beaches. Naturally the cost of engineering solutions is high. Flood proofing a rural road can cost over 50% of the original estimated cost depending on the severity of risk and ground conditions. Landslide-proofing a rural road on mountainous terrain could cost over 70% of the original estimate.⁵³

83. The project will introduce climate risk management in infrastructure as part of climate-resilience building in the Gama Neguma programme. However, this investment is delivered through village development plans and improved district development plans, based on already funded infrastructure through Gama Neguma budget. Channeling project investment entirely in to infrastructure-based solutions will not support adaptation needs related to livelihood that come up through VDPs. Focusing on infrastructure risk reduction alone would be the most high-cost approach to the project. In addition, investing heavily on infrastructure risk reduction would have limited the scope of the project- both in terms of resilience results and geographic spread. There would be less financing available for risk-integrated planning and capacity building for a broader scope of rural development needs.

Increased livelihood diversification and off-farm employment creation

84. Diversifying the livelihood base is considered an important risk reduction strategy for rural agricultural communities, especially ones that are heavily dependent on rainfall for crop cultivation. Promoting multiple sources of food and income has proven to be a successful strategy in remote rain-dependent farming areas in Sri Lanka.⁵⁴ However these strategies are still based on agriculture- such as fishery,

⁵³ Disaster Management Centre, expert committee for infrastructure design controls

⁵⁴ Nissanka, S.P., B.V.R. Punyawardena, K.H.M.S. Premalal and R.O. Thattil, 2011. Recent trends in annual and growing seasons' rainfall of Sri Lanka. Proceedings of the International Conference on the Impact of Climate Change in Agriculture. Faculty of Agriculture, University of Ruhuna, Mapalana, Sri Lanka. December 20, 2011. Pages 249-263

livestock keeping or increased perennial crops such as fruits, spices and timber. Due to the lag in infrastructure, roads and electricity primarily, rural industry remains very low and employment opportunity in industrial sector is negligible in the target districts.

85. Even agricultural based income diversification is rife with lack of basics- technology, information and markets. This gap is being addressed by the EU-SDDP in their focal districts, by encouraging agriculture value addition, small industrial units for processing, producer groups for marketing, and micro-finance for start-up capital. The baseline project of Divi Neguma is highly focused on improved agricultural production. During PPG consultations, it emerged that while diversification is necessary, improved productivity of land should be the key focus of the project. Investment in diversification also requires baseline investment in social mobilization, technology supply and infrastructure such as roads, markets etc that cannot be funded through SCCF finances. Therefore, income diversification as a strategy for adaptation is not the focus of this project, although SCCF funds will support baseline initiatives related to rural industry of Divi Neguma and EU-SDDP to improve their resilience through activities outlines in Annex 1.

Investing in improved early warning systems for common climate-related hazards

86. Early warning systems for flood, landslide and drought are necessary to protect rural development investments from climate-related hazards. Failure of early warning is attributed to large scale crop failure and losses during the past three years. Renewed interest in EWS in Sri Lanka in years following the Indian Ocean Tsunami 2004 resulted in sophisticated coastal warning towers for possible tsunami threat. However, more regular hazards such as flash floods, landslides and drought have not received the requisite attention or funding. The Department of Meteorology issues bad weather warnings based on satellite readings but there is no indication of severity or duration of rainfall. It is impossible at present to warn of localized flash floods, or even river floods with sufficient advance notice for people to protect crops or other livelihood assets. Prediction of drought with any level of accuracy is near impossible with present levels of technology and could even lead to mal-adaptation if not backed by technical and information support at village level. Of the three common climatic hazards, only landslide warning is carried out with a level of scientific accuracy. Landslide EWS based on rainfall data and risk maps developed by the National Housing and Building Research Organization. But even this warning is issues through mass media and mobile communications networks, and does not have a local relay system that reaches the most remote and vulnerable people.
87. In a combined effort to reduce agricultural losses due to shifting seasons, Department of Meteorology and the Department of Agriculture is currently looking at developing seasonal forecasts to assist farmers adjust cropping cycles. The initiative is being supported by the SAARC Meteorological Centre based in Dhaka.⁵⁵ However this effort is still at preliminary stages, and cannot yet precisely forecast the rapid shifting of climatic conditions within a season.
88. Generating and disseminating early warning, while technically challenging, is just one aspect of adaptation. The more important aspect lies in how communities would use this information to transform their agricultural activities. This requires high levels of competence among grassroots extension services to support farmers with information. Such extension support systems are not in place in farming districts, especially project target districts with low human development.
89. EWS as an adaptation action is a high-investment with limited effectiveness given the current context of technology limitations and grassroots dissemination practice. Its impacts would have been limited geographically and sustainability would be questionable given the drawback in capacity at national and sub-district level in terms of technically adept personnel. In this light, EWS were not considered for financing under the SCCF project. However, by building the capacity of grassroots level mobilisers and extension services to reduce climate change risk in their local areas; the project supports local capacity for better preparedness in high risk areas.

⁵⁵ The SAARC (South Asian Association for Regional Cooperation) has been established by common agreements of the governments of South Asia to share Meteorological data, research and information across the region.

The project's cost-effectiveness is further improved by the below outlined factors;

-Project interventions focus on improved, risk integrated planning and coordination that will result in optimal use of local development resources, including technical expertise and finances.

90. Project target districts were selected through systematic analysis of climate risk and vulnerability across all 25 districts of the country. For more cost-effective implementation selected districts have been organized in to three geographical clusters. The clustering recognizes that vulnerability and risk span across administrative boundaries, making it possible to address a localized hazard situation that could spread over divisional or district boundaries. Geographical clustering will support cost-effective delivery and management of project interventions, especially planning, risk assessment and training outputs/activities. Clustering will also ease monitoring challenges (travel, personnel and time) at the MoED-based Project Management Unit.

91. Component 1 proposes to modify existing local guidelines for agriculture and infrastructure development using climate risk information generated at district and divisional levels. The project will later use this information to implement concrete adaptation actions in Component 3. Relevant technical agencies mandated to manage irrigation, agriculture, coastal zone and water resources will be engaged in risk assessment, adaptation needs identification and prioritizing through cost-benefit or multi-criteria analysis. This is cost effective because by exposing district-level technical officers to these exercises the project will build local capacity to evaluate climate risks in the future; create trainers for other districts and also enable these officers to prioritize risk reduction activities in their own sectoral plans for the districts. Furthermore, by introducing economic tools such as cost-benefit analysis, multi-criteria analysis to prioritize adaptation options within district development plans, the project supports faster integration of these tools in to regular planning processes. This includes the programmes technical departments such as Agrarian Services, Agriculture, Coast Conservation and Irrigation in each district.

-Well-funded baseline projects with the financial capacity to absorb additional costs of adaptation for replication and up-scale

92. This project is designed to be fully integrated in to the main rural development programmes of the Ministry of Economic Development. The project therefore lends its financial and technical support to bring in climate change smart elements to the existing Gama Neguma and Divi Neguma programmes. The project will use the same implementation and monitoring platforms established by the MoED at national, district and sub-district levels. The second baseline initiative is a livelihood development project implemented in seven conflict affected district with EU-support. This project is based in the Ministry of Public Administration and will be implemented through the district and divisional secretariats.

-A menu of low-cost, no-regrets adaptation options developed based on rigorous climate risk assessment and local vulnerability mapping.

93. The project will promote a menu of low cost adaptation measures that will support farmers face current climate variability and future uncertainty. The approach of conservation agriculture coupled with reinforcement of ecosystem services through water, land, catchment and coastal protection serve as strong risk reduction measures with established sustainability outcomes beneficial for both farmer and the ecosystem. Structural risk reduction through enforcement of hazard zonation, building codes and guidelines and land-use controls of Disaster Management Centre is promoted for rural infrastructure projects financed by Gama Neguma and EU-SDDP. In carrying out these risk reduction measures, the project will work with a range of partners (mentioned in section 2.6 below) whose initial work in the areas of disaster risk mapping, natural resources mapping, guidelines and codes, community based ecosystem restoration will contribute information and experience to the project.

