



Office of the Principal Scientific Adviser  
to the Government of India

# Smart Plastic ATM Network (SPAN)

Siddharth Kumar Gopal II/W2W/SSF-22/014

Class 10

St. Thomas Residential School



Deposit Plastic Waste



**INVEST INDIA**  
NATIONAL INVESTMENT PROMOTION  
& FACILITATION AGENCY



Redeem Rewards





Office of the Principal Scientific Adviser  
to the Government of India



# The Plastic Pollution Problem



- A Global Problem
- Impacts the Entire Ecosystem
- 5 billion tonnes of plastic waste in the environment today - Not even a single piece ever produced has decomposed till now.
- Negative Impact on over 260 species of marine life due to 2.5 lakh tonnes of plastic debris in the sea
- Biomagnification
- Ragpickers and their life





Office of the Principal Scientific Adviser  
to the Government of India



# The Inspiration Behind SPAN



## The Spark: Kerala Floods – 2018

- Water bodies dumped back plastic waste, filling the roads.
- Plastics entering water bodies pose a serious hazard for aquatic animals and decrease the efficiency of photosynthesis in aquatic plants and plankton (which contribute the maximum to oxygen in the atmosphere).

The Root Cause : Careless dumping of plastic waste on road sides and water bodies. The concepts of plastics in the oceans affecting aquatic plants and animals may be too abstract for people to take positive action towards responsible plastic waste disposal

The thought: Could there be a better and more scientific way of plastic disposal? Can people be inspired to dispose off plastic waste more responsibly?

## The Idea: Smart Plastic ATM Network

- A kiosk to deposit plastic waste in exchange for a gift !



Office of the Principal Scientific Adviser  
to the Government of India



# The Idea: Smart Plastic ATM Network

- Plastic Pollution : An **Abstract Concept**, No Negative Impact at the Time of Disposal
- Solution: **SMART Plastic ATM Network** in public places such as railway stations, schools, offices, residential colonies
- **Biometric Authenticated Plastic Bank Accounts** to collect plastic points
- Points rewarded based on weight and quality of plastic deposited – evaluated using smart sensors within the ATM
- **Plastic Points** May be Redeemed for Gifts Ranging from Books, Toys, Food Packets or even instant cash (subject to market regulations)
- Gifts sponsored by **CSR arm or marketing budgets** of companies
- **Reverse logistics network** to be established to transport plastic waste to recycling units

Deposit Plastic Waste



Redeem Rewards

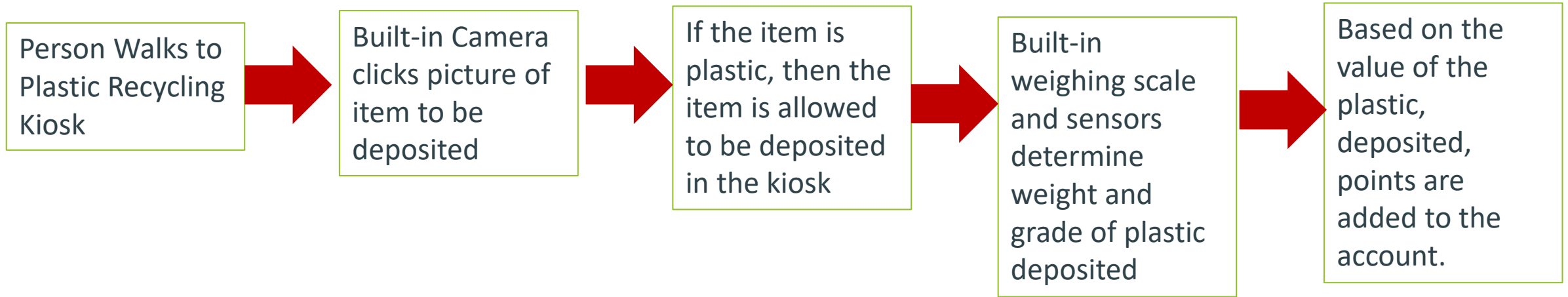




Office of the Principal Scientific Adviser  
to the Government of India



# Smart Plastic ATM Network



- ▶ Additional mechanism using GPS/GSM module to alert when the plastic waste holding module is full as well as when the gift module is empty.
- ▶ Collected plastic waste will be given to recycling / up cycling units
- ▶ A companion App will enable users to track where the nearest available plastic ATM is, how many points have been accrued till date and also redeem rewards from a catalogue



Office of the Principal Scientific Adviser  
to the Government of India



# Social Change Through Instant Rewards

- **The BIG Advantage:** Lesser plastic pollution at public places and subsequently in oceans and landfills which help to conserve the Earth because of responsible recycling through the Plastic ATM.
- Easy to Use, **Motivates Socially Responsible Behaviour** with Minimal Additional Effort
- Point Accrual System encourages repetitive usage and reinforces behavior change
- **The Life of Rag Pickers Will Improve** and This Can Contribute to More Children Getting Back to School







Office of the Principal Scientific Adviser  
to the Government of India



# Entrepreneurship is a journey, not a destination

- **Market Research: Completed**
- **Feature Design: Completed**
- **Financial Feasibility – Ongoing**
- **Operational Feasibility – Ongoing**
- **Prototype Design – Ongoing**
- **Partner Identification – Ongoing**
- **We hope to install the first set of standalone machines in a local hospital as well as my school towards the end of 2024 , once we receive funding/sponsorship**



**Office of the Principal Scientific Adviser  
to the Government of India**



# Thank You