Although the current account deficit widened to 2.1 percent of gross domestic product (GDP) in FY18/19, robust capital inflows during the second half of the year allowed for a buildup of international reserves to US$411.9 billion at the end of the fiscal year (equivalent to 10 months of imports).

Implementation challenges of indirect tax reforms, stress in the rural economy, and a high youth unemployment rate in urban areas may have moderated the pace of poverty reduction since 2015.

The proposed project is focused on improving the public passenger transport by river ferries in the state of Assam (primarily on the Brahmaputra but also on the Barak River) and the institutional capacity and framework to develop the sector.

Development of waterways and ferry services provides low-cost options to integrate transport networks north and south of the river compared to the construction and maintenance of flood-resilient roads and bridges across the long stretches of the Brahmaputra.

With World Bank support, the GoA is creating a more rigorous, tripartite institutional framework that can provide a stronger foundation for sector governance and sustain the desired sector improvements.

Alongside its support for the sectorwide reform program, the World Bank will finance priority investments in safety management, private and public ferry fleet improvements, and replicable terminal improvements on the major Guwahati and Majuli routes and several pilot rural routes.

The Inland Waterways Authority of India (IWAI) of the Government of India (GoI), established in 1986, provides and maintains the fairway navigation 3 on national waterways.4 4 The IWAI, in coordination with DIWTA, is considering augmenting commercial freight transportation on the Brahmaputra, which is a national waterway (National Waterway 2).

In a sprawling city such as Guwahati, service improvements would also contribute to more efficient land use and urban consolidation by allowing the city to develop on its relatively close but underdeveloped north bank instead of just sprawling further along its congested southern bank.

The Project Development Objectives (PDOs) are to (a) improve passenger ferry infrastructure and services in Assam and (b) improve the institutional capacity and framework for inland water transport in Assam.

The project is supported by an Investment Project Financing (IPF) of US$88 million, which includes a financing of US$53 million based on achievement of DLIs. The project will support ferry infrastructure and services (terminals and vessels), institutional reforms, consultancies/analytical studies, training and capacity building, goods including information and communication technology equipment, and development of software applications for safe and efficient management of the sector.

Procurement of New Vessels and Retrofitting of Existing Public Vessels: (i) Procuring approximately twenty (20) passenger ferries for ASC, with capability for carrying motorcycles and cargo, as well as providing longer haul services; (ii) retrofitting existing vessels operated by DWITA and/or ASC; and (iii) repurposing old pubic vessels for the provision of alternative (non-transport) critical public services (e.g. (US$15 million).

Component 3: Improvement in terminal infrastructure (estimated cost US$55 million)

26.

Provision of Smaller Terminals: Designing and constructing at least four (4) small and mainly rural terminals, as per standard designs for modular and scalable infrastructure adaptable to rural and urban areas (US$15 million).

Component 3 will provide standard designs for modular and scalable infrastructure that can be adapted for other urban and rural ferry terminals.

The four main beneficiary groups of the project are the users of ferry services throughout the state of Assam, through better and safer services; private vessel owners through fleet modernization and upgrading of the existing fleet to better safety and service standards for operations under a strengthened regulatory regime; government employees in the institutions of the sector who will be trained to fulfill more effective and focused roles in the new institutions in industry; and the citizens of Assam who will benefit from the more efficient and effective public governance of the sector.

The EEP provides for all project-related investments (goods, works, non-consulting services, consulting services, training, and operating costs) included under the four project components mentioned earlier (detailed in annex 2).

Most of the investment and maintenance costs of navigation infrastructure in

[redacted]

Passenger ferry operations are sometimes privately operated while provincial and local governments are heavily involved in developing ports often with private lessees operating terminals. The project design is based on the expectation of a similar long-term disposition of roles in Assam with public sector management of infrastructure provision and a mix of public and private sector operations in transport services.

Most waterways need investments in and maintenance of reliable channels, supported with navigation aids, provision of suitable vessels, and landing facilities to make IWT an efficient alternative and/or complementary transport mode to roads and railways.

The project is improving the existing passenger ferry market in Assam through better and technically designed terminals and energy-efficient vessels (both new and retrofitted) and is making these sustainable through a more responsive institutional framework. The infrastructure investments do not envisage any disruption to the water balance, large-scale dredging activity, or land acquisition.

The investments are planned and prioritized under an integrated strategic development plan (ISDP) for the state, aiming to mainstream IWT as a mode of transport in Assam that is attractive and suited to a much wider user base.

Certain priority ferry routes (in Guwahati and Dibrugarh) have been identified for investments under the project.

