GOVERNMENT OF KARNATAKA

INFRASTRUCTURE DEVELOPMENT DEPARTMENT

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Pre-feasibility Report

Cruise Terminal in Karnataka

Submitted by:

Feedback Infrastructure Services Pvt. Ltd., India

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1 Executive Summary

Background

Government of Karnataka (GoK) envisages development of infrastructure through Public Private Partnership (PPP) and intends to attract investments in various sectors in Karnataka.

The current report details out the prefeasibility study undertaken for 'Development of a Cruise Terminal in Karnataka'. While during the workshop held under the chairmanship of Secretary, IDD Old Mangalore port was identified for setting up of a cruise terminal, the Consultants feel that the project can be replicable at other ports also, if adequate land and port infrastructure like adequate depth and breakwaters are available. The Consultants propose the following possible locations for the proposed cruise terminal.

- Old Mangalore port (Dakshina Kannada district)
- Malpe port (Udupi ditrict)
- Karwar (Uttara Kannada district)

While three alternative sites are suggested, the Consultants believe that the terminal should be established only at one of these locations. This is because Karnataka already has a cruise terminal at New Mangalore. While another terminal, with world class facilities, to compete with New Mangalore may be feasible, having more than two cruise terminals in a single state is not practical.

The main project idea is to have a world class cruise terminal at any one of the proposed sites, along with a 'Karnataka village' within the terminal and a resort in the respective city - Mangalore, Udupi or Karwar.

Sector Profile

Cruises have grown in popularity amongst tourists in the last few decades. Asia Pacific especially has become a key growth market for the global cruise category. This region is expected to see increased investment in port infrastructure in the coming years. India with its rapid economic development, huge population and a 7,500 km long coastline is regarded as a market with immense potential for more number of tourists and new destinations. Ports such as Mumbai, Goa, Mangalore and Kochi,on the western coast of India, could be effective alternate locations for winter deployment of ships operating in Northern Europe. Such ships are otherwise are restricted to Dubai and other ports in the Middle East.

Today, the cruise industry in India is mainly driven by international tourists, with most of the domestic tourists flying to Singapore or Hong Kong to embark on cruises. International cruise tourist arrivals in the country have increased five-fold in the past 15 years. However, this tourist traffic isheavily dependent on economic and socio-political factors across the globe.

Presently, Mumbai and Kochi are the favoured ports of call in India for international cruise ships. It is expected that the cruise tourism industry in the country would witness rapid growth once required infrastructure is in place. This would lead to the development of three major regional cruise corridors -

Mumbai-Lakshadweep-Mumbai; Goa-Lakshadweep-Kochi-Goa; Kochi-Maldives-Colombo-Kochi. In the first two corridors mentioned, Karnataka is expected to have at least one port of call. Therefore, a cruise terminal in the state is a necessity.

Project details

It is proposed that a cruise terminal be set up at one of Karnataka's minor ports. The factors that usually decide the port of call for cruise vessels include good facilities including arrangements for hassle-free movement within the terminal, commercial facilities to pamper tourists, good connectivity to the city centre, and presence of places of tourist interest in the city where the liner calls. As a cruise terminal is essentially a tourist-centric project, 3 destinations are proposed for a world class cruise terminal in the state—Old Mangalore, Karwar and Malpe on the basis of their tourist potential. The remaining minor ports are present in areas devoid of any tourist attractions and are not recommended by the Consultants for setting up a terminal, unless the state consciously invests in developing the area as a tourist destination.

Key Issues

1. Detailed technical studies would be required to assess the dredging and breakwater requirements at all the three proposed ports for the cruise terminal

2. In the past, PPP projects - where the capital costs related to basic port infrastructure like dredging, reclamation of land and breakwaters were loaded on to private players - have received lukewarm response. The cases in point are cruise terminal at Mormugao and more recently Chennai Port Container Terminal. The Mormugao cruise terminal did not see success despite several rounds of bidding. Even the INR 3,700 crore container terminal at a lucrative location like Chennai port saw response from just one bidder-Adani in the first round of bidding. Adani's bid was rejected on the grounds of being low. Even in rebidding, only two players-Adani and Essar are in the fray. The reasons cited for low bid in the earlier round was high cost of breakwaters (~INR 1,200 crore) being loaded on to the private player

    a. It is, hence, advisable that the state bears undertakes basic development activities at its ports like capital dredging and provision of breakwaters, before offering them to private players

3. Old Mangalore is located at the confluence of two rivers, ___ and ____ due to which it experiences high sedimentation, indicating very high maintenance dredging requirements

4. Both Karwar and Malpe ports have rocky bottoms at ~9 m depth, limiting the effective depth available to vessels to 8.5 m. This would entail high capital dredging costs if the depths have to be increased to entertain larger ships

5. Old Mangalore, Malpe are major fishing harbours and even Karwar has fishing areas around the port, thus any development can cause protests from the fishing community. The state government and the developer will need to ensure that the new developments cause minimum disturbance to the areas marked for fisheries

Market Assessment

As per the market assessment undertaken by the consultants, the existing cruise terminal at New Mangalore is expected to be a major competitor for the proposed new terminal in attracting international cruise ships. Hence, a three pronged strategy is suggested for the new cruise terminal to compete with the New Mangalore port.

- Building a world-class cruise terminal
- Marketing and networking with all the stakeholders involved
- Positioning of the terminal as a facility complementary to the New Mangalore port in the long run. Though in the short run, the new terminal will need to set competitive tariffs to attract traffic, in the long run as traffic increases it is expected that the new terminal will become a complementary facility. This is because most of the world class terminals abroad have capacity to berth multiple vessels at a time. With cruise tourism in India growing over a period of time, a single berth at New Mangalore may not be enough. Further, it may become difficult for New Mangalore to add another exclusive cruise berth, as it is essentially a cargo port. The proposed terminal can bridge this gap

Hinging on successful execution of the strategy, passenger and vessel traffic at the new cruise terminal is estimated till the year 2041-42. The cruise traffic in India has grown at a CAGR of 11.8% during 1997-2011. This growth was seen despite two major downturns in 2001 and 2008. Past growth trends are used to estimate the future cruise tourist growth in India. The share of Karnataka's cruise tourists in total is used to project growth rates for future.

The competition from the New Mangalore cruise terminal is also factored in while making the final traffic estimates at the proposed site given below.

Year	2011-12	2015-16	2019-20	2024-25	2029-30	2034-35	2041-42
Projected Annual Growth Rate of Cruise Tourists in India	11.34%	11.79%	11.00%	10.50%	10.00%	9.50%	8.50%
Projected Cruise Arrivals in India (In Millions)	0.11	0.140	0.237	0.392	0.635	1.004	1.835
Assumed Share of Mangalore in Total Cruise Arrivals	6%	6%	8%	8%	10%	15%	16%
Projected Cruise Arrivals in Mangalore(In Millions)	0.007	0.008	0.019	0.031	0.063	0.151	0.294
Share of the proposed terminal		0.00%	8.00%	15.00%	25.00%	30.00%	50.00%

Projected Cruise Arrivals at the new terminal (Number)		**0.0**	**1517.0**	**4708.0**	**15869.0**	**45172.0**	**146799.0**
Projected Cruise Arrivals at the new terminal(Ships)			**3**	**6**	**16**	**31**	**114**

For estimating domestic cruise traffic, past growth rates of domestic tourists in Karnataka are used for traffic projections. Further, it is assumed that one domestic cruise vessel carries an average of 175 passengers[1], which gives the number of domestic vessels. It is important to note that given the current tariffs of INR 0.60 per GRT and small size of the vessel, domestic cruises will not generate high revenues. However, domestic cruises are important for higher footfalls, especially during the off season period of April-October(for international cruise vessels)which would help attract commercial players likely to set shop at the terminal.

Following table summarizes the projections for domestic cruises:

	2012-13	**2014-15**	**2019-20**	**2024-25**	**2029-30**	**2034-35**	**2040-41**
Projected Growth Rates for Domestic	8.10%	8.10%	8.00%	8.00%	7.50%	7.50%	7.50%
Domestic Cruise Passengers in Karnataka	4540	5310	7860	11570	16640	23920	39720
Number of Vessels	26	30	45	66	95	137	227

Area Statement for the Cruise Terminal

An area summary of the proposed new cruise terminal is given below.

Area Summary	**Value**	**Unit**
Port Area		
Berth	6600	sqm
Terminal Building	3750	sqm
Administrative Building	100	sqm
Karnataka Village	4000	sqm
Parking	980	sqm
Total Area	15430	sqm
Total Area in acres	3.81	acres

City Area		
Resort	25	acres

Project Financials

It is recommended that the capital dredging cost and cost of any other basic infrastructure like breakwaters which benefit the port as a whole and not just a terminal, should be borne by the government, to make the project attractive to the private investor. If the recommendation is followed, the total project cost for the private investor with including interest during construction is estimated to be ~INR 139 crore.

Further, a capital structure of 70% debt ~ INR 97 crore and a 30% equity equivalent to INR 41.5 crore is assumed for the project.

Key project returns are summarized in the table given below.

Parameter	Value	Unit
Total Project Cost	138.5	INR crore
Upfront Payment	0	INR Crore
Project IRR to the Concessionaire	12%	%
Project NPV	10.7	INR crore
Equity IRR	15%	%
Lease Rental per Year to the government	50	INR lakh per annum with 5% p.a. escalation
NPV of receivables to the government	5.55	INR crore
VFM	79.11	

The concessionaire is expected to earn a Project IRR of 12% and a positive Project NPV of INR 10.7 crore. It can be seen that the project has a borderline viability. This hinges on the fact that the government bears the cost of capital dredging and breakwaters and also maintenance dredging cost if it is over INR 80 lakh a year (at an escalation of 5% p.a.) This is because this is the highest annual cost of maintenance dredging that the project can withstand so that it generates a positive NPV.

Environmental & Social Impacts

The cruise terminal would lie in the CRZ-II zone under the coastal regulatory norms. Hence the project would require clearance from the state CZMA. Since the terminal area at the port would be less than 20000 square metres, there is no need for a clearance from the Union Ministry of Environment and Forests.

The breakwater and the dredging operations to be undertaken at the port fall under 'Category B' of the EIA notifications,2006, since all the proposed sites are located at minor ports and handle a cargo capacity of less than 5 million tonnes per annum. Hence, as per the EIA notification 2006, the concessionaire would have to obtain EIA clearance from the State Level EIA Authority (SEIAA), duly

constituted by the Central Government for Category 'B' activities, before any construction work, or preparation of land is done.

The project proposed would have two major socio-economic impacts.

- A boost for the local economy: The project is expected to boost tourism in the state and contribute to its economic prosperity. A Cruise Passenger on an average spends more than USD 100 per trip, which has a direct impact on the economy. Further it is expected that a project of this scale will generate employment for people from all walks of life.
- Two of the proposed sites have fishing harbours (Old Mangalore and Malpe). A project at these sites can lead to disturbance to the livelihood of fishermen. Hence, it is to be ensured that minimal disruption is caused to the livelihood of fishermen community due to new constructions. If such disruption is inevitable, the project proponent may need to involve the community in the project by providing employment and other social benefits

Operating Framework

An indicated project implementation structure is outlined below.

Component	Description
Structure	• The project is to be developed under BOT model of PPP • The berth cost and other terminal facilities cost are to be borne by the concessionaire • The capital dredging costs and break-water costs are to be borne by the government • The government also bears a portion of the maintenance dredging cost if it is over a certain threshold (to ensure viability of the project. • The private sector player recovers its investments over a period of time from revenues from operation of the cruise terminal and the Karnataka Village in the port premises. The private player will also be leased out land for building a resort, which will be a further source of revenue. The land for resort can be given in the city, if not available at the port.
Concession Period	• 30 years including a construction period of 3 years
Payment to Concession Authority	• Annual Lease rental • For land in the port premises, to be calculated at the rate of INR 0.5 per sq.mtr per month • For land in the city, an annual rental of INR 50 lakh is suggested for 25 acres of land

Component	Description
Role of Concession Authority	• Provision of identified land for the project, free from all encumbrances • Grant of lease hold rights of the project site to the developer • Provision of adequate rights to the developer for collection of user charges, parking fees and rentals from property development.
Role of Private Sector Developer	• Detailing and placement of the Project components • Detailed designing and Engineering of facilities based on Concept • Achieving financial closure and making the necessary capital investment • Construction, Marketing, Operating, Maintaining and Managing (Utilities, Facilities, Equipments etc) the Project during the Authorization Period • Obtaining all clearances/approvals from the concerned Govt. Department, handling legal issues etc

Recommendations

1. It is recommended that the project be taken up only after detailed technical studies to assess the technical suitability of the suggested sites for setting up a cruise terminal that can handle large vessels to the order of 90,000 GRT
2. Further, the project is feasible only if the state bears the cost of capital dredging and breakwaters
3. No Upfront Fee is recommended for the project, as the project is viable as a borderline case. An upfront fee can make the project unviable
4. Three potential locations are identified by the Consultants for the proposed cruise terminal. It is recommended that the site is selected based on availability of the following :
    a. Close to 3.2 acres of land for berth, terminal and Karnataka Village. Another 25 acres of land for the resort.
    b. A depth of at least 10 meters to allow large vessels to call on the berth

2 Introduction

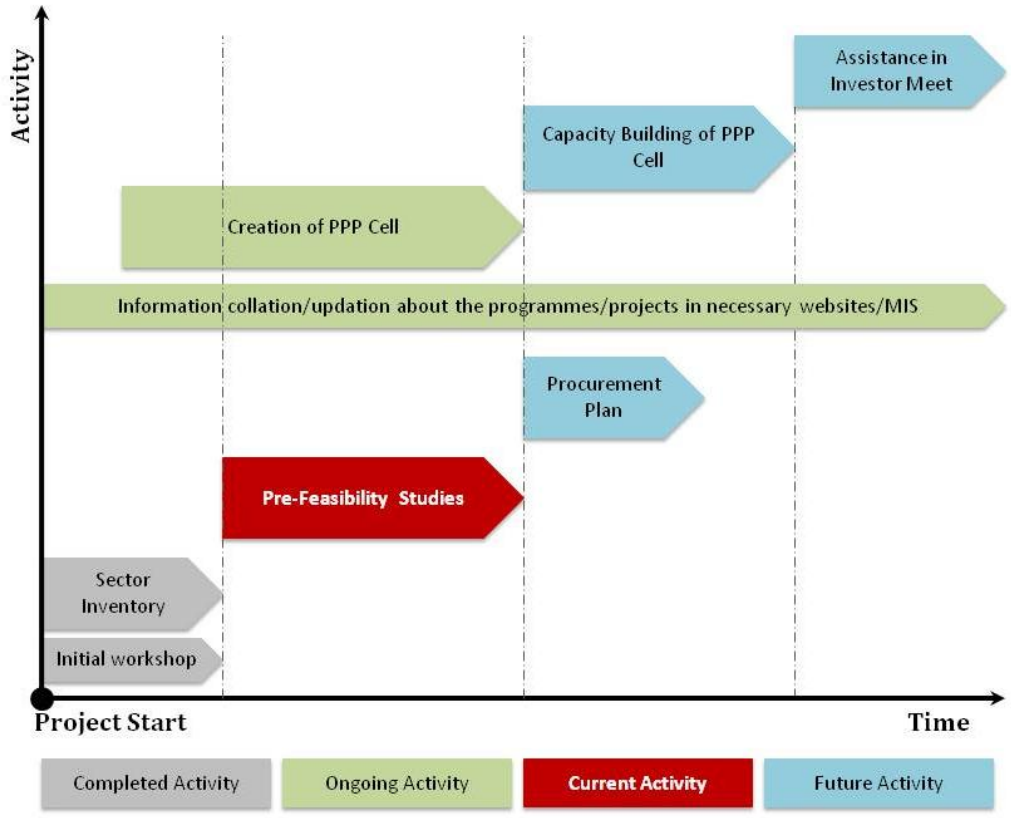
2.1 Project Background

Government of Karnataka (GoK) envisages development of infrastructure through Public Private Partnership (PPP) and intends to attract investments in various sectors in Karnataka.

For this, Infrastructure Development Department (IDD) has selected consultants for Sector Specific Inventory & Institutional Strengthening for mainstreaming of PPP for various departments related to infrastructure development in the state. Feedback Infrastructure Services Private Limited (FISPL) was selected to assist Infrastructure Development Department (IDD) to fulfill the above objective.

For the same, the Inception Report, comprising the preliminary information on the various sectors covered under IDD and the inventory of the projects finalized in consultation with IDD, was submitted by the Consultants on February 22, 2012. The figure below summarizes the progress of the assignment, in reference to the defined objectives.

