

POST SHOW REPORT

THEME
**CONSERVING
ENVIRONMENT BY
SUSTAINABLE USE OF
MARINE RESOURCES**

**21-23 SEP
2022**
GOA MARRIOTT RESORT & SPA

CLEAN SEAS FOR BETTER ECO-SYSTEM

Summarizing the conference, the topic of discussion was to propose suitable acts to nurture and protect the life of our planet. As oceans and seas cover two-third of the earth, we ought to take good care of the marine life. Marine life itself is threatened by pollution & marine debris as it injures and kills it & also interferes with the navigational safety, and it is hazardous for human health too. Our oceans and waterways are polluted with an extreme variety of marine debris, such as cans, plastic bags, fishing gears, abandoned vessels, and last but not the least, one of the biggest culprits of the pollution of the sea, that is, bilge discharge from ships and other installations. By the close of the SpillTECH 2022 conference, the problem that threatens the life of our planet would have been analysed along with their solutions for a safer future of the ocean and ocean resources.



Spill management is essential to be carried out to save the earth from pollution occurring due to accidental spills. It has 4 C's, namely, Communication, Control, Contain, and Clean-up. Communication refers to bringing in notice even the smallest spill, because a small spill can also turn into a big accident and could become extremely hazardous. Control refers to know where to inform and whom to inform to, meaning, it is vital to know clearly where the information would flow from and what would the channel be. And finally, is Clean-up, which means to clean the place safely and securely with the right kind of technologies and PPE required.

It has also been suggested that a clean coast safe area is critical to the human life and the mother earth. Therefore, all industries should take into consideration incorporating environmental issues into their operations. This would not only impact the environment positively, but also affect the bottom line and the long-term success of their businesses. Understanding the rising needs for a support system of maritime economic activity, Goa maritime cluster has been launched said the Chief Minister of Goa, Pramod Sawant.





Even though Goa, being a coastal state, benefits of proximity to the sea both in the form of tourism and centre of trade, also makes the earth vulnerable to potentially hazardous spills as well as dumping of waste materials into the ocean by several vessels that have been navigating thousands of miles away. According to a study, the primary cause of the oil spills was the shipping traffics in the eastern Arabic Sea of India's west coast. Focus would be made by ensuring that the coast of Goa would be safe and clean through encouraging the maritime industry to come to Goa for an awareness debate.

D S Nanaware, Director Pipelines, IOCL in his speech told that the demand of energy is likely to increase with a fast pace. Oil forms a significant share in the primary energymix of India as well. In the year of 2021-2022, India has found to be importing 212 million metrics of crude oil all via coastal routes. Almost the entire petroleum products are imported and exported via the single point marine system. Therefore, a massive network of liquid hydrocarbon pipelines has been constructed for transporting a humongous amount of petroleum to and for from the refineries. Indian Oil itself operates more than 15000 km of pipeline network. Any breach in the integrity of petroleum handling assets could lead to spill disasters for life and the environment both offshore and onshore. Hence, investments have been made in replacing aging assets as per the requirement. Oil spill prevention and mitigation preparedness list plan includes maintenance of inventory of equipment's, such as, intertidal, and coastal boom barriers. This also includes pressure cleaning systems, floating tanks, oil dispersant, spray system, oil absorbent pillows and sheets. All these equipment's are kept on hired vessels in ready condition to fight the accidental oil spill. A team of trained personal for operating these equipment's is kept on a standby.

It has also been suggested that audit of offshore installations should be carried as per rules and regulations, after a certain time frame. External safety audits should be done in all 12 major ports of India. An ongoing development is also being carried out from ministry of ports, shipping and waterways to establish a few regional oil spill response centres. This would enhance the oil spill response capabilities to a larger extent.



Even though the data and statistics of incidents of oil spills are reported either via vessels plying through the sea or via satellite, airborne surveillance is also utilized for oil spill detection because satellite data does not confirm it 100%. It is also used because aircraft is the fastest mode of reaching to a potential oil spill. Therefore, it is necessary to carefully select the aircraft, its sensors and equipment as that would be the eyes and ears of the aircraft while detecting. The most important sensor is the electro optic infra-red camera and side looking airborne radar. The new technology implemented worldwide is a combination of hyper spectral sensor combined with a lidar. For deploying the right response to oil detection, it is required to know the nature of oil as well. Therefore, search patterns should be fitted in the mission management systems. Polygons drawn on EO/IR video are transformed to map assisting in coordination and visibility, and the data could be provided to pilots for guidance. Radar and or EO/IR could be used to map area of pollution or any other disaster situation. Mission management systems would also help in detecting the vessels available. As it is essential to pinpoint the possible violators, therefore, this software would be found very useful for vessels that do not have an AIS transponder. Another very important aspect is vessel inspections. Crew coordination is extremely critical for the effectiveness of the operation. Data sharing is very significant, and it can be done via SATCOM, link II and other HF/VHF/UHF links. Another method is maritime broad band radio (MBR). This has an inhouse capability and experience to deliver turnkey solutions for pollution control/ISR/SIGINT/ELINT/COMINT/MPA etc or any aircraft/UAV platforms of end customer. In short, Aerial surveillance is a main element of an effective response to most spills to assess the location and extent of oil contamination and to verify predictions of the movement and fate of oil slicks at the sea.