2.7 Coordination with Related Initiatives

94. In the PPG phase it has been verified that SCCF financed activities are not duplicated through any other project. Currently, there is no project in Sri Lanka looking at integrating climate change adaptation and climate risk management into large-scale, rural development projects, whether government or donor-funded. A few pilot scale climate change adaptation are currently implemented at community-level

through local NGOs. There are a number of parallel development projects and programmes being implemented, especially in conflict affected districts of the north and east. The Ministry of Economic Development acts as liaison for the majority of development-oriented donor projects, including all projects implemented in the northern and eastern provinces. As such coordination can be achieved simply through implementation out of the same Ministry. At national level, the Minister of Economic Development calls a quarterly meeting of all donor-funded projects and programmes under the Ministry.

95. In addition, there are projects such as the UNDP-funded Road Map for Disaster Risk Management, and ADB-funded National Climate Change Adaptation Strategy that seek to define and integrate risk reduction measures in to the development process. The implementing approach to the project has been designed to coordinate with these different projects and programmes as far as possible, to minimize overlap and maximize knowledge sharing. At national level coordination between technical agencies and SCCF project is ensured through the technical advisory committee for climate change (see implementation arrangements below).
96. At district level, the District Secretary calls a DCC (District coordination committee) meeting every month. At this meeting, progress of all projects and programmes are presented and discussed. The DCC is chaired by the senior-most Member of Parliament representing the district and co-chaired by the District Secretary. At both these meetings progress of Gama Neguma and Divi Neguma are presented, providing an opportunity to share project learning, and also seek further avenues of integration in to development activities. Some development activities (irrigation rehabilitation and coastal zone development) fall within the mandate of each respective Ministry/ Department. Such initiatives will be coordinated through the national and district level Divi Neguma Task Force established and operationalized through the project.
97. The project will coordinate specifically with the projects and programmes listed below through the relevant technical department or government agency, represented in the national Technical Advisory Committee;
 - The SPA-funded and IFAD-supported project **‘Participatory Coastal Zone Restoration and Sustainable Management in the Eastern Province of post-tsunami Sri Lanka’** (2008-2015), While the initial emphasis of this seven-year project is on the development of scientifically-based, low-cost, community-based approaches to rehabilitating three key coastal ecosystems – mangroves, coastal lagoons, and sand dunes – at specific sites in the Eastern Province, it provides a very good platform to share lessons and enable replication of its approach in other vulnerability hot spots along the coast. The SCCF project will build on the experiences and techniques demonstrated by this project and expand the reach of community-based adaptation through participatory ecosystem restoration to additional vulnerability hot spots on the selected coastal districts. This will be achieved by including the Coast Conservation Department (CCD) the implementing agency in to the National Task Force, and Task Force of coastal districts.
 - The World Bank-funded **North East Local Services Improvement Project (NELSIP)** seeks to improve the delivery of local infrastructure services by Local Authorities (LAs) in the Northern Province and Eastern Province of Sri Lanka. The first component of the project is related to infrastructure service delivery: The objective is to improve the quantity and quality of public goods delivered and maintained by local authorities, which includes the rehabilitation of rural roads, drains, culverts and bridges, public buildings, markets and fairs, waste disposal sites, rural water supply schemes, parks, recreation facilities and libraries, nursery schools, playgrounds, and dispensaries- all of which are closely related to deliverables of Gama Neguma. The project is implemented through the Ministry of Economic Development.
 - The Road Map for Disaster Risk Management Project (UNDP funded) at Ministry of Disaster Management that has formulated district-wise hazard profiles for flood, drought, landslide, tsunami, coastal erosion and inundation, and cyclone. The Project is currently working on building codes for disaster resilience. The project tried and tested disaster-risk incorporated village development planning in several villages of the northern and eastern provinces.
 - GEF-SGP’s **Community-Based Climate Change Adaptation Project** which implements pilot scale adaptation projects across the country. The project has used community-level risk assessment tools and a number of locally modified adaptation strategies to overcome climatic hazards in several high-risk agro-

ecological zones. Seven CBA projects were implemented by and another five are in the pipeline. Project locations were based on a desk review of vulnerability to current climatic trends by an expert panel. In each location the primary focus is to increase communities' adaptive capacity through long and short term interventions in improving natural assets linked to livelihoods such as soil quality, improved tree cover and access to water. The SCCF-project borrows heavily from water-management and land management experience of these CBA projects.

2.8 Sustainability of Project Interventions

98. The sustainability of project interventions is measured in terms of continuity of project-funded interventions beyond its lifespan - this includes planning capacity, training programmes and investment in climate resilient development. Overall sustainability of project results is ensured through the implementation modality which is fully integrated to the delivery of Divi Neguma and Gama Neguma. Community-ownership of project interventions, vis-à-vis village development planning process is another aspect of sustainability. By creating technical support linkages (through the advisory task force at national and district level) the project ensures that rural development programmes benefit from scientific/technical expertise available in country, beyond project investment period. Future Gama Neguma and Divi Neguma and related investment programmes will secure necessary budgets for climate resilient measures that have been successfully tested and proved cost-effective through the project.

Sustainability of project results under the Component 1:

99. Ministry of Economic Development⁵⁶ and technical agencies, currently lack technical skills tools and methods necessary to develop a culture of resilience in planning and implementing rural development.. Component 1 will introduce climate risk assessment tools, that are applicable at district and sub-district planning levels., In the target districts, climate risk assessments will be integrated into VDPs and VRMPs process. By integrating climate risk at this lowest level of rural development planning, the project ensures that climate risks and adaptation measures are reflected in Divisional and District plans. Adaptation strategies proposed by communities will be technically refined and prioritised by the district Divi Neguma Task Force. These strategies will be incorporated into each district's own plan Gama Neguma and Divi Neguma, ensuring their implementation even after project period. Moreover, district planners and technical departments will have the necessary information and tools to whet future rural development investments against current and predicted climate change.

100. The sectoral climate risk assessment tools will be 'owned' by district level agencies representing key economic and livelihood sectors. Training and technical capacity development measures of the project will develop their ability to upgrade these tools with new information, and adopt and customise other tools available internationally.

Sustainability of project results under the Component 2:

Sustainability of capacity building activities is ensured through;

- Training of trainers at national, district and local levels who would be utilised by MoED to train counterpart officers in other districts;
- Integrating climate risk assessment methodology into regular in-service training programmes of Departments of Agriculture, Irrigation, Agrarian Development, Coast Conservation and the other relevant entities ensures that risk evaluation methodology is widely understood outside of the target districts;
- Upgrading the current programme on Disaster Risk Management at SLIDA to offer climate risk assessment tools and methods will support continued education and exposure of public sector officials beyond project implementation period.

101. Exposure field visits to project sites for top officials⁵⁷ of the Ministry of Economic Development, Ministry of Finance and National Planning Department will demonstrate concrete adaptation practices and

⁵⁶ Minister of Economic Development, Hon. Basil Rajapakse at the Consultative Planning Workshop in July 2012; and later Ms. Chandra Wickremasinghe, Additional Secretary Regional Planning at final stakeholder workshop in November 2012

⁵⁷ Secretary, Additional Secretaries and Directors of the Ministry of Economic Development

their initial results in reducing climate risks and current vulnerabilities (this includes the demonstration of increase in yields, improved water availability through demand side management options, new supply infrastructure, such as water harvesting technologies, etc). This will lead to further adoption and integration into the donor-and government funded programmes that target the priority Northern and Eastern Provinces of the country.

102. Community exchange field visits will also be organised to demonstrate technology and effectiveness of risk-integrated planning and on-the-ground adaptation measures. Demonstrated results will facilitate the process of replication as part of the VDP/VRMP processes. Economic evaluation of results will support the continued financial assistance to resilience building actions through development programmes financed by Ministry of Economic Development and donor community.