Figure 1: Project Status



The current report details out the prefeasibility study done for Development of Cruise Terminal at three alternate locations-Old Mangalore, Malpe and Karwar. Structure of the Report

This Project Report has been structured along the following in a chapter-wise format.

Chapter 2: Introduction

The chapter includes the background of the project and introduction about the study that is being undertaken.

Chapter 3: Sector Profile

The chapter includes the industry overview of the Cruise Sector in India and abroad

Chapter 4: Project Detail

The chapter includes the details and description of the project and project components. The project also includes the needs & considerations undertaken for the development of the project. The best case studies will be reviewed in this chapter and the relevant points will be taken to apply in the specific project and project design

Chapter 5: Market Assessment

Chapter 5 includes the market assessment for the project. The chapter describes the cruise industry outlook of the region, opportunities in the sector & thus the demand projections have been made.

Chapter 6: Project Financials

Based on the market assessment and project details, this chapter describes the project financial analysis. The chapter includes the cost & revenue assessment for the project facilities.

Chapter 7: Statutory & Legal Framework

Based on the above analysis a legal & regulatory framework has been developed for the project and a proposed tariff structure has been prepared for the project.

Chapter 8: Indicative Environmental & Social Impacts

The chapter includes an indicative environmental & social impact assessment and the mitigation measures for the project.

Chapter 9: Operating Framework

The chapter includes the risk assessment for the projects & appropriate mitigation measures. An indicative project structure has been prepared.

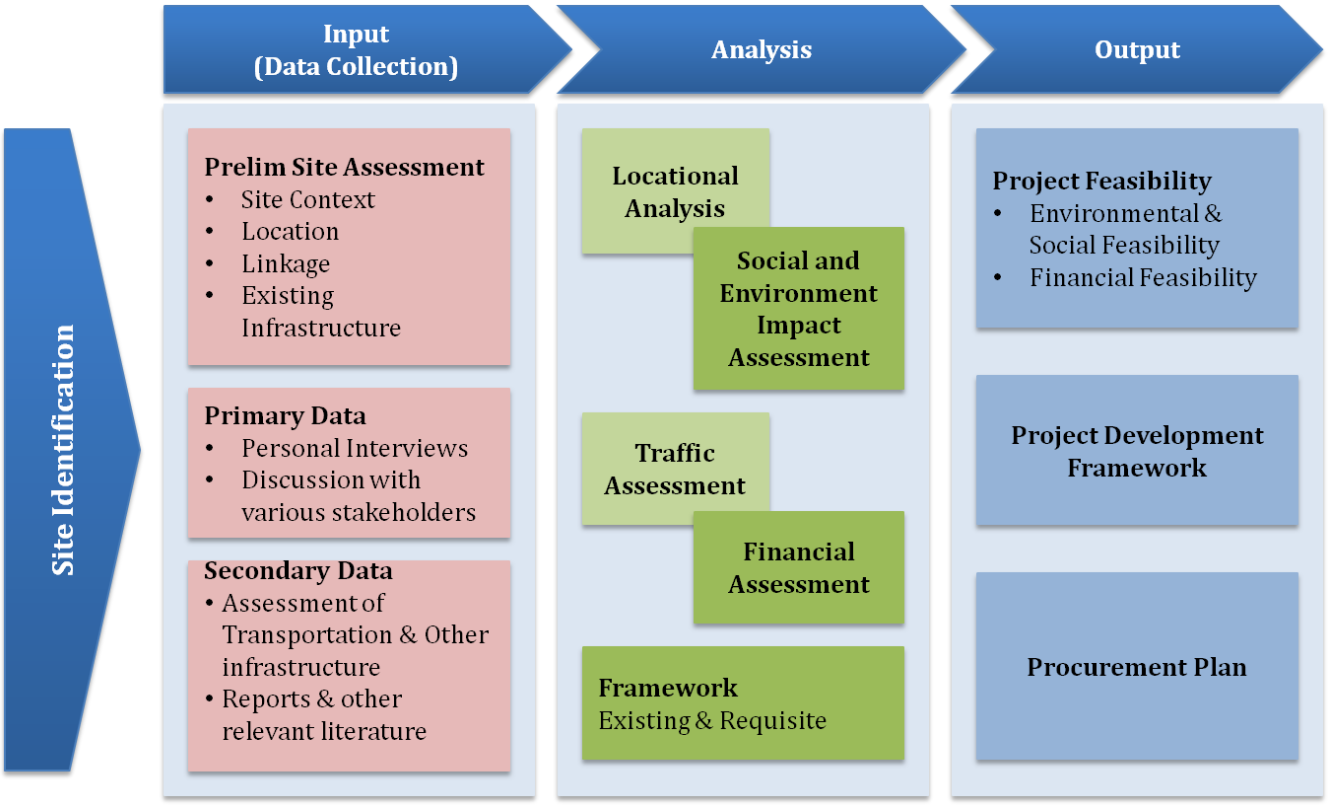
Chapter 10: Way Ahead

The chapter includes the time line for the procurement plan for further development of the project.

2.2 Approach & Methodology

The approach and methodology adopted for the study is as outlined in the figure below.

Figure 2: Methodology for the Study



Stage I: Input

The first stage involved the study of the project site to understand its suitability for the defined activity. Various factors influencing the site's potential like accessibility, linkages, physical features, economic activities and developments in proximity, etc were analyzed. This study helped us to assess the environmental and social impact of the project.

Simultaneously, this stage also involved collection of data, both primary and secondary, to carry out the requisite traffic assessment at later stages.

Stage II: Analysis

This stage involved the review and analysis of data, collected in previous stages, in order to determine the feasibility of the project, both in terms of financials as well as environmental & social impacts. The financial analysis encompassed various aspects as detailed below:

- Costs & Revenue Estimation
- Viability Assessment (NPV, Project IRR, Equity IRR)
- Project Funding

- Scenario Analysis, etc.

This stage also involved a study of the legal and statutory framework along with identification of issues and mitigation measures.

Stage III: Output

Based upon the results of the analysis, the framework and the procurement plan for further development of the project were defined.

3 Sector Profile

3.1 Introduction

Ports play an important role in the economics of the coast and are generally centers of trade and commerce. The seaports of India have played a historical role in the development of maritime trade and economy in India. India has around 7,500 km of natural peninsular coastline strategically located on the crucial East-West trade route, which links Europe and Far East. The coastline has 13 major ports and about 187 other minor and intermediate ports. While the central government has developed port infrastructure across the country, and in many cases through private participation, states too now have become active in developing their coastlines.

Government of Karnataka intends to develop the coastline and minor ports through private sector participation. The detailed profile of Karnataka is presented in the next section.

3.2 Regional profile of Karnataka

Karnataka has 320 Km of Coast line and 11 ports with combined capacity of ~52 MTPA. Karnataka has one major (New Mangalore) and 10 minor ports. Total capacity of the major port is 41.8 MTPA while that of the minor ports is 10.7 MTPA. Out of ten minor ports only 3 are operational while others are in various stages of development. The ten minor ports are:

1. Karwar Port
2. Belekeri Port
3. Tadri Port
4. Honnavar Port
5. Bhatkal Port
6. Kundapur Port
7. Hangarkatta Port
8. Malpe Port
9. Padubidri Port
10. Old Mangalore Port

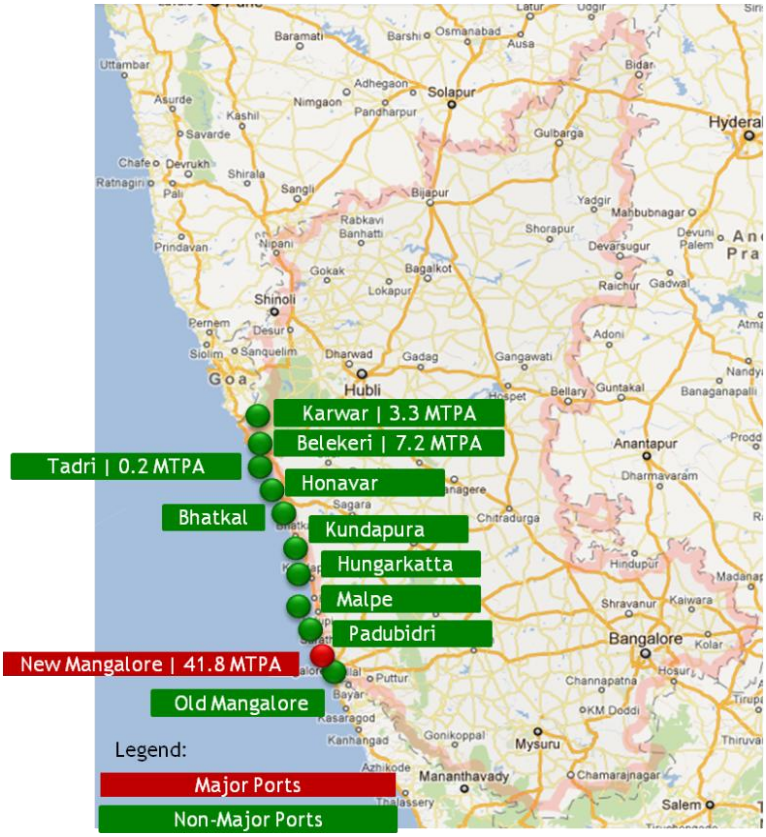
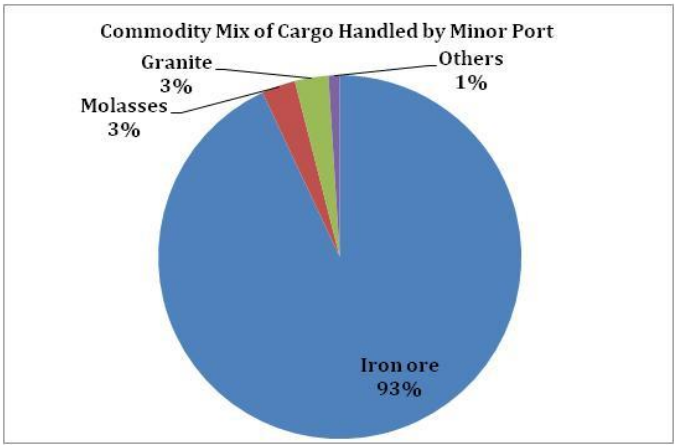


Figure 3: Location of Minor Ports in Karnataka

Total traffic handled by minor ports is 3 MTPA in year 2009-10. Major Commodities handled by ports are Iron ore, Granite, Molasses, Salt, POL & Products and Edible Oil.

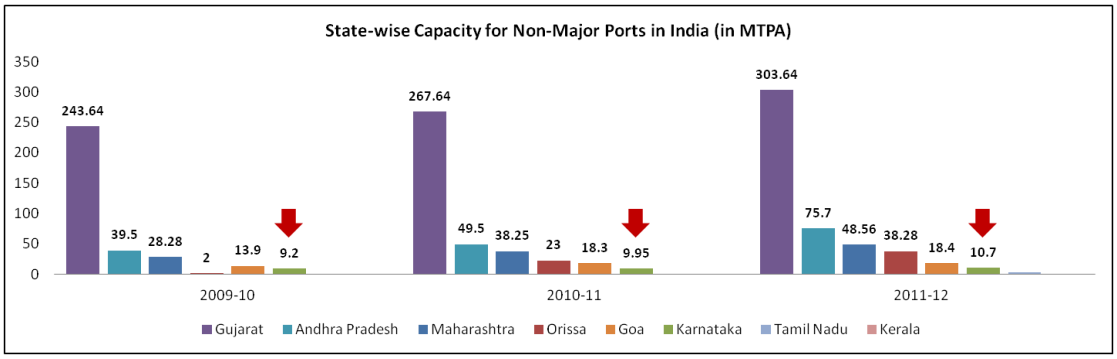
Figure 3: Commodity mix of cargo handled by minor ports



Source: Report on Development of Karnataka, 2011

Karnataka is ranked 6th in capacity as compared to minor ports of other states of India. The capacity of ports in Karnataka has seen very little growth in the recent years. The graph below shows the comparison of total capacity of the minor ports of various states.

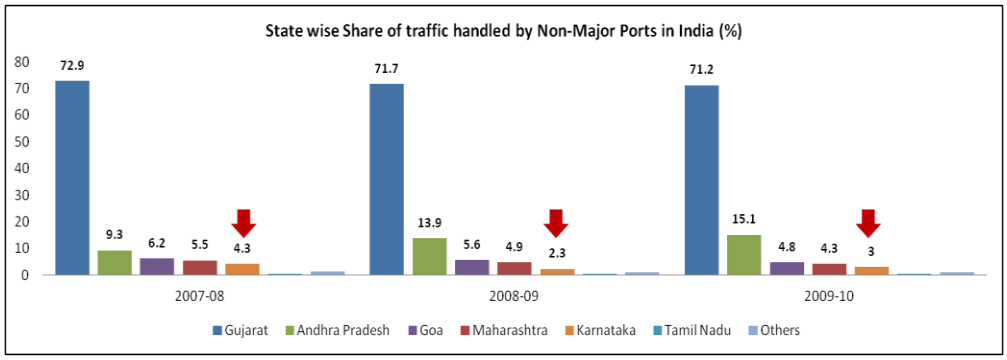
Figure 4: State-wise capacity of non major ports in India



Source: IPA

Karnataka is ranked fifth in the total traffic handled by Minor ports of states. There has been a decrease in total traffic share handled by Karnataka minor ports over the years. The share of Karnataka decreased from 4.3% to 2% from 2008-2010. The figure below shows the state wise traffic share of traffic handled by Non-Major Ports in India.

Figure 5: State wise share of traffic handled by Non Major ports in India



Source: IPA

3.2.1 PPP Activities in the sector

Karnataka ports have seen very little private investment in the recent years. Port development comes under the Ports & Inland water transport department. There is a PPP cell operational since 2007 in Karnataka government which undertakes the development of PPP projects including ports. There are some initiatives which have been taken up for the development of minor ports in Karnataka:

- Karwar port is under second stage development of Modern Deep Sea Port. The project is undertaken under BOOST model and is already in progress. The project cost is approximately INR 788 Cr. The entire funding for the project will have to be borne by the concessionaire. The Government of Karnataka will hand over the available port land and water front area required.
- Tadri (Tadadi) Port is being developed on BOT with a total cost INR 2,230 Crore. The total capacity of port is expected to be 14.06 MTPA. The port is leased for 30 years with the Concessionaire having the flexibility to design, finance, construct, operate and manage facilities.

3.3 Key Issues

Karnataka's port development is constrained due to two reasons:

1. Lack of major industrial catchment in the central region
2. Difficult terrain resulting in issues for creating rail linkages to the hinterland

4 Project

4.1 Description of the Project

It is proposed that a cruise terminal be set up at one of Karnataka's minor ports. While during the workshop held under the chairmanship of Secretary, IDD it was decided to select Old Mangalore for setting up of a cruise terminal, the Consultants feel that the project can be replicable at other ports also, if adequate land and facilities like the right depth, breakwaters are available.

Factors deciding the port of call for cruise vessels include good facilities including arrangements for hassle-free movement within the terminal, commercial facilities to pamper tourists, good connectivity to the city centre, proximity to the airport and presence of places of tourist interest in the city where the liner calls. On this basis 3 destinations are proposed—Old Mangalore, Karwar and Malpe. Other minor ports in Karnataka are located in areas do not have any tourism significance and hence are not suitable for setting up a cruise terminal, unless the state decides to invest in developing those areas as tourist destinations.

Cruise tourism implies substantial benefits for the cities where the ports of call are located. As per the Economic Impact Study conducted by Business Research and Advisors in 2007, an average spend by a guest at the port of call is USD 104 and the crew is USD 73. So even if a 500 passenger cruise vessel with ~ 125 crew member is considered, the average income in the city hosting the cruise vessel will be as high as USD 3 million.

In India, major destinations for international cruise vessels are Mumbai, Goa, Cochin and Chennai. Karnataka is also on the way to become a notable cruise destination with the New Mangalore port inaugurating a passenger lounge for cruise visitors in 2009. Starting from just 4 cruise vessels in 2009-10, New Mangalore now hosts close to 17 vessels annually. This indicates that a market for cruise exists in Karnataka. The consultants have later, in the market assessment, analyzed the extent to which the New Mangalore port can act as a competitor to another terminal in Karnataka and how the proposed terminal can attract vessels despite having an existing terminal nearby.

It is to be noted that the consultants recommend that the cruise terminal project should be taken up only in one of the proposed locations—Old Mangalore, Karwar and Malpe, depending on the availability of land and technical suitability. This is because having multiple cruise terminals will just result in creating over capacity, as cruise liners are not expected to call on multiple terminals in the same state. Detailed technical studies will be required to assess the technical suitability of the above mentioned port sites for creation of a port terminal. This report highlights the basic requirements for a cruise terminal and assesses the feasibility for the same. On the basis of financial analysis, the Consultants have recommended certain concessions and cost-sharing by the government.

