India: Karnataka Urban Development and Coastal Environmental Management Project
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I. PROJECT DESCRIPTION

A. Rationale

1. The report and recommendation to the President (RRP) explained that urban growth in coastal districts of Karnataka had far exceeded the capacity of existing infrastructure and services with resulting negative impacts on human welfare, economic growth, and the natural environment. In response to this, the project design focused on improving the living conditions in 10 urban centers located along the west coast of the state with a total population of about 1 million at the time of project preparation. Improvements were to be achieved through the provision of essential urban infrastructure and municipal services in the 10 selected towns to meet basic needs and to support the sustainable development of the region. In this way, the project also responded to the state’s intention to realize the social and economic development.
potential of urban areas other than Bangalore, which was the main center of urban and industrial growth in Karnataka.

B. Expected Impact

2. Three sector and/or area goals are stated in the project framework (RRP, Appendix 1). These are to (i) improve the quality of life in the urban areas, (ii) improve gross state product (GSP), and (iii) improve the guided planning of urban areas. For item (i) goal, the associated performance indicators or targets are (a) to increase economic activities and revenue base of municipalities, and (b) achievement of time savings due to improved services and reduction in morbidity due to improved public health conditions. For item (ii) goal, the performance indicator or target is for the GSP to increase at a faster rate. For item (iii) goal, the performance indicators or targets are (a) land optimization within an appropriate planning and regulatory framework, (b) reduction in nonconforming uses, and (c) optimization of infrastructure network. It is noted that the discussion on impact is not an end-state statement, and the indicators and targets lack baseline data and quantitative measures of performance.

C. Objectives or Expected Outcome

3. The purpose of the project, as stated in the project framework, is to improve urban infrastructure, management, and resource mobilization in project cities. Associated performance indicators and targets include the (i) provision of basic urban infrastructure and essential municipal services in 10 project towns with a projected total population of over 1.2 million by 2006; (ii) cost recovery, devolution of powers to urban local bodies (ULBs), improvement in financial and technical capability of ULBs, and enhancement of asset management capability of ULBs; and (iii) introduction of public–private partnerships. As in the discussion on impact, the outcome is not defined as an end-of-project state, and the performance indicators and targets also lack baseline and quantitative measures.

D. Outputs

4. The project was designed with 14 outputs. The RRP explained that these outputs are organized into six components, as follows: (i) Part A: capacity building, community participation, and poverty reduction; (ii) Part B: water supply rehabilitation and expansion; (iii) Part C: urban environmental improvements; (iv) Part D: street and bridge improvements; (v) Part E: coastal environmental management; and (vi) Part F: implementation assistance. Outputs included (i) improved water supply, (ii) improved wastewater management facilities, (iii) improved storm drainage, (iv) improved solid waste management, (v) improved municipal services and facilities, (vi) improved community amenities, (vii) improved urban transport, (viii) improved infrastructure facilities in slums, (ix) improved sanitation through low-cost sanitation facilities, (x) improved municipal offices, (xi) coastal resource management and conservation plan, (xii) industrial pollution control and environmental monitoring program, (xiii) coastal erosion protection through afforestation, and (xiv) the Mangalore Urban Waterfront Rehabilitation Plan. The output indicators and targets of the design and monitoring framework, generally, were not based on baseline data, which implies that the overall intention to “improve” infrastructure and services cannot be measured.

E. Provision of Inputs

5. The total cost of the project—including physical and price contingencies, duties, taxes, and interest and other charges during construction—was estimated at $251.4 million equivalent. Foreign exchange costs were estimated at $93.9 million and local currency costs, including
duties and taxes, were estimated at $157.5 million equivalent. The Asian Development Bank (ADB) provided a loan of $175 million (70% of the total cost), the state Government of Karnataka was expected to provide $55.3 million, and the local government was expected to provide $21.1 million.

6. Component costs were to be distributed as follows: Part A, $8.5 million; Part B, $69.0 million; Part C, $41.4 million; Part D, $14.9 million; Part E, $4.3 million; and Part F, $8.8 million. Major variations in actual costs were in (i) Part C with increased expenditure to $75.6 million, (ii) Part D with increased expenditure to $23.2 million, and (iii) Part F with a very significant increase in expenditure to $27.2 million largely due to the delayed closing date (by almost 4.5 years). However, downward adjustments to expenditure in other components and the use of contingencies enabled the project to be completed below the original overall cost estimate, at $240.9 million. A total of 2,613 person-months of consulting services were required, with 134 person-months for international consultants and 2,479 person-months for domestic consultants.

