

## Shipbuilding: Innovative Interventions Required

<b>Intervention 1 : Scheme for setting up dedicated SEZ for shipbuilding sector</b>			
<b>S.No.</b>	<b>Tasks</b>	<b>Key Stakeholder</b>	<b>Innovation</b>
1	<p>Accord export status for building ships which are built in India for Indian owners. This can be done by providing SEZ status for existing as well as upcoming shipyards. Further, provide the following in all the SEZs</p> <ul style="list-style-type: none"> <li>• Single window clearance for all the necessary clearances required such as: Environmental clearance, clearance for power &amp; water requirements and security clearance of the location etc.</li> <li>• Invite component manufacturers/ancillary industries to set up units in SEZ; viz. HVAC, boiler plant, anchor chain, shaft alternator, valves, marine duty pumps, lashing range, fire-fighting, inter communication, air compressor, winch towing winch etc. This can be done by providing export status to these enterprises and providing soft loans through financial institutions like SIDBI</li> <li>• Formulate direct as well as indirect subsidy schemes for players in shipbuilding SEZs. Direct subsidies can be in the form of cash incentives for the reimbursement of direct investment costs, incentives for labor and research and development (R&amp;D) etc.; while indirect subsidies would be in the form of relief from land property taxes etc.</li> <li>• Set up testing and certification labs of global standards (through technical collaborations) for all the shipbuilding equipment &amp; components.</li> </ul>	Ministry of Commerce, Ministry of Shipping	Knowledge Creation and Commercialization
<b>Issues Targeted</b>			
<ul style="list-style-type: none"> <li>• Non-availability of organized component and service supply manufacturer.</li> <li>• High interest rates on working capital in India as compared to competing countries (Difference as high as 5-6% as compared to competing countries)</li> <li>• Absence of a strong ancillary industry</li> <li>• Inverted duty structure. All ships including dredgers imported by Indian owners from abroad are fully exempted from customs duty. However, customs duty of the order of about 35% is imposed on all capital equipment required for shipbuilding.</li> <li>• Present requirement to obtain multiple clearances covering land acquisition, environmental clearance, power and water etc., from various departments for new projects in shipbuilding acts as a deterrent to attracting investment into this sector.</li> </ul>			

<b>Intervention 2 : Focused scheme for fostering domestic components &amp; ancillary industries</b>			
<b>S.No.</b>	<b>Tasks</b>	<b>Key Stakeholder</b>	<b>Innovation</b>
1	<p>Focused scheme to induce indigenous production of critical components &amp; equipment for ship-building industry like high quality steel plates, gearboxes, shafting, propellers, generators, switchboards, valves, pumps etc. The scheme will supplement the objectives of the Cluster Innovation Centres to bridge the</p>	Ministry of Commerce, Ministry of Shipping	Knowledge Creation and Commercialization

	<p>demand-supply gaps in multiple aspects of a business and drive need-based innovation in the industry clusters in a localized manner, by prioritizing the needs of the industry and enable agencies like the Government and others in directing their efforts for increased efficacy. Some of the steps that may be adopted are:</p> <ul style="list-style-type: none"> <li>• Compile a list of critical components which have very limited domestic production.</li> <li>• Identify international companies present in the above product categories and encourage these companies to collaborate with Indian counterparts to create manufacturing facilities in India Several measures that can be adopted for the same are : <ul style="list-style-type: none"> <li>• Reduce or exempt investors from India's corporate income tax rate for 5-10 years.</li> <li>• Provide incentives for foreign players who are ready for technology transfer to Indian players.</li> <li>• Provide infrastructure support to shorten to ensure shorter time to market</li> </ul> </li> <li>• Provide dedicated space for ancillary units in the Special Economic Zones.</li> <li>• Provide export subsidies to these units to ensure better access to export markets. This is required to ascertain profitability &amp; scalability of these units.</li> <li>• Reduced excise duty on the identified materials to encourage indigenous raw-materials/component manufacturers to expand their capacities.</li> </ul>		
<b>Issues Targeted</b>			
<ul style="list-style-type: none"> <li>• Dependence on imports for critical raw-materials like high quality steel plates and other structural items.</li> <li>• Absence of a strong ancillary industry</li> </ul>			

<b>Intervention 3 : Foster R&amp;D and design capabilities of Indian firms</b>			
S.No.	Tasks	Key Stakeholder	Innovation
1	<p>Launch a national level scheme to encourage both academia &amp; industry to target efforts in R&amp;D. The scheme should target to implement the following:</p> <ul style="list-style-type: none"> <li>• Provision for funding up-gradation of R&amp;D labs in the private and government sector with sharing basis for the lab up-gradation.</li> <li>• Incentive scheme to reward any breakthroughs in new product development by academia or industry.</li> <li>• Incubation centres for providing supportive framework for the researcher that enables him to turn a technological idea that has an economical-marketing potential into a product of interest for investors</li> </ul>	<p>Ministry of Science &amp; Technology, Ministry of Shipping</p>	<p>Knowledge Creation and Commercialization</p>