4.2 Location & Connectivity

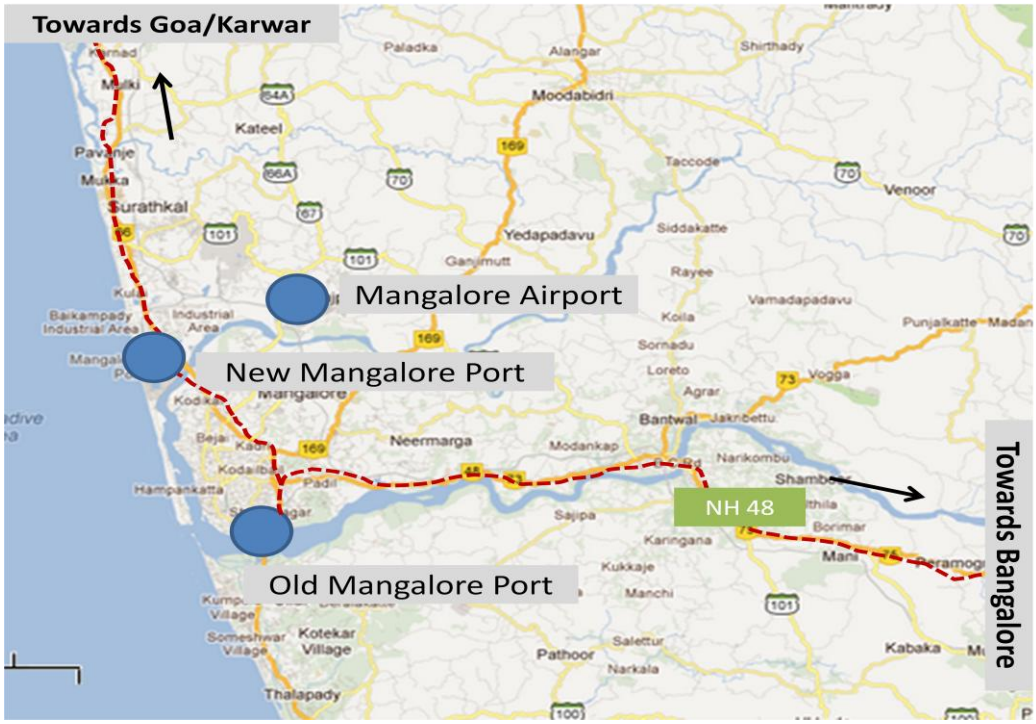
The location and connectivity of the three sites proposed for the cruise terminal – Old Mangalore, Malpe and Karwar are described in this section.

4.2.1 Old Mangalore Port

Situated 12 km south of the New Mangalore Port, Old Mangalore port is connected to Bangalore via NH 75 and to Goa and Karwar via NH 66.

Further, the port is 25 km from the international airport at Mangalore. Proximity to the airport is important for cruise passengers, as it provides access to the travelers who want to visit other cities.

Figure 6: Location of Old Mangalore Port



4.2.2 Malpe

Malpe, in Udupi district, is a natural port on the west coast of India, located about 60 Km north of Mangalore and 220 Km south of Karwar.

Malpe is connected to the Udupi via State Highway 65, where it meets National Highway 66, which runs parallel to the western coast from Goa to Kanyakumari. The port is connected to Bangalore via NH 66 and NH 75 and to Hubli via NH 66 and NH 67.

The nearest airport is Mangalore Airport, which is approximately 60 Kms from Malpe.

Figure 7: Location of Malpe Port

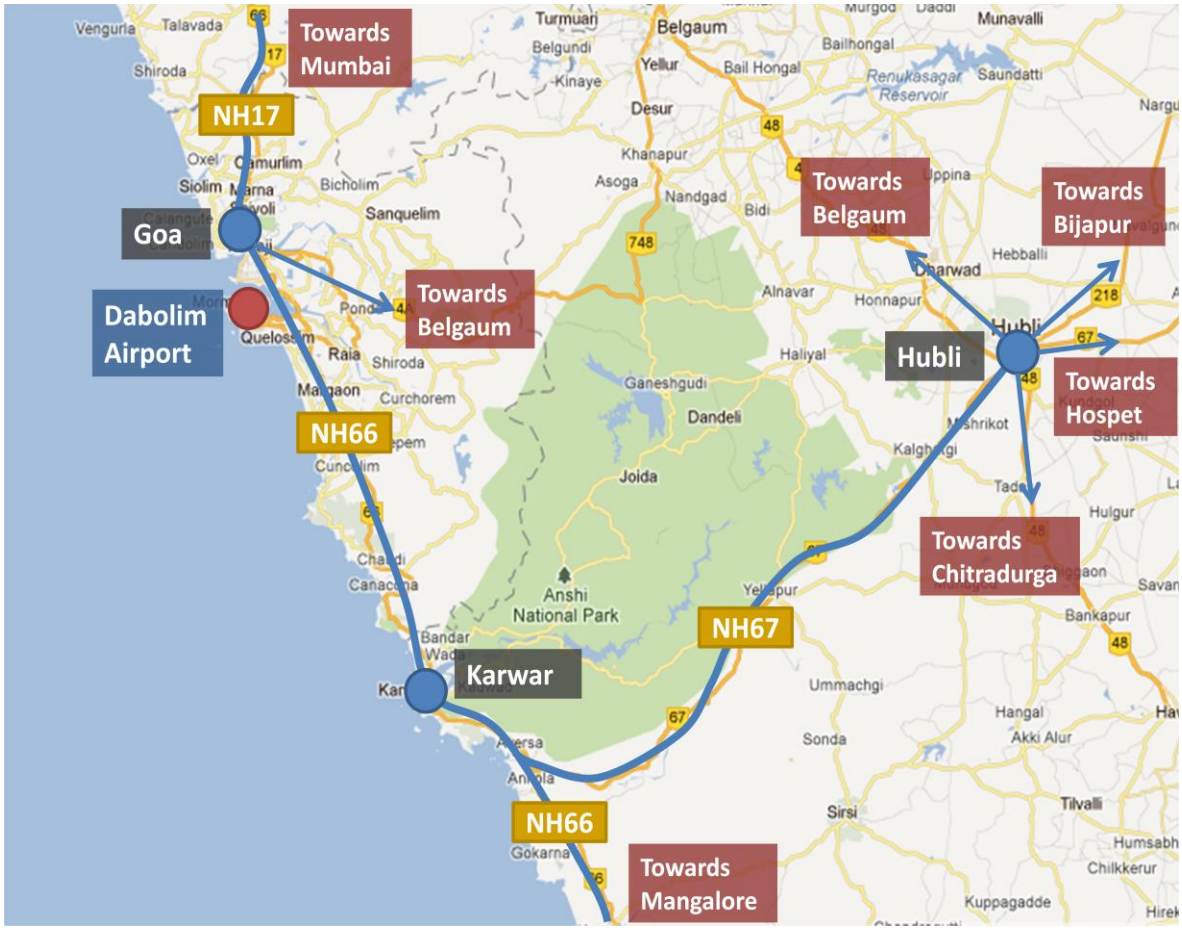
4.2.3 Karwar

Karwar, the northernmost minor port of Karnataka, is situated on the banks of river Kali, 15 Km south of the state border shared with Goa.

The town is mainly served by NH 66, which runs north-south on the western coast of India. Hubli, located 150 km north-east of the town, is connected to Karwar via NH 66 and NH 67.

The nearest Airport to Karwar is Dabolim Airport in Goa, approximately 100 Km north of Karwar. Further, there is a navy airport in Karwar where a civil enclave is being planned.

Figure 8: Location of Karwar Port



4.3 Site Features

4.3.1 Old Mangalore

Old Mangalore port lies at the river estuary, where two rivers—Gurupur and Netravati rivers meet. Situated at the mouth of the river, the port witnesses high level of siltation and hence will require substantial maintenance and capital dredging. Two breakwaters, of 375 m (north breakwater) and 580 m (south breakwater) length were constructed in 1994 to protect vessels entering the port against vessels. The port has fishing harbours and new developments will need to consider impact on the fishing community in the area.

Figure 9: Old Mangalore Port Site Features

Currently, the Old Mangalore port has a draft of 3.5 m, which enables it to handle small vessels only (a maximum capacity of 2000 tons and ~175 passengers). With inadequate facilities to host large international cruise vessels, tourist visits are mainly from regional cruises destined for Lakshadweep. To enable it to handle larger vessels, the draft needs to be deepened and other passenger amenities provided.

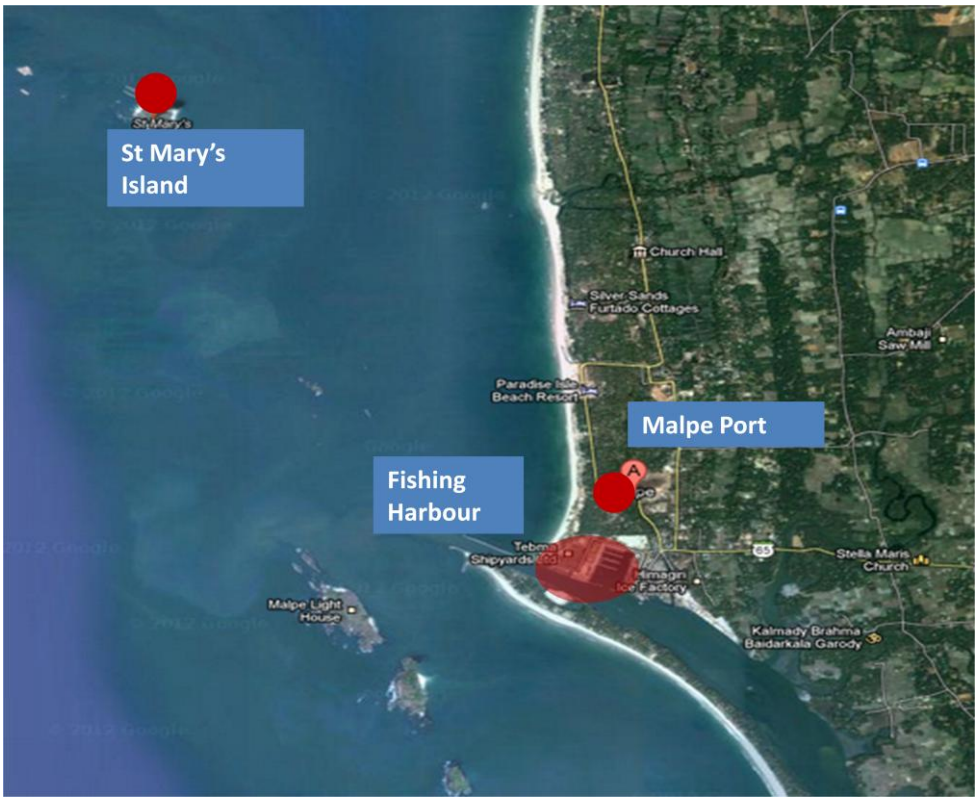
It is evident that the New Mangalore port, with its dedicated berth for handling cruises, will be the major competitor for the proposed cruise terminal in attracting cruise liners. With Karnataka more or less established as a point on tour circuits of international cruises on the western coast from Mumbai to Kochi, it is important that proposed site offers a cruise terminal of international standards and adequate passenger handling capacity to utilize this potential.

Consequently, infrastructure and vessel and tourist services at the proposed cruise terminal need to be at a comparable level to the services offered at terminals in Singapore and Dubai. Only such a high quality international standard terminal will enable the port to compete with the New Mangalore terminal and become a favoured port of call for regional and international cruises.

4.3.2 Malpe

Malpe port is situated near the town of Udipi and is located at the confluence of Udayavara river with Arabian Sea. Malpe is located 8 km south of Bhatkal Port. Malpe is a major fishing harbor and the port has breakwaters to make it suitable for harboring purposes. However, being a major fishing harbor, any development in the vicinity will need to ensure that least disturbance is caused to fishing communities.

Figure 10: Site Features-Malpe



About 6 km from the shore, there is a row of rock outcrops running parallel to the coast offering protection from monsoon waves. Rocky bottom exists at 9.9 meters, indicating a high cost of capital dredging[2] beyond this depth. The river mouth siltation is not expected to be very high; hence the maintenance dredging requirements will be low.

However, detailed technical studies need to be undertaken to estimate the need for breakwaters for large cruise ships and the extent of capital dredging required for setting up a cruise terminal.

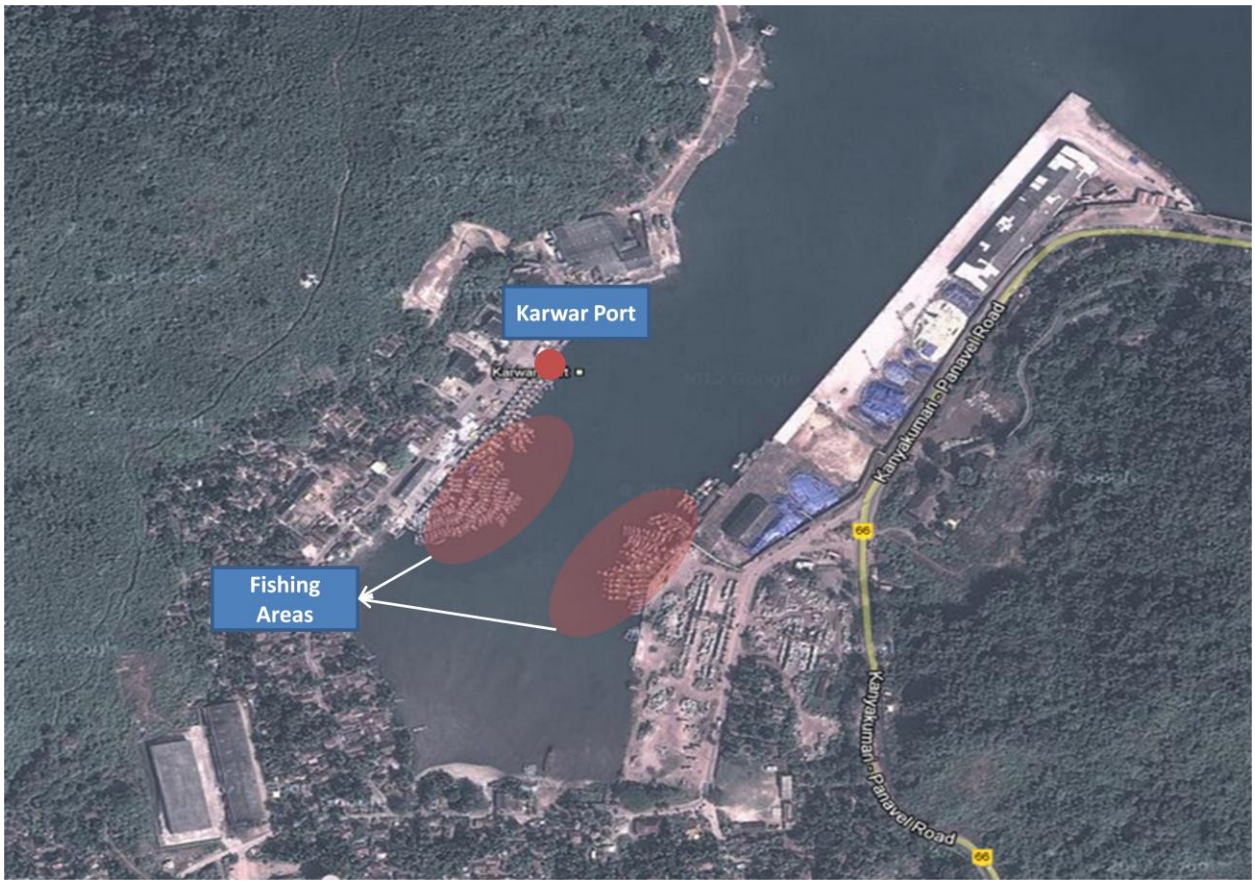
[2] "Sediment Movement at Indian Ports", Madhav Manohar, Head Civil Engineering Department, Birla Instt. Of Technology

Currently, apart from the fishing harbor, the port has basic facilities including a passenger jetty, 3 wooden jetties and cargo sheds. Udupi, the town near Malpe, is a tourist destination getting 1.1 lakh tourists a year[3].

4.3.3 Karwar

Karwar port is located in North Karnataka, 64 km south of Marmugoa port and caters to 2 lakh sqkm of hinterland. It is an all weather port, with a 355 meter berth that can simultaneously accommodate two ships at a time. It has a 250 m breakwater.

