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**Subject:** Report on Impact of Waste Management Programs in Assiut University in supporting the Sustainable Development Goals (SDGs)

Assiut University (AU) is a large urban university encamping a total of 21 faculties and 2 institutes in addition to 11 university hospitals, administration buildings, 2 complexes of staff housing, and 2 complexes of students. Assiut University has several waste management programmes to **reduce, reuse, and recycle** (3R) organic and inorganic wastes. Different recycling bins are placed in all areas of the campus to collect paper, plastic, metals, and organic wastes, which are managed by different Stream Recycling Systems. In order to maintain effective management systems of waste (3R), Assiut University implemented Multiple Stream Recycling Systems (Fig. 1) that contribute significantly to the achievement of the **17 Sustainable Development Goals (SDGs)**. These initiatives reflect a strong institutional commitment to reducing environmental impact, promoting the better socioeconomic reforms, and fostering responsible consumption.

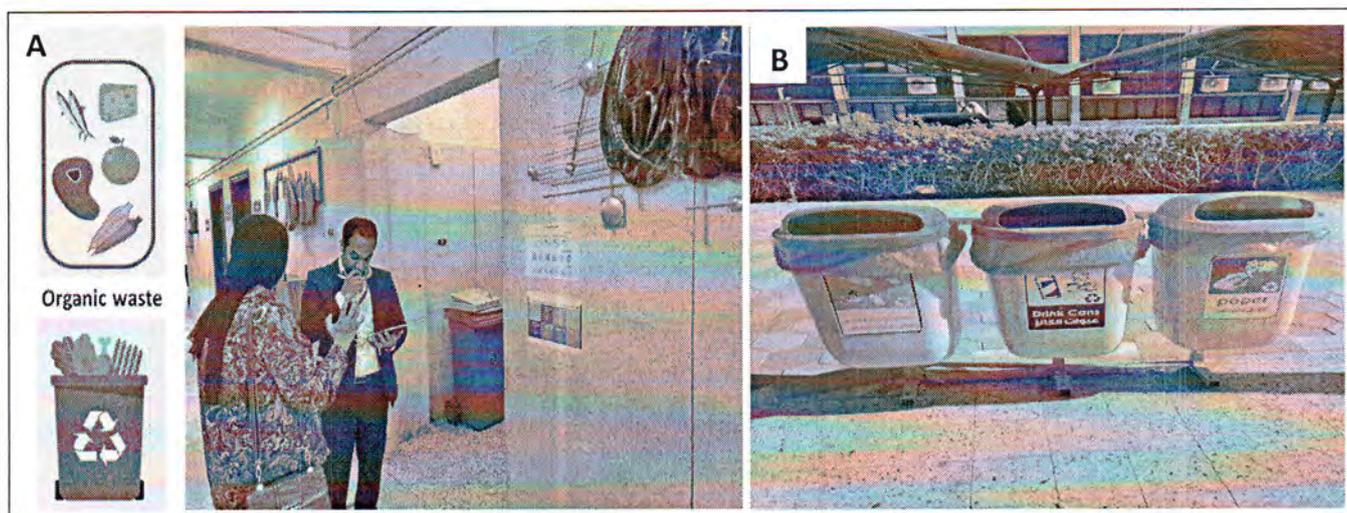




Fig. 1: Examples of 3R Program for Assiut University Waste, A) a **Single Stream Recycling System** of domestic organic waste, B) a **Three Stream Recycling System** of paper, plastic + glasses, and metals in the main campus (e.g., open area of Faculty of Nursing), C) a **Three Stream Disposal System** in the bio-medical faculties (e.g., Pathology lab at the Faculty of Medicine), D) **Treatment of medical waste** by shredding and autoclaving (steam sterilization) in the medical waste treatment facility of the Faculty of Medicine at AU.

Key programs include: Multiple Stream Recycling Systems, which are represented by A Single Stream Recycling System of domestic organic waste in the campus (Fig. 1A), a Three Stream Recycling System of non-toxic and recyclable material in the campus (Fig. 1B), and a Two Stream Disposal System of the toxic and hazardous medical wastes in the bio-medical faculties (Figs. 1C & D), allowing students, faculty, and medical sector employees to easily determine what they can and cannot recycle.