Heading towards a conclusion, it is important to understand the problems that threaten the life of our planet along with their solutions for a safer future of the ocean and ocean resources. It is necessary to analyze the marine life and the marine eco system before coming up with suitable & workable solutions to nurture and protect the life of our planet. Financial support for clean up and its judgement should be fast tracked & the polluter pays should be at top priority.



Waste and Solid Waste Management is essential to be taken into consideration. There is nothing termed as waste in the nature. This is because sometimes what one individual considers a waste product, for another it would be a raw material. Therefore, having said this, it is vital to manage the waste efficiently. The central objective must be to identify threats to the eco system generated by the waste from ships & developing adequate port reception facility for collection & management of the waste. According to MARPOL, technically no ship from any part of the world is allowed to discharge oil or bilge water into any part of the ocean. So, the recommended solution provided in this conference was the collection, segregation, transportation, scientific treatment, and management of ship wastes. The needs and benefits of Port Reception Facility (PRF) must also be studied and taken into attention.



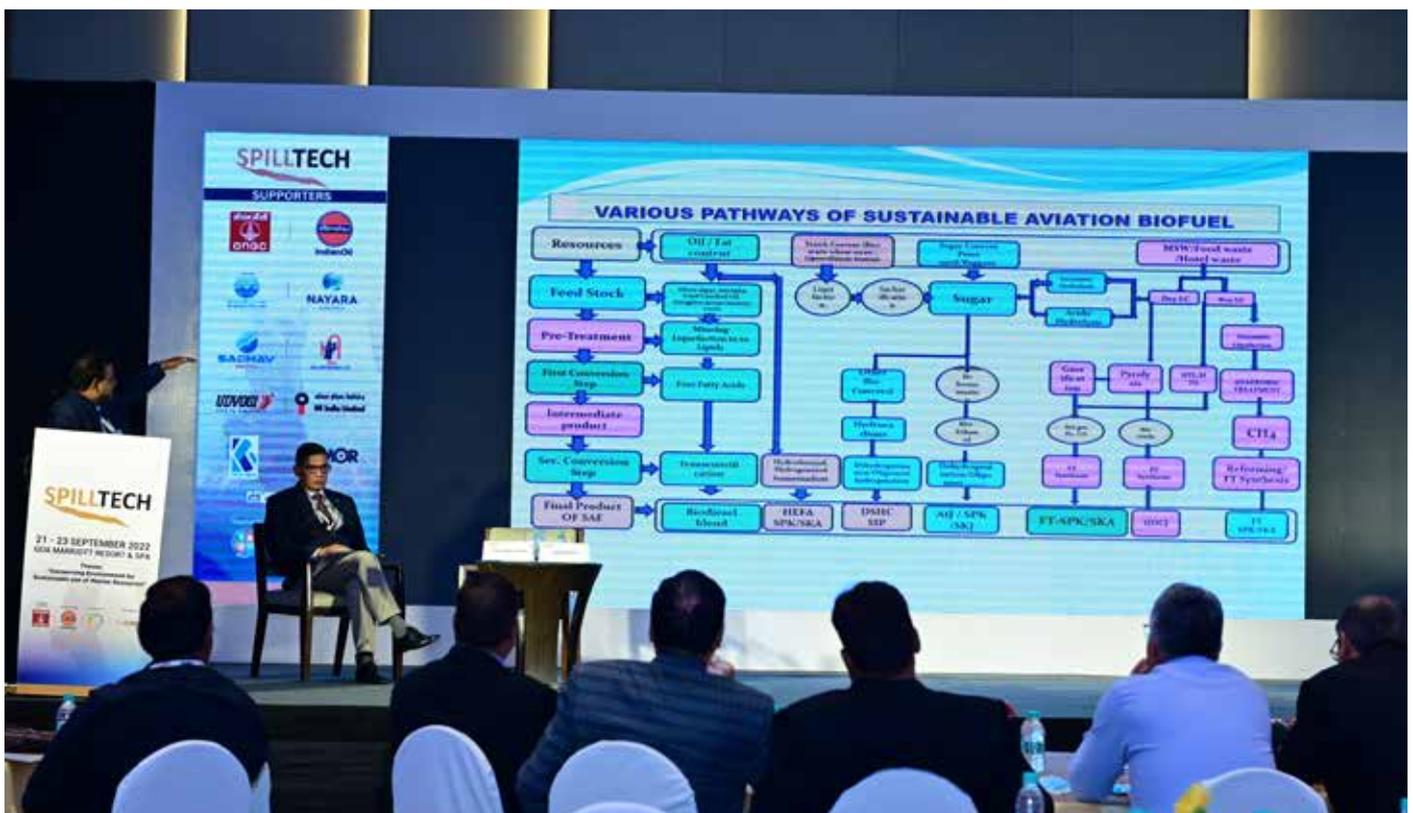
It has been discussed that sources of solid waste are increasing day by day, and management is decreasing. There is no city in India that could claim 100% segregation of waste. Undefined open spaces are simply becoming dumping grounds. Also, toxic plastic pollution is travelling up the food chain, and solid waste is choking the water bodies. If good behaviour would be practised on each level, that is, individual, corporate body, or government-level, then nothing would be a waste in the world, and everything would be a resource. According to sources, India generates 62 million tons of waste annually. 75-80% of municipal waste get collected out of which only 22 - 28% of this waste is processed and treated. The yearly increase in waste generation is around 5%. This is due to the fact that the culture of reusing waste has been forgotten, and a shift has been made towards the usage of disposable items. On the positive side, C & D waste processing plants are being built. This would eventually help in processing the waste and reducing the numbers. Vermi composting and biogas are known as waste managers, therefore, working should be done on these as well. It has been discussed that sources of solid waste are increasing day by day, and management is decreasing. There is no city in India that could claim 100% segregation of waste. Undefined open spaces are simply becoming dumping grounds. Also, toxic plastic pollution is travelling up the food chain, and solid waste is choking the water bodies. If good behaviour would be practised on each level, that is, individual, corporate body, or government-level, then nothing would be a waste in the world, and everything would be a resource. According to sources, India generates 62 million tons of waste annually. 75-80% of municipal waste get collected out of which only 22 - 28% of this waste is processed and treated. The yearly increase in waste generation is around 5%. This is due to the fact that the culture of reusing waste has been forgotten, and a shift has been made towards the usage of disposable items. On the positive side, C & D waste processing plants are being built. This would eventually help in processing the waste and reducing the numbers. Vermi composting and biogas are known as waste managers, therefore, working should be done on these as well.