Figure 11: Site Features-Karwar



While the port has a 9 m draft, it can cater to vessels with 8.25 m draft only due to rocky bottom. Higher drafts will require high investment on capital dredging. Facilities at the port include warehouses, liquid cargo storage tank terminals and berths. Main commodities handled at the port include molasses, granite blocks, rock phosphate etc.

Karwar is also an important tourist destination attracting more than 9 lakh tourists every year.

[3] Department of Tourism, Karnataka

4.4 Key Issues

Key Issues for project development are as follows:

1. There is a need for detailed technical studies to assess the dredging and breakwater requirements at all the three proposed ports for a cruise terminal. In the past, in PPP projects,capital costs related to basic port infrastructure like dredging, reclamation of land and breakwaters was loaded on to private players and these projects have received lukewarm responses. The cases in point are cruise terminal at Mormagao (A case study given in the next chapter) and more recently Chennai Port Container Terminal.
    a. Even an INR 3,700 crore container terminal at a lucrative location like Chennai port saw response from just one bidder-Adani in the first round of bidding. Adani's bid was rejected on the grounds of being low. Even in rebidding, only two players-Adani and Essar are in the fray. The reasons cited for low bid in the earlier round was high cost of breakwaters (~INR 1,200 crore) being loaded on to the private player.
    b. It is, hence, advisable that the state bears undertakes basic development activities at its ports like capital dredging and provision of breakwaters, before offering them to private players
2. Old Mangalore is located at the confluence of two rivers due to which it witnesses high sedimentation, indicating very high maintenance dredging requirements
3. Both Karwar and Malpe ports have rocky bottoms at 9 m depth, limiting the effective depth available to vessels to 8.5 m. This would entail high capital dredging costs if the depths have to be increased to accomodate larger ships
4. Old Mangalore, Malpe are major fishing harbours and even Karwar has fishing areas around the port. Thus any development can cause protests from the fishing community. The state government and the developer will need to ensure that new developments cause minimum disturbance to the areas marked for fisheries

4.5 Best Case Studies for similar projects in India/ world

In this section, two case studies on previous PPPs on development of cruise terminals are considered. The first one at Port Galveston, Texas, USA has been a success, while the second one at Mormugao, Goa, India did not take off.

4.5.1 Cruise terminal at Port Galveston, Texas

One of the best examples for a Public Private Partnership is the Galveston Port Terminal in Texas. Between 2002 and 2004, six major projects were implemented on a PPP basis. The cruise terminal had a major impact on the Texas economy.

1. Project summary

To meet the growing demand for cruise ship capacity and to rapidly capitalize on the economic benefits to local and state economy and tax base - calculated at USD 10 million in direct economic impact on the Galveston community and USD 15 million in indirect impact per year-round operation of one cruise ship - the Port of Galveston formed a PPP with Royal Caribbean, Carnival and CH2M HILL in 2002 to expand cruise ship service and facilities. This was the first time a PPP was used for a port project in Texas.

The formation of the PPP involved creating a "third party" legal entity to hold the cruise line contracts and the lease with the Port (and would allow operating profits to be held by the Port for future investment in other expansion projects), as well as providing a fixed-price

contract with bridge loan terms to allow fast-track construction until a bond could be issued by the Port.

The private sector provided up-front investment in exchange for commercial terms regarding return on its investment. The public sector conserved its capital funds, while receiving increased revenues from growth in related employment and commercial revenues, and strengthening its ties with the business community.

The entire contract, financing structure, and partnering concepts used to deliver the project was unique in the U.S. cruise market. Design-build delivery was used on the projects, totaling USD 14 million (projects completed to date), to provide singular responsibility for administration, design/construction quality, time savings, and early knowledge of guaranteed construction costs for bonding.

The project development phase, completed within 50 days, illustrates execution of a PPP that was bound by tight timelines.

2. Development Phase of the Galveston Terminal

In September 2002, the Port approved a cruise terminal agreement with Royal Caribbean and Carnival. CH2M HILL was contracted to upgrade a dilapidated warehouse, modify 100 feet of wharf facilities, and construct access/circulation roads for passenger pickup and drop-off to accommodate new service for Royal Caribbean's Splendour of the Seas - scheduled to arrive in seven weeks. This was the first time the Port had used design-build procurement for a project, but despite initial lack of project scope and definition, the design-build team performed the originally anticipated scope, plus USD 100,000 of new scope, within budget and was able to share over USD 100,000 in cost saving with the Port.

The initial phase of development was noted for a fast-track approach to design required transforming a drab, neglected warehouse into a clean, colorful passenger terminal that provided for quick, efficient flow of people and baggage, as well as facilities for security and cruise operations. The new terminal added 80,000 sq. ft. to Galveston's cruise complex, and the extended wharf facilities completed a 2,000-ft.-long berth capable of handling two cruise ships at once. By November 2002, the wharf facilities and roadway improvements were complete and the building was available for beneficial use. The ship, arriving with 1,600 passengers, docked in Galveston on November 11. The partnership among the skilled local craftsmen, the Port, Royal Caribbean, and the design-build team successfully met the challenge.

3. Innovative Aspects of the PPP arrangement

The proposal submitted by CH2M HLL featured two innovative aspects.

- Creating a "third party" legal entity that would hold the cruise line contracts (Royal Caribbean International and Carnival Cruise Lines) and the lease with the Port and would allow operating profits to be held by the Port for future investment in other port infrastructure expansion projects
- Providing a fixed-price contract with bridge loan terms to allow fast-track construction until a bond could be formed and placed by the Port

The contract, financing structure, and partnering concepts used to deliver the Galveston cruise terminal development were unique in the U.S. cruise market. The Port delivered the cruise facility on an extremely tight schedule at a fixed cost while meeting all of its objectives – which could only be achieved with a PPP model. This approach created an innovative cruise terminal financing "template" that has since been proposed and used elsewhere by CH2M HILL and the cruise lines.

4. **Impact of the terminal**

The success of the PPP helped the Port continue its phenomenal growth, accrue benefits to the local and state economy, and take a leadership position in the cruise industry. With the development of the terminal Galveston has become a popular cruise port and one to model new cruise development after. The PPP's operation continued successfully for more than 2 years, spanning six major projects.

Operation of the facilities designed, constructed and upgraded by the PPP along with higher sailings, resulted in successfully serving hundreds of thousands of passengers. The terminal entertained its millionth passenger within two years from the start of construction. These projects contributed to a 200% increase in Galveston cruise passengers through the 2002-03 season and a 1,100% increase compared to 2000-01. Renovating and reusing an existing building and wharf infrastructure saved time and money while enabling revenues to be generated much sooner than if a new facility was designed and constructed.

5. **Key Lessons**

i. Suitable project structure, budgeted costs savings and cooperation among all stakeholders can achieve success in PPP
ii. There is a need to develop tourism sector as a whole, for the cruise terminal to be successful

4.5.2 Mormugao Cruise Terminal

1. **The Project Description:** Mormugao Port Trust (MPT) invited an EOI for the construction of an international standard cruise passenger terminal at Baina Bay. A RFQ for the project was first invited in 2003-2004. The development of the project was to be undertaken under Build-operate-transfer (BOT) basis at an estimated cost of Rs 185 Cr
2. **Scope of Work:** The scope of works included setting up a full-fledged facility for handling cruise vessels and containerized cargo, construction of breakwater, capital dredging, bund and reclamation involving operation of cruise vessels and container vessels
3. **Present Status**: Afcons Infrastructure, Gammon India and Adani Port were shortlisted for the project in 2003-2004. But the project never took off due to various reasons. In 2005, re-invitation of tenders was warranted by a change in project scope. The Project has not taken off till date due to the unfavorable project structuring
4. **Key Lessons**
    - Poor structuring of the project can lead to project failure

5 Market Assessment

5.1 Industry overview

5.1.1 Background

Cruises have grown to be a major part of the tourism sector in the last few decades. The modern cruise industry growth has been greatly aided by globalization, with an increasing number of ports of call and destinations around the globe and a multinational clientele and onboard personnel from every continent.

By continuously expanding its offer of products and services and developing new markets this dynamic sector has globally witnessed an annual passenger compound annual growth rate (CAGR) of 7.7% during 1990 – 2011. The fact that 60% of the 90 million people who have thus far been on a cruise, have been on one in the past decade, illustrates the extent of rapid growth seen by this sector in recent times. With over 19 million passengers carried worldwide in 2011, cruise tourism is a USD 29.4 billion rapidly growing industry.

In terms of capacity too, the cruise industry has experienced unprecedented development. During the 1980s, around 40 new cruise ships were built and put in service, followed by other 80 vessels along the 1990s. Since the turn of the century, the industry's rapid growth has seen nine or more newly built ships catering to a North American clientele added every year, as well as others servicing European clientele. Most of the cruise ships carry around 300-3000 passengers, but ocean liners such as the 'Oasis' ships of the 'Royal Caribbean International' can carry up to 6000 passengers. The ships vary in size from about 70,000 gross tons to 225,000 gross tons.

5.1.2 Cruises in Asia Pacific

Asia Pacific has become a key growth market for the global cruise category. With a population of over 3.5 billion people and an increased desire to travel, the region presents enormous opportunities for growth in the medium to long term. In 2011, Asia Pacific came in third with an 18% value share of the cruise tourism market and enormous potential for growth.

As Asia Pacific gains space in the global cruise category, the region is expected to see increased investment in port infrastructure, a critical factor to guarantee the delivery of exceptional service and compete against well-established cruising markets like North America and the Caribbean. Countries in the region are increasingly investing in infrastructure to support cruise tourism facilities and services. The Gulf region especially has been witnessing a rise in cruise ships, with Costa Cruises, the first major line to introduce Gulf itineraries, upping capacity by 16 per cent in 2011. China has also taken the lead by inaugurating a new terminal in Tianjin in 2010, and in 2012 a second facility in Shanghai is expected to be inaugurated, boosting its capacity to handle eight cruise ships per day.

Singapore and Dubai are the most popular cruise destinations in the region. Singapore cruise centre handles around a million international tourists a year while Dubai is expected to handle 475000 foreign tourists in 2011-2012.

Asia's strength lies in its numerous destinations and it is estimated that in the near future it will have the critical mass of world category ports enough to be able to offer its great cultural diversity. Notable investments, apart from Dubai and Singapore include the ports of Port Klang (Kuala Lumpur), Penang (Malaysia) and Langkawi (Malaysia).

Today, saturation in the traditional markets of North America and Europe and long-unchanged routes make it urgent for international cruise operators to seek new clients as well as exploring new destinations. In that context, India with its rapid economic development, huge population and a 7500 km long coastline is regarded as a market with immense potential for both new clients and new destinations. The western coast, comprising ports such as Mumbai, Goa, Mangalore and Kochi could be effective alternate locations for winter deployment of ships operating in Northern Europe, which otherwise are restricted to Dubai and other ports in the Middle East.

5.1.3 Cruise Industry in India

Cruise industry in India is mainly driven by international tourists. Absence of a strong domestic cruise market can be attributed to the lack of development in inland waterways and high vessel and passenger tariffs that make it unviable for cruise liners to use Indian ports as their 'home' ports. Therefore, according to CruiseBay (one of the biggest global cruise operators), even as 85,000 Indians opted for cruises in 2011, most of them preferred to fly to Singapore or Hong Kong to embark on cruises.

Table 1: Cruise tourist and foreign tourist arrivals

Year	Cruise Tourist Arrivals (In millions)	International Tourist (In millions)	Cruise Tourists as a % of Foreign Tourists
1996-97	0.021	2.29	0.92%
1997-98	0.022	2.37	0.93%
1998-99	0.017	2.36	0.72%
1999-00	0.024	2.65	0.91%
2000-01	0.041	2.54	1.61%
2001-02	0.019	2.38	0.80%
2002-03	0.012	2.73	0.44%
2003-04	0.028	3.36	0.83%
2004-05	0.028	3.46	0.80%
2005-06	0.153	3.92	3.90%
2006-07	0.240	4.45	5.40%
2007-08	0.092	5.08	1.80%
2008-09	0.130	5.28	2.46%
2009-10	0.101	5.17	--
2010-11	0.100*	5.78	1.73%

Note: **Cruise tourist arrivals are based on Department of Tourism annual report figures, Reply of Shipping Minister to the Parliament*
Source: Indiastat.com and Cochin Port

International tourists in India have nearly doubled in the last decade, increasing from 2.54 million in 2001 to 5.78 million in 2011. Cruise tourist arrivals too have increased five-fold in the past 15 years.

Notable decreases in total number of international tourists in 2000-01 and 2007-08 indicates that tourism is affected heavily by economic and socio-political factors across the globe. The effect of the 9/11 World Trade Centre attacks in 2001 and the economic recessions of 2007-08

and 2010-11 on cruise tourist arrivals was even more pronounced. In fact, in both 2001 and 2008, there were dramatic slumps, with the number of cruise visitors going down by more than 50 % from the previous years.

5.1.4 Key Issues

Though the Cruise Shipping Policy of the Ministry of Shipping was approved by the Government of India on 26th June, 2008 with the objective of making India an attractive cruise tourism destination with the target of achieving a target of 6 lakh cruise passengers landing per year by the end of 2010, a host of factors have worked against India's ability to reach even close to half the intended target. This can be mainly attributed to a lack of development of infrastructure like cruise terminals, extension of the limits for the levy of service tax from 12 nautical miles to 200 nautical miles of the Indian coastline, the generally high service tax and luxury tax rates on accommodation, car rentals and food and beverages and the failure to establish an institutional framework for holistic development of cruise shipping.

Cruise tourism growth is closely related to growth in the tourism industry of a state. Cruise passengers generally take day tours of the city where the cruise terminal is located and many cases stay for 2-3 days if there are developed tourist circuits on land. However, for developing attractive tourist circuits, Karnataka faces challenges on two fronts:

- **Infrastructure, maintenance and hinterland connectivity:**
  One of the major challenges is ensuring good quality and fast connectivity to important tourist destinations from the international arrival gateway like Bangalore and other cities such as Mangalore and Mysore. Further, lack of world class infrastructure and adequate maintenance of government owned tourist bungalows, lack of clean toilet facilities at places of tourist interest and the absence of professional multilingual guides affect Karnataka's brand image as a tourist destination when compared to states like Kerala.
- **Marketing strategy:**
  Karnataka has a large potential for tourism, with host of heritage sites across the state. However, there is a need for a good marketing strategy to build its brand image as a must-visit tourist destination. It can learn from experiences of Kerala and Gujarat, which have built excellent brands as tourist hot-spots through successful and aggressive marketing and advertising strategies. In addition, the state needs to involve key players from the travel trade for planning or even in terms of participating in overseas exhibitions in a big way.

5.1.5 Existing Infrastructure for Cruise Vessels in India

Presently, there are five ports in India at Mumbai, New Mangalore, Goa, Kochi and Chennai that receive international cruise vessels. Among these, only Chennai and New Mangalore have dedicated cruise terminals while the other ports receive cruise vessels in a separate berth (Mumbai) and the berths that handle general cargo ships (Mormagao and Kochi). However, Kochi and Mumbai are the most popular with international cruise travelers. Mumbai port handled 60 international cruise liners in 2011-2012[4], whereas Kochi handled around 41 cruise ships in 2010-11 and more than 30 the following year[5].

[4] Mumbai Port Trust Official Website
[5] Press Release – Cochin Port Trust

It is expected that once the three cruise terminals being planned at Mormugao, Mumbai and Kochi are completed, cruise tourism will take off exponentially in India. These cruise terminals would also lead to the development of three potentially important regional cruise corridors, Mumbai-Lakshadweep-Mumbai; Goa-Lakshadweep-Kochi-Goa; Kochi-Maldives-Colombo-Kochi. In the first two corridors mentioned, Karnataka is expected to have a port of call.

5.2 Opportunities and Demand Projections

Cruise tourism in Karnataka is a recent phenomenon, having picked up only after a dedicated terminal for handling cruise ships was opened at the New Mangalore Port in 2009. The state has since then become a regular destination for cruise liners that have the western coast of India on their itineraries. This indicates that demand for cruise tourism exists in Karnataka.

While cruise ships have several attractions for its passengers within their vessels, when the liners berth on various ports, they prefer to go for day tours. Thus, it is important for the city where the cruise vessels are calling to have a good tourist infrastructure as well as attractions. Though day tours are generally organized by local tour operators contracted by the shipping agency managing the cruises, there are options for passengers to book day-excursions independently too.

