29th – 30th
NOV.
2022

FUTURIUM BERLIN

The Way Forward to
CIRCULARITY

Preventing, Reducing and Managing Waste:
Local Approaches for Global Challenges

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

ENVIRONMENTAL *made*
PROTECTION *in Germany*

Day 1: Tuesday, November 29th

SESSION 1: OPENING

09:00 – 09:10	OPENING OF THE CONFERENCE – Stefan Friedrichs
09:10 – 09:25	WELCOME NOTE – Dr. Christiane Rohleder
09:25 – 09:40	WELCOME NOTE – Ingrid-Gabriela Hoven
09:40 – 09:45	VIDEO: PRESENTING THE GIZ GLOBAL PROJECT TO SUPPORT THE EXPORT INITIATIVE ENVIRONMENTAL PROTECTION – Stefan Friedrichs
09:50 – 10:10	KEYNOTE: CHALLENGES OF CIRCULARITY – Prof. Dr. Helmut Maurer

COFFEE BREAK

10:10 – 10:45	COFFEE BREAK

SESSION 2: BENDING THE LINEAR ECONOMY

10:45 – 10:50	INTRODUCTION – Stefan Friedrichs
10:50 – 10.55	OPENING STATEMENT - Jonathan Uhde
10:55 – 11:05	KEYNOTE: INTERNATIONAL TRENDS TOWARDS A CIRCULAR ECONOMY FOR PLASTICS – Jan Peter Schemmel
11:05 – 11:15	JORDAN ON THE ROAD TO A CIRCULAR ECONOMY: THE ROLE OF THE WASTE MANAGEMENT FRAMEWORK LAW AND THE EPR SYSTEM – H.E. Dr. Mohammad Khashashneh
11:15 – 12:20	PANEL DISCUSSION: EXPERIENCES FROM DIFFERENT COUNTRIES – Dr. Nawa El Karawy, Somboon Sahasithiwat, Isnazunita Ismail, Mukesh Bahadur Singh

Breaks

Session 1

Session 2

Session 3

Session 4

Session 5

Session 6

Day 1: Tuesday, November 29th

12:20 – 12:30	KEYNOTE: STRONG PARTNERS, CLOSED LOOPS - THE IMPORTANCE OF COOPERATION FOR CIRCULAR ECONOMY – Sofie Geisel
12:30 – 12:40	GROUP PHOTO
12:40 – 14:00	**LUNCH BREAK**
	SESSION 3: GREEN SOLUTIONS IN URBAN AREAS: INCENTIVES, RAISING AWARENESS AND PILOT EXPERIENCES
14:00 – 14:03	INTRODUCTION – Stefan Friedrichs
14:03 – 14:18	OPENING STATEMENT: URBAN METABOLISM WHAT IS IT ALL ABOUT? – Alexander Charalambous, Nicolas J.A. Buchoud
14:20 – 14:40	INTER-MUNICIPAL COOPERATION IN THE POLTAVA REGION, UKRAINE – Andriy Simonov, Vitaliy Kolisnichenko, Anatoliy Titenko, Oleksandr Vasylenko
	DISCOVERY STAGE (STAGE 1)
14:50 – 15:00	INCENTIVIZING CIRCULARITY BY DIGITAL APPS – Omar Isam Arabiyat, Martin G. Wieser

● Breaks
● Session 1
● Session 2
● Session 3
● Session 4
● Session 5
● Session 6

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Day 1: Tuesday, November 29th

15:00 – 15:10	INSIGHTS ON A SEPARATE COLLECTION PILOT OF PET PLASTICS IN PETRA – Dr. Murad Farajat, Eng Issa Hasanat, Agnes Bünemann
15:10 – 15:20	MANAGEMENT OF ORGANIC WASTE IN INDIA: POTENTIAL AND INNOVATIVE SOLUTIONS – Vaishali Nandan

SOLUTION STAGE (STAGE 2)

14:50 – 15:00	NATIONAL CLEAN AIR PROGRAMME FOR HUMAN WELL-BEING IN INDIAN CITIES – Ravindra Kumar Tiwari
15:00 – 15:10	DIGITAL APPLICATION (PRANA) FOR NATIONAL CLEAN AIR PROGRAMME MANAGEMENT AND MONITORING – Raghu Babu Nukala, Sonal Jain
15:10 – 15:20	HOW SHAH ALAM CITY COUNCIL AND THE BUSINESS COMMUNITY BAN SINGLE-USE PLASTIC – Haslina Ab Aziz
15:20 – 15:50	**COFFEE BREAK**
15:50 – 15:55	INTRODUCTION – Stefan Friedrichs
15:55 – 16:10	KEYNOTE: PEOPLE ARE KEY: HOW TO FOSTER CIRCULAR BEHAVIOURS – Dr. Anna Pegels
16:10 – 17:10	BREAKOUT SESSIONS: INCENTIVES AND RAISING AWARENESS
17:10 – 20:00	GET-TOGETHER

- Breaks
- Session 1
- Session 2
- Session 3
- Session 4
- Session 5
- Session 6

Day 2: Wednesday, November 30th

	SESSION 4: FORWARD-LOOKING TECHNOLOGIES AND BUSINESS MODELS
09:00 – 09:10	REFLECTION OF DAY 1 AND INTRODUCTION OF DAY 2 – Stefan Friedrichs
09:10 – 09:20	KEYNOTE: SUSTAINABLE CIRCULARITY: EMBEDDING TECHNOLOGIES INTO A SYSTEMIC TRANSFORMATION PROCESS – Dr. Henning Wilts
09:20 – 10:00	PANEL DISCUSSION: EXPERIENCES FROM DIFFERENT AREAS – Dr. Henning Wilts, Karolin Langfeldt, Peter Berger
10:25 – 10:55	**COFFEE BREAK**
10:55 – 11:05	KEYNOTE: TAKE BACK FOR TAKE AWAY – AN ATTRACTIVE ALTERNATIVE? – Fabian Barthel

- ● Breaks
- ● Session 1
- ● Session 2
- ● Session 3
- ● Session 4
- ● Session 5
- ● Session 6

Day 2: Wednesday, November 30th

11:05 – 11:20	IMPLEMENTATION OF RE-USE-SYSTEMS – WHAT DOES IT TAKE? – Stefan Friedrichs
11:20 – 12:20	BREAKOUT SESSIONS: FORWARD-LOOKING TECHNOLOGIES AND BUSINESS MODELS – Stefan Friedrichs
12:20 – 13:50	**LUNCH BREAK**
	SESSION 5: PARTNERSHIP AND COOPERATION
13:50 – 14:00	DEBRIEFING OF BREAKOUT DISCUSSIONS – Stefan Friedrichs
14:00 – 14:50	COOPERATION TALKS: PARTNERS IN DIALOGUE – Stefan Friedrichs
	BUILDING-UP PARTNERSHIPS AND FOSTERING COOPERATION – Raghu Babu Nukala, Andreas Beck
	COOPERATION WITH ASSOCIATIONS – Sylvi Claußnitzer, Florian Werthmann
	CIRCULAR ECONOMY: FROM THE SIDELINES TO THE CORE OF GLOBAL MACROECONOMIC AGENDAS? – Agnes Bünemann, Nicolas J.A. Buchoud
	ADDED VALUE THROUGH COOPERATION EXPERIENCES BETWEEN PREVENT AND EXI – Angelina Schreiner, Dorothee Bürkle

- Breaks
- Session 1
- Session 2
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- Session 6

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Day 2: Wednesday, November 30th

14:50 – 15:00	PRESENTING THE GREENTECH KNOWLEDGE HUB – Ramshid Rashidpour, Soma Biswas, Nadirah Abd Manaf, Rika Lumban Gaol, Pakin Somkieatprayool, Dina Kurdieh, Sonal Jain	
15:10 – 15:45	**COFFEE BREAK**	
	SESSION 6: THE WAY FORWARD	
15.45 – 15.50	SHORT RECAP – Stefan Friedrichs	
15:50 – 16:20	PANEL DISCUSSION: THE WAY FORWARD – Christina Laun, Nilgün Parker, Markus Lücke, Helmut Maurer	
16:20 – 16:30	CLOSING REMARKS – Nilgün Parker	

● Breaks

● Session 1

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● Session 5

● Session 6

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01
Opening of the Conference

WHEN: 9.00 – 10.45

WHERE: MAIN STAGE

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Opening

WELCOME NOTE

DR. CHRISTIANE ROHLEDER State Secretary, BMUV

SPEAKER

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Opening

WELCOME NOTE

INGRID-GABRIELA HOVEN
Managing Director,
GIZ

SPEAKER

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Opening

KEYNOTE: CHALLENGES
OF CIRCULARITY

PROF. DR. HELMUT MAURER
Former Senior Expert,
European Commission

SPEAKER

Coffee Break
10.10 – 10.45

Why do we need to bend the linear economy of plastics?

- The global **use of plastics** is **growing** more rapidly than any other commodity, reaching 460 million tonnes in 2019.

- The current plastics lifecycle is far from circular; only **9%** of the 353 Mt of plastic waste was **recycled** in 2019.

- The **carbon footprint** of the plastics lifecycle is significant.

- Mismanagement of plastic waste has caused large stocks of plastic to **leak into the environment** (e.g., accumulation in water bodies, microplastic leakage into food chain)

- The COVID-19 pandemic disrupted global process in the transition to a resource-efficient economy (e.g., disruption to plastic recycling, switch to single-use plastics, increase in use of masks and other disposable equipment)

Source: OECD, 2022

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What progress has been made?

- The **production of secondary plastics** has more than **quadrupled** in weight in the last 20 years and is growing more quickly than primary plastic production.

- Several countries have implemented **policies** in favor of a circular economy.

- **Innovation in recycling** is on the rise; every year between 1995 and 2017 innovation for reusing plastics increased by 23%

- About **half** of all **environmentally relevant innovations** patented in 2017 focused on **plastics circularity.**

Source: OECD, 2022

Global trends towards circularity

MARKET TRENDS:

- Increase of bio-based / bio-degradable plastics

- Oil price impacts the share of recyclate in plastic items

POLICY TRENDS / INSTRUMENTS:

- Extended Producer Responsibility (EPR), e.g., implemented through producer-financed deposit return schemes

- Economic / fiscal measures to make recyclates economically viable (e.g., EU plastic tax)

- Recycled content targets, e.g., 30% recycled content in beverage bottles by 2030 (EU SUPD)

TECHNOLOGICAL TRENDS:

- Chemical recycling

Source: OECD, 2022

SESSION 2

Global inititatives

- **EU** Plastic Strategy, incl. Single-use plastic Directive, Packaging Packaging Waste Directive

- **UN** Treaty on Plastic Pollution

- Global Alliance on Circular Economy and Resource Efficiency (GACERE)

- Amendments to the Basel Convention and **OECD** Decision on Transboundary Movements of Waste

- **WTO** - Informal Dialogue on Plastics Pollution and Environmentally Sustainable Plastics Trade

- **G7** Oceans Plastic Charter

- **G20** Osaka Blue Ocean Vision

Source: UNEP, 2022

Circular business models in the CE for plastics

- **Encourage sufficiency** → Zero waste stores

- **Product-as-a-service models** → Deposit return schemes, e.g., for reusable packaging on local markets, for food delivery systems etc.

- **Standardize** → standardized packaging options designed for recycling

- **Reverse logistics / take back mechanisms** → through Extended Producer Responsibility

- **Value from waste** → Plastic waste used to create valuable materials/products (incl. products with recycled content)

SESSION 2

Our observations: From theory to practice

- Investment needs in **reuse infrastructure**, e.g., collection, washing, etc., and need for capacity building on importance of reuse, but:

  - Lack of interest in many countries in reusable (food) packaging systems.

  - Challenge: Measures for packaging reduction have geographical / cultural aspects ("not one deal fits all") and are mostly to be implemented at local level ("not the big fish").

- Opportunities for cooperation exist in **waste management**, specifically chemical recycling, but:

  - Significant barriers of implementation such as lack of collection and sorting infrastructure, no sufficient design for recycling

  - Potential for "pitfalls": Miss the objective of priorization of the upper levels of the waste hierarchy.

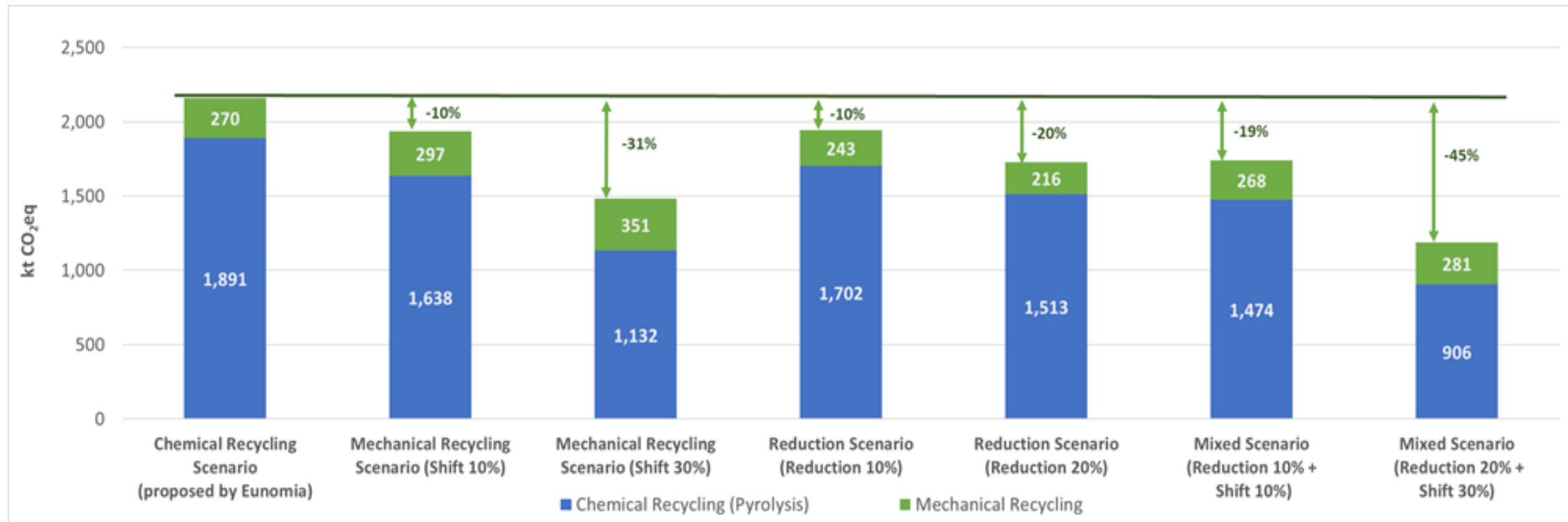 - Lesser contribution to the reduction of impact on environment.

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A compass for international cooperation: A Circular Economy waste hierarchy

Source: Öko-Institut, 2022

Most preferred

1 PREVENTION — Promote sufficiency & take responsibility: Rethink, refuse, reduce!

2 RE-USE — e.g. preparing for reuse, reusable container systems, reverse logistics etc.

3 RECYCLING
3a. Mechanical material recove
3b. Mechanical material recovery (Downcycling) & Solvent-based material recovery
3c. Material recovery through certain types of chemical recycling

3a. For same or similar functionality or field of application
3b. Downcycling: For a lower grade functionality; Solvent-based material recovery (Output: Polymers)
3c. Solvolysis, Hydrolysis (Output: Monomers)

4 RECOVERY
4a. Chemical recovery
4b. Energy recovery through co-processing/ co-incination
4c. Energy Recovery in municipal solid waste incineration

4a. Pyrolysis (Output: Pyrolytic oil & wax), Gasification (Output: Syngas)
4b. Co-processing/co-incineration: Substituting
4c. Municipal solid waste incinerator: Controlled incineration in modern, state-of-art incinerators

5 DISPOSAL

High risk that future efforts for prevention & reuse may be hindered (Lock In)

Landfilling of treated or inert wastes in controlled, sanitary landfills

UNACCEPTED
Landfilling untreated waste, uncontrolled disposal, disposal in non-sanitary landfills, open burning, littering

Least preferred

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Chemical recycling vs. Mechanical recycling vs. Reduction

Climate Impact (kilo tons CO2 equivalent)

"shift" = innovation so that amounts of plastic waste for mechanical recycling can increase

Source: Öko-Institut, 2022. Link to study: https://zerowasteeurope.eu/library/climate-impact-of-pyrolysis-of-waste-plastic-packaging/
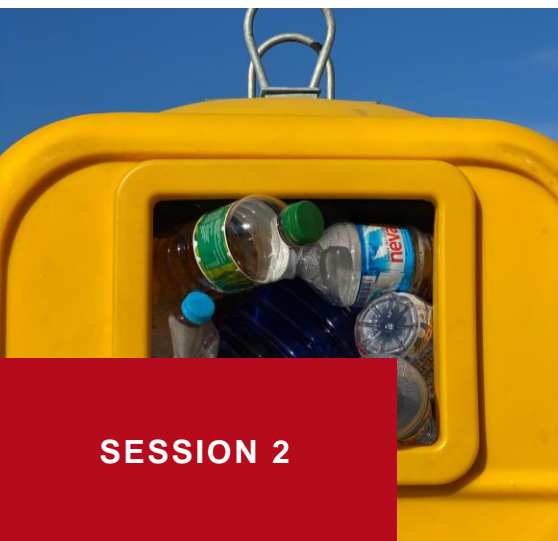
Conclusions underline the waste hierarchy

- A **zero-emission economy** based on chemical recycling seems to be impossible.

