Sea port plays a very important role in increasing efficiencies for trading between different countries. Maritime infrastructure enhances the global trade and helps in realizing higher and sustainable growth in national income. The significance of marine development was recognized since the early period of the stages of economic development.

The important of sea transport was realized 1000 years ago. The globalization has brought tremendous changes in the international financial system 90 per cent of cargo transport is done through maritime transportation in the world. The maritime transportation is playing an important role in the developed and developing country. More than 60 per cent of the world population leaves within 100 km of the coastline. Every sixth job is related directly or indirectly to the sea. It is cheaper to transport a ton of a coal 5000 miles in bulk carrier than 500 km by rail. The global sea food production was 154 million metric tons in 2001 of which almost 80 per cent came from wild capture fisheries and remaining from aquaculture. The trade was worth 125 billion US dollars and industry provided employment to 40 million people.

The top ten world ranking ports are:
1. Shanghai (China)
2. Singapore (Singapore)
3. Hongkong (China)
4. Shenzhen (China)
5. Busan (South Korea)
6. Ningbo-Zhoushan (China)
7. Guangzhou (China)
8. Qingdao (China)
9. Dubai (UAE)
10. Rotterdam (Netherland).
India having a vast coastline of 7517kms (about 5423kms along the main land and 2094kms the Andaman and Nikola and Lakshadweep islands) it has a vast network of navigable rivers, substantial passenger traffic and internal moment of commodities along with chief skilled and unskilled labor should have been ideal for coastal and inland transport to flourish over 95 per cent of India's trade by volume is carried out through ocean transport. The Government of India owns the twelve major ports through the major port trust act 1963 amongst them Ennore is the only corporate port that is administered by provision of companies act 1956. The existing 200 non major ports are essentially under the jurisdiction of respective maritime boards of the state Governments.

The volume of cargo handled at Indian ports has witnessed a CAGR of 9 per cent in last 6 years. (2005-06 to 2010-11). The total cargo handled at the 12 major ports stood at 545.19MMT in the year 2012-13. The share of minor ports also increased over the years. The total cargo handled by minor ports stood at 387.87 with a share of 41.54 per cent. The share of these ports increased from 25.8 per cent in the year 2001-02 to 41.54 per cent in 2011-12 this is the sign of increasing utilization of state resources in this sector.

The National Maritime Development Program of Government of India with an outlay of Rs100000 crores (approx US$20 billion) with public and private sector during the period was under consideration from 2005. This will definitely encourage and it is observed to be the same in the present status of development.

In spite of remarkable achievements, the comparative performances of Indian ports are lagging behind in many respect compare to global competitive ports. The report of inter ministerial group formed by government of India in 2007 identified the challenges such as inadequate port capacity and navigational aids, bunching of vessels, limited cargo handling facilities low labor productivity, shortage of storage space low average dwell time (1.88 days for imports and 3.78 days for exports compare to 0.6 days at international port. Dwell time dry cargo in Indian ports was 38 days in case of imports and 27 days for exports compare to an international bench mark of 14 day (year in 2005). This speaks itself about the necessity to match these things with international parameters and benchmarks. The national maritime agenda 2010-20 declare by Ministry Of Transport and Shipping Board Government of India is frame with various ambitious targets and to add capacity of Indian ports over 3 billion tones by 2020 through various projects. This will call for massive investment
in marine activities. The growth projections and the underlying potential coupled with a tax -friendly regime in place, will serve to accentuate India's attractiveness in the maritime sector there by helping to achieve the target of this long term ambitious vision.

The Government of Maharashtra with a long coastline of 720 km having 48 noted minor ports have been consistently pursuing the progressive policies of sea transport through a development of minor ports. Maharashtra being leading maritime state having two big major ports contributes 48 per cent of cargo traffic handled in the country .The state consistently pursuing the progressive policies for the development of minor ports which are trade gateways for district. These ports were inoperative before the implementation of development policy through private sector involvement. The negligence towards the development of minor ports resulted into the massive loss of revenue as well as the non-utilization of these resources for a long time up to 1990's. With the formation of MMB in the year 1996 the development was geared up with the private sector involvement. The MMB formulated a policy to support and optimize benefits for all stakeholders. According to this policy the port will be develop on BOOST basis and concession period of 50 years will be given. The Government property in the port will be transferred on leas basis, and the equity participation of the Government would be up to 11%, in addition tax relief will be given to companies. These ports are now on a progressive path of development since last 10-15 years. To supplement the existing major port, M.M.B is targeting to create commercial and captive ports. It is identifying opportunities for the development of coast based economic activities ,such as fishing ,fishery, harbors, shipbuilding ship repairs ,ship breaking and marine passenger traffic etc.