This section first outlines the major tourist attractions in the cities selected for the proposed terminal. Then competition for the new cruise terminal is examined. It is proposed that to beat the immediate competition from the terminal at New Mangalore, a world class cruise terminal be built to attract liners. The consultants have done two case studies on cruise terminals in Singapore and Dubai to get an idea of facilities required by world class terminals. Facilities at New Mangalore are also examined. To attract cruise liners, when another terminal is operating in the state, Karnataka will have to build an international standard cruise terminal and the operator will have to make efforts at marketing the terminal among all stakeholders—shipping agents, cruise liners, domestic and international cruise operators. Finally the section gives the traffic forecast made by the consultants for cruise passengers and cruise vessels for the proposed cruise terminal.

5.2.1 Tourism potential at the three proposed locations

This section gives details on the tourist attractions present in and around the three locations that have been proposed for the cruise terminal – Old Mangalore, Malpe and Karwar.

5.2.1.1 Mangalore

Mangalore, the administrative headquarters of Dakshina Kannada district in Karnataka, is a major port city in the Arabian Sea. Dominated by distinctive coconut palms in the backdrop of hills, Mangalore has several tourist spots of interest for cruise passengers.

Following are some of the popular tourist attractions in the city:

Seemanthini Bai Bejai Museum

- City's only museum, links modern Indian history with the 16th century.
- Famous for collections of ancient foreign coins, metallic icons, statues, lamps and inscriptions.

Kadri Sri Manjunatha Temple

- Built in 1086 AD; situated on the highest hill of the area.
- Home to India's best bronze statue of the God Lokeshwara.

St Aloysius Church

- Designed by Antonio Moscheni , built in 1899
- Magnificient ceiling, fresco and oil canvas paintings.

Other places to visit in Mangalore include Sultan Battery, a watchtower built by Tippu Sultan to prevent warships from entering Gurpur River, Shri Sharavu Mahaganapathi Temple, Light House Hill-Garden and the Mangaladevi Temple.

Pilikula Nisagardhama, a sprawling 300-acre eco-educational and Tourism Park, 12km from Mangalore, has boating facilities, wildlife safari, mini aquariums and an amusement park. Pilikula also has a 9-hole Golf Course spread across 60 acres of land.

Besides, the coastline of the city is blessed with number of beaches like Someshwara beach, Mukka beach, Surathkal beach, Panambur beach and the Tannirbavi beach.

For more adventurous tourists, there are options beyond 15 km radius of Mangalore city Centre, which can be explored. These include:

- **Mudabidri (34 km)** - It is referred to as 'Jain Varanasi' and has 18 Jain monasteries, the most famous being the 1000 pillared Chandranatha Basti built in 1429
- **Karkala(20 km**) - Karkala has a number of important temples and a 13m high statue of Lord Bahubai, which was completed in 1432
- **Sringeri (100 km)** - A beautiful town on the banks of river Tungabhadra, located amidst the lush hills of Chikmagalur, it is one of the most important pilgrim centres of Karnataka

It can be seen that ample tourist attractions exist in Mangalore and its vicinity for all kinds of travellers. Further, for cruise tourists opting to fly out of Mangalore, the city also has an airport 20 km from the city centre catering to both domestic and international flights.

5.2.1.2 Malpe

Malpe is a suburb of Udupi city and is administered by the Udupi Municipality. Local languages spoken here included Tulu, Kannada and Konkani.

In addition to being a port and a fishing hub, Malpe is also a beach town. The beach at Malpe is scenic and is a popular attraction among tourists. Apart from the beach, there are four rocky islands near the coast of Malpe, the details of which are given below. Regular ferry services exist between Malpe and all the four islands.

Daria-Bahadurgad

- Northern-most of the four islands.
- Major tourist attraction - fort built by Basavappa Naik.

Kari-Illada-Kallu

- Southern-most of the four islands.
- Known for unique hexagonal shaped basalt rocks.

St. Mary's Island

- Also called 'Thonse paar' or the Coconut Island.
- Believed to have been discovered by Vasco da Gama in 1498.

For the religious tourists, there are two temples in Malpe - those of Vadabhandeshwara and Ananteshwara. There is a very famous temple of Lord Krishna in Udupi, 6 km west of Malpe.

Ananteshwara Temple

- Dedicated to Lord Balrama
- Customary to visit this temple before entering the Krishna Temple.

Udupi Krishna Temple

- Lord Krishna is worshipped through a window with 9 holes here, called Navagraha Kitiki. The window is exquisitely carved and is silver plated.

The following are other major tourist destinations, situated more than 20 km from Malpe.

- **Mudabidri (60 km):** It is also referred to as 'Jain Varanasi' and has 18 Jain monasteries, the most famous being the 1000 pillared Chandranatha Basti built in 1429

- **Karkala (40 Km):** Located about 20 km from Mudabidri, Karkala has a number of important temples and a 13m high statue of Lord Bahubai, which was completed in 1432

- **Mangalore (60 Km):** The major tourist attractions are the Seemanthini Bai Bejai Museum, the hillock of Light house, number of temples including Mangaladevi temples, chyrches and mosques. The coastline of the city is blessed with number of beaches like Someshwara beach, Mukka beach, KREC beach, Panambur beach and beautiful silky Tannirbavi beach
- **Sringeri (100 km):** A beautiful town on the banks of river Tungabhadra, located amidst the lush hills of Chikmanglur, it is one of the most important pilgrim centers of Karnataka

- **Chikmanglur (180 Km):** The prime attraction in Chikmagalur is the Mullain Giri, which is the highest peak in Karnataka (6300 ft. above sea level). Other attractions of Chikmagalur include the Kondadarama Temple, which is a symbolic blend of Hoysala and Dravidian styles of architectures, the Jamia Mosque, St Joseph's Cathedral and the ancient Siddheshwara and Lakshmi Kantha temples

Malpe is, hence, a tourism destination with a lot of potential, having both religious and scenic tourist attractions.

5.2.1.3 Karwar

Administratively, Karwar is the headquarters of the Karwar Taluk as well as the Uttara Kannada District of Karnataka State. It was the chief town of the North Kannada district in British India.

The place has beautiful beaches and clean areas; hence it attracts a lot of tourists. Among the unspoilt beaches of Karwar, Devbagh Beach, outlined by casuarinas trees, offers good diving and snorkeling opportunities for adventure seekers in the Arabian Sea. Other scenic beaches include Koodi Bagh Beach and Kaju Bagh Beach.

Karwar also accounts to a number of historic towns and sacred temples. Sadashivgad Hill Fort on the outskirts of Karwar provides great picturesque views during sunset. The ancient Durga and Venkataramana temple exhibit fine ochre paintings. The octagonal church and the dargah of Peer Shan Shamsuddin Kharobat are other popular religious tourist attractions here.

Apart from the tourist attraction mentioned above, Karwar is also famous for its festivals and cuisine. Some of the festivals celebrated in Karwar are 'Karavali Utsav' and 'Ganesh Chaturthi'.

- **Karavali Utsav:** Every year, a 3 day festival 'Karavali Utsav' is held on the Rabindranath Tagore Beach at Karwar. Organized by the Uttara Kannada District Administration as the cultural-social festival of the district, Karavali Utsav witnesses a huge turnout from both tourists and the local population
- **Ganesh Chaturthi Festival:** Ganesha Chaturthi Festival is one of the major festivals of Karwar. Statues as tall as 25 feet are installed in temporarily erected structures that are colourfully decorated with flowers and lights

Aided by its various religious and historical sites and popular festivals, tourism in Karwar is poised to grow rapidly in the coming years.

5.2.2 Competition for the Proposed Cruise Terminal in Karnataka

On the west coast, the main ports where cruise liners call are Mumbai, Goa, Mangalore and Cochin. Examining the itineraries of cruise liners calling at Mangalore, it can be seen that most of the cruise liners have Mumbai, Goa, Mangalore and Cochin on their tour circuits[6]. Thus, the major competition that the proposed terminal will face is from the New Mangalore Port.

Opened in 2009, the terminal has seen a rapid growth in terms of cruise vessels calling at Mangalore. From just 4 vessels in 2009-10, New Mangalore Port Trust handled 14 cruise vessels in 2010-11 and 17 vessels in 2011-12.[7] In 2010-11, the cruise terminal handled over 5,800 passengers from 14 ships in 2010-11. Generally, over 60% of the cruise passengers disembark from the ships and opt for day-long sight-seeing trips, savouring what the city and its nearby regions have to offer.

The Port also offers 50% concession in berthing charges for cruise vessels to encourage more cruises to call at the port.

Currently, the terminal is served by the deep-draught (14 m) berth 14 at New Mangalore which has a length of 350 m. Following table gives the facilities available at New Mangalore:

Figure 12: Facilities at the Passenger Terminal at New Mangalore

	Approx area (sqm)	Remarks
Terminal Area	3000	
Passenger Lounge	1500	Seating capacity for only 20-25 people, lot of unutilized space
Retail space	200	100 sqm each, one duty free liquor shop, another outlet being set up
Immigration & Custom Counters	1000	
Baggage Handling	300	
Other Facilities		KSRTC Volvo buses transporting passengers from cruise ship to the terminal

Source: Based on Visual inspection of the Cruise Terminal at Mangalore

While facilities available for passengers are adequate, there are still other facilities like internet cafes, multi-cuisine restaurants, a shopping arcade etc that can be provided.

The consultants have examined case studies of world-class terminals at Dubai and Singapore to get an idea of what does a world class terminal entails. This has been done to ensure that the proposed terminal will have similar facilities, in order to attract vessels at its terminal.

[6] Cruisecompete.com
[7] NMPT Press Releases and News Articles

5.2.2.1 Dubai Cruise Terminal

1. Introduction

A late entrant to cruise tourism, it was only in 2001 that a state-of-the-art international cruise terminal was a set up at Port Rashid in Dubai. However, within a span of ten years, the terminal, by utilising its geographical advantages and the excellent infrastructural facilities has become a serious contender to Singapore as Asia's cruise tourism hub.

A host of factors have contributed to the terminal's phenomenal growth in the past decade:

- **Strategic Location**: Dubai's strategic location and its accessibility from Europe, Asia and Africa give it a huge advantage
- **Ability to handle more than one cruise ship at a time**: Dubai Cruise Terminal has facilities to handle much as five mega ocean liners simultaneously. Its deep basin makes it feasible for Cruise lines the option to bring in larger ships. The extra depth also makes it possible for Dubai to be a destination other than Europe or the Mediterranean that is perfect throughout the year and provides an extremely viable alternative to the congested Caribbean islands, usually the most preferred choice for cruise tourists
- **World Class Facilities at the terminal**: Coordination between various agencies to ensure a seamless cruise experience: Management of DP World, UAE Region, which operates Port Rashid, works closely with Dubai Tourism & Commerce Marketing (DTCM), Dubai Customs, Dubai World Security, the Roads & Transport Authority, or RTA, and travel and tour operators to organize cultural activities on arrival and help desks in different languages, also ensuring minimum bureaucracy, easy immigration and issue of visas, clearing of passengers by manifests, professional ground handling, and world-class ship stores

2. Facilities available at the terminal

At the Dubai Cruise Terminal, the facilities available to the cruise liners and the amenities and services offered to the passengers are comparable with those at the largest North American ports.

Vessel Facilities

- 335m of Quay with a Quay apron of 35m.
- 11 m Draft for ships of all sizes.
- Capable shipping agent and ship handlers
- Excellent ship repair facilities and marine supplies and services

Passenger Convenience

- Spacious 3,300 square metre, ultra-modern cruise terminal
- Highly efficient reception check-in.
- Competent information centre with concierge service
- Rest rooms with handicap access toilets.
- Special facilities for the physically challenged (wheel chairs, electric carts & ramps).
- Personal & baggage security screening.
- Covered baggage handling area.
- Post office and other communication facilities

Passenger Entertainment & Comfort

- Convenient computer terminals and an Internet centre.
- VIP lounge (Majilis) for visiting dignitaries
- Shopping arcade including souvenir shops, jewellery and electronic store
- Heritage and culture exhibits.
- Conferences facilities and business centre.
- Passenger clearance via manifest system with swift immigration procedures and no visa problems for visitors

Concessions Extended

- No passenger handling fees for maiden calls.

Recognition for its passenger-friendly nature was reiterated in January 2012 when the Dubai Cruise Terminal was voted, for the fifth time, the World's Leading Cruise Port at the prestigious World Travel Awards 2011, competing against 17 regional winners for the honour.

3. Impact of the world-class terminal:

Since opening in 2001 with two berths, Port Rashid has clocked an impressive growth rate, both in number of total cruise tourist arrivals and cruise ship dockings. From 7,000 foreign cruise arrivals in 2001, it has come a really long way to record almost 375,000 tourist arrivals and 135 international cruise ship dockings in 2011.The CAGR for the decadal period 2001-2011 is 49%.

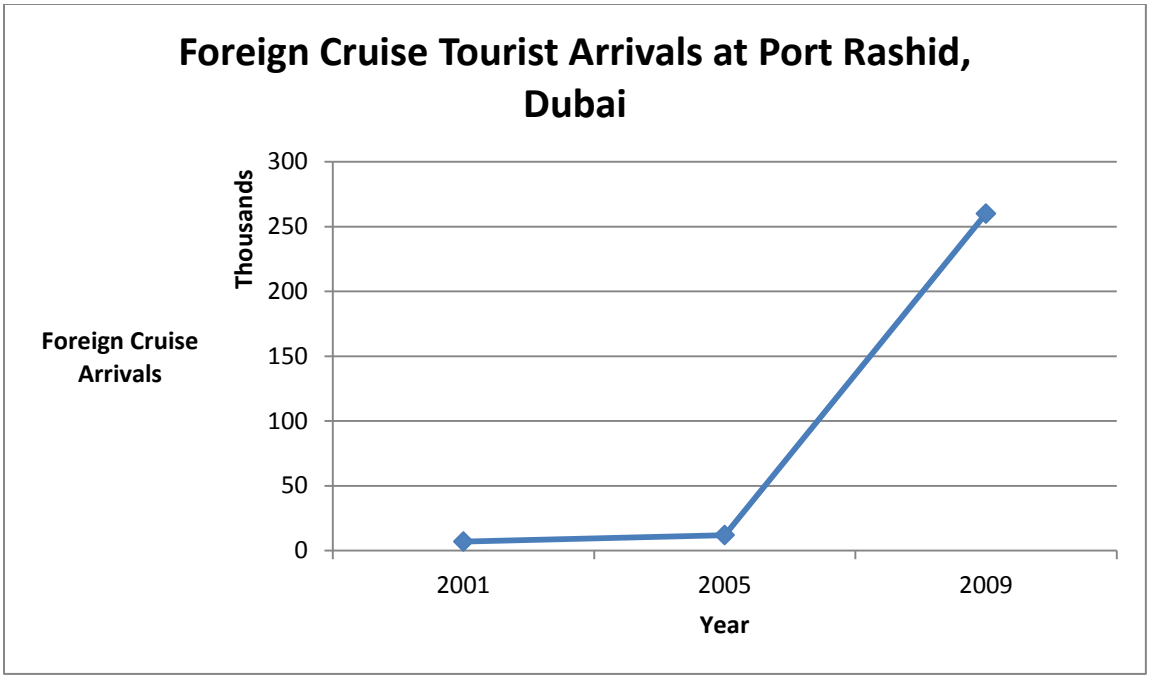
Table 2: Cruise Liner Visits at Dubai Cruise Terminal

Year	Cruise Liner Visits	Cruise Tourist Visits
2001	NA	7000
2005	15	12000
2009	100	260000

Source: Press releases from Dubai Cruise Terminal

The chart below illustrates the impact a world class terminal has. However, it also demonstrates the impact of such a terminal can be seen only with a lag of 3-4 years.

Figure 13: Impact of a World Class Terminal on Cruise Tourist Arrivals in Dubai



Even though the Emirate's overall tourism sector, along with other destinations worldwide, was hurt by the global economic crisis in 2008-2009, with tourism demand falling and visitors spending less on their stays, Dubai's cruise sector continued to grow rapidly, with a six fold increase in the number of cruise liner visits during the four year period from 2005 to 2009.

In 2007, Italy's Costa Cruises became the first international cruise company to make Dubai its regional hub, which led to a dramatic increase in the number of passengers handled; the exponential growth seen in the charts between 2005 and 2009 can be attributed to this factor. In 2010, Costa Cruises alone carried 140,000 passengers and was estimated to have a direct impact of USD 14m on Dubai's economy. This included guest expenditure, food and beverage, fuel and port fees alone. Furthermore, the terminal infrastructure has led to Dubai being an important fly-in and fly-out destination for international cruise tourists, leading to increased traffic at the port. When effects on the business of large Dubai-based airlines such as Emirates airlines and the generated good-will, leading to repeat visits and positive recommendations to friends are taken into consideration, the impact would be even bigger.