Several offshore wastes namely, production wastes, exploration wastes, human derived wastes, and other industrial wastes. The best waste reduction strategy is to keep waste from being formed in the very first place. Waste prevention strategy would include inventory management, improved operations, materials substitution, and equipment modification.

Suggestion provided for waste management is Zero waste Goa concept. According to this concept, Goa waste management corporation collects waste from 400 different educational institutions of Goa, and then distributes 4 ways segregation bins to all these respective institutes. It clearly labels on them demonstrating which bin would be used for which kind of waste. After doing so, it collects about 20 to 30 tons of segregated waste from education institutes across Goa on a monthly basis, and then sends the non-recyclable waste to the cement factories where they use it as a fuel and as an alternative of coal. That is why they are referred to as refused derived fuel. Then, a thermophilic bio reactor is used to convert all the organic waste, such as, food, into gas, sludge, and slurry. The gas is further converted into electricity which is 0.8 to 1 megawatt of electricity per day basis. The sludge goes into the in-vessel composting in order to be converted into compost, which is a preform of fertilizers. And the slurry is put into an effluent treatment plant to be converted into recycled water. This water is used for floor cleaning, flushing, and gardening. Previously, a dump site in Saligao was converted into a solid waste management facility by the usage of remediation technologies. More of such solid waste management facilities should be created. Also, bio digester-based toilets IHHL, should be installed.



Various conventional treatment techniques for water and air pollution were explained. Ozonization treatment for water was also briefed. Pollution should be controlled with the objective of improving quality of environment. Suggestions provided to achieve this objective was effective implementations of law, maximizing of reuse and recycle of sewage, identification of sites and development of procedures and methods for disposable of hazardous wastes, close coordination and report with the educational institution, association, and the Government of India.

The importance of marine environment was addressed as it plays a vital role in the international trade and recreational activities leading to the generation of wealth and development. Marine resources comprise of fisheries, sea wood, seaweed and biotechnology research supporting different economic sectors and communities. Marine eco system is also a subject to increasing pressure due to its competing uses, resulting from resources, over exploitation and pollution. Recognizing that unorganized human activities are threat to marine eco systems; therefore, global initiatives continue to be implemented for its protection and sustainable use.





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