- **Mechanical recycling** must be prioritized over pyrolysis wherever possible.

- Measures such as **Design for Recycling** and other innovations must be incentivized.

- Legal equality of chemical and mechanical recycling for packaging waste must be prevented.

- The **climate impact** of different **recycling technologies** should be considered when setting targets for recycled content.

- It is important to **reduce the overall amount of packaging** to lower the GHG emissions in this sector - it is not possible to achieve a zero-emission economy by recycling alone.

Source: Öko-Institut, 2022. Link to study: https://zerowasteeurope.eu/library/climate-impact-of-pyrolysis-of-waste-plastic-packaging/

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Transition to circularity of plastics at a crossroad

- Promoting circular business models should be oriented by its environmental impact reduction potential.

- International business cooperation, funding and investment should:

  - Contribute to absolute reduction of resource consumption
  - Reduce CO_2 emissions of plastics (circular) economy
  - Prioritise reduction over recycling, and mechanical over chemical recycling
  - In the field of mechanical recycling: Close loops domestically

SESSION 2

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Thank you
for your attention!

Jan Peter Schemmel

CEO, Öko-Institut e.V.
E-Mail: j.schemmel@oeko.de
Web: https://www.oeko.de/en/

Bending the Linear Economy

JORDAN ON THE ROAD TO
A CIRCULAR ECONOMY:
THE ROLE OF THE WASTE
MANAGEMENT
FRAMEWORK LAW AND THE
EPR SYSTEM

**H.E. DR.
MOHAMMAD
KHASHASHNEH**
Secretary General,
Jordan Ministry of
Environment

SPEAKER

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Bending the Linear Economy

PANEL DISCUSSION:
EXPERIENCES FROM
DIFFERENT COUNTRIES

DR. NAGWA EL KARAWY
Advisor,
WMRA

PH.D. SOMBOON SAHASITHIWAT
Vice President,
NSTDA

ISNAZUNITA ISMAIL
General Manager,
ETRC

MUKESH BAHADUR SINGH
Director,
MoHUA

JAN PETER SCHEMMEL
CEO,
Öko-Institut e.V.

SPEAKER

SESSION 2

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Bending the Linear Economy

THAILAND'S BIO-
CIRCULAR GREEN
ECONOMIC MODEL (BCG)
TO GUIDE AN ECOSYSTEM
FOR SINGLE-USE PLASTIC
PREVENTION

**SOMBOON
SAHASITHIWAT**
Vice President,
NSTDA

SPEAKER

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Bending the Linear Economy

ECO-DESIGN AND
MINIMUM STANDARDS AS
TOOLS TOWARDS A
CIRCULAR ECONOMY

**ISNAZUNITA
ISMAIL**
General Manager,
ETRC

SPEAKER

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Bending the Linear Economy

KEYNOTE: STRONG
PARTNERS, CLOSED
LOOPS - THE
IMPORTANCE OF
COOPERATION FOR
CIRCULAR ECONOMY
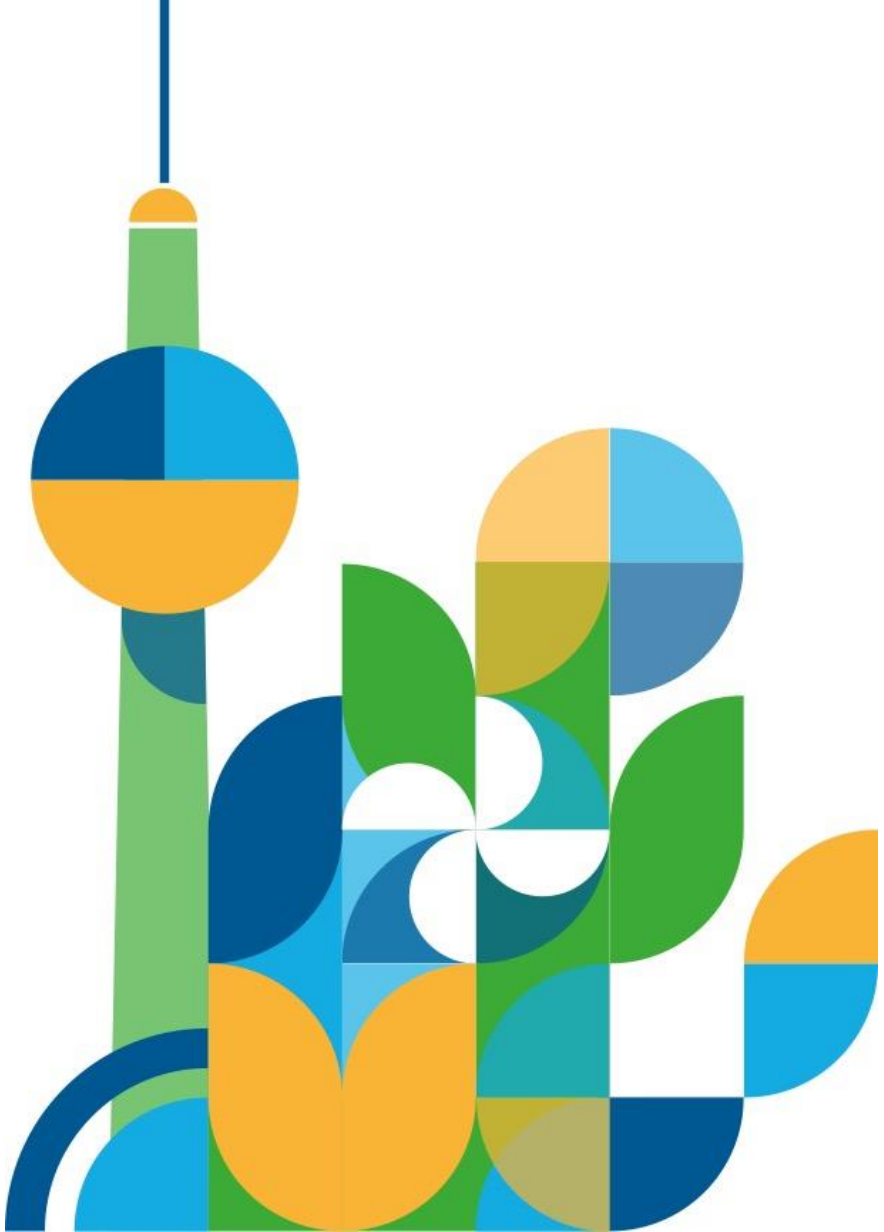
SOFIE GEISEL
CEO,
DIHK Service GmbH

SPEAKER

THE WAY FORWARD TO CIRCULARITY – CONFERENCE 2022

Group Photo

THE WAY FORWARD TO CIRCULARITY – CONFERENCE 2022

Lunch Break

12.40 – 14.00

Green solutions in urban areas: incentives, raising awareness and pilot experiences

INTER-MUNICIPAL
COOPERATION IN THE
POLTAVA REGION,
UKRAINE

**ANDRIY
SIMONOV**
Mayor of Pyriatyn

**VITALIY
KOLISNICHENKO**
Mayor of Grebinka

**ANATOLIY
TITENKO**
Mayor of
Novoorzhytske

**OLEKSANDR
VASYLENKO**
Mayor of Chornuhy

SPEAKER

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Stage Setting

Discovery Stage (Stage 1)

- Incentivizing circularity by digital apps

- Insights on a separate collection pilot of PET plastics in Petra

- Management of organic waste in India: Potential and innovative solutions

Solution Stage (Stage 2)

- National Clean Air Programme for human well-being in Indian cities

- Digital application (PRANA) for National Clean Air Programme management and monitoring

- How Shah Alam City Council and the business community ban single-use plastic

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Green solutions in urban areas: incentives, raising awareness and pilot experiences

STAGE 1

INCENTIVIZING CIRCULARITY BY DIGITAL APPS

Omar Isam Arabiyat
Greater Amman Municipality

MARTIN G. WIESER
Founder & CEO, SynoptiCons

SPEAKER

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Incentivizing circularity by digital apps

Omar I. Arabiyat. I Martin G. Wieser

Berlin · Nov 29, 2022

SESSION 3

SORT IT RIGHT

Supported by:

Federal Ministry
for the Environment, Nature Conservation,
Nuclear Safety and Consumer Protection
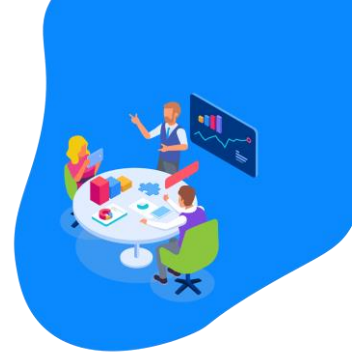
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based on a decision of
the German Bundestag

Greater Amman Municipality

Recycle Me

SynoptiCons
we connect the dots

What should we present?

To cover the topic "incentivizing circularity by digital apps" we have to make the Sort It Right app a central topics.

But in order to make (for the audience) the connection with GAM, we need to talk about the history of the GIZ program, what happened in the past and why the app is the logical "next step" of development.

We should talk about the separate collection, achievements with pilot areas and then also show what currently is done in GAM (city center project, app pilot,...)

Then we come to the app itself
- why is it needed? - to get the consumer into the loop and reward their good behaviour
- what can it do? - incentivize consumers who recycle correctly, to reward their contribution to a cleaner environment.
- how does it work? - identify the product, identify the bin, give points to the user

What is the future of such apps?
- are important to communicate with the young, digital generation
- is in the hands of each consumer multiple times a day
- Can be used for WEEE, for textiles
- can even be used to establish "digital DRS" deposit return scheme

Welcome

OMAR ISAM ARABIYAT
Greater Amman Municipality
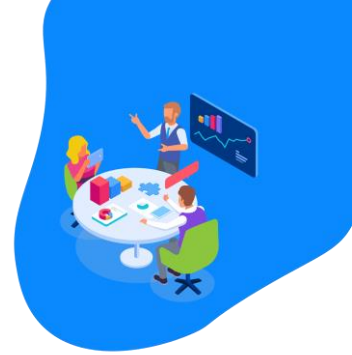
MARTIN G. WIESER, M.ENG.

Founder & CEO SynoptiCons
E-Mail: mgw@synopticons.com

20+ yrs. experience in digitalisation and business processes in Waste Management and Circular Economy.

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CIRCLE - Climate and Resource Protection through Circular Economy

> ## What's the overall objective of the program?

- Support the implementation of Jordan's National Solid Waste Management Strategy (NSWM).

- **Collect as much recyclable waste as possible** separately, to promote the circularity of materials and reduce landfilling.

44

The Circularity journey of GAM (Greater Amman Municipality, Jordan)

SORT IT RIGHT
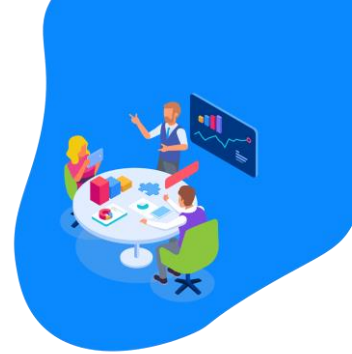
Pilot operations for waste separation at the source.

Introduction of the "yellow bin" in a pilot area of GAM, to separately collect packaging waste.

400 000 KG

Separate waste collection in multiple city districts.

Use of highly maneuverable waste collection vehicles in the Old Town

You've recycled
1373
containers to date

Progress | Graphics Numbers
Mo Tu We Th Fr Sa Su

Congrats!
You are in the top
92%
of recyclers of Amman

Together we've saved enough CO2 to remove
650 passenger cars
from the road this year

Home · Prizes
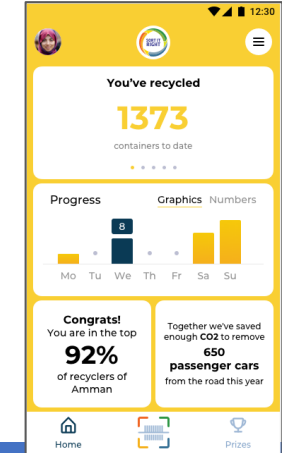
2021

2023

2020

2022

Regular collection of separated packaging waste.

Nearly 400 tons of recyclable packaging material have been collected within a year.
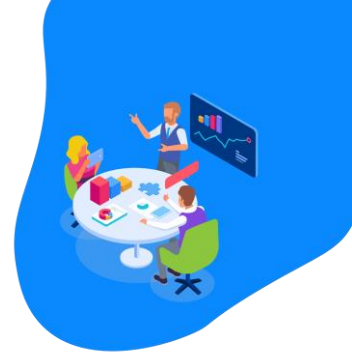
Mobile Recycling App to incentivize consumers for waste separation.

Modern solution to include consumers as an important part of the Circular Economy.

SESSION 3

SynoptiCons we connect the dots

Recycle Me

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Milestones of the Circular journey

Past	Present	Future

- **Awareness raising** in the population

- Creation of **infrastructure** (bins, trucks, workforce)

- **Collection and processing** of several hundred tons of recyclable materials
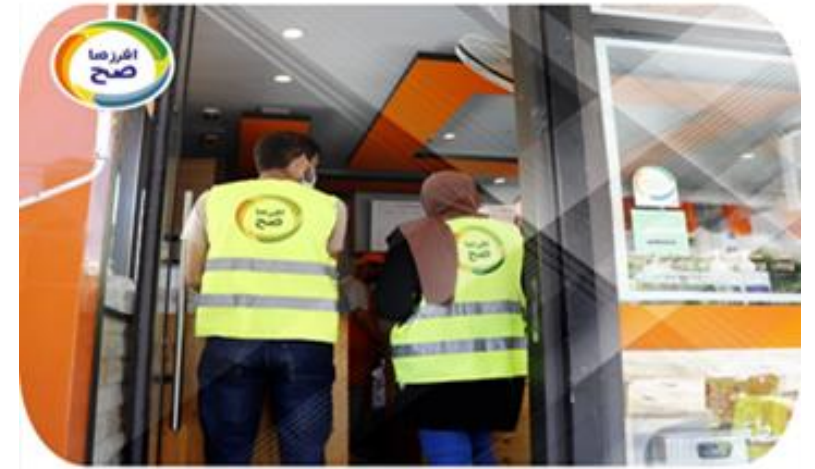
Milestones of the Circular journey

| Past | Present | Future |

- **Extension of areas** with separate collection for recyclable materials.

- **Continuous awareness campaigning** and trust building with citizens.

- **Implementation of best practices** to handle increasing amounts.

Milestones of the Circular journey
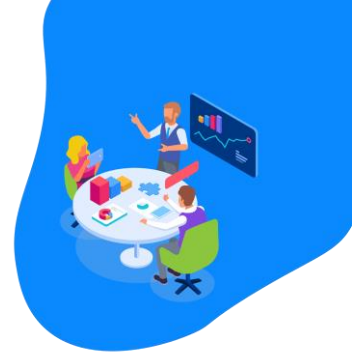
Past	Present	Future

- **Introduce the "Sort It Right" app as pillar** of separation done right by consumers.

- **Partner with producer (organizations)** to support the app.

- **Leverage the power of the app** for awareness raising and education.