F. Implementation Arrangements

7. The executing agency for the project was the Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC). At the state level, an Empowered Committee provided strategic guidance and facilitated resolution of implementation and inter-department coordination issues. A district-level Project Advisory Team endorsed the subproject scope, reviewed progress, and provided guidance and coordination assistance to project implementation units (PIUs) in obtaining site clearance and statutory clearances, and in redressing grievances. Municipal councils were responsible for approving the scope, feasibility, and preliminary design of subprojects. Two regional PIUs were established—one in northwest and another in southwest Karnataka—and were each responsible for five towns. The regional PIUs were responsible for facilitating the detailed engineering design, obtaining right-of-way clearances, and supporting town-level PIUs in contract management, monitoring, and implementation. Town-level PIUs were established for the construction supervision of civil works contracts and field coordination. Two design and supervision consultants and the project management consultants were engaged to provide the necessary technical and project management support to KUIDFC. Two regional nongovernment organizations were recruited to implement the Community Awareness and Participation Program. KUIDFC also engaged third-party quality assurance consultants to monitor and report on the quality of construction.

8. The majority of the loan covenants were fully complied with. Partial compliance was noted in the loan covenants on (i) the reduction of nonrevenue water to 25% in all project towns, and (ii) the inclusion of a drainage surcharge in water tariffs. The project completion report (PCR)\(^2\) noted that a nonrevenue water assessment by KUIDFC showed that 8 out of the 10 towns have achieved the agreed target. To recover the operations and maintenance (O&M) cost of sewerage systems, the Government of Karnataka issued an order for the mandatory imposition of a sewerage surcharge, which is under consideration by the respective local bodies.

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

9. The PCR rated the project relevant and this validation agrees with this rating. The project was in line with government’s policy as stated in the 74th Constitutional Amendment

Act, and with the objectives stated in India’s past and current 5-year plan. The project addressed the need for urgent improvements to urban infrastructure and the delivery of basic municipal services in 10 towns along the west coast of Karnataka. The project also supported the preparation of a coastal resource management and conservation plan to guide future urban growth and industrial development in the three coastal districts of west Karnataka. It was consistent with ADB’s policy emphasis on integrated urban development through expansion and rehabilitation of key urban infrastructure, capacity development of local governments for improving service delivery, environmental sustainability, and empowering of the urban poor.

10. Although clearly relevant, the project was not ready for implementation and this was a significant design weakness. It is noted that a review of urban projects undertaken by the Government of India and ADB in 2003–2004 recommended the strengthening of project design through advance support for implementation preparation and this recommendation was adopted. This approach was again taken up in the project performance evaluation report (PPER) for the Karnataka Urban Infrastructure Development Project in 2007 and endorsed in the Management Response to the Project Performance Evaluation Report of Karnataka Urban Infrastructure Development Project in 2008. This approach could have benefited the project and helped in avoiding the delays discussed in para. 15. In addition, the monitoring and reporting dimension was inadequately incorporated into the project design and the project framework did not provide baseline data or performance targets at sector and/or area goal, nor purpose or output levels as basis for assessing improvements from the baseline. The use of the project framework as a monitoring framework was limited and may have had a negative impact on effectiveness, efficiency, and sustainability. Further, the risk assessment at appraisal did not give enough emphasis on the weak implementation capacity, and consequently, no risk management strategy was put forward, which could have mitigated some of the implementation delays.

B. Effectiveness in Achieving Project Outcome and Outputs

11. The PCR concluded that overall, the project was effective and this validation agrees with this rating. At the outcome level and against the first indicator, although no detailed baseline information had been made available or performance targets had been set, project achievements are clear—1.0 million people (or 212,770 households) have been provided with an improved potable water supply, 0.4 million people (about 94,000 households) with access to wastewater management services and sanitation, 0.8 million people (or around 172,200 households) provided with a municipal solid waste management system, and 1.2 million people with access to urban transport facilities. Measures of improvement are provided in the output monitoring recorded in the PCR.

