



The World Bank

Resilient Kerala Program (P169907)

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Report No: PGD77

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROGRAM DOCUMENT

FOR A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 115.2 MILLION AND US\$ 90.4 MILLION

(US\$250 MILLION EQUIVALENT)

TO THE

REPUBLIC OF INDIA

FOR THE

FIRST RESILIENT KERALA PROGRAM DEVELOPMENT POLICY OPERATION

May 31, 2019

Social, Urban, Rural, and Resilience Global Practice
South Asia Region

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Republic of India

GOVERNMENT FISCAL YEAR

April 1 – March 31

CURRENCY EQUIVALENTS

(Exchange Rate Effective as of April 30, 2019)

Currency Unit = U.S. dollar (US\$)

US\$ 1.00 = INR 69.56

INR 1.00 = US\$ 0.01

US\$ 1.00 = SDR 0.7218

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank	KSEB	Kerala State Electricity Board
AEMU	Agroecological Management Unit	KSTPII	Second Kerala State Transport Project
AEZ	Agroecological Zone	KWA	Kerala Water Authority
AIIB	Asian Infrastructure Investment Bank	LSGD	Local Self-Government Department
CPF	Country Partnership Framework	LSGI	Local Self-Government Institution
CPI	Consumer Price Index	M&E	Monitoring and Evaluation
CSO	Civil Society Organization	MIS	Management Information System
DDMA	District Disaster Management Authority	MLD	Million Liters Per Day
DEA	Department of Economic Affairs	MTN	Medium-Term Note
DOECC	Directorate of Environment and Climate Change	NIUA	National Institute of Urban Affairs
DPO	Development Policy Operation	NPAs	Nonperforming Assets
DRM	Disaster Risk Management	NRK	Nonresident Keralite
EOC	Emergency Operation Center	O&M	Operations and Maintenance
FDI	Foreign Direct Investment	PBMC	Performance-Based Maintenance Contract
FRBM	Fiscal Responsibility and Budget Management	PDNA	Post-Disaster Needs Assessment
GDP	Gross Domestic Product	PDO	Program Development Objective
GFDRR	Global Facility for Disaster Risk Reduction and Recovery	PFM	Public Financial Management
GO	Government Order	PWD	Public Works Department
GoI	Government of India	PWS	Piped Water Supply
GoK	Government of Kerala	RBCMA	River Basin Conservation and Management Authority
GRM	Grievance Redress Mechanism	RBI	Reserve Bank of India
GRS	Grievance Redress Service	RKDP	Rebuild Kerala Development Programme
GSDP	Gross State Domestic Product	RKI	Rebuild Kerala Initiative
GST	Goods and Services Tax	RKI-IC	Rebuild Kerala Initiative Implementation Committee
HLEC	High-level Empowered Committee	RKP	Resilient Kerala Program
ICT	Information and Communication Technology	RPSIA	Rapid Poverty and Social Impact Assessment
IDFC	Infrastructure Development Finance Company	SAPCC	State Action Plan on Climate Change
IMF	International Monetary Fund	SC	Scheduled Caste
IRS	Incident Response System	SDG	Sustainable Development Goal
IWRM	Integrated Water Resources Management	SGST	State Goods and Services Tax
JRDNA	Joint Rapid Damage and Needs Assessment	SOP	Standard Operating Procedure
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)	ST	Scheduled Tribe
KIIFB	Kerala Infrastructure Investment Fund Board	SWM	Solid Waste Management
KRWSA	Kerala Rural Water Supply and Sanitation Agency	TCP	Town and Country Planning
KSDMA	Kerala State Disaster Management Authority	ULB	Urban Local Body
		UN	United Nations
		UNISDR	United Nations International Strategy for Disaster Reduction
		WRD	Water Resources Department
		WSS	Water Supply and Sanitation



REPUBLIC OF INDIA

RESILIENT KERALA PROGRAM

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The team benefited from the guidance of Sameh Naguib Wahba, Director; Christoph Pusch, Practice Manager (GSURR); Junaid Kamal Ahmad, Country Director; Hisham A. Abdo Kahin, Operations Manager; and Sumila Gulyani, Program Leader (SCAIN); as well as OPCS and SARDE Teams.

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Finally, the World Bank team would like to express its gratitude for the collaboration of the Government of Kerala in the preparation of this Development Policy Operation.



SUMMARY OF PROPOSED FINANCING AND PROGRAM

BASIC INFORMATION

Project ID	Programmatic	If programmatic, position in series
P169907	Yes	1st in a series of 2

Proposed Development Objective(s)

The Program Development Objective (PDO) is to enhance the State of Kerala's resilience against the impacts of natural disasters and climate change.

Organizations

Borrower: REPUBLIC OF INDIA

Implementing Agency: STATE OF KERALA

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Financing	250.00
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DETAILS

International Development Association (IDA)	250.00
IDA Credit	250.00

INSTITUTIONAL DATA

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Overall Risk Rating

Substantial



Results

Prior Actions	Indicative Triggers	Indicator Name
<p>Prior Action 1: The GoK has adopted the Rebuild Kerala Development Program for enhancing disaster and climate resilience through policy, regulatory and institutional actions with inclusive and participatory approaches.</p>	<p>Trigger 1: The GoK has issued guidelines for project selection, preparation, and budgeting, including criteria for project readiness, feasibility, and resilience, for the RKDP.</p>	<p>Result 1: Resilient recovery from 2018 floods is implemented in line with the RKDP priorities and guidelines, and benefit women and children.</p>
<p>Prior Action 2: The GoK has adopted the new flood cess, with effect as of June 1, 2019 for financing resilient recovery efforts.</p>	<p>Trigger 2: The GoK has issued legal instructions for mobilizing private institutional and retail finance for financing resilient recovery efforts.</p>	<p>Result 2: Additional public and private financial resources are mobilized for resilient recovery.</p>
<p>Prior Action 3: The GoK has adopted new protocols for enhancing emergency preparedness and response capacity of various departments.</p>	<p>Trigger 3: The GoK has updated and published the State Disaster Management Plan, incorporating disaster risk reduction and climate resilience principles and policies and including emergency management and outreach to vulnerable communities.</p>	<p>Result 3: Improved capacity for emergency, disaster, and climate risk management with outreach to vulnerable communities.</p>
<p>Prior Action 4: The GoK has established a cross-sectoral State-level committee to draft a River Basin Conservation and Management Authority Act establishing a River Basin Conservation and Management Authority.</p>	<p>Trigger 4: Draft River Basin Conservation and Management Act has been submitted to the State Assembly for approval.</p>	<p>Result 4: Improved river basin planning and water infrastructure operations management for climate resilience at the State level.</p>
<p>Prior Action 5: The GoK has notified¹ the establishment of five agroecological zones and the reorganization of the Agriculture Department along agroecological zones.</p>	<p>Trigger 5: The GoK has instituted/amended policies, guidelines, and programs for expansion of agriculture risk insurance uptake.</p>	<p>Result 5: More resilient and sustainable agriculture based on agroecological zones and enhanced agriculture risk insurance.</p>
<p>Prior Action 6: The GoK has notified the criteria for the identification/determination of the core road network and mandated the review of PWD road policies, construction codes, and manuals to ensure the resilient design, construction, and maintenance of core road network.</p>	<p>Trigger 6: The GoK has adopted performance-based management contract model for managing the core road network, incorporating design and performance standards and disaster-related emergency response module.</p> <p>Trigger 7: The GoK has undertaken institutional streamlining in the roads sector to address institutional and resource fragmentation and to strengthen core sector institutions.</p>	<p>Result 6: Improved physical and institutional resilience of the core road network, including in hilly areas where most tribals are located.</p>
	<p>Trigger 8: The GoK has reorganized institutional arrangements to create a single land record and integrated map for Kerala unifying the current Deeds Registry, Record of Rights, and Field Book (map) records and services.</p>	<p>Result 7: Unified and more up-to-date gender-disaggregated land records in high risk areas.</p>

¹ 'Notified' means publicly declaring the Government decision specific to the subject matter.



Prior Actions	Indicative Triggers	Indicator Name
<p>Prior Action 7: The GoK has established a committee to revise the Town and Planning Country Act to make master plans risk informed and to revise the annual expenditure planning and budget guidelines for urban local bodies to undertake multiyear municipal infrastructure investments.</p>	<p>Trigger 9: The GoK has amended TCP Act for risk-informed master planning.</p> <p>Trigger 10: The GoK has revised annual expenditure planning and budget guidelines for urban local bodies to undertake multiyear municipal infrastructure investments.</p>	<p>Result 8: Risk-informed master plans are notified and funds for multi-year municipal infrastructure investments are allocated in annual plans by urban local bodies.</p>
<p>Prior Action 8: The GoK has established a cross-sectoral committee to prepare the policy and institutional program for strengthening water supply and sanitation services and their resilience to disasters and impacts of climate change.</p>	<p>Trigger 11: The GoK has adopted the policy and institutional program for strengthening water supply services including service delivery models, O&M cost recovery, MIS, and Grievance Redress Mechanism.</p> <p>Trigger 12: The GoK has adopted a State Sanitation and Waste Management Strategy, incorporating cost-effective septage and waste management models.</p>	<p>Result 9: Improved water supply and sanitation services.</p>



IDA PROGRAM DOCUMENT FOR A PROPOSED CREDIT TO REPUBLIC OF INDIA

1. INTRODUCTION AND COUNTRY CONTEXT

1.1. BACKGROUND

1. **The 2018 floods and landslides in Kerala revealed a series of interconnected problems in disaster preparedness, emergency management systems, and more importantly, in the management of reservoirs and water resources in the State.** The main challenges and vulnerabilities of Kerala—emblematically—follow the course of the river, starting from the basins and reservoirs upstream, to the developments in the cities and towns midstream, all through to farms and livelihoods downstream. The lack of management of the river led to catastrophic impacts on property, infrastructure, and lives and livelihoods of people, especially affecting the poor and vulnerable segments of the population. Addressing the underlying drivers of floods and landslides and better preparing the State for future disasters therefore, follows the course of the river: (i) upstream through integrated water resources management (IWRM); (ii) midstream through improved planning, land use, and infrastructure and services; and (iii) downstream through ecologically sound agriculture and irrigation practices. This defines the areas of transformational reforms required for building resilience so that Kerala would not face the same level of devastation in future disasters.

2. **The State Partnership between the Government of Kerala (GoK) and the World Bank defines how to systematically address these interconnected problems for protecting lives, livelihoods, and assets of people, as well as securing the development gains of the State.** The scale and comprehensive nature of the changes needed to address the underlying causes of floods and landslides requires engaging with the State at a broader and higher level over an extended period. The depth and breadth of the engagement need to be supported by using all the tools at the World Bank’s disposal, including policy dialogue, political economy analysis, sector engagements, partnerships, and collaborations with other development partners, and the civil society, as well as bringing in IDA resources to build a platform for the first State Partnership. The State Partnership, described as the core of the World Bank Group’s Country Partnership Framework (CPF) for India for FY18-22², aims to bring about systemic changes in state capabilities through policy shifts and institutional transformations. In the case of Kerala, the State Partnership means working in cross-cutting themes and priority sectors to build systems of resilience in a fiscally, environmentally, and institutionally sustainable way against natural disasters and climate induced extreme events.

3. **There are three unique aspects of the first State Partnership that the GoK and the World Bank have established through the proposed operation:** (i) the confluence and the combination of the two stories noted above, (ii) strong commitment of the State for the reform agenda right from the highest level all the way through the technical and administrative levels, (iii) the use of development policy financing to launch the engagement and structure the medium-term transformative shifts in policies, institutions, and programs, rather than as a onetime intervention to effect a limited change.

4. **The proposed operation, which forms the foundation for the State Partnership, supports the policy and institutional reform program of the GoK for enhancing the State’s resilience against disasters and impacts of climate change.** The heavy monsoon of 2018 brought widespread flooding to several districts of Kerala and triggered thousands of small to big landslides. The extreme and prolonged rainfall spell in August led to the worst

² Report Number 126667



flooding in Kerala in nearly a century, affecting almost 5.4 million people, or one-sixth of the State's population. The GoK recognized that a traditional approach to recovery and reconstruction would not lead to comprehensive preparedness for future disasters and the floods should be taken as 'a challenge and an opportunity to rebuild the State to ensure better standards of living to all sections of the society.'³ The World Bank's engagement with the GoK has followed a two-pronged approach—(i) supporting the assessment of impacts of the disaster and assisting recovery and reconstruction through restructuring ongoing investment operations and (ii) helping establish policies, institutions, and systems that are required to build systemic resilience to disaster risks and climate change. This has opened the door to establish a long-term partnership with the State for a Resilient and Green Kerala. This approach is also aligned with the World Bank's Climate Change Action Plan of mainstreaming disaster and climate resilience in the development agenda. The proposed operation of US\$250 million, the first in a series of two Development Policy Operations (DPOs), responds to this context by supporting policy reforms for mainstreaming long-term resilience to disaster risks and impacts of climate change across the State's key areas of development. The proposed operation will be financed by IDA. While India is currently eligible for only IBRD financial terms, IDA Blend financial terms will be applied to the operation under the amendments approved by the Board based on the IDA18 midterm review.

1.2. COUNTRY CONTEXT

5. **India continues to be the world's fastest growing major economy.** After growing at 8.2 percent in FY16/17, the economy expanded at a slower pace of 7.2 percent in the following year. In the current fiscal year, growth is expected to remain at 7.2 percent. Data for the first three quarters suggest that growth has been broad-based, with an acceleration in industrial growth on the production side and growing contributions from gross fixed capital formation and exports on the demand side. Meanwhile, the external headwinds that characterized the first half of the fiscal year have subsided. The decline in oil prices since October 2018 has allowed the current account deficit to return to relatively benign levels. Likewise, the large portfolio capital outflows that materialized from April 2018 onward have reversed. Foreign reserves stood at US\$411.9 billion, as of end-March 2019, equivalent of about 9.7 months of imports. Going forward, growth is projected to firm up and stabilize at around 7.5 percent, thanks to resilient private consumption, a rise in exports of goods and services and a gradual increase in investments. The current account deficit is projected to reach 2.6 percent in FY18/19 and to decline thereafter.

6. **With a steady decline in poverty since 1994 and the highest level of human development in India, Kerala's challenges are increasingly about the quality of public services and infrastructure.** Poverty levels in the State, 8 percent, are among the lowest in the country.⁴ After 2005, Kerala grew and reduced poverty faster than many other states, with growth being driven mainly by services. Kerala has 99 percent literacy, the highest life expectancy, and the lowest rates of infant mortality in the country. Although Kerala is home to a small share of India's poor, pockets within the State record a high incidence of poverty. While the level of economic and human development is high in Kerala, the State lags in the development of quality infrastructure. Moreover, existing infrastructure is highly vulnerable to disasters risks and climate change. Low level of investments in infrastructure due to fiscal constraints coupled with inefficiencies in the allocation of scarce resources and inadequate quality of management in public institutions have led to poor quality of infrastructure.

7. **Kerala is exposed to hydrometeorological and geophysical hazards and faces challenges in building resilient communities and infrastructure in the context of climate change.** The State is vulnerable to increased intensity and frequency of flooding during the monsoon period, a water shortage during peak summer months

³ The policy statement of the GoK as per Government Order G.O.(P)No.16/2018/P&EA, dated November 9, 2018.

⁴ World Bank. 2017. *India State Briefs - Kerala: Poverty, Growth, and Inequality*.



along with a subsequent increase in urban temperature, and a potential increase in coastal erosion along the highly populated coastline due to rising sea levels. The Kerala State Disaster Management Authority (KSDMA) notes that the State is prone to cyclone, monsoon storm surge, coastal erosion, sea-level rise, tsunami, flood, drought, lightning, landslide (debris flows), land subsidence, and earthquake. It has a high-average annual precipitation of about 3,000 mm and approximately 90 percent of rainfall occurs during two monsoon periods. Almost 15 percent of the State is prone to floods. The high intensity storms during the monsoon months result in heavy discharges in the rivers, while the prolonged dry seasons jeopardize farmers' livelihoods and security of drinking water. Additionally, Kerala has a diverse topography ranging from the high ranges to midland and coastal plains and lowland areas near the coast that fall 3 m below sea level. This combination of intense rainfall in the high ranges with a drastic elevation difference over a short distance causing peak runoffs, combined with flat terrain toward the western coast, presents the conditions for rapid flooding.

8. **A Joint Rapid Damage and Needs Assessment (JRDNA) was conducted in September 2018 by the GoK, supported by the World Bank and the Asian Development Bank (ADB).** The assessment estimated the recovery needs at INR 250 billion or US\$3.56 billion (equivalent to 3.6 percent of FY17/18 gross state domestic product [GSDP]) for priority sectors alone. The JRDNA formed the basis for the comprehensive Post-Disaster Needs Assessment (PDNA), led by the United Nations (UN) in October 2018, which estimated the total recovery needs at US\$4.4 billion. The sectors that suffered the worst damage were transport, rural infrastructure, livelihoods, housing, and urban infrastructure. The losses were amplified owing to several factors, including inadequate water resources management (WRM), poor early warning systems and protocols, unplanned development in disaster-prone areas, and poor-quality infrastructure. Without immediate recovery, reconstruction, and long-term resilience building efforts, the recent disasters may undermine the progress that the GoK has made in reducing poverty and promoting shared prosperity.

9. **Following the abatement of floods, the GoK established the Rebuild Kerala Initiative (RKI), a state-level institutional modality for formulating and coordinating the implementation of building a Green and Resilient Kerala.** Through establishing the RKI, the GoK aims to establish a streamlined and transparent process of decision making for comprehensive and resilient recovery and rebuilding from the 2018 floods. The RKI aims to catalyze the State's transformational shift toward risk-informed sustainable development⁵ by putting in place policies, institutions, and systems for enhancing resilience to disasters and impacts of climate change; by ensuring higher standards of infrastructure, assets, and livelihoods for resilience; and by fostering equitable, inclusive, and participatory reconstruction for building back better.

10. **The RKI, with support from the World Bank and other partners, has developed the Rebuild Kerala Development Programme (RKDP), a comprehensive government program for a Green and Resilient Kerala, through a participatory and inclusive approach.** The RKDP will be supported by the World Bank through a programmatic series of DPOs that create an enabling platform for multisectoral policy and institutional engagement with the State. This will be complemented by a strong technical assistance program to implement the reforms and strengthen key institutions. In response to the GoK's request, the World Bank has tentatively agreed to reallocate US\$45 million from the Second Kerala State Transport Project (P130339) to support immediate recovery works and finance critical technical assistance after the safeguards disclosure requirements have been met. The World Bank is also preparing an investment operation aimed at building resilient urban infrastructure and strengthening urban local bodies (ULBs). The proposed World Bank support will aim to maximize finance for development by helping the State leverage private sources of finance to support the RKDP

⁵ Government Order; G.O.(P)No.16/2018P&EA dated November 11, 2018.



and through enhancing private sector participation in recovery and resilience building. Finally, the World Bank is collaborating with several development partners, as well as thinktanks and civil society entities to broaden capacity support for the RKDP. Together, these form the foundation of the World Bank's emerging State Partnership with Kerala.

2. MACROECONOMIC POLICY FRAMEWORK

2.1. RECENT ECONOMIC DEVELOPMENTS

11. **India's growth remains robust.** After growing at 8.2 percent in FY16/17, the economy expanded at a somewhat slower pace of 7.2 percent in the following year. In FY18/19, growth is expected to remain at 7.2 percent. Data for the first three quarters of the year suggest that growth has been broad-based, with an acceleration in industrial growth on the production side, and growing contributions from gross fixed capital formation and exports on the demand side.

12. **Inflation has remained well within policy targets.** Thanks in part to the adoption of inflation targeting by the Reserve Bank of India (RBI) in FY16/17, inflation has remained within the 4 (±) 2 percent target since then. Inflationary pressures prompted the RBI to raise policy rates twice by a cumulative 50 basis points (to 6.5 percent) between April and August 2018. However, since then, inflation has declined significantly, driven by a sustained decline in food prices: headline inflation stood at 2.9 percent in March 2019, and 3.4 percent on average for FY18/19 till end March. As a result, the RBI reduced the policy rate by 25 basis points in February 2019 and a further 25 basis points in April 2019. However, core inflation as well as expectations remained elevated.

13. **Credit growth has picked up,⁶ but credit to industry remains burdened by the prevalence of nonperforming assets (NPAs) in the banking sector, and fragility in the nonbank segment of the financial sector.** While the Government has introduced measures to address the prevalence of NPAs in the banking sector, including a novel Insolvency and Bankruptcy Code, combined with an INR 2.1 trillion bank recapitalization program, their full effects are only expected to materialize over the medium term. Meanwhile, a series of defaults by the *Infrastructure Leasing and Financial Services*, a nonbanking financial company, has resulted in a sharp deceleration in overall nonbank credit growth, which was only partially made up for by increases in bank credit.

14. **India's external position is robust, although the current account deficit has widened recently.** The current account and trade deficits widened to 1.8 percent and 3.1 percent respectively of gross domestic product (GDP) in FY17/18 on the back of strong import growth.⁷ However, stable foreign direct investment (FDI) and strong portfolio capital inflows allowed for a build-up in reserves. By contrast, India's external position worsened significantly in the first half of FY18/19, as elevated oil prices pushed the current account deficit to 2.9 percent in the second quarter, and large portfolio outflows were triggered by U.S. monetary policy. The nominal exchange rate depreciated, and foreign reserves declined by over 8 percent from January to October 2018. However, since then, the decline in oil prices and the U.S. Federal Reserve signaling a slower pace of normalization led to a reversal. Portfolio capital has flowed back in, and the rupee has appreciated by about 4 percent against the U.S. dollar since October 2018. For the full fiscal year, the current account deficit is expected to reach 2.6 percent of GDP. At end-March 2019, foreign reserves stood at a comfortably large level of US\$411.9 billion (equivalent to

⁶ Mostly driven by personal and services loans issued by private banks.

⁷ Exports were constrained by temporary working capital bottlenecks after goods and services tax (GST) implementation, and structural competitiveness weaknesses.



around 9.7 months of imports).

15. **Public finances remain stable, although fiscal consolidation at the central level was temporarily put on hold.** The Central Government's fiscal deficit reached 3.5 percent of GDP in FY17/18, 0.3 percentage points above the original budget target.⁸ At the state level, some consolidation is believed to have taken place over the same period, with the aggregate fiscal deficit of states falling by 0.4 percentage points to 3.1 percent. As a result, the general government deficit declined to 6.4 percent. For FY18/19, the deficit of the Central Government was revised upward to 3.4 percent of GDP (up by 0.1 percentage points relative to the initial budget) on account of a new income transfer scheme for farmers. Nonetheless, further consolidation by states should bring the general government deficit down to 6.2 percent of GDP by FY 19/20.