Citizens = Consumers in the centre

Environmental Awareness

Sustainability

Packaging Recycling

Littering Reduction

Plastics Avoidance

What is in for me?
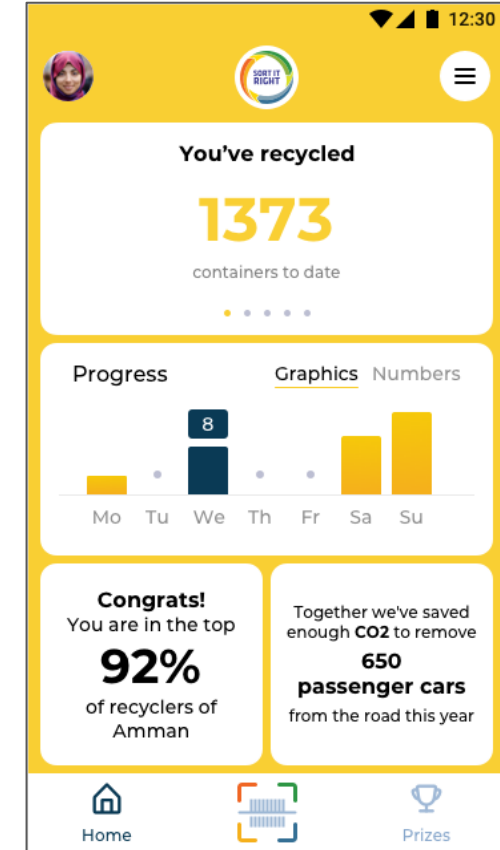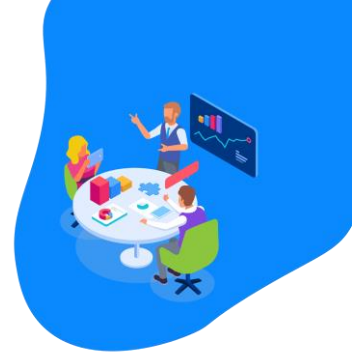
It's super easy: Scan & Win !
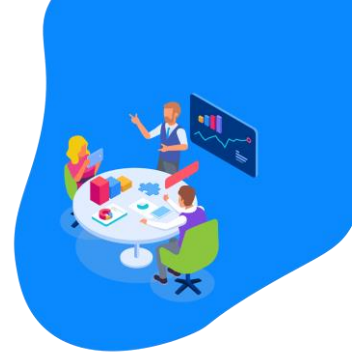
Look how easy it is…
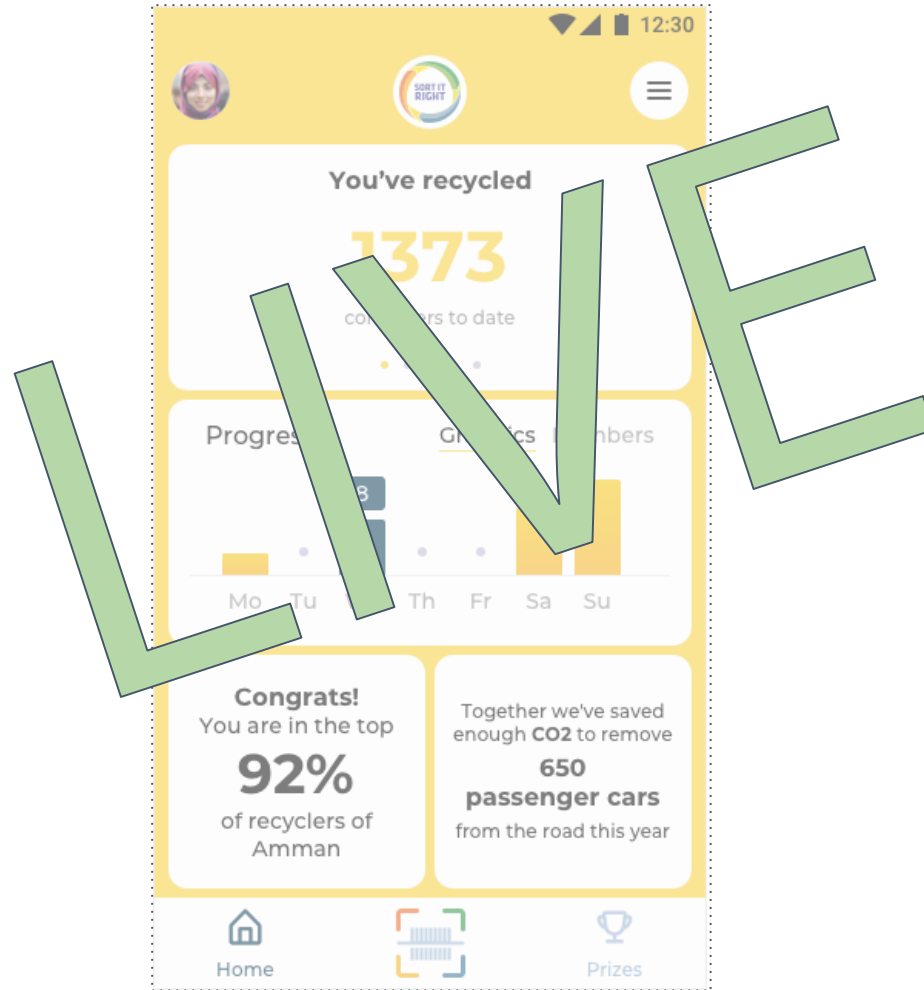
Who are the key beneficiaries?

Producers

Packers & Fillers

Consumers

PROs

Producer Responsibility
Organisations
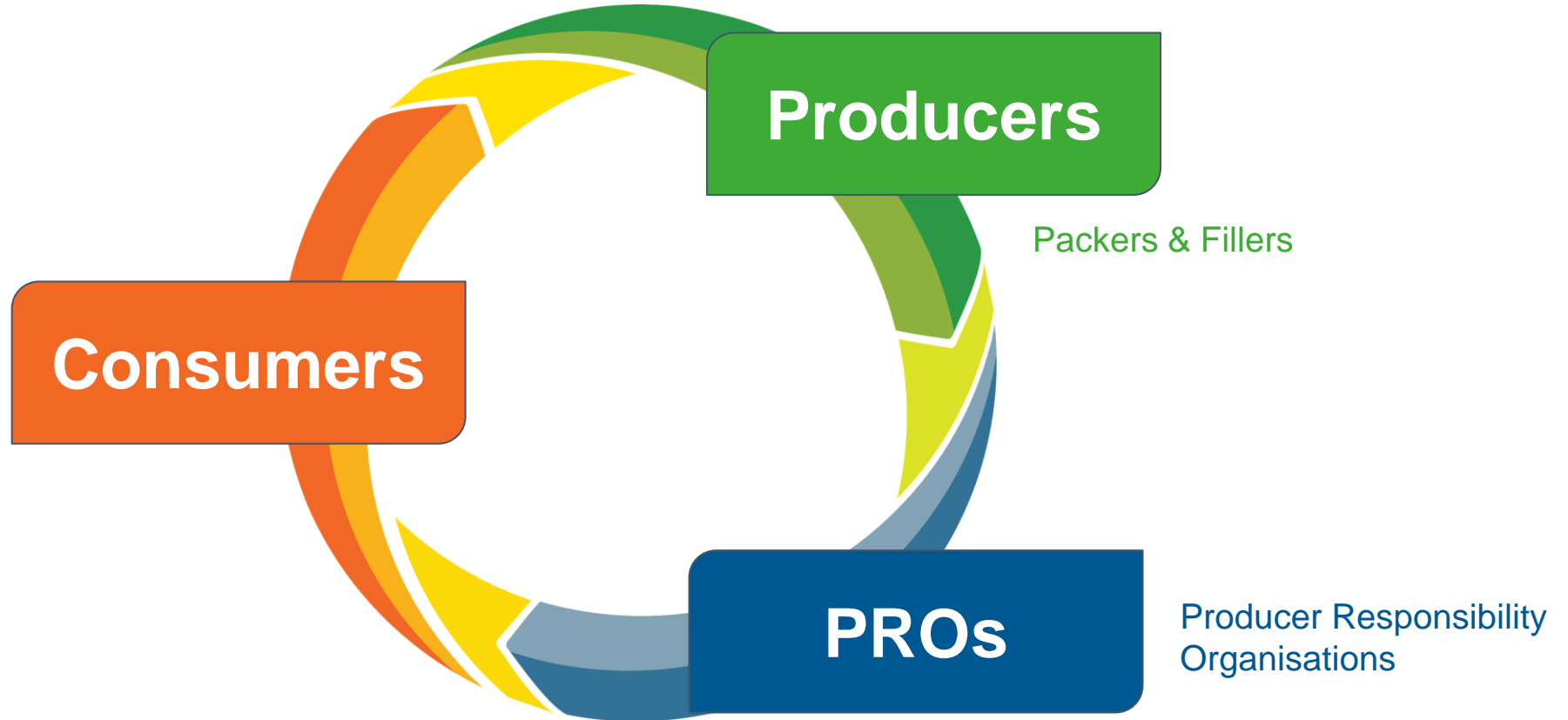
Benefits for producers (packers & fillers)

SORT IT RIGHT
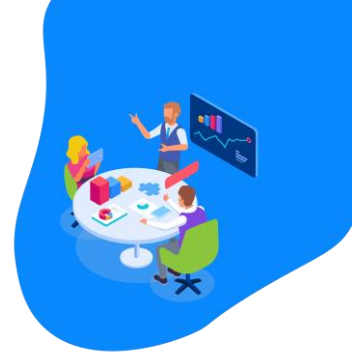
Producers **actively support** a **sustainability initiative** to promote recycling and emphasize their CSR & ESG commitment.

Producers **receive additional media attention** and subtle **communication** with existing and prospect customers.

Producers **add value to their brand(s)** by showing that they care about the "end of life" of their packagings.

Producers gain **insights** into the **user behavior** regarding recycling and can deduct buying patterns.

SynoptiCons
we connect the dots

Recycle Me

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Benefits for Producer Responsibility Orgs

PROs **increase return rates of packaging** in the separate collection and better **achieve their collection targets**.

PROs fulfil their **mission to educate and raise awareness** in a modern and sustainable way.
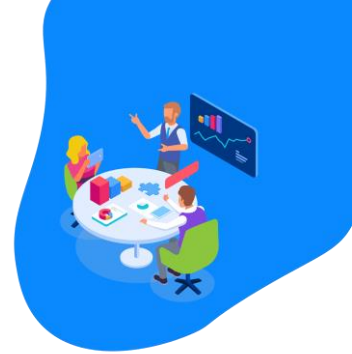
PROs can **achieve cost savings**, due to the increased quality of materials collected separately by consumers.
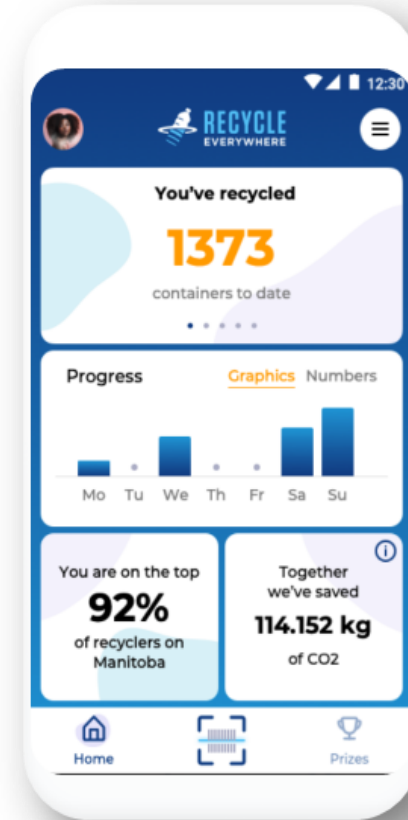
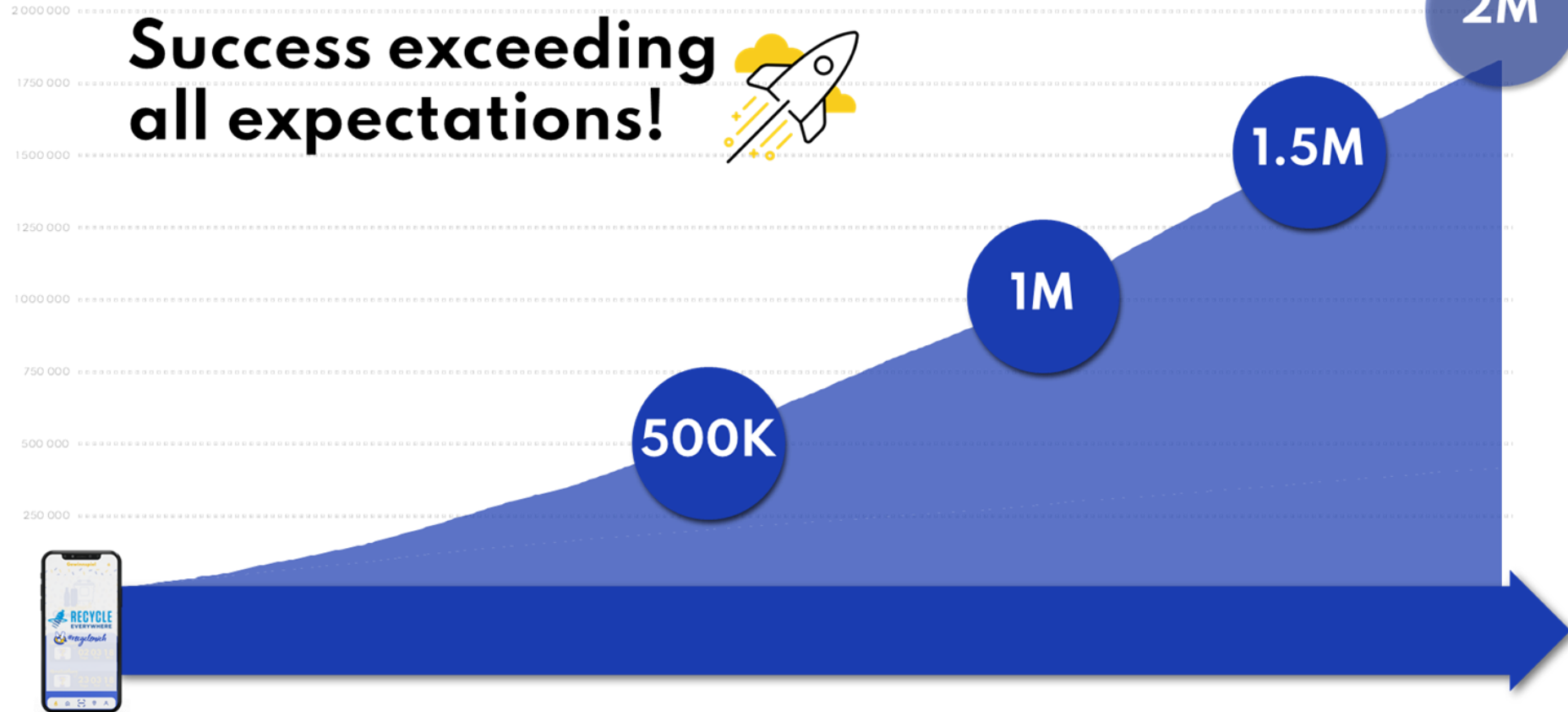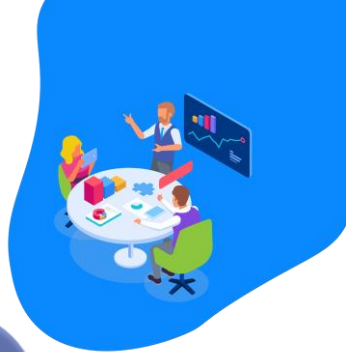PROs can **gain a competitive edge** when offering their services to packers & fillers.
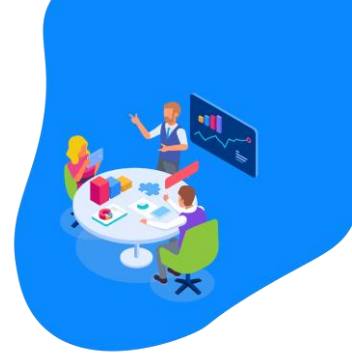
Are there best practices already?

Austria

Canada

Recycle Me

Do those apps work?

Want to know more? Contact us!

www.sort-it-right.app
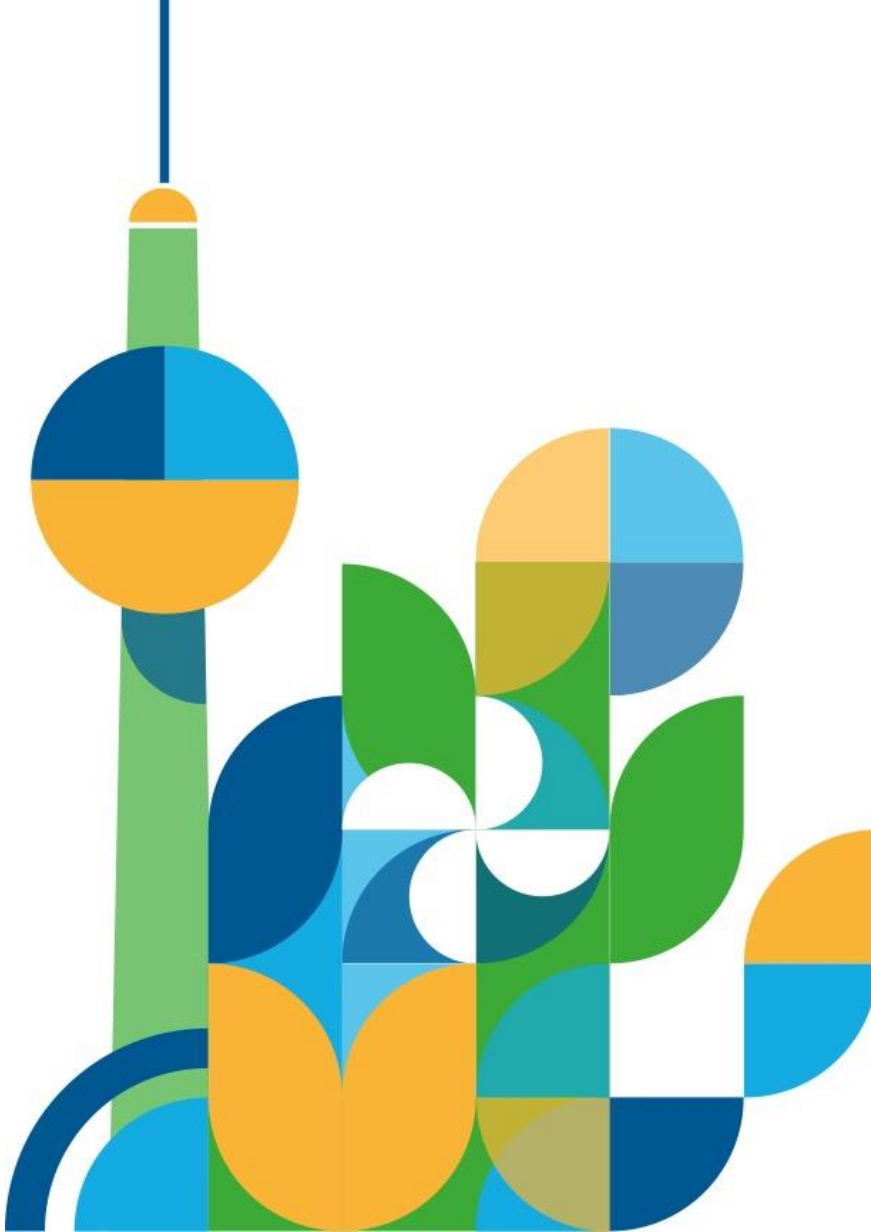
THE WAY FORWARD TO CIRCULARITY
29 NOVEMBER 2022

Insights on a separate collection pilot of pet plastics in Petra

Implemented by:

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

cyclos

On behalf of:

Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

ENVIRONMENTAL *made*
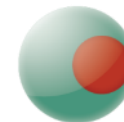PROTECTION *in Germany*

of the Federal Republic of Germany

Pet bottles are very important for the availability of water
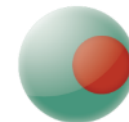

(Photo: cyclos)

Impressions of waste collecting in the historic city of Petra

- In Petra, about 8 tonnes of PET bottles are generated as waste per month.