12. On the second outcome indicator (again with no baselines or targets), the state has devolved power as stipulated in the 74th Constitutional Amendment of India. The state has appointed technical staff in each ULB and gave regular training to their staff to improve asset

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5 Advance support to be provided through up-front capacity building of implementing agencies and institutional strengthening of the state’s line departments.
8 See, for example, outputs 3.1 and 3.2 summary statements in the “Project Achievements” column of the Project Framework presented in Appendix 1 of the PCR.
management capability. On the third outcome indicator, Mangalore city signed an agreement with a special economic zone (SEZ) authority for the operations and maintenance (O&M) of the city’s wastewater system. Under the agreement, the SEZ will operate and maintain pumping stations and treatment plants in return for using effluent. Other towns are developing public–private partnership schemes for providing water supply 24 hours a day, 7 days a week. Public–private partnerships, in the form of service contracts for the O&M of treatment plants, pumping stations, and waste management have also been introduced. ULBs have engaged self-help groups for the primary collection of municipal solid waste. These groups have been trained and oriented under the project.

13. Achievement of progress against output indicators and performance targets was generally good with few shortfalls. Identified shortfalls include the following: (i) storm water drainage with a target of 76 kilometers completed only 59 kilometers although, in this case, the number of beneficiaries was reported to exceed the targeted number of beneficiaries; (ii) low-cost sanitation had only over half the targeted number of twin-pit pour-flush latrines constructed; and (iii) not all Coastal Resource Management and Conservation Plan outputs were achieved although strategic and spatial planning for the coastal regulation zone was carried out along with the preparation of coastal regulation zone mapping.

C. Efficiency of Resource Use in Achieving Outcome and Outputs

14. Overall, the PCR rated the project efficient. The economic internal rate of return (EIRR), at completion, was analyzed for the water supply, sewerage, drainage, solid waste management, and streets and bridges components. The EIRR for the water supply component in the 10 cities ranges 15.9%–41.6% while that of the drainage component varies from 12.4% to 73.7%, which are higher than the appraisal estimates; the EIRR for streets and bridges is also higher than appraisal estimates. Sewerage and solid waste management components were not assessed at appraisal, but at project completion, the EIRR exceeded the cost of capital. The reevaluation is considered to be reliable—in general, the approach used during appraisal was applied in the recalculation of the EIRR. The analysis at completion also calculated the sensitivity indicators relevant at project completion and it is noted that the subprojects were found to be sensitive to increases in future O&M costs.

15. The original loan closing date of 30 June 2005 was extended to 25 November 2009 for several reasons: (i) the borrower delayed loan effectiveness by 12 months, pending selection of project consultants; (ii) subsequently, it took KUIDFC 18 months to renegotiate onlending agreements to secure ownership by the 10 participating municipalities and to adjust the project scope to address local needs; and (iii) after finalizing the scope, the project consultants took another 18 months for reappraisal, primary data collection, and detailed design and bid document preparation. There were other reasons for the delays, such as (i) land acquisition and obtaining right-of-way clearances from the National Highways Authority of India, and the railway authorities took longer than expected; (ii) high turnover of personnel in consulting firms and inadequate predesign investigations that led to delays in finalizing the designs and bid documents; and (iii) international project management consultants were unable to provide appropriate support because they lacked familiarity with local conditions. It is also reported in the PCR that KUIDFC considered that, during the initial stages, the time taken by ADB to approve some bids and make procurement decisions was slow. Project design could have identified the implementation capacity risks and ensured a risk management strategy, but the problems mostly reflect inefficient project implementation. However, given the robustness of the EIRRs and the fact that they are above 12%, this validation rates the project efficient in
achieving its outcomes and outputs, although this is a borderline case given the delay in project implementation.

D. Preliminary Assessment of Sustainability

16. Overall, the PCR rated the project likely sustainable. However, it was noted that the operating expense ratios for the completed project facilities need improvement by improving the share of own revenue. With still low tariffs and user charges, the financial internal rate of return of the water supply subprojects was negative at project closing (PCR, Appendix 11). The PCR (Appendixes 8 and 11) reported that the Government of Karnataka increased water tariffs in various towns during the implementation period and also in 2012, but the progress toward cost recovery—even only to cover O&M expenses—had been very slow. This was even slower for sewerage services as only one town (Karwar) had started levying sewerage charges by project closing. The PCR (Appendix 11) indicated that no revenue was raised by the municipalities from solid waste services as of 2011. The shortfall in cost recovery must be covered by state and/or municipal subsidies as a temporary measure. The PCR confirmed that all the project towns had favorable financial status (PCR, Appendix 11) (current asset and debt–equity ratios). There had been adequate and growing intergovernmental transfers of budget resources from the Government of Karnataka, which ensured that all municipalities were able to meet regular expenses and invest in municipal infrastructure. Strengthening of municipal revenues through reforms is an ongoing process. This validation notes the innovative arrangement in Mangalore city to work with the Mangalore SEZ and defray O&M costs of the sewerage facility in return for the latter’s use of effluents. This validation rates the project outcomes likely sustainable, with a note that a more robust tariff and/or fee increases need to be pursued.

