

THE CIRCULAR ECONOMY INSTITUTE

Transitioning Towards a Circular
Economy: Implementing Climate
Actions in Malaysia

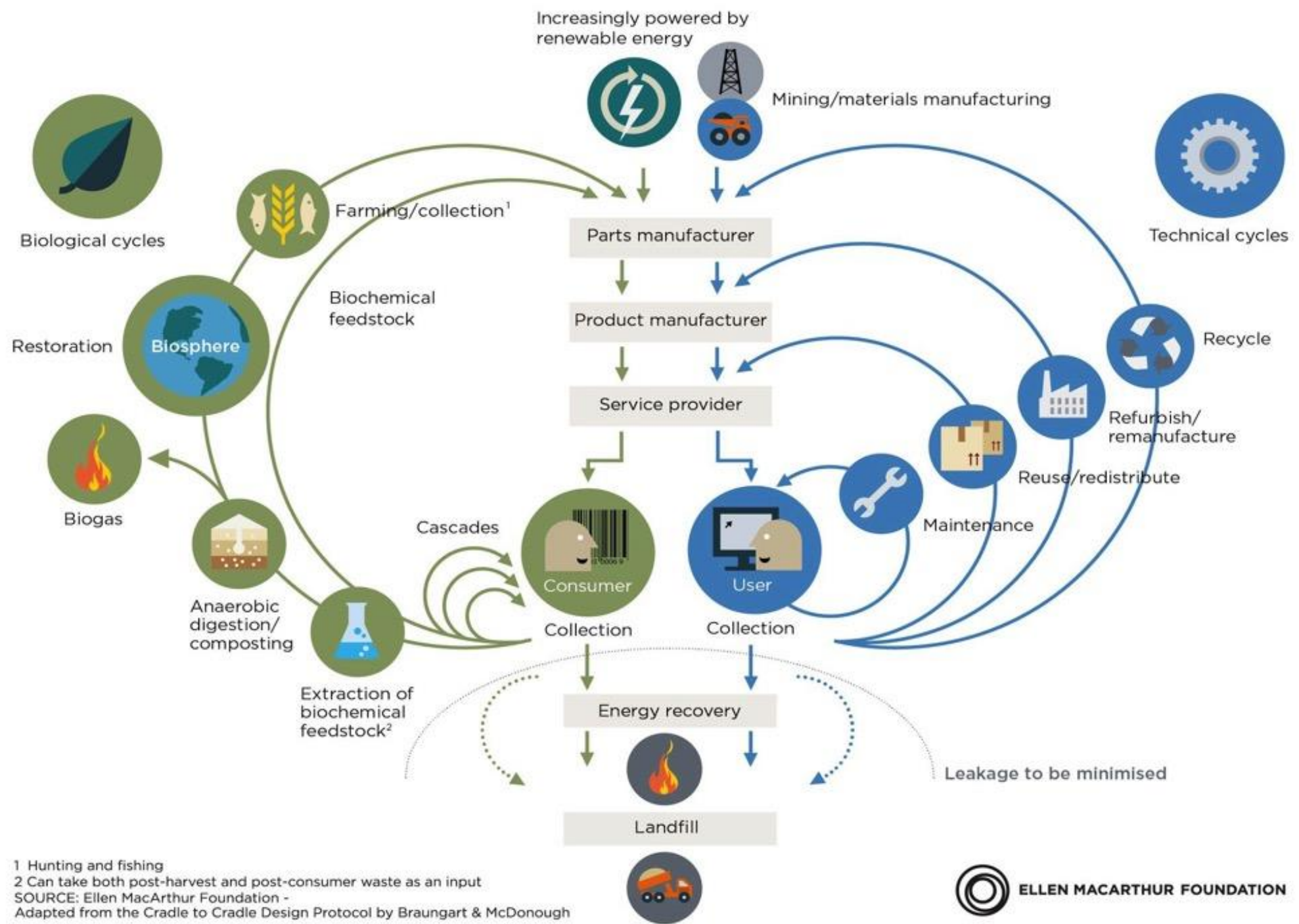


CIRCULAR ECONOMY
INSTITUTE

THE INSTITUTE'S MISSION

The Institute's mission is to promote the highest standards of practice in the circular economy field and to build the strong leadership we need internationally to shift from linear to circular.





2024: Ukrainian Youth scientist creates ReLeaf Paper Bags



Fallen leaves during Autumn converted to ReLeaf paper bags

- Designing out waste (upstream)
- Circulating materials as long as possible in the economy (applying both bio and tech loops simultaneously)
- Keeping systems regenerative
- Inspiring other youth scientists to create and innovate
- Even the war cannot stop you from implementing something meaningful for the planet and its people
- If a youth can do it, so can you!