- That's about 100 tonnes every year.

- These volumes can be collected separately and recycled.
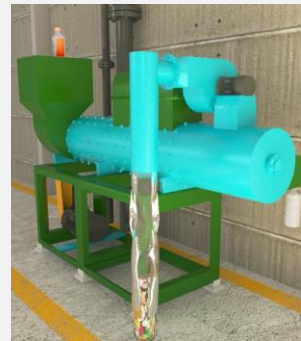

(Photo: cyclos)

What is needed in Petra

Collection

Collection Bins

Big Bags

Collection car

Storage and treatment

Storage space –
in the planning stage

De-labelling Machine

Perforator and Bailing-Press

Fork Lift

Beginning with a local EPR-System

- A "small" EPR scheme should be implemented for PET bottles and beverage cans which are collected in the entire Petra region.

- The rolling costs for collection, sorting and recycling can be covered through this system.
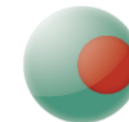
Cans and PET Bottles

(Photo: cyclos)

Collection bins at every kiosk and at other collection points

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Exemplary calculation in a local EPR-System

- The table shows an exemplary calculation. The „EPR-fee per unit" is a levy, which has to be paid by the obliged companies of beverage packaging in Petra to the system operator (PRO).

- The fees and the proceeds from the sale of the PET bottles will cover all running costs for collection, sorting and treatment in the future.

	EPR-fee per unit	EPR-Fees per year calculated for 15,000 beverages per day	Conversion to Euro
PET bottle	1 Piaster	≈ 55,000 JD	≈ 75,000 Euro
PET bottle	2 Piaster	≈ 110,000 JD	≈ 150,000 Euro
PET bottle	5 Piaster	≈ 274,000 JD	≈ 375,000 Euro

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OUR CONTACT:

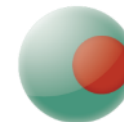**Agnes Bünemann**
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Green solutions in urban areas: incentives, raising awareness and pilot experiences

STAGE 1

MANAGEMENT OF
ORGANIC WASTE IN INDIA:
POTENTIAL AND
INNOVATIVE SOLUTIONS

**VAISHALI
NANDAN**
Senior Professional,
GIZ

SPEAKER

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

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PROTECTION *in Germany*

Management of Organic Waste in India (MOWI)
Potential and Innovative Solutions

By Vaishali Nandan | November 2022

Implemented by

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

On behalf of:

Federal Ministry
for the Environment, Nature Conservation,
Nuclear Safety and Consumer Protection

of the Federal Republic of Germany

ENVIRONMENTAL *mode*
PROTECTION *in Germany*

Objective:

In selected partner countries of the export initiative, favourable framework conditions for the use of modern environmental and climate protection technologies have been improved.

Duration:
01.01.2021 – 31.03.2023

Implementation Partners:
Rostock University

MOWI is an accompanying measure of the Cities Combatting Plastic entering Marine Environment (CCP-ME) project

Capacity Development and Knowledge Exchange on technologies

National/State/Cities

State Strategies on sustainable organic waste management

State

City Action Plan and Implementation support

Cities

NEW DELHI

KANPUR LUCKNOW, UTTAR PRADESH

PORT BLAIR

KOCHI

TRIVANDRUM, KERALA

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

On behalf of:

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

of the Federal Republic of Germany

Ministry of Housing and Urban Affairs Government of India

एक कदम स्वच्छता की ओर

GOVT. OF. KERALA

SUCHITWA MISSION LOCAL SELF GOVERNMENT DEPARTMENT KERALA

Clean Kerala Company Limited

Andaman & Nicobar Administration

Development of State Strategies on Organic Waste Management

- In partnership with Rostock University:

- **3 State strategies for OWM** developed for Uttar Pradesh, Kerala and Andaman & Nicobar Islands.

  - Review on existing OWM practices, policy framework and climate implications led to a gap analysis and recommendations for action in short, medium and long term.

  - Discussion with key stakeholders for adoption of strategy and support on the development of a concept for supporting pilot implementation

⑩**Trainings of trainers** developed in partnership with RU and state training institutes to support the roll out of the state strategies, focus on **biogas**, **composting** and **economics of organic waste management**, tackling alternative innovative practices.

  ⑩Trainings on OWM conducted from 14th to 23rd Nov 2022 in Uttar Pradesh, Kerala and Andaman & Nicobar Islands, with more than **290 people trained.**

City Action Plan on Organic Waste Management

- **3 City Action Plans on municipal OWM** for Kanpur (UP), Kochi (Kerala) and Port Blair (A&N).
  - Includes mapping of existing OW material flow, related gap assessment and recommendations.

- **6 concepts for supporting the implementation** of enhanced practices for sustainable OWM prepared.
  - Kanpur: Decentralized Composting in Educational Institutions and on flower markets.
  - Kochi: Onsite composting for bulk waste generators (hotels); Resource Recovery Park and Banana Recycling.
  - For Port Blair: Decentralized Community Composting demonstration in hotspot area, using crate composting /any suitable model; and onsite composting at institutional municipal buildings.
  - Handholding support for implementation of concepts are planned.

Temple flower waste
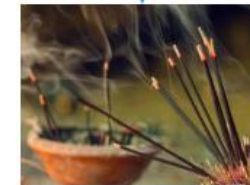
Upcycling floral waste to incense sticks

Upcycling floral waste to colour for Holi festival celebration

Example: Success story from Phool

Knowledge Transfer

Detailed study on fish processing waste, coconut shell waste, flower waste and sawmill waste in the city of Port Blair

- **Detailed studies** for supporting compost utilization/uptake, biomethanation and tailored solutions for main OW streams.

  - Detailed study on the fish processing waste, sawmill waste, coconut shell waste, and flower waste in Port Blair

  - National Biomethanation study – under development

  - Organic Waste Strategy for Delhi – under development

  - Compost study for Uttar Pradesh – under development

- **Study tour** with delegates from Indian partner institutions to **IFAT 2022 Munich, Germany**, fostering networking with international technology providers.

- Follow up with **German RETech Partnership** and participation of delegates from Suchitwa Mission and Clean Kerala Company at **IFAT Mumbai** to further investigate suitable technologies for the state. Kerala Conclave on SWM technologies planned for Jan 2023.
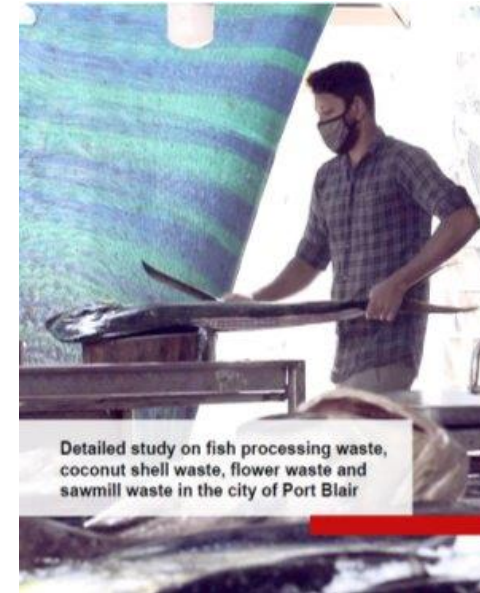
Outreach and IEC campaigns

- **Publication "**Biodegradable Waste Management at home: A Guidebook"
  - Launched by partner Ministry MoHUA on 30 September 2022..
  - Different techniques for implementation of OWM at household level – as this is one of the solutions promoted under national guidelines of organic waste management.

- Support to partner cities and states on conducting **awareness campaigns** on source segregation.

- Film on organic waste management in the city of Kochi

- As part of supporting 'GIZ Knowledge Hub for Green Technologies', a monthly series of **webinars** is established under **Community of practice for Organic Waste Management**.

- A delegation of Parliamentarians from the German Environmental Committee visited the flower, vegetable and meat market in Delhi, India on 28 October 2022.

Opportunities for next phase of MOWI

- Further distribution of **trainings** and state level **capacity building** for implementation of technologies for OWM, including cooperation with the German Biomass Research Center (**DBFZ) and Rostock University**

- Further **cooperation** to strengthen capacities of decision makers to advance **conducive policies.**

- State-level Stakeholder Workshop to plan **institutionalization of state level strategies.**

- **Implementation of feasibility study and recommendations** at state and/or city level

- Organization of national event to **share lessons learned.**

- Special interest expressed from India during Indo-German G2G negotiations:

  "Following the support for the Project Management of Organic Waste, beyond 2023, the Indian side is interested in a stronger support on **bio-methanation** including its utilisation, centralized, and decentralized **composting**."

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

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I   www.giz.de

Green solutions in urban areas: incentives, raising awareness and pilot experiences

STAGE 2

NATIONAL CLEAN AIR
PROGRAMME FOR HUMAN
WELL-BEING IN INDIAN
CITIES

**RAVINDRA
KUMAR TIWARi**
Deputy Secretary,
Ministry of
Environment, Forest
& Climate Change,
India

SPEAKER

giz Deutsche Gesellschaft
für Internationale
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National Clean Air Programme (NCAP) for Human Well-being in Indian Cities

**Ministry Of Environment, Forest & Climate Change
Government of India**

- Hon'ble Prime Minister on 15 August 2020 announced government's commitment to **ensure clean air to all the people** of the country, **assuring** them **a healthy and productive life**.

- He announced the intent and plan to **improve** the **air quality in more than 100 cities** through holistic approach.

- Health benefits directly to more than 30 crore people in the country

Improvement

- NCAP launched in January, 2019

- National-level strategy outlining the actions for reducing levels of air pollution at city and regional scales

- 20-30% city-wise air quality improvement targets based on population and air quality status.

- Coverage 131 cities in 24 States/UTs

- ≈Rs. 7100 Crore released for air quality improvement in 131 cities

Air Quality Improvement Status

Improvement in 95 cities in 2021-22 w.r.t base year of 2017. → **20 cities conforming to Air Quality Standards w.r.t. baseline**

AQI	Possible Health Impacts
Good	minimal impact
Satisfactory	minor breathing discomfort to sensitive people
Moderate	breathing discomfort to the people with lung disease such as asthma and discomfort to people with heart disease, children and older adults
Poor	breathing discomfort to people on prolonged exposure and discomfort to people with heart disease with short exposure
Very Poor	respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases
Severe	respiratory effects even on healthy people and serious health impacts on people with lung/heart diseases

Insufficient Data

Implementation Strategy

1. Creation of **Action Plans**

    • National Action Plan- National level interventions and schemes
    • State Action Plan- State level interventions and schemes
    • City Action Plan – City level interventions

2. Mobilize/convergence of **funding** of central and state/ UT schemes and programmes for air quality improvement

3. State level **sector specific interventions** for combating air pollution

4. Create **incentive structure** for cities

5. **Monitoring** mechanism

6. Public **participation & outreach**

Committees Structures under NCAP

CITY LEVEL — **STATE LEVEL** — **NATIONAL LEVEL**

CITY LEVEL
- Implementation and Monitoring committee
  - Chairmanship of District Collector/Municipal Commissioner

STATE LEVEL
- Steering Committee
  - Chairmanship of Chief Secretary
- Implementation and Monitoring committee
  - Chairmanship of ACS/PS, Environment

NATIONAL LEVEL
- Apex Committee
  - Chairmanship of Hon'ble Minister, EFCC
- Steering Committee
  - Chairmanship of Secretary, EFCC
- Monitoring Committee
  - Chairmanship of Additional Secretary, MOEFCC
- Implementation Committee
  - Chairmanship of Chairman, CPCB

Major Sectors Contributing to Air Pollution

Municipal Solid Waste burning

Road Dust

Construction & Demolition
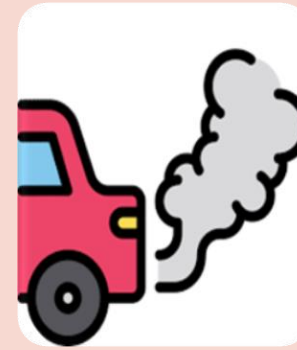
Vehicular Emissions

Industrial Emissions

Collection and processing of Municipal Solid Waste, Ban on burning of biomass/garbage

Maintenance of roads, Increasing green cover

Collection & processing of generated C&D waste

Monitoring of PUC for vehicles and development of EV charging infrastructure and promotion of E-vehicles

Mandatory installation of Online Continuous Emission Monitoring Systems (OCEMS) to industries except for green category.

Convergence of Schemes of GoI

- **Ministry of Environment Forest and Climate Change** - National Mission for Green India , Nagar Van Yojna

- **Ministry of Housing and Urban Affairs** - Urban Swachh Bharat Mission 2.0 , Metro rail projects, augment public transport network in cities and thereby improvement in air quality

- **Ministry of Heavy Industries** - Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME) Scheme (Phase II), CESL – 50,000 E- buses in 40 cities

- **Ministry of Petroleum and Natural Gas** - Sustainable Alternative Towards Affordable Transportation (SATAT) Pradhan Mantri Ujjwala Yojana (PMUY), City Gas Distribution Network, adoption of cleaner fuels in the country

- **Department of Agriculture & Farmer's Welfare** - Promotion of Agricultural Mechanization for in-situ management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi

- **Ministry of Road, Transport and Highways-** Implementation of BSVI standards, Vehicle scrappage policy

- **Ministry of New and Renewable Energy -** Schemes for renewable energy and MSW, Promotion of solar , Focused schemes on bio-gas/ bio-methanation plants for managing organic wastes, Waste to energy plants, etc, Provide financial incentives for renewable projects.

- **Ministry of Power -** Uninterrupted electric power supply , Phasing out old coal based power plants , Implementation of FGD in thermal power plants, etc.