Presently, Dubai, apart from being a popular port of call, is one of the biggest home ports (ports from which a cruise ship loads passengers and begins its itinerary, and to which it returns to disembark passengers upon conclusion of voyage) in the world.

4. **Key Lessons:**
   Key lessons for Karnataka (from the Dubai experience) when it embarks on a modern cruise terminal would be:
   - **Concurrent Development of Hinterland tourism (up to a radius of 50 km from the coast)** Within 20 kms from the coast, Dubai offers classic Golf on its carefully designed golf courses, bird watching especially on the Dubai Creek , Arabian Experiences,

including desert safaris, dune driving, moonlight Arabian barbecues in the street complete with traditional entertainment, camel racing and falconry, cruises exotic of traditional wooden dhow or modern cabin cruiser on the Dubai Creek and into the Gulf, the exotic sights and sounds of traditional commerce in the bustling souks and on the Quays of the Creek, photographic opportunities galore, elegant mosques, sumptuous palaces, brightly dressed children, majestic camels, ancient wind-towers, dusty villages and dramatic sunsets historical Sites especially the Dubai Museum, Shoppers malls and archaeological sites

While Karnataka has several tourist destinations, a brand needs to be developed selling it as an ultimate coastal tourism destination of Karnataka. Further, a buzz is needed to be created for various tourist destinations in the city. Cruise passengers a typically luxury tourists and facilities to cater to this category needs to be developed by the state government is co-ordination with the tourism department

- **Coordination between the department of ports, transport and tourism:** Up to 4 agencies coordinate and work strongly with each other, integrating customs, visa requirements, sight-seeing arrangements within the city etc. making the entire experience an extremely pleasant one for foreign tourists
- **High port charges and taxes are major deterrents** toward making a port a cruise tourism hub. By keeping passenger and port charges low, at least for the initial visit of a cruise, Dubai Cruise Terminal has successfully attracted repeat visits.
- Having major cruise liners to make a terminal its regional hub or home port of call contributes significantly to the cruise traffic at the terminal

5.2.2.2 Singapore Cruise Centre:

1. Introduction

The Singapore Cruise Centre is a cruise terminal located in the south of Singapore in the vicinity of Harbour Front and in Keppel Harbour. Built in 1991 by the Port of Singapore Authority, it comprises two terminals, namely the International Passenger Terminal (IPT), and the Regional Ferry Terminal (RFT) (relocated from Finger Pier in 1992).

The IPT, with a draft of 12 metres, handles international cruise ships, and has two berths of 310 metres and 270 metres with a height limit of 52 metres while the RFT has six berths and caters to maritime traffic to the nearby destinations of Batam and the Karimun Islands of Indonesia.

The terminal was built at a cost of USD 50 million in 1991. Further upgrades happened in 1998 at a cost of USD 22.5 million in preparation for the arrival of the new generation of "Mega resort" cruise ships to Singapore when the terminal at Harbour Front was upgraded and its berth extended.

In the last two years, the SCC has embarked on 2 projects:

A USD 13.7 million Rejuvenation Project to renovate the terminal and upgrade the facilities at Harbour Front Passenger Terminal that would improve circulation, add ambience and provide more spacious areas for immigration and baggage clearance.

A USD 500 million project to build a 28,000 square metre terminal which, once completed in 2013 would enable the cruise centre to host the world's largest Oasis-class cruise ships and

attract 1.6 million cruise passengers by 2015. It can handle 6,800 passengers at any one time and will double Singapore's berth capacity.

2. Facilities at the terminal:

Both the International Passenger Terminal (IPT) and the Regional Ferry Terminal (RFT) offer excellent passenger amenities and ship berthing provisions, making the entire experience of travelling to Singapore a pleasant one for cruise tourists and the crew.

Terminal Facilities at International Port Terminal

- Air-conditioned Arrival and Departure Halls
- Terminal-to-Ship Link bridges
- Passenger Gangways
- Portable Baggage Conveyor Belt
- Forklifts
- Pipeline Freshwater Supply
- Shore-to-Ship Telephones
- Baggage Carousels
- Travellators
- Facilities for the Handicapped

Terminal Facilities at Regional Ferry Terminal

Air-conditioned Arrival and Departure Halls

- Overnight Mooring
- Freshwater Supply for Overnight Mooring

Passenger Facilities at the terminals

- Limousine Taxis
- Free Baggage Trolleys
- Duty-Free Shopping
- Food and Beverage Outlets
- Moneychangers
- Banks
- Super mart
- Convenience Store
- Pharmacy, Post Office, Chinese Medical Hall, Medical & Dental Clinics

3. Impact of the world-class terminal

From the time the terminal was inaugurated, the traffic, at both the International Port Terminal and the Regional Ferry terminals has been increasing steadily. It was largely unaffected by both of the socio-political crises in the past decade – the WTC attack in 2001 and the economic recession in 2008.

Table 3: Growth in Cruise Traffic in Singapore

Year	Cruise Liner Visits	Cruise Tourist Visits (In 000s)
1991	Unknown	130
2001	168(Intl)	231*
2011	394(Intl)	4420

Source: World Tourism Report Statistics and Singapore Cruise Centre official website
**Figures for 2001 include only International Port terminal arrivals*

In the very first year after the terminal was opened to traffic, the impact was clearly visible. Annual domestic and international cruise terminal visitors jumped by 46%; from 130,000 in 1991 to 190,000 in 1992. Also the annual growth rate for the past nine years has been 3.8% (International cruise tourists alone). Even more impressive was the average annual growth rate of 12% in the period 2004-2008 on a high base, despite Dubai's rise as an alternative home port and port of call for European cruise-liners. This steady growth of passenger arrivals since 1991, making Singapore a cruise hub in Asia is due to the infrastructure at the cruise centre.

An important factor crucial in Singapore Cruise Centre's success has been the way it has dealt with visa norms. By ensuring that most of the details be filled on-line by passengers well before arrival in Singapore, SCC ensures passengers are subject to minimum hassles. Further, its mutual understanding with Thailand means that visa requirements have been done away with and seamless travel facilitated.

4. Key lessons

Key lessons and recommendations for India from the Singapore experience are

- Development of regional ferry transport would supplement international cruise operations to a great extent. Inland waterways are extremely under-utilised and under-utilised
- Success of Singapore Cruise Terminal owes as much to marketing efforts as to infrastructure at the ports. By clear positioning and generating a strong awareness, Singapore was able to attract thousands of tourists every year. A strong awareness tourism campaign on cruise tourism would not only bring in foreign tourists but would also draw Indian nationals to regional cruises
- Visa requirements and customs need to be simplified. Singapore has been able to enter into agreements with Thailand, resulting in seamless travel for tourists
- Dubai and Singapore would be major competitors once the terminal is built. However, India needs to benefit from a proactive relationship with these countries towards synergizing greater potential for the region as a whole

5.2.3 Strategy for the proposed Cruise Terminal at Karnataka

To beat the competition from New Mangalore, a three pronged strategy is suggested:

1. Building a World Class Terminal at the proposed location: What would really provide an edge to the proposed Cruise terminal is building a world-class facility. Cruise passengers represent a sophisticated and demanding category of tourists with high expectations regarding comforts aboard the liner, a variety of destinations at every port of call and 'seamless' travel. Word-of-mouth recommendations and prior experiences determine a location's standing in the eyes of the travelers. Therefore, pampering these tourists is the best way to sell the port and garner repeat visits. After examining the case studies for Dubai and Singapore and the facilities present in the New Mangalore Port Trust, following facilities are proposed for the cruise terminal:

Passenger requirements	Port requirements	Vessel requirements
•Air-conditioned lounge •Luggage Counter •Tourist Info Centre •Money exchange/ATM •Internet cafes •Medical clinics •Multi-cuisine restaurants •Duty-free shops •Shuttle services to railway stations and airports • Taxi service •Escalators/Elevators •Aero-bridges from terminal to ship •Shopping arcade •Terminal Map •Entertainment centre •Toilets and other facilities for the physically challenged •Multi-lingual sign-boards •Karnataka Village/Haat/Exhibition Centre •Hotel accomodation for fly-in guests- pre-cruise and post-cruise	•Administrative office •Navigation facility •Ship coordination centre •Single window immigration, customs and health clearance.	•Dedicated berths for cruise vessels •Berth to handle 90,000 GRT •Draft of at least 10 m to handle large passenger cruise liners of 90,000 GRT

The notable features of this terminal would be:

- A Karnataka Village/Haat: The village will be designed keeping in mind the rich cultural heritage of Karnataka, on the lines of Delhi Haat but at a smaller scale. The Village can have heritage exhibition centre, shops selling ethnic wares, open air theatre for events and festivals, eateries providing local cuisine. The idea is to provide a rich and multicultural experience to all the tourists. The Village can have an entry fee and can be a revenue earning source for the private operator
- Resort in the city: Many tourists going for ground tours may also stay over at the hotels to fly to other destinations. Though the share of such passengers is very low at present, such facilities add to the attraction for a cruise tourist. Further, as the hotel will be located in the city, this will also act as an additional source of income for the concessionaire
- Shopping arcade within the terminal: It is proposed that a shopping arcade providing a world class shopping experience akin to that provided in airports be offered for the new terminal
- It is to be noted that additional revenue earning avenues have to be provided to the concessionaire for feasibility of the project

2. **Marketing & Networking with all stakeholders involved:** The concessionaire will have to make efforts at marketing the terminal to shipping agents handling cruise itineraries, domestic and international tour operators, taxi and bus operators. The concessionaire will also need to create a buzz around its terminal through adequate advertising measures.
   Apart from marketing the terminal through media like TV, newspapers and internet, the concessionaire also needs to put a lot of work in describing the USP of the cruise terminal. Constantly updated brochures that give information on cultural shows and exhibitions arranged in the region should be distributed to induce the cruise tourist to disembark.
   Further, a new lucrative target group in the Indian market would be corporates, especially those in the South. Tapping this market would require travel agents and tour operators to associate with companies headquartered in Bangalore and Mysore so that conferences and board could be held aboard cruise ships. Entering into tie-ups with cruise operators to provide packaged cruise tours for such clients would pay rich dividends to both the concessionaire and cruise operators.

3. **Positioning as a facility complementary to New Mangalore in the long run**: It can be seen from the case studies of Dubai and Singapore that world class cruise terminals can handle more than one vessel at a time indicating they have multiple berths. As cruise tourism in India grows over a period of time and most of the international cruises coming in between December to April, it will be difficult for New Mangalore to meet this traffic alone. Further, as New Mangalore is essentially a cargo port; with industrial growth in Karnataka, it will increasingly be handling more cargo over a period of time. Hence, adding another berth for handling cruise ships may not be possible. Hence, the proposed cruise terminal can act as a complementary facility to the cruise terminal at New Mangalore in the long run. However, the state needs to take care to not build so many terminals that it may lead to overcapacity.

5.2.4 Traffic Projections

Traffic projections are done for domestic and international cruises. International cruises call on Indian ports during October-March season, for utilizing the terminal all year round, growth of

domestic cruise market is important. Even the tourism department of Karnataka government has come out with tenders inviting cruise operators for domestic cruises. However, due to lack of terminal facilities the interest has been marginal. But if the new terminal comes up, not only will domestic tourism pick up in Karnataka but the terminal will also have earning avenues during the April-October season.

a. Examining the past trends during 1997-2011, the CAGR for cruise tourists in India was found to be 11.8%. This growth was seen despite two major downturns during this period.
b. For future growth, past growth rates for cruise tourists are taken, with the growth figures assumed to progressively decline over the concession period to 8.5% by 2041-42
c. The current share of Karnataka in total cruise tourists is 6% and this is the share assumed to project the cruise tourists that will be coming into the state during initial years. It is assumed that with setting up of a world class cruise terminal in Karnataka, the state over a period of time will become one of the 5 major cruise destinations in India along with Chennai, Kochi, Mumbai and Goa. This, however, hinges on the fact that the charges are competitive and the concessionaire does adequate marketing. The share of Karnataka in total cruise passengers in India is assumed to gradually go up to 16% in 2042
d. For projecting vessels, consultants have analyzed the vessel cruise itineraries calling at Mangalore during next one year[8], based on which assumptions for distribution of vessels as per size is made for the proposed terminal during the initial years. However, as the cruise ship sizes are increasing over time[9], it is assumed that the share of larger ships will increase gradually. Following table gives the assumptions made for the vessel size:

Table 4: Assumptions for average passenger per Cruise Vessel during initial years

Vessel Size (GRT)	Share in total Vessels at Mangalore (%) in 2013	Share in Total Vessels at Mangalore (%) in 2042	Passenger Capacity Per Vessel
13000	50%	5%	250
30000	20%	10%	400
40000	20%	35%	700
90000	10%	50%	2000

e. Finally, of the total vessels coming to Karnataka, a share is assumed to be diverted to the new terminal. Initially the share is assumed at 5% (translating into just 1 international cruise vessel calling), as it will take time for the new terminal to find acceptance when another terminal in the state already exists. However, over the period of time as the concessionaire markets its terminal, networks with shipping agents and tour operators, the share is expected to gradually increase. In fact, by 2042 it is assumed that the size of the overall market will be such that even if the proposed terminal has a 50% share or 151 vessels a year, the New Mangalore Terminal will still have a market of more than 100 vessels available to it. Following table gives the final projections:

[8] Cruisecompete.com
[9] Cruise Lines International Association

Table 5: Projected International Cruise Passengers and Vessels at the Proposed Cruise Terminal

Year	2011-12	2015-16	2019-20	2024-25	2029-30	2034-35	2041-42
Projected Annual Growth Rate of Cruise Tourists in India	11.34%	11.79%	11.00%	10.50%	10.00%	9.50%	8.50%
Projected Cruise Arrivals in India (In Millions)	0.11	0.140	0.237	0.392	0.635	1.004	1.835
Assumed Share of Mangalore in Total Cruise Arrivals	6%	6%	8%	8%	10%	15%	16%
Projected Cruise Arrivals in Mangalore(In Millions)	0.007	0.008	0.019	0.031	0.063	0.151	0.294
Share of the proposed terminal		0.00%	8.00%	15.00%	25.00%	30.00%	50.00%
Projected Cruise Arrivals at the new terminal (Number)		**0.0**	**1517.0**	**4708.0**	**15869.0**	**45172.0**	**146799.0**
Projected Cruise Arrivals at the new terminal(Ships)			**3**	**6**	**16**	**31**	**114**

2. **Forecast for Domestic Cruises:** Old Mangalore port already receives 24 domestic passenger vessels at present from Lakshwadeep. For the purpose of estimation, it is assumed that if charges for the domestic passenger vessels is kept similar to what the schedule of rates specify currently, these vessels will shift to new terminal (if the new terminal is at a location other than Old Mangalore) due to better facilities provided. For future forecast, the past growth trend of domestic tourists to Karnataka is analysed for the period of 2005-06 to 2011-12. The CAGR of domestic tourists to Karnataka during this period is ~8.1%. The future growth rates for domestic cruises are based on the past trends with the rate assumed to be 8.1% initially tapering down to 7.5% by the end of the concession period. Further, it is assumed that one domestic cruise vessel carries an average of 175 passengers[10], which gives the number of domestic vessels. Following table summarizes the projections for domestic cruises:

Table 6: Projected Domestic Cruise Growth Rates

	2012-13	2014-15	2019-20	2024-25	2029-30	2034-35	2040-41
Projected Growth Rates for	8.10%	8.10%	8.00%	8.00%	7.50%	7.50%	7.50%

[10] Primaries with Old Mangalore Port officials

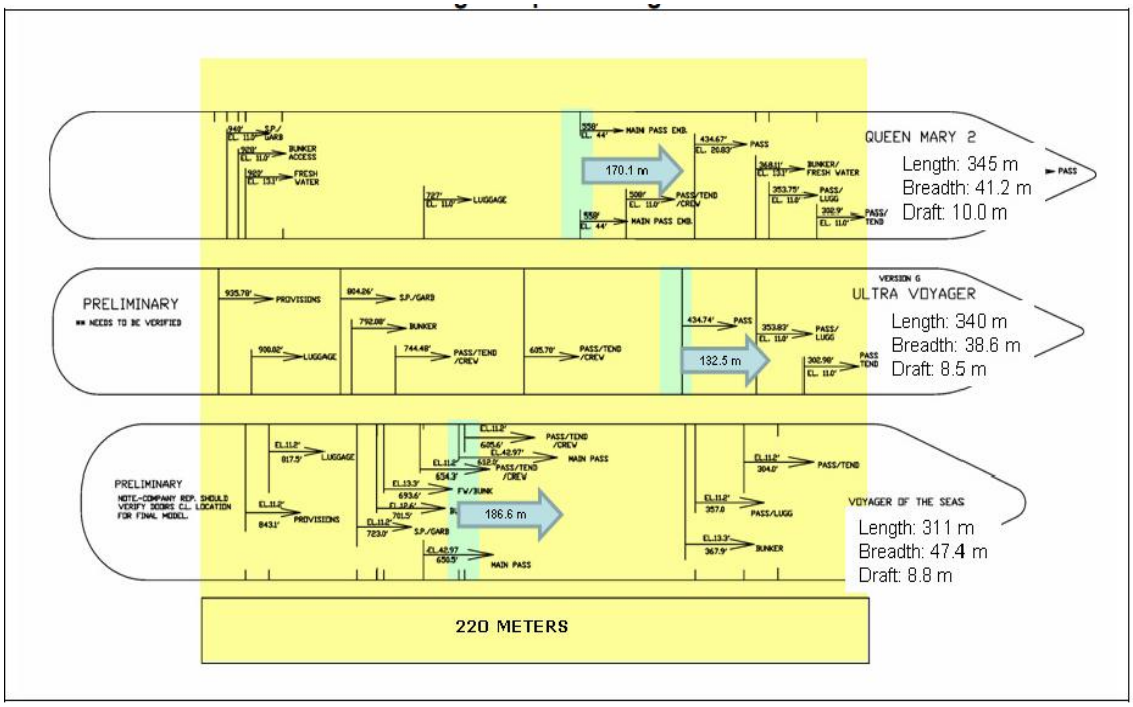
Domestic							
Domestic Cruise Passengers in Karnataka	4540	5310	7860	11570	16640	23920	39720
Number of Vessels	26	30	45	66	95	137	227

It is important to note that given the current tariffs of INR 0.60 per GRT and small size of the vessel, the domestic cruises will not generate high revenues However, domestic cruises are important for higher footfalls, especially during the off season period of April-October(for international cruise vessels)which would help attract commercial players likely to set shop at the terminal.