State of Kerala Context

16. **Kerala has enjoyed respectable economic growth in recent years, albeit below the Indian average.** Real GSDP has grown by approximately 5.8 percent, on average, between FY11/12 and FY16/17 (below the 7.0 percent average for Indian states), although it has risen to 7.4 percent in the two most recent years (FY16/17 and FY17/18)⁹. The structure of Kerala's economy has changed significantly over the past decade, with the share of agriculture in gross value added falling from around 18 percent in FY04/05 to 11 percent in FY16/17, and the shares of industry and services increasing from 23 percent and 60 percent to 26 percent and 63 percent respectively. Remittances provide a significant source of financing for Kerala, which received almost 20 percent of all remittance inflows to India (US\$56.6 billion) in FY16/17. Within services, tourism is a key subsector, accounting for 10 percent of the State's GDP.

17. **Kerala has recorded high fiscal deficits in recent years.** After some improvement over FY02/03 to FY10/11, Kerala's fiscal performance deteriorated from FY11/12 onwards, with the fiscal deficit crossing the 3 percent mark that year, and remaining above it, in all subsequent years. This deterioration was primarily driven by gradual increases in committed expenditure (especially on salaries and subsidies) and in FY16/17 (when the deficit reached 4.3 percent,) particularly by the implementation of the 10th pay revision, and the clearance of large contingent liabilities. Kerala stands out, among comparable states, in terms of both (i) low own-revenues and (ii) high committed expenditures to GSDP. Although the State adopted a Fiscal Responsibility and Budget Management (FRBM) Act in 2003 (including an amendment, which came into force in April 2017 mandating the State to maintain a fiscal deficit of no more than 3 percent of GSDP during FY17/18 to FY19/20), this had little practical effect. In FY17/18, the fiscal deficit stood at 3.9 percent of GSDP.

18. **Total revenues have risen, but so have expenditures.** On the revenue side, own-tax revenues, have been stable over the last five years, averaging 6.8 percent of GSDP¹⁰, while the State's share in central taxes increased significantly in FY15/16, to account for over one-fourth of total tax revenues. By contrast, nontax revenues increased over the last decade from 1.7 percent to about 3 percent of GSDP, owing to increases in both States' own nontax revenues and grants in aid from the center. Overall, funds received from the Central Government have risen significantly to 4.3 percent of GSDP in FY18/19, making up over 34 percent of total state revenues. Meanwhile, total expenditures have also increased steadily. Over the past decade, expenditures ranged from 12.6

⁸ With the slippage mostly due to additional outlays required to compensate the states for GST revenue shortfalls.

⁹ Kerala's growth is believed to have been negatively affected by demonetization and GST introduction due to the features of its industrial and services base, which is essentially made up of small production units.

¹⁰ Accruing primarily from the sales and value-added taxes, excise duties, motor vehicle tax and land revenue, as well as state goods and service tax since 2017.



percent of GSDP in FY09/10 to 16.1 percent of GSDP in FY17/18. Current expenditures, which account for more than 90 percent of the total, on average, have increased since FY10/11 from 11.3 percent to 14.6 percent of GSDP in FY17/18. The main reasons for their rise, especially in FY17/18, include the implementation of the 10th pay revision and the distribution of social security pensions and long-pending arrears. In turn, committed expenditures¹¹ accounted for the bulk of current expenditures (approximately 63 percent, on average, over the past 10 years). Capital spending, whose share in total expenditures has traditionally been low, stood at 1.5 percent of GSDP in FY17/18, much below the national average of 3.0 percent. However, it should be mentioned that (i) Kerala has historically devoted a significant share of expenditure to social sectors, in such a way that it has built a significant human capital base and (ii) recurrent expenditures also include transfers to municipalities that have been high by Indian standards and partly channeled to municipal infrastructure.

Figure 1. Kerala Fiscal Indicators (% of GSDP)

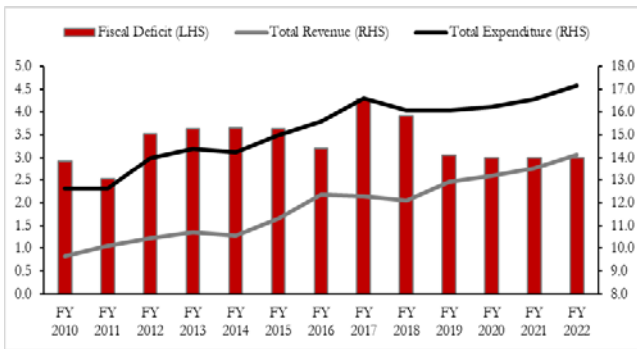
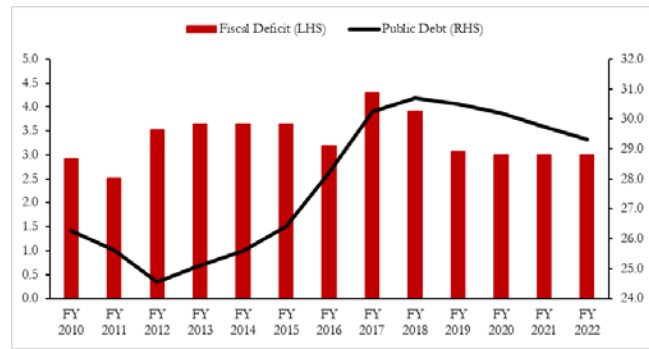


Figure 2. Kerala Deficit and Debt Dynamics



Source: Government of Kerala ‘Medium Term Fiscal Policy and Strategy Statement’, 2019.

19. **As a result, Kerala’s public debt has been increasing gradually as a percent of GSDP.** Public debt declined continuously between FY07/08 and FY11/12, but rose rapidly thereafter, due to (i) relatively low GSDP growth, and (ii) relatively high deficits. While the public debt/GSDP ratio increased by just under two percentage points, from 24.6 percent in FY11/12 to 26.4 percent in FY14/15, it shot up in the following years—to reach 30.7 percent at the end of FY17/18, still only marginally above the target of 30.4 percent prescribed by the State’s FRBM.

2.2. MACROECONOMIC OUTLOOK AND DEBT SUSTAINABILITY

National Outlook

20. **Economic growth is projected to gradually accelerate in the coming years, and overall macroeconomic stability to be maintained.** Private consumption is expected to remain the primary driver of growth, while investment and exports should pick up moderately. Inflation and external conditions are expected to normalize after the temporary shocks experience in the first half of FY18/19. Inflation is projected to average 3.7 percent for the full fiscal year, and to increase moderately thereafter as food prices firm up. The current account deficit is anticipated to widen to 2.6 percent of GDP in FY18/19 (reflecting a period of high oil prices) but to decline as oil prices stabilize at lower levels, and past exchange rate adjustments trigger supply responses. On the fiscal front, the combined fiscal deficit of the center and states should continue to decline in coming years, albeit gradually. The general government deficit is projected to decline to 6.3 percent of GDP in FY18/19 and further to 6.2 percent by FY19/20. In the medium term, the rollout of the GST is expected to improve tax compliance, foster greater formalization of the economy, and boost interstate trade. Taken together, gradual fiscal consolidation and robust

¹¹ Which includes salaries, wages, pensions, subsidies, interest payments, and devolution to local self-governments.

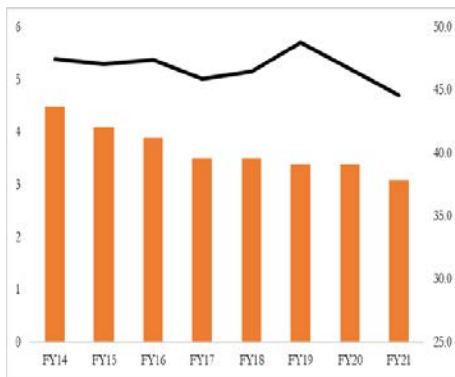


economic growth are thus expected to drive a continued decline in the general government debt.

21. According to the latest Debt Sustainability Analysis, India’s debt remains sustainable as it is denominated in domestic currency, of long/medium-term maturity, and predominantly held by residents. Under the baseline assumption of planned fiscal consolidation and an acceleration in nominal GDP growth, the Central Government debt-to-GDP ratio is expected to decline to below 45 percent by FY20/21 (figure 3). Given that a captive market for debt caps the interest cost, the sustainability of debt is mostly contingent upon shocks to real GDP growth and fiscal slippages. India’s external debt, at around 21 percent of GDP and predominantly of long duration, remains sustainable.

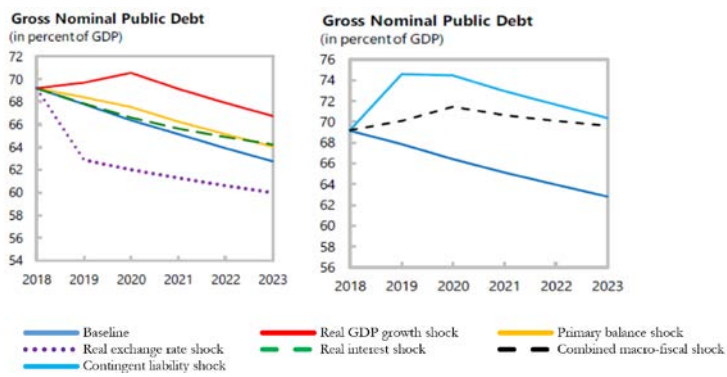
22. Stress tests show that the most significant risk to India’s debt sustainability is low growth. A stress test corresponding to a growth shock yields a deteriorating debt path with debt-to-GDP ratio reaching a peak of 71 percent of GDP. A combined macro fiscal shock yields slightly worse outcomes though the debt path would return to a downward trajectory (figure 4).

Figure 3. Central Government Fiscal Deficit and Debt-GDP (%)



Source: India Central Statistics Office, staff calculations.

Figure 4. India Public Debt Sustainability: Baseline and Stress-Test Scenarios



Source: International Monetary Fund (IMF) Article IV 2018.

23. India’s macroeconomic policy framework is considered adequate for the proposed DPO. Economic growth is robust, the initial disruptions caused by demonetization and the introduction of the GST have been overcome, and the economy has also proved resilient to external shocks. Structural reforms, including initial efforts to address financial sector weaknesses are also expected to pay off over time. In recent years, the monetary policy framework has been strengthened. While fiscal consolidation is proving to be slower than anticipated, especially at the central level, it is noteworthy that India’s states have been increasingly prudent fiscally in recent years. Moreover, the 15th Finance Commission is expected to mandate a fiscal consolidation glide path for both the center and each state that will provide an anchor for fiscal policy in the coming years. Debt and deficit levels are relatively high, but ample domestic funding is available and refinancing risks are moderate. India’s exposure to external volatility has increased in recent years, but so have buffers given high reserve levels and limited external financing needs.



Table 1. India Selected Economic Indicators FY14–FY20

Key Macroeconomic Indicators	FY14	FY15	FY16	FY17	FY18	FY19	FY20
	Actual	Actual	Actual	Actual	Actual	Estimated	Estimated
Real Economy	(Annual percentage change unless otherwise indicated)						
Nominal GDP (local currency)	13.0	11.0	10.5	11.5	11.3	11.4	12.0
Real GDP	6.4	7.4	8.0	8.2	7.2	7.2	7.5
Per Capita GDP (real US\$, Atlas method)	1,486.2	1,609.7	1,639.8	1,751.9	1,974.8	—	—
Contributions to growth (percentage points)							
Consumption	4.2	4.4	5.2	5.2	5.7	5.1	5.3
Investment	0.5	0.8	2.0	2.6	2.9	3.1	2.6
Net exports	4.5	0.2	0.2	0.1	-2.8	-1.4	-1.8
Unemployment rate	3.4	3.5	3.5	3.5			
GDP deflator	6.2	3.3	2.3	3.1	3.8	3.9	4.2
Consumer price index (CPI) (average)	9.4	5.9	4.9	4.5	3.6	3.7	4.0
Fiscal accounts (general government)	(Percent of GDP)						
Revenues and grants	19.6	19.2	19.9	20.2	20.3	20.7	20.4
Expenditures and net lending	26.2	25.9	26.8	27.1	26.7	27.0	26.6
Overall balance	-6.7	-6.7	-6.9	-6.9	-6.4	-6.3	-6.2
Public debt	67.1	66.6	68.5	67.7	67.6	67.2	66.1
Selected monetary accounts	(Annual percentage change unless otherwise indicated)						
Base money (M0 or reserve money)	8.8	10.1	12.1	-1.3	—	—	—
Credit to nongovernment	14.8	11.1	9.7	7.9	—	—	—
Interest rate (Repo rate and period average)	7.6	7.9	7.0	6.4	6.1	6.4	6.1
Balance of payments	(Percent of GDP, unless otherwise indicated)						
Current account balance	-1.7	-1.3	-1.0	-0.7	-1.8	-2.6	-1.9
Imports	28.4	26.6	22.4	21.4	22.1	24.9	26.4
Exports	24.5	23.2	19.6	19.4	19.0	20.0	20.8
Foreign direct investment (net)	1.1	1.5	1.7	1.6	1.1	1.2	1.4
Gross reserves (in US\$ billion, eop)	304.2	341.6	360.2	370.0	424.5	—	—
In months of next year's imports	6.6	8.2	8.7	—	—	—	—
External debt	23.9	23.4	20.0	20.5	20.8	—	—
Terms of trade (FY2000=100)	60.2	57.9	71.8	—	—	—	—
Exchange rate (INR per US\$1, average)	60.9	61.2	65.7	67.1	64.5	69.9	70.0
Other memo items							
Nominal GDP in US\$ (billions)	1,916.9	2,042.9	2,146.8	2,286.1	2,650.8	2,723.9	3,049.1
Nominal GDP in INR (trillions)	112.3	124.7	137.7	153.6	170.9	190.5	213.4



Table 2. India's Selected Fiscal Indicators FY14–FY20

Key Fiscal Indicators	FY14	FY15	FY16	FY17	FY18	FY19	FY20
	Actual	Actual	Actual	Actual	Actual	Revised	Budget
Central Government	(Percent of GDP)						
Overall balance	-4.5	-4.1	-3.9	-3.5	-3.5	-3.4	-3.4
Primary balance	-1.1	-0.9	-0.7	-0.4	-0.4	-0.2	-0.2
<i>Total revenues (and grants)</i>	12.1	11.8	12.6	13.2	13.2	13.2	13.5
Tax revenues	10.1	10.0	10.6	11.3	11.6	11.9	12.1
Taxes on goods and services	2.9	2.9	3.6	4.2	4.8	4.8	4.8
Taxes on income and profits	5.6	5.5	5.4	5.6	6.0	6.4	6.6
Taxes on international trade	1.5	1.5	1.5	1.5	0.8	0.7	0.7
Other taxes	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Nontax revenues	1.8	1.6	1.8	1.8	1.4	1.3	1.3
Recoveries of loans	0.1	0.1	0.2	0.1	0.1	0.1	0.1
<i>Expenditures</i>	16.8	16.1	16.7	17.0	17.3	16.9	17.3
Current expenditures	15.1	14.5	14.9	15.1	15.6	15.2	15.7
Interest payments	3.3	3.2	3.2	3.2	3.2	3.1	3.2
Others (salaries, supplies, and so on)	8.9	8.5	8.0	7.9	8.5	8.1	8.5
Tax transfers to states	2.9	2.7	3.7	4.0	4.0	4.0	4.0
Capital expenditures	1.7	1.6	1.8	1.9	1.6	1.6	1.6
<i>Central Government Financing</i>	4.5	4.1	3.9	3.5	3.5	3.3	3.4
External (net)	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Domestic (net)	4.4	4.1	3.9	3.5	3.6	3.3	3.4
State Governments	(Percent of GDP)						
Overall balance	-2.2	-2.6	-3.1	-3.5	-3.1	-2.6	—
Revenues	12.2	12.8	13.3	13.4	14.6	15.0	—
Expenditures and net lending	14.4	15.6	16.4	17.0	18.1	17.9	—
Public Debt	(Percent of GDP)						
General Government	67.1	66.6	68.5	67.7	67.6	67.2	66.1

Source: India Central Statistics Office, Staff calculations.

State Government Outlook

24. In contrast with the State's track record of relative fiscal profligacy, Kerala's fiscal position has improved in FY18/19, and the budget for FY20—presented together with a Medium-Term Fiscal Policy—included significant measures to maintain state finances in line with the FRBM, while making space for expanded capital spending. Some significant fiscal improvements are believed to have taken place in FY18/19 (according to revised estimates, as of January 2019). Relative to FY17/18, the revenue deficit is expected to fall by 0.8 percentage points of GSDP (from 2.5 percent to 1.7 percent) owing to an increase in revenue receipts (with higher grants from the center on account of disaster relief but also higher own-tax revenues) and to a decline in committed expenditures (by 1.1 percentage points of GSDP), compensating for an increase in non-committed recurrent outlays. With



capital spending constant at 1.5 percent of GSDP, the overall fiscal deficit is also expected to decline from 3.9 percent of GSDP in FY17/18 to 3.1 percent in FY18/19.

25. **According to the GoK's medium term fiscal plan—presented/adopted together with the FY19/20 budget—the consolidation trend is expected to continue, resulting from a combination of the following, which will enhance the state's compliance with the FRBM Act:**

- **Subdued recurrent expenditure growth.** Kerala is targeting further declines in recurrent expenditures (as a share of GSDP), stemming from compressions in committed expenditures. After peaking at 10 percent of GSDP in FY17/18, committed expenditures are expected to decline to 8.9 percent in FY18/19 and further to 8.0 percent by FY20/21. While interest obligations are expected to remain stable as a share of GSDP, outlays on salaries, wages, and pensions are all projected to fall from 7.5 percent in FY17/18 to 6.7 percent in FY18/19 and further to 5.7 percent in FY20/21 (following the payout of all pay/pension revision arrears in FY18/19 and given that new pay revisions will only take effect from FY21/22 onwards); according to the State's Medium-Term Fiscal Policy increases in salary and pensions in FY21/22, following the new pay revisions would be contained to 0.6 percent of GSDP.
- **Significant gains on the revenue side.** Revenue receipts are projected to increase as a share of GSDP by 2 full percentage points between FY17/18 and FY21/22, from 12.1 percent in FY17/18 to 12.9 percent in FY18/19, and 14.1 percent of GSDP in FY21/22, owing mostly to significant expected gains in own-tax revenues underpinned by:
 - (a) Expected positive developments in overall economic activity (as the planned increase in public investment boosts construction activity and helps relieve supply-side constraints) and in GST collections (as the new tax stabilizes and Kerala's businesses—mostly made up of small units—gradually absorb the initial compliance costs), and
 - (b) An extensive list of policy initiatives to boost revenues as outlined by the Minister of Finance in the Budget Speech 2019–2020 including
 - (i) New temporary tax measures (for two years) in the form of a 1 percent cess on the supply of goods and services with a GST rate of over 5 percent and a 0.25 percent flood cess on all goods under the fifth schedule (gold, silver, platinum, and ornaments), as well as a 2 percent increase in taxes applicable to sale of liquor, a 10 percent levy on cinema sales by local bodies, a 1 percent increase in the onetime tax on new motor vehicles, the introduction of stamp duty for electronic records and agreements, an increase in the 'fair value' of land by 10 percent, revisions to the luxury tax rate for residential buildings, and the introduction of a onetime tax and luxury tax to be levied on finished buildings, and a 5 percent increase in all charges and fees for service provided by state departments;
 - (ii) Enhanced measures to detect tax evasion under the GST and strengthen assessment and enforcement (including through reorganizing and upskilling the relevant departments, invoice matching based on GSTR-2A, real-time e-way bill verification at state borders using automatic number plate recognition technologies);



- (iii) Measures to broaden the tax net (including surveys of service providers, outreach efforts, the deployment of e-ticketing in cinema halls and the provision of accounting software for traders); and
- (iv) The implementation of amnesty programs to collect tax arrears in the form of onetime settlement schemes; Measures to strengthen GST administration, with the creation of a Coordination Committee bringing together the relevant state and central commissioners.

26. **In turn, these improvements should make room for increased non-committed recurrent expenditures and capital spending—in line with ambitious reconstruction objectives—while keeping the deficit within FRBM targets.** Indeed, non-committed recurrent expenditures are budgeted to rise from 5.7 percent in FY18/19 to 6.5 percent by FY21/22; as for capital spending, after hovering around an average of 1.5 percent of GSDP over the past decade, it is budgeted to rise by almost 1 percentage point, from 1.5 percent in FY18/19 to 2.3 percent by FY21/22 (a nominal increase of INR 137.5 billion, or almost US\$2 billion). The projected decrease in the revenue deficit should make space for the capital budget to rise without affecting the overall fiscal deficit. The symmetrical increase in revenue receipts and decline in revenue expenditure should result in a narrowing revenue deficit, from 2.5 percent of GSDP in FY17/18 and 1.7 percent in FY18/19, to 0.6 percent by FY20/21, allowing the overall fiscal deficit to remain strictly at 3.0 percent.

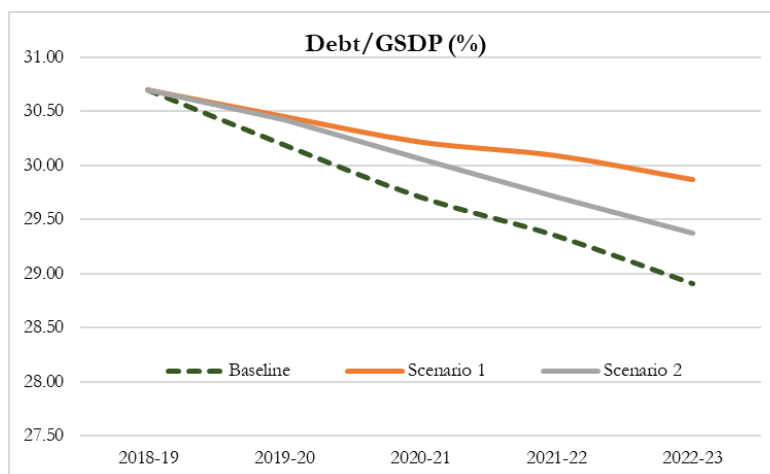
27. **Under that baseline scenario, which assumes a robust nominal growth rate of 13 percent (up from 12.8 expected in FY18/19), as renewed investment boosts economic activity, Kerala’s debt trajectory is projected to decline steadily and the debt to GSDP ratio to fall below 30 percent by FY20/21.** Indeed, the debt to GSDP ratio is expected to reach 30.5 percent in FY18/19 and to decline each year to reach 30.2 percent in FY19/20 and 29.7 percent the following fiscal year.