Convergence of measures from 8 Ministries and over 25 programmes/schemes

- **PRANA- Portal for Regulation of Air Pollution in Non-Attainment cities; Digital application for NCAP programme management and monitoring**

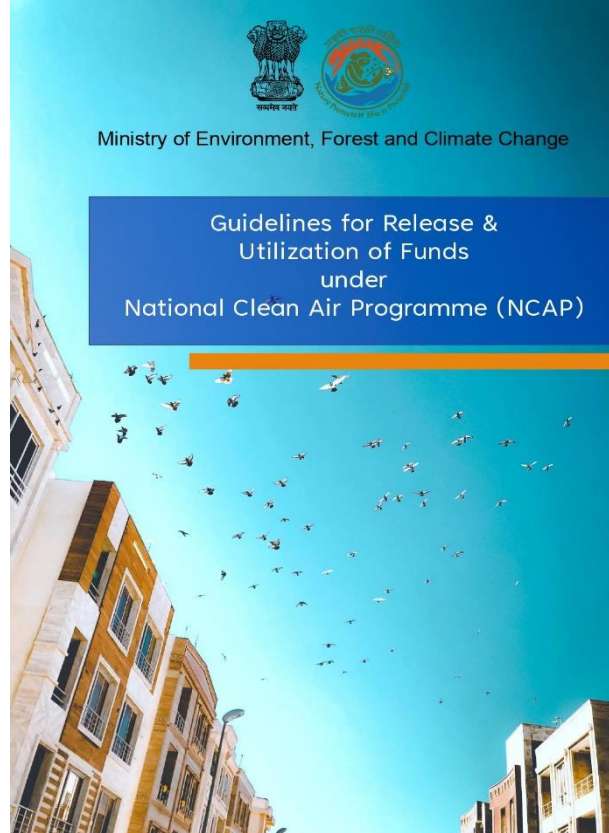International Day of Clean Air for Blue Skies

International Day of Clean Air for Blue Skies, September 07, 2021/2022
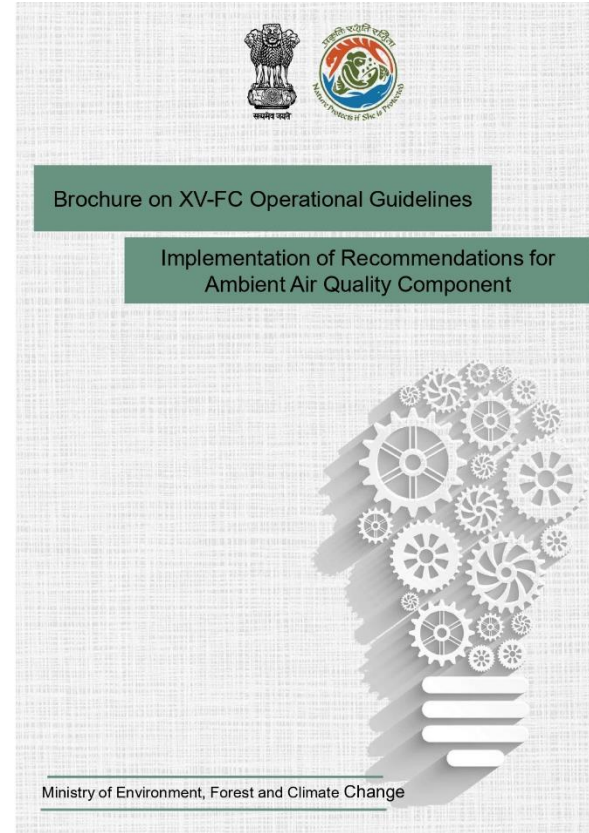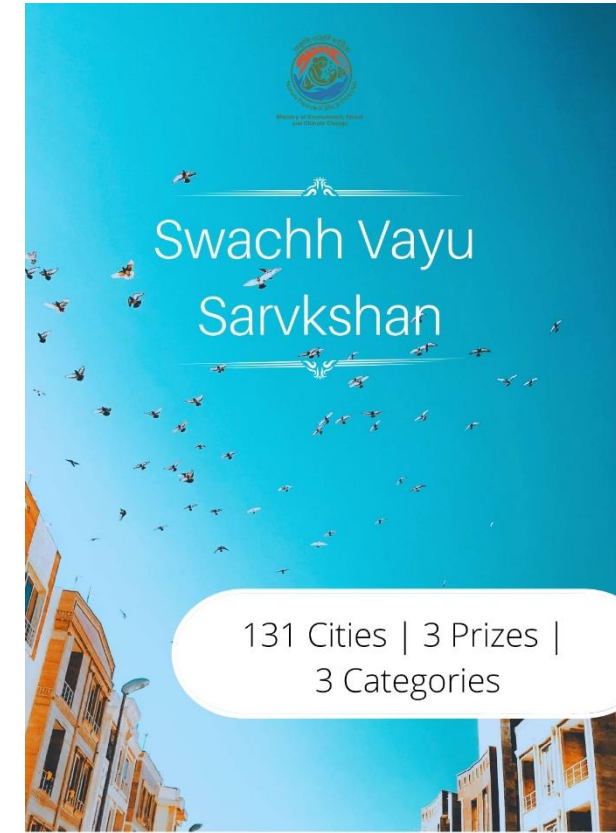
Guidelines Released

Guidelines for Capacity Building and Public outreach (CBPO)

Guidelines for Release and Utilisation of funds under NCAP

XVFC Operational guidelines for Urban Local Bodies grant

Swachh Vayu Survekshan- Ranking of cities under NCAP

Clean Air Best Practices for 8 cities; released on International Day of Clean Air for Blue Skies, 2022

IEC activities

Under NCAP, MoEF&CC is also conducting **regional workshops for sensitization, knowledge sharing and capacity building of the stakeholders** in the State.

Western region

Delhi & NCR region

7th - 8th March, 2022
Apparel House, AEPC, Sector 44, Gurugram

Southern region

Environment Ministers from across the country, deliberated upon the Single-Window System for Integrated Green Clearances, Combating Climate Change and Plastics and Waste Management.

National Conference of Ministers of Environment, Forest and Climate Change; 23-24, September 2022

Plantation Drives as a part of Awareness Programme

Developed and designed a children's story book along with standees (in English and Marathi language) which was released by Commissioner Nagpur Municipal Corporation on International Day of Clean Air for Blue Skies (7 September 2022).

THANKS

PRANA - Digital Application for Management of India's National Clean Air Programme

International Conference on "The Way Forward to Circularity" | 29-30 November 2022 | Berlin

On behalf of:

Federal Ministry
for the Environment, Nature Conservation,
Nuclear Safety and Consumer Protection

of the Federal Republic of Germany

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Raghu Babu Nukala & Sonal Jain
GIZ (India)

PRANA – Digital Application

Portal for Regulation of Air pollution in Non-Attainment cities

Launched by the Ministry of Environment, Forest and Climate Change, Government of India in 2021

- PRANA is an internet based digital application to **manage and monitor** India's National Clean Air Programme (NCAP)

- PRANA's **Intranet** helps national, state, city level agencies to work on cloud-based systems

- Intranet provides for **online submissions** of information, online approvals, **tracking physical progress and financial status** on implementation of Clean Air measures

- PRANA's Internet provides for **dissemination of information** to public on air quality management efforts under NCAP

Rs. 69 billion funds released

7 Thematic Areas

131 cities

24 States
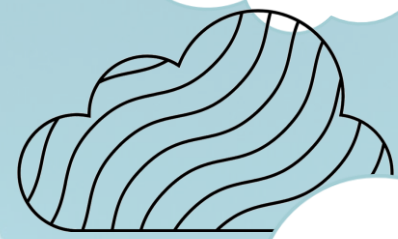
7 Sectoral Ministries

- Air Quality Data
- Waste and Biomass - Dumping and Burning
- Industries
- Vehicles
- Road Dust and Construction & Demolition
- Public Outreach
- Capacity Building, Monitoring Network and Source Apportionment

2-Dec-22

PRANA
Portal for Regulation of Air Pollution in Non-Attainment Cities

− A +   SITE MAP   LOG IN

Home | About NCAP ▾ | National Dashboard | City Dashboard | Air Quality data | Activities ▾ | Resources | Citizen's Corner

Overview

Partners

City Dashboard

DISCOVER

All Municipal commissioners of 131 cities are requested to login through re

About PRANA

"PRANA" – Portal for Regulation of Air-pollution in Non-Attainment cities, is a portal for monitoring of implementation of National Clean Air Programme (NCAP). It will support tracking of physical as well as financial status of city air action plan implementation and disseminate information on air quality management efforts under NCAP to public.

Information related to various activities and their progress under NCAP by various stakeholders shall be available on this portal, which will help in future policy decisions.

**Sh. Narendra Modi
(Hon'ble Prime Minister)**

At a glance

Total Cities	Thematic Areas	Fund Released
131	7	₹6897.06 Crores

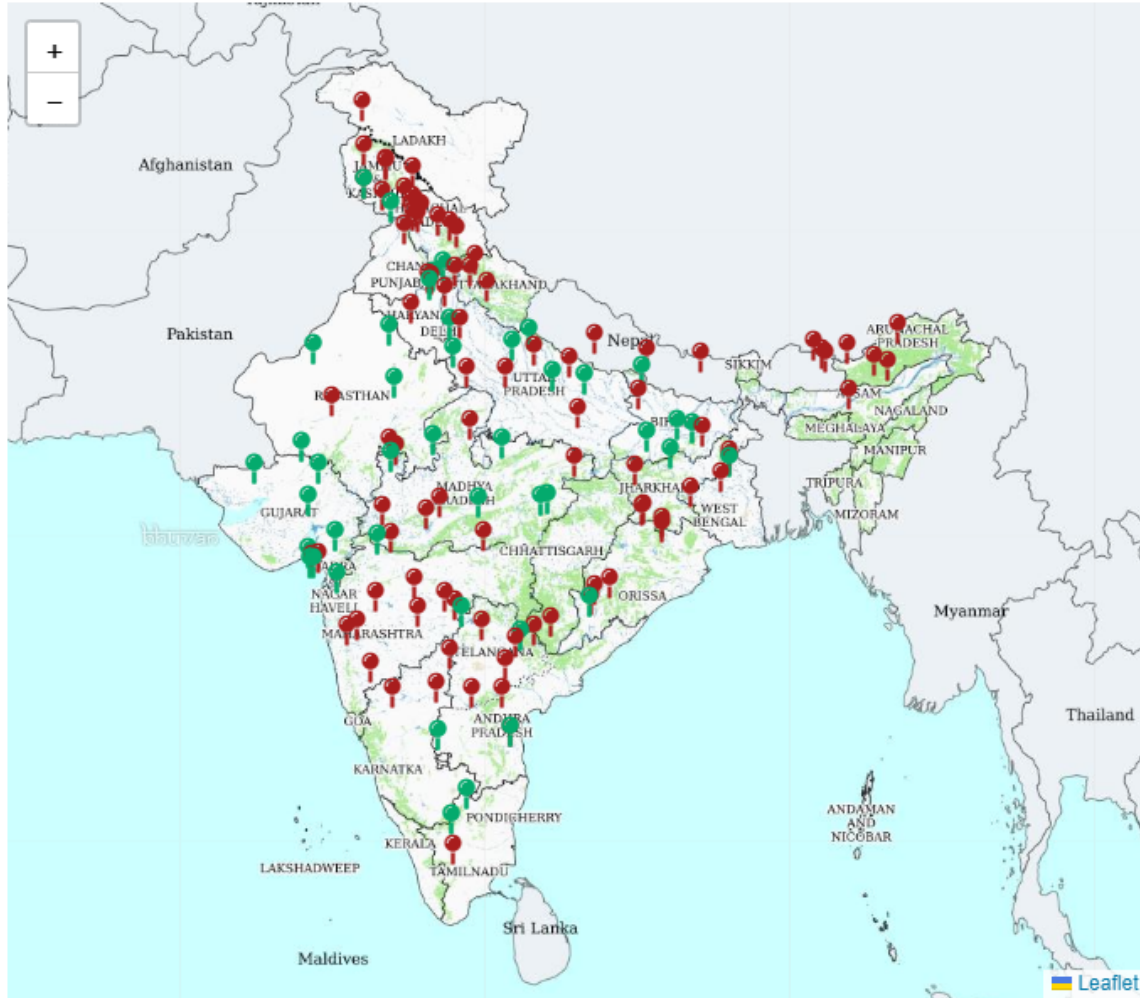https://prana.cpcb.gov.in/#/home

2-Dec-22

Internet Features
Citizen-centric Information

INTERNET FEATURES

- About NCAP

- National Dashboard

- City Dashboard

- Air Quality Data (including live data, AQI Bulletin)

- Activities

- Partners – Ministries; International Organizations; Institutes of Repute

- Resources (reports, downloads, Best Practices

- Events

- Citizens' Corner

Ministry of Environment, Forest and Climate Change
Government of India

PRANA
Portal for Regulation of Air Pollution in Non-Attainment Cities

— A +   SITE MAP   LOG IN

Home   About NCAP ▾   National Dashboard   City Dashboard   Air Quality data   Activities ▾   Resources   Citizen's Corner

Geographical View

+
−

Afghanistan

Pakistan

Nepal

Myanmar

Thailand

Sri Lanka

Maldives

◉ Leaflet

● XV-FC Cities   ● NCAP Cities

List of States, UTs and Cities under NCAP & XV-FC

Search

State/Union Territory	City(s)
Andhra Pradesh	Guntur, Kurnool, Nellore, Vijayawada, Vishakhapatnam, Anantapur, Chitoor, Eluru, Kadapa, Ongole, Rajahmundry, Srikakulam, Vizianagaram

NATIONAL DASHBOARD

- Funded States, Cities
- City Air Action Plan Status
- Funds Released
- Overview of Thematic Areas
- City wise PM10 performance
- Status of Ambient Air Quality Monitoring Network
- Geographical View
- Public Grievance Redressal Portal Status
- Source Apportionment/ Emission Inventory Status

Air Quality Data

Air quality of Indian cities

(Data Source: CPCB)

Current AQI

Good	49
Satisfactory	80
Moderate	108
Poor	52
Very Poor	5
Severe	1

Total CAAQM Stations	374
Live	295
Insufficient Data	37
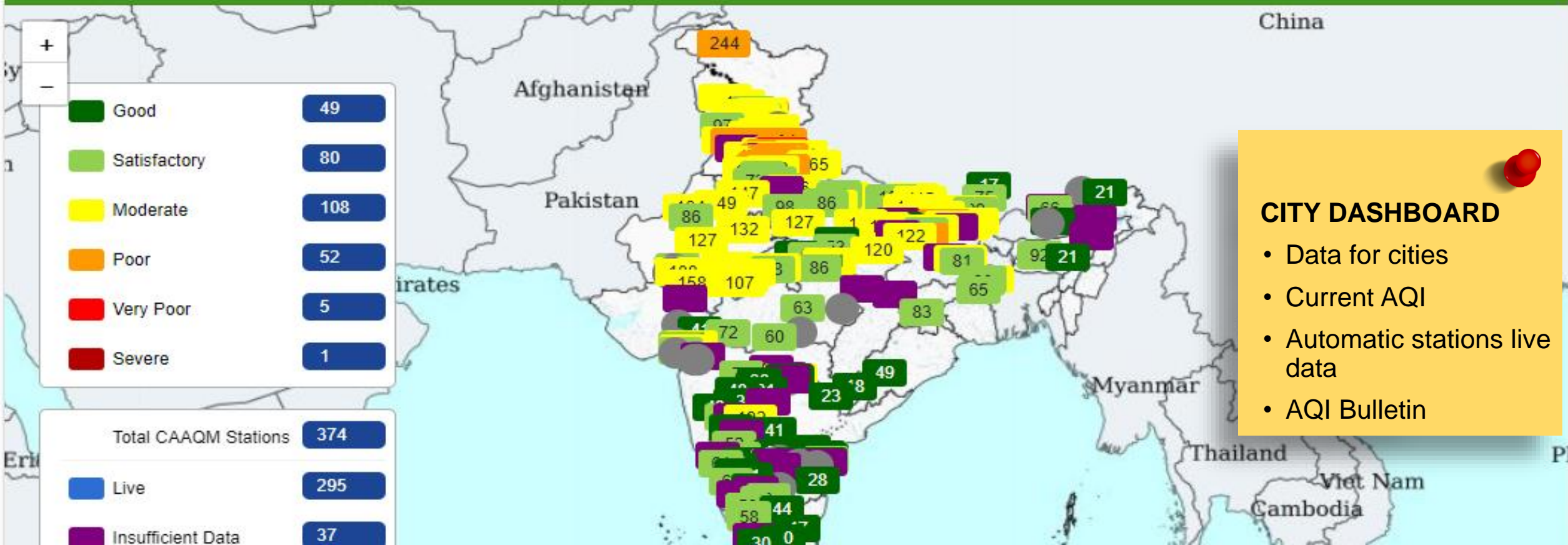
CITY DASHBOARD

- Data for cities
- Current AQI
- Automatic stations live data
- AQI Bulletin

Intranet Features
NCAP Programme Management System

INTRANET FEATURES

- **Separate pages for each organization:** Cities, Sectoral Ministries. International Organisations, Institutes of Repute

- **Basic Details** (contact person etc.)

- **State Action Plan Module:** Action plan info and quarterly progress

- **City Action Plan Module** – Action plan status and quarterly progress

- **Sectoral Ministries Action Plan Module:** Action plan status and progress

- **Hotspots Module: Pollution hotspots in cities**

- **Financial Module:** Fund transfer Information, Utilization Certificate (UC)

- **Messaging module:** System generated (Approval, submission, rejection); Alert messages; Information (CPCB to cities; SPCB to cities; etc.)