The Government of Maharashtra policy towards creating infrastructural facilities through private sector support on Build, Own, Operate, Share and Transfer (BOOST) and with a concession period sufficiently for 50 to 60 years will boost the activities in the state. The potential sight s identified by the MMB through the private sector participation. Many of them are in the pipeline where as the ports like Dighi, Rewas, Aware, Jaigad and Redi have started their operation with additional capacities.

The state's share in cargo handling through minor ports is rapidly rising. The major ports in the state have shown tremendous performance with a share of 48 per cent in the total cargo handle by the country.
Having such an optimistic policy for sustainable development of ports and shipping the projected growth can be achieved provided that these projects are strictly implemented in time to avoid financial variations that may occur due to delay. Still there is wider scope for the development of ports as well as the inland water transport system, ship construction, ship repair yard, ship breaking etc. in the state.

The Ratnagiri and Sindhudurga districts have good potential for development. The lengths of coastline of these two districts are 237kms and 120kms respectively. It is roughly 50 per cent of Maharashtra's coastline. The potential will be pulled with completion of the phases of development of minor ports in operation in these districts and commissioning of some new ports which are at completion stage. The importance of them are, development of Greenfield port facilities at Dhamankhol bay at Jaigad district Ratnagiri, for coal and bulk cargo already reached at 5MTPA. Development of all weather and multipurpose port is at Vijaydurga for dry bulk, container and liquid cargo with the capacity of 75MTPA. Development of captive port facility at Girye bay for coal with the capacity of 15MTPA and Development of All weather and multipurpose port at Redi for dry bulk, container, liquid with 3.3 MTPA.

There is also scope to augment marine offshore activities particularly in the Sindhudurga district. Here seaport transport through minor ports itself is at the development stage. With the exception of Redi port which is the only efficient port in operation at present. If proper infrastructure is provided, we can realize the dream of optimizing the resource utilization by way of creation and development of commercial ports in this region.

The Maharashtra state has a coastline of 720 kms. There are 48 minor port limits from Dahanu on the north to kiranpani on the south covering five coastal districts viz., Mumbai suburban, Raigad, Ratnagiri, Sindhudurg and Thane, known as the Kankan coast of Maharashtra. Out of the 48 minor ports limit, In addition, there are 35 navigable rivers and creeks, which offer a vast potential for development of inland water transport.

Development of ports in the state assumes importance in view of growing industrialization along the coast, which also helps to reduce congestion of roads and relatively cheaper mode of traveling.

The Government of India under through the port Trusts is responsible for the development of major ports in India (while non major ports are developed by the respective state maritime Boards. Up to the September 1996, Port development
activities were looked after by the Ports Department, Government of Maharashtra headed by Chief Ports Officer.

In order to provide more flexibility in development and administration of minor ports, the Government of Maharashtra established the Maharashtra Maritime Board (MMB) in October 1996 under the Maharashtra Maritime Board Act, 1996 (MMB Act) as an autonomous body for implementation of the following activities:

1) Promoting cargo movement by developing the ports to boost the economic activity;

2) Enforcing maritime Acts and Rules for administration and conservancy of ports, regulating traffic, revising the fare structures from time to time, licensing of crafts etc.;

3) Developing inland water transport for cargo as well as for passenger movement in inland waters of the state; and

4) Carrying out hydrographic surveys and other allied investigations along the coastline and acquiring modern survey equipments, flotillas, navigational aids to carry out its activities efficiently.

With a view to develop multi-user port facilities capable of handling all types of cargo like bulk and break-bulk, containers, petroleum and chemicals, the State Government has decided to develop a few minor ports in the state which have got enough potential and economic viability.

