

e-Poster

Recycling 2021



8th International conference on
**Recycling, Pollution Control and
Waste Management**

August 06-07, 2021 | Webinar

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A study on erp with special reference to esrpl

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Extended Producer Responsibility or EPR, aims to make producers or generators of plastic, more responsible w.r.t. the production of plastic (up-stream process) and product life cycle through a waste management infrastructure. It was first introduced in India in 2012, for ewaste/ electronic waste. EPR challenges with implementation in India are many given the volume of waste and the expanse of the country. This study is done to understand EPR of an individual company the procedures, challenges and opportunities of EPR in company is identified. This study also covers the policy instrument used for implementation of extended producer responsibility in of the company. Study is analysed using the descriptive method

INTRODUCTION: Principles of extended producer responsibility (hereinafter referred to as 'EPR') have been the core of most of the recent policies and legislation dealing with the end-of-life management of recyclable goods. The rising consumption of a range of complex durable goods over the years has resulted in a serious environmental problem. Proper management of the waste thus generated has been a matter of serious concern for policy makers. The authorities in the last decade has imposed the burden on the producers of these goods to be responsible for their end-of-life management. The producer may also choose to delegate this responsibility to a third party, a so-called producer responsibility organization ('PRO'), which is paid by the producer for used product management.

Advantages

- Producers can be financially incentivized to design more sustainable and environmentally friendly products when facing financial or physical stress of recycling their products.
- Using fewer materials and designing products to last longer can directly reduce producers' end-of-life costs.
- As EPR policy becomes more mainstream, it puts more pressure on countries that export E-wastes. This will discourage them from further exporting E-wastes and encourage them in building recycling facilities of their own.

Disadvantages

- It is speculated that laws could increase the cost of electronics because producers would add recycling costs into the initial price tag.
- There are concerns that manufacturers may use recall programs to pull second-hand electronics off the reuse market, by shredding rather than reusing or repairing goods that come in for recycling.
- Fees are set in place to help incentivize recycling, but this may deter the use of manufacturing with better materials for different electronic products

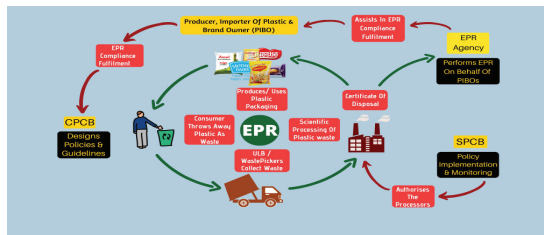
OBJECTIVES

- To know the process of EPR
- To study the role of ERP in ESRPL
- To study the policy instrument used for implementation of EPR
- To study the challenges and opportunities in waste management

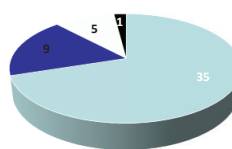
METHODOLOGY

To fulfill the above objectives of the study, data has been collected from the official website of the company and have done an interview with the CEO of the company, for further reference referred various journals and articles

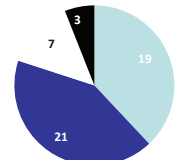
ROLE OF EPR



ROLE OF EPR IN COMPANY



PROPER IMPLEMENTATION OF EPR POLICY



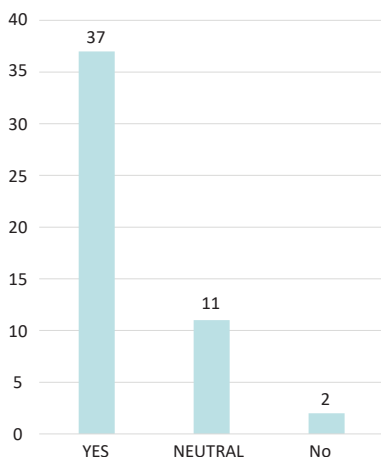
■ A LOT ■ SOMEWHAT ■ NOT SURE ■ NOT AT ALL ■ VERY SATISFIED ■ SATISFIED ■ NEUTRAL ■ NOT SATISFIED

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ANALYSIS

Challenges for waste management	Opportunities for waste management
Lack of stable political structures also affecting the waste management structures	Establishment of a sound legal basis and a sound controlling system
Regions lack suitable administrative structure, definitions of responsibilities and resources	Acknowledgement of the challenges by decision makers and officials
Insufficient funding	Willingness to develop new systems and come up with strategies to finance and organise them
Challenging political dynamics	Willingness in the private sector to assume more financial and technical responsibility
Deficiency in practical experience and qualified personnel	Experience gathered from previous projects
Lack of strategies planning, administrative communication, and definition of political goals	Establishment of specialist authorities for waste management
Lack of awareness of professional opportunities in waste management	Waste management now an option at universities
Underdeveloped capacity to handle the recycling of plastics and other waste. Lack of processing and recovery facilities	Expansion of collection and transport in cities, readiness to employ suitable systems for separated collection