- **Reports generated** - Physical progress; City report card; Mandatory action points

- **Performance Assessment:** ranking of cities
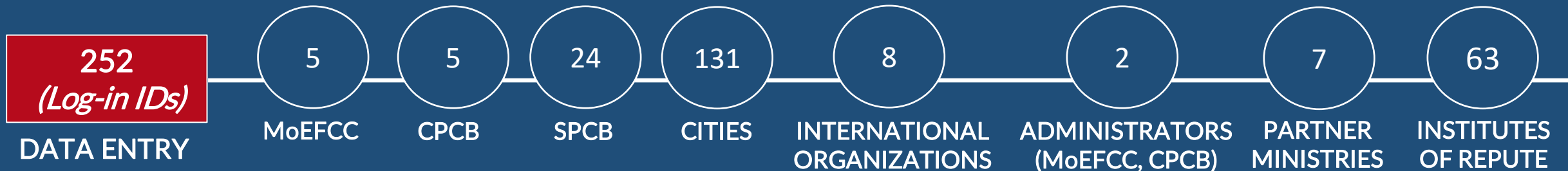
252 (Log-in IDs)	5	5	24	131	8	2	7	63
DATA ENTRY	MoEFCC	CPCB	SPCB	CITIES	INTERNATIONAL ORGANIZATIONS	ADMINISTRATORS (MoEFCC, CPCB)	PARTNER MINISTRIES	INSTITUTES OF REPUTE

MoEFCC

*Data that cities are able to **view and update** through their login id*

- Basic details
- Details of concern nodal officials

Repository of MoUs:

MoU under NCAP; DoE, IoRs

State Action Plan:
- Status of action plan and quarterly progress

Reports generated:
- Physical progress
- City report card
- Mandatory action points

City wise Action Plan module:
- Status of action plan and quarterly progress

Minutes of the Meeting:
- Information about steering, monitoring & implementation committee meetings at city, state and national level *(Date; Number of meetings conducted; Minutes of the meetings)*

Financial module:
- Utilization Certificate (UC)- uploaded, generated and submitted by cities, SPCB ,CPCB
- Fund transfer Information (MoEFCC-> CPCB-> SPCB->cities)
- Linkage with CNA system (ongoing)

Sectoral ministries Action Plan module:
- Status of actions taken by sectoral ministries

Hotspots module:
- Hotspots identified; Location, Map
- Action plans; Quarterly Progress Reporting (QPR)

Performance Assessment:

Of cities by SLMIC and CPCB

Messaging module:
- System generated (Approval, submission, rejection)
- Alert messages
- Information (CPCB to cities; SPCB to cities; etc.)

Ranking assessment:
- Marks to cities
- Ranking of cities based on criteria

Dashboards:
- Summary dashboards
- Individual city dashboards

252 *(Log-in IDs)*	5	5	24	131	8	2	7	63
DATA ENTRY	MoEFCC	CPCB	SPCB	CITIES	INTERNATIONAL ORGANIZATIONS	ADMINISTRATORS (MoEFCC, CPCB)	PARTNER MINISTRIES	INSTITUTES OF REPUTE

CITIES

*Data that cities are able to **view and update** through their login id*

Basic details
- Details of concern nodal officials

Repository of MoUs:
MoU under NCAP; DoE, IoRs

Important official documents:
- Office orders
- Directions

Reports generated:
- Physical progress
- Mandatory action points

Annual Action Plan with Micro Detailing module:
- City Micro Action Plans; Annual Targets
- Quarterly Progress Reporting (QPR)
- Approval of action plans by CPCB

Minutes of the Meeting:
- Information about steering, monitoring & implementation committee meetings at city level *(Date; Number of meetings conducted; Minutes of the meetings)*

Messaging module:
- System generated (Approval, submission, rejection)
- Alert messages
- Information (MoEFCC to cities; CPCB to cities; SPCB to cities; etc.)

Hotspots module:
- Hotspots identified; Location, Map
- Action plans; Quarterly Progress Reporting (QPR)

Performance Assessment:
They can view the scores they have been given by SLMIC and CPCB

Financial module:
- Utilization Certificate (UC)- uploaded, generated and submitted by cities, SPCB ,CPCB
- Fund transfer Information (MoEFCC-> CPCB-> SPCB->cities)
- Linkage with CNA system (ongoing)

| 252 *(Log-in IDs)* DATA ENTRY | 5 MoEFCC | 5 CPCB | 24 SPCB | 131 CITIES | 8 INTERNATIONAL ORGANIZATIONS | 2 ADMINISTRATORS (MoEFCC, CPCB) | 7 PARTNER MINISTRIES | 63 INSTITUTES OF REPUTE |

City Report Card

Annual Plan	**Quarterly Progress Report**	**State/Union Territory**	**Type of the City**
2022-23 ✕ ▾	JULY-SEP ✕ ▾	Maharashtra ✕ ▾	XV-FC ▾

Name of Non Attainment City

Pune ▾   Generate   📊   Export PDF

A. STATUS OF AIR QUALITY

Sr. No	Average PM10 (µg/m3)	Previous Year	
1		52,49,65,58,54,61,55,52,68,75,67,98,71,103,104,99,47,45,97,153,145,97,58,61,61,196,113,116,100,121,132,64,114,84,90,35,47,170,111,235,110,110,67,57,84,68,116,81,109,103,115,79,114,64,66,86,94,104,59,93,81,57,106,68,59,97,85,

B. FINANCIAL PROGRESS

Sr. No	Indicator	Funds Released	Percentage Of Funds Utilized
1	Total Funds Released Under NCAP	218.8	4.01
2	Total Funds released under convergence of funds other than NCAP in FY 2021_22 till date	0	-

C. PHYSICAL PROGRESS

Sr. No	Thematic Area	Indicator	Status	Targe
1	Strengthening of Infrastructure and Enforcement	Monitoring Stations(Real time (R) & Manual(M))	0	
2	Strengthening of Infrastructure and Enforcement	Source Apportionment Study	0	
3	Strengthening of Infrastructure and Enforcement	Emergency Response System/Graded Response Action Plan	0	
4	Strengthening of Infrastructure and Enforcement	Number of Hotspots with Action Plans prepared against number of Hotspots identified	100	
5	Strengthening of Infrastructure and Enforcement	City Implementation Committee Meeting	13	
6	Public Outreach	Public Grievance Redressal System	0	
7	Road and Construction and Demolition	Percentage Of Road length Paved and Maintained	0	
8	Road and Construction and Demolition	Percentage of Green Cover in the City	0	
9	Road and Construction and Demolition	Percentage Of C&D Waste Processed	0	
10	Vehicles	Traffic Decongestion Plan	0	

Sidebar navigation:
- Details of Concerned Officials
- Important Official Documents
- Dashboard
- Annual Action Plan with Micro Detailing
- Annual Plan and Quarterly Progress Report of Partner Ministries
- State Action Plans
- Minutes of Meeting of Implementation Committee under NCAP
- Messages (279)
- Minutes of Meetings of Other Committees under NCAP
- Hotspots
- Repository of MoUs
- Performance Assessment
- Reporting Module
- Rankings Approval System

Note:
- **CITY REPORT CARD**
  - Status of air quality
  - Financial progress
  - Physical progress

- **SUMMARY DHASHBOARD AS VIEWED BY CPCB FOR EACH CITY**
- Status of City Action Plan
- Annual data of PM 10
- City login summary
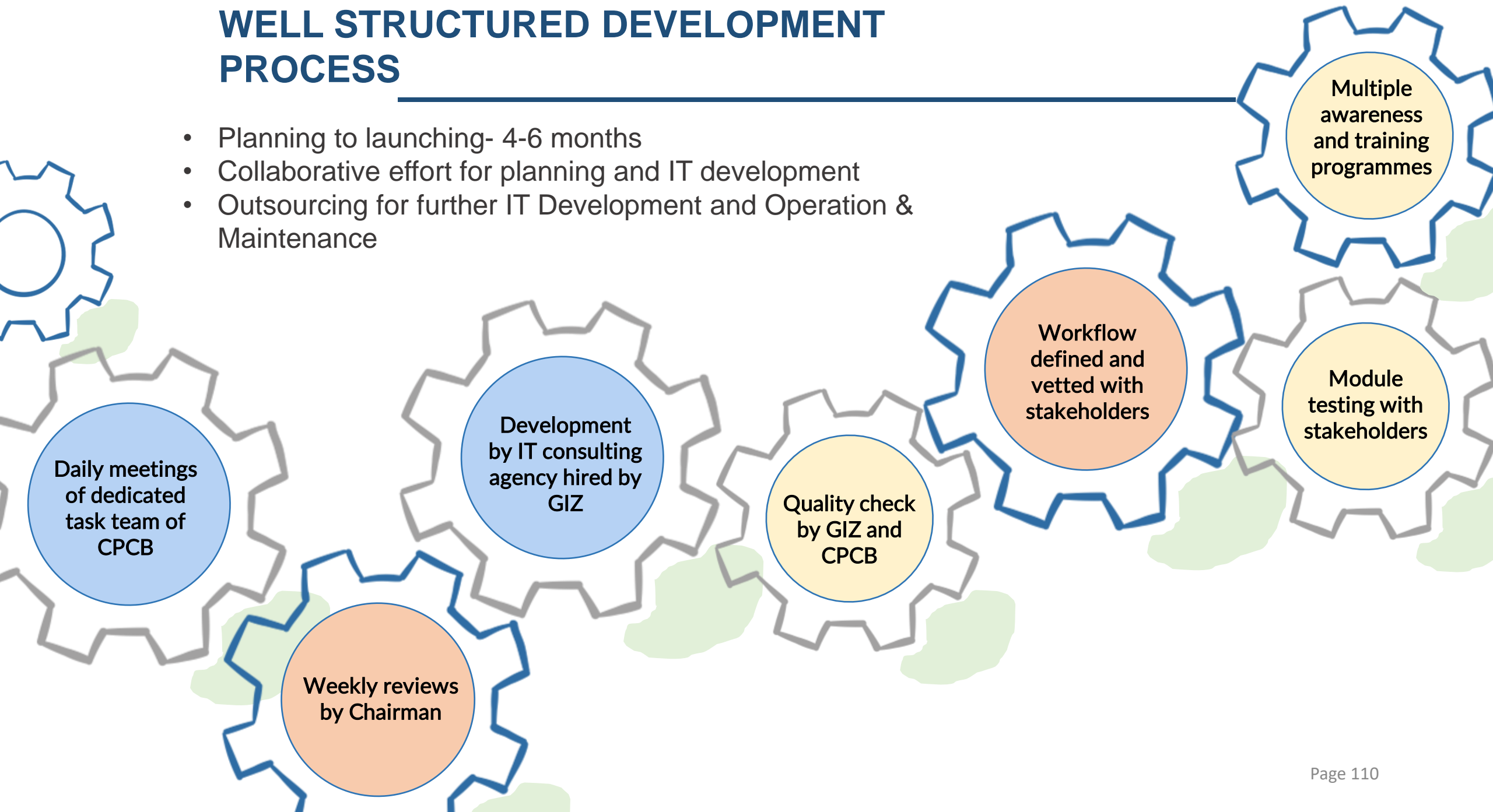- Source contribution to PM levels
- Minutes of meeting

Key Takeaways
Digitalisation for Effective Programme Management

WELL STRUCTURED DEVELOPMENT PROCESS

- Planning to launching- 4-6 months
- Collaborative effort for planning and IT development
- Outsourcing for further IT Development and Operation & Maintenance

Daily meetings of dedicated task team of CPCB

Weekly reviews by Chairman

Development by IT consulting agency hired by GIZ

Quality check by GIZ and CPCB

Workflow defined and vetted with stakeholders

Multiple awareness and training programmes

Module testing with stakeholders

HIGHLIGHTS

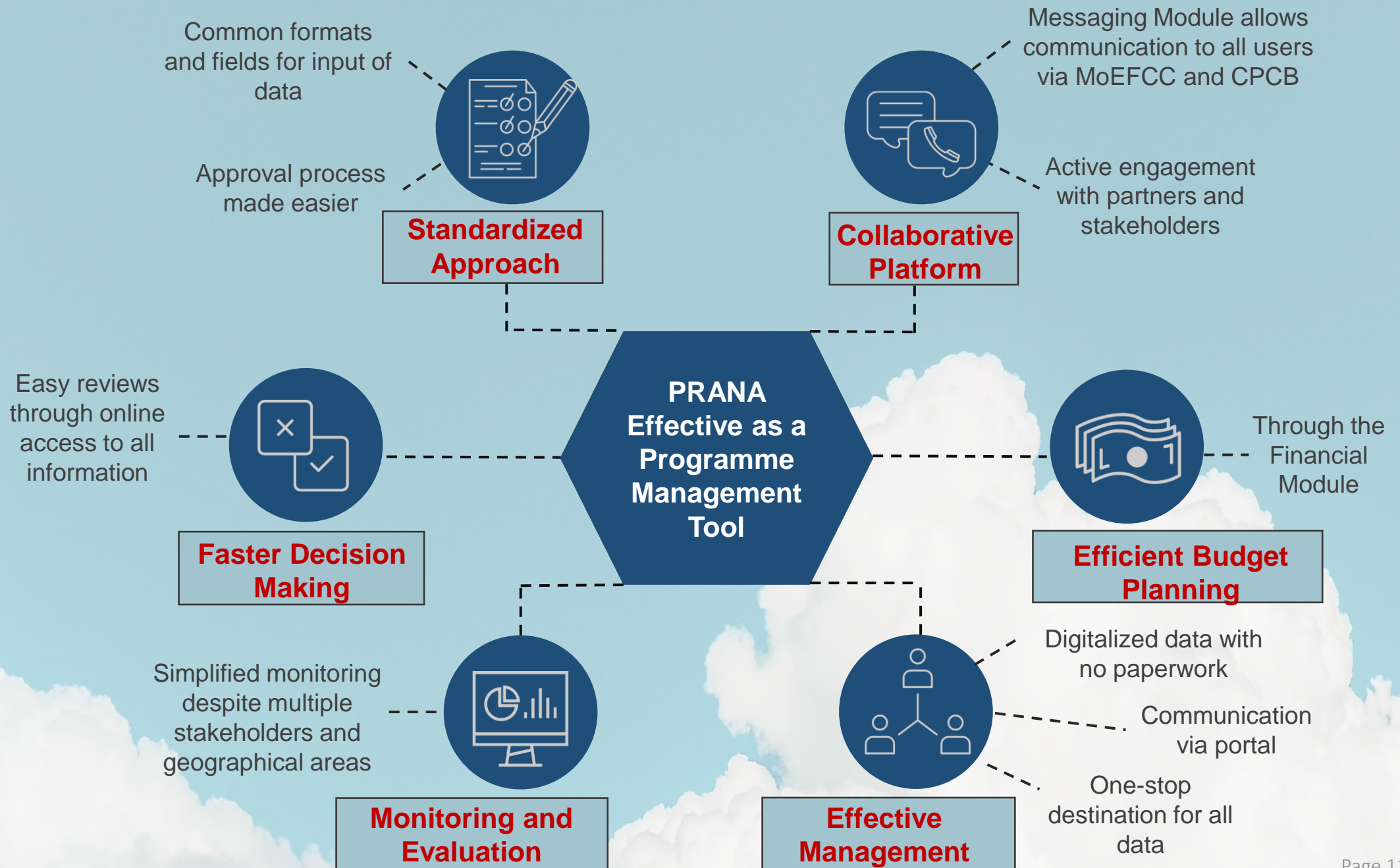**252** — Login IDs generated for authorities at National, State and City levels

70 — Cities have Annual Action Plans for Clean Air

150 — Best practices already reported in reduction of air pollution captured on PRANA

60 — Cities have identified hotspots and prepared plans

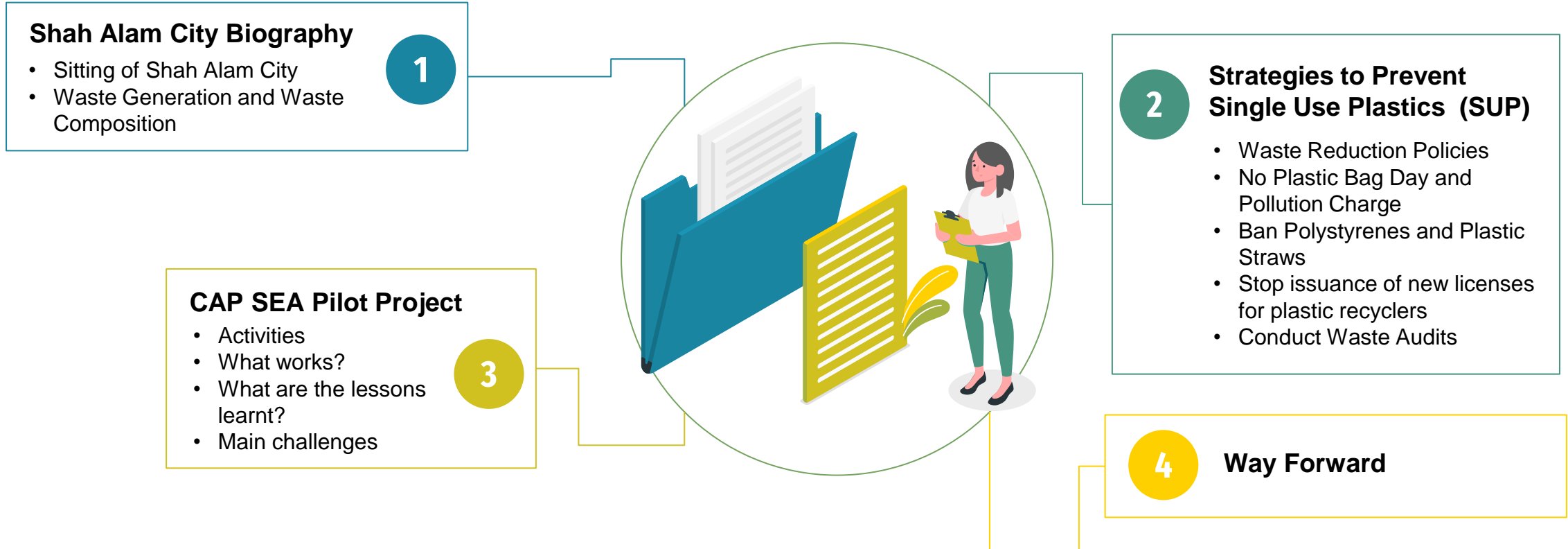# Green solutions in urban areas: incentives, raising awareness and pilot experiences

STAGE 2

HOW SHAH ALAM CITY
COUNCIL AND THE
BUSINESS COMMUNITY
BAN SINGLE-USE PLASTIC

**HASLINA AB
AZIZ**
Senior Assistant
Director,
MBSA

SPEAKER

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Shah Alam City is moving to reduce single use plastics (sup)

Shah Alam City Biography

1

- Sitting of Shah Alam City
- Waste Generation and Waste Composition

Strategies to Prevent Single Use Plastics (SUP)

2

- Waste Reduction Policies
- No Plastic Bag Day and Pollution Charge
- Ban Polystyrenes and Plastic Straws
- Stop issuance of new licenses for plastic recyclers
- Conduct Waste Audits

CAP SEA Pilot Project

3

- Activities
- What works?
- What are the lessons learnt?
- Main challenges

4   **Way Forward**

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Shah Alam City Biography

The Sitting of Selangor State and Shah Alam City

Selangor is a state located at the west coast of Peninsular Malaysia. It surrounds the federal territories of Kuala Lumpur and Putrajaya, both of which were once under Selangor's territorial sovereignty.