The port policy announced by the State Government has sought to develop the minor ports through private sector participation. The policy matters of M.M.B. is given below:

The port would be developed on Build, Own, Operate, Share and Transfer basis. Concession period would be 50 years inclusive of 5 years construction period. All the government property in the port, taken up for development will be transferred on lease basis to the company entrusted with the development of port.

The company will raise the capital required, develop the port, provide all services and manage the port as per the agreement entered into with the state Government.

The state Government's equity participation may go up to 11 per cent for the port and cost of Government land which is proposed to be used for the port development, may form part of the State Government's equity.
The State Government would appoint two Directors on the Board of the company which is selected to develop the Port. There will be exemption from payment of registration fee and stamp duty.

The MMB acts as a nodal agency for providing all facilities. A coordination committee will be constituted under the chairmanship of the Chief Executive Officer.

The seven minor ports have been identified for development under private sector. Imposed sites of the first phase development are as follows:

The planning of major ports is done by the Ministry of Shipping and Transport on the basis of plans drawn up by port trust and in consultation with other organization like the Planning Commission, National Development Council, Ministry of Commerce, Ministry of Finance etc. Major Port Trust Act 1963 empowers the Central Government to constitute a Board of Trustees for each major port in India.

It is the port trust, which is responsible for the management of ports property, control, maintenance and operations at the harbour. It is also empowered to levy dues on cargo; control pilot services, conservancy, lighthouses, Signal station; regulate harbour traffic; provide and maintain launches, barges, tugs etc.; improve the harbour; prevent pollution and make regulations governing service conditions etc.

A port trust comprises a chairman and a Deputy Chairman, if necessary appointed by the Centre, and not more than 19 other trustees in case of Mumbai, Kolkata and Madras ports, and not more than 17 for the remaining ports. The trustees represent major interests like port harbour, mercantile marine, customs, state government representative, defense services, Indian railways, ship-owners, owners of sailing vessels and shippers. A representative of the Ministry of Shipping and Transport is also being appointed since 1980. Almost all major interest is represented on the port trust; what is called for is their coordinated effort to fulfill national objectives.

There are other authorities also at the port like health officer, customs mercantile marine and dock labour board. The port health officer is responsible for the clearance of all ship entering the port so as to prevent the berthing of a ship where either passengers or crew are suffering from a communicable disease. Customs officer at the docks, jetties or bonders, examine all good weather imported or awaiting shipment. Under the Customs Act, 1962 they are administered and collect revenue from duties levied on various cargos passing through the port. The port authorities can land and ship goods from places specified within the port area by the customs. The
goods landed must await appraisal by the customs staff in accordance with the laid down procedures. These procedures are time consuming and sometime even irritating.

The Mercantile Marine Department of the Centre is to administer various merchant shipping laws and rules relating to the registration and tonnage measurement and crew accommodation of ship, survey of load line and safety of ship; inspection of statutory equipment including life saving appliances, wireless certificates of competency etc. The dock Labour Board constituted by the Centre is to ensure adequate supply and proper utilisation of dock labour. It also determines the wages and service conditions.

The financial resources of a port are raised through its own income, government loans and aid from international financial institutions like the World Bank. In all cases direct expenditure incurred by government as well as the loans drawn by the port authorities are required to be paid back from the port’s revenue earnings. All major ports function on the basis of financial self sufficiency, they are expected to meet their current operational expenses, repay loans and interest thereon from the revenues earned. The capacity of different ports to bear the overall burden differs according to the pattern of traffic and its volume, cost of maintaining the port and debt burden. Bulk oil and bulk are earning considerable revenue without involving corresponding maintenance expenditure. The new projects are faced with the problem of heavy capital outlays and the trade is being made to bear the cost of heavy debt servicing along with high operational expenses. Sometimes certain ports are called upon to handle unexpectedly heavy cargo traffic which they are unable to bear.

Port facilities cannot be built overnight to meet sudden demands like the heavy import of food grains, through vital but low rated from the ports financial angle. The financial status of a major ports can be evaluated in isolation since port is one of the instruments in building national economy, its financial perspective. A port might be running in to a loss but fulfilling an important development objective.

