PROJECT INFORMATION DOCUMENT (PID)  
CONCEPT STAGE  
Report No.: PIDC1289

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Improving Climate Resilience (P146314)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>SOUTH ASIA</td>
</tr>
<tr>
<td>Country</td>
<td>Sri Lanka</td>
</tr>
<tr>
<td>Sector(s)</td>
<td>General finance sector (20%), General public administration sector (20%), General water, sanitation and flood protection sector (30%), Flood protection (30%)</td>
</tr>
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<td>Theme(s)</td>
<td>Natural disaster management (100%)</td>
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<td>Lending Instrument</td>
<td>Investment Project Financing</td>
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<td>Project ID</td>
<td>P146314</td>
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<td>Borrower(s)</td>
<td>Department of National Planning, Ministry of Finance</td>
</tr>
<tr>
<td>Implementing Agency</td>
<td>Ministry of Irrigation and Water Resources Management</td>
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<td>Environmental Category</td>
<td>B-Partial Assessment</td>
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<td>Date PID Prepared/Updated</td>
<td>09-Sep-2013</td>
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<td>24-Oct-2013</td>
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<td>Estimated Date of Appraisal Completion</td>
<td>14-Feb-2014</td>
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<td>27-Mar-2014</td>
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<td>Concept Review Decision</td>
<td>Track II - The review did authorize the preparation to continue</td>
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I. Introduction and Context  
Country Context

Sri Lanka has acquired the status of a middle income country and aspires to become a higher middle income country within next 5-10 years. After ending the 26 years of conflict, the government has embarked on an accelerated development drive, under the Mahinda Chinthana Vision for Future, the government’s development policy framework, which envisions to increase the per capita GDP up to USD 4,000 by the end of year 2016.

As the Government of Sri Lanka (GoSL) implements connectivity improvements, urban development and other physical infrastructure across the country, it must account for the sustainability of its investments in the long term. One of the biggest threats to the country’s development comes from natural disasters, particularly floods, landslides, coastal erosion, drought, and cyclones.
The impacts of natural disasters in Sri Lanka have been sizable over the past decade, particularly flood and drought. Floods have cumulatively affected more than 8.5 million people, while droughts have affected more than 5 million (Sri Lanka Disaster Information System). Floods of 2003, 2006, 2008, 2010, 2011 and 2012, Tsunami of 2004, and the droughts of 2001, 2004 and 2012 have all caused widespread impact. In addition, landslides and high winds are frequent phenomena that destroy or damage thousands of houses every year. Finally, though less frequent, cyclones have had significant impacts, such as the 1978 cyclone that affected over 1 million people and caused more than 1,000 fatalities.

Given the concentrated economic activities, and high probability of disaster events occurring, the fiscal and economic impacts of disaster are understood to be relatively high in Sri Lanka. The annual fiscal loss is significant, estimated to be in excess of US$50 million, while, in some years, the fiscal loss is much greater. For example, the floods of December 2010 to February 2011 resulted in estimated direct damages of more than US$600 million.

While perceived to be high, clear understanding of the impacts of disaster is somewhat unknown, particularly the fiscal and economic impacts. A strong understanding of the impacts of disaster is critical to take action to mitigate the risk.

Lack of clarity on the current level of disaster risk is compounded by uncertainty of future disaster risk. Several recent studies suggest that monsoons could become more variable and unreliable, with possible consequences including an increase in the intensity of rainfall and a reduction in the duration of the monsoon (Hu et al. 2000; Lal et al. 2000). The Bank’s Climate Change Strategy for South Asia highlights the major climate change trends expected to take place in the future. Moderate climate change scenarios project less and less frequent precipitation in the already dry areas, potentially increasing the frequency and duration of droughts. Higher and more variable rainfall is expected to increase the frequency and intensity of floods, especially affecting monsoon-dependent areas.