Sustainability of project investments in Component 3;

- Concrete investments based on community-driven adaptation needs identified during VDP and VRMP process
- Ground level adaptation action will be implemented through CBOs such as women's groups and farmer organizations strengthening local ownership and responsibility. These organizations will be tasked with future maintenance of natural assets developed through project intervention such as catchment forests, sand dunes and mangroves.
- Continuity of land use and water use best practices will be supported by Divi Neguma programme in the target districts. The MoED proposes to provide an upgraded package of farm support (including seeds, implements, livestock and perennial seedlings) to households that adopt and maintain land-and-water initiatives promoted through the project
- Involvement of local authorities and technical departments such as coast conservation, irrigation, agriculture and agrarian development for post-project maintenance of structural assets such as village reservoirs, rural roads and irrigation channels.
- The project will be adding value and climate resilience to investments already planned and carried out through baseline projects. In that sense, the investments are sustained through the maintenance agreement of the baseline activity. Community infrastructure is either maintained through the Local Government (roads, buildings, markets) or by the CBO (Farmer Organisations/ Women's Organisations). A written agreement on maintenance arrangements will be reached before baseline and project invested is made. In some cases, local technical agencies Agrarian Development Department (for small village reservoirs) and Coast Conservation Department (for mangrove belts on coastal lagoons) are responsible for the maintenance and upkeep of community investments. In terms of household-level investments such as home gardens, small farms future maintenance will be part of the monitoring programme of village level extension officers; and beneficiaries will be incentivized to up-keep investments in soil and water conservation
- Village development officers and agrarian officers appointed by the Ministry of Economic Development and trained through the project will remain in the village for at least five years, ensuring continuity of processes and activities. It also enables close monitoring of maintenance of project-funded assets.

The project's exit strategy involves the following:

- Leaving adequate capacity within Ministry of Economic Development, and allied technical agencies to conduct climate risk assessments in key livelihood sectors.
- Strengthening the Divi Neguma Task Force at national and district levels to be able to routinely factor in climate risk and resilience measures into future programming of Gama Neguma and Divi Neguma.
- Demonstrating a set of concrete adaptation actions on the ground in risk-prone locations that could be easily adopted and integrated in to Gama Neguma/Divi Neguma regular programmes.
- Facilitating risk-integrated rural development plans that can draw additional investment from government, private sector and donors.

2.9 Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

104. At National level the project's main stakeholders are Ministry of Economic Development, Ministry of Public Administration, Ministry of Environment and the Divi Neguma Task Force.

105. The project will be implemented through the Rural and Regional Development Units of the Ministry of Economic Development. The Project Board will include an official from the Climate Change Division of the Ministry of Environment (See implementation arrangements below). The Secretary, MoED will appoint a National Project Director to manage project activities and head the Technical Advisory Committee or National Divi Neguma Task Force⁵⁸. The Task Force will have representation from the national ministries and departments representing sectors important to rural development (see Table 05 below). This includes National Planning Department and Ministry of Local Government.

At district level, the project's main stakeholders are;

- The District Secretary (Chief Administrator) of each target district
- Director Planning of the District Planning Secretariat
- District Divi Neguma Task Force for technical support and oversight

At sub-district level

- Divisional Planning Units
- Village level mobilisers
- Grama Niladhari (GN) Officers of GN units where Component 3 activities will be implemented
- Agrarian Extension Officer of GN units where Component 3 activities will be implemented

106. Project activities will be implemented by community-level organizations that already exist in villages. New community groups will not be formed. Project implementation at grassroots, including the actual implementation of baseline investments will be handled by Farmer Organizations, Rural Development Societies and Women's Societies which exists in every village. This is the implementation mechanism for Divi Neguma, Gama Neguma and EU-SDDP as well. There are well-established mechanisms and government norms through which these communities based organizations can directly engage with the Divisional or District planning units, handle money and provide accounts. Therefore special/new norms and procedure for engagement implementation is not necessary for project implementation.

107. CBOs through which project activities are carried out consist of target beneficiaries. Therefore community voices could be expressed through participatory implementation of the planned adaptive actions. CBOs will be part of the Divisional Project Committee and give in out in to the technical design of the adaptation actions.

108. During the PPG, MoED consulted with a range of other officials including officials of the Ministry of Finance, National Planning and Directors of district planning units of all 25 districts. A summary of these workshops and meetings is in Annex 5. The table below summarizes the key stakeholders involved in project development and implementation; and their role in the project. A graphical representation of the stakeholder involvement plan is presented below in implementation arrangements in Figure 7.

Table 12: Roles of Key Stakeholders

Stakeholder	Project-relevant responsibility/role
<i>Ministry of Economic Development</i>	
Minister of Economic Development	Policy guidance and implementation directives to support project execution nationally and in districts
Secretary, Ministry of Economic Development and Secretary, Ministry of Finance	Policy and financial guidance on project implementation structures and disbursement method. Will be the chair of the National Project Steering Committee and leadership to the project
Additional Secretaries for Rural Development and Regional Development, Ministry of Economic Development	Implementation support to the project support unit in the Ministry of Economic Development
Director, Divi Neguma, Ministry of Economic Development	The key administrators of the project implementation. These directors will support the day to day activities of the project support unit and provide technical guidance to district-level directors
Director, Gama Neguma, Ministry of Economic Development	
Regional Directors, Ministry of Economic Development	Provide implementation support in the relevant districts/ district clusters under their purview. These Directors will play a coordination role and will be especially important in capacity building and up-scaling lessons to non-project districts
<i>Other National Ministries and Departments in the Task Force</i>	
Director, Climate Change Division, Ministry of Environment	The Ministry of Environment will provide policy direction and guidance for the project; and ensure that interventions are in line with the proposed adaptation strategies and environmental management policies. The Ministry will play a key role in the project technical committee and National project Steering Committee
Director, Policy Planning Division, <i>Ministry of Environment</i>	
Ministry of Finance	The key policy and budgetary decisions are made here. Assistance of the Ministry of Finance is sought to upscale and fund some urgent and pertinent adaptation actions that will be field tested through the project.
Ministry of Agriculture Ministry of Local Government	Both ministries will play key roles in the project technical committee and National project Steering Committee. They will be implementing partners of the Project
Department of Agriculture	These are technical Departments that are already working closely with the Ministry of Economic Development in implementing Divi Neguma and Gama Neguma. They will play a key role in the Divi Neguma Task Force, which is the project's technical advisory committee. These Departments will provide technical support through their research and development; technical extension and advisory services. They will be members of the project's technical committee
Department of Minor Export Crops	
Department of Livestock Development	
Department of Agrarian Development	
Disaster Management Centre	
Coast Conservation Department	
National Aquatic Development Authority	
Department of Small Industries	
<i>Multilateral Agencies funding rural development projects</i>	
World Bank	Funds and implements a number of projects for

	reconstruction of former conflict affected districts of Sri Lanka, including community infrastructure development and rehabilitation. Some lessons from the World Bank's environmental safeguards programme were incorporated in designing adaptation in community infrastructure built through Gama Neguma
UN Food and Agriculture Organisation	Works widely with agriculture and fisheries sectors, especially in conflict affected districts.
GEF Small Grants Facility	SGP through its network of local organisations has worked in designing and field testing community0-based adaptation models in different agro-ecological zones of the country through GEF and Ausaid funded projects. These projects have proved to be strong building blocks on which large scale adaptation actions for Gama Neguma and Divi Neguma have been designed.
<i>International Organisations with climate adaptation experience consulted during the PPG</i>	
International Water Management Institute	A large international research organisation headquartered in Sri Lanka and has produced large amounts of research on river basin management, small tank rehabilitation and water quality in Sri Lanka. IWMI will be a key knowledge generation, research dissemination and training partner of the project
Practical Action	An international NGO working with appropriate technology, community development and local solutions. Practical Action implemented some of the first community-based adaptation projects in the country testing out salinity-resistant rice varieties and drought management through agronomic changes.
Ethical Tea Partnership	An international network that certifies tea products based on community and environmental standards. In Africa the ETP has conducted a number of climate change adaptation projects with tea growers and will support the project to implement some of these activities in tea growing vulnerable districts such as Ratnapura and Badulla.
Community Based Organisations such as Farmer Organisations (FO), Fishery Development Organisations, Rural Development Societies (RDS) and Women's Societies	These exist in every village in differing forms of organisational capacity. These organisations are the grassroots targets for the baseline projects and the mechanism through which rural development investment is conveyed in to villages. Many of these societies/organisations can handle direct contracts from government, have their own bank account and are registered with the Divisional Secretary.
<i>Academia and Training Institutes consulted during the PPG</i>	
University of Peradeniya	Conducts research on agricultural adaptation, crop management, agronomic practices and supports the Department of Agriculture to issue seasonal forecasts with crop recommendations etc