9.1 CHALLENGES

For the development of commercial ports in this region attention should be paid towards the following emerging issues and challenges of concern –
1) Infrastructure

With the inception of port development policy in the state with public-private partnership maximum development is taking place in the state in terms of establishment of new ports and marine related activities. In the districts of Ratnagiri and Sindhudurg, Government had initiated ambitious projects under public-private partnership (PPP) model. The current challenges for fulfillment of these projects are mainly related to the infrastructural constraints. Infrastructural facilities are badly neglected at present condition.

Approach Roads:

The port activities are facing the challenges of rough roads. The location of these ports is 50 to 60 km away from the national highway. The state roads connecting the national highway are narrow and are in very poor condition. If we consider the case of ports at Jaigad, we can realize the situation. From Nivali to Jaigad the distance is 42kms. If we consider the average speed of 60km/hr then drive should take max. 45 minutes, but many times it takes 1hr 30minutes a double time merely due to critical road conditions. Therefore infrastructural financing seems to be a major challenge at present.

Railway connectivity:

The Konkan railway which runs parallel to the coastal line will help to boost the port activities. But at present the evacuation of traffic linking to the ports is also a hurdle due to the hilly terrain. Development of railway infrastructure to link the ports like Jaigad, Ratnagiri port and the other proposed ports like Vijaydurg and even to Redi port which are not connected with railway link due to heavy cost of developing railway lines which requires bridges and tunnels.

2 Natural challenges

The hinterland area of these minor ports faces geographical challenges which are natural. There are many Ghats and passes connect to the coast with Deccan. Ports in Ratnagiri are connected with Kolhapur, Karad and other hinterland area through the Ghats like, Kumbharli, Amba, Anuskura, Bawada Ghat. The ports in the Sindhudurg district are connected with this hinterland area through Phonda and Amboli Ghat etc. These Ghats are about 800 to 1100 meters above the sea level. It is very difficult to carry heavy bulk cargo through trucks. The container handling becomes a challenge as these Ghats section are also in critical conditions. There are always traffic hindrances in the rainy season which is obvious. With heavy rainfall a continuous
maintenance and repairs are required which is not done on due time. This is an important challenge for the forthcoming all weather ports in the region.

3 Linking the ports with Hinterland

At present the development of small ports and their linkage to hinterland area is expected to be realized through captive terminals only. At present condition the ports in the region are basically handling raw material imports catering to refineries, power plants rather than exports. Advantage of ports can be made possible only through the heavy investment in road and railway transport and through the development of industries which is critical in nature. Improving efficiency of these ports is depending on adoption of long term suitable policy.

4 Integrated approach:

The coastal water way is cheapest and safest way of transport. Still it is not being worked as a standardized mode of transport. Adoption of integrated approach is very important between inland waterways, coastal shipping ports and the evaluation taking place with proper hinterland connectivity. Such integrated approach will help for improving efficiency of seaborne trade. A multimodal network and transport system is inevitable which is neglected. Increasing investment in the sea borne traffic will require a support from forward and backward linkage. Inland water ways compromising rivers lakes, canals, creeks, backwaters are important and had acquired substantial share in inland transport network. However, potential of this important mode of transport had not been fully exploited. Therefore, increasing investment in development maintenance and regulation of national waterways is an important challenge which had to be mitigated.

5 Port related activities

Development of port related activities such as ship repair yards and ship breaking are important. The long term gain of such activities is tremendous in nature. Increasing bisector support with private investment in this sector will mitigate challenge of promoting these activities with increasing investment.

6 Local support and Involvement

Development of small port and port related activities are always motivated by local support and involvement. It is one of the important challenges to adopt a policy of local people’s involvement in the day today activities in the management. The attitude of private investors at one hand and government policy on the other is not conclusive to realize this social aspect. There are also issues related to availability of
suitable manpower. The availability of skilled and semi-skilled manpower, technical capabilities, and special trained labors are some important issues.

7 Maritime education

To lead a maritime activities at mark, a good training is require to meet a challenges of technicians, good officers, crew, highly skilled personnel in various capacities and resourceful manpower. Maritime institutions and training centers are to be created to boost the activities.

