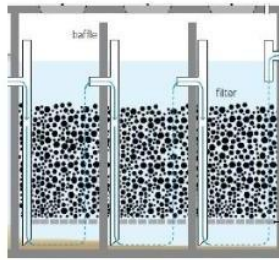


Anaerobic Baffled Reactor (ABR)



Anaerobic Filter (AF)



Ultrafiltration (UF)



Hydroponic System

DESIGN & REVIEW OF THE ANAEROBIC MEMBRANE BIOREACTOR (AnMBR) AS AN ON-SITE AND DECENTRALIZED SANITATION SYSTEM FOR VARIOUS URBAN CONTEXTS & SCALES (INDIA)

Location: Thiruvananthapuram, Kerala, India

Local Supervisor: Mr. Manohar Varghese, Chief Operating Officer,
Eram Scientific Solutions Pvt. Ltd.



**NIRUPAMA
NAIR**

MASTERS OF ENGINEERING

SANITATION SCIENCE
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Considering the looming water scarcity and lack of space in urban centers, decentralized systems are gaining prominence. The Anaerobic Membrane Bioreactor (AnMBR) system is known for its efficiency in producing superior quality output, and the savings it provides in space. I chose to review its feasibility as an onsite and decentralized system, for a few different urban contexts, at different scales. I concluded that the AnMBR system is highly suitable as an on-site and decentralized system for different urban contexts and that as the scale increases, the space savings from the use of the system becomes more evident. The only limitation is the cost of the membrane modules. Where cost is viable, the technology can be readily taken up, with automated membrane cleaning mechanisms in place, that reduce the requirement of human intervention. The use of localized parts, rigorous value engineering, and larger scales of production can further reduce the cost of the system.