5.2.5 Project Design

The project is expected to have four major components:

1. Berth: A 220 m berth is proposed. It is expected that this length of berth can accommodate more than 350 m long ship which is the size of the ultra large cruise ships currently in the market. Following illustrates how even ultra large vessels can be accommodated in a berth length of 220 m.



Source: Port of Miami, Engineering Department

Karwar Old Mangalore and Malpe already have breakwaters. Malpe also has natural protection from a row of rock outcrops running parallel to the coast. However, detailed technical studies will determine whether the breakwaters are adequate for entertaining large cruise vessels.

2. Terminal Area: The terminal area is where the passengers will wait while the formalities are being completed at customs and immigration area. It is proposed that a high quality terminal area be created on the lines of what exists in international airports. A 1.5 sqm per passenger is assumed for Terminal area based on analysis done by American Association of Port Authorities on average terminal sizes and the benchmarks recommended by Air Transport Association (IATA) for airport terminals. The maximum number of passenger expected at one time is 2,500 people and the terminal area is suggested keeping that in mind, considering that the berth capacity is to accommodate 90,000 GRT vessel with a ~2,500 passenger capacity. Further, a 25% space is assumed for commercial areas like shopping arcade, food courts, ATMs etc. It is proposed that the terminal will have wi-fi connection to provide ready net connection facility to its passengers. Following table gives the area plan of the Passenger Terminal:

Table 7:Area Plan for Terminal Building at the Proposed Cruise Terminal

Component	Area (sqm)
Total Terminal Area	**3750**
Essential Facilities at the Terminal	**2830**
Waiting Lounge	1500
Immigration & Customs Area	1000
Baggage Handling Area	330
Total Commercial Area within the terminal	**920**
Duty Free Shop	*100*
Branded Shops	*200*
Restaurant-cum-luxury lounge	*200*
Food Court	*250*
Offices of Taxi, bus, tour operators	*150*
Pharmacy	*20*

3. Karnataka Village: It is proposed that a Karnataka Village be built on the lines of Delhi Haat showcasing Karnataka's rich cultural heritage and local as well as global cuisines. Karnataka Village is expected to be located within the port premises, if the area is available. Otherwise, the government may allocate land near the port for the same. Following table gives the proposed area plan for the Karnataka Village:

Table 8: Area Plan for the Proposed Karnataka Village

Karnataka Village	**4000**		
Components	**Total Area (sqm)**	**Number**	**Per Unit Area (sqm)**
Open Air Theater & Activity Area	520	1	520
Circulation	1000		
Exhibition Centre	400	2	200
Curios Shops on Ethnic Theme	1320	50	26
Food Shops	760	30	25

4. Resort: As already explained in the market assessment chapter, a resort is proposed as a part of the project. A resort is suggested, as there are no five star hotels in any of the proposed locations at present. A 50 room resort spread over 25 acres of land is proposed. The resort is can be outside the port limits to avoid any environmental issues.

The following table gives the Area Summary for the Cruise Terminal Project:

Table 9: Area Summary for the proposed Cruise Terminal Project

Area Summary	Value	Unit
Port Area		
Berth	6600	Sqm
Terminal Building	3750	Sqm
Administrative Building	100	Sqm
Karnataka Village	4000	Sqm
Parking	980	Sqm
Total Area	15430	Sqm
Total Area in acres	3.81	Acres
City Area		
Resort	25	Acres

6 Project Financials

Financial analysis is done for the 30 years concession period, including a 3 year construction period. The base year is assumed to be 2012-13.

6.1 Cost Estimation

This section gives cost assumptions for capital and operational costs. A section on dredging and breakwaters is given separately.

6.1.1 Capital Cost Assumptions

Following table gives the capital cost assumptions for the proposed terminal

Capital Cost Assumptions			
	Value	Units	Remarks
Built-Up Area Cost			
Berth	59000	INR per sqm	*Based on past studies of Feedback and recent tender for a multi-purpose terminal at Chennai*
Terminal	30000	INR per sqm	*Based on cost estimate of airport terminal*
Administrative Building	12912	INR per sqm	*Past Studies done by Feedback*

Resort	50	INR Lakh/room	*Past Studies done by Feedback*
Dredging Cost			
Capital Dredging	500	INR/cubic m	*Based on interviews with CE at the ports*
Maintenance Dredging	500	INR /Cubic m	
Major Equipment			
Tug barges	5	INR cr/tug	
Other Costs			
Site Survey	9.8	INR/sqm	*Previous Studies of Feedback*
Site Development	420.0	INR/sqm	
Roads	98.8	INR/sqm	
Electrical System	140.0	INR/sqm	
Water	148.2	INR/sqm	
Fire Protection	24.7	INR/sqm	
Sewerage	34.6	INR/sqm	
Storm Water Drainage	37.1	INR/sqm	
Landscaping	5.0	Lakh	
Pre-Operative Expenses	5%	of the construction cost	
Contingency	5%	of the Total Cost	
Escalation	5%	p.a.	

6.1.2 Dredging Costs

Most of the minor ports in Karnataka do not have an effective depth of more than 8 m. A cruise vessel of 90,000 gross tonnes will require at least a 10 m draught. The draught at Old Mangalore is just 3.5 m. Malpe has a rock bottom at 9 m depth. Similarly, Karwar has a 9 m depth but the vessels are restricted to 8.25 m because of the rocks at the bottom. As a result it is expected that capital dredging costs will be very high. A preliminary assessment was done for the dredging cost for Old Mangalore to get an idea of the extent of capital dredging cost that can be incurred. It is to be noted that this is a very preliminary assessment which assumes similar average depth at all points. More detailed technical studies need to be done to get an exact estimate.

The current depth at Old Mangalore is 3.5 m. There will be three parts to capital dredging

- Wharf Dredging Requirements: The dredging at the berth. With a 220 m berth length and the ~ 50 m width of the ship, an effective 10 m depth would require 97,500 cubic meter of dredging
- Turning Radius: A turning radius is required to veer the ship towards the shore. A turning radius of 150 m would require 450,000 cubic meter of dredging
- Channel Dredging: Length of the Old Mangalore Channel is 6000 m and the width is 100 m. For a 10m depth ~ 3.9 mn cubic meter of dredging is expected

It is evident that only capital dredging cost can be more than INR 200 crore for the port and can double the cost of the project. For dredging in areas with rocky bottoms, the cost can be even higher.

The consultants suggest that a detailed study be done for all the three suggested minor ports to assess the dredging requirements.
It is recommended that the capital dredging cost and cost of any other basic infrastructure like breakwaters which benefit the port as a whole and not just a terminal, should be borne by the government, to make the project attractive to the private investor.

6.1.3 Project Cost

The total project cost with including interest during construction is estimated to be ~INR 139 crore provided that the dredging cost is borne by the government. The following table gives the cost break-up:

Table 10: Cost Break-Up for the proposed Cruise Terminal

Cost Component	Total Cost (INR Crore)
Berth	**41.2**
Terminal Building	**20.4**
Administrative Building	**0.1**
Karnataka Village	**3.8**
Resort	**36.7**
Equipment	**10.8**
Pre-Operative Expenses	**5.4**
Contingency	**6.3**
IDC	13.6
Total Cost Inclusive of IDC	138.5

6.2 Other Project Assumptions

This section details assumptions for operational expenses, revenues, tax calculations, depreciation and capital structure.

6.2.1 Capital Structure

The financing assumptions are given below:

Table 11: Financing Assumptions

Financing & Income Tax Assumptions	
Debt	70%

Equity	30%
Cost of Debt	**12%**
Cost of Equity	18%
Weighted Average Cost of Capital	11%

The project is expected to have 70% debt ~ INR 97 crore and a 30% equity equivalent to INR 41.5 crore

6.2.2 Income Tax Assumptions

Income Tax including surcharge and education cess is taken to be 32.45%. The Minimum Alternate Tax (including education cess and surcharge) is taken to be 20.5%.

6.2.3 Depreciation Assumptions

Following table gives assumptions for depreciation rates used for analyzing project financials.

Table 12: Depreciation Assumptions

Depreciation as per Income Tax Act	***Rate***
Civil & Structures	*5%*
Plant and Machinery	*15%*
Depreciation as per Companies Act	
Civil and Structures	*1.63%*
Plant and Machinery	*4.75%*

6.2.4 Revenue Assumptions

1. Assumed Tariffs for Vessels calling on the proposed terminal:
    a. Following levels of tariffs are assumed for the proposed terminal. Tariffs charged by New Mangalore and Mormagoa were considered while making the assumption:

Table 13 Assumed Tariffs for Foreign Cruise Vessels

Berthing Charges (INR Per GRT/day)	**Embarkation/Disembarkation (INR per Passenger)**	**Transit (INR per passenger)**
8	493	371

    b. For domestic vessels, the rates being charged currently at the Old Mangalore port are assumed
2. Rentals for commercial facilities inside the terminal are assumed at INR 45 per sq. ft. per month based on commercial rentals for high quality showrooms in Mangalore and Karwar.
3. For revenues from Karnataka Village following assumptions are made:
    a. Based on the trend seen at the New Mangalore Port, it is assumed that 60% of the cruise passengers in international liners go for day tours. Of these, it is assumed that 25% will visit the Karnataka Village
    b. 50% of domestic vessel passengers are assumed to visit the Karnataka Village
    c. Further, based on daily visitors at Manasa Water Park in Mangalore, it is assumed that the village will get 500 visitors from the city

d. The entry fee for the Village for the domestic tourists (based on entry fee of the Manasa Water Park in Mangalore) is assumed to be INR 200 per person. For International visitor the fee is assumed to be slightly higher at INR 500 per person
e. Based on rentals charged for small shops and kiosks in Mangalore, the rental is taken as INR 35 per sqft per month
f. Average occupancy for commercial spaces to be given on rent is assumed to increase from 30% in the first year of operation to 80% by the end of the concession period

4. Revenue Assumptions for the Resort are as follows:
   a. Average Room rent per day is assumed at INR 7,000 per day, as per the rates charged by similar resorts in coastal Karnataka
   b. Food and Beverages revenue is assumed to be 30% of the room revenue
5. Escalation: Port charges escalation is assumed to be 5% per annum and for other revenue components the escalation is assumed to be 8% per annum

6.2.5 Operational Expenses Assumptions

1. Following table gives the assumptions for operational expenses for berth, dredging, Karnataka Village and the resort. For maintenance dredging an annual amount is assumed to ensure that the project gives a Positive NPV to the private investor. If the technical studies done for dredging points to higher annual maintenance dredging costs, it is proposed that the state bears the cost.

Table 14: Operational Expenses Assumptions for Berth, Maintenance Dredging, Kerala Village and Resort

Berth			
Civil & Repair Maintenance	1%	of Berth Plus Equipment Capex	
Mechanical	2%	of Berth Plus Equipment Capex	
Equipment running & Hiring Cost	5%	of Equipment Capex	
Overheads	2%	of Berth Plus Equipment Capex	
Maintenance Dredging	80	INR lakh per year	A maximum amount that can be borne by the private investor (with 5 % escalation every year), without making the project unviable
Karnataka Village			
Operations and Administrative Costs	700.00	INR/Sqm/year	Based on annual opex of Delhi Haat
Lease on Port Land	0.5	INR/sqm/month	As per schedule of rates
Resort			
O&M(F&B, Room, HR)	30%	of total receivables from the hotel	
Lease Rental for Resort	50	Lakh per year	The land in prime area is

			assumed to cost INR 1 crore per acre. Annual Lease rental taken at 2% of that.
Escalation per annum	5%		

2. Operational expenses of terminal building: As the terminal building is assumed to be built as per the standards of an airport, the expenses are based on analysis of AAI annual reports for past 5 years
    a. Repair and Maintenance assumed at 6% of the income from cruise vessels and terminal operations
    b. Electricity and Water assumed at 3% of the income from cruise vessels and terminal operations
    c. Other costs assumed at 6% of the income from cruise vessels and terminal operations

3. Staff costs: Following staff distribution and monthly salary is assumed:

Table 15: Assumptions for Staff

Post	Number of people	Sal per month (INR)
MD	1	70000
GM	2	40000
Manager	3	25000
HR	2	25000
Accounts	4	20000
Office Boys	4	8000
Cleaning Staff	5	7000
Guides	5	15000
Ground Staff	10	8000
Average Per Year		INR 60 lakh

6.3 Key Project Financials

Based on the market assessment and assumptions described in the earlier chapters, this section presents the results of the financial analysis. The consultants also carried out a Value for Money Analysis (VFM) to recommend the most suitable mode of project procurement. Value for Money (VFM) analysis is essentially a cost-benefit analysis, where it is examined if the benefits of the project are positive as compared to alternative procurement method. A PPP project is said to achieve value for money if it costs less than the best realistic public sector project alternative which would deliver same services. Thus, a positive Value for Money for the government means that the project will generate enough value to be taken up on PPP basis.

A detailed explanation for VFM is given in Annexure 1.

The key financial returns for the project are summarized in the table below:

Table 16: Key Project Returns

Parameter	Value	Unit
Total Project Cost	138.5	INR crore
Upfront Payment	0	INR Crore
Project IRR to the Concessionaire	12%	%
Project NPV	10.7	INR crore
Equity IRR	15%	%
Lease Rental per Year to the government	50	INR lakh per annum with 5% p.a. escalation
NPV of receivables to the government	5.55	INR crore
VFM	79.11	

The concessionaire is expected to earn a Project IRR of 12% and a positive Project NPV of INR 10.7 crore. It can be seen that the project has a borderline viability. This too hinges on the fact that the government bears the cost of capital dredging and breakwaters and also maintenance dredging cost if it is over INR 80 lakh a year (at an escalation of 5% p.a.). The Value for Money value is positive, which means that the project will generate value for both public and private sector.