8 Environmental challenges

Port development and environmental protection are the important issues. Proper care is needed to be taken while implementing the project. Exploitation of resources for the short term gain will lead to environmental damage. Efficient monitoring agency to check environmental impact is one of the important issue and challenge.

9 Competition

Challenges of competition are unavoidable. The competition between sea mode transport and inland transport emerges as greater attention and priority is given to inland transport. The competition amongst the minor ports in the region with the ports located in the nearest states like Goa and Karnataka and with the state itself is possible may be in the future.

9.2 FINDINGS

The foreign trade of a country is said to be an engine of growth. The maritime and port development activities are important trade linkage. Port development and coastal shipping in India had reduced the strain on overburdened surface transport system. It acts as complementary to rail as well as road transportation. Still there are some critical issues of Indian ports such as congestion, poor infrastructure due to which transshipment is preferred over foreign ports. These hindrances call for measures to achieve growth in future.

The MMB is playing an important role for the development of minor ports through private sector participation. It had indentified eminent business houses interested in developing ports in the different locations. Some of them have started operation. The port development activities can still be encouraged by overcoming some challenges which are in the form of infrastructure environmental, connectivity and development of coastal industry as a whole.
The district Ratnagiri with a coast line of 237km is merely a maritime district with huge potential of coastal cargo handling through the development of minor ports. With the initiation of some important projects by government of Maharashtra through Maharashtra Maritime Board the share of cargo handling through minor ports is increasing over the years. There is still scope for developing marine activities through other marine activities such as repair yard, ship building, ship breaking etc.

In the district Sindhudurg, another maritime district in the state having a coast line of 120 km is also having potential sights of minor ports in the state. The port activities in the district are not geared up to the extent of its capacities. The Redi port is the only port in operation which is handling single cargo i.e. bauxite. The small jetty owns by state Government at Vijaydurg handled a negligible amount of molasses cargo. However, the MMB had indentified the port site at Vijaydurg and it has signed an agreement with a private company to create an international standard port at Vijaydurg. The other ports which are to be developed with private sector participation are port at Kirapani and a policy of improving the efficiency of Redi port. Hence, a lopsided development is observed between the various coastal districts call for ensuring balanced development along the coast.

The overall development of the marine activities has many issues and challenges. Since the marine development is a long term policy matter a suitable long term policy of resources utilization is not followed. Many of the expert’s view that ad-voc policy for short term gain will not be suitable which seems to be exist at present. In spite of motivating private sector and its own share in developing minor ports in the region, infrastructure facilities, rail road linkage are neglected. Poor infrastructural facilities are becoming hindrance for the port development in this region.

Dilip Bhatkar a well known mariner and familiar personality in the marine activities of Konkan coast of Maharashtra, presently MEDC (Maharashtra Economic Development Council) Regional Director is of the opinion that Jaigad port of Ratnagiri district and Vijaydurg port of Sindhudurg district have very good potential for development. The average height of mountain terrain very close to the port is 90 to 120 meters above sea level in Ratnagiri and Sindhudurg districts. The needs and features which are totally different from other Konkan districts like Thane and Raigad. The ports in these districts have close vicinity to Mumbai. Apart from these geographical conditions, coastal line features, regional contours etc. are different in
Ratnagiri and Sindhudurg districts in comparison with these districts. Therefore development measures need to be viewed in different angles.

The development of port facilities with local people's participation is to be implemented. Local technician's engineers, professionals, even polytechnic and ITI educated local girls of Konkan regions should be involved for working in the projects.

The repairs under water area of ship require Dry Dock facility. There are very few Dry Docking facilities on west coast of India. There are 4 to 5 old floating Dry Docks which were built a broad and brought to India. Marine syndicate pvt ltd group is constructing first floating Dry Dock in India under (Indian Register of Shipping) certification in jungle area coast line of Konkan in Jaigad creek.

Ship breaking is also very good activity to be considered on Konkan coast. Ship breaking work is going in big way at Alang in Gujarat. Ship breaking work is also done at Darukhana in Mumbai. There are some good locations in Ratnagiri district for ship breaking activity.

As suggested by Dilip Bhatkar, coastal security has prime importance. Local villagers of coastal region are always very alert and they are true watch keepers on the coast line and in the creeks. Involvement of local people who are residents of coast line will results in assured watch keeping and security of coast.