The focus is to design and develop infrastructure in a way that is modular and scalable, limiting the need for fixed structures or substantial acquisition of land or heavy capital dredging

To reduce dredging requirements, the ferry terminals will developed in the river where water levels provide better depths for berthing of vessels round the y

The project will support more landings (mostly smaller rural ghats) that will be selected by GoA based on the strategic development plan and identification of upgrading needs

The project will generate direct transport economic benefits in the form of improved services to existing ferry users, benefits from generation of ferry trips (including fewer road trips and savings in their resource costs), time savings from the shorter river crossings along the Brahmaputra where there are only five bridges to commute across the banks, connectivity for largely rural communities in the upper reaches of the river, and possible benefits in vessel operating efficiency.

Tertiary benefits include stimulating local economic activity and production in the form of flow-through benefits of boosting shared prosperity by creating more jobs associated with cross-river trade, more livelihood opportunities with improved and more reliable connectivity, increased incomes for farmers and riparian communities, and reduced poverty.

The project investments are supporting the sector to make a step-change transition to sustainably superior and safer standards. The economic analysis captures some of the direct benefits from the main fixed investments in ferry infrastructure that are proposed on the identified priority ferry routes between North and South Guwahati and the Aphalamukh-Neamati route serving the Majuli River Island.

The economic internal rate of return (EIRR) of the investments is estimated to be 18.9 percent in real terms.

This, therefore, results in a higher economic return (of about 24 percent) in the case of Aphalamukh (Majuli). However, the volume of passengers using Guwahati ferries is such that, even with a lower average user benefit, the EIRR of investments at Guwahati alone is estimated to be 11.7 percent. The benefits of improved urban amenity, encouragement of lower-cost land use development on the north bank, and contribution to tourism will be additional to the direct transport benefits measured.

The project will thus remove critical transport bottlenecks through modal shift options and reduce the pressure on the government to build new bridges and roads.

Since the specific alignments with detailed technical design for investment to be supported under the project are being finalized, a Social Management Framework (SMF) and a Resettlement Policy Framework-cum-Indigenous Peoples Development Framework (RPF-cum-IPDF) have been prepared to guide the Social Impact Assessment (SIA) to prepare site-specific Social Management Plan, Indigenous Peoples Development Plan-cum-Resettlement Action Plan (SMP, IPDP-cum-RAP).

CE for the AIWTP includes stakeholder/community consultations, a multilevel GRM, and beneficiary survey on draft designs for the terminals to be constructed/upgraded (Component 3), including activities listed under other components.

The findings from the study establishes that IWT is a major contributor to direct and indirect economic growth and employment opportunities in the state.

These measures include project informed design and support for value addition of goods.

Economic regulations to include

route licensing and tariff rationalization.

Review approval letter from State Public Investment Board (SPIB) on the Business plan / feasibility of the APC, clearing the way for its incorporation.

The business plan / feasibility should typically (while SPIB's own guideline will prevail) include details on the capital structure, capitalization levels, investment plan and staffing e

The business plan / feasibility should typically (while SPIB's own guideline will prevail) include details on the capital structure, capitalization levels, investment plan and staffing e

The project is focused on improving ferrying of cross-river passengers in Assam and seeks to use the opportunity to establish a tenable foundation for development of a modern IWT sector in Assam.

As such, the project is guided by a binding philosophy that admits wider and even incremental interventions as long as they contribute to strengthening institutions and planning, operational efficiency and safety, and importantly, sustainability.

and infrastructure challenges of the sector including one component supporting project management.

Sector planning, design and rollout, operationalization of new Regulatory Authority (RA), business planning and operationalization of Assam Shipping Company (ASC) and Assam Ports Company (APC), including remuneration of staff/specialists hired at the RA, ASC, APC, and Assam Transport Policy; modernization of crew training center and training of staff to fulfill new roles in the restructured industry (US$11 million)

3.

The exercise involves preparing a water transport strategy for Assam and an investment plan to help mainstream water transport in the state including multimodal integration and last mile connectivity.

Complementing the investments in infrastructure, the project aims to strengthen the Assam IWT sector through a supportive institutional framework.

The water transport strategy will assist the state in developing a water transport policy with a broad road map for future investments that promote a more balanced modal mix, improved modal integration, mainstreaming of IWT, and better climate adaptability/resilience and emission reduction.

The capacity of institutions needs to improve to deliver roles effectively in the upgraded sector.

The objective of supporting an incentive scheme is to ensure safe, secure, and sustainable transport and to encourage investment in modern shipping technology including adoption of more efficient, greener, and safer technologies, through review of fiscal and other barriers affecting quality of boat construction and maintenance.

Subsequently, a market-based financing framework will be developed to support the scrapping and replacement of unsafe or obsolete private vessels with new vessels, the expected capital cost and financing requirements for which will need much deeper assessment.