28. **Under alternative scenarios—modeled by the World Bank team—Kerala’s debt is still declining.** In Scenario 1, the impact of lower growth from FY19/20 onwards is modeled (12 percent versus 13 percent in the baseline). In this case, the debt to GSDP ratio only crosses the 30 percent mark by FY22/23. In Scenario 2, a higher primary deficit in FY18/19 (1.2 versus 1.0) and a more gradual declining path with slightly slower growth than in the baseline (12.6 percent in FY18/19 and 12.5 percent thereon) is modeled. In this scenario, the debt-to-GSDP ratio crosses the 30 percent mark by FY21/22.

29. **Thus, Kerala’s macroeconomic policy framework is also considered adequate.** With respectable economic growth and gradual fiscal consolidation that still makes room for greater capital spending, the debt/GSDP ratio is expected to fall over the medium term. This positive medium-term outlook is subject to several downside risks, as its realization is contingent on sustained economic growth, significant improvements in revenue collection, and continued efforts at fiscal consolidation. However, the State’s own Medium-Term Fiscal Policy framework provides comfort to the extent that it (i) explicitly acknowledges that the past patterns of relative fiscal profligacy—while once justified in light of social spending priorities and adverse shocks—must now be reversed, (ii) provides for detailed measures to improve revenue collection, and (iii) builds in margins of maneuver to further cut non-committed recurrent and capital expenditures, should revenue targets not be met or committed expenditure growth exceed stated goals. Moreover, the programmatic nature of the proposed DPO series provides an avenue for further engagement with the authorities on the fiscal framework as discussed in section 4.3.



Figure 5. Kerala Debt Paths under Alternative Scenarios



Source: GoK 'Medium Term Fiscal Policy & Strategy Statement', 2019; staff calculations.

Table 3. Kerala Selected Fiscal Indicators FY14–FY22

	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
	Actual	Actual	Actual	Actual	Rev. Est.	Rev. Est.	Projected	Projected	Projected
	(Percentage of GSDP)								
Fiscal Deficit	-3.6	-3.6	-3.2	-4.3	-3.9	-3.1	-3.0	-3.0	-3.0
Primary Deficit	-1.9	-1.7	-1.2	-2.3	-1.7	-1.0	-1.0	-1.0	-1.1
Revenue Deficit	-2.4	-2.7	-1.7	-2.5	-2.5	-1.7	-1.0	-0.6	-0.8
<i>Total Revenues</i>	<i>10.6</i>	<i>11.3</i>	<i>12.4</i>	<i>12.3</i>	<i>12.1</i>	<i>12.9</i>	<i>13.2</i>	<i>13.5</i>	<i>14.1</i>
Tax Revenues	8.5	8.4	9.3	9.3	9.6	10.1	—	—	—
Own Tax Revenues	6.9	6.9	7.0	6.8	6.8	6.9	7.5	7.7	8.2
Nontax Revenues	2.1	2.9	3.1	3.0	3.3	3.1	—	—	—
Own Nontax Revenues	1.2	1.43	1.5	1.6	1.6	1.7	1.7	1.8	1.8
<i>Expenditures</i>	<i>14.2</i>	<i>15</i>	<i>15.6</i>	<i>16.6</i>	<i>16.1</i>	<i>16.1</i>	<i>16.2</i>	<i>16.6</i>	<i>17.2</i>
Revenue Expenditures	13.0	14.0	14.1	14.8	14.6	14.6	14.2	14.1	14.9
Committed	8.4	8.6	8.8	9.2	10.0	8.9	8.1	8.0	8.4
Interest Payments	1.8	1.9	2.0	2.0	2.2	2.0	2.0	2.0	1.9
Salaries and Wages	4.2	4.2	4.2	4.5	4.6	4.2	3.7	3.6	3.9
Pensions	2.1	2.2	2.3	2.5	2.9	2.5	2.2	2.1	2.4
Subsidies	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2



	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
	Actual	Actual	Actual	Actual	Rev. Est.	Rev. Est.	Projected	Projected	Projected
Non-Committed Capital Expenditures	4.6	5.4	5.3	5.5	4.6	5.7	6.1	6.2	6.5
Debt Stock	1.2	1.0	1.5	1.8	1.5	1.5	2.0	2.4	2.3
Kerala Nominal GSDP Growth	25.6	26.4	28.2	30.3	30.7	30.5	30.2	29.7	29.3
Kerala Real GSDP Growth	12.8	10.2	8.9	10.5	11.4	12.8	13.0	13.0	13.0
	3.9	4.3	6.8	7.4	7.4	7.4	—	—	—

Source: GoK 'Medium Term Fiscal Policy & Strategy Statement', 2019

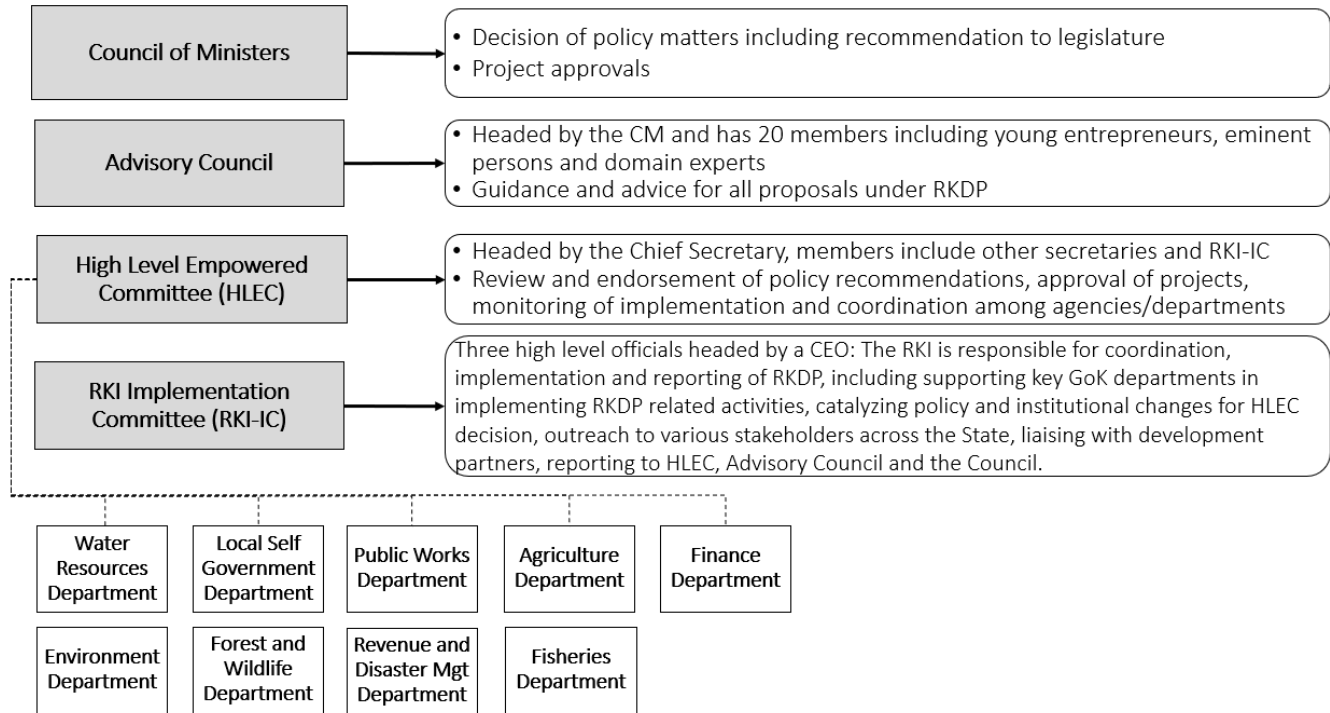
3. GOVERNMENT PROGRAM

30. The floods provided an opportunity to the GoK to accelerate long-pending policy and institutional reforms that address the drivers of natural disaster and climate change risks faced by Kerala, as well as better prepare the State against future disasters. To facilitate this process, as noted earlier, the Government established the RKI through a Government Order (GO) to “bring about a perceptible change in the lives and livelihoods of its citizens by adopting higher standards of infrastructure for recovery and reconstruction, and to build ecological and technical safeguards so that the restructured assets could better withstands floods in the future”¹² The RKI is mandated to help identify critical reforms and investments across sectors and departments, drive the change process within the Government and across the State, and partner with various development partners and civil society entities. The GO describes the RKI institutional framework for developing, implementing, and monitoring the policy reform agenda and the overall recovery and reconstruction process (figure 6). It aims to ensure a consultative and participatory process; maximize synergies across sectors, departments, and agencies; and streamline decision making to enable a comprehensive yet rapid, resilient recovery, and reconstruction.

¹² Government Order; G.O.(P)No.16/2018P&EA dated November 11, 2018.



Figure 6. RKI Institutional Framework: Roles and Responsibilities



31. **The GO also outlines the methodology and procedures to identify priorities and channel proposals from ideation to implementation.** Based on the findings of the PDNA, the GoK has carried out development seminars, workshops, and idea exchanges using face-to-face and virtual platforms among state departments, local self-governments, stakeholders of major programs and projects in Kerala, and the general public. Major policy and institutional initiatives and important project proposals are anchored to this consultative and inclusive process. Ideas and concepts developed are taken by the RKI as inputs for identifying policy and institutional changes as well as developing programs and projects to be part of the RKDP. In short, this inclusive and participatory process led by the RKI has helped in developing the RKDP.

32. **The RKDP constitutes the GoK’s road map for a Green and Resilient Kerala.** Its goal is to catalyze rebuilding of Kerala in a way that (i) addresses key drivers of floods and other natural disasters and climate change risks and (ii) strengthens preparedness against future disasters. The RKDP encompasses cross-cutting and sector-based policy, regulatory and institutional actions, as well as priority programs that are critical for resilient and sustainable recovery and rebuilding of the State. The cross-cutting areas in the RKDP are Disaster Risk Management and Resilience, Environment and Climate Change, Strengthening Institutional Efficiency and Resilience, and Open Data. The sectors in the RKDP include Integrated WRM, Water Supply, Sanitation, Urban, Roads and Bridges, Transportation, Forestry, Agriculture, Animal Husbandry and Dairy, Fisheries, Livelihoods, and Land. Further, the RKDP outlines financing and implementation modalities, including partnerships with public and private sectors, development partners, and the civil society. The RKDP serves as a foundation toward resilient development and promotes a pathway to resilient recovery. The draft RKDP was shared with the public at large



by the RKI on March 7, 2019. In addition, structured consultations led by the RKI and facilitated by GoK departments and the UN were held with domain experts and other key stakeholders during March 2019. The final RKDP, incorporating feedback received from stakeholders, was reviewed by the RKI-IC, the HLEC, and the Advisory Council, approved by the Council of Ministers in May 2019 and, will be launched statewide in July 2019.

33. **The RKDP prioritizes inclusive development and climate sensitivity.** In fact, inclusive development is one of its core principles. All priority program and reforms are to be implemented, and resilient recovery undertaken, so that Kerala's assets and livelihoods become less vulnerable to future shocks, so that all citizens, including vulnerable members such as women, the elderly, persons with disabilities, scheduled castes (SCs) and scheduled tribes (STs), migrant workers, and fisherfolk, participate fully in the efforts and are not left behind in any way. Sectoral engagements will focus on integrating the specific concerns of these populations. The RKDP's cross-cutting chapter of Environment and Climate Change additionally analyses the environmental factors contributing to disasters, such as the floods of August 2018, and the potential future impacts of climate change. Given the demonstrated links between environment and disaster risk, the RKDP strives for recovery through creating resilient measures that mitigate the impacts of any future incidents or disasters.

4. PROPOSED OPERATION

4.1. LINK TO GOVERNMENT PROGRAM AND OPERATION DESCRIPTION

34. **The first Resilient Kerala Program DPO financed by the World Bank is closely aligned with the vision, priorities, and programs of the RKDP and driven through the RKI institutional framework.** The World Bank's support to the RKDP, using resilience and sustainability as overarching themes, aims at assisting the GoK in integrating the most critical cross-cutting and sectoral policy and institutional actions that will put the State on a pathway toward a Green and Resilient Kerala. While the RKDP has a larger mandate, World Bank support will focus on cross-cutting and sector areas that suffered the worst damage from the recent disaster and where the impact on enhancing resilience will be most significant and the World Bank's support would provide the greatest value addition. The main platform of World Bank support would be a programmatic series of two DPOs. Following these, depending on the nature and pace of the reforms, a third DPO or other forms of specific investment support could be considered. The reform process would be supported by a robust program of technical assistance from the World Bank team and through external domestic and international partners. This holistic and comprehensive approach to build alliances among development partners is already under way, as described in section 4.5.

35. **The development objective of the proposed operation, as the first in a programmatic series of DPOs and as the primary platform for establishing a State Partnership, is to enhance the State of Kerala's resilience against the impacts of natural disasters and climate change.** This objective will be achieved through policy and institutional reforms under two pillars:

- Pillar 1: Enhancing Kerala's Institutional and Financial Capacity for Managing Disaster Risks and Climate Change
- Pillar 2: Mainstreaming Disaster and Climate Resilience into Critical Infrastructure and Services

36. **The proposed DPO directly contributes to India's national and Kerala's state objectives for enhanced DRM,** including strengthening disaster risk governance, reducing risk, enhancing preparedness for effective



response and ‘building back better’ in recovery and rehabilitation, as articulated in the Sendai Framework for Disaster Risk Reduction 2015–2030 (Annex 5), adopted by the Government of India (GoI) at the Third UN World Conference for Disaster Risk Reduction in Sendai, Japan, in March 2015. The DPO also supports priority areas regarding overall disaster governance, rehabilitation through building back better following the disasters, as well as disaster risk financing defined under the National Disaster Management Policy 2009, State Disaster Management Policy 2010, National Disaster Management Plan 2016, and State Disaster Management Plan 2016.

37. **The proposed operation would also contribute to India’s overall progress toward Sustainable Development Goals (SDGs).** It covers SDGs 6, 9, 11, and 13 for (i) sustainable management of water and sanitation for all; (ii) building resilient and inclusive infrastructure; (iii) making cities and human settlements inclusive, safe, resilient, and sustainable; and (iv) taking urgent action to combat climate change and its impacts.

38. **Finally, the proposed operation aims at maximizing finance for development.** It will support the GoK in leveraging private sources of finance to complement public finances through innovative modalities such as Masala and Diaspora Bonds targeting institutional and retail investors respectively, as well as help bring private sector finance and expertise in the development, management, and operation of key infrastructure and other assets in sectors such as water, roads, and agriculture that will be built or rebuilt by the GoK as part of recovery and resilience. In fact, the first Masala Bond issued by the Kerala Infrastructure Investment Fund Board (KIIFB) on March 25, 2019, through a private placement amounted to approximately INR 21.5 billion or US\$300 million.

39. **The proposed programmatic series of DPOs supports an innovative approach to respond to disasters.** Emergency operations prepared right after disasters typically focus on early recovery and reconstruction without creating a broad enough platform to address the vulnerabilities that turn natural phenomena into disasters. Interventions to improve DRM and climate resilience usually require cross-sectoral coordination and collaboration across central, regional, and local levels of the Government. Considering this, it was felt that a high-level policy and institutional engagement effected through a programmatic DPO series and complemented through technical assistance and partnerships under the rubric of a State Partnership would serve as a strategic tool to effectively address the complex challenges of DRM and climate change and to mainstream resilience in a more holistic way.

4.2. PRIOR ACTIONS, RESULTS AND ANALYTICAL UNDERPINNINGS

40. The prior actions for DPO1, indicative triggers for DPO2, and expected results from the programmatic reforms are presented below.

Pillar 1: Enhancing Kerala’s Institutional and Financial Capacity for Managing Disaster Risks and Climate Change

41. The objectives of Pillar 1 are (i) to enhance technical and institutional capacity and (ii) to establish innovative sources of financing for disaster recovery, reduction, and climate resilience. Specifically, the GoK aims to reform and modernize its public sector and investment management processes and systems to rebuild more resilient and efficient infrastructure. Prior Action 1 defines the policy framework toward resilient recovery and green development as outlined in the RKDP; Prior Action 2 paves the way to sustainably finance the implementation of the policy framework as outlined in the RKDP; and a strong disaster management system supported by Prior Action 3 constitutes the permanent institutional mechanism to better prepare for future disaster and climate risks in line with the foundational element on DRM and resilience under the RKDP.



Prior Action 1 for DPO1 in Disaster Risk Management: The GoK has adopted the Rebuild Kerala Development Program for enhancing disaster and climate resilience through policy, regulatory and institutional actions with inclusive and participatory approaches.

Indicative Trigger 1 for DPO2: The GoK has issued guidelines for project selection, preparation, and budgeting, including criteria for project readiness, feasibility, and resilience, for the RKDP.

42. **The recent disaster gave momentum to the GoK to consider long-pending policy and institutional reforms that aim to address the drivers of floods and other critical natural disaster and climate change risks faced by the State.** The 2018 disaster amplified the drivers of risk and legacy challenges that Kerala has faced in the past decades: lack of a clear vision to mitigate disaster and climate change risks, weak coordination among key departments and agencies coupled with limited capacities of sector agencies, and poor quality and resilience of public services and infrastructure. The GoK recognized the need to go beyond traditional approaches to recovery and reconstruction to not only recover fully from the current disaster but also prepare better for future disasters. Led by the Chief Minister, the RKDP sets a bold vision for a new Kerala –Nava Keralam—that is more resilient, green, inclusive, and vibrant.

43. **The first prior action will internalize a holistic road map of reforms for resilient development, in particular mainstreaming these structural changes within the Government’s policies, systems, and programs.** The RKDP is a strategic road map of reforms for mainstreaming resilience within existing Government’s policies, systems, and programs. The RKDP includes ‘Sector Notes’ that define critical interventions required for addressing key drivers of August 2018 floods and the State’s legacy challenges associated with respective sectors. Priority sectors covered are Integrated Water Resources Management, Water Supply, Sanitation, Urban, Roads and Bridges, Transportation, Forestry, Agriculture, Animal Husbandry and Dairy, Fisheries, Livelihoods, and Land. Cross-cutting areas include Disaster Risk Management and Resilience, Environment and Climate Change, Strengthening Institutional Efficiency and Resilience, and Open Data for Resilience. Each of these sectors and cross-cutting areas are led by the associated governmental departments and agencies for implementation, with overall coordination by the RKI. The RKDP also outlines a plan for financing the resilience agenda as well as institutional modalities for monitoring and evaluating the results.

44. **The RKDP was formulated through an inclusive and participatory approach** recognizing that the disasters hit the vulnerable groups such as women, migrants, the elderly, fisherfolk, tribal population, disabled, and the poor much harder. All policies and institutional actions included in the RKDP aim to alleviate the burden on the vulnerable groups. The RKDP was presented to the HLEC and approved by the Cabinet for disclosure for public consultation in March 2019. Following this, the GoK, in partnership with the UN, organized consultations on the draft RKDP and obtained comments from sector specialists, local communities, civil society organizations (CSOs), and the private sector, in addition to feedback received from the public online. Based on the comments received, the GoK has revised and finalized the RKDP, which was approved by the Cabinet on May 23, 2019. The approved RKDP is expected to launch statewide in July 2019.

45. **Establishing the basis for making the RKDP operational, the proposed trigger will issue guidelines for project selection, preparation, and budgeting, including criteria for project readiness, feasibility, and resilience, for the RKDP.** This is a first step toward the creation of a single and robust statewide public investment management system. The guidelines will aim to improve the allocative efficiency of public investments through a more stringent cross-sector vetting and prioritization process for high-impact, affordable, and ready projects, based on formal and transparent criteria and reviews. These guidelines will also include the good practices for inclusion to ensure that the vulnerable groups that are put in the forefront of the policy reform agenda actually



benefit from the programs and projects implemented on the ground. The guidelines will be prepared based on the KIIFB's standards and international good practices to enhance operational efficiency and development impact. The GoK will integrate systematic climate risk and resilience screening in the guidelines, especially for large-scale projects or projects in priority areas with significant development impact.

46. **As a result, the proposed reforms will ensure that 'Resilient recovery from 2018 floods is implemented in line with the RKDP priorities and guidelines.'** Progress toward achieving this result will be measured based on (i) the percentage of medium-term resilient recovery activities being implemented according to RKDP priorities and programs and (ii) the number of women and children benefitting from RKDP programs.

Prior Action 2 for DPO1 in Disaster Risk Financing: The GoK has adopted the new flood cess, with effect as of June 1, 2019 for financing resilient recovery efforts.

Trigger 2 for DPO2: The GoK has issued legal instructions for mobilizing private institutional and retail finance for financing resilient recovery efforts.

47. **This prior action underpins how the development program for a Green and Resilient Kerala will be financed through a reform-oriented approach.** The overall planning for financing the recovery needs of US\$4.4 billion is ongoing as part of the RKDP road map, considering debt sustainability and FRBM Act requirements. The GoK has so far generated commitments of approximately US\$1.8 billion, including public finances, external funding, and market-based resources for 2019–2021. The 2019/20 budget approved by the legislature on January 31, 2019, underscores the GoK's commitment by allocating resources for recovery and resilience, including by establishing the case for leveraging private financing through bonds and increasing public sources through a flood cess. The GoK's plan to finance the RKDP, including recovery needs will be discussed in a donors' conference planned in parallel to the launch of the RKDP.

48. **A 1 percent 'Kerala flood cess' is levied on goods coming within the GST tax bracket of 12 percent, 18 percent, and 28 percent imposed on the value of supply.** A 0.25 percent flood cess is levied on all goods coming under the fifth schedule, including gold, silver, and platinum ornaments, on the value of supply. All services attract 1 percent cess. Based on the Rapid Poverty and Social Impact Analysis (RPSIA) prepared, the flood cess is not likely to have an adverse impact on the poor as it is levied on consumables which are not used as much by vulnerable groups. Initial estimates by the GoK suggest that INR 10 billion or US\$145 million will be raised through the Kerala flood cess over a two-year period.

49. **The GoK, through the KIIFB, issued a Masala Bond through a Medium-Term Note (MTN) Program and raised INR 21.5 billion or approximately US\$300 million from the international capital markets in March 2019.** The MTN Program is listed on the International Securities Market of the London Stock Exchange and the Singapore Stock Exchange. KIIFB has become the first state level entity to secure a public international credit rating, and it became the first public sector enterprise in India to access the international debt capital markets by raising offshore bonds. This landmark deal showcased the acceptance and confidence by international investors in Kerala as it became the largest local currency issue by a sub-sovereign entity from all the emerging markets and Asia.