17. The capacity building, community participation, and poverty reduction component is most likely sustainable in the five southern project cities because of the strong base provided by the project, coupled with the continued support and inputs of the nongovernment organizations participating in the project.

E. Impact

18. The PCR did not provide an impact performance rating and this validation recommends a rating of significant. There is general evidence of overall progress against the first indicator of the initial subgoal: (i) the median monthly per capita consumption level in the urban areas of coastal Karnataka recorded a 100% increase during 2004–2005 and 2010–2011; and (ii) on average, the revenue from property tax of participating municipalities has increased by 14% per annum between 2000 and 2010. The project will have contributed to this but it is not known to what extent. On the second indicator of the initial subgoal, the impact is more project-specific: the average time taken for water collection was reduced from 30 minutes per day in the pre-project scenario to no separate time spent on water collection at post-project. On the indicator of the second subgoal, it is noted in the PCR that the GSP growth rate changed from 7.1% in the pre-project scenario or during 1990–1999 to 7.8% during 2000–2010. However, the project’s direct contribution to this is uncertain.

19. On the first and second indicators of the third subgoal, city development master plans have been prepared for nine project towns to regulate the planned growth of land use and development. These plans have provided a physical framework for land use for a projected city population over a period of 10–20 years. In addition, the Government of Karnataka has also launched a new project to create an urban property ownership records database, which accurately records both the spatial details of the property as well as the nonspatial record of rights. On the third indicator of the third subgoal, the existing infrastructure network has been
integrated with the newly constructed facilities to achieve optimization in all towns across different sectors.

20. The Economic Survey of Karnataka for 2011–2012 reports a substantial reduction (23.5%) of poverty incidence in the urban areas of coastal Karnataka between 2004–2005 and 2009–2010. The report states that inequality in the region declined by 11.6% in the same period and the median monthly per capita consumption level has increased by 100%. Achievements in poverty and inequality reduction in the region were higher than that of the Karnataka average (by over 10%). Although poverty and inequality reduction in the region cannot be completely or directly attributed to the project, it is widely recognized that the project contributed to greater regional prosperity and had significant positive impacts on the poor.

21. The project is categorized as B for environment safeguard. At the time of approval, there was no categorization on involuntary resettlement and indigenous peoples. It was however noted in the RRP that the project is not expected to require any resettlement but will involve acquisition of 113 hectares (ha) of marshy lands or uplands normally used for agricultural purposes. Overall, resettlement management followed the ADB social safeguards requirements for the project. The PCR reported (Appendix 10, para.10) that 22 short resettlement plans were implemented and affected persons were compensated in accordance with the approved short resettlement plan’s entitlement matrices. A total of 81.23 ha of private land were acquired for various components. At project completion, 79.36 ha had been acquired, while a small portion of 1.08 ha was still being acquired for an underground drainage in Mangalore.

22. Environment covenants under the project have been complied with. The project had improved the overall environmental conditions of the 10 coastal towns. The improvement stems from the addition of 2,000 ha of mangrove plantations, the provision of low-cost sanitation units, and the creation of core water supply and sanitation infrastructure. The project also helped in strengthening the environmental monitoring capacity at the regional level and in the planning and conservation of coastal resources through the preparation of Coastal Regulation Zone maps. The project has the potential to contribute further to improved environmental conditions over time if facilities are maintained and operated properly.

III. OTHER PERFORMANCE ASSESSMENTS

A. Performance of the Borrower and Executing Agency

23. The performance of both the borrower and KUIDFC was rated satisfactory by the PCR and this validation agrees with this rating. There were extensive delays in achieving loan effectiveness and in the mobilization of the project. There were also difficulties in implementation, especially in land acquisition and right-of-way clearances. The executing agency did manage to establish effective consultation, project implementation and progress reporting procedures, monitoring mechanisms, and a grievance redress mechanism. It also conducted awareness campaigns and improved transparency by regularly publishing all reports, including project progress reports.