University of Moratuwa	This is the country's largest engineering university and is already engaged directly with the Disaster Management Centre on disaster-proofing infrastructure. University can provide expert inputs to integrating these standards and codes in to Gama Neguma and other development programmes.
Sri Lanka Institute for Development Administration (SLIDA)	The key training institute for local/district administrators, planners and officials. The Project will integrate climate risk assessment training in to the current disaster management programme delivered through SLIDA
Other	
Green Building Council of Sri Lanka	The Green Building Council brings together private sector construction industry, academics, and engineers and architects to promote concepts of energy, water, and land use efficiency, disaster management and local materials in construction. In the project the council will support training on climate resilience in building design and construction by integrating with regular green building training programmes.

3. PROJECT RESULTS FRAMEWORK:

<p>This project will contribute to achieving the following Country Programme Outcomes⁵⁹ as defined in CPD: 4.2 Policies, programmes and capacities to ensure environmental sustainability, address climate change, mitigation and adaptation and reduce disaster risks in place at national, sub national and community levels</p>					
<p>CPD Outcome Indicator: Number of national and sectoral policies approved by Government (available both CPD and CPAP) Baseline: 2 Target: 5</p>					
<p>Primary applicable Environment and Sustainable Development Key Result Area: Promote Climate Change Adaptation</p>					
<p>Applicable SOF (e.g. GEF) Strategic Objective and Framework: Special Climate Change Fund</p>					
<p>Applicable SOF (e.g. GEF) Expected Outcomes: Outcome 1.1: Mainstreamed adaptation in broader development frameworks at country level and in targeted vulnerable areas Outcome 1.2: Reduced vulnerability to climate change in development sectors</p>					
<p>Applicable SOF (e.g. GEF) Outcome Indicators: Indicator 1.1.1 No. of adaptation actions implemented according to planning frameworks (NAPA, CAS, UNDAF, PRSP, disaster risk reduction strategies, government development plans, and other) (Number) Indicator 1.2.2 Economic losses through effective climate resilient infrastructure (US\$) Indicator 1.2.6 Water availability for agriculture (% of population)</p>					
	Indicator	Baseline	Targets	Source of Verification	Risks and Assumptions
<p>Project Objective: Increase the resilience of communities to climate change induced hazards through integration of climate smart policies and actions in to</p>	<p>No of sectoral adaptation strategies identified by the project approved and budgeted by the</p>	<p>< 05</p>	<p>>20 strategies and their associated actions implemented</p>	<p>Task Force Reports Adaptation Assessment for Third National Communication by</p>	<p>Lack of incentive and direction for agencies to incorporate climate change adaptation in to sectoral development plans Lack of inter-agency coordination</p>

⁵⁹ Country Programme Document 2013-2017 from which these outcomes and indicators were derived in in final draft awaiting government endorsement

development planning and budgeting.	Departments of Agriculture, Agrarian Development, Coastal Conservation and Ministry of Economic Development			Ministry of Environment	
	Climate risk assessment is an integral part of development planning at national and district level	climate risk assessment is non-existent	Climate risk assessment included in planning processes for VDPs, district development plans and Gama Neguma/Divi Neguma national Programmes in 12 vulnerable districts	Annual reports of MoED	Resilience viewed as an outcome of preparedness rather than planning
Outcome 1: National rural development programmes Divi Neguma and Gama Neguma integrate climate risk information and adaptation measures in 12 vulnerable districts	No of Gama Neguma and Divi Neguma projects modified through climate risk assessments at GN and Divisional Level	0	> 150 Gama Neguma Projects > 5 Divi Neguma Strategies including -crop selection for home gardens -perennial crops for small commercial farms -livestock choice -water and soil management incentives -inland/freshwater fishery	Divi Neguma and Gama Neguma Monthly and Annual Progress Reports at district and DSD level Adaptation Assessment for Third National Communication by Ministry of Environment Progress reports (quarterly and bi-annually) of Gama Neguma and Divi Neguma	MoED programmes are highly target driven focused on inputs. This attention to achieving hard targets could hinder the integration of processes that promote adaptation and address climate risk Some climate risks may prove difficult to ameliorate at a micro-level

<p>Outcome 2 National, district, divisional and local technical staff have sufficient technical capacity to identify and integrate climate risk considerations in designing, approving and implementing development projects under the Gama Neguma and Divi Neguma programmes</p>	<p>Number of staff (disaggregated by gender) within national, district, divisional and local planning units in 12 vulnerable districts reported to apply climate risk assessment tools and methods to new rural investment projects</p> <p>No of stakeholder groups reporting enhanced awareness of climate change risks and adaptation measures at national, district and village levels</p>	<p>0</p> <p>0 (lack of awareness has been reported as a major barrier during stakeholder consultations)</p>	<p>National officers of NPD, MoED, MoF = 20 Technical agencies and department= 50 District Planning and Samurdhi officers= 75 Village Mobilisers= 300 Local Authority Technical Officers =120 Trainers trained =15</p> <p>Key stakeholder groups listed below report higher level of awareness measured by before and after survey-Officers of National Planning, Ministry of Finance and Ministry of Economic Development -Divi Neguma Task Force at National and District level -District Planning Units -Divisional Planning Units -Village mobilisers-communities in risk prone GN units</p>	<p>Training protocols and attendance lists</p> <p>Individual capacity assessment reports</p> <p>Task Force Meeting reports</p> <p>Participants feedback post training</p> <p>Perception survey to measure awareness of risks and adaptation options</p>	<p>Lack of simplified risk assessment methodologies and awareness of climate risks in planning units and local authorities</p> <p>Retaining trained staff in these key planning and technical positions after project completion</p> <p>Field exposure visits will be well attended by government officials</p>

<p>Outcome 3: Concrete adaptation actions defined and implemented in selected vulnerable villages/ village clusters in the 12 target districts to increase resilience of rural development programmes to climatic risks</p>	<p>% increase in annual income of farmers (disaggregated by gender) as a result of project introduced adaptation measures implemented in home gardens and small farms</p> <p>Total value of community driven rural infrastructure built following building codes and construction controls and guidelines for climate and disaster risk reduction</p>	<p>annual income = or <USD1500 in target farm households⁶⁰</p> <p>0</p>	<p>15% increase against baseline by 2015</p> <p>20% increase against baseline by 2016</p> <p>> USD 2.25 million</p> <p>At least 50% over the baseline value of Gama Neguma Investment in five villages per districts</p>	<p>District Divi Neguma Task Force meetings</p> <p>Project Board Meeting minutes</p> <p>Updated VDPs and Divisional Development Plans</p> <p>Baseline and end of project survey of target DSDs</p> <p>Field visits</p> <p>Case studies incorporating economic valuation of infrastructure risk reduction</p>	<p>Tested pilot actions could be replicated at a larger landscape level</p> <p>High level of community participation in assessing risks, planning interventions and monitoring impact</p> <p>Incentives for land and water management are accepted by Divi Neguma recipient households</p> <p>Cost of climate-proofing community infrastructure is not prohibitive</p>
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⁶⁰ District wise baselines to be established through indicator development activity in Output 1