Selangor is the major contributor to **Malaysia's** economy in year 2019 with a share of 24.2%, followed by W.P. Kuala Lumpur (16.4%), Sarawak (9.6%), Johor (9.4%), Pulau Pinang (6.7%) and Sabah (6.0%).
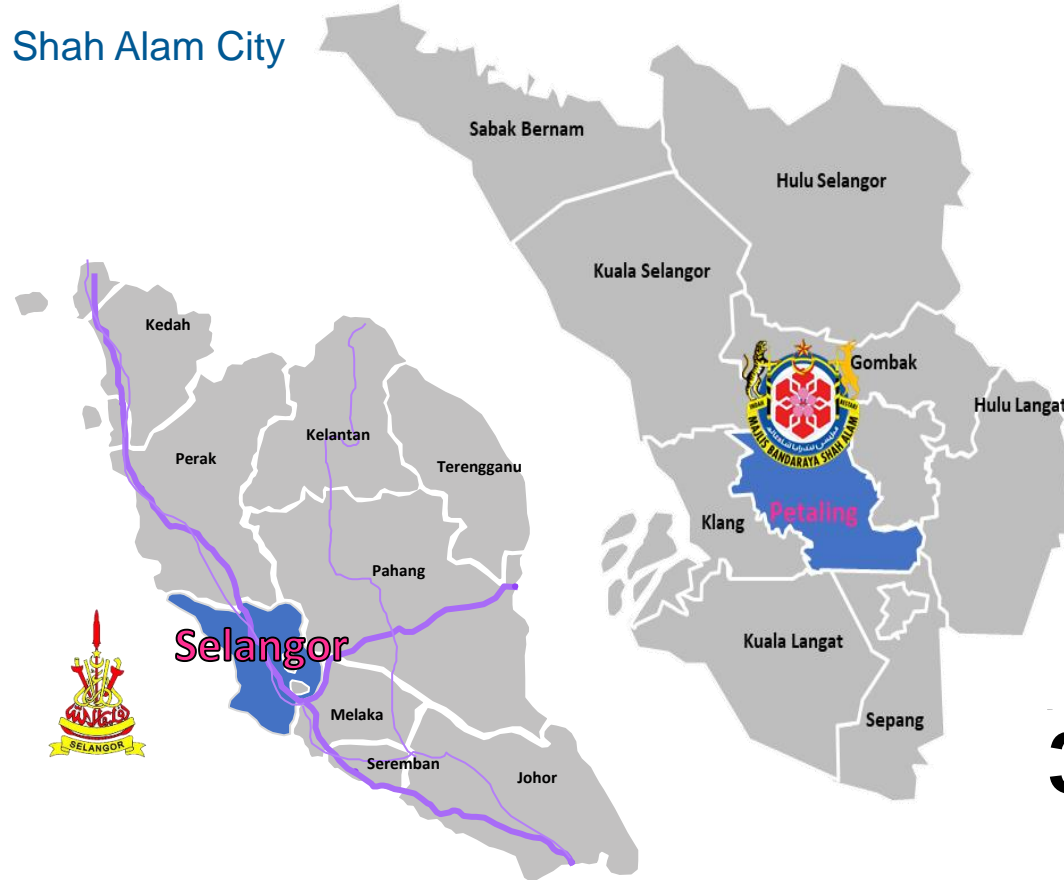
Shah Alam is located within the district of Petaling and a small part of the district of Klang in the state of Selangor. **THE STATE CAPITAL OF SELANGOR IS SHAH ALAM.**

Total population (2020)
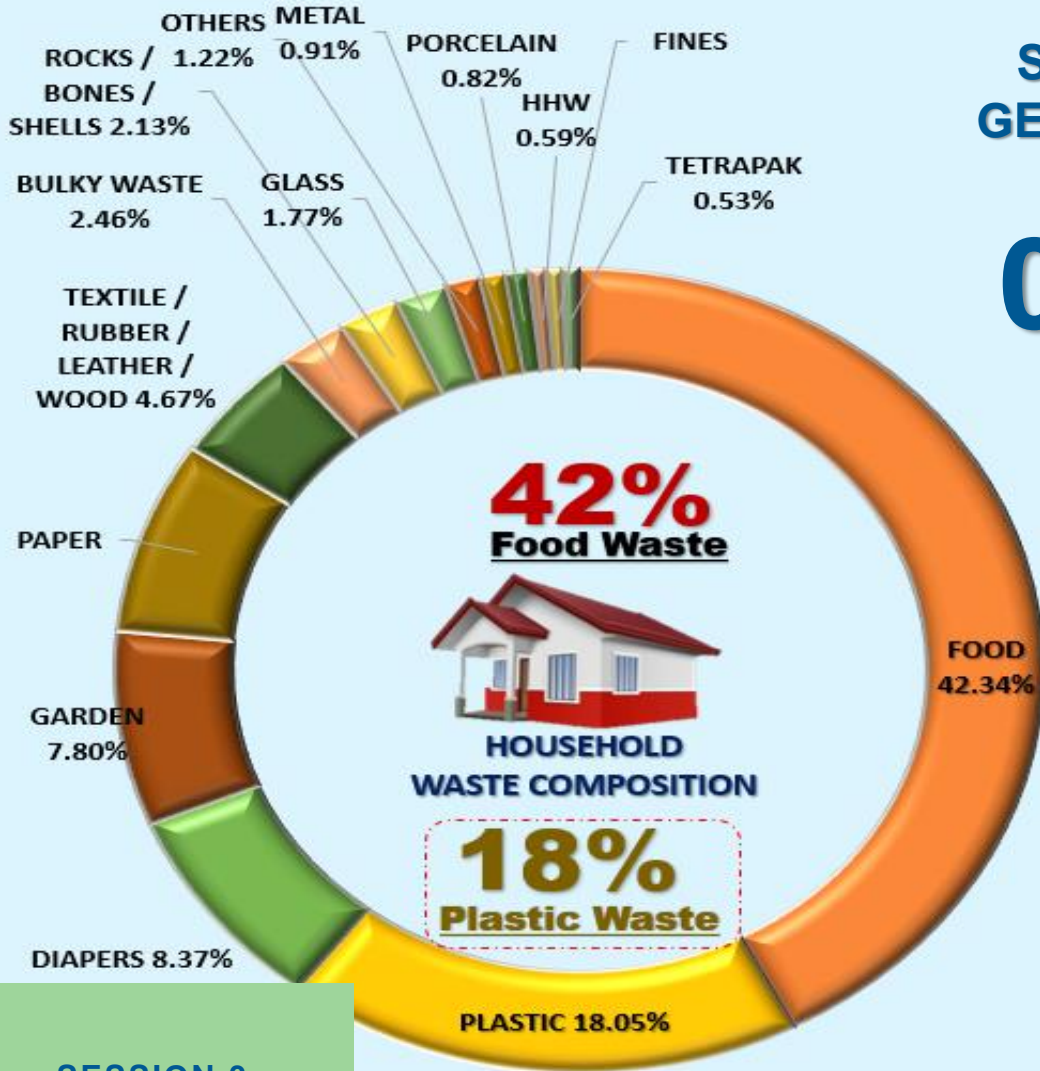
686,966

Total acreage

30,210.72 Ha

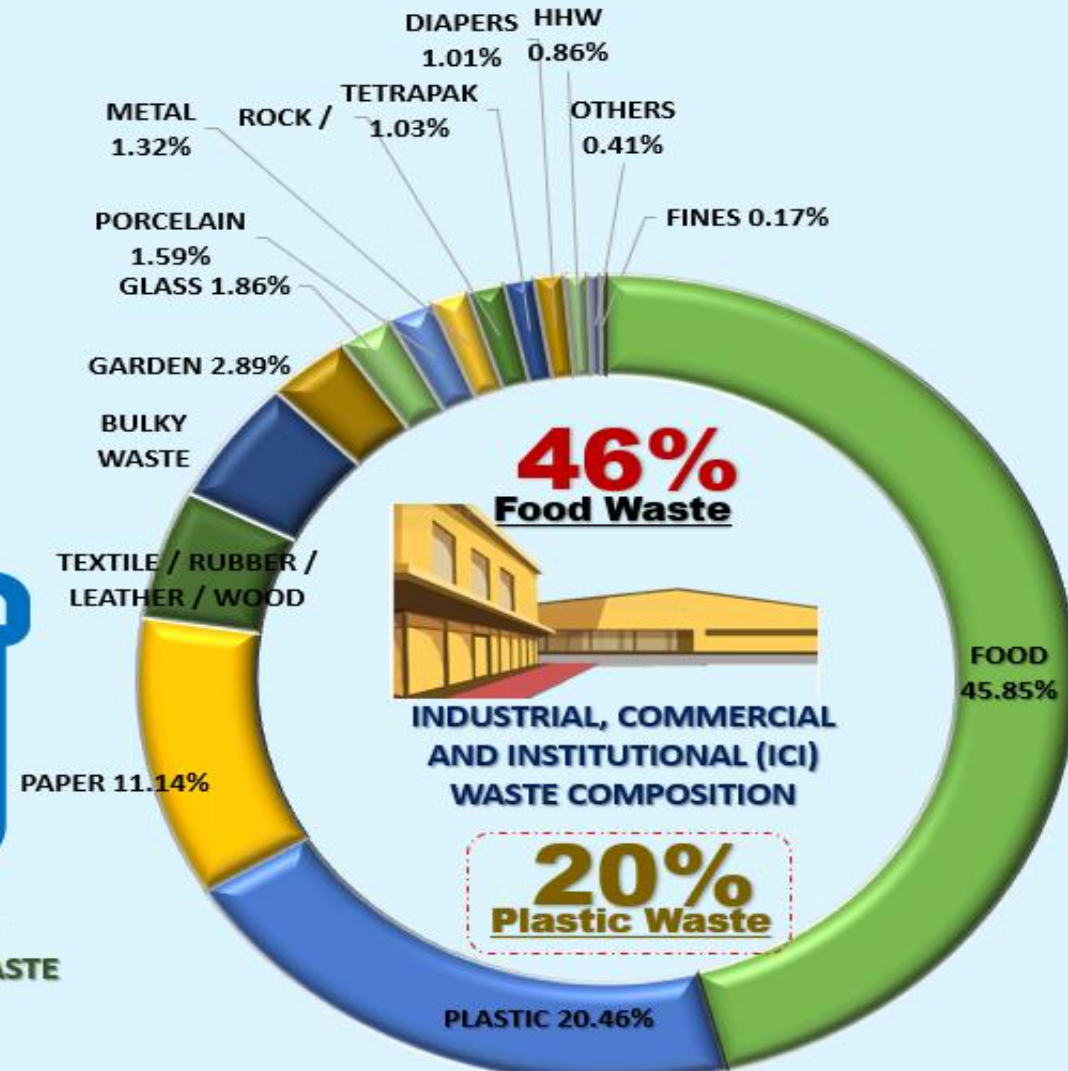**(302km²)**

Shah Alam City Biography

Waste Generation and Waste Composition

SOLID WASTE GENERATED PER CAPITA

0.9 Kg/Day

DOMESTIC WASTE 642 MT / DAY

GARDEN / BULKY / CLEANSING / INERT WASTE

500 MT / DAY

Household Waste Composition

- OTHERS ROCKS / 1.22%
- METAL 0.91%
- PORCELAIN 0.82%
- FINES
- BONES / SHELLS 2.13%
- HHW 0.59%
- TETRAPAK 0.53%
- BULKY WASTE 2.46%
- GLASS 1.77%
- TEXTILE / RUBBER / LEATHER / WOOD 4.67%
- PAPER
- GARDEN 7.80%
- DIAPERS 8.37%
- PLASTIC 18.05%
- FOOD 42.34%

42% Food Waste

HOUSEHOLD WASTE COMPOSITION

18% Plastic Waste

Industrial, Commercial and Institutional (ICI) Waste Composition

- DIAPERS 1.01%
- HHW 0.86%
- METAL 1.32%
- ROCK /
- TETRAPAK 1.03%
- OTHERS 0.41%
- PORCELAIN 1.59%
- GLASS 1.86%
- FINES 0.17%
- GARDEN 2.89%
- BULKY WASTE
- TEXTILE / RUBBER / LEATHER / WOOD
- PAPER 11.14%
- PLASTIC 20.46%
- FOOD 45.85%

46% Food Waste

INDUSTRIAL, COMMERCIAL AND INSTITUTIONAL (ICI) WASTE COMPOSITION

20% Plastic Waste

Source : Shah Alam Solid Waste Master Plan

CAP SEA Project Activities

Video

CAP SEA Pilot Project

Pilot Project Implementation

What works?

- Formation of the task force by MBSA

- The action plan provides a comprehensive guideline to operationalized the process

- Collaboration of many different parties, universities, school, and NGO

- Very passionate and committed team and partners

What are the lessons learnt?

- Resistance of community to accept changes.

- More awareness materials to reach out community to change their behaviors

- There are not many alternative to replace SUP. Premises lack options to replace their SUP.

- Reuse concept is very new in this region therefore leads to lack of understanding and trust by business owners and community.

- Timeline to implement is too short

- Regulation is not enough to make people adhere to the rules

MAIN CHALLENGES

Lack of physical activities due to Covid-19 lockdowns.

CAP SEA Pilot Project

Pilot Project Implementation

Way forward

- By 2030, at least 50% of commercial premises in Shah Alam are free from SUP.

- By 2030, 80% of Shah Alam communities and stakeholders are aware on SUP prevention initiative by MBSA.

- Intensify reuse concepts & introduce more alternative to replace SUP.

- Continuous advocation and promotional SUP prevention to communities and local businesses.

- More training needed for MBSA staff and partners.

- Comprehensive enforcement through licensing rules to businesses.

THE WAY FORWARD TO CIRCULARITY – CONFERENCE 2022

Coffee Break
15.20 – 15.50

Green solutions in urban areas: incentives, raising awareness and pilot experiences

KEYNOTE: PEOPLE ARE KEY: HOW TO FOSTER CIRCULAR BEHAVIOURS

DR. ANNA PEGELS
Senior Researcher, IDOS

SPEAKER

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IDOS | German Institute of Development and Sustainability

THE WAY FORWARD TO CIRCULARITY

DR. ANNA PEGELS – 29/11/2022

Getting people on board

BEHAVIOUR CENTERED DESIGN OF THE WASTE MANAGEMENT SYSTEM

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IDOS? Who's that?

