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Supermarket Food Waste and Current Waste Reduction, Resource Recovery and Reuse Practices-Case Study from Colombo Metropolitan Area, Sri Lanka**Kumara A.M.I.U., Jayathilake W.G.A.N., Drechsel P. *, Fernando S.***International Water Management Institute, Colombo, Sri Lanka***indrajith.att@gmail.com***Abstract**

Estimated as nearly a third of global food production, food waste (FW) is a global challenge of pressing concern. Food losses occur throughout the food supply chain as food is grown and travels from the farmer to the consumer, with the largest losses incurred during transportation and retailing. Towards the end of the chain, the potential economic benefit of reducing waste per food unit is increases since money and resources are invested at every stage of the value chain. A study was conducted to analyse the quantities of FW generation in supermarkets, and existing waste reduction (WR) and resource recovery and reuse (RRR) options, opportunities and challenges. The supermarket-chains selected for the study were Cargills, Keells, Arpico and Laugfs. The commercial capital of the country, Colombo Metropolitan area was selected as the study area. Due to life style and high income by the residents, this area has the highest supermarket density in the country. One executive officer from the respective chain headquarters, and five outlet managers were interviewed from each supermarket-chain (n=20). The analysis focused on vegetables, fruits, fish, meat, groceries, bakery items and packed perishables. Selected outlets (n=5 per chain) were anonymously visited to observe existing practices, and to verify received information. All four supermarket-chains employ various WR/RRR strategies to reduce food waste such as using damage minimizing mechanisms during the transportation and on the shelves by the means of using crates and maintaining chilled environment, avoiding overstock by studying previous sales records, offering discounts for selected food categories to minimize wastage and other strategies linked to quality control (like expiration rate). The composition of the average monthly waste output from a supermarket outlet was dominated by organic wastes from vegetables (46%) and fruits (40%). Fish wastes (6%) and meat wastes (6%) were also noticeable in contribution. The average economic loss for supermarkets due to FW was estimated as nearly 216,000 LKR/month/outlet across the four chains (SD: 114002). Outlets that were practicing comparatively robust WR/RRR strategies such as discounting prices, preparing value added products by means of juices, salads or boiled vegetable packs from the fruits and vegetables were able to minimize associated economic losses. Supermarkets should be encouraged to experiment and support more WR/RRR options such as reuse leftovers as animal feed, energy recovery etc. and motivate customers to buy and consume optically imperfect foods, promoting related regulatory frameworks and seeking other incentives.

Keywords: Food Waste, Food chain, Supermarket, Loss, Quality