4. TOTAL BUDGET AND WORKPLAN

Award ID:	00073030	Project ID(s):	00085983
Award Title:	PIMS 4863 SCCF FSP: Sri Lanka: Strengthening the Resilience of Post Conflict Recovery and Development to Climate Change Risks in Sri Lanka		
Business Unit:	LKA 10		
Project Title:	Sri Lanka: Strengthening the Resilience of Post Conflict Recovery and Development to Climate Change Risks in Sri Lanka		
PIMS no	4863		
Implementing Partner (Executing Agency)	Ministry of Economic Development		

GEF outcomes/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total (USD)	See Budget Note:
OUTCOME 1: National rural development programmes Divi Neguma and Gama Neguma integrate climate risk information and adaptation measures in 12 target districts	MOED	62180	SCCF	71200	International consultants	15,000	3,000	1,500		19,500	1
				71300	Local consultants	79,900	62,995	14,900	8,600	166,395	2
				71600	Travel	10,525	8,525	3,800	2,650	25,500	3A & 4A
				72800	IT Equipment	54,840	10,660	0		65,500	5A
				75700	Meetings and Workshops	7,655	6,220	3,580	1,305	18,760	6A
				74200	Audiovisual and print	3,500	10,200	5,000		18,700	7A
				74500	Miscellaneous	650	500	500	100	1,750	8
					Total Outcome 1	172,070	102,100	29,280	12,655	316,105	
OUTCOME 2: National, district, divisional and local technical staff have sufficient technical capacity to identify and integrate climate risk considerations in designing,	MOED	62180	SCCF	71200	International consultants	30,000	15,000	18,000	18,000	81,000	9
				71300	Local consultants	24,500	49,000	52,500	40,600	166,600	10
				71600	Travel	8450	7,850	11,195	7,700	35,195	3B & 4B
				74200	Audiovisual and print	3500	4,000	4,750	1,750	14,000	7B
				74500	Miscellaneous	1,960	1,960	1,960	1,960	7,840	8
				75700	Meetings and Workshops	15,555	12,365	12,365	5,220	45,505	6B

approving and implementing development projects under the Gama Neguma and Divi Neguma programmes				72100	Contractual Services-Companies	34,000	74,690	50,150	48,160	207,000	11
					Total Outcome 2	117,965	164,865	150,920	123,390	557,140	
OUTCOME 3: Concrete adaptation actions defined and implemented in selected vulnerable villages/ village clusters in the 12 target districts to increase resilience of rural development programmes to climatic risks	MOED	62180	SCCF	71200	International consultants	6,000	18,000	6,000		30,000	12
				71300	Local consultants	113,400	120,400	85,400	28,000	347,200	13
				71600	Travel	8,605	6,655	6,655	5,358	27,273	3C/ 4 C
				72100	Contractual Services-Companies	567,150	567,150	537,150	0	1,671,450	14
				72800	IT Equipment	3,000	3,500	3,500	3,000	13,000	5 C
				74500	Miscellaneous	890	890	890	890	3,560	8
								Total Outcome 3	699,045	716,595	639,595
PROJECT MANAGEMENT	MOED	62180	SCCF	71400	Contractual Services Individual	28,500	28,500	28,500	25,350	110,850	15
				71600	Local Travel	2,000	2,000	2,000	1,044	7,044	16
				72200	Equipment and furniture	6,000	4,640	0	0	10,640	17
				72500	Office Supplies	2,850	2,850	2,850	2,850	11,400	18
				74500	Direct Project Services	9,392	3,274	1,745	1,745	16,156	19
					Total Management	48,742	41,264	35,095	30,989	156,090	
					PROJECT TOTAL	1,037,822	1,024,824	854,890	204,282	3,121,818	

General notes to the budget:

- International consultants (IC) are budgeted at USD 3000 per week and local consultants/ National Consultants (NC) are budgeted at \$ 650-700 per week.
- TORs of all international consultants and local consultants including project advisors are in Annex 4
- The cost of workshops (space rental, organisation, food and DSA, presentation materials, etc.) at local level is USD 145 (with 25 participants on average)/ at district level is estimated at USD 435 (35-40 participants) and national is 1305 (50+ participants) per day

Budget Notes corresponding to numbers in the last column of Budget Table

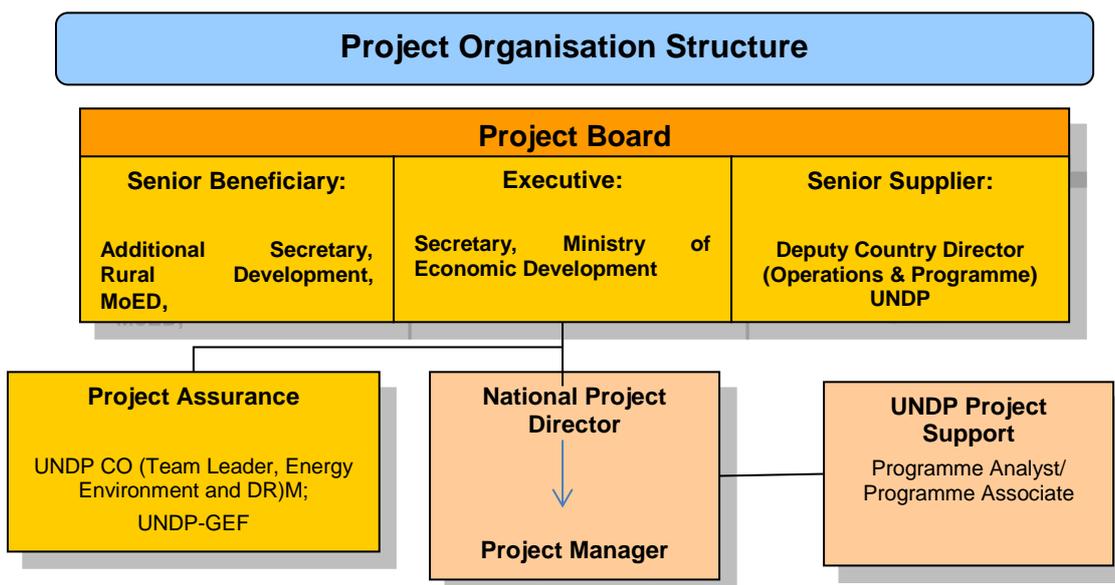
- 1) 7.5 person-weeks of international expertise for risk assessment
- 2) 244.3 person-weeks of national expertise. Risk Assessment (52) GIS Mapping Specialist (32.3) Local Planning (30) Crop Scientist (60) and Participatory Vulnerability Analysis (40) and developing monitoring indicators for project (30)
- 3) Travel for International consultants.
3 A: single –time travel for one consultant
3 B: single –time travel for three consultants
3 C: single –time travel for one consultant
- 4) Local travel for national consultants and implementation staff of MOED at district and GN
4A : Travel for risk assessment, district planning and VDP preparation
4B : Travel for exposure visits, media briefings and project monitoring and impact documentation
4C : Travel to implement and monitor progress of concrete adaptation actions
4D : Travel for project management unit
- 5) Computer hardware and software
5 A: for surveys, risk assessment and mapping in 12 districts and for MoED at national level to support other districts
5 C: Software for technical inputs related to infrastructure disaster-proofing (e.g. engineering solutions for roads and buildings)
- 6) Budget for workshop and meetings
6A: Output 1.1 25 district meetings and 03 regional TOT workshops; Output 1.2 24 mini workshops in the focal districts and 01 national workshop; Output 1.3 12 district consultations on VDP/VRMP updating and 50 divisional level consultations.
6B: Output 2.1 36 district mini workshops to train Divi Neguma Task Force and allied officials and 24 trainers trainings and refresher programmes over 4 years; 210 sessions of mobilizer training to prepare VDPs. 24 district mini workshops for planning officials and one national workshop; and district meetings for progress and impact monitoring (USD 3620)
- 7) Printing and reproduction cost:
7 A: Risk assessment reports, climate risk maps, background studies, building codes, crop selection guidelines
7 B: Printing and production costs related to knowledge management, exposure visits and impact documentation
- 8) Miscellaneous for unforeseen expenses