**Sectoral and Institutional Context**

Extreme variability of rainfall is the defining feature of Sri Lanka’s climate. The monsoon is the most significant climate event: it carries more than 70 percent of the region’s annual precipitation in only four months. Because of the dominance of the monsoons, the country’s climate exhibits the highest seasonal concentration and variability of rainfall in the world. If climate projections are indicative of future trends, the risks associated with water-related climate variability are likely to intensify and worsen.

As a result of rainfall variability, Sri Lanka is highly vulnerable to droughts and floods. Droughts vary in their intensity, duration, and spatial coverage. Climate change is likely to exacerbate damage caused by such events. The region’s river systems are also highly flood prone. Floods are a natural and necessary feature of river systems with variable seasonal flows. However, when floods are excessive, they cause extensive damage. Lack of well-developed infrastructure plays a significant role in curbing repeated floods. Flood-affected areas in Sri Lanka are likely to increase as a result of climate change. Since any such changes are likely to be gradual, it may not be possible to predict when and where the likely impacts of climate change could occur.

The increased occurrence of disasters highlights the need of a comprehensive climate risk
management program. Such a program would be targeted at minimizing the economic losses and establishing appropriate policies for land use planning, building guidelines, and the mainstreaming climate risk management into infrastructure development.

Flooding in Eastern Sri Lanka
In the recent past, natural disasters, floods and drought have hampered the development of the Eastern Province. The province has been severely affected by floods consecutively for the last three years. Floods of January 2011 affected more than a million people in the east and had caused more than US$600 million in direct damage. Floods of December 2012 affected nearly a half a million people and caused a significant damage (clear estimates are not available). Both of these flood events caused a significant impact on the agricultural livelihoods due to destruction of crops, livestock and agricultural infrastructure.

The total impacts of these events are largely under-estimated as the indirect losses or the changes in the economic flows have not been taken into account. In typical disaster events, the direct damages are the only impact measured. However the impact of disasters, particularly flood events, is more significant than the direct and immediate impacts. Post disaster assessments carried out in different other countries show that the indirect impacts for floods can be greater than the direct impacts that are typically measured.

Flooding in the Eastern Province has been occurring on an annual basis and, since 2000, the average number of people affected by floods is more than 375,000 per year. In addition to the extreme rainfall events that these areas have been experiencing, there are many factors contributing to the flooding. Particular challenges include the following:

- Large flows coming from the upstream catchments to the downstream low lying areas due to recent land use changes and sudden opening of the gates of upstream reservoirs
- Insufficient outflow capacity of the lagoon mouths to discharge the flood water to the sea
- Encroachments into the waterways and flood plains by large-scale construction works, fillings, and illegal settlements
- Blocked canals and streams running through urban, semi urban and rural areas due to non-maintenance, dumping of solid waste, natural siltation etc
- Damaged storm water systems, blocked or narrow culverts in roads and road embankments and insufficient drainage capacity in urban, semi urban and rural areas.

(Source: Flood mitigation in the Ampara and Batticaloa Districts, DMC & UNDP, 2010)

Most of the eastern districts have now developed a fairly organized preparedness and response mechanisms to floods. However, the recent flood events highlight that there is an urgent need for a well-designed mitigation program to reduce the impact of floods. Interventions to reduce floods must take a comprehensive approach with due consideration to the upstream effects and downstream impacts.

Relationship to CAS
The proposed Comprehensive Climate Risk Mitigation Program aligns with two of the main strategic objectives of the Country Partnership Strategy (CPS) FY2013 – FY2016, which aims to help the government achieve the goals set out in the Mahinda Chintana development policy framework. In particular, the project fits following two areas: (i) facilitating sustained private and public investment, and (ii) improving living standards and social inclusion. The Bank aims to seek
opportunities for projects to actively contribute to the Mahinda Chintana goal “to promote sustainable development in close liaison with the land, fauna, and flora and to bestow our natural heritage to our future generation.” The proposed project will include efforts to maximize the environmental benefits in high risk areas and protect investments in other sectors through integrated disaster risk management.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

The proposed Project Development Objective (PDO) is to reduce exposure of people in vulnerable areas to hydrometeorological risk, through evidence-based investment planning and urgent mitigation measures, and to improve Government’s capacity to respond effectively to an eligible crisis or emergency.