50. **The indicative trigger seeks the issuance of legal instructions to mobilize additional private finance for financing resilient recovery efforts.** To support the RKDP, the KIIFB plans to register and list a Diaspora Bond in the Abu Dhabi Securities Exchange and Riyadh Stock Exchange. The first Diaspora Bond is expected to raise INR 10 billion or US\$145 million. Kerala has over 2 million non-resident Keralite (NRK) workers overseas, over 93 percent of whom are working in the Gulf Cooperation Council countries. Annually, the NRKs send home nearly US\$13



billion in remittances. Their annual savings are estimated to be over US\$4 billion. The Diaspora Bond program will channel diaspora remittances and savings to productive investment activities. In the longer term, it will build a 'structural bridge' to the diaspora for sustained engagement in Kerala's resilient development. Such borrowings, however, must be managed prudentially, through regular Debt Sustainability Analysis based on realistic scenarios for growth and infrastructure development. The debt service on the Diaspora Bond is expected to be well below the annual rate of growth of the State's revenue, which has averaged over 13 percent in recent years.

51. **As a result, the proposed reforms will ensure that 'Additional public and private financial resources are mobilized for resilient recovery'.** Progress toward achieving this result will be measured based on the amount of public and private financing mobilized to finance recovery and resilience programs through the cess and the Masala and the Diaspora Bonds.

Prior Action 3 for DPO1 in Disaster Risk Management: The GoK has adopted new protocols for enhancing emergency preparedness and response capacity of various departments.

Indicative Trigger 3 for DPO2: The GoK has updated and published the State Disaster Management Plan, incorporating disaster risk reduction and climate resilience principles and policies and including emergency management and outreach to vulnerable communities.

52. **The KSDMA's existing institutional setup and resources mostly focus on post-disaster response, and its role as the State's coordinating agency for ex ante DRM measures can be strengthened.** This prior action will improve Kerala's preparedness and response capacity to manage disasters and impacts of climate change. Based on lessons learned from the 2018 floods, the State Executive Committee of the KSDMA has updated the standard operating procedures (SOPs) and adopted new protocols on May 9, 2019 for enhancing emergency preparedness and response capacity of various state departments. The Executive Committee has approved and issued the updated Orange Book of Disaster Management—Kerala—SOPs and Emergency Support Functions Plan, which contains a Monsoon Preparedness and Emergency Response Plan and an Incident Response System (IRS) structure as a statutory requirement. The updated Orange Book details the State's crisis management mechanisms, responsibilities of State and District Emergency Operation Centers (EOCs), and the SOPs to be followed while dealing with hazardous rain, flood, cyclone, tsunami, high waves including storm surge, landslide, petrochemical transportation accident, and space debris such as meteorites. The updated Orange Book also contains the Emergency Support Functions Plan indicating the suo-moto responsibilities of various departments in the event of emergencies. The new Monsoon Preparedness and Emergency Response Plan defines the roles and responsibilities of the State EOC, central agencies, District Disaster Management Authorities (DDMAs), and 29 state departments during the monsoon season (June to December) for enhanced emergency preparedness and coordination. The Orange Book has incorporated an IRS structure as a statutory requirement to be followed at the state, district, and taluk level. The KSDMA will also initiate a training program for the government officials to enhance the emergency preparedness and response capacity of the state departments based on the new protocols.

53. **The proposed trigger seeks the adoption and publication of the amended State Disaster Management Plan.** As required by the National Disaster Management Act of 2007, the KSDMA prepared the State Disaster Management Plan in 2016. The recent disaster highlighted the need for updating the plan to incorporate climate change adaptation and emergency management of extreme weather events. Reflecting on lessons learned from the recent disaster, the KSDMA has adopted a new IRS structure as part of its updated Orange Book of Disaster Management, Kerala, with updated SOPs for the emergency support functions plan, detailing the crisis management mechanism put in place in the State and the desk responsibilities of EOCs at state and district levels.



The implementation of the aforesaid will strengthen the institutional mechanism to better prepare for future disaster and climate risks, social inclusion, and outreach to vulnerable communities to (i) formulate investment plans for integrated risk reduction and climate change adaptation and (ii) devise an action plan for upgrading EOCs with a functioning disaster management information system, including an operational decision support system that will serve as a predictive system for climate-informed long-term disaster risk planning, and early warning systems at the state and district levels.

54. As a result, the proposed reforms will ensure ‘Improved capacity for emergency, disaster, and climate risk management.’ The progress will be measured by satisfactory completion of a Statewide emergency management exercise, according to the updated State DRM Plan, which will cover disaster and climate resilience and improved outreach, as evidenced by an independent observer’s report.

Pillar 2: Mainstreaming Disaster and Climate Resilience into Critical Infrastructure and Services

55. **The objective of Pillar 2 is to mainstream disaster risk reduction and climate resilience into critical areas of infrastructure development and service delivery.** The World Bank’s support to the State’s mainstreaming effort at this juncture is vital to keep the momentum in the right direction for comprehensive and integrated sector reforms that will take time due to their complex nature. Addressing the underlying drivers of floods and landslides and better preparing the State for future disasters follow the course of the river: (i) upstream through IWRM (Prior Action 4 and Trigger 4); (ii) midstream through improved planning (Prior Action 7 and Triggers 9 and 10), land use (Trigger 8), and infrastructure and services (Prior Actions 6 and 8 and Triggers 6, 7, 11, and 12); and (iii) downstream through ecologically sound agriculture and irrigation practices (Prior Action 5 and Trigger 5). These reforms together address long-standing issues around the management of river and cross-sectoral committees have been established to ensure coherence and coordination. These policy and institutional shifts involve multiple departments and levels of the Government and have a significant public interface. These prior actions enable the implementation of the following key sector priorities defined in the RKDP: Integrated Water Resources Management (Prior Action 4); Agriculture (Prior Action 5); Roads and Bridges (Prior Action 6); Urban Development (Prior Action 7); Water Supply and Sanitation (Prior Action 8); and Land (Trigger 5).

Prior Action 4 for DPO1 for Water Resources Management: The GoK has established a cross-sectoral state-level committee to draft a River Basin Conservation and Management Authority Act establishing a River Basin Conservation and Management Authority.

Indicative Trigger 4 for DPO2: Draft River Basin Conservation and Management Act has been submitted to the State Assembly for approval.

56. **The August 2018 floods damaged flood protection, irrigation, and water resources infrastructure with an estimated total recovery cost of US\$211.9 million.**¹³ The floods damaged approximately 886 km of river banks and 103 km of coastal protection and drainage systems, over 540 km of distributary canals, and more than 350 hydraulic structures affecting the irrigation water supply, 200 storage ponds, and 70 small dams. Approach roads leading to dams, site offices, and residential areas were also heavily damaged. The drainage systems in urban areas were blocked due to flood waters carrying heavy sediment loads, compounded by intense rainfall. Gushing waters spread deep into the habitations, aggravating the damages to public and private assets.

57. **A lack of reliable hydrometeorological data, uncoordinated reservoir operations, and absence of**

¹³ PDNA 2018.



necessary institutional mechanisms exacerbated the disaster. There are 76 dams in the State, including four managed by Tamil Nadu, in addition to over 18,000 storage ponds. Seven of the largest dams constitute 74 percent of total storage capacity of 5.8 billion m³. The Kerala State Electricity Board (KSEB) operates 58 hydropower dams, the State's Water Resources Department (WRD) owns 16 irrigation dams, and Kerala Water Authority (KWA) owns two water supply dams. The Irrigation Department oversees flood protection and maintenance of irrigation canals. The State has weaknesses in the three fundamental areas of water resources development and management: (i) poor coordination across and low capacity of various water-related institutions; (ii) inadequate hydrological database, information systems, and tools for sound decision making, forecasting, and early warning to trigger emergency response; and (iii) insufficient investments in building resilient infrastructure and poor operation and maintenance (O&M) of assets. Inadequacies in these three areas contributed to the disastrous consequences of the 2018 floods.

58. **While the 2008 Water Policy recognizes IWRM, the State has not been able to fully implement the policy, resulting in institutional ineffectiveness and suboptimal performance of various water-dependent sectors.** The policy calls for a river basin management approach for planning, development, and management of water resources and emphasizes the importance of comprehensive watershed and water quality management and the establishment of evidence-based planning and monitoring systems. However, adoption of the policy has been challenging due to institutional weaknesses; fragmentation of water management among multiple line agencies (for example, irrigation, drinking water, industrial water, and hydropower); and duplicated functions between the WRD and other agencies (for example, the Irrigation Department and State Pollution Control Board). The approach of the agencies is largely supply driven, without attention to water demand management, leading to suboptimal performance of the sectors and the agencies.

59. **Using the 2018 floods as an opportunity for implementing the long-pending reform in WRM, this prior action catalyzes the most critical step to operationalize the 2008 Water Policy for introducing a river basin planning and management approach.** The GoK has established a high-level cross-sectoral committee of secretaries and experts to draft a River Basin Conservation and Management Act as well as to establish and operationalize a River Basin Conservation and Management Authority (RBCMA), based on lessons learned from the recent disaster as well as past floods and droughts. The GO for establishing the committee outlines clear terms of reference and time lines for drafting the proposed act. The committee will streamline and define roles and responsibilities of various institutions (for example, WRD, KSEB, KSDMA, agriculture, irrigation, and so on) and mechanisms for improved coordination under the new institutional setup of the RBCMA as an apex body for overseeing IWRM. The committee will draft a River Basin Conservation and Management Act and define the roles and responsibility of the RBCMA and other water-related institutions. The committee will consider international good practices and lessons learned from establishing river basin organizations for IWRM, as well as the transboundary nature of dam operations with the neighboring State of Tamil Nadu.

60. **The proposed trigger seeks the institutionalization of integrated river basin planning and management based on the River Basin Conservation and Management Act.** The Act will enable the establishment and operationalization of the RBCMA with core functions of (i) developing and operating modern information and analytical systems to improve the quality and reliability of data and information, enhance real-time monitoring, and improve the scientific basis for informed decision making in the water sector; (ii) integrating planning across all water-related sectors on a basin or sub-basin basis, including developing water allocation and use strategies and identifying and preparing a prioritized shelf of investments that make more productive use of water resources and mitigate risks; and (iii) strengthening systems for coordinated real-time water infrastructure (for example, dams and irrigation networks), including rolling out statewide flood forecasting and early warning systems and



improving the integrated operation of reservoirs in the State through updated cross-sectoral operation guidelines. The Act will include the regulatory regime for IWRM, dam safety, and integrated reservoir operations. The RBCMA, to be established through the Act, will be responsible for these functions. The adequate provision of these functions will require institutional reforms (for example, cross-sectoral coordination, restructuring the WRD along river basins) and capacity building (skilling and equipping appropriate staff).

61. As a result, the proposed reforms will ensure ‘Improved river basin planning and water infrastructure operations management for climate resilience at the state level’. Progress toward achieving this result will be measured based on the development of river basin management plans by the RBCMA for two priority river basins (that is, Pamba and Periyar river basins).

Prior Action 5 for DPO1 supporting reforms in Agriculture: The GoK has notified¹⁴ the establishment of five agroecological zones and the reorganization of the Agriculture Department along agroecological zones.

Indicative Trigger 5 for DPO2: The GoK has instituted/amended policies, guidelines, and programs for expansion of agriculture risk insurance uptake.

62. **The August 2018 floods and landslides caused widespread damage to the agriculture sector of Kerala.** Approximately 50 percent of Kerala’s geographical area is under cultivation.¹⁵ Around 17 percent of the State’s population depends on the primary production sector including crops, livestock, and fisheries.¹⁶ The crops sector incurred damages in flood-hit areas as well as the other areas due to incessant rains followed by high temperatures, leading to destruction of seasonal crops and reduction in yields of tree crops. Damages to the crops sector were estimated at INR 27.23 billion or US\$382 million, with estimated crop production losses of INR 35.58 billion or US\$500 million across 89,610 ha.¹⁷ The major damage includes destruction of irrigation systems and structures, crops, agriculture buildings and assets, and soil degradation. This directly affects people’s livelihoods and their ability to bounce back after a disaster. Making the agriculture sector resilient to disasters and impacts of climate change directly improves resilience of farmers and communities.

63. **Agroecological approaches offer a paradigm shift to more sustainable and resilient food systems while restoring ecosystem services and biodiversity in the context of climate change.** While the present system of planning accounts for cropping patterns and macro-climatic conditions, it does not factor in ecological variance between blocks within a district. Resources are allocated at the district level based on past cropping and expenditure patterns. Adoption of agroecological approach will be a significant departure from the existing practices of planning and resource allocation for agriculture in the State, leading to increased resilience of the farmers.

64. **The prior action catalyzes a paradigm shift in agriculture practice in the State, through notifying the division of Kerala into five agroecological zones (AEZs)¹⁸ and reorganizing the Agriculture Department based on AEZs.** This division was done based on comparable agroclimatic parameters to delineate areas suitable for various farming systems. Each of these zones is characterized by distinct agroecological parameters such as geomorphology, soil types, rainfall, temperature, and elevation. Each zone has been further subdivided into Agroecological Management Units (AEMUs). The AEMU boundaries have been kept consistent with administrative

¹⁴ ‘Notified’ means publicly declaring the Government’s decision specific to the subject matter.

¹⁵ Department of Economics and Statistics. 2017. Agriculture Statistics 2016-17.

¹⁶ Department of Economics and Statistics. 2013. Agriculture Census 2011.

¹⁷ UN. 2018. PDNA: Kerala.

¹⁸ These are (i) coastal plains, (ii) mid-land laterites, (iii) foot hills, (iv) high hills, and (v) Palakkad plains.



block boundaries for ease of administration and ecologically informed service delivery. As a result, Kerala has been divided into agroecologically similar groups of blocks having unique agroecological characteristics and suitability for specific crops and extension needs. The restructuring of the Department of Agriculture through the prior action aims to ensure that planning, resource allocation, and deployment of human resources are aligned with agroecological classification of blocks and districts. This will enable a service delivery ecosystem that provides tailored extension support and necessary incentives to promote adoption of agroecologically informed farming systems. Based on the full road map of actions provided in the RKDP, the Agriculture Department is currently preparing a detailed action plan with time lines, which will be aligned along AEZ divisions to enable the paradigm shift. The plan aims to significantly improve efficiency and resilience by better targeting resource allocation (including subsidies), inputs, extension services, market development, and water management for ecologically similar areas. Regulatory environment and farmer advisory services—both public and private—will also gear up accordingly to support or disincentivize agriculture practices based on relevance within the AEZ. The GoK is committed toward developing value chains for key commodities to reduce market side risks. These activities have been included under the action plan being prepared.

65. **The agroecological approach will enhance coordination between the Department of Agriculture, WRD and LSGIs toward climate smart irrigation planning and management.** There is considerable scope to improve agricultural water and moisture management for climate smart agriculture. Notwithstanding significant public and private investment in irrigation, many irrigation systems in the State are underperforming and do not adequately serve end users. Over time, the agricultural sector has become increasingly reliant on groundwater in many parts of the State, which has now surpassed surface or canal water as the primary source and is increasingly under stress. The core reason for the poor performance of irrigation systems in Kerala appears to be the shift in cropping pattern from paddy-dominated food crops to coconut and rubber-dominated cash crops over the past five to six decades, while most of the irrigation systems are designed for irrigating paddy fields. There is a glaring mismatch between agriculture sector requirements with regard to capital investments for development of large-scale canal irrigation systems and absence of corresponding area expansion under canal irrigation. Joint initiatives by the Department of Agriculture and WRD, and LSGIs based on AEZs will enable technically and agroecologically suitable irrigation schemes, including micro-irrigation in hilly areas.

66. **Promotion of agroecologically relevant farming systems is expected to sustainably enhance production, increase resilience to climate shocks, and lead to improved market development and trade integration.** The AEZ-based agriculture development approach calls for ecosystem-based adaptation of agriculture practices, thus moving from a ‘one-size-fits-all’ approach to ecologically sustainable farming practices. AEMU-level planning emphasizes local planning and development based on agroecological boundaries as against top-down planning and implementation based on administrative boundaries. Agroecological planning can herald sustainable development of agriculture in Kerala through efficient land use planning, mapping suitable crop varieties to AEMUs, optimizing resource allocation, tailoring schemes, interventions, and technologies to AEMUs, improved risk analysis of climate hazards, and identification of suitable mitigation measures. Agriculture advisory services, mechanization, input production and application will be tailored to the relevant farming systems. Agriculture support institutions at various levels will benefit from improved clarity pertaining to their catchment areas’ needs and can build their capacities and delivery systems to provide ecosystem-based services.

67. **To advance the reform agenda supporting AEZs, the indicative trigger seeks the institution/amendment of policies, guidelines, and programs for expansion of agriculture risk insurance uptake.** In addition to national schemes such as the Pradhan Mantri Fasal Bima Yojana and the Weather Based Crop Insurance Scheme, Kerala has its own crop insurance scheme. However, uptake remains less than 10 percent across the State, affecting the



resilience of farmers. To improve uptake, the Agriculture Department will (i) develop a strategic plan to expand awareness of crop insurance based on AEZs, (ii) develop a road map for enhanced coverage of crop and livestock insurance schemes, (iii) provide special compensation packages and insurance plans to joint liability groups that are vulnerable to post-flood scenarios, and (iv) expand the coverage of insurance packages for climate resilient agriculture by including additional crops such as rubber and damages from extreme winds and rains. The GoK will devise a new agriculture risk insurance scheme for providing an end product-based insurance coverage to all sectors of farmers by leveraging the modern technology tools and global good practices.

68. As a result, the proposed reforms will ensure ‘More resilient and sustainable agriculture based on AEZs and enhanced agriculture risk insurance.’ Progress toward achieving this result will be measured based on (i) resilient and sustainable AEZ development plans adopted for at least two AEZs; and (ii) agriculture risk insurance uptake enhanced to at least 20 percent.

Prior Action 6 for DPO1 in Transport and Roads Sector reforms: The GoK has notified¹⁹ the criteria for the identification/determination of the core road network and mandated the review of PWD road policies, construction codes, and manuals to ensure the resilient design, construction, and maintenance of core road network.

Indicative Trigger 6 for DPO2: The GoK has adopted performance-based management contract model for managing the core road network, incorporating design and performance standards and disaster-related emergency response module.

Indicative Trigger 7 for DPO2: The GoK has undertaken institutional streamlining in the roads sector to address institutional and resource fragmentation and to strengthen core sector institutions.

69. **During the recent disaster, approximately 48 percent of the state highways and major district roads were reported damaged, mainly due to floods, landslides, earth slips, soil movement, and rock falls.** The flood inundation map shows that most of flooding occurred in the areas of backwaters and lower reaches of the river. In the middle and upper reaches, the flooding was less but damage occurred in areas where discharges were in excess of full bank flow. The PDNA estimated that about US\$372 million would be required for reconstructing damaged state highways and major district roads. Damages to the road network also had implications for rescue and relief operations.

70. **The road sector in Kerala, which is the dominant mode of transport supporting the State’s agriculture, tourism, and socioeconomic activities, faces inadequate capacity and institutional ineffectiveness to meet the growing demand and to reduce its exposure and vulnerability.** Kerala’s road network density is around 37 percent higher than the national average of 387 km per 100 km². This network caters to 75 percent of the State’s freight transport and 85 percent of passenger travel. Of the 205,000 km of road network, the core road network of the State consists of approximately 1,780 km of national highways, 4,340 km of state highways, and 27,470 km of major district roads, together constituting roughly 16 percent of the total road network and carrying about 80 percent of road traffic. This core road network has come under increasing pressure from growing population and rapid traffic growth, at around 12–14 percent annually. Around 70 percent of state highways are still single lane, with 54 percent in poor condition. Because of poor design standards and low-quality construction and maintenance, the core road network is also vulnerable to disaster and climate change risks. Inadequate capacity and poor quality of roads is exacerbated by the fragmentation of institutions that manage the network, competing for same funding sources and creating an uncoordinated approach to asset development and management. The

¹⁹ ‘Notified’ means publicly declaring the Government decision specific to the subject matter.



FY18–19 State budget allocated approximately INR 350,000 or US\$5,000 per km for development and maintenance of state highways and major district roads, which is significantly lower than the national average.

71. **This prior action helps the GoK strategically prioritize risk reduction investments in the core road network.** The road network is divided into three functional classifications—primary, secondary, and tertiary. The core network is a subset of the primary network and determined based on the following criteria: traffic volume, connectivity with economic growth centers, public transport route, higher share of commercial vehicle and resilience functionalities such as provision of emergency services (for example, access to hospitals, ambulances, search and rescue) and delivery of relief goods and equipment for speedy restoration in times of disaster. The identification of the core road network enables the State to make strategic decisions for prioritizing rehabilitation and upgrades of the core road network to enhance its resilience. The resilient core road network will enhance the resilience of local communities including the hilly areas where majority of the tribal population is concentrated.

72. **In parallel, this prior action will define climate resilient standards on road designs, construction, and maintenance.** The existing manuals of the Public Works Department (PWD) do not consider climate change impacts and require stronger regulatory enforcement across multiple institutions. The proposed DPO will support developing policies that embed climate resilience in road infrastructure planning, investment prioritization, design, construction, and asset management. Based on the new policies, the PWD will subsequently update its code and manual, incorporating principles of risk assessment and improved resilience standards and technologies. Any intervention in the core road network and risky areas will be monitored in compliance with the new standards. The GoK will incrementally roll out the resilient standards to the entire core network over time. The PWD will require technical assistance to build its capacity in adopting and enforcing the new policies.

73. **The indicative Trigger 6 seeks the adoption of performance-based management contract (PBMC) model for managing the core road network.** The PBMC will incorporate resilient performance standards and cover the responsibility of contractors for timely emergency response and restoration in times of disaster. This will ensure that the core road network is designed, built, and maintained with higher and more resilient standards using advanced private sector expertise. As part of testing the new approach, the World Bank will help the GoK assess and address potential risks and liabilities arising from the PBMC. Several Indian states are adopting the PBMCs for road construction and maintenance with increasing success, including Andhra Pradesh and Karnataka. The PWD will learn from and build on these examples.

74. **To strengthen institutional resilience, the indicative Trigger 7 seeks to address institutional and resource fragmentation in the roads sector and to strengthen core road sector institutions.** The road sector institutions will be streamlined with dedicated institutional mechanisms for managing the core road network and creating a coordinated approach toward risk-informed asset development and management. This will include defining clear roles and responsibilities of the PWD for developing and managing green, safe, and resilient road networks through the development of the DRM Plan, including emergency preparedness and response procedures. Institutional streamlining will contribute to more efficient emergency response and rapid restoration of the core road network which is critical for transportation of emergency goods, materials, and ambulances in times of disaster. The streamlining will also support strategic investment decision making, efficient resource allocation, and asset management. Institutional streamlining of the transport sector will likely face bureaucratic resistances. The GoK will establish a Road Sector Modernization Task Force to undertake a consultative process and to achieve consensus among key stakeholders on time.