- 9) 15 person-weeks of international expertise to develop risk assessment tools and train methodology and 12 person weeks of international expertise for evaluations at mid and end of term
- 10) 238 person-weeks of national expertise for risk assessment tools (120); knowledge management (104); Environmental Economist (14)
- 11) Subcontracts for organisation of curricula development (84,000); integrating in to governance and administrative training programmes (26,000) and exposure visits, media visits and media monitoring (USD 97,000)
- 12) 10 person weeks of international expertise to review resilient infrastructure design
- 13) 496 person-weeks of national expertise for Senior Advisor, Agriculture and Land Management (186); Senior Advisor IWRM (80) Senior Advisor Infrastructure (120) and Senior Advisor Coastal Management (110)
- 14) Subcontracts for physical work related to adaptation to community-based organisations, farmer organisations and village development committees issued through the government sub-contracting mechanisms at Divisional Secretariat level. It was estimated that adaptation measures in coastal districts would cost around 20% higher than non-coastal districts. Resilience measures in Gama Neguma programme will cost higher than resilience building through Divi Neguma.
- 15) National Project staff : Project manager, part-time project assistant and part-time accountant
- 16) Official travel for Project Office Staff
- 17) Office equipment (computer, printer, scanner, camera)
- 18) Project management unit supplies and stationary
- 19) Direct project services refers to project ‘execution services’ which UNDP provides at the request of government to support the procurement of goods and services. The services are charged on an item by item basis against UNDP’s Universal Price List (UPL). The main categories of services are provided in section 5 of this project document. An initial analysis of the likely cost of these services has been completed during the PPG phase. Based on this analysis the likely costs to be charged to the project budget will be approximately USD 9392 in year 1 to USD 1745 in year 4.

Table . Summary of Funds

Source	Amount (USD)				Total
	Year 1	Year 2	Year 3	Year 4	
SCCF	1,037,822	1,024,824	854,890	204,282	3,121,818
MOED	12,865,000	11,775,000	10,712,500	10,712,500	46,065,000
UNDP EU-SDDP	2,757,500	2,757,500	2,757,500	2,757,500	11,030,000
TOTAL	16,660,322	15,557,324	14,324,890	13,674,282	60,216,818

5. MANAGEMENT ARRANGEMENTS



5.1 Project organization

1. The project will be executed according to UNDP’s National Implementation Modality (NIM), as per the NIM project management implementation guidelines agreed by UNDP and the Government of Sri Lanka.

The GEF Implementing Agency is UNDP and will be tasked with providing quality assurance support to the Government and ensure quality assurance as expected by the donor (GEF/SCCF). The National Implementing Partner is the Ministry of Economic Development. A Project Board will be set up chaired by the Secretary, Ministry of Economic Development or his designate. The Department of National Planning, Ministry of Public Administration, Ministry of Environment, Ministry of Local Development and UNDP will be permanently represented on the Board. Potential members of the PB are reviewed and recommended for approval during the PAC meeting. Representatives of other stakeholders can be included in the Board as appropriate. The Project Board (PB) is responsible for providing strategic guidance and making management decisions for the project, in particular when guidance is required by the Project Manager, through the National Project Director, as further detailed below.

2. The project proposes that a sub-committee to National Divi Neguma Task Force (see implementation arrangements below) provide technical advisory services to the project. This sub-committee will be called Technical Advisory Committee on Climate Change. It will consist of representatives from Departments that have a direct link with implementation and adaptation actions identified in Component 3 through *Divi Neguma* and *Gama Neguma*. Their main role would be to provide guidance on integrating adaptation strategies in to development programmes and monitor their implementation in districts through respective extension officers. The advisory committee will also recommend specific research activities to be carried out by research partners to the project, Universities of Peradeniya, Moratuwa and IWMI. The national Task Force will work through District level Task Forces in the 12 target districts, as further detailed below.
3. A Project Management Unit (PMU) will be established in the Rural Development Unit of the Ministry of Economic Development. Under the Project Board, the PMU will coordinate the project’s operation on a day-to-day basis with the government agencies and district planning units of the target districts. The Climate Change Secretariat (CCS) of the Ministry would play a key supporting role, providing the PMU with technical backup in the form of a full time environmental management officer (EMO). This EMO will work with the project management unit, specifically to ensure national climate adaptation priorities are meaningfully applied in the districts. The EMO will be nominated by the Director, Climate Change

Secretariat, Ministry of Environment and report to the National Project Director in the duration of the project.

4. **The Project Board convened by the Ministry of Economic Development** is responsible for making management decisions for a project in particular when guidance is required by the Project Manager. The Project Board plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities. The Project Board approves the Annual Work Plan and Budget for the project and approves any essential deviations from the original plans.
5. In order to ensure UNDP's ultimate accountability for the project results, Project Board decisions will be made in accordance to standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. Potential members of the Project Board are reviewed and recommended for approval during the L-PAC meeting. Representatives of other stakeholders can be included in the Board as appropriate. The Board contains three distinct roles, including:

An Executive: individual representing the project ownership to chair the group. This will be the **Secretary of the Ministry of Economic Development**. The Executive is ultimately responsible for the project, supported by the Senior Beneficiary and Senior Supplier. The Executive's role is to ensure that the project is focused throughout its life cycle on achieving its objectives and delivering outputs that will contribute to higher level outcomes. The **Secretary of the Ministry of Economic Development** has to ensure that the project gives value for money, ensuring a cost-conscious approach to the project, balancing the demands of beneficiary and supplier.

Specific Responsibilities (as part of the above responsibilities for the Project Board)

- Ensure that there is a coherent project organization at national and district level
- Set tolerances in the AWP and other plans as required for the Project Manager
- Monitor and control the progress of the project activities at a strategic level considering the changes influenced by the project on baseline investments
- Ensure that risks are being tracked and mitigated as effectively as possible
- Organise and chair Project Board meetings
- The Executive is responsible for overall assurance of the project as described below. If the project warrants it, the Executive may delegate some responsibility to the project assurance.

Senior Supplier: The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project. This will be a Representative from UNDP that is held accountable for fiduciary oversight of SCCF resources in this initiative. The Senior Supplier represents the interests of the parties which provide funding and/or technical expertise to the project (designing, developing, facilitating, procuring, implementing), in this case the Special Climate Change Fund of the Global Environmental Facility. The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project. The Senior Supplier role must have the authority to commit or acquire supplier resources required. If necessary, more than one person may be required for this role. In this project, the Senior Supplier is the Deputy Country Director, Operations and Programme, UNDP.

Specific responsibilities are

- Make sure that progress towards the outputs remains consistent from the supplier perspective
- Promote and maintain focus on the expected project output(s) from the point of view of supplier management
- Provide technical and managerial guidance for project implementation
- Ensure that the supplier resources required for the project are made available

- Contribute supplier opinions on Project Board decisions on whether to implement recommendations on proposed changes
- Arbitrate on, and ensure resolution of, any supplier priority or resource conflicts

Senior Beneficiary: The Senior Beneficiary's primary function is to ensure the realization of project results from the perspective of project beneficiaries. The Senior Beneficiary is responsible for validating the project outputs, ensuring technical compliance and for ensuring smooth implementation. The role represents the interests of all those who will benefit from the project, or those for whom the deliverables resulting from activities will achieve specific output targets. The Senior Beneficiary role monitors progress against targets and quality criteria. This role may require more than one person to cover all the beneficiary interests. For the sake of effectiveness the role should not be split between too many people.