2	<p>Creation of innovation centres (within NSDRC) for conducting collaborative research on pay-per-use model. This may be done on PPP model with investments shared between central government, state government and private players. Some of the facilities that should be created are:</p> <ul style="list-style-type: none"> <li>• CAD/CAM packages such as Tribon, Foran, Autoship etc.</li> <li>• Drafting</li> <li>• Design development</li> <li>• Dimensional management</li> <li>• Incubation centres for providing supportive framework for the researcher that enables him to turn a technological idea that has an economical-marketing potential into a product of interest for investors</li> </ul> <p>Further, these centres should be made responsible for conducting training programmes for the industry in the above areas.</p>	<p>Ministry of Science &amp; Technology, Ministry of Shipping</p>	<p>Knowledge Diffusion &amp; Absorption</p>
<b>Issues Targeted</b>			
<ul style="list-style-type: none"> <li>• Limited investment in R&amp;D in ship designing and innovation.</li> <li>• Inadequate skills &amp; infrastructure availability for conducting research in the areas of ship designing, ship building technology &amp; equipment design etc.</li> </ul>			

**References:**

**1. China’s Shipbuilding Story : Increased focus on R&D**

China is the one of the leading shipbuilding country in the world. As of the end October 2010, China's production completion of shipbuilding was 50.90 million deadweight tons (dwt), an increase of 58.4%, and new orders of the industry were 54.62 million dwt or 2.9 times that of the same period last year, respectively.

Following an initial period of basically low-end commercial shipbuilding - such as bulk carriers and container ships - China's shipyards have since the mid-1990s progressed toward more sophisticated ship design and construction work. In particular, moving into commercial shipbuilding began to bear considerable fruit beginning in the late 1990s, as Chinese shipyards modernized and expanded operations, building huge new dry-docks, acquiring heavy-lift cranes and computerized cutting and welding tools, and more than doubling their shipbuilding capacity. At the same time, Chinese shipbuilders entered into a number of technical cooperation agreements and joint ventures with shipbuilding firms in Japan, South Korea, Germany, and other countries, which gave them access to advanced ship designs and manufacturing technologies - in particular, computer-assisted design and manufacturing, modular construction techniques, advanced ship propulsion systems, and numerically controlled processing and testing equipment. As a result, military shipbuilding programs collocated at Chinese shipyards have been able to leverage these considerable infrastructure and software improvements when it comes to design, development, and construction.

To promote indigenous innovation and R&D capability of domestic enterprises, apart from improving existing ship models, China has invested more on high-tech and high value-added technologies such as

environment-saving and energy-efficient shipbuilding, maritime equipment projects, and critical internal equipment within ships. China is also developing its offshore drilling rig industry as a future alternative to traditional shipbuilding. Many large enterprises in China are starting their production of rigs for both domestic and foreign orders.

<b>Intervention 4 : Measures to improve labor skills &amp; productivity</b>			
<b>S.No.</b>	<b>Tasks</b>	<b>Key Stakeholder</b>	<b>Innovation</b>
1	<p>Increase industry participation in the existing institutes working in the area of skill building for shipping sector (like IMU). A panel may be made within the institutes comprising of senior people from the industry as well as international experts in the field of:</p> <ul style="list-style-type: none"> <li>• Naval Architecture and Ship Designing (Basic and Detailed)</li> <li>• Ship Building Technology (Block Production Techniques, Construction Super vision/ Surveying)</li> <li>• Equipment Design and Production Techniques (Ancillary Development).</li> </ul> <p>Specialized courses should also be conducted for existing workforce in the industry in the above mentioned areas.</p>	Ministry of Shipping	Knowledge Diffusion and Absorption
2	<p>Infrastructure updation in existing ITIs &amp; Polytechnics</p> <ul style="list-style-type: none"> <li>• Introduce courses for inducing more number of semi-skilled labor in the industry. For this, specialized courses in the areas of welding, fitting etc. should be arranged.</li> <li>• Set up non-engineering courses for metallurgy.</li> <li>• One time capital grant may be given for upgrading the infrastructure of such institutes. Recurring expenditure should be met by the concerned institution.</li> </ul>	Ministry of Shipping, NSDC	Knowledge Diffusion and Absorption
<b>Issues Targeted</b>			
<ul style="list-style-type: none"> <li>• Inadequate skills &amp; infrastructure availability for conducting research in the areas of ship designing, ship building technology &amp; equipment design etc.</li> <li>• Lack of basic skills like welding and fitting.</li> </ul>			

<b>Intervention 5 : Provide database &amp; technology support to domestic firms</b>			
<b>S.No.</b>	<b>Framework for Innovation</b>	<b>Key Stakeholder</b>	<b>Innovation</b>
1	<p>Provide database &amp; technology support to domestic firms in the following areas:</p> <ul style="list-style-type: none"> <li>• Quality standards followed globally for various components &amp; products.</li> <li>• Technology- and innovation-related international journals from major publishers.</li> <li>• Country wise/OEM wise SOPs for testing the products. This will include testing labs availability and tests</li> </ul>	Ministry of Science & Technology	Knowledge Diffusion and Absorption



	<p>conducted by them, fees for conducting the tests etc.</p> <ul style="list-style-type: none"><li>• Database of industry experts (either retired or from the industry) who can be contacted by domestic firms for any kind of technical support required. For the same, profiles of the experts need to be invited and kept in a repository. On receipt of any request from the industry, communication can be sent to the relevant experts and the interested one's can then be suggested to the requestor.</li></ul>		
<b>Issues Targeted</b>			
<ul style="list-style-type: none"><li>• Lack of awareness of global standards for among domestic firms</li><li>• Limited investment in R&amp;D in ship designing and innovation.</li><li>• Inadequate skills &amp; infrastructure availability for conducting research in the areas of ship designing, ship building technology &amp; equipment design etc.</li></ul>			