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B. Performance of the Asian Development Bank

24. The performance of ADB was rated *satisfactory* by the PCR and this validation agrees with this. ADB deployed 18 loan review missions and these missions helped ensure that the project was effective and likely sustainable. However, and as with the performance of the borrower and executing agency, the efficiency of the project was significantly constrained by the largely predictable delays in loan effectiveness and mobilization, and by the land acquisition and right-of-way clearances.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

25. Overall, the project is rated *successful* on the basis of its assessed relevance, effectiveness, efficiency, and sustainability. This validation agrees with this overall rating. It was relevant to the government and ADB policies. The project effectively achieved its envisaged outcomes, and was efficient in its resources utilization although less so in the timeliness of implementation. Project investments are likely sustainable if the reform impetus is maintained.

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<tr>
<th>Criteria</th>
<th>PCR</th>
<th>IED Review</th>
<th>Reason for Disagreement and/or Comments</th>
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<tr>
<td>Relevance</td>
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<tr>
<td>Effectiveness in achieving project outcome and outputs</td>
<td>Effective</td>
<td>Effective</td>
<td>The recalculated EIRR are robust. However, the project experienced various implementation delays. As such, the project was borderline efficient (para. 15).</td>
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<td>Efficiency of resource use in achieving outcome and outputs</td>
<td>Efficient</td>
<td>Efficient</td>
<td>Project municipalities were assessed as capable to subsidize facility operations as efforts are being made to reach higher levels of cost recovery. More robust tariff and/or fee increases need to be introduced (para. 16)</td>
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<td>Preliminary assessment of sustainability</td>
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<td>Borrower and executing agency</td>
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<td>Quality of PCR</td>
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ADB = Asian Development Bank, EIRR = economic internal rate of return, IED = Independent Evaluation Department, PCR = project completion report.

B. Lessons

26. This validation agrees with the lessons learned identified in the PCR, in particular, the necessity of advance actions for consultant selection, procurement, land acquisition, and statutory clearances, which can help in the timely completion of projects. This validation also
supports the observed lesson for this type of project to use more standardized country systems and processes and control mechanism, at least at the state level, to reduce implementation effort and time. Further, this validation notes the need for awareness campaigns to change the behavior of urban residents to assure the achievement of project impacts.

C. Recommendations for Follow-Up

27. This validation agrees with the recommendations in the PCR, particularly on the recommendations on the very critical need for future tariff increases. The tariff increase should be done in a phased manner and after careful assessment of affordability analysis. This validation concurs with the recommendation moving forward to build the expertise of agencies, such as the KUIDFC, to take charge of new investments and to effectively resolve technical and project management issues. Without dedicated staff, the agency cannot accumulate institutional knowledge and expertise.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Evaluation Design, Implementation, and Utilization

28. The covenant to formulate and implement a monitoring and evaluation program was complied with and the program was prepared by the project management unit. A midterm review that evaluated project progress was undertaken in 2004 as part of the covenant. The project framework presented in the RRP was weak, with limited provision of baselines and targets. Although there is no doubt that the project has achieved significant improvements in infrastructure provision and service delivery, there is no evidence that the project framework and its targets and indicators guided implementation. Measuring the performance of the project has been inhibited and the management of the project has not been supported with an adequate set of performance targets.

B. Comments on Project Completion Report Quality

29. The PCR quality is rated satisfactory. The PCR provided adequate evidence and analysis to substantiate ratings and is consistent with the PCR guidelines. It is noted, however, that the PCR did not refer to or discuss the 2007 project performance evaluation report (PPER) for the Karnataka Urban Infrastructure Development Project.

C. Data Sources for Validation

30. Apart from the PCR, the RRP and loan review mission reports were available and used for this validation.

D. Recommendation for Independent Evaluation Department Follow-Up

31. A PPER is recommended and should be prepared toward the end of 2015 by which time all components should have been operational for at least 2 years.

10 Loan Agreement, Schedule 6, para 9.
11 Loan Agreement, Schedule 6, para 8.
12 ADB. 1995. Report and Recommendation of the President to the Board of Directors: Proposed Loans and Technical Assistance for the Karnataka Urban Infrastructure Development Project in India (Loans 1415-IND and 1416-IND). Manila.