9.3 SUGGESTIONS

The maritime development policy of Government of India, inter-alia with respective state Governments, shaped and promoted the marine activities in the country. The Government of Maharashtra which has a great maritime tradition is actively pursuing the development of minor ports, captive jetties, intermediate ports and other marine related activities through public -private partnership model and Built Operate Owen and Transfer basis (BOOT). The maritime districts viz, Ratnagiri and Sindhudurg have obviously received a greater attention and in the process the new ports have been set up of which some of them have started their operation. As a result the share of minor ports in the total cargo handled by the state has increased over the years. Considering these facts and the process of development in the state we can provide herewith some suggestions to improve the maritime related activities particularly in the Ratnagiri and Sindhudurg district-
1) **Long term policy**

In regards with utilizations of marine resources in the region a long term policy and plan is needed to prepare by considering financial support from the private sector as well as Government support. This will help for effective implementation of projects and allocation of funding.

2) **Infrastructure support**

Infrastructure plays a vital role in port development and port related offshore activities. Poor infrastructure at ports leads to declining port efficiency. The present status of infrastructure is very poor and critical. Therefore necessary steps are required to provide approach roads connecting the port in these districts. Road and railway connectivity will improve the efficiency of ports.

3) **Integrated approach**

Port and marine activities are linked to road and railway linkage industrial development fishing, coastal securities etc. Since all these activities are handled by the different departments of the Governments. A proper coordinating policy will help to promote further development in this region.

4) **River training and creeks**

The port related activities are depending on allied creeks and rivers. In the coastal region the flow of rivers are very much steeper as they flow from hilly heights towards sea. Proper River training and structuring will lead to all time flow and will avoid sand bars which often observed in the mouth estuaries of the creeks and difficult for shipping activities. This type of development will also help in reducing the maintenance cost in the form of dredging.

5) **Local involvement and support**

In regards with involvement of local society, scope should be given to the local people’s participation in the vast range of port related activities at the various stages. Participation in the decision making process is done at present as regional members are appointed in the Management body of M.M.B. But many times appointment of such members is delayed and the purpose is not served which are needs to be strengthened. Participation of local businessmen in the share holding can also be done. Such type of initiations by the concerned companies developing the projects and the state Government agencies will help in promoting local employment and the activities in the region without the opposition of the local people which is often observed.
6) **Maritime training and education**

Maritime training institutions and training colleges should be started taking into consideration the ambitious policy formulated at present and the future prospects.

7) **inland water transport development**

Presently Government is adopting inland water transport development policy in the state with huge investment. The focus is given to the rive rime development which is utmost important. In this regard, a policy of internal port connectivity should be followed. Our ports are not internally connected at present. If big ports like Mumbai port and JNPT are connected internally through sea routes we can reduce the burden of these major ports, congestion in the major ports and be reduced and efficiency of ports will increase. This will also lead to reducing burden of road traffic, reduction of cost, improving safety at roads and environmental concern also.

8) **Ship Breaking and Ship Repair**

Ship breaking and ship repair activities have wider scope in this region. The ship repair facilities in the form of dry docking can be promoted. The ship breaking projects can also be started in the line of Gujarat Government which is promoting these activities in the state.

9) **State Owned Ports**

The state owned minor port can also be initiated in the state which will act as a role model and direct the activities for private minor ports in the state.

10) **Coastal Updating**

A special attention is needed to give towards updating the maritime information. Recent mapping, hydrographs, Coastline survey are important aspects which are to be constantly updated.

11) **Coastal Security and Environment**

Costal security as well as environmental concerns is the responsibilities of all the stakeholders. Strict enforcement of environmental and security related regulations in needed to enhance environment friendly development.

9.4 **LIMITATIONS**

Present study is primarily relied on secondary source of data. The availability of official data in the updated forms determines the practical applications. Practically it was difficult come across getting detailed information of private ports for case study.
An effort has been made to overcome the difficulty by applying the primary data support to this study.

9.5 SCOPE FOR FURTHER STUDY

The study can further be enlarged through undertaking the comparative analysis of port development in other maritime states like Gujarat and by a case study of the leading minor ports developed country.