MORE CHALLENGE IN IMPLEMENTING EPR IN COMPANY



POLICY INSTRUMENTS

Policy instrument	Examples
Administrative instruments	<ul style="list-style-type: none"> • Collection and/or take-back (mandatory or voluntary) • Reuse and recycling targets • Setting emission limits • Recovery obligation • Product standards technical standards
Economic instruments	<ul style="list-style-type: none"> • Material/product taxes • Subsidies • Advance disposal fee systems • Deposit-refund systems • Upstream combined tax/subsidies
Informative instruments	<ul style="list-style-type: none"> • Environmental reports/labelling • Information provision to recyclers • Consultation with authorities about collection network
Agreements	<ul style="list-style-type: none"> • Social contracts • Gentlemen's agreement

CONCLUSIONS

Principles of extended producer responsibility (hereinafter referred to as 'EPR') have been the core of most of the recent policies and legislation dealing with the end-of-life management of recyclable goods. The rising consumption of a range of complex durable goods over the years has resulted in a serious environmental problem. Proper management of the waste thus generated has been a matter of serious concern for policy makers. The authorities in the last decade have imposed the burden on the producers of these goods to be responsible for their end-of-life management. The producer may also choose to delegate this responsibility to a third party, a so-called producer responsibility organization ('PRO'), which is paid by the producer for used product management.

Biography

Irin Sutha is having 24 years of experience in teaching and working as an Assistant Professor in SRM Institute of Technology since 2010. She is having work experience in St. Mary's Degree College, Yousufguda, Hyderabad and Villa Marie Degree College for Women, Somajiguda, and Hyderabad. Her Awarded PhD in Retail Management in the year 2014. She has published more than 57 articles in SCOPUS indexed journals and other reputed Journals. She has organized more than 10 conferences, Seminars and workshops. She presented more than 45 papers in National and International conferences. Working with two text books titled Performance Management and Retail Management. She acted as a Convenor and Editor for International Conference on Business Research and Business Finance in SRM IST Recognized as a Research Supervisor in the Department of Commerce, SRM IST and guiding scholars for their PhD works. She is the Member of Board of Studies in SRM as well as other universities. She is acting as an Editorial Board member in various Journals. She also is acting as a Reviewer for Journals Acting consultant on various companies for HR and Accounting. She is Passionate in Learning and Teaching.

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Accepted Abstract

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Social Responsibility, Sustainability, and Public Policy: The Lessons of Debris Management after the Manabí Earthquake in Ecuador

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Natural disasters can generate millions of tons of debris and waste, which has an impact on the environment and poses direct risks to the health of the population, hence the need to analyze public policy and its consequences following the 2016 earthquake in Ecuador. Several in-depth interviews were conducted with individuals active in public service during the post-earthquake management period, together with fieldwork analysis of debris management and the institutional strategies for its recycling and reuse in three of the most affected cities: Pedernales, Portoviejo, and Manta. The environmental impact was examined, including its taxonomy of inconsistencies within public

administration, alongside the processes of decentralization and shared decision-making. Similarly, the links between corporate social responsibility (CSR), public policy, and sustainability were analyzed at both the national and local level for their wider implications and ramifications. The study highlighted the gaps in the management of such a crisis, exposing a lack of ethics and the shortcomings of social (ir-) responsibility in the distorted processes of public welfare in the country, aspects that should rather work in concert to achieve full sustainable development.

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Implementation of Sustainable Development Goals in an Integrated Solid Waste Management

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Quick growth of urbanization and population as well as transformation of industrial and materials have pushed the management of municipal solid waste into a crisis especially for developing markets based on the grand challenge of sustainable development. The compounding complexity of the multiple objectives and dynamic problem constraints required to represent an integrated solid waste management (ISWM) problem in practice is a hugely significant issue for vehicle routing problem studies. The purpose is to introduce a new coordinated framework for a practical and efficient vehicle routing problem considering the tripe bottom line of sustainability. The ISWM multiple objective functions applied in this study incorporate financial, environmental and social considerations to develop a sustainable vehicle

routing problem considering heterogeneous vehicle fleets operating across a multi-echelon logistics network with the optimization goals. An entirely novel development and application of the adaptive memory social engineering optimizer (AMSEO) is introduced and is shown to perform significantly better than the simulated annealing (SA) as well as the social engineering optimizer (SEO) itself. Finally, the potential overall waste disposal cost savings achievable through increased recycling (revealed by framing the logistics problem across several echelons) is of particular significance. The main findings are the practical solutions with the use of sustainable development goals for the ISWM and further application and development of the AMSEO in the routing optimization.