75. As a result, the proposed reforms will ensure ‘Improved physical and institutional resilience of the core



road network.’ Progress toward achieving this result will be measured based on (i) the number of key core road network corridors, including in hilly areas where most of the tribal population is concentrated, adopting the PBMC based on resilient standards for maintenance and (ii) increased share of budget allocation for the core road network by 20 percent from the 2019 budget allocation for the core roads.

Indicative Trigger 8 for DPO2 for structural transformation in Land and Cadaster: The GoK has reorganized institutional arrangements to create a single land record and integrated map for Kerala unifying the current Deeds Registry, Record of Rights, and Field Book (map) records and services.

76. **In Kerala, land records keeping is fragmented and while progress has been made in connecting the records, their data on land ownership differ.** Registration of deeds is done by the Department of Registration under the Minister of Registration, the Record of Rights by the Revenue Department, and the Field Book (cadastral map) by the Survey and Land Records Department under the Minister of Revenue and Housing. The latter two records are often not updated after the registration of a land transaction deed. The interlinked processes are constrained and often neglected, leading to a situation where the information on a property differs between the three records. Notably, land rights-related litigation dominates courts in Kerala, stemming in part from the system that allows registration of deeds without verifying the property details or existence of previous deeds on the same land parcel. Also, a large percentage of land transactions between 1947 and 1967 have not been registered anywhere and vast state land areas are being encroached to an unknown, but significant extent. The cadastral map is grossly outdated for 46 percent of Kerala’s close to 1,700 villages, requiring a resurvey. Apart from sheer upscaling of investment, success with land records requires an institutionally and operationally integrated program to complete and update land records systematically across Kerala. Finally, although a digitization program is under way, in many places land records are often stored in poor conditions without adequate safeguards from natural disasters.

77. **This trigger enables comprehensive and secure land records in Kerala, offering critical protection of rights when population is displaced by a disaster.** The Kerala Land Records Modernization Mission led by the Land Commissioner of the Revenue Department will unify the land records and registry map completion work of the Department of Revenue, Department of Land Records and Surveys, and the Department of Registration. The program will include (i) establishment and operationalization of the institutional arrangements for land records modernization, (ii) a programmatic approach for systematic completion of land records in a share of the most disaster-prone areas, and (iii) establishing an enabling regulatory framework for maintaining modern land records and land registration services in Kerala. Comprehensive land records and information on land use and built environment lead to improved understanding of risks and evidence-based land use planning and land management that among others directs housing to areas of low hazard exposure. Secure tenure directly contributes to rapid disaster recovery and resilience of vulnerable households. In addition, secure tenure and comprehensive land administration systems increase investments in dwellings, which reduces risks and improves resilience through better siting and construction of buildings.

78. **The proposed trigger seeks the creation of a single land record and integrated map for Kerala, unifying the current Deeds Registry, Record of Rights, and Field Book (map).** This will enable integrated, digital, and up-to-date land records in Kerala and provide a functional platform for the required investments of scale in a programmatic manner.

79. As a result, the proposed reforms will ensure ‘Unified and more up-to-date land records in high risk areas.’ Progress will be measured based on the implementation of a program for single digital land record and map in at



least two high-risk districts and provision of gender-disaggregated data on land ownership and transactions by Kerala Land Records Modernization Mission.

Prior Action 7 for DPO1 in Urban Development: The GoK has established a committee to revise the Town and Planning Country Act to make master plans risk informed and to revise the annual expenditure planning and budget guidelines for urban local bodies to undertake multiyear municipal infrastructure investments.

Indicative Trigger 9 for DPO2: The GoK has amended TCP Act for risk-informed master planning.

Indicative Trigger 10 for DPO2: The GoK has revised annual expenditure planning and budget guidelines for urban local bodies to undertake multiyear municipal infrastructure investments.

80. **City-level planning is mostly driven by a fragmented and ad hoc annual planning and expenditure cycle.** The current budget allocation system does not leave much flexibility for ULBs to undertake long-term capital planning and investments in key infrastructure and service delivery sectors, including solid waste management (SWM), drainage, and sanitation. ULBs also have responsibility for implementing the state programs in socioeconomic sectors such as health, education, agriculture, animal husbandry, agriculture, and fisheries. The annual planning guidelines of the Local Self-Government Department (LSGD) require the ULBs to allocate a minimum share of the plan funds by sector, based on discussions in ward committee meetings and 14 to 19 sectoral working groups in each ULB. Excessive earmarking of the plan funds among various sectors has resulted in severe allocation inefficiencies and hindered the incorporation of resilience principles into planning, design, and construction of critical municipal infrastructure, which often requires multi-year planning and investments. Lack of resilient municipal infrastructure, such as drainage, sanitation, and SWM systems, contributed to greater disaster vulnerability as well as induced health and other human hazards during the 2018 floods.

81. **The current municipal master planning system in Kerala does not fully incorporate climate and disaster risk information.** The 2016 Kerala TCP Act allows the municipal master plans to include regulations for natural hazard prone areas. While the KSDMA and DDMA's prepare district-level natural hazard maps, ULB master plans do not yet include hazard layers due to differences in mapping scales at the ULB level and inadequate technical capacity of ULBs in preparing hazard maps. Moreover, although 23 out of 97 master plans have been notified, the sanctioning of the master plans is often delayed, resulting in both non-enforceability of the master plans and inconsistency with ULB's annual plans and budgets.

82. **This prior action offers an important milestone for introducing risk-informed urban planning in Kerala.** The objectives of the Government are to (i) mandate master plans which would ensure risk-based urban planning and (ii) enact new policies that allow ULBs to plan and carry out capital investments that span multiple years in resilient urban infrastructure. Addressing these issues will require detailed analysis of specific legal and institutional changes that are needed, convening of multiple government departments and tiers and consultations with civil society stakeholders. Through this prior action, the Government will establish a high-level committee and outline clear terms of reference, processes and time lines, emphasizing its commitment to specific policy and institutional changes and time-bound implementation plans that would allow the above objectives to be met under DPO2.

83. **The proposed triggers seek the development and approval of guidelines for preparation and official notification of risk-informed urban planning.** The guidelines will mandate risk-informed master planning to reduce vulnerability of the built environment to natural disasters and climate change impacts. Also, guidelines for multiyear planning and budgeting will be adopted by the LSGD and initialized by ULBs for resilient infrastructure development and service delivery. This will include assigning plan funds to multiyear infrastructure and service



delivery projects. These guidelines will ensure consistency between the master plans and district- or local-level plans and enable appropriate land demarcation for essential municipal services and risk-informed municipal infrastructure development.

84. As a result, the proposed reforms will ensure that 'ULBs notify risk-informed master plans and start allocating funds for multiyear infrastructure investments in their annual plans.' Progress toward achieving this result will be measured based on based on (i) preparation and notification of risk-informed master plans by at least two ULBs and (ii) undertaking of multiyear municipal infrastructure investment planning and budgeting by at least two ULBs.

Prior Action 8 for DPO1 regarding structural changes in Water Supply and Sanitation: The GoK has established a cross-sectoral committee to prepare the policy and institutional program for strengthening water supply and sanitation services and their resilience to disasters and impacts of climate change.

Indicative Trigger 11 for DPO2: The GoK has adopted the policy and institutional program for strengthening water supply services including service delivery models, O&M cost recovery, MIS, and Grievance Redress Mechanism.

Indicative Trigger 12 for DPO2: The GoK has adopted a State Sanitation and Waste Management Strategy, incorporating cost-effective septage and waste management models.

85. **The recent floods and landslides exacerbated the poor sanitation conditions in Kerala.** Kerala ranks high in the availability of household toilets, but many of them still use leach pits, which cause groundwater pollution due to the high groundwater table. These create extra challenges for the women who are responsible for the health and hygiene practices for the family. Sewage collection and treatment is absent in almost all ULBs except partial coverage in Trivandrum and Kochi. The State has promoted decentralized management of biodegradable waste at the household level and recovery and recycling of non-biodegradable waste. However, disposal facilities for inert rejected waste are lacking and non-biodegradable waste is not recovered or recycled at present. Because of dumping of solid waste and untreated sewage, contamination of water bodies is common. In fact, a vast amount of waste, including debris, sewage, municipal solid waste (for example, plastics and e-waste), industrial waste (hazardous and non-hazardous), and biomedical waste accumulated along the river banks, canals, drainage systems, open wells, and wetlands during the 2018 floods.

86. **Despite recognizing sanitation as one of the critical issues, the GoK has not been able to address the problem due to several reasons,** including (i) limited financial resources through existing plan funds and own source revenue as compared to the investment needs for sanitation; (ii) lack of mechanisms to plan city- and village-wide improvements; (iii) limitations in the current decentralized annual planning process that leads to fragmented investments and small-scale projects at the local level; (iv) lack of critical human resources to design, implement, and maintain key infrastructure; and (v) lack of land.

87. **Inadequate piped water supply (PWS) and sanitation services in Kerala led to serious contamination of drinking water sources during the 2018 floods, posing a risk to public health and the environment.** Access to PWS is low, with most households continuing to use well water. Based on 2018 data from KWA, about 54 percent of rural population and 60 percent of urban population have access to household water supply connections and public stand posts. However, only 28 percent of 8 million households have piped household connections, showing under-utilization of the assets created. According to the GoI's Integrated Management Information System database, based on a sample survey, around 95 percent of groundwater sources are contaminated, of which 85 percent of sources have bacteriological contamination and 15 percent have chemical contamination. Coliform contamination is found mostly in the well water sources (95 percent of the samples) and limited in PWS (1 percent



of the samples). Boiling of water is the standard practice of treatment adopted by most households in Kerala. Lack of PWS coupled with inadequate sanitation services led to contamination of drinking water sources during the 2018 disaster. This posed risk to public health as well as adverse impacts on the quality of surface water bodies, freshwater, and marine ecosystems (for example, habitat change and loss of biodiversity), and tourism.

88. **The existing policy and institutional framework, such as the State Water Policy (2008), does not envisage any target for PWS coverage or service delivery parameters, including hours of supply, quantity of supply, and metering.** There are fragmented responsibilities and limited planning and coordination among the KWA, Kerala Rural Water Supply and Sanitation Agency (KRWSA) and LSGD. Ownership by local governments is limited due to inadequate technical and financial capacity and lack of incentives to improve connections and service delivery. The Grama Panchayats and ULBs promote small water supply schemes mainly to address issues in summer months when most wells go dry. The lack of any financial support, beyond contributions by local communities, results in several schemes slowly becoming defunct. According to KWA estimates, the State has an installed water treatment capacity of 3,016 million liters per day (MLD), but only about 2,608 MLD of water is being produced. The KWA is adding another 1,064 MLD of treatment capacity through ongoing schemes. Given the excess capacity issues, there is lack of strategy for revenue enhancement. Policy changes would be also required to incentivize demand for household connections.

89. **Kerala's water supply service is not built on full cost recovery principles, weakening the financial sustainability of the KWA, especially in the context of climate variability and change.** Kerala follows volumetric tariff structure for charging for water, fixed by the State Government. However, it is not built on full cost recovery principles and the state budget has not always provided subsidies on time for the 2.2 million connections served by the KWA. The baseline O&M cost recovery for the KWA is estimated at 41 percent without considering power subsidies. At the same time, the KRWSA shows good practices in service delivery for rural water supply schemes including full O&M cost recovery from beneficiaries for about 0.2 million connections. Further, most cities and villages have about 45 percent nonrevenue water. Declining groundwater levels and high variation of rainfall over the years have increased vulnerability, with many dried wells getting inundated during the floods. Finally, sector information is presently scattered among different institutions with no standard mechanism to monitor service delivery performance.

90. **As part of the prior action for DPO1, the GoK has issued the terms of reference for a cross-sectoral committee for preparing the policy and institutional program for water supply, sanitation, and waste management services, and for their enhanced resilience to disasters and impacts of climate change, including key principles and time-bound action plan.** The sanitation and waste management strategy and program focuses on scaling up cost-effective septage (including sewerage) and waste management models to address the current challenges in the sector and ensure improved protection of water resources and public health during disasters. The policy and institutional framework for water supply will enhance service delivery orientation by adopting performance standards, ringfencing of the KWA into administrative units for internal benchmarking, exploring service delivery models for local bodies and the KWA, reducing nonrevenue water, and promoting energy-efficient services. The policy will clarify the O&M program, including connections policy, metering policy, volumetric tariffs, and regulatory aspects to gradually enhance revenues and reduce subsidies. The policy will include monitoring and evaluation (M&E) systems, grievance redress mechanisms (GRMs), and citizen engagement programs, and ensure improved resilience of water supply infrastructure, and enhanced access to safe water, especially during disasters. The GoK will prepare a detailed policy and institutional program for water supply, sanitation and waste management sectors for DPO2.



91. **Through the prior action, the GoK has set up a committee to recommend the policy and institutional program for strengthening water supply and sanitation (WSS) services and their resilience to disasters and impacts of climate change.** The policies and institutional program will (i) clarify roles and responsibilities of different WSS agencies, including regulation, investments and financing, service delivery, and O&M; (ii) establish performance and service delivery standards, including climate and disaster resilient standards; (iii) recommend appropriate institutional and service delivery models; (iv) enhance accountability of WSS agencies through performance-based financing and service delivery-based contracts; (v) identify measures and incentives for more efficient operations; (vi) recommend cost-effective sewage and septage programs; (vii) increase customer orientation by improving management information systems (MIS), developing Citizen Charter, and establishing GRMs. This will contribute to improving the reliability and safety of drinking water sources and minimize contamination of drinking water sources in times of disaster.

92. **The indicative triggers seek the adoption of the policy and institutional program for strengthening WSS services, including service delivery models, O&M, cost recovery, MIS, and GRM.** The policy and institutional framework for accountable and efficient water supply will ensure improved resilience of water supply infrastructure, and enhanced access to safe water and improved public health, especially during disasters. The GoK will adopt the state sanitation and waste management program in ULBs, including cost-effective septage and waste management models sensitive to the needs of vulnerable groups such as women, SCs, and STs. The GoK would also adopt the water supply program in at least ULBs, including service delivery models, O&M program, and volumetric tariffs to increase cost recovery and reduce subsidies, MIS and GRM and citizen engagement program, ensuring last-mile delivery to urban and rural households.

93. As a result, the proposed reforms will ensure 'Improved WSS services.' Progress toward achieving this result will be measured based on (i) adoption of nonrevenue water reduction models in at least two ULBs, (ii) recovery of O&M cost increased to at least 50 percent at the state level, (iii) public disclosure of annual performance report by the KWA, and (iv) cost-effective septage and sewerage programs adopted in at least five ULBs.

4.3 TECHNICAL ASSISTANCE

94. **A technical assistance program will provide analytical and capacity development support to the GoK in implementing reforms to complement the DPO series.** The technical assistance program will span two years coinciding with the expected timing for the two DPOs. The multisectoral technical assistance will include the following themes to help the GoK achieve the results (Annex 1) and the RKDP: (i) maximizing finance for development; (ii) fiscal and public financial management at the State and local levels; (iii) revitalization of fisheries for resilience and sustainability; (iv) inclusive resilience; (v) open data for improved risk assessment, flood monitoring and forecasts, and emergency response; (vi) risk-informed urban planning and hazard maps; (vii) mainstreaming resilience in WSS, WRM, and transport sectors; (viii) disaster risk financing and insurance; (ix) agroecology; (x) environmental management capacity building of the Directorate of Environment and Climate Change (DOECC) and line departments; and (xi) more detailed environmental and social analysis on the potential impact of the results expected from the policy reforms.

95. **Furthermore, the technical assistance program will comprehensively strengthen the State's fiscal and public financial management capacity of the GoK.** This will include (i) the development of a customized fiscal sustainability analysis framework for the State allowing to model the impact of shocks on the fiscal and debt outlook and to develop medium-term fiscal projections for better policy making and fiscal discipline; (ii) an

extension of the debt sustainability analysis to the broader reconstruction financing plan of the government, including investments to be channeled through the KIIFB; (iii) public investment management, particularly the planning, appraisal, and vetting stage to make it more resilient, cost-efficient, and participatory by mainstreaming and institutionalizing the innovative approach introduced in the RKDP; (iv) tax administration; (v) public expenditure management; (vi) planning and comprehensive top-down and bottom-up budget preparation; (vii) strengthen cash and debt management; (viii) state policy on commitment control along with procedures and guidelines; and (ix) the State’s integrated financial management information system with greater focus on data analytics, business process re-engineering, system security, data storage facilities and open data portal making key basic data accessible in open, public, and analysis-ready format.

96. **The estimated total budget for the abovementioned technical assistance program is approximately US\$6 million.** An initial US\$3 million has been made available from the proceeds of the restructuring of the ongoing Kerala State Transport Project II.²⁰ Further, the World Bank team is reaching out to relevant Trust Fund programs (for example, Global Facility for Disaster Risk Reduction and Recovery [GFDRR]) as well as other development partners. The World Bank team is also currently finalizing discussions with the Gates Foundation to provide up to US\$500,000 for technical assistance. In addition, the World Bank team is facilitating innovative partnerships between the GoK and national and local thinktanks to enhance the capabilities of key State departments and agencies. A Memorandum of Understanding between the GoK and the Infrastructure Development Finance Company (IDFC) Foundation will be the first of these partnerships. Under this arrangement, the IDFC Foundation is expected to provide domain experts, site-based capacity support, and change management experts to GoK in priority sectors (for example, DRM, WRM, agriculture, transport, urban development, WSS, and land) and areas of resilient development over a two-year period. In addition to the amounts for technical assistance, the KfW has already committed US\$3 million grant for supporting policy reforms and institutional strengthening and for developing investment programs in the roads sector.

97. The analytical underpinnings for the Prior Actions are listed in Table 4.

Table 4. DPO Prior Actions and Analytical Underpinnings

Prior Actions	Analytical Underpinnings
Pillar1: Enhancing Kerala’s Institutional and Financial Capacity for Managing Disaster Risks and Climate Change	
Prior Action 1: The GoK has adopted the Rebuild Kerala Development Program for enhancing disaster and climate resilience through policy, regulatory and institutional actions with inclusive and participatory approaches.	<ul style="list-style-type: none"> • UN. 2015. <i>Sendai Framework for Disaster Risk Reduction 2015-2030: International Agreement Adopted on Disaster Management.</i> • Kerala State Disaster Management Authority. 2016. <i>Kerala State Disaster Management Plan.</i> • World Bank. 2010. <i>Natural Hazards, Unnatural Disasters: The Economics of Effective Prevention.</i> • World Bank and Asian Development Bank. 2018. <i>Kerala Floods and Landslides, JRDNA.</i> • UN. 2018. <i>Kerala PDNA.</i>
Prior Action 2: The GoK has adopted the new flood cess, with effect as of June 1, 2019] for financing resilient recovery efforts.	<ul style="list-style-type: none"> • World Bank. 2014. <i>Financial Protection against Natural Disasters: An Operational Framework for Disaster Risk Financing and Insurance.</i> • Clarke, Daniel Jonathan, Darcy Gallucio, and Olivier Mahul. 2016. <i>Disaster Risk Finance as a Tool for Development: A Summary of Findings from the Disaster Risk</i>

²⁰ P130339



Prior Actions	Analytical Underpinnings
	<p><i>Finance Impact Analytics Project.</i></p> <ul style="list-style-type: none"> Centre for Migration and Inclusive Development. 2017. <i>God’s Own Workforce: Unravelling Labour Migration to Kerala.</i> Ratha, Dilip, Sanket Mohapatra, and Elina Scheja. 2011. <i>Impact of Migration on Economic and Social Development: a Review of Evidence and Emerging Issues.</i>
<p>Prior Action 3: The GoK has adopted new protocols for enhancing emergency preparedness and response capacity of various departments.</p>	<ul style="list-style-type: none"> UN. 2015. <i>Sustainable Development Goals 2015–2030.</i> India National Disaster Management Authority. 2009. <i>National Disaster Management Policy.</i> India National Disaster Management Authority. 2016. <i>National Disaster Management Plan.</i> UN. 2015. <i>Guide to Developing Disaster Risk Frameworks.</i>
<p>Pillar 2: Mainstreaming Disaster and Climate Resilience into Critical Infrastructure and Services</p>	
<p>Prior Action 4: The GoK has established a cross-sectoral state-level committee to draft a River Basin Conservation and Management Authority Act establishing a River Basin Conservation and Management Authority.</p>	<ul style="list-style-type: none"> The World Bank and Global Facility for Disaster Risk Reduction and Recovery (GFDRR). 2017. <i>Flood Risk Management at River Basin Scale: The Need to Adopt A Proactive Approach.</i> Urban Floods Community of Practice.
<p>Prior Action 5: The GoK has notified²¹ the establishment of five agroecological zones and the reorganization of the Agriculture Department along agroecological zones.</p>	<ul style="list-style-type: none"> Srinivasan, Jeena T. 2011. <i>Agriculture – Wetland Interactions: A Case Study of the Kole Land, Kerala.</i> Center for Economic and Social Studies, Hyderabad Howden, S. Mark, Jean-François Soussana, Francesco N. Tubiello, Netra Chhetri, Michael Dunlop, and Holger Meinke. 2007. <i>Adapting Agriculture to Climate Change.</i> Altieri, M. A., C. I. Nicholls, , A. Henao, and M. A. Lana. 2015. “Agroecology and the Design of Climate Change-Resilient Farming Systems.” <i>Agronomy for Sustainable Development.</i>
<p>Prior Action 6: The GoK has notified²² the criteria for the identification/determination of the core road network and mandated the review of PWD road policies, construction codes, and manuals to ensure the resilient design, construction, and maintenance of core road network.</p>	<ul style="list-style-type: none"> Paris Agreement on Climate Change at the 21st Conference of Parties, December 2015. Kerala State Planning Board and Stakeholder Discussions. <i>State Economic Review 2016/2017.</i> Weili Zhang and Naiyu Wang. 2016. “Resilience-based Risk Mitigation for Road Networks.” <i>Structural Safety.</i> Volume 62.
<p>Land and Cadaster</p> <p>No Specific Prior Action</p>	<ul style="list-style-type: none"> World Bank. 2016. <i>Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters.</i> Chacko Ann Mary. 2017. “Land Reforms and Women Land Owners in Kerala: A Question of Power and Empowerment.” Aundhe, Madhuchhanda Das, and Ramesh Narasimhan. 2012. “Project Nemmedi: The Bytes and Bites of ICT Adoption and Implementation in India.”