In the Three Stream Recycling System, recyclable items such as paper, plastic, glass, and metals are separated in situ into three material types: paper, plastic + glasses, and metals (mostly cans) into different bins, rather than being all dumped in a large bin in a Single Stream Recycling System. By using the Two and Three Stream Systems, users are typically able to sort non-toxic and recyclable material from toxic and hazardous wastes, ensuring that each stream remains pure and free from contamination, leading to higher-quality recycled materials that are easier and safer to process and less likely to end up collectively in landfills.

In AU, electronic waste (E-waste) materials such as bulk and flat screens, faulty printers, ink-cartridges from printers are not disposed in the normal trash because they contain high concentrations of toxic chemicals and heavy metals, which are harmful to human being and the environment. Thus, E-waste materials are handled by the a special unit at AU to ensure safe disposal of these materials to protect the environment.

In brief, the Key waste management programs implemented to contribute significantly to the achievement of the **17 Sustainable Development Goals (SDGs)** include:

- **Implementation of a campus-wide comprehensive waste segregation systems**, where a Single Streamed line of organic waste collection and recycle, a Three inorganic, hazardous, recyclable, and a Single e-waste program was implemented at the source.
- **Operation of composting facilities** to process organic waste into fertilizer used for campus landscaping and urban farming projects.
- **Establishment of recycling stations in the Faculty of Engineering and Faculty of Agriculture, in addition to partnerships** with a third party licensed waste company with to dispose un recyclable glass, metals, and electronics.
- **Organization of e-waste collection drives and disposal campaigns** to manage electronic waste in accordance with environmental regulations with the same a third party licensed waste disposal company.
- **Campus-wide waste management and recycle campaigns**, encouraging reduction, reuse, and recycling through awareness events, signage, and student-led initiatives.
- **Ban or reduction of single-use plastics** in canteens, vending machines, and university events, replacing them with reusable alternatives and increased the number of water dispensers across the campus to reduce the need for bottled water.
- **Digitalization of administrative processes** to reduce paper consumption and promote environmentally-friendly operations.
- **A campus-wide digital transformation of the educational process** using various e-learning platforms.
- **Inclusion of waste management topics in the academic curriculum**, research projects, and student theses focused on lifecycle analysis, waste-to-energy, and sustainable packaging.
- **Implemented various policy changes** including **Waste Management Policy** and replacement of the old Single Stream Recycling System that ends in landfills with Multiple Stream Recycling Systems. **Purchasing Policy** of products from suppliers that offer minimal or sustainable packaging to help reduce the paper and plastic used in goods packaging. **Events Policy** in which AU encourages organizers of campus events to replace the single-used plastic and paper plates and cups with reusable dining ware to reduce the use of paper and plastic. **Responsible Consumption and Production Policy**: where AU endorsed and

promoted sustainable consumption and production of food by reducing waste and encouraging suppliers to adopt sustainable practices throughout their supply chains.

- **Installation of smart bins or waste monitoring systems** to track collection volumes and optimize waste handling logistics.
- **Community engagement and awareness**, AU become a vibrant place to educate the campus community and promoted a culture of sustainability by hosting several events, workshops, and conferences related to achieving the sustainable development goals (SDGs) in the light of the **Egyptian Sustainable Development Strategy (Egypt's Vision 2030)**.
- AU carry out regular monitoring of the effectiveness of the implemented waste management systems and shared the results with the AU administration and AU community.
- **Collaboration with local governments, NGOs, and private sectors** to strengthen regional waste governance and promote circular economy innovation with partnership with Assiut Governorate.

These efforts directly support **SDGs 2, 3, 4, 6, 9, 11, 12, 13, 14, 15, and 17**, and contribute indirectly to others, including:

- **SDG 2** – Ensure sustainable food production systems by using recycled organic waste as natural fertilizers that increase productivity and production
- **SDG 3** – Reducing health risks through safe waste handling and sanitation
- **SDG 4** – Educating students about sustainable materials management
- **SDG 6** – Preventing water contamination through proper waste disposal
- **SDG 9** – Driving innovation in waste treatment and recycling technology
- **SDG 11** – Advancing sustainable campus infrastructure and communities
- **SDG 12** – Promoting responsible consumption and waste reduction
- **SDG 13** – Lowering emissions from waste and enhancing climate action
- **SDG 14** – Minimizing land and marine pollution from solid waste
- **SDG 15** – Protecting ecosystems through sustainable waste practices
- **SDG 17** – Building waste partnerships for policy and practice improvement

All Kind regards

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