Without an affordable cost of financing, the private operators would not be able to upgrade to new and safer vessels and eventually not participate in the program, thus affecting the overall development objective. The component will therefore provide for a detailed analysis to assess financing requirements and structure a government program that mitigates the risk perception of commercial banks and increases access to financing for private boat operators to procure new vessel The component will identify suitable interventions needed by the Government through design of appropriate incentive mechanisms specifically targeting increasing private participation in vessel purchases and operations.

Procurement of new vessels for the Assam Shipping Company and retrofitting of existing public vessels (US$15 million)

11.

The project would also like to improve connectivity/access to basic services for many islands, villages, and far-off chars by using additional floating stock which is customized to specific needs.

Component 3: Improvement in terminal infrastructure (estimated cost US$55 million)

14. This component will support development of improved and technically designed/engineered ferry landings at feasible locations along the Brahmaputra in Assam. The project will finance the activity under two subcomponents.

In particular, this subcomponent will finance the design and construction of few priority terminals at identified busy crossings (such as Guwahati and Majuli).

The developments would offer opportunities for ecotourism development, rejuvenating the river waterfront and integrating quality ferry terminals in the urban context.

Provision of smaller terminals at other locations (mainly rural routes) (US$15 million)

16. This subcomponent will provide standard designs for modular and scalable infrastructure that can be adapted for other urban and rural ferry terminals.

The project is improving the existing passenger ferry market in Assam through better and technically designed terminals and energy-efficient vessels (both new and retrofitted) and making these sustainable through a more responsive institutional framework. The infrastructure investments do not envisage any disruption to the water balance, any large-scale dredging activity, or land acquisition.

The investments are planned and prioritized under an ISDP for the state aiming to mainstream IWT as a mode of transport in Assam, attractive and suited to a much wider user base.

In consultation with the GoA, the project has prioritized the following high-demand ferry routes for development.

The focus is to design and develop infrastructure in a way that is modular and scalable, limiting the need for fixed structures or substantial acquisition of land or heavy capital dredging.

To reduce dredging requirements, the ferry terminals will developed in the river where water levels provide better depths for berthing of vessels round the y

Estimation of the sanitary sewage flow is 20 percent above the water supply rate and it will be routed to a package treatment plant.

The project will support more landings (mostly smaller rural ghats) that will be selected by GoA based on the strategic development plan and identification of upgrading needs

Detailed analysis will be developed to assess financing requirements and structure a government program that mitigates the risk perception of commercial banks and increases access to financing for private boat operators to procure new vessels.

Alongside terminal infrastructure, the Guwahati and Dibrugarh (Majuli) ferry corridors will be taken up initially for shore-based pilots for installing navigation aid facilities.

The project is expected to have economic and social benefits much wider than the direct improvements in transport service. The project will generate (a) direct transport economic benefits in the form of improved services to existing ferry users, (b) benefits from generation of ferry trips (including fewer road trips and savings in their resource costs), (c) time savings from the shorter river crossings along the 891 km where there are only five bridges to commute across the banks, (d) connectivity for largely rural communities in the upper reaches of the river, and (e) possible benefits in vessel operating efficiency.

Tertiary benefits include stimulation of local economic activity and production in the form of flow-through benefits of boosting shared prosperity by creating more jobs associated with cross-river trade, more livelihood opportunities with improved and more reliable connectivity, increased incomes for farmers and riparian communities, and reduced poverty.

The project investments are not intended to deliver incremental improvements, rather they envisage helping the sector to make a step-change transition to sustainably superior and safer standards. The economic analysis captures some of the direct benefits from the main fixed investments in ferry infrastructure that are proposed on the identified priority ferry routes between North and South Guwahati and the Aphalamukh-Neamati route serving the Majuli River Island.

This, therefore, results in a higher economic return (of about 24 percent) in the case of Aphalamukh (Majuli). However, the volume of passengers using Guwahati ferries is such that, even with a lower average user benefit, the EIRR of investments at Guwahati alone is estimated to be 11.7 percent. The benefits of improved urban amenity, encouragement of lower-cost land use development on the north bank, and contribution to tourism will be additional to the direct transport benefits measured.

The analysis applies local private (unsubsidized) bus and ferry fare per passenger as being a reasonable proxy for long-run avoidable costs (including vehicle per vessel capital) of each mode, other than for the upfront cost of new international standard ferry terminals to be developed which is considered as upfront capital cost.

Fatality is based on 50 times GDP pe capita for India, a figure based on estimates used internationally.

A reality to reckon, however, while reviewing the economics associated with the investments is the fact that the sector, which has remained underfunded, rudimentary, and unsafe for decades (while being operational somehow), is now being scaled up to international engineering standards with due consideration also to sustainability.

Many of these are monetized in the economic analysis while many others that are not easy to quantify have been excluded from the assessment, particularly the benefits from better and more frequent access to health facilities, either directly or because of the improved job prospects from the project.