- IDOS: Formerly known as DIE (Deutsches Institut für Entwicklungspolitik), now German Institute of Development and Sustainability

- Publicly funded research institute, mainly financed by German development cooperation (BMZ)

- Focus of my work: Sustainable behaviours, in particular waste avoidance and recycling behaviours by households
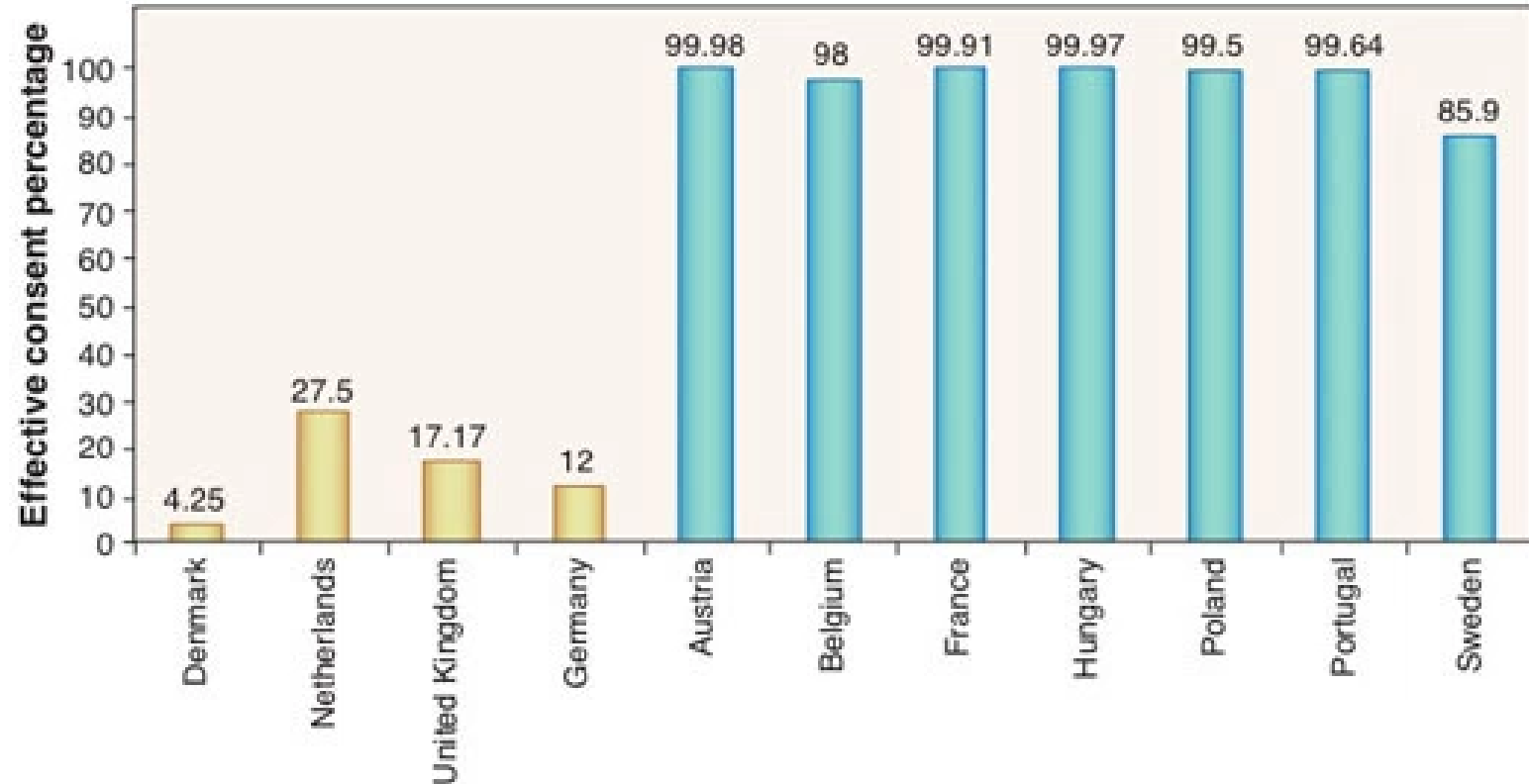
Waste avoidance and recycling: People are key
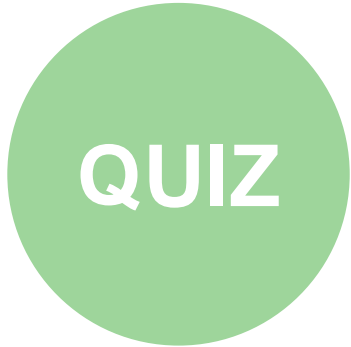

People shaping behavioural contexts

- Municipalities
- Consultants
- Ministries
- Entrepreneurs

People behaving in certain ways

- Investors
- Innovators
- Consumers
- Households
- Entrepreneurs

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Is behavioural context really that relevant?

QUIZ

a) Religious values
b) Decision default
c) Awareness campaigns targeting compassion
d) Awareness campaigns targeting reciprocity


Effective consent rates, by country. Explicit consent (opt-in, gold) and presumed consent (opt-out, blue).

Is behavioural context really that relevant?

a) Religious values
b) **Decision default**
c) Awareness campaigns targeting compassion
d) Awareness campaigns targeting reciprocity
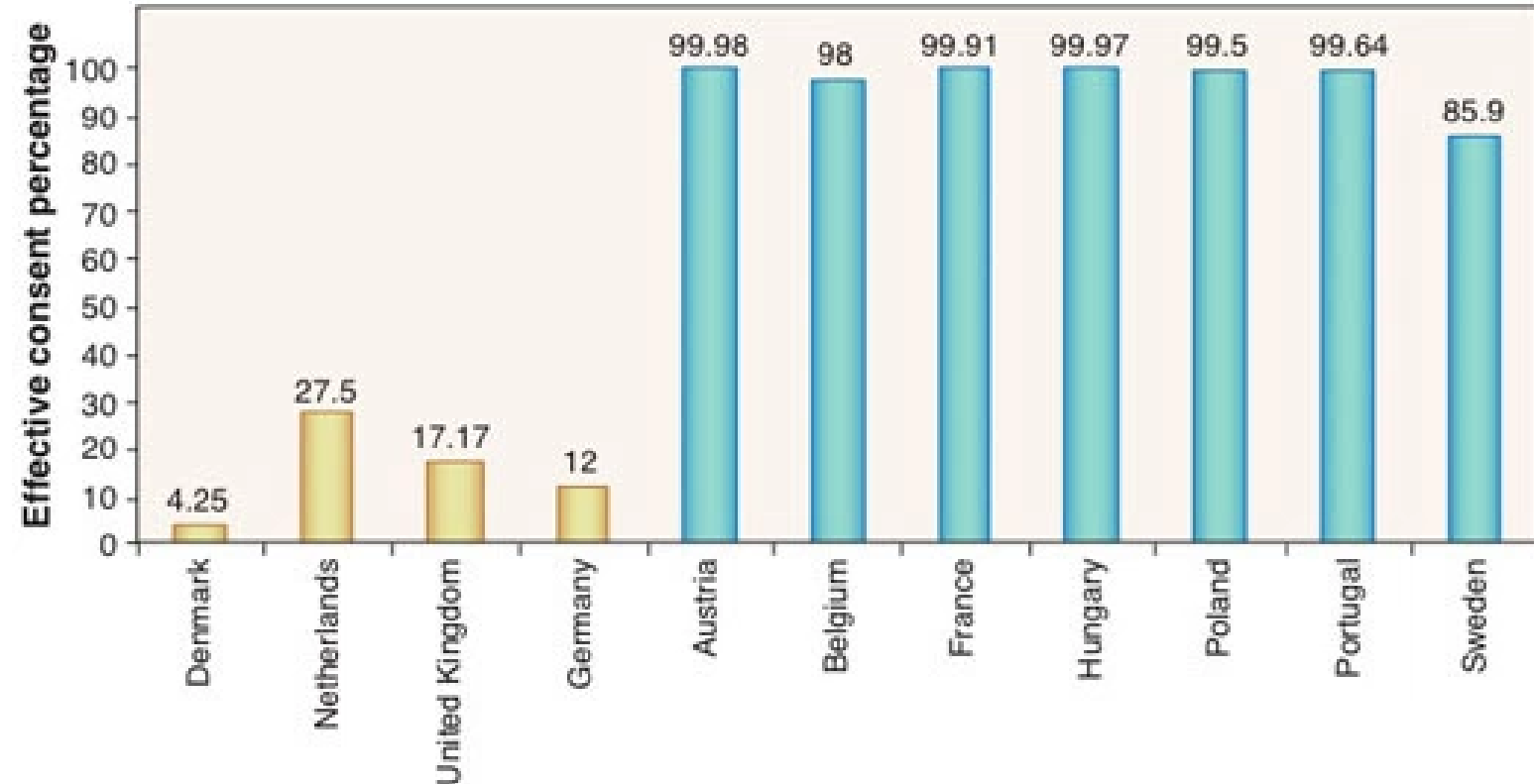
Effective consent rates, by country. Explicit consent (opt-in, gold) and presumed consent (opt-out, blue).

What about green behaviours

Copenhagen Experiment (Hansen, 2011):

Green footprints towards waste bins **reduced littering by 46%.**

Key question: **How** to shape behavioural contexts that support people in avoiding waste or enabling recycling?
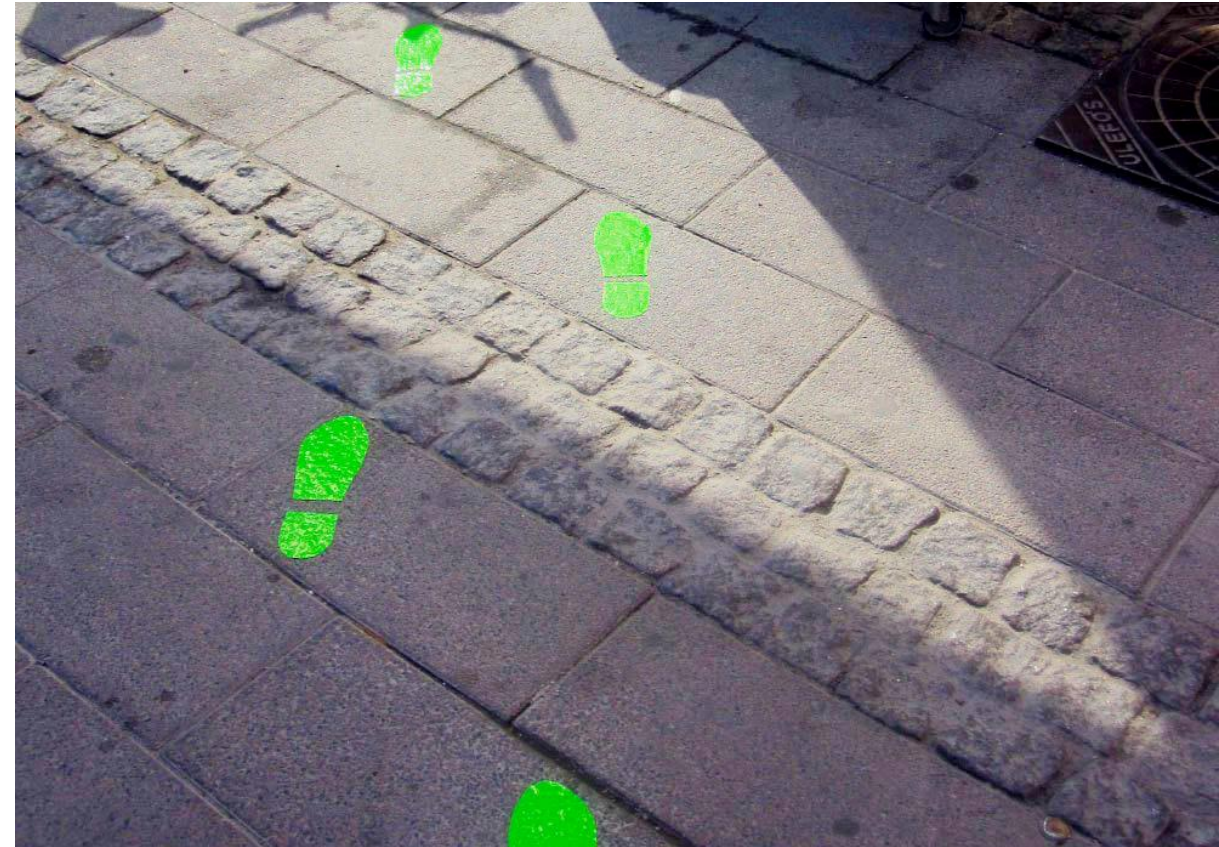
Behaviour centred design – how to?

No silver bullet, but „silver process"

Define the **overarching aim** (e.g. closing the plastics loop in area X)

Understand people and their **status quo**: **Who** do we need to have on board, **what** do they currently do, and **why**?

Understand the **target behavior**: **what** do we need them to do so we can close the plastics loop, and **why** would they do it?

Co-develop **targeted behavioural context changes** to enable and incentivise shift from current to target behavior

Test and improve elements of behavioural context changes

Scale tested and proven changes

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Example: Waste seperation in Indonesia

AIM

Overarching aim: Closing the plastics loop in Telaga Kahuripan, Bogor

Status quo: Mixed waste disposal by households

Target behavior: Separation at source into two categories
(inorganics, organics/residuals), then separated
disposal (or leave bin for inorganics empty)

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Example: Waste seperation in Indonesia

4 targeted context changes

Enable: Distribution of second bins

Create trust: Re-Design of truck

~0% ➡ 35%

Example: Waste seperation in Indonesia

4 targeted context changes

Motivate: Collaboration game and community prize

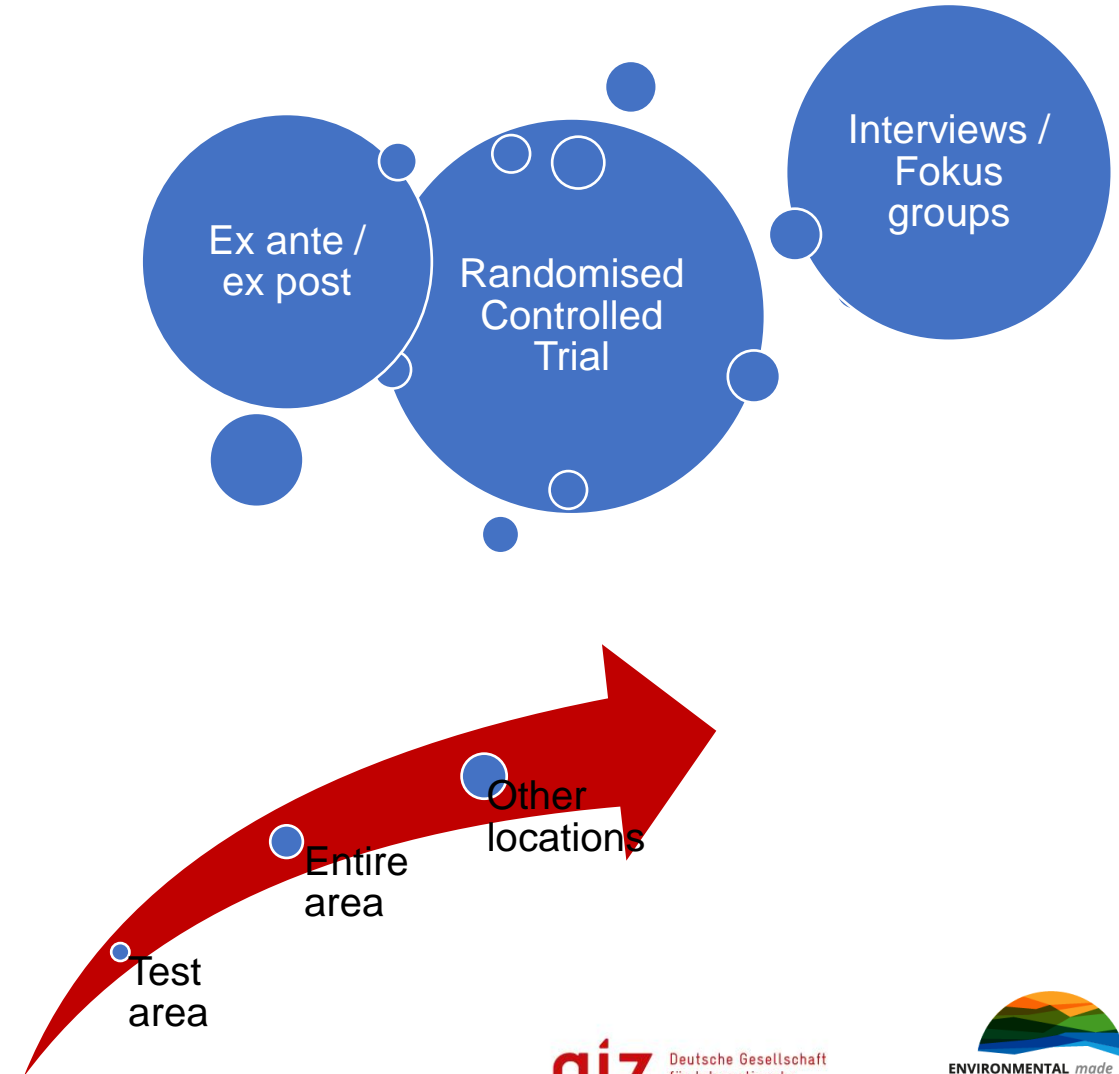**Self-commit** and **signal** to peers: Sticker

35% ➡ 70%

Example: Waste seperation in Indonesia

Test and improve elements of systems change

Scale tested and proven interventions

Ex ante / ex post

Randomised Controlled Trial

Interviews / Fokus groups

Other locations

Entire area

Test area

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Why invest in behaviour-centred design?

Above steps are an investment of time and money, but without „getting people on board", entire waste management systems can malfunction.

Systems once in place are difficult to change, so it is better to invest and get it right from the start.

Many thanks!
Get in touch:

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AND SUSTAINABILITY (IDOS)

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THE WAY FORWARD TO CIRCULARITY – CONFERENCE 2022

Breakout Sessions
16.10 – 16.40

THE WAY FORWARD TO CIRCULARITY – CONFERENCE 2022

Plenary Short Debriefing on Discussion Points

THE WAY FORWARD TO CIRCULARITY – CONFERENCE 2022

Get Together
17:10 – 20:00