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Waste Wash Water Recycling in Ready Mix Concrete Plants

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Worldwide waste wash-water (WWW) can be considered one of the major environmental problems that associated with ready-mix concrete production if it disposed in inappropriate manner. This study aims to evaluate the potential of WWW recycling in ready mix concrete plants in Jordan. A representative waste wash water sample (400 L) was collected from a basin in a ready-mix concrete company. A pilot plant on the lab scale was fabricated and installed. The treatment system consisted of concrete washout reclaimer, wedged slurry settling pond, slow sand filtration unit, and finally neutralization unit. Water samples were collected from all stages of the pilot plant and analyzed. The collected waste wash water samples were utilized for replacement of well

water (mixing water) at various ratios. Fourteen concrete mixtures were produced and cast as well as tested at various curing ages (7, 28, and 90 days). The results show that the raw WWW could not be accepted as mixing water even after dilution as it led to significant reductions in concrete compressive strength and low workability, the WWW from the settling pond, the filtered WWW and the filtered-neutralized WWW at dilution ratios up to 75% are a potential alternative for fresh water in the concrete industry. Therefore, the current guidelines for mixing water quality should be revised by governmental authorities to encourage the reuse of the WWW.

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Need assessment and capacity building of scavengers for sustainable solid waste management and resource recovery in Ibadan, Nigeria

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Co-authors: Omosulu, Samuel Bamidele: Rufus Giwa Polytechnic, Owo, And Faculty of Environmental Studies

Third world cities have experienced a tremendous waste generating capacity as a result of decades of industrialisation, urbanization and economic prosperity. Scavengers are a form of informal workers in the waste management stream whose activities are pivotal in salvaging repairable, reusable, and rentable solid wastes from open dumpsites for recycling and reuse. Several studies have ascertained that, in spite of the economic potentials and latent entrepreneurship capacities of scavengers, scavenging practitioners are still facing serious social, economic, environmental and occupational hazards which are traceable to citizen's perception about scavengers and dearth of health awareness on the part of the scavengers. The study examines the needs' assessment of scavengers as agents of resource recovery and to improve their capacities through training, in order to achieve sustainability in the solid waste management in the 21st Century, using Ibadan as study setting. Data was collected using a mixed method of quasi experimental and qualitative design. Three phases of quasi experimental designed were adopted viz: pre-intervention, intervention and post intervention, having a control and experimental. The pre-intervention phase utilized a total of 200 questionnaires to elicit information from the scavengers on their needs'

assessment, while, total of 300 questionnaires were drawn to capture the perception of the public on scavenging, using systematic random sampling. Information gathered from both qualitative and quantitative methods were triangulated and findings were utilized to develop a training module for the study. Findings from the study reveal that there is an increase in the knowledge level of scavengers on the benefits and effects of adherence and non-adherence to personal and preventive measures on occupational and health hazards associated with scavenging. The paper equally reveals a reduction in the widespread public idea of scavengers as vagabond, nuisance and threats who always constitute menace to the society, but now being seeing as environmental agents and valued partners working towards achieving a sustainable waste management system in a sustainable human environment. The paper recommends that if governments of Third Word cities especially Nigeria can re-organize train and incorporate the scavengers and all other waste pickers into the standardization process, it will be more attractive to people even with high education, promote harmonious integrated waste management system and sustainability of recycling industries.

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Assessment of the Robustness of Biofil Toilet Technology for the Treatment of Black water

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As black water management is a problem in the densely populated urban poor communities due to the limited space and the high generation of excreta without effective technologies for treatment and its reduction; the Biofil Toilet Technology (BTT) has been developed to help and solve the problem. BTT works by enhancing the symbiotic work of both micro and macro-organisms (earthworms) to treat black water. Extensive use of bactericidal household chemicals for cleaning of toilet rooms may affect the activity of the earthworms and hence it was necessary to test resistance of earthworms towards such chemicals for the optimization of the technology. In this study chloroxynol (Dettol) with concentrations [0.3-5 mg/ml], sodium hypochlorite (Para zone) concentrations [0.6-9 mg/ml] and lactic acid (Mr Muscle) concentrations of [0.7-7 mg/ml] were selected for the test based on the frequent use of these chemicals by the urban and peri urban community householders in Ghana. The results obtained showed that earthworms were able to survive up to 25% when exposed to chloroxynol (Dettol) without any 100% lethal effect; however, earthworms were not able to resist the effect of sodium hypochlorite (Para zone) with 2.5 mg/ml concentration and 7 mg/ml concentration of lactic acid

(Mr. Muscle) which caused 100% mortality effect over the 21 days of exposure time. After 7 days of exposure, due to the toxicity effect of various concentrations of the three test chemicals, the earthworms showed body weight loss of 28.5% and relatively low contaminant removal potential. Up to 37% COD, 30% BOD, 53% TDS and 54% TSS removals were recorded. However, after 14 days of exposure and onwards, the earthworms were able to recover from the toxicity effect and started to increase their body weight by about 38.7%. Furthermore, during this time the earthworms were able to remove the COD up to 86%; BOD up to 89%; TDS up to 92% and TSS 94% from black water in the biofil toilet technology. 4.5 log and 4.6 log removals of pathogenic pollutants namely; E. coli, total coliforms were achieved. Moreover, 87% Helminthes ova removal was attained by earthworms in the BTT. In conclusion increase in the concentrations of the tested chemicals increased toxicity to earthworms which resulted in some mortality, body weight loss and low removal of Contaminants but the survived earthworms after a longer exposure (14 to 21 days) could increase in their body weight as well as efficiency in the removal of contaminants.

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