6.4 Scenario Analysis

Sensitivity analysis is done to understand the sensitivity of the project returns to changes in crucial parameters of the project like capital costs, operating costs and revenues.

a. Change in Construction Costs: The project is highly sensitive to changes in the construction costs. A 10% increase makes the project unviable. Hence, the project proponent will have to ensure that there is no delay in the project that will lead to cost overruns. Changes in Project NPV, Project IRR and Equity IRR corresponding to changes in construction cost is given below:

Table 17: Sensitivity of the Project to changes in Construction Cost

Change	Project NPV (INR crore)	Project IRR	Equity IRR
30%	(34.79)	10%	12%
25%	(26.56)	10%	13%
20%	(19.70)	10%	13%
15%	(11.60)	11%	14%
10%	(3.60)	11%	14%
5%	4.31	11%	15%
0%	10.72	12%	15%
-5%	18.50	12%	16%
-10%	26.17	13%	17%
-15%	33.74	13%	18%
-20%	39.74	14%	18%
-25%	47.19	14%	19%
-30%	54.56	15%	20%

b. Changes in Operational Expenses: The project is sensitive to changes in operational expenses. A 15% increase in the operational expenses is expected to make the project unviable. Hence the project proponent will have to keep a tight rein on its project cost. Following table gives the sensitivity of the various returns to the project to changes in operational expenses:

Table 18: Sensitivity of the Project to the Changes in Operational Costs

Change	Project NPV	Project IRR	Equity IRR
30%	(12.94)	10%	13%
25%	(8.54)	11%	14%
20%	(4.16)	11%	14%
15%	(0.93)	11%	14%
10%	3.43	11%	15%
5%	7.79	11%	15%
0%	10.72	12%	15%
-5%	15.05	12%	16%
-10%	19.36	12%	16%
-15%	23.65	12%	16%
-20%	26.18	12%	17%
-25%	30.48	13%	17%
-30%	34.74	13%	17%

c. Changes in Revenue Flow: A lower than forecasted revenue can impact the project viability substantially. Even a 10% lower than the projected revenue can render the project unviable. Hence, the project proponent will have to ensure that it takes adequate marketing measures to boost the traffic at its terminal

Table 19: Sensitivity to Changes in Revenue

Change	Project NPV	Project IRR	Equity IRR
30%	74.89	15%	20%
25%	65.60	14%	20%
20%	54.01	14%	19%
15%	44.16	13%	18%
10%	32.45	13%	17%
5%	22.54	12%	16%
0%	10.72	12%	15%
-5%	0.22	11%	14%
-10%	(10.65)	10%	14%
-15%	(21.84)	10%	13%
-20%	(33.24)	9%	12%
-25%	(44.83)	8%	11%
-30%	(56.68)	8%	9%

7 Statutory & Legal Framework

7.1 Legal & Regulatory Framework

Minor ports are on the Concurrent List of the Indian Constitution. Indian Ports Act, 1908 brings minor ports under the state jurisdiction. Some of the major provisions of the Act are given in the table below:

Table 20: Major Provisions of Indian Ports Act 1908

Provisions	Details
Power to dictate operational parameters	State can make rules to regulate the entry and exit of vessels entering the port; regulate berths, stations, anchorage occupied by vessels; crew number etc
Alter Port Limits	State can alter port limits and also merge two ports to make one port
Levy of Port Dues	State can levy and change port dues on vessels entering the minor ports. It can also exempt vessels from paying dues and vary the rates at which port dues are fixed. (Charges paid by private developer will be as per CA signed with the state)
Powers of Central Government in Minor Ports	• Demand co-operation in times of emergency and for defense operations • Power to appoint and control port health officers. • Rules to prevent danger to public health from vessels on the port
Exemptions from the Act	• Won't apply to vessels belonging to or in service of the central or the state government, vessel s of war or belonging to any foreign state

The Act effectively gives the state control over major aspects of minor ports including regulation of traffic and levy of charges in the port limits.

8 Indicative Environmental & Social Impacts

8.1 Environmental Impacts

As the proposed development is located close to the sea, the project will be regulated by various CRZ Regulations and Environmental Regulations in the country. Any development at the port and near the shore area can impact the natural environment at sea and also flora and fauna in the sea. As a result, the project proponent will need to ensure that it gets relevant clearances and undertakes necessary mitigation measures if suggested by the concerned authorities.

8.1.1 Environmental Clearances

From the Coastal Zone Management Program map of the coastline it can be inferred that the proposed terminal will lie in the CRZ-II zone.

CRZ-II is defined as the areas that have already been development upto or close to the shoreline. For this purpose, "developed area" is referred to as that area within the municipal limits or in other legally designated urban areas which is already substantially built up and which has been provided with drainage and approach roads and other infrastructure facilities, such as water supply and sewerage mains.

1. **CRZ Clearance**

The project in CRZ –II involves less than 20000 square metres of area and hence would require CRZ clearance from the Karnataka CZMA according to the 2011 CRZ notification from the Ministry of Environment and Forests.

1. **EIA Clearance**

The CRZ notification 2011 specifies that construction involving more than 20,000 sq metres built-up area in CRZ-II will require environmental clearance from the centre. Projects less than 20,000 sq mts built-up area shall be approved by the concerned State or Union territory Planning authorities after obtaining recommendations from the concerned. Since, less than 20,000 sqm of area is proposed in the CRZ-II area for the cruise terminal, it will require environmental clearance at the state level.

The breakwater and the dredging operations that need to be undertaken at the port fall under 'Category B' of the EIA notifications in 2006, since all the proposed minor ports and handle a cargo capacity of less than 5 million tonnes per annum. Hence, as per the EIA notification 2006, the concessionaire would also have to obtain EIA clearance from the State Level EIA Authority (SEIAA), duly constituted by the Central Government for Category 'B' activities, before any construction work, or preparation of land is done.

Both the EIA certificate from the State Environmental Assessment Committee (SEAC) and the CRZ clearance from the Karnataka or central Governments would be on the basis of recommendations made by the CZMA only.

Further, the concessionaire would also have to submit compliance reports every six months in respect of the terms and conditions stipulated for granting environmental clearance in hard and soft copies to the concerned regulatory authority.

According to the CRZ notification 2011, in addition to this, the concessionaire would have to renew CRZ and EIA clearances every five years.

8.2 Social & Economic Impacts

The project proposed would have two major socio-economic impacts.

- A boost for the local economy: The project is expected to boost tourism in the state and contribute to its economic prosperity. A Cruise Passenger on an average spends more than USD 100 per trip, which has a direct impact on the economy. Further it is expected that a project of this scale will generate employment for people from all walks of life.
- Two of the proposed sites have fishing harbours (Old Mangalore and Malpe). A project at these sites can lead to disturbance to the livelihood of fishermen. Hence, it is to be ensured that minimal disruption is caused to the fishermen community due to new constructions. If such disruption is inevitable, the project proponent may need to involve the community in the project by providing employment and other social benefits

9 Operating Framework

9.1 Risks & Mitigation

Risks are inherent in all Public Private Partnership projects. They arise due to uncertain future outcomes which may have direct effect on the provision of services by the project, and/or the commercial viability of the project. The risk allocation to parties in contract and the management of risks are, are hence crucial for project structuring.

The risk analysis, allocation and management involve the following activities:

- Identification of all possible risks and assessing their likelihood;
- Examining the likely effects of the risks in quantitative and qualitative terms.
- Considering suitable mitigation measures that may be available.
- Allocation of risks to parties

9.1 Classification of Risks

For the project, several types of risks exist:

a. Construction Risk: Risk arising out of delays in construction leading to cost overruns
b. Environmental & Social Risk: Risk of project getting delayed due to environmental considerations. Further, there can also be risks due to delays in land acquisition and protests of the people being displaced due to the project
c. Traffic Risk: Risk of lower revenues due to less than expected traffic
d. Competition: Risk of losing business to competitors
e. Political Risk: Risks arising due to changes in law and delay in grant of approvals
f. Force Majeure Risk: Risks arising due to incidents not in control of the project proponent like natural calamity, strikes etc.

9.2 Risk Mitigation

The following matrix gives risk mitigation measures for various types of risks.

Table 21: Risk Mitigation Measures for the Project

Risk Type	Factors	Mitigation Measures
Construction Risk	• Geo-technical risks • Construction technology • Availability of construction materials • Delay by EPC Contractor selected by the project proponent	• Robust technical and engineering studies before the start of project • Fixed time EPC contracts by the project proponent, with built-in penalties for delays • A fixed concession period for the project creates an in-built penalty on the project proponent for delays in terms of loss of revenue earning years
Environmental & Social Risk	• Site in environmentally sensitive areas • Delay in land acquisition and protests of locals	• Required environmental clearances be obtained and mitigation measures be adopted as per the

Risk Type	Factors	Mitigation Measures
		recommendations of the authority • It is recommended that the project proponent employs locals to the maximum extent possible to ensure participation of the local community in the economic growth of the region due to the project
Traffic Risk	• Less than anticipated traffic	• Strategic tie-ups cruise liners, tour operators • Aggressive marketing of the terminal
Competition	• Risk due to competitors	• Charging competitive rates. Consultants have kept in mind the charges by competitors while making revenue projections
Political Risk	• Change in law, • Revocation of licenses, permits etc • Delays due to political instability	• Effective legal provisions for safeguard interests of the project proponent
Force Majeure	• Natural Calamity	• Contractual provisions where any penalties for not meeting contractual obligations are suspended for the time of the force majeure event • Insurance

9.3 Indicative Project Structure

Component	Description
Structure	• The project is to be developed under BOT model of PPP • The berth cost and other terminal facilities cost are to be borne by the concessionaire • The capital dredging costs and break-water costs are to be borne by the government • The government also bears a portion of the maintenance dredging cost if it is over a certain threshold (to ensure viability of the project. • The private sector player recovers its investments over a period of time from revenues from operation of the cruise terminal and the Karnataka Village in the port premises. The private player will also be leased out land for building a resort, which will be a further source of revenue. The land for resort can be given in the city, if not available at the port.
Concession Period	• 30 years including a construction period of 3 years
Payment to Concession Authority	• Annual Lease rental • For land in the port premises, to be calculated at the rate of INR 0.5 per sq.mtr per month • For land in the city, an annual rental of INR 50 lakh is suggested for 25 acres of land
Role of Concession Authority	• Provision of identified land for the project, free from all encumbrances • Grant of lease hold rights of the project site to the developer • Provision of adequate rights to the developer for collection of user charges, parking fees and rentals from property development.
Role of Private Sector Developer	• Detailing and placement of the Project components • Detailed designing and Engineering of facilities based on Concept • Achieving financial closure and making the necessary capital investment • Construction, Marketing, Operating, Maintaining and Managing (Utilities, Facilities, Equipments etc) the Project during the Authorization Period • Obtaining all clearances/approvals from the concerned Govt. Department, handling legal issues etc

10 Way Ahead

The way ahead for the project will be to first carry out detailed technical studies for assessing the dredging and breakwater requirements for the proposed cruise terminal. Based on the technical suitability, one of the three project sites can be selected for the cruise terminal.

Once the project site is finalized based on technical feasibility and land availability, the state can go ahead with the procurement process. However, government will need to bear the capital dredging costs, breakwater costs and a part of maintenance dredging costs (in areas like Old Mangalore where the cost of maintenance dredging is very high) to attract private players.

The Consultants will provide IDD with Request for Proposals for appointment of Transaction Advisors.

The Consultants will also hold Capacity Building workshops for officials identified as PPP cell personnel. Three training sessions will be organised as a part of capacity building. Various techniques of effective communication like audio-visual media in form of PowerPoint presentations, videos, notes, interaction dialogues etc will be used for these capacity building sessions.

10.1 Recommendations

1. It is recommended that the project be taken up only after detailed technical studies to assess the technical suitability of the suggested sites for setting up a cruise terminal that can handle large vessels to the order of 90,000 GRT
2. Further, the project is feasible only if the state bears the cost of capital dredging and breakwaters
3. No Upfront Fee is recommended for the project, as the project is viable as a borderline case. An upfront fee can make the project unviable

11 Annexure

11.1 Annexure 1: Value for Money Analysis

Value for Money (VFM) analysis is essentially a cost-benefit analysis, where it is examined if the benefits of the project are positive as compared to alternative procurement method. A PPP project is said to achieve value for money if it costs less than the best realistic public sector project alternative which would deliver the same services.

The VFM analysis basically takes into account the Project NPV achieved by alternative means of implementation and compares it with the NPV achieved through PPP. Private partnership brings in several efficiencies in cost control, reining in operating expenses and ensuring adequate marketing measures which makes the implementation of the project more efficient. A PPP project typically allocates risks due to increases in costs and incidence of lower than forecasted revenue onto the private partner.

For VFM analysis, the consultants have identified risks at construction and operation stage.

Risks at Project Construction Stage:

1. Higher Construction Cost: Risks due to higher construction costs substantially impact the Project NPV adversely.
2. Time Overrun: Delays in projects lead to loss of revenue, as lesser number of operational years are available during the concession period to earn revenues

Risks at Project Operation Stage:

1. Revenue Risk: Risk emanating due to lower than anticipated revenues, which can be due to traffic shortfall
2. Operational Expenses Risk: Risk of higher than anticipated operational expenses

Following table illustrates the VFM calculation for the proposed cruise terminal. VFM for all other sites are also calculated in a similar way.

Risks		Financial Impact	Risk Allocation (%) as per PPP Model		NPV at Risk	NPV of Risk to be added back	NPV of retained risks
1	2	3	**4**	**5**	**6**	**7**	**8**
			Concessionaire	**Authority**			
Construction Phase	Construction Cost Overrun	Cost overrun of 20%	50%	50%	-46.5	-8.6	-8.6
	Construction Time Overrun	Time overrun by 50% of the construction period (Loss of revenue of 6 quarters)	100%	0%	-52.1	-22.7	0.0
Operation Phase	Revenue Risk (Due to traffic shortfall)	Decrease in Revenue by 15%	100%	0%	-42.5	-13.2	0.0
	Opex risk	Increase in O&M Cost by 15%	80%	20%	-34.6	-4.2	-1.0
	Total					**-48.7**	**-9.6**
VFM (INR Cr)	**79.11**						

1. Column 2 defines the risks while the Column 3 defines the financial impact of the risks. The average value of these risks and their probabilities are taken from PPP Toolkit for Ports
2. Column 4 & 5 gives the risk allocation to Concessionaire and Authority as per the PPP model that has been selected. The construction and opex risks are shared between government and private player, hence not all risk is loaded on to the private player
3. Column 6 or NPV at Risk gives the Project NPV if the state government had implemented the project, and the project bears the financial impact described in Column 3.
4. Column 7 or NPV of Risk to be added is the change in the Project NPV of the government due to financial impact of the specific risk weighted by the risk allocated to the private concessionaire. Adding this to the Base Project NPV for the government gives a risk adjusted NPV for the government.
5. Column 8 is the NPV of retained risks is the change in the Project NPV of the government due to financial impact of the specified risks, weighted by the risk allocated to the government. Adding this to the Base Project NPV of the private concessionaire gives Risk Adjusted NPV for PPP project.

The difference between the Risk Adjusted NPV for the Private Player and Risk Adjusted NPV for the government gives the Value for Money for the project.Annexure-2: Cashflow Statement

11.2 Annexure 2: Cash Flow Statement

Table 22: Cashflow for the Cruise Terminal

Financial Year-->		2013	2015	2020	2025	2030	2035	2042
INR Crore								
Inflow								
Equity		6.34	20.13	0.00	0.00	0.00	0.00	0.00
Debt		14.80	46.97	0.00	0.00	0.00	0.00	0.00
Total Income		0.00	0.00	25.89	44.10	72.95	122.86	301.75
Total Inflow		21.14	67.10	25.89	44.10	72.95	122.86	301.75
								1.00
Outflow								1.00
Capex		21.14	67.10	0.00	0.00	0.00	0.00	0.00
Principal Repayment		0.00	0.00	9.69	9.69	0.00	0.00	0.00
Interest Repayment		0.00	0.00	7.56	1.74	(0.00)	(0.00)	(0.00)
Opex		0.00	0.00	11.46	17.05	25.02	37.43	71.83
Tax		0.00	0.00	0.93	4.72	12.17	26.99	74.10
Total Outflow		21.14	67.10	29.64	33.21	37.19	64.43	145.93
Opening Balance		0.00	0.00	(31.36)	(21.11)	91.21	306.61	978.88
Net Surplus		0.00	0.00	(3.75)	10.90	35.75	58.43	155.82
Closing Balance		0.00	0.00	(35.11)	(10.22)	126.97	365.04	1134.70
Project IRR								
Capex		21.14	67.10	0.00	0.00	0.00	0.00	0.00
PBT		0.00	0.00	4.52	22.95	45.57	83.07	228.08
Depreciation		0.00	0.00	2.35	2.35	2.35	2.35	1.84
Interest		0.00	0.00	7.56	1.74	(0.00)	(0.00)	(0.00)
Tax		0.00	0.00	0.93	4.72	12.17	26.99	74.10
Pre Tax Cashflow		(21.14)	(67.10)	6.88	25.31	47.93	85.42	229.92
Post Tax Cashflow		(21.14)	(67.10)	5.95	20.59	35.75	58.43	155.82
Project IRR	11.7%							
Project NPV	10.72							
Equity		6.34	20.13	0.00	0.00	0.00	0.00	0.00
PAT		0.00	0.00	3.59	18.24	33.40	56.08	153.98
Book Depreciation		0.00	0.00	2.35	2.35	2.35	2.35	1.84
Principal Repayment		0.00	0.00	9.69	9.69	0.00	0.00	0.00
Equity Cash Flow		(6.34)	(20.13)	(3.75)	10.90	35.75	58.43	155.82
Equity IRR	15.3%							