Specific responsibilities are

- Ensure the expected output(s) and related activities of the project are well defined
- Make sure that progress towards the outputs required by the beneficiaries remains consistent from the beneficiary perspective
- Promote and maintain focus on the expected project output(s) and their complementarity to the baseline initiatives
- Prioritise and contribute beneficiaries' opinions on Project Board decisions on whether to implement recommendations on proposed changes
- Resolve priority conflicts

Project Assurance

6. Overall responsibility: Project Assurance is the responsibility of each Project Board member; however the role can be delegated. The Project Assurance role supports the Project Board by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. The following list includes the key aspects of project assurance carried out throughout the project as part of ensuring that it remains relevant, follows the approved plans and continues to meet the planned targets with quality.
 - Maintenance of thorough liaison throughout the project between the members of the Project Board.
 - Beneficiary needs and expectations are being met or managed
 - Risks are being controlled
 - Adherence to the Project Justification (Business Case)
 - Projects fit with the overall Country Programme
 - The right people are being involved
 - An acceptable solution is being developed
 - The project remains viable
 - The scope of the project is not "creeping upwards" unnoticed
 - Internal and external communications are working
 - Applicable UNDP rules and regulations are being observed
 - Any legislative constraints are being observed
 - Adherence to RMG monitoring and reporting requirements and standards
 - Quality management procedures are properly followed
 - Project Board's decisions are followed and revisions are managed in line with the required procedures
7. Project Assurance has to be independent of the Project Manager; therefore the Project Board cannot delegate any of its assurance responsibilities to the Project Manager. A UNDP Programme Officer typically also holds the Project Assurance role.
8. The assurance role of UNDP CO is to:
 - Advise on the selection of strategy, design and methods to carry out project activities

- Ensure that any standards defined for the project are met and used to good effect
 - Monitor potential changes and their impact on the quality of deliverables from a supplier perspective
 - Monitor any risks in the implementation aspects of the project
 - Monitor Progress against AWP and Budget quarterly and annually
 - Ensure mid-term and terminal evaluations are conducted in a timely and professional manner
9. The assurance role of UNDP-GEF is to:
10. The assurance responsibilities of the Senior Beneficiary are to check that:
- Specification of the Beneficiary's needs is accurate, complete and unambiguous in the project outcomes and outputs
 - Implementation of activities at all stages is monitored to ensure that they will meet beneficiary's needs and are progressing towards that target
 - Impact of potential changes is evaluated from the beneficiary point of view
 - Risks to the beneficiaries are frequently monitored

The National Project Director (NPD) The NPD will be the Additional Secretary for Rural Development (MoED) responsible for overseeing overall project implementation on regular basis and ensuring that the project objective and outcomes are achieved. This function is not funded through the project. The NPD, assisted by the Project Manager, will report to the Project Board on project progress. The NPD will be responsible for coordinating the flow of results and knowledge from the project to the Project Board.

Project Manager (PM): The Project Manager will be externally recruited by MoED and funded through the project. The Project Manager has the authority to run the project on behalf of the Implementing Partner within the constraints laid down by the Board. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. The Project Manager will be supported by an Assistant Project Manager (APM) recruited full-time under a local technical assistance contract.

The PM will be responsible for the day-to-day management, administration, coordination, and technical supervision of project implementation. S/he will provide overall operational management for successful execution and implementation of the programme. S/he will be responsible for financial management and disbursements, with accountability to the government and UNDP. The PM will ensure provision of high-quality expertise and inputs to the project.

In carrying out her/his responsibilities, s/he will advocate and promote the work of adaptation to climate change in Sri Lanka and will also closely work and network with the relevant government agencies, UN/UNDP, the private sector, NGOs, and civil society organizations.

Specific responsibilities would include:

Overall project management:

- Manage the realization of project outputs through activities;
- Provide direction and guidance to project team(s)/ responsible party (ies);
- Liaise with the Project Board or its appointed Project Assurance roles (UNDP) to assure the overall direction and integrity of the project;
- Identify and obtain any support and advice required for the management, planning and control of the project;
- Responsible for project administration;
- Liaise with any suppliers;
- May also perform Team Manager and Project Support roles;

Running a project

- Plan the activities of the project and monitor progress against the initial quality criteria.

- Mobilize goods and services to initiative activities, including drafting TORs and work specifications;
- Monitor events as determined in the Monitoring & Communication Plan, and update the plan as required;
- Manage requests for the provision of financial resources by UNDP, using advance of funds, direct payments, or reimbursement using the FACE (Fund Authorization and Certificate of Expenditures);
- Monitor financial resources and accounting to ensure accuracy and reliability of financial reports;
- Manage and monitor the project risks as initially identified in the Project Brief appraised by the LPAC, submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the Project Risks Log;
- Be responsible for managing issues and requests for change by maintaining an Issues Log.
- Prepare the Project Quarterly Progress Report (progress against planned activities, update on Risks and Issues, expenditures) and submit the report to the Project Board and Project Assurance;
- Prepare the Annual review Report, and submit the report to the Project Board and the Outcome Board;
- Based on the review, prepare the AWP for the following year, as well as Quarterly Plans if required.

Closing a Project

- Prepare Final Project Review Reports to be submitted to the Project Board and the Outcome Board;
- Identify follow-on actions and submit them for consideration to the Project Board;
- Manage the transfer of project deliverables, documents, files, equipment and materials to national beneficiaries;
- Prepare final CDR/FACE for signature by UNDP and the Implementing Partner.

Project Support: The Project Support role provides project administration, management and technical support to the Project Manager as required by the needs of the day-to-day operations or by the Project Manager. The project support functions are available through a Project Management Unit (PMU) located in MoED, which will provide office space at central level. PMU staff will be funded by the project to ensure delivery of results as specified in the Project Results Framework. The PMU will ensure project implementation proceeds smoothly through effective work plans and efficient administrative arrangements that meet donor requirements. The PMU will be composed of the following core staff: Assistant Programme Manager, Finance/Accountant and Admin Officer. The PMU office will also provide a ‘home’ for technical consultants supporting the delivery of specific project outputs. The Ministry of Environment will provide technical support to the PMU by providing a full-time Environmental Management Officer (EMO) to coordinate technical advisory team and monitor their output.

Specific responsibilities: Some specific tasks of the Project Support Team would include:

Provision of administrative services:

- Set up and maintain project files
- Collect project related information data
- Update plans
- Administer the quality review process
- Administer Project Board meetings

Project documentation management:

- Administer project revision control
- Establish document control procedures
- Compile, copy and distribute all project reports

Financial Management, Monitoring and reporting

- Assist in the financial management tasks under the responsibility of the Project Manager
- Provide support in the use of Atlas for monitoring and reporting

Provision of technical support services

- Provide technical advices
- Review technical reports
- Monitor technical activities carried out by responsible parties

Environmental Management Officer

- Support project manager to coordinate the technical advisory team of consultants
- Assist project manager to monitor technical inputs to the project; and ensure they are in line with national adaptation priorities
- Ensure coordination between MoED and Ministry of Environment
- Ensure coordination with other adaptation projects

The Technical Advisory Committee of the National Divi Neguma Task Force: The National Divi Neguma Task Force brings together all the technical departments that support the Ministry of Economic Development to meet their targets under Divi Neguma sectors- home gardening, livestock, fisheries and cottage industry. Currently represented under the Task Force are Departments of Agriculture, Agrarian Development, National Aquaculture Development Authority, Fisheries, Livestock Development and Minor Export Crops. Under the project a special sub-committee would be formed to provide advisory services to climate change related project activities and membership in this sub-committee would be open to Climate Change Secretariat of the Ministry of Environment, Disaster Management Centre, Department of Coast Conservation in order to bring in the climate adaptation, disaster risk reduction and coastal protection elements.

The sub-committee would review the sectoral adaptation action plans under development by Ministry of Environment, and advice the project on integrating these to the district plans. The National committee would also nominate district level officers who would represent the agencies in the District Divi Neguma Task Force.

Contractors: The implementation of the components of the project will be supported by contractors, selected according to UNDP procurement rules. The Government Implementing Partner may contract other entities, defined as Responsible Parties, to undertake specific project tasks through a process of competitive bidding. In the case of community base organisations supplying implementation support under Component 3, they need to be registered as legitimate CBOs by the Finance Ministry, enabling them to handle funds up to USD 10,000. However, if the Responsible Party is another government institution, Inter Governmental Organisation or a United Nations agency, competitive bidding will not be necessary and direct contracting will be applied. Confirmation of direct contracting will need to comply with criteria, such as comparative advantage, timing, budgeting and quality. If direct contracting criteria cannot be met the activity will be open to competitive bidding.