²¹ ‘Notified’ means publicly declaring the Government decision specific to the subject matter.

²² ‘Notified’ means publicly declaring the Government decision specific to the subject matter.



Prior Actions	Analytical Underpinnings
	<i>Journal of Information Technology Teaching Cases 2 (1).</i>
<p>Prior Action 7: The GoK has established a committee to revise the Town and Planning Country Act to make master plans risk informed and to revise the annual expenditure planning and budget guidelines for urban local bodies to undertake multiyear municipal infrastructure investments.</p>	<ul style="list-style-type: none"> • Government of Kerala, State Planning Board, Twelfth Five-Year Plan 2012–2017. • Government of Kerala, State Planning Board, Thirteenth Five-Year Plan 2017–2022: • World Bank. 2017. <i>Building Regulatory Capacity Assessment: Level 2- Detailed Exploration.</i> • G. K., Bhat, Raghupati Usha, Rajasekar Umamaheshwaram, and Karnath Anup. 2013. <i>Urbanisation–Poverty–Climate Change: A Synthesis Report – India, Volume 1.</i> • The World Bank and GFDRR. 2017. <i>Land Use Planning for Urban Flood Risk Management.</i>
<p>Prior Action 8: The GoK has established a cross-sectoral committee to prepare the policy and institutional program for strengthening water supply and sanitation services and their resilience to disasters and impacts of climate change.</p>	<ul style="list-style-type: none"> • P. S., Harikumar. 2016. Water Quality Management of Kerala- Issues, Challenges, and Solutions, Republic Working Group on Environment, Kerala State Planning Board. p. 9. • P. S., Harikumar, and K., Kokkal. 2009. <i>Environmental Monitoring Program on Water Quality.</i> Kerala State Council for Science, Technology and Environment. • NIUA (National Institute of Urban Affairs). <i>Urban Climate Change Resilience, Policy Brief 4: Water Security Resilience against Climate Change.</i> • NIUA. 2014. <i>Urban Climate Change Resilience, Policy Brief 5: Urban Health Inclusive Health Policy and Climate Resilience Inclusive Urban Health Policy.</i> • Jha, Abhas K., and Robin Bloch Jessica Lamond. 2013. <i>Cities and Flooding: A Guide to Integrated Urban Flood Risk Management for the 21st Century.</i> • Dr. Gupta, Anil K. <i>Presentation on Flood Risk Management: Challenges for Urban India.</i> National Institute of Disaster Management. • Department of Environment and Climate Change. 2014. <i>Kerala State Action Plan on Climate Change, Government of Kerala.</i> • GoK. 2018. <i>Memorandum of Floods Summary of the Flood Event, Damages, Impacts, and Needs Performed by the State Government.</i>

4.4. LINK TO CPF, OTHER BANK OPERATIONS AND THE WBG STRATEGY

98. **The proposed operation is fully aligned with the objectives and approaches of the World Bank Group’s CPF for India for FY18–22.** The CPF has three focus areas: (i) Resource Efficient Growth; (ii) Enhancing Competitiveness and Enabling Job Creation; and (iii) Investing in Human Capital. The CPF recognizes that improving DRM and resilience to climate change (Objective 1.5) and improving living conditions and sustainability of cities (Objective 1.2) are critical for facilitating resource-efficient growth and poverty reduction. For enhancing India’s ability to create more and better jobs, the CPF supports enablers such as increasing resilience of the financial sector and financial inclusion (Objective 2.2) and improving connectivity and logistics by making the transport systems more climate and disaster resilient (Objective 2.3). As a cross-cutting theme, the CPF pursues climate smart engagement to support India’s climate change mitigation and adaptation efforts across the portfolio. The CPF notes that addressing complex challenges requires reforms and engagement in multiple sectors to achieve success. The proposed DPO contributes to achieving the abovementioned objectives through policy and institutional reforms in an integrated fashion. The proposed operation adopts the four catalytic approaches



outlined in the CPF to achieve the objectives: (i) leveraging the private sector, (ii) engaging a Federal India, (iii) strengthening public sector institutions, and (iv) supporting a Lighthouse India²³ by leveraging experience and lessons learned from the other states where the World Bank has supported post-disaster recovery and reconstruction.

99. **The proposed operation directly contributes to the World Bank’s twin goals of ending extreme poverty and promoting shared prosperity.** As a robust emerging economy, India faces the challenge of sustaining rapid economic growth while lowering the greenhouse gas intensity and reducing the vulnerability of its large population and growing stock of infrastructure. The country’s estimated average annual economic loss from natural disasters is US\$9.8 billion.²⁴ India has the largest number of people exposed to natural hazards in the world (1.02 billion or 82 percent of the entire population). Climate change effects are estimated to have the potential to push 45 million people into poverty in India. The proposed operation supports Kerala’s recovery from the floods and aims to protect the development gains by enhancing the State’s resilience against natural disasters and climate change.

100. **The proposed operation builds on the World Bank’s existing and pipeline engagement in the State and catalyzes the first of its kind State Partnership.** The ongoing Second Kerala State Transport Project (KSTPII) is being restructured to support initial recovery efforts. The restructuring and additional financing for the National Dam Rehabilitation and Improvement Project aims to improve the safety and operational performance of selected existing dams in the participating states, including Kerala. The National Hydrology Project aims to improve the extent, quality, and accessibility of water resources information and to strengthen the capacity of targeted WRM institutions in India, including Kerala. The National Cyclone Risk Mitigation Project Phase 2 aims to reduce vulnerability to cyclone and other hydrometeorological hazards of coastal communities in coastal states, including Kerala, and increase the capacity of the State entities to effectively plan for and respond to disasters. The Kerala Urban Service Delivery Improvement Project, currently under preparation, aims to integrate resilience principles into and undertake investments in critical urban infrastructure.

4.5. CONSULTATIONS AND COLLABORATION WITH DEVELOPMENT PARTNERS

101. **During the preparation of the operation, consultations were conducted with a broad range of stakeholders.** The preparation of the JRDNA and PDNA involved consultations with various State departments, district and local governments, affected local communities including vulnerable groups such as women, the elderly, the SCs, and the STs, the private sector, and CSOs. Relevant State departments and the World Bank held several sector workshops. These consultations helped identify the following: (i) transformational policy and institutional reforms for strengthening resilience in the respective sectors, (ii) immediate and critical sector studies, and (iii) priority investments. The GoK conducted statewide workshops and consultations to obtain public comments and feedback on the RKDP in March 2019 and has finalized the RKDP based on the comments received. Further stakeholder consultations with a focus on sectors and cross-cutting themes will be followed up by continued dialogues with the GoK and inform the development of a holistic State Partnership Framework.

102. **The World Bank has been a strong convener for the GoK’s recovery efforts by exploring opportunities to collaborate with other development partners.** The JRDNA was conducted jointly by the GoK, World Bank, and

²³ ‘Lighthouse India’ stands for analyzing, curating, and disseminating the country’s vast experience and knowledge internally between states as well as externally with the rest of the world and by doing so positioning India as a lighthouse.

²⁴ UNISDR. 2015. Global Assessment Report.



ADB and served as the basis for preparing the PDNA by the UN and the European Union. The RKDP takes a strategic approach to partnerships on financing, capacity development, and citizen outreach. With World Bank support, the GoK is exploring partnerships with other major donors, including the ADB, Japan International Cooperation Agency and the Asian Infrastructure Investment Bank (AIIB). At present, the GoK and the World Bank are closely coordinating with KfW on a partnership comprising investment and technical assistance support. The first phase of KfW support will likely involve a concessional loan of EUR 170 million in support of the RKDP in roads sector, a grant of EUR 10 million in livelihoods sector, and a grant of EUR 3 million for technical assistance. In addition, KfW is also presently considering EUR 150 million support to the RKDP through parallel financing of the World Bank's DPO series, as well as expanding the resources for technical assistance. The AIIB has professed initial interest to support up to US\$300 million for investment operations under the RKDP. Coinciding with the launch of the RKDP, the GoK has requested World Bank support to convene a forum of development partners to mobilize additional partners and resources to programmatically support the RKDP.

103. **In view of the need for sustained capacity support required for implementing key policy and institutional reforms envisaged in the RKDP and the Resilient Kerala Program (RKP), the World Bank is facilitating a partnership between the GoK and IDFC Foundation, a semi-government think tank in Mumbai.** The partnership will design and deliver a programmatic capacity-building program for key GoK agencies so that the key policy and institutional actions can be effectively implemented, and the relevant institutions are able to maximize the benefits of the reforms. Similar partnerships with other national and local thinktanks are also being explored in specific sectors.

5. OTHER DESIGN AND APPRAISAL ISSUES

5.1. POVERTY AND SOCIAL IMPACT

104. **The recent floods and landslides have disproportionately affected a significant share of the poor and marginal population in Kerala, straining their limited resources and eroding their weak coping mechanisms.** It is estimated that 578 tribal settlements were directly affected by the floods, comprising over 10,000 ST population, with more than 7,000 requiring direct shelter assistance.²⁵ Major damages were reported in hill districts such as Wayanad, Palakkad, and Idukki with high tribal concentrations, with landslides and slips in roads affecting access to relief measures and damaging plantations and paddy fields. Because many tribal settlements are in remote forest areas, rescue and relief operations reached these places much later than others. Over 89,000 SC households in low-lying areas experienced physical damages and losses due to the floods. It is estimated that there are more than 677,000 female-headed households in the 10 districts most affected by the floods and landslides.²⁶ Of the 322,000 people sheltered in over 3,600 relief camps across 14 districts, more than 60 percent were women and 30 percent were children as of August 2018. While the exact number of elderly people affected by the floods is unknown, many of them reported that they were unable to save their belongings during evacuation. Approximately 1,000 fishermen voluntarily supported rescue operations during the 2018 floods. However, many of their boats suffered damages due to debris underlying the flood water. The policy reforms under the DPO therefore focus on the need for specific actions for poorer and more vulnerable groups, involving them in a participatory manner, and mitigating the differential impacts of floods on them.

105. **The reforms will generate significant positive social effects, especially for the poorer and vulnerable**

²⁵ Government of Kerala. 2019. *Economic Review 2018: Kerala State Planning Board*. Thiruvananthapuram: GoK.

²⁶ Government of Kerala. 2019. *Economic Review 2018: Kerala State Planning Board*. Thiruvananthapuram: GoK..



groups. An RPSIA was conducted as a good practice considering that the RKDP itself would involve significant infrastructure development and rehabilitation. It was conducted from February to March 2019 based on a desk review and interviews with key stakeholders including the State and Panchayat officials, academia, and female beneficiaries of Kudumbashree²⁷ (comprising group leaders, SC women, and women from the fishing community). The activities to be undertaken under this DPO are expected, mostly, to benefit and support vulnerable groups including women, the elderly, persons with disability, SCs and STs, migrant workers from other Indian states, and fishermen living in coastal areas. The RKDP is gender informed to integrate women's needs and their knowledge as resilience champions. Accordingly, all future disaster resilience plans, urban master plans, and similar plans and strategies supported under the DPO will be gender-informed and will consider specific needs of women for shelter, safety, and sanitation in times of disaster. Key findings of the analysis, including a high-level impact assessment of prior actions and the GoK's existing systems for inclusion, are summarized below.

106. **Pillar 1 of this operation will enhance the State's institutional and financial capacity to protect the assets and livelihoods of poor and vulnerable groups through an inclusive and participatory approach.** The proposed operation will build the State's technical and institutional capacity to implement the RKDP, which is guided by the principle of 'Fast, Efficient and Inclusive' resilient development. The proposed operation will implement more effective policies for resilient recovery from floods and other natural disasters and moreover help build resilience of communities against such future disasters. Kerala has a very strong cadre of women in Kudumbashree, which is used for traditional gender initiatives such as saving and livelihood creation and promotion. However, Kudumbashree also played an extensive role in the 2018 post-flood relief and recovery efforts. Kudumbashree members reportedly cleaned houses and public offices, provided counseling to families, managed community kitchens in affected areas, collected relief material and distributed it in camps, provided assistance for packing of take-home kits, supplied volunteers for various activities, housed flood victims in their homes, and conducted mass cleaning activities in some districts. Further, nearly half of all members in local self-government institutions (LSGIs) in Kerala are women. However, the office bearers of these LSGIs often do not have the capacity to select projects to address interests of women and children. The RKI will help strengthen the institutional capacity of the RKDP at all levels, so at least a given proportion of projects selected can address issues specifically faced by women during disaster (for example, last mile connectivity, different or nonexistent information channels, and so on) and tap their capacity as resilience champions. In terms of other actions under Pillar 1, enhancing the State's financial capacity through a flood cess is unlikely to affect the poor as it applies to luxury goods. Finally, it is expected that an enhancement in the State's emergency preparedness and response capacity will help protect vulnerable groups such as the elderly, women, children persons with disability, and those who live in remote communities, so they can be evacuated and rescued efficiently.

107. **Mainstreaming resilience into critical infrastructure and services under Pillar 2 will contribute to improving the livelihoods of poor people and vulnerable groups.** Especially, the shift to agroecological farming is expected to improve agricultural productivity, thereby directly improving the livelihood of small and vulnerable farmers. Enhanced resilience of road networks especially in hilly areas will mitigate disruptions to emergency transportation services (for example, search and rescue, relief, and health service) for ST communities. Improving the State's land records and maintenance will help the GoK obtain gender-disaggregated data on land ownership and transactions in the State. Currently, there are no reliable figures on the proportion of women owning land in Kerala because the land registry does not provide gender-disaggregated data on land ownership. Including this dimension will support women's financial inclusion as they will be able to show that they have collateral. Such data can also be used to design more targeted support to women without land ownership. Improved water supply

²⁷ Kudumbashree is the state's initiative for poverty eradication and women's empowerment.



coverage and sanitation services will benefit especially women and SC and ST households without access to safe drinking water. The revised annual planning guidelines will mandate ULBs to implement plans in a socially sustainable manner that are sensitive to the needs of vulnerable groups such as women, children, elderly, and persons with disability. The risk-informed master plans will likely help the most vulnerable groups by facilitating the regulation of land use in hazard-prone areas. The RKDP states that all risk informed master planning would be forward looking and would not require immediate resettlement. If there are settlement areas that pose imminent threat to lives and livelihoods of communities, socially acceptable and inclusive special programs will be prepared. The World Bank will provide support to the GoK through a technical assistance program during the implementation period of the DPO1 and will also carry out more detailed environmental and social analysis on the potential impact of the results expected from the policy reforms.

108. The GoK's policies and programs to address the needs of vulnerable groups indicate that the State has adequate capacities and systems in place to manage social risks and enhance positive effects of the operation.

For example, the State Planning Board prepares a separate gender and child budget to ensure that planning, financing, implementation and evaluation by sectoral departments take into account considerations of women and children. In addition, the GoK has mainstreamed gender considerations into local-level planning by, *inter alia*, earmarking a minimum of 10 percent of LSGI budgets to the Women Component Plan, ensuring women's representation in the LSGI's sectoral Working Groups, and requiring gender impact statements as part of cost-benefit analysis. However, the capacity of the Panchayats needs to be built so that women's interests, especially in the wake of disaster, are effectively addressed by the LSGIs. The State's exemplar Kudumbashree program empowers women by improving their livelihoods and integrating them into local governance processes. Also, Kudumbashree implements an educational program for children with disabilities. In the aftermath of the 2018 floods, groups of women under Kudumbashree played an extensive role in clean-up and relief efforts, and also contributed generously to the relief fund. There are special programs to assist the aged, SC and ST population, migrant workers, and fisher women. While most of these programs received additional FY19/20 budget to address the post-disaster recovery needs, many migrant workers were unable to benefit from such schemes during the floods due to lack of access to information, loss of identity cards in the floods, and lack of social support. The proposed operation will enhance the institutional and technical capacity for managing disaster risks, which will contribute to building robustness of various social programs in times of disaster.

5.2. ENVIRONMENTAL ASPECTS

109. The State's environment and forestry sector incurred total damage and loss of US\$4 million and recovery needs of US\$21 million according to the PDNA. The impact on forest ecosystems is marked by soil erosion, loss of humus, and widespread destruction of the riverine vegetation. Due to the flooding, wetlands, especially the Ramsar site Vembanad Kole, have received sizeable quantities of solid and industrial wastes which adversely affected the water quality. During the floods and landslides, approximately 770 different landscapes including riverine, forest, plantations, and agricultural fields were affected, which will have a long-term impact on biodiversity due to habitat modification. Of the 25 key aquatic biodiversity areas in Kerala identified by the International Union for Conservation of Nature, eight systems have been severely affected by the disaster.

110. The policy and institutional reforms will generate significant positive environmental effects but will require significant improvements in the State's environmental management capacity and systems. Although the proposed operation focuses on policy and institutional reforms and it is not mandatory, a rapid policy strategic environmental assessment was conducted considering that the RKDP itself would involve significant infrastructure development and rehabilitation. The assessment was conducted from February to March 2019 based on a desktop



review and meetings with line departments, Directorate of Environment and Climate Change (DOECC), and the Forests Department. The reforms will help prevent the occurrence of similar-scale damages and environmental protection from future events. The other sector reforms will also contribute to positive environmental effects. For instance, river basin management will protect the riparian environment and lead to environmentally improved flow of soil and better flow of silt to the sea. This will have a positive impact on conserving the beach sand, an important coastal resource. Also, the agroecological management approach will reduce the pressure on the land resources. The main sector reforms that will have bearing on forests pertain to water resources and roads. Both sectors have reforms that embed sound environmental principles. For instance, the introduction of green, climate-resilient road construction practices such as better slope protection and strengthened stormwater management particularly in the hilly ranges will have a positive contribution to reducing landslide risks. These efforts will help in the management and mitigation of future floods. Furthermore, Prior Actions 2, 8, and 6 are designed to implement actions in line with the State Action Plan for Climate Change, in addition to the actions in the RKDP (Prior Action 1). While the RKDP will integrate principles of environmental sustainability as evident in the cross-cutting sector note on Environment and Climate Change led by the Departments of Environment and Forests, it may have significant negative impacts on the environment and forests in the absence of proper environmental due diligence procedures and systems.

111. **Strengthening the capacity of line departments and the DOECC, in managing environmental risks is critical.** The responsibility for managing environmental issues within the State lies with the Department of Environment in general, and the DOECC in particular. The responsibility for coordinating, monitoring and evaluating implementation of the State Action Plan on Climate Change (SAPCC) also lies with the DOECC. The institutional capacity of the DOECC is inadequate with fewer than 10 environmental specialists and without field presence. The capacity of line departments was also found to be inadequate. As a result, coordination by the DOECC with other sectors and integration of environmental and forests management considerations by line departments have been limited. Therefore, institutional strengthening of the DOECC and line departments is imperative to be more effective in achieving all the reforms through the various specific actions. A technical assistance program will facilitate the institutional strengthening of the DOECC and line departments as discussed in section 4.3. This is a focus area of the RKDP as it aims a green development, less susceptible to climate-induced disasters.

5.3. PFM, DISBURSEMENT, AND AUDITING ASPECTS

112. **The public financial management (PFM) system and the framework for public financial accountability are progressive and will be strengthened for enhanced effectiveness in certain areas through technical assistance.** The GoK's PFM systems face a number of challenges, many of which are common to other Indian states. Budget credibility is undermined by adjustments in the budget during the year through supplementary grants and to accommodate deficiencies in revenue projections. Budgetary processes have not yet sufficiently internalized medium-term fiscal planning and focus on performance management with no effective structure for commitment control. During FY16/17, 16 percent of the total budget allocation was surrendered at the end of the financial year. Furthermore, FY16/17 Comptroller and Auditor General's report on State finances signals (i) inconsistencies in the GoK's debt management system, (ii) issues with public investment management with lack of adequate project appraisal system and comprehensive costing and comparison, (iii) high infrastructure maintenance costs stemming from the excessive use of force account for roads and infrastructure repairs, (iv) excess payment of pension and non-settlement of advances by drawing and disbursing officers, and (v) accumulated unutilized program funds in Treasury saving bank accounts.



113. **While the GoK's public investment management framework is quite comprehensive, its effectiveness can be strengthened to deliver more resilient and efficient infrastructure.** It is anchored on the Kerala Fiscal Responsibility Act of 2003, financial regulations, and the Kerala Infrastructure Investment Act of 1999, which was amended in 2016. The delays and cost overruns of infrastructure projects that are centrally funded suggest weaknesses in the current system and important potential efficiency gains. The percentage of cost overrun for centrally funded projects in Kerala is 16.5 percent, which is above the national average of 14 percent. Also, Kerala has 21 delayed projects, with delays that range between 9 and 31 months. Furthermore, the substantial flood damages and infrastructure reconstruction needs estimated at US\$4.4 billion underscore the need to strengthen the resilience of the State's infrastructure. This is a core objective of the RKDP and of this operation.

114. **The GoK is in the process of addressing some of the challenges.** Specifically, it is rolling out the web-based integrated financial management system for capturing the Government's financial transactions including allocation and distribution, fund management, treasury operations, and accounting. Going forward, the PFM system could greatly benefit from a technical assistance program as described in section 4.3

115. **The World Bank has reasonable assurance that the control environment for foreign exchange in the RBI, which is the Central Bank of India, is satisfactory for the purposes of this operation.** This assessment is based on the RBI audit report and the satisfactory outcomes of other operations, which have been disbursed and managed through the RBI. The IMF has not carried out a Safeguard Assessment of the central bank (RBI) so far. As part of the preparation for this operation, the RBI's audit report and published annual financial statements for the year that ended on June 30, 2018, were reviewed by the World Bank. The audit report has a clean, unqualified opinion and was conducted by private firms of chartered accountants. The financial statements are prepared in accordance with the RBI Act, 1934 and the notifications issued thereunder and are in the form prescribed by the RBI General Regulations 1949, and the audit has been conducted following auditing standards generally accepted in India.

116. **The GoK makes public the annual budget allocations and utilizations details of the State Government on adoption by the state legislature.** The annual budget speech details the budget strategies with due emphasis on the State's development focus and fiscal position. The annual 'Budget in Brief' discloses budgetary transactions and gives a broad picture of Kerala's economy for the last decade in comparison with that of all other states. It also provides the information on the State's various resources, expenditure on development and non-development activities, and the annual plan outlays earmarked under different sectors such as Agriculture, Education, Industries, Irrigation, and so on. In addition, gender budget and child budget, detailed demand for grants, performance budgets, supplementary budgets, audited state financial statements, and so on are duly made public. District-level budgets are also made public through LSGIs, albeit with time lags. While initiatives have been taken toward budget transparency, the GoK is yet to adopt a formal framework or policy for the same. The State has developed online systems for bottom-up departmental budget preparation; however, budget preparation remains an administrative process with no specific efforts toward public participatory budget preparation.

