



Successful management of beach litter at Puri sea beach, Odisha, India

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Introduction

Puri is the greatest iconic sacred pilgrimage destination in India and one of the four abodes of divines and blessed with a scenic Sea beach on Bay of Bengal. Puri beach is also known for its tourist attraction and Hindu sacred place. Every year around one crore tourists visit the state because of its magnificent beaches, the twelfth century Lord Jagannath Temple, nearby black pagoda (The Konark Sun Temple), a UNESCO World Heritage site and the Chilka lake.

Cleanliness of Puri beach has been maintained by Puri Municipality. But due to man power shortage and administrative issue of Puri Municipality, the State Tourism Department has signed a contract in 2nd February 2014 for 10 years with Jagruti Welfare Organisation (NGO), a city based organisation specialising in solid waste management and to carry out the drive on beach cleaning from Hotel Pink House (Pentakota) to Sterling resort (Baliapanda), Puri.

Since then Jagruti Welfare Organisation has been actively involved in beach cleaning and successfully managing the beach litter along with the lifting of garbage on the road running parallel to the beach from Digabareni Square to Swargadwar, Puri. Jagruti Welfare Organisation was felicitated as the "Best Organisation" for Cleaning and Sanitation Work in Odisha on the eve of Independence Day in 2005.

Description of wastes

Solid wastes are the unwanted and discarded wastes coming to Puri beach by three ways: land based, sea based and river based origin. Land based solid wastes are mostly coming to the beach by tourist, local people and drainage from the city. Sea based solid wastes are coming from the fishing vessels, tourist boats and river based solid wastes from a small river known as River Mangalapasses near the Hotel Sterling Resort, Puri and finally join in the Bay of Bengal. Solid wastes are categorised into two types, bio-degradable and non-biodegradable.

Biodegradable wastes are identified as plant leaves, flowers, banana leaf, betel nut and leaf, dead Tulsi plant, fruits, teeth cleaning stick, food packaging material, bamboo basket, sweet corn, ice-cream spoon, newspaper, cotton cloth, earthen pot, brick, palm leaf basket, baby diaper, biscuits, match stick and box, cigarette butt and box, coconut and tender coconut, lemon, wooden stick, paper cup, crab shell, clay diya, egg shell, packaging carton, leaf plate, incense sticks and tissue paper.

Similarly, non-degradable solid wastes are identified as plastic packaging materials, drinking water pouch, plastic bottle, umbrella handle, plastic toy, globes, synthetic cloth, balloon, liquor bottle, hair oil bottle, glass bottle, ice-cream, plastic glass, liquor can, ice-cream cup, tea cup, plastic spoon, polyethylene, thermo coal plate, monofilament twine, thermo coal floats, discarded fishing net, eye glass handle, plastic rope, plastic bag, Dettol bottle, chapal, chocolate cover, and tooth brush.

How was it done?

According to the agreement, manual sweeping and picking of solid wastes is practicing twice in a day (morning and evening). In summer season, from 5.30am to 11.30am in morning & 3.00pm to 9.00pm in evening and in winter season 6.00am to 12.00pm in morning & 2.30pm to 8.30pm in evening is following for cleaning. All together 100 waste pickers (70 female and 30 male) are regularly cleaning the Puri beach. The solid wastes are collected both manually and mechanically and collected in dustbins of 120 litre and 1,100 litre capacity placed along the beach and are transferred to the bigger dustbins as transit bins for transportation through tractors and finally to the refuse compactors which are also introduced (capacity 9 cubic meter) in the recent past for better management of the solid wastes having features for loading, compacting and transportation makes the collection process easy and efficient. Solid wastes are also removed mechanically with the help of Barber surf rake beach cleaner which was imported from Australia. The machine is a hydraulic drive for smooth operation and capable of capturing even the smallest objects from the sand such as glass, cigarette butts and depositing them in the hopper, leaving the sand cleaner and safer. All the solid wastes are transported by both Refuse compactor and Tractor, and disposed at the final dumping point situated at Achia, Baliapanda (Puri) which is the only treatment plant in Odisha where the solid wastes are segregated into bio-degradable and non-biodegradable solid waste. The bio-degradable solid wastes are treated by the biological treatment method and the end product of these bio-degradable solid wastes are utilized as manure for plantation and kitchen gardening. Non-biodegradable solid wastes are segregated into different categories and used for recycling.

The Impact

Before the intervention of Jagruti welfare organisation, the beach was maintained by Puri Municipality, Puri. During that period, proper cleaning mechanism was not there due to several reasons such as manual cleaning by less manpower, non-availability of sufficient dustbin, lack of awareness among the tourist and local people, no mechanical

way of waste collection from the beach, and no proper transportation of the waste to the duping point. The beach was with full of solid wastes and in few places with big stones. But after the contract signed by the State Tourism Department with Jagruti Welfare Organisation, the scenario has been changed completely. Even though, the quantity of solid wastes has increased to 50 % in comparisons with the previous 4 years due to increase tourist, venders, and population, but Jagruti Welfare Organisation is maintaining the beach properly with proper cleaning mechanism by both mechanically and manually year-round.

Economic aspects

The Tourism department of Odisha has funded this project and investing Rs. 97 lakh annually to keep the beach clean.

Conclusion

There is no proper segregation mechanism for organic, inorganic and recyclable waste at beach site. Lack of implementation of legal framework exists in our country to address such solid wastes. There should be proper institutional arrangement with appropriate technology, operational management, human resource development, public participation and legal frameworks for an integrated solid waste management along the beach. Municipality, political authority and most importantly the common people should be more conscious about beach cleanliness and solid wastes problem which is now a global concern. However awareness among the general public through mass media, meetings, posters and activities of different NGOs can act as a preventive measure for such an environmental degradation due to solid waste. A regular drive to remove the encroachment occurring along the beach area and carry out an eviction drives in a regular interval is highly essential. Utilization of plastic bottles and other non-biodegradable wastes in road making is a future breakthrough. In spite of many future prospect and potentialities of this particular pilgrimage tourist destination did not grow to a great extent. The scenic beauty of Puri beach is yet to be explored properly both by domestic and international tourists.

Acknowledgement

We are highly grateful to Mr.Santosh Kumar Mahanty, Project Head, Jagruti Welfare Organisation for providing all the necessary information and support during the entire survey period.

