SWARN : An ICT Based International Collaborative Business Model for Limiting Generation, Disposal and Ensuring Public Participatory Management of Waste

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I propose an international collaborative infrastructure (ICI) along with an ICT based public participatory business model (SWARN) for waste management. ICI will assign countries yearly Ecological Credits (ECO) based on their population, 1 ECO = Right to produce 1 ton waste. Countries will commercially trade with ECOs to deal with their waste production scenario. ICI will monitor waste management scenario through SWARN. SWARN uses public feedback to provide effective & efficient location-based waste collection services. The model has economic incentives for people to encourage pre-segregation of waste at source. Also the chain declines further processing if the waste is not segregated at any step. This ensures that Recyclables and Organic wastes are collected in separately. The recyclables along with prepared compost from Organic wastes will be sold to corporations for sales revenue. In order to assess the viability of the SWARN in Indian urban areas, we executed pilot study of SWARN with collaboration of Local Municipal Council (BMC). 2 Execution of 10 days each with 25 houses involved in each are performed, granting 20% of sales revenue as incentives to participants. A mathematical model is developed to calculate the maximum effective management cost(s) through SWARN which is $64.54/ton vis-a-vis the current system which is $85/ton and similar IOT based system Ecube Labs to be $68/ton. We find SWARN cost-effective, advantageous, Besides it offers public participatory, economic management of waste. ICI along with SWARN offers limiting of generation, disposal of waste and ensuring public participatory, economic management of waste.

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