117. **Disbursement.** Upon effectiveness of the credit, the GoI will submit to the World Bank a Withdrawal Application for the credit. The World Bank will disburse the U.S. dollar proceeds of the credit to the GoI's account with the RBI. This account is controlled by the Office of the Controller of Aid, Accounts, and Audit of the Department of Economic Affairs and is part of the GoI's general foreign exchange reserves. Upon receipt of the credit proceeds, the GoI will transfer the equivalent Indian rupee amount to the GoK according to the guidelines for the transfer of external assistance to the states. The GoK will confirm to the World Bank within 30 days the



receipt of the tranche and its credit into the consolidated fund of the State. The credit proceeds for this operation do not finance specifically agreed activities. The proceeds may be used for any purpose, in support of the program, other than to finance excluded expenditures (as defined in the financing agreement for the operation). Pursuant to the Legal Agreements for this operation, India (in its capacity as the recipient of the IDA credit) and Kerala will undertake not to use the proceeds to finance any excluded expenditures. If any amount of the credit proceeds is used to finance excluded expenditures, the Legal Agreements will authorize the World Bank to require India or Kerala (through India) to refund the amount. The amounts so refunded shall be cancelled from the credit.

5.4. MONITORING, EVALUATION AND ACCOUNTABILITY

118. **The RKI will be responsible for the M&E of the result indicators of the proposed operation.** The RKI will have an overall coordination role and directly monitor the implementation of the reforms, institutional actions, and major recovery activities in line with the RKDP. The RKI has demonstrated a good capacity to coordinate with various state departments. Relevant sector departments such as the Department of Finance, PWD, LSGD, KSDMA, WRD, and KWA will have the primary responsibility to implement the structural reforms under the coordination of the RKI as described in this Program Document and monitor their respective sectoral result indicators. The change process will be supported by close monitoring and a strong multisectoral technical assistance support from the World Bank, which would be part of broader State Partnership with Kerala.

119. **The World Bank will monitor the status of implementation through biannual implementation support missions and tracking of results indicators.** As part of the M&E process, the World Bank will track the baseline and output indicators provided in the policy and results matrix (Annex 1). The outcomes of implementation support missions will be reflected in the Implementation Status and Results Reports. An Implementation Completion and Results Report will be completed within one year after the closing date of the programmatic series of the two DPOs.

120. **Grievance redress.** Communities and individuals who believe that they are adversely affected by specific country policies supported as prior actions or tranche release conditions under a World Bank Development Policy Operation may submit complaints to the responsible country authorities, appropriate local/national grievance redress mechanisms, or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address pertinent concerns. Affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

6. SUMMARY OF RISKS AND MITIGATION

121. **Overall, the operation faces substantial risks to achieving its development outcomes.** Especially, risks associated with governance, sector strategies and policies, environmental and social, technical design of the program, institutional capacity for implementation and sustainability, and stakeholders are considered Substantial. The risks associated with macroeconomic situation and fiduciary are rated as Moderate.



122. **Governance risk is considered Substantial.** The reforms supported by the programmatic DPO may present a threat to vested interests as shifting from the prevailing operational norms in a number of sectors will be met with some resistance, as is expected when aiming for institutional and policy change. Key risks and mitigation measures are discussed in the following paragraphs.

123. **The RKDP covers multisectoral reforms and ensuring sectoral coherence and coordination will likely face a challenge.** The RKI was set up for this purpose to ensure smooth coordination and implementation of the reforms among multiple departments. Each committee that will be established to draft policies and Acts in the WRM, WSS, urban, and transport sectors will be represented by multiple departments to ensure coherence. The multisectoral nature of the reforms introduces additional challenges in terms of communication from the GoK. High-level recognition and endorsement of the RKDP by the Chief Minister's Office and the inclusive and streamlined RKI institutional modality would provide the enabling environment for the proposed reform agenda. Furthermore, a technical assistance will be provided to help the GoK implement the institutional reforms as described in section 4.3.

124. **Institutional streamlining and restructuring of the state departments and agencies related to WRM, agriculture, transport, and WSS will face bureaucratic resistances.** Through establishing the RBCMA, the powers of oversight, asset ownership, service delivery and the associated human resource, and state budgets are being restructured and resistance will likely arise as these functions were previously performed by various state departments and agencies (for example, the WRD, KSEB, KWA, and Irrigation and Agriculture Departments). While the cross-sectoral state-level committee represented by concerned departments and consultative processes will partly mitigate this risk, it may take time to achieve consensus among various departments. Similarly, institutional streamlining of the transport sector presents a significant threat to vested interests of more than ten transport institutions through merger and closure. The GoK plans to establish a Road Sector Modernization Task Force represented by the relevant road institutions to obtain consensus in an accelerated manner. Revising the annual expenditure planning and budget guidelines to enable multiyear municipal infrastructure investments (for example, sanitation) will face resistances from the other sectoral working groups in ULBs as it will result in reduction of their plan funds. Reorganization of Agriculture Department will unlikely face strong resistances within the department as the budget and human resources will largely remain the same, if not increase. These risks are partly mitigated through a technical assistance as discussed in section 4.3 and by the high-level commitment from the GoK under the leadership of the Chief Minister to address the institutional ineffectiveness as evident in the RKDP and GOs issued by the respective state departments. Also, the design of the operation as a programmatic series of DPO introduces decision points before the next phase of the DPO to mitigate risks.

125. **While anti-corruption and public sector ethics regulations exist in Kerala and are generally enforced through the State Vigilance and Anti-corruption Bureau, there was alleged misconduct by the PIU in the World Bank-funded KSTPII.**²⁸ The World Bank's Integrity Vice Presidency (INT) conducted a preventive investigation of the KSTP and the PIU developed a Governance Improvement Action Plan in 2018. The PIU successfully implemented the action plan and there has been no alleged misconduct related to the project since then. There has been no misconduct in other projects funded by the World Bank and development partners such as Swiss Development Cooperation, ADB, and KfW in the State. In the case of proposed operation, it is evident that the GoK has adopted the key principles of good governance from the PDNA to the RKDP by leveraging the State's strong social capital, ICT competencies and the innovative and participatory approach of RKI. The World Bank will leverage the State's legal system for anti-corruption and conduct a regular review of RKDP implementation in

²⁸ P130339.



coordination with the State Vigilance and Anti-corruption Bureau. In addition, the World Bank will provide support to the RKI in establishing a good governance framework for implementing the RKDP.

126. **At the program level, the political context is relatively stable and not likely to significantly affect the PDO.** The RKDP outlines a clear set of priorities for resilient development, which are supported across the political spectrum. In fact, a Cabinet Meeting held on March 5, 2019, directed the RKI and state departments to take necessary steps to implement the reforms and comply with the requirements of the proposed operation.

127. **The risks pertaining to sector strategies and policies are considered Substantial.** Sectoral policies and strategies outlined in the RKDP are considered transformational and constitute the State's overall resilient development strategy. However, sector governance has some weaknesses such as fragmentation among institutions especially in roads and WRM sectors and duplication of task and responsibilities or missing functions in sanitation and SWM. While some bureaucratic resistances are expected as explained, the RKDP supported by the DPO directly aims at streamlining these inefficiencies and proper implementation of reforms would serve as a mitigation measure. The mobilization of alternative finances through the proposed operation as well as implementation of the GoK's medium-term financing strategy will mitigate the risk of inadequate funding, which has been traditionally the case in infrastructure sectors.

128. **The environmental and social risks are considered Substantial** mainly because of the weaknesses in the state system, including in the DOECC, key line departments and ULBs in charge of the reforms. The RKDP will entail infrastructure development and rehabilitation, requiring significant improvements in the State's environmental and social due diligence procedures and systems. The RKDP includes specific time-bound actions and programs to strengthen DOECC, especially at the field level, and to enhance environmental governance across the State. Further, the proposed technical assistance will include support to build capacities for environmental management in Kerala. One of the four cross-cutting priorities of the RKDP supported by Prior Action 1 is environmentally sustainable resilient development.

129. **The risk regarding the technical design of the program is considered Substantial.** A set of transformational yet complex reforms are being implemented over a short period which have limited precedent in India. The program design was informed by the PDNA, key drivers of the 2018 floods, as well as an in-depth analysis of legacy challenges and current issues in the State's sectoral and cross-cutting policies and institutions. However, many of the transformative reforms such as river basin management, agroecology, and resilient road networks require further analytical works and capacity building to ensure the technical soundness of reforms. The GoK recognizes this requirement and identified key analytical works to inform the reforms as listed in the RKDP. This risk is mitigated through the multisectoral technical assistance program as discussed in section 4.3.

130. **The risks regarding institutional capacity for implementation and sustainability is considered Substantial.** Technical capacity building and knowledge transfer will be provided to design and implement the transformative reforms and achieve the results, especially with regard to emergency preparedness and response, river basin management, agroecology, hazard maps for risk-informed urban planning, and quality infrastructure and services delivery. The series of DPOs brings a programmatic approach, which will be supported with a strong technical assistance engagement as discussed in section 4.3 as well as a technical capacity-building program in collaboration with development partners as discussed in section 4.5 to help gradually grow the institutional capacities to a level that ensures the success and longevity of the reform agenda. This comprehensive and medium-term state engagement approach has found very strong political and bureaucratic ownership in the GoK.



131. **Involvement of multiple implementing agencies and development partners requires a high degree of coordination and ability to meet the M&E requirements.** Several key institutions have limited or no experience in implementing multisectoral programs. While all the implementing agencies, except the Department of Agriculture, are familiar with the World Bank's policies and procedures related to Investment Project Financing through the past and ongoing operations in the State, this is their first DPO engagement and will likely require extensive implementation support from the World Bank throughout the project life. The GoK has developed an overall results framework for the RKDP with clear targets and responsibility of implementing agencies in M&E. The World Bank will provide support for the RKI and the State Government to ensure that various interventions including those supported by other development partners and M&E arrangements are consistent with the RKDP and complementary to the proposed operation. The RKI will continue to play a key role for coordination and work toward ensuring the sustainability of reforms and achievement of results.

132. **The risks regarding stakeholders are considered Substantial.** Some sector reforms such as agriculture, urban planning, and WSS may have direct implications to local communities and other stakeholders such as CSOs. While the adoption of agroecology offers a paradigm shift to more sustainable and resilient food systems, it may involve changes to crop varieties suitable to AEMUs which may pose challenges to the farmers who are traditionally engaged in the other crops. This risk is mitigated by providing targeted extension services to the farmers as part of the RKDP. Revising the annual expenditure planning and budget guidelines to enable multiyear municipal infrastructure investments by ULBs may lead to reduction in the other plan funds, which could affect the resource allocation to CSOs and other partner organizations. The ULBs and LSGD will conduct stakeholder consultations and carefully mitigate this risk when revising the guidelines to optimize the outcomes toward a Green and Resilient Kerala. The introduction of volumetric tariffs may also face objections from the consumers. The GoK will conduct an analytical work to set an appropriate level of tariffs and conduct stakeholder consultations to obtain consensus. The establishment of a WSS-specific GRM will contribute to mitigating this risk. The State has conducted a number of stakeholder consultations in March 2019 and incorporated comments and feedback from the general public, civil society, private sector, academia, and other donors when finalizing the RKDP. Provided that a participatory vision and consultative approach as defined in the RKDP are followed throughout the reform process, the stakeholders' risks should not be beyond manageable.



Table 5: Summary Risk Ratings

Risk Categories	Rating
1. Political and Governance	● Substantial
2. Macroeconomic	● Moderate
3. Sector Strategies and Policies	● Substantial
4. Technical Design of Project or Program	● Substantial
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Moderate
7. Environment and Social	● Substantial
8. Stakeholders	● Substantial
9. Other	
Overall	● Substantial



ANNEX 1: POLICY AND RESULTS MATRIX

PDO: The development objective of the proposed operation is to enhance the State of Kerala’s resilience against the impacts of natural disasters and climate change.

Prior Actions and Triggers		Results		
Prior Actions under DPO1	Indicative Triggers for DPO2	Indicator Name	Baseline (May 2019)	Target (February 2021)
Pillar1: Enhancing Kerala’s Institutional and Financial Capacity for Managing Disaster Risks and Climate Change				
<i>Objectives: (i) to enhance technical and institutional capacity; and (ii) to establish innovative sources of financing for disaster risk reduction and climate resilience.</i>				
<p>Prior Action 1: The GoK has adopted the Rebuild Kerala Development Program for enhancing disaster and climate resilience through policy, regulatory and institutional actions with inclusive and participatory approaches.</p> <p>Coordination: RKI CEO</p>	<p>Trigger 1: The GoK has issued guidelines for project selection, preparation and budgeting, including criteria for project readiness, feasibility and resilience, for the RKDP.</p>	<p>Result 1: Resilient recovery from 2018 floods is implemented in line with the RKDP priorities and guidelines and benefits women and children.</p>	<p>Recovery projects are not based on resilient recovery planning criteria.</p>	<p>At least 25 percent of medium-term (1-3 years) resilient recovery activities are implemented as per RKDP priorities and programs.</p> <p>At least 1,000,000 women and children benefit from RKDP programs.</p>
<p>Prior Action 2: The GoK has adopted the new flood Cess, with effect as of June 1, 2019 for financing resilient recovery efforts.</p> <p>Coordination: Finance Department</p>	<p>Trigger 2: The GoK has issued legal instructions for mobilizing private institutional and retail finance for financing resilient recovery efforts.</p>	<p>Result 2: Additional public and private financial resources are mobilized for resilient recovery.</p>	<p>Recovery and resilience programs are financed through public finances.</p>	<p>At least \$500 million of public and private financing is mobilized to finance recovery and resilience programs through cess, Masala and Diaspora Bonds.</p>
<p>Prior Action 3: The GoK has adopted new protocols for enhancing emergency preparedness and response capacity of various departments.</p> <p>Coordination: KSDMA</p>	<p>Trigger 3: The GoK has updated and published the State Disaster Management Plan, incorporating disaster risk reduction and climate resilience principles and policies and including emergency management and outreach to vulnerable communities.</p>	<p>Result 3: Improved capacity for emergency, disaster, and climate risk management with outreach to vulnerable communities.</p>	<p>Weak coordination capacity among key agencies to respond to emergencies and weak outreach to vulnerable communities, as evidenced during August 2018 Floods.</p>	<p>A State-wide emergency management exercise is satisfactorily completed as per updated State DRM Plan, which covers disaster and climate resilience and improved outreach, as evidenced by independent observer’s report.</p>



Prior Actions and Triggers		Results		
Prior Actions under DPO1	Indicative Triggers for DPO2	Indicator Name	Baseline (May 2019)	Target (February 2021)
Pillar 2: Mainstreaming Disaster and Climate Resilience into Critical Infrastructure and Services				
<i>Objective: to mainstream disaster risk reduction and climate resilience into critical infrastructure development and service delivery.</i>				
<p>Prior Action 4: The GoK has established a cross-sectoral State-level committee to draft a River Basin Conservation and Management Authority Act establishing a River Basin Conservation and Management Authority.</p> <p>Coordination: WRD</p>	<p>Trigger 4: Draft RBCMA Act has been submitted to the State Assembly for approval.</p>	<p>Result 4: Improved river basin planning and water infrastructure operations management for climate resilience at the State level.</p>	<p>Inadequate river basin planning and management functions at the State level.</p>	<p>River basin management plans are developed for two priority river basins (i.e. Pamba and Periyar river basins) by River Basin Conservation and Management Authority.</p>
<p>Prior Action 5: The GoK has notified²⁹ the establishment of five agroecological zones and the reorganization of the Agriculture Department along agroecological zones.</p> <p>Coordination: Department of Agriculture</p>	<p>Trigger 5: The GoK has instituted/amended policies, guidelines and programs for expansion of agriculture risk insurance uptake.</p>	<p>Result 5: More resilient and sustainable agriculture based on agroecological zones and enhanced agriculture risk insurance.</p>	<p>(i) Climate and disaster vulnerable agriculture practices; (ii) Low levels of agriculture risk insurance uptake at less than 10 percent.</p>	<p>(i) Resilient and sustainable agroecological zone development plans are adopted for at least two agroecological zones; (ii) Agriculture risk insurance uptake is enhanced to at least 20 percent.</p>
<p>Prior Action 6: The GoK has notified³⁰ the criteria for the identification/determination of the core road network and mandated the review of PWD road policies, construction codes and manuals to ensure the resilient design, construction and maintenance of core road network.</p>	<p>Trigger 6: The GoK has adopted performance-based management contract model for managing the core road network, incorporating design and performance standards and disaster-related emergency response module.</p>	<p>Result 6: Improved physical and institutional resilience of the core road network, including in hilly areas where most tribals are located.</p>	<p>Road design and maintenance programs are not climate change and disaster risk proofed.</p>	<p>Performance-based management contract based on resilient standards is adopted for maintenance of at least five key core road network corridors, including at least one in hilly areas where most of the tribal population is concentrated.</p>

²⁹ 'Notified' means publicly declaring the Government decision specific to the subject matter.

³⁰ 'Notified' means publicly declaring the Government decision specific to the subject matter.



Prior Actions and Triggers		Results		
Prior Actions under DPO1	Indicative Triggers for DPO2	Indicator Name	Baseline (May 2019)	Target (February 2021)
Coordination: PWD	Trigger 7: The GoK has undertaken institutional streamlining in the roads sector to address institutional and resource fragmentation and to strengthen core sector institutions.		Road sector budget is not allocated according to the priority of roads in the network.	Share of budget allocation for the core road network is enhanced by at least 20 percent from the 2018 budget allocation for the core roads.
No Specific Prior Action Coordination: Department of Revenue, Survey Land Records Department and Department of Registration	Trigger 8: The GoK has reorganized institutional arrangements to create a single land record and integrated map for Kerala unifying the current Deeds Registry, Record of Rights and Field Book (map) records and services.	Result 7: Unified and more up-to-date gender-disaggregated land records in high risk areas.	Separate Deeds Registry, Record of Rights and Field Book (map) are maintained for land records.	A program is implemented by Kerala Land Records Modernization Mission for single digital land record and map in at least two high-risk districts, providing gender disaggregated data on land ownership and transactions.
Prior Action 7: The GoK has established a committee to revise the Town and Planning Country Act to make master plans risk-informed and to revise the annual expenditure planning and budget guidelines for urban local bodies to undertake multi-year municipal infrastructure investments. Coordination: LSGD/State Planning Board	Trigger 9: The GoK has amended TCP Act for risk-informed master planning.	Result 8: Risk-informed master plans are notified and funds for multi-year municipal infrastructure investments are allocated in annual plans by urban local bodies.	No urban local bodies have risk-informed master plans.	Risk-informed master plans are prepared and notified by at least two urban local bodies.
	Trigger 10: The GoK has revised annual expenditure planning and budget guidelines for urban local bodies to undertake multi-year municipal infrastructure investments.		No plan funds assigned to multi-year infrastructure investments.	Multi-year municipal infrastructure investment planning and budgeting is undertaken by at least two urban local bodies.
Prior Action 8: The GoK has established a cross-sectoral committee to prepare the policy and institutional program for strengthening water supply and sanitation services and their resilience to disasters and impacts of climate change. Coordination: WRD, LSGD, KWA, KRWSA	Trigger 11: The GoK has adopted the policy and institutional program for strengthening water supply services including service delivery models, O&M cost recovery, MIS and Grievance Redress Mechanism.	Result 9: Improved water supply and sanitation services.	(i) Non-Revenue Water is 45 percent (ii) O&M Cost Recovery is 41 percent (iii) No Annual Performance Report by KWA	(i) Non-Revenue Water reduction models are adopted in at least two Urban Local Bodies; (ii) O&M cost recovery is increased to at least 50 percent at state level;



Prior Actions and Triggers		Results		
Prior Actions under DPO1	Indicative Triggers for DPO2	Indicator Name	Baseline (May 2019)	Target (February 2021)
				(iii) Annual Performance Report is publicly disclosed by KWA.
	Trigger 12: The GoK has adopted a State Sanitation and Waste Management Strategy, incorporating cost-effective septage and waste management models.		14.3 million population affected by poor sanitation and waste management services ³¹ .	Cost-effective septage and sewerage programs are adopted in at least 5 Urban Local Bodies.

³¹ Based on seven districts which were fully affected by flood.



ANNEX 2: FUND RELATIONS ANNEX

India—Assessment Letter for the World Bank

April 24, 2019

This note provides the IMF staff's current assessment of India's macroeconomic conditions, prospects, and policies. The assessment has been requested in relation to a proposed program credit to India to be considered by the World Bank in June 2019.

Overview. India remains among the fastest growing large economies in the world. Over the past year, ahead of the elections, government policies shifted mainly to implementation of earlier reforms rather than initiating new ones. Growth slowed in the last two quarters and the balance of risks is tilted to the downside. Budget pressures have been rising.

The Indian economy has recorded strong growth in recent years. Recently-revised official data indicate that real GDP growth averaged 7.9 percent during FY2014/15-FY2016/17. Activity was supported by generally lower oil prices after 2015, supportive policy actions including implementation of some important structural reforms, a return to normal monsoonal rainfall, and a stronger balance of payments and international reserves.

Transitory shocks have caused some headwinds to growth. Activity was affected by the late-2016 currency exchange initiative, the mid-2017 introduction of the Goods and Services Tax (GST)—a welcome reform but with some implementation challenges, and the 2018 bout of external pressures when an oil price spike compounded the effects of an emerging markets selloff. The latest high-frequency and national accounts data (growth of 6.8 percent during the second half of 2018 (y/y)) suggest softer activity. Growth projections in the April *World Economic Outlook* (7.1 percent in FY2018/19; 7.3 percent in FY2019/20) are predicated on stabilized international oil prices, easier monetary and fiscal conditions, and recovering bank credit. Near-term growth remains underpinned by robust private consumption, while gross fixed capital formation is on track for a second year of double-digit growth despite remaining weaknesses in corporate and public sector banks' balance sheets, still-subdued capacity utilization in core sectors, and supply-side bottlenecks.

The balance of economic risks is tilted to the downside. On the external side, oil prices have recently risen above US\$70 per barrel, considerably higher than the US\$59 per barrel baseline projection for FY2019/20. If sustained, this could dampen domestic purchasing power and private consumption growth. Despite strengthened reserve buffers, tighter global financial conditions could be disruptive. Rising regional geopolitical tensions could affect confidence. Domestic risks derive from delays in fiscal consolidation, lingering effects from GST implementation issues, and further weakening of bank, non-bank financial corporation, and corporate sector balance sheets. Moreover, policy uncertainties in the wake of the national elections could adversely affect growth.