Valentyn Frechka came in second place for the 'Young Inventors Prize' of the European Inventor Award 2024 out of three finalists



Committed To Circular Economy

From raw materials to production efficiency – our mission remains unchanged: functional packaging without harming the environment.

Impact

We produce pulp and fiber-based packaging from plant wastes with the least possible impact on the environment.

➤ ABOUT TECHNOLOGY

01

RENEWABLE

Made from fibers of quickly renewable fallen leaves

02

FOREST FRIENDLY

No wood pulp used during production

03

CO2 SAVING

Only 0,066 kg CO2 per kg during production

04

RECYCLABLE

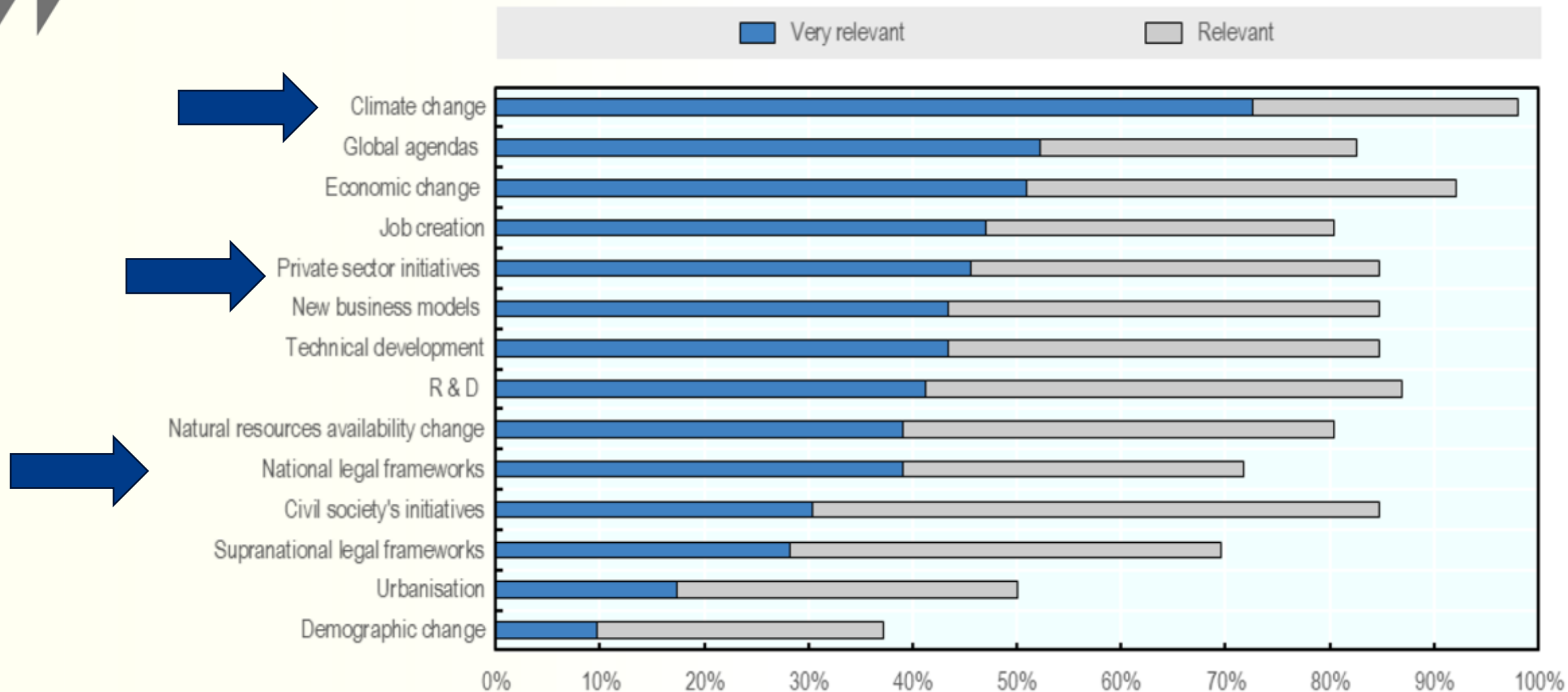
In standard paper waste stream

Releaf Paper Supports
The UN's SDGs





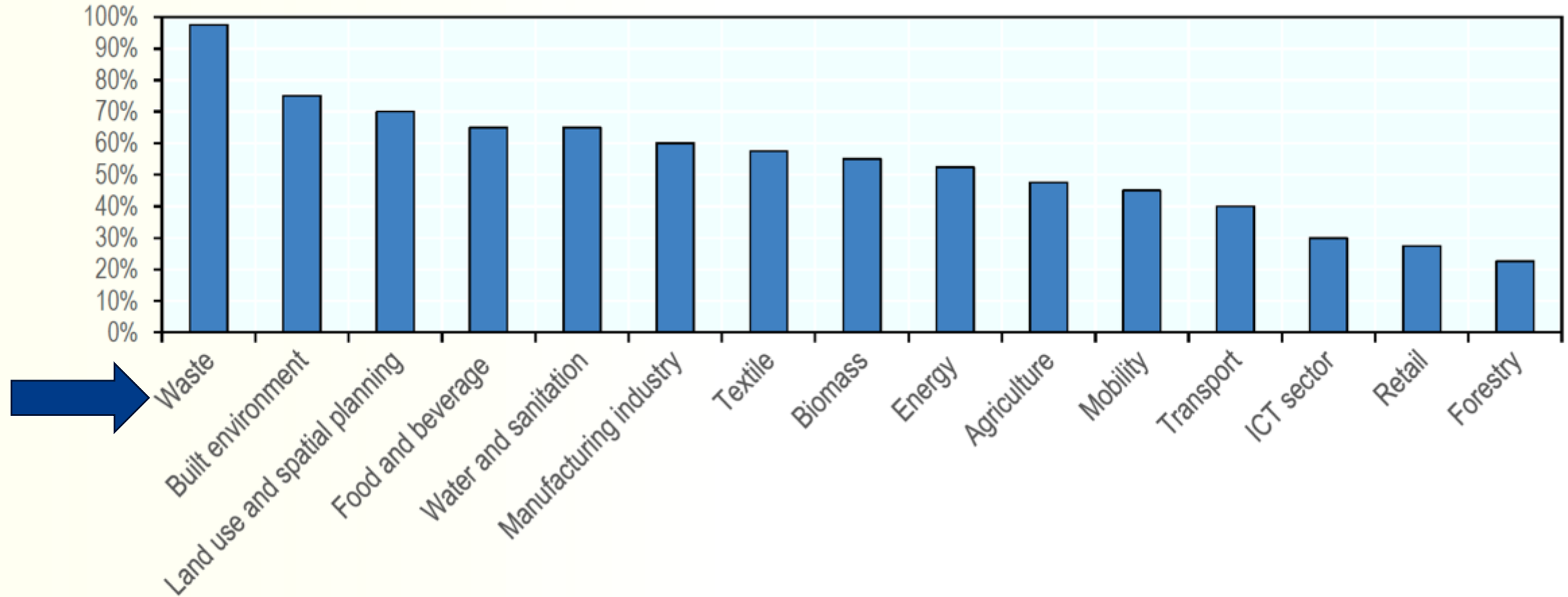
Drivers for the circular economy



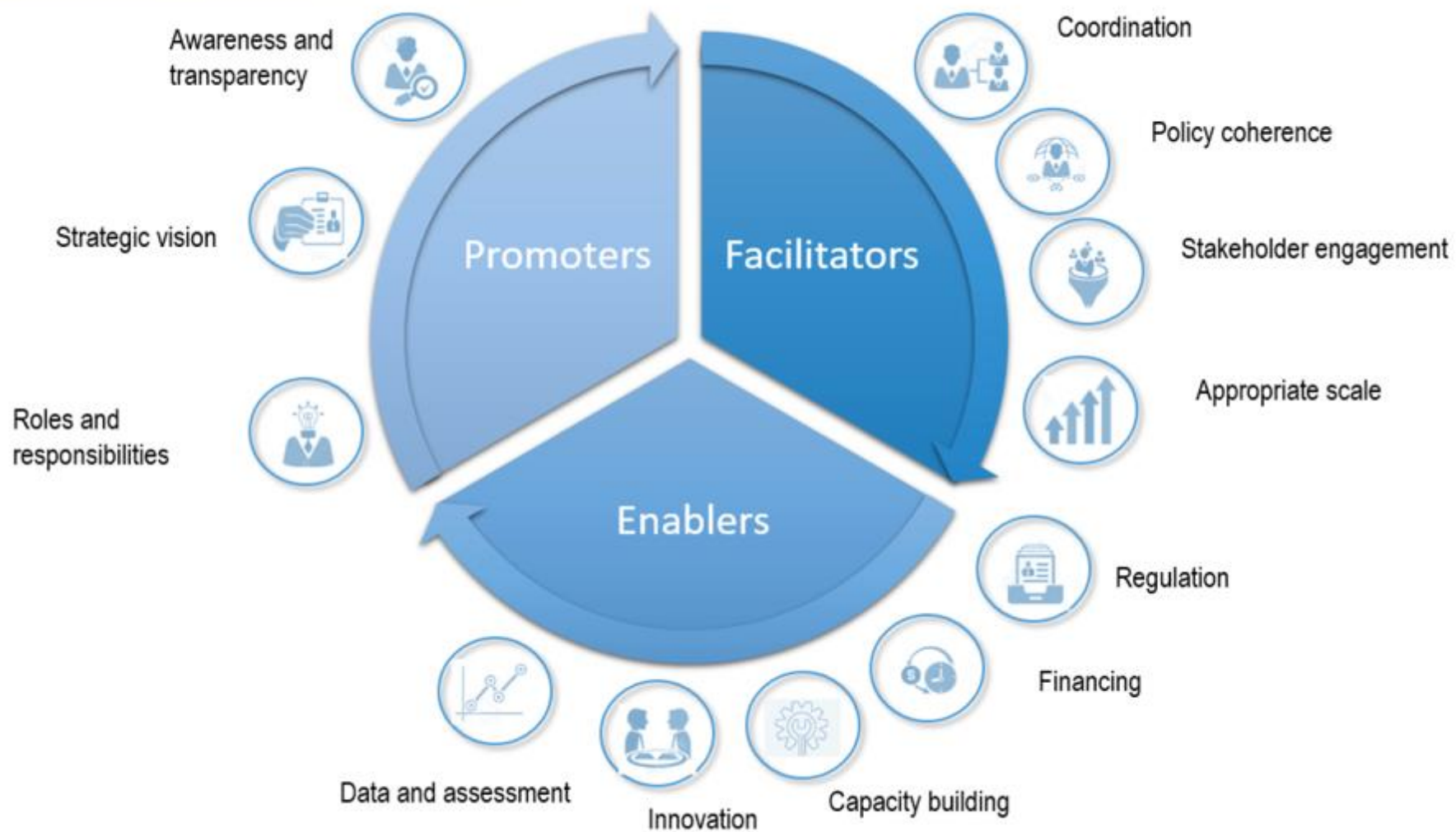
Source: OECD (2020), The Circular Economy in Cities and Regions: Synthesis Report.



Key sectors for the circular transition



Source: OECD (2020), The Circular Economy in Cities and Regions: Synthesis Report.





