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Officials of Hanoi DONRE

- C40-CCAC SWS Workshop and Waste Finance Academy Follow Up Event
  - Ho Chi Minh
CONTENTS

① EXISTING SOLID WASTE IN HA NOI
② TECHNOLOGY INNOVATION
③ RECOMMENDATION
HA NOI CAPITAL is political, economic and cultural center of the country.

Administrative divisions: 12 urban districts, 17 rural districts and 01 district-leveled town.

Population: ≈ 8,900,000 persons (2019).

- Second ranked on GRDP, equivalent to 7.37%
- Rapid industrialization and modernization
- High population growth rate, i.e 3.8%/year, estimated 10.4 million by 2020.

ENVIRONMENTAL POLLUTION is an unavoidable consequence.
1. EXISTING SOLID WASTE MANAGEMENT IN HA NOI CITY

a. Source of generation

- HOUSEHOLD
- BUSINESS
- CONSTRUCTION WASTE
- NATURAL WASTE
- TOURISTS
- INDUSTRIAL WASTE
1. EXISTING SOLID WASTE MANAGEMENT IN HA NOI CITY

a. Waste collection

① Dirty waste bin
② Handcarts
③ Manual sweep
④ Waste truck
Challenge & Problems in Environmental Sanitation

Waste Crisis
- Overloaded landfills, carrying capacity is expected full by end of 2020.

Waste is Not Segregated at Source
- Challenges in selecting treatment technology.
- High investment rate of technology complex.

Treatment Unit Rate
- Low treatment cost.
- Constraints for investors.

Communication, Education
- Informal
- Challenges during project implementation.

Policy
- Not strictly enforced.
- Limited financial resource for public services.
City Gov increasing waste protection by propaganda, monitoring and penalty

Environmental sanitation utility enhances and ensures environmental sanitation

CITIZEN: increasing themselves responsibilities and awareness
Solution

Technology innovation in waste collection and transportation
OVERALL OBJECTIVES

MANAGEMENT OF GENERATION SOURCE, MECHANIZATION
* Replacing collection truck = waste bin (put waste in the bin).
* Replacing manual tasks = specialized machines.
* Replacing manual collection = machinery.
* Changing behavior of people.

IT APPLICATION
* Waste collection by fixed schedule.
* Operation and monitoring by GPS, Camera.

SEGREGATION AT SOURCE
* Waste segregation at source.
* Smart collection.

STAGE 1 (2016 - 2018)

STAGE 2 (2018 - 2020)

STAGE 3 (2021 - 2025)
SPECIFIC OBJECTIVES

• WASTE SEGREGATION AT SOURCE

Developing system of waste segregation at source in 04 central city districts

• WASTE RECYCLE

Enhancing waste reuse, recycle to foster resources saving and physical recycling

• INTEGRATED IMPROVEMENT

Improving technology of waste collection, transportation and treatment in line with Clean – Sealed – Fast removal criteria; integrated technology of waste collection and treatment.

• REDUCTION OF BUDGET

Improving solid waste management efficiency in Ha Noi, improving environmental quality, ensuring public health and reducing budget to achieve sustainable urban development.
STAGE 1 (2016-2018)
MANAGEMENT OF GENERATION SOURCE, MECHANIZATION

Closed bin

Replaced manual tasks

Replaced manual collection

Changed behavior and practices
PUTTING WASTE FOR COLLECTION AT RIGHT TIME AND MECHANIZING WASTE COLLECTION

UREDUCO in coordination with Ward PCs to develop detailed plans for 73 wards in 4 districts

HOUSEHOLDS
Putting waste in the bag, sealing and being collected once per day after 7.30 pm

BUSINESS HOUSEHOLD
Self-equipped bins and registered schedule of putting waste for collection
(1) Source of generation
Domestic waste from households, institutions, schools...

(2) Collection
Waste bin, Route 1 truck...

(3) Transportation

(4) Transferring station
Compacting, loading waste from Route 1 truck to Route 2 truck

(5) Treatment
At Nam Son waste treatment complex
• **Objectives:**
  - Mechanizing, modernization, environmental sanitation interventions.
  - Fast removing waste and mitigating environmental pollution.
  - Locating segregation of recycling waste.

• **Location:** 181 De La Thanh, Dong Da street, Ha Noi.

• **Capacity:** 70 tons/day.

• **Service area:** Dong Da district.

• **Expected operation timeline:** 2020.

• Appropriate for inner and central urban due to limited land fund.

Application of mobile loading by self-pressed container at location of 181 De La Thanh
APPLICATION OF VERSAFLEX PREMIUM COATING

- Objectives:
  - Repairing broken, damaged, cracked waste bins.
  - Saving new investments in waste bin.
  - Being used in handling problems that require fast repair.
  - Rapid adhesion (3 - 10s), physical properties in comply with ASTM D543.
Some improvements

- Handcart assisting tool
- Automated vacuum cleaner
- Automatic odor remover in waste trucks
- Sealed system
LOCAL GOVERNMENT ENHANCES ENFORCEMENT

Conducting patrol, detection, warning and penalties by authorized forces

Placing warning signs
COMMUNICATION TO RESIDENTIAL, BUSINESS HOUSEHOLDS
- Supervising and monitoring operations of mechanized equipment and vehicles, waste bins allocated in line with digitalized route, technical status, fuel consumption, completed volume.
- Receiving automatic signal, or other information about waste bins, also receiving information from environmental sanitation hotline to promptly notify the operation room for proceeding.
Implemented activities

1. Developed map and digitalized route of waste collection and transportation
2. Established monitoring and operation center for waste collection and transportation
3. Operated GPS and CCTV system
4. Monitoring vacuum sweepers by sensor of sweeping frequency.
## STAGE 3 (2021-2025)
### SOLID WASTE SEGREGATION

### IMPLEMENTATION ROADMAP

#### PHASE 1
- Recycling waste
- Leftover
- Others

- **2020-2021**

#### PHASE 2
- Recycling waste
- Organic waste
- Others

- **2021-2023**

#### PHASE 3
- Recycling waste
- Organic waste
- Burnable waste
- Non-burnable waste

- **2024-2025**
WASTE SEGREGATION IN HOAN KIEM DISTRICT – HA NOI

Location: Hoan Kiem district, Ha Noi.

Objectives:
- Segregating 100% recycle waste
- Reducing >30% landfilled rate
- Quality of segregated waste: organic waste mixed with other items < 10%

Orientation: Developing waste segregation at source in 04 central city districts in Ha Noi.
RECOMMENDATION

① Ministry of Natural Resources and Environment (MONRE) issued a guidance circular for implementing Decree 40:2019/ND-CP on enhancing water segregation at source, facilitating collection, transportation and treatment and mitigating environmental pollution by spontaneous technology of waste collection, transportation and treatment.

② The city develops and issues preparation plan for urgent resources, finance, institutional policy for waste segregation at source.

③ Developing strict enforcement and strong policy; enhancing supervising, warning and penalties.

④ Encouraging businesses in environmental sector to conduct research and investment in advanced technology in waste collection, transportation and treatment.

⑤ Applying advanced technology in waste collection, transportation and treatment, minimizing secondary pollution, mitigating environmental pollution and improving living quality.
THANKS FOR YOUR ATTENTION

FOR GREEN – CLEAN – BEAUTIFUL
SUSTAINABLE ENVIRONMENT