India's external position is broadly consistent with fundamentals and reserves are adequate. The current account deficit (CAD) is expected to widen to 2.5 percent of GDP in FY2018/19, on higher oil prices and imports, and remain at that level in FY2019/20. Foreign direct investment inflows have increased significantly, from US\$27 billion in FY2012/13 to US\$39 billion in FY2017/18 and are expected to continue to support financing of the CAD. Gross international reserves stood at US\$407 billion in late-March 2019 (around 6.6 months of import cover). As noted in the IMF's 2018 External Sector Report, the external position appears broadly consistent with medium-term fundamentals and desirable policy settings, with the real effective exchange rate assessed to be in line with fundamentals with an overvaluation/ undervaluation range of -6 to +6 percent for FY2018/19.



Budget pressures have been on the rise, both on the revenue and expenditure side. The recently-released Interim Budget targets central government fiscal deficits of 3.4 percent of GDP in FY2018/19 and FY2019/20 (authorities' definition), marking slippages of 0.1 and 0.3 percentage points compared to last year's budget announcement. For FY2018/19, revenues appear to have fallen short of the revised budget estimates, while the newly-announced rural farm income support scheme will add about 0.1 and 0.3 percent of GDP to budgetary outlays in FY2018/19 and FY2019/20, respectively. The latest plans delay the time to reach the medium-term central-government debt target of 40 percent of GDP. A full budget, expected to be presented in July after the general elections, will shed more light on medium-term policies. To ensure that the debt target is met by 2025, further steps to increase GST compliance, income tax reforms, and additional reductions in fuel and food subsidies are needed to support the consolidation plans. India's general government debt (about 70 percent of GDP) is relatively high, but owing to a favorable growth-interest differential, debt is projected to remain sustainable (including under stress scenarios).

Low food prices have kept inflation at bay but the RBI should remain vigilant to inflation pressures. Inflation remained low at 2.9 percent (y/y) in March 2019, on low food prices. The Reserve Bank of India's (RBI) Monetary Policy Committee cut the policy repo rate by 25 basis points (bps) each in February and April 2019 to 6.0 percent. Headline inflation is expected to rise gradually and average about 3.9 percent in FY2019/20. In the medium-term, inflation is expected to converge to 4 percent, the mid-point of the RBI's inflation target band (4 percent CPI inflation \pm 2 percent). Given elevated core inflation (excluding food and energy), volatile food prices, and less-than-earlier planned fiscal consolidation, it will be important for the RBI to remain vigilant to upward pressures on inflation. Supply-side reforms, particularly in agriculture, continued fiscal consolidation, and strengthening monetary transmission are needed for low inflation in the medium term.

Financial sector reforms have progressed, but further steps are needed to enhance the efficiency of credit provision. Important steps have been taken to relieve the balance sheets of India's public sector banks (PSBs, which make up two-thirds of India's banking system) and large corporates from non-performing assets (NPAs). These include the recognition of NPAs—raising them to 14.8 percent of PSBs' risk-weighted assets as at end-September 2018, compared to 3.8 percent for private sector banks), the recapitalization of public sector banks (PSBs), and the resolution of some distressed assets through the implementation of the new Insolvency and Bankruptcy Law. Accelerating the cleanup of balance sheets, a decisive strengthening of PSBs' governance to improve their risk management and operations, and a reduction in the public sector's role in the financial system are needed to revive bank credit and enhance the efficiency of credit provision. In addition, a gradual reduction of the statutory liquidity requirement and priority sector lending would help intermediate funds more efficiently toward productive activities.

Structural reforms have been paying off, but labor market, land, and product market reforms are needed for rapid inclusive medium-term growth. India has made considerable progress on both the pace and the composition of structural reforms in recent years, including as evidenced by India's recent improvement in the World Bank's Doing Business Indicators. Important measures include power sector reforms; further easing of FDI sectoral ceilings; enhancements to financial inclusion; and some limited steps to create more flexible labor and land markets (particularly at the state level). Faster growth is needed to create jobs for a young and growing population and sustaining inclusive growth. Structural reforms should translate into higher investment and employment and raise medium-term growth. Accordingly, more needs to be done to address long-term structural bottlenecks, particularly enhancing flexibility in labor markets, tackling obstacles to female labor force participation, land reforms, and product market and agricultural sector reforms.



IMF Relations. On July 18, 2018, the IMF’s Executive Board concluded the 2018 Article IV Consultation. The next Article IV consultation is expected to take place in August. A joint IMF-World Bank Financial Sector Assessment was published in late 2017.

India: Selected Economic Indicators, 2016/17-2020/21

(Annual percentage change, unless otherwise indicated)

Population (2017/18): 1.34 billion

Quota (current): SDR 13,114.4 million/ 100 percent of quota Per capita GDP (2017/18 estimate): 1,980 USD

Literacy rate (2015): 72.23%

Poverty rate \$1.90 a day PPP (2011): 21.20%

Main products and exports: Petroleum, chemical and primary products, business and IT services. Key export markets: EU, USA, United Arab Emirates, China, Singapore, and Saudi Arabia.

FISCAL YEAR 1/	2016/17	2017/18	2018/19	2019/20	2020/21
Est.			Projections		
Output	8.2	7.2	7.1	7.3	7.5
Real GDP growth (%)					
Prices					
Inflation, CPI-Combined (%)	4.5	3.6	3.5	3.9	4.2
General government finances	20.2	19.8	20.6	20.4	20.4
Revenue (% of GDP)					
Expenditure (% of GDP)	27.3	26.8	27.3	27.2	27.0
Fiscal balance (% of GDP)	-7.1	-7.0	-6.7	-6.9	-6.6
Public debt (% of GDP)	69.0	69.8	69.8	69.0	67.8
Money and credit					
Broad money (% change)	10.1	9.2	13.0	11.0	12.0
Credit to the private sector (% change)	7.8	9.5	15.3	11.6	12.7
3-month Treasury bill interest rate (%) 2/	5.8	6.1	6.4
Balance of payments					
Current account (% of GDP)	-0.6	-1.8	-2.5	-2.5	-2.4
FDI, Net (% of GDP)	-1.6	-1.1	-1.3	-1.6	-1.6
Reserves (months of imports)	7.6	7.5	6.6	6.2	5.9
External debt (% of GDP)	20.6	20.0	21.1	20.9	20.7
Exchange rate					
REER (% change) 3/	1.2	2.7	-4.2
Memorandum item:					
Terms of Trade (% change)	1.4	-2.3	-1.9	1.8	1.2



ANNEX 3: LETTER OF DEVELOPMENT POLICY

M. L. N. Sastry
Under Secretary
☎ 011 – 2309 3167
✉ mln.sastry@nic.in



Government of India
Ministry of Finance
Department of Economic Affairs
North Block, New Delhi-110 001

D.O. No. 12/1/2019-FB.V

Dated the 30th May, 2019

Dear Mr. Ahmad,

Please refer to this Department's letter of even number dated 25.03.2019 regarding posing of Government of Kerala's project proposal titled '**Resilient Kerala Development Program (RKDP)**' for an assistance of USD 500 million from the World Bank, in three tranches of USD 150 million, USD 250 million and 100 million for a total period of three years.


2. In this regard, Government of Kerala have requested for increase in the Loan amount for first tranche of the project. Further, Government of Kerala vide their letter dated 25.05.2019 (copy enclosed) have also requested for Development Policy Loan for the first tranche of the project.

3. The Department of Economic Affairs have considered the request(s) of Government of Kerala and recommends the Loan assistance for the first tranche of the project for USD 250 million as Development Policy Loan.

With regards,

Encl: a/a

Yours sincerely,


(M. L. N. Sastry)

Mr. Junaid Kamal Ahmad
Country Director, India
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New Delhi – 110 003
Email - jahmad@worldbank.org.

Copy to: Mr. Tom Jose, Chief Secretary, Government of Kerala, Secretariat,
Thiruvananthapuram – 695 001. Email - chiefsecy@kerala.gov.in.



Tom Jose
Chief Secretary



Government of Kerala
Secretariat
Thiruvananthapuram-695 001

No. 211/CS/2019

25th May 2019

Dear Shri. Garg:

At the onset, let me thank the Department of Economic Affairs and the World Bank for the support extended to Kerala to recover and rebuild from the catastrophic 2018 floods. The Government of Kerala (GoK) is committed to implement a transformative programme, the Rebuild Kerala Development Programme (RKDP), that will address the key drivers of floods and other major natural disasters and better prepare the State to future natural disasters. The proposed World Bank supported Resilient Kerala Program (RKP) Development Policy Financing will be aligned with the RKDP. This letter summarizes the Government's commitments to the successful implementation of the RKDP and the RKP programmes.

Between June 1 and August 19, 2018, the State of Kerala went through the worst floods in history since 1924. One sixth of the State's population, about 5.4 million people, were affected and 1.4 million of these people were displaced from their homes. The floods and the accompanying landslides had a catastrophic effect on lives, livelihood, property and infrastructure. The floods also brought to light the requirement of focusing on a series of interconnected problems in disaster preparedness and emergency management systems, and in the management of reservoirs and water resources. Additionally, they highlighted certain fundamental structural issues and capacity limitations associated with resilience policies and standards, institutional capabilities and financing frameworks across several of our economic, infrastructure and service delivery sectors that leave Kerala unprepared for major natural disasters or climate change shocks. Kerala is highly vulnerable to a host of natural hazards, such as cyclones, storm surges, coastal erosion, sea level rise, tsunami, flood, drought, landslips, land subsidence and earthquakes. Their impacts are expected to further aggravate due to climate change. It is important and timely for the State to put in place clear policies and programmes that help in building resilient communities, economy, livelihoods and infrastructure.

Following the disaster, Government have decided to go beyond traditional approaches to recovery and reconstruction, to not only recover fully from the current disaster, but also to prepare better for future disasters. The Rebuild Kerala Initiative (RKI), led by the Chief Minister, Shri Pinarayi Vijayan, was thus born out of the vision that floods should be taken as *"a challenge and an opportunity to rebuild the State to ensure*



better standards of living to all sections of the society. The Rebuild Kerala Initiative presents a unique approach to rebuilding the State". The RKI is designed as a dedicated State-level institutional arrangement for formulating and coordinating the resilient recovery process. It is guided and overseen by a High Level Empowered Committee (HLEC) headed by the Chief Secretary of Kerala and an Advisory Council headed by the Hon. Chief Minister and with representation from the Government, the private sector and the civil society. Finally, the Cabinet of Ministers is responsible for ensuring that the recovery and rebuilding activities are inclusive and expeditious. This arrangement signals our strong commitment to the resilient rebuilding process.

The Post Disaster Needs Assessment (PDNA), led by the United Nations in October 2018, estimated the total recovery needs at US\$4.4 billion. Using the PDNA as a starting point, the RKI has developed the RKDP, a strategic vision and an operational roadmap for a resilient, green, inclusive and vibrant Nava Keralam (or, New Kerala). The RKI is also mandated to coordinate, facilitate and monitor the implementation of the RKDP through a participatory and inclusive process and thus catalyse the Kerala's transformational shift towards risk-informed sustainable development.

The multi-sectoral RKDP encompasses crosscutting and sector-based policy, regulatory and institutional actions as well as priority investment programs that are critical for resilient and sustainable recovery and rebuilding of the State. It aims for rebuilding of Kerala in a way that addresses key drivers of the floods and other natural disasters and strengthens preparedness against future disasters. The cross-cutting priorities in the RKDP include Disaster Risk Management and Resilience, Environment and Climate Change, Strengthening Institutional Efficiency and Resilience, and Open Data; and the key sectors covered by RKDP are Integrated Water Resource Management, Water Supply, Sanitation, Urban, Roads and Bridges, Transportation, Forestry, Agriculture, Animal Husbandry and Dairy Development, Fisheries, Livelihoods and Land.

The visionary roadmap proposed in RKDP is fully aligned with ongoing State priorities, programs and projects that aim at enhancing the lives of the people in the State. It is guided by Nava Keralam's mission for zero mortality due to disasters with minimum economic losses and disruption of services. Therefore, the principles of risk-informed programming will be embedded across all RKDP sector recovery plans with additional investments for disaster preparedness and response. Additionally, many proposed schemes of the State Planning Board's Annual Plan 2017-2018 are supported or further developed in the RKDP.

By availing World Bank support for the RKDP through the proposed RKP Development Policy Loan, we are embarking on a transformative policy and institutional reform programme for enhancing Kerala's resilience against natural disasters and impacts of



climate change. The Bank support will not only bring about additional financial resources but also help leverage other development partners and connect us to lessons from global good practices. Through the RKDP and the RKP, we aim to make sustainability and resilience central planks of our development policy. This will be instituted by, one, enhancing the State's overall institutional, financial and technical capacities for better managing disaster risks and climate change, and two, by ensuring that key economic and development sectors embed environmental sustainability, natural disaster and climate change resilience in their policies and programs. These changes will be effected by enhancing the capabilities of our institutions in systemic ways.

Towards enhancing Kerala's institutional and financial capacity for managing disaster risks and climate change, a set of cross-cutting actions have been undertaken at the State-level. At the apex level, the RKDP has been adopted by Government as our vision and roadmap for resilient recovery and rebuilding. As part of recognizing the need to mobilize additional public and private resources to finance our recovery, Government has put in place several innovative and sustainable financing modalities including a new flood cess. Government have adopted new protocols for updating State Emergency Operations Center's Handbook on Disaster Management aiming at enhanced emergency preparedness and response capacity of various departments for future disasters. The State has already set up a cross-sectoral State-Level Committee (SLC) to draft a River Basin Conservation and Management Act and establish a River Basin Conservation and Management Authority (RBCMA) to coordinate all water related activities at the river basin level and to support integrated water resources management. Government have also taken steps to delineate the State into five agro-ecological zones based on geographical and climatic specifications. Government have notified the criteria for identification and determination of the core road network and mandated the review of PWD road policies, construction codes and manuals to ensure resilient design, construction and maintenance of core road network. The State has established two high level Committees - one, to revise the Town and Planning Country Act, and two, to update the annual expenditure planning and budget guidelines for urban local bodies (ULBs), and has established a cross-sectoral committee to prepare a policy and institutional program for strengthening water supply and sanitation services and their resilience to disasters and impacts of climate change. Thus, we are in the process of achieving and implementing all the prior actions mandated by the Bank.

Government of Kerala takes pride in inclusive development. In fact, this is a core principle of the RKI. Our resilient recovery programmes are undertaken such that all citizens, especially vulnerable members such as women, the elderly, persons with disabilities, the SCs, the STs, migrant workers and fisherfolk, can participate fully and



benefit from them. Through the RKDP, we are embarking upon specific policies and programmes that reach out to these groups. As a part of strengthening resilience, Government is committed to ensure that there is sufficient institutional capacity to manage environment and climate change impacts. This has been identified as a focus area during the Development Policy Loan preparation. A proposal for such strengthening has already been initiated and is being pursued in line with the Government procedures. The RKDP's cross-cutting chapter on Environment and Climate Change additionally analyses the environmental factors that contribute to disasters, and the potential future impacts of climate.

We see this multi-sectoral RKP Development Policy Loan as a starting point of a partnership between the State of Kerala and the World Bank. The Development Policy Loan must be complemented through a strong programme of technical assistance and capacity building, sector-specific investment programmes and leveraging of other development partners. The dedicated arrangement of RKI allows us to engage in such a multi-dimensional partnership. The strong commitment of Government coupled with the resilience of our communities and the support of our diaspora will help us in realizing the vision for a Nava Keralam that is more resilient, green, inclusive and vibrant.

Yours sincerely,

Tom Jose

Shri. Subhash Chandra Garg
Finance Secretary and Secretary (EA)
Department of Economic Affairs
Ministry of Finance
Government of India
New Delhi - 110021

Copy to:
Shri. Sameer Kumar Khare IAS
Additional Secretary (FB&ADB)
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ANNEX 4: ENVIRONMENT AND POVERTY/SOCIAL ANALYSIS TABLE

Prior Actions	Significant Positive or Negative Environment Effects	Significant Poverty, Social, or Distributional Effects, Positive or Negative
Pillar1: Enhancing Kerala’s Institutional and Financial Capacity for Managing Disaster Risks and Climate Change		
<p>Disaster Risk Management Prior Action 1: The GoK has adopted the Rebuild Kerala Development Program for enhancing disaster and climate resilience through policy, regulatory and institutional actions with inclusive and participatory approaches.</p>	<p>Positive environmental effects as the policy and institutional reforms contained in the program will bring about positive environmental benefits, particularly in the water resources (river basin management), agroecological zoning, sanitation and waste management, environment and forest sectors.</p>	<p>Positive: The RKDP is prepared using an inclusive and participatory approach. The consultations process was open to public as well as direct stakeholders. For the implementation period, the RKDP includes publicly available monitoring and evaluation through open platforms and beneficiary feedback. It also places a special emphasis on all vulnerable groups including women and children.</p>
<p>Disaster Risk Financing Prior Action 2: The GoK has adopted the new flood cess, with effect as of June 1, 2019 for financing resilient recovery efforts.</p>	<p>No positive or negative environmental effects, as this pertains solely to raising of funds for resilient recovery in the context of floods.</p>	<p>No positive or negative social impact. The flood cess will only be applicable on luxury items which attract higher GST (18%/28%); unlikely to have an impact on the the poor</p>
<p>Disaster Risk Management Prior Action 3: The GoK has adopted new protocols for enhancing emergency preparedness and response capacity of various departments.</p>	<p>Positive environmental effects as the new protocols will lead to building the capacity not only to respond to floods but also to manage in a more environmentally responsible manner (for example, there are particular protocols for dealing with the immediate environmental impacts of monsoons).</p>	<p>Positive: It is likely that the protocols will not only enhance emergency preparedness and response capacity, but also provide early warning signals to remote communities and groups who are otherwise vulnerable at the time of rescue such as elderly persons, women, children, and persons with disabilities.</p>
Pillar 2: Mainstreaming Disaster and Climate Resilience into Critical Infrastructure and Services		
<p>Water Resources Management Prior Action 4: The GoK has established a cross-sectoral state-level committee to draft a River Basin Conservation and Management Authority Act establishing a River Basin Conservation and Management Authority.</p>	<p>Positive environmental effects, as the cross-sectoral approach is bound to bring actions that are integrated in nature and result in better water resource management. The Departments of Environment and Forest have been explicitly included as a part of the cross-sectoral approach.</p>	<p>No positive or negative social impact: No significant social impact is anticipated.</p>
<p>Agriculture Prior Action 5: The GoK has notified³² the establishment of five agroecological zones and the reorganization of the Agriculture Department along agroecological zones.</p>	<p>Positive environmental effects as the shift to agroecological zones is bound to result in more appropriate crop selection and reduced use of fertilizers and pesticides.</p>	<p>Positive: Shift to agroecological farming is likely to reduce risk and improve agricultural productivity, thereby improving livelihood prospects for poor and vulnerable groups who are engaged in farming.</p>

³² ‘Notified’ means publicly declaring the Government decision specific to the subject matter.



<p>Transport and Roads Prior Action 6: The GoK has notified the criteria for the identification/determination of the core road network and mandated the review of PWD road policies, construction codes, and manuals to ensure the resilient design, construction, and maintenance of core road network.</p>	<p>Positive environmental effects as the resilient design, construction, and maintenance are bound to increase the lifetime of the road infrastructure assets, which implies less dependence on new mining resources for sand and quarry and less debris/waste disposal.</p>	<p>Positive: Better road networks are likely to improve connectivity and create job opportunities for the local population and a focus on improving roads in hilly areas is likely to benefit the tribal population.</p>
<p>Land and Cadaster No Specific Prior Action</p>	<p>No significant environmental effects.</p>	<p>Positive: Gender-disaggregated data on land ownership and transactions will give a true sense of the extent to which women own land in the State. Currently, these data are very difficult to gather as land records are not available in one place.</p>
<p>Urban Development Prior Action 7: The GoK has established a committee to revise the Town and Planning Country Act to make master plans risk informed and to revise the annual expenditure planning and budget guidelines for urban local bodies to undertake multiyear municipal infrastructure investments.</p>	<p>Positive environmental effects as risk-informed master plans are bound to address those arising from environmental issues.</p>	<p>Positive: The revised annual planning guidelines will mandate ULBs to implement plans in a socially sustainable manner and in a way that is sensitive to the needs of vulnerable groups such as women, children, elderly, and persons with disabilities.</p> <p>Positive: The risk-informed master plans are likely to help the most vulnerable groups by facilitating the regulation of land uses in hazard-prone areas</p>
<p>Water Supply and Sanitation Prior Action 8: The GoK has established a cross-sectoral committee to prepare the policy and institutional program for strengthening water supply and sanitation services and their resilience to disasters and impacts of climate change.</p>	<p>Positive environmental effects as the policy and institutional program will contribute toward addressing one of the development priorities that is relevant not only in terms of building resilience but also in addressing an ongoing development challenge. The Department of Environment is a part of this committee to formulate this policy and institutional program.</p>	<p>Positive: Strengthening the policy and institutional framework for water supply focuses on improving consumer service and grievance redressal. Increased coverage and improved water supply services will benefit all, especially women and SC and ST households, a significant number of whom do not have access to drinking water on their premises; they will potentially incur less costs on coping with rationing and supply intermittency as well as on treating water before consumption.</p>



ANNEX 5: SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION

The Sendai Framework is a 15-year, voluntary, non-binding agreement which recognizes that the State has the primary role to reduce disaster risk, but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders. It was endorsed by the UN General Assembly following the 2015 Third UN World Conference on Disaster Risk Reduction. Countries, including India, committed to the Sendai Framework in 2015.

The Sendai Framework has seven global targets:

- (a) Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rates in the decade 2020-2030 compared to the period 2005-2015.
- (b) Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020 -2030 compared to the period 2005-2015.
- (c) Reduce direct disaster economic loss in relation to global GDP by 2030.
- (d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
- (e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.
- (f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030.
- (g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

Under the Sendai Framework, four priorities for action are identified:

1. **Understanding disaster risk:** DRM should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.
2. **Strengthening disaster risk governance to manage disaster risk.** Disaster risk governance at the national, regional and global levels is very important for prevention, mitigation, preparedness, response, recovery, and rehabilitation. It fosters collaboration and partnership. Creation and operationalization of national platforms are a critical part of this process, bringing together stakeholders with a role to play in risk reduction and management.
3. **Investing in disaster risk reduction for resilience.** Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment.
4. **Enhancing disaster preparedness for effective response and to 'Build Back Better' in recovery, rehabilitation, and reconstruction.** The growth of disaster risk means there is a need to strengthen disaster preparedness for response, act in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phases present a critical opportunity to build back better, including through integrating disaster risk reduction into development measures.