Neighbourhoods



SEA circular

solving plastic pollution at source

Reducing Marine Litter By Addressing the Management of Plastic Value Chain in Southeast Asia

Implementation Period from 2019-2021 (Phase 1)
2021 – ongoing (Phase 2)

EXTENDED PRODUCER RESPONSIBILITY (EPR): EXPLORING GOVERNMENT AND PRIVATE SECTOR COLLABORATION TOWARDS PROMOTING THE 3Rs



- Designed in **2019** and **implementation started in 2020** before Malaysian Recycling Alliance (MAREA) was established in January 2021.
- **Petaling Jaya City Council** worked with Nestlé to recover all types of plastic packaging from targeted neighbourhoods via **door-to-door collection** (yellow box).
- Inculcate **habits** to **segregate waste, rethink, refuse, reduce, reuse, repair, repurpose, redistribute**.
- Recyclables ➡ Recycling
- **Reduce waste to landfill, increase urban recycling rates.**
- **Collection of data @ households by PJ City Council**
- Residents who complied with “Eco-Lifestyle Homeowners” criteria after submitting application forms to PJ City Council was **entitled to 50% assessment tax rebate scheme** (max RM500 rebate yearly).

Download from UNEP Knowledge Library:

<https://wedocs.unep.org/handle/20.500.11822/40346>



EXTENDED PRODUCER RESPONSIBILITY (EPR): EXPLORING GOVERNMENT AND PRIVATE SECTOR COLLABORATION TOWARDS PROMOTING THE 3Rs



Implementation timeline: 2020 - ongoing

The project started on 2020 focuses largely on recycling and the role of Petaling Jaya City Council as well as the private sector (Nestlé Malaysia and KPT Recycle) play to formalize the recycling collection and increase the recycling rate in urban areas to covers two objectives.

- 1.The collaboration between MBPJ, Nestlé Malaysia and KPT Recycle in a dedicated door-to-door collection and recycling programme in gated and guarded areas structured as a voluntary Extended Producer Responsibility (EPR) scheme.
- 2.The Assessment Tax Rebate Scheme for Eco-Friendly House Owners in Petaling Jaya, which provides households the awareness and financial incentive to practice all 3Rs.



Collection of mixed recyclables from residents



Collected DMR (Dry Mixed Recyclables)



Collection & Segregation