Administrative Implementation Manual: Based upon UNDP's Project Operations Manual, further details on project internal functions, processes and procedures will be outlined in an Administrative Implementation Manual to be produced during the inception period, and the first Annual Work Plan and Budget of the project.

Audit arrangements

Audits will be conducted in accordance with the UNDP NIM Audit policies and procedures, and based on UN Harmonized Approach to Cash Transfer (HACT) policy framework. Annual audit of the financial statements relating to the status of UNDP (including GEF) funds will be undertaken according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by a special and certified audit firm. UNDP will be responsible for making audit arrangements for the project in communication with the Project Implementing Partner. UNDP and the project Implementing Partner will provide audit management responses and the Project Manager and project support team (PMU) will address audit recommendations. As a part of its oversight function, UNDP will conduct audit spot checks at least two times a year.

UNDP support services

As per the Letter of Agreement (LOA) between the Government of Sri Lanka and UNDP with respect to the provision of support services by the UNDP Country Office for nationally implemented programmes and projects, the UNDP Country Office may provide, at the request of the Implementing Partner, the following support services for the activities of this project, and recover the actual direct and indirect costs incurred by the Country Office in delivering such services as stipulated in the LOA:

- Payments, disbursements and other financial transactions
- Recruitment of staff, project personnel, and consultants
- Procurement of services and equipment, including disposals
- Organization of training activities, conferences, and workshops, including fellowships
- Travel authorization, Government clearances ticketing, and travel arrangements
- Shipment, custom clearance, and vehicle registration.

All relevant project staff will be trained by UNDP during the early implementation phase on administrative issues, financial matters, procurement etc.

Intellectual property rights

These will be retained by the employing organization of the personnel who develops intellectual products, either Government or UN/UNDP in accordance with respectively national and UN/UNDP policies and procedures.

Communications and visibility requirements:

Full compliance is required with UNDP's Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects needs to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be accessed at: http://www.thegef.org/gef/GEF_logo. The UNDP logo can be accessed at <http://intra.undp.org/coa/branding.shtml>.

Full compliance is also required with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"). The GEF Guidelines can be accessed at: http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf.

Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.

6. MONITORING FRAMEWORK AND EVALUATION

1. The project will be monitored through the following M& E activities. The M&E budget is provided in the table below. The M&E framework set out in the Project Results Framework in Part III of this project document is aligned with the AMAT and UNDP M&E frameworks.
2. Project start: A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and program advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.
3. **The Inception Workshop** should address a number of key issues including:
 - Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis-à-vis the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff will be discussed again as needed.
 - Based on the project results framework and the LDCF related AMAT set out in the Project Results Framework in Section III of this project document, and finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
 - Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
 - Discuss financial reporting procedures and obligations, and arrangements for annual audit.
 - Plan and schedule PB meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first PB meeting should be held within the first 12 months following the inception workshop.
4. **An Inception Workshop report** is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.
5. **Quarterly:**
 - Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform.
 - Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP/GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).
 - Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot.
 - Other ATLAS logswill be used to monitor issues, lessons learned. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.
6. **Annually:** Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.
7. The APR/PIR includes, but is not limited to, reporting on the following:
 - Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
 - Project outputs delivered per project outcome (annual).
 - Lesson learned/good practice.
 - AWP and other expenditure reports
 - Risk and adaptive management
 - ATLAS QPR

8. Periodic Monitoring through site visits: UNDP CO and the UNDP-GEF region-based staff will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.
9. **Mid-term of project cycle:** The project will undergo an independent Mid-Term Review at the mid-point of project implementation. The Mid-Term Review will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term review will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term review will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The LDFC/SCCF AMAT as set out in the Project Results Framework in Section III of this project document) will also be completed during the mid-term evaluation cycle.
10. End of Project: An independent Terminal Evaluation will take place three months prior to the final PB meeting and will be undertaken in accordance with UNDP-GEF guidance. The terminal evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term review, if any such correction took place). The terminal evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The LDFC/SCCF AMAT as set out in the Project Results Framework in Section III of this project document) will also be completed during the terminal evaluation cycle. The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response, which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC).
11. **Learning and knowledge sharing:** Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums.
12. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.
13. There will be a two-way flow of information between this project and other projects of a similar focus.
14. **Audit:** Project will be audited in accordance with UNDP Financial Regulations and Rules and applicable audit policies.

Table 13: Monitoring and Evaluation Plan

Type of M&E activity	Responsible Parties	Budget USD	Time frame
Inception Workshop/ Annual Work Plan finalization	<ul style="list-style-type: none"> ▪ Project Board ▪ Project Team ▪ UNDP CO / RAP ▪ Hired consultant 	8000	Inception is done at project start and work plan is prepared annually
Measurements of means of verification of project results (incl. End-of-Project Impact study)	<ul style="list-style-type: none"> ▪ PMU ▪ UNDP-GEF RCU ▪ Hired consultant 	12,000	Start and at the end of project.
Measurement of Means of Verification for Project Progress and Performance (measured annually)	<ul style="list-style-type: none"> ▪ Oversight by UNDP-GEF RCU & Project Management ▪ Counterpart organizations in the field or hired consultants on an as-needed basis 	As part of project activities	Annually prior to APR/PIR and to the definition of annual work plans
APR-PIR	<ul style="list-style-type: none"> ▪ PMU ▪ UNDP-CO/ UNDP-GEF ▪ Task Force Chair 	0	Annually
Steering Committee Meetings	<ul style="list-style-type: none"> ▪ NPD ▪ UNDP CO & RAP 	0	Following Project IW and held regularly
Technical reports (TAC)	<ul style="list-style-type: none"> ▪ PMU ▪ TAC at national and district level ▪ UNDP CO and RAP 	As part of project activities	To be determined by Project Team & UNDP-CO/ FAO CO/RAP
Mid-Term Evaluation	<ul style="list-style-type: none"> ▪ PMU ▪ UNDP CO ▪ UNDP-GEF RCU ▪ Hired consultants 	17,000	Mid project
Final External Evaluation	<ul style="list-style-type: none"> ▪ PMU ▪ UNDP-CO ▪ UNDP-GEF RCU ▪ External Consultants (i.e. eval. team) 	17,000	At the end of project implementation
Terminal Report	<ul style="list-style-type: none"> ▪ NPD/PMU ▪ UNDP-CO/ UNDP-GEF RCU 	As part of project activities	At least one month before the project's end
Financial audits	<ul style="list-style-type: none"> ▪ UNDP-CO ▪ NPD/PMU 	10,000	Yearly
Visits to field sites (UNDP staff travel costs not included as will be charged to IA fees)	<ul style="list-style-type: none"> ▪ UNDP CO/ RAP ▪ UNDP-GEF RCU (as appropriate) ▪ Government representatives 	0	Yearly
TOTAL INDICATIVE COST Excluding project team staff time and UNDP staff and travel expenses.		USD 64,000	

7. LEGAL CONTEXT

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the Standard Basic Assistance Agreement (SBAA) and all CPAP provisions apply to this document.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP/GEF hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

The UNDP Resident Representative in Sri Lanka is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP Regional Coordination Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

- Revision of, or addition to, any of the annexes to the Project Document;
- Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and
- Inclusion of additional annexes and attachments only as set out here in this Project Document

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ANNEXES

Annex 1:	Adaptive Activities Recommended for Rural Development
Annex 2:	Vulnerability indicators with respect to vulnerability assessment of districts
Annex 3:	Rapid Climate Change Related Capacity Assessment of Key Stakeholder Agencies involved in Rural Development
Annex 4:	Terms of Reference
Annex 5:	Consultative and Planning workshops During PPG
Annex 6:	Consultative Workshop Outcome
Annex 7:	Analysis of Adaptation Mainstreaming in to Rural Development
Annex 8:	Summary of Adaptation Needs from District Planners
Annex 9:	Integrating climate-resilient water resource management to Divi Neguma and Gama Neguma
Annex 10:	Incentives for Land Use Through Divi Neguma
Annex 11:	Project Implementing Arrangement National to Sub-National
Annex 12:	Letters of co-financing/Agreements