Key Results (From PCN)

Achievement of the PDO will be monitored through the following proposed key outcome indicators: i) development of investment plans prepared to mitigate basin-level climate risk; and ii) a reduction in the area at risk of hydrometeorological events through investment in flood and drought mitigation infrastructure.

III. Preliminary Description

Concept Description

The main aim is to help Sri Lanka begin a process that would build a more climate-resilient economy. With rapid economic progress in recent times, increased assets are at risk to increasingly variable hydrometeorological events. Ensuring disaster and climate resilient development will ensure continued growth is sustainable.

Given the current lack of understanding of the multisectoral impacts of climate change, hydrometeorological modeling and scenario analysis work is required. Once completed a large climate resilient investment program would be identified and financed through multiple funding sources. Key line ministries would be brought together in the assessment of risks or impacts on particular sectors and an investment road map would be developed.

While there is a lack of understanding of comprehensive climate and disaster risk, there are urgent flood and drought mitigation investments required to ensure the short term integrity of irrigation and flood control infrastructure. Given the impacts of hydrometeorological events in the eastern province in recent years, urgent investment is required to improve flood and control systems.

To address long-term capital development needs and short term hydrometeorological mitigation requirements, the project will comprise the following four components.

Component 1: Risk Assessment and Basin Investment Plans (US$6 million). The objective of this component is to improve the understanding of the hydrometeorological risk in 4-5 river basins that are highly exposed to hydrometeorological risk. This would include the following activities: i) development of hydrological/ hydraulic models; ii) collection of flood exposure and vulnerability data that would be integrated with the hydrological/ hydraulic model to develop a risk model; and iii) assessment of the underlying causes of flooding and drought including rainfall variability, land use changes, and infrastructure development; and iv) creation of investment plans with detailed
designs. A strategic environmental assessment, including social aspects particularly related to resettlement of people from vulnerable areas, for selected investment areas would also be undertaken. The result of this component would be the development comprehensive climate resilient investment plans that would be financed by Government, the Bank and other donors. The interrelation between the floods and drought will be analyzed in detailed in developing the hydrometeorological risk mitigation interventions.

Component 2: Priority Hydrometeorological Mitigation Interventions (US$18 million): The objective of this component is to implement urgent hydrometeorological mitigation interventions that have been identified and prioritized by recent needs assessments. The interventions would focus on both upstream irrigation systems and downstream flood control structures. Upstream investments would include repairs of damaged tank systems and rehabilitation of irrigation and drainage schemes. Downstream investments would include: i) widening of narrow bridges and culverts allowing flood water to drain off quickly; ii) removing of bottlenecks in the drainage canals; and iii) construction of diversions or retention structures to minimize downstream flooding. Such investments would not involve construction of new infrastructure, only critical repairs to existing structures. The result of this component would be a decrease in annual hydrometeorological losses.

Component 3: Implementation Support (US$3 million): The objective of this component is to ensure the successful implementation of the activities carried out under the proposed project and support the scaling of a long term planning division. This comprises: (i) implementation support in the areas of project management, monitoring and evaluation (M&E), procurement, financial management, and environmental and social safeguards; (ii) public awareness and communications support regarding project interventions and management of public expectations; (iii) support to the implementing agencies in construction, supervision, and compliance with environmental and social safeguards; (iv) purchase of vehicles, office furniture, and IT equipment for the Project Management Unit (PMU); and (v) operating costs of the PMU.

Component 4: Contingent Emergency Response Component (US$3): Following an adverse natural or man-made event or that causes a major disaster, the Government may request the Bank to re-allocate project funds to this component (which presently carries a zero allocation) to support response and reconstruction. This component would allow the Government to request the Bank to reallocate project funds to be engaged to partially cover emergency response and recovery costs.

IV. Safeguard Policies that might apply

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V. Financing (in USD Million)

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VI. Contact point

World Bank

Contact: Marc S. Forni
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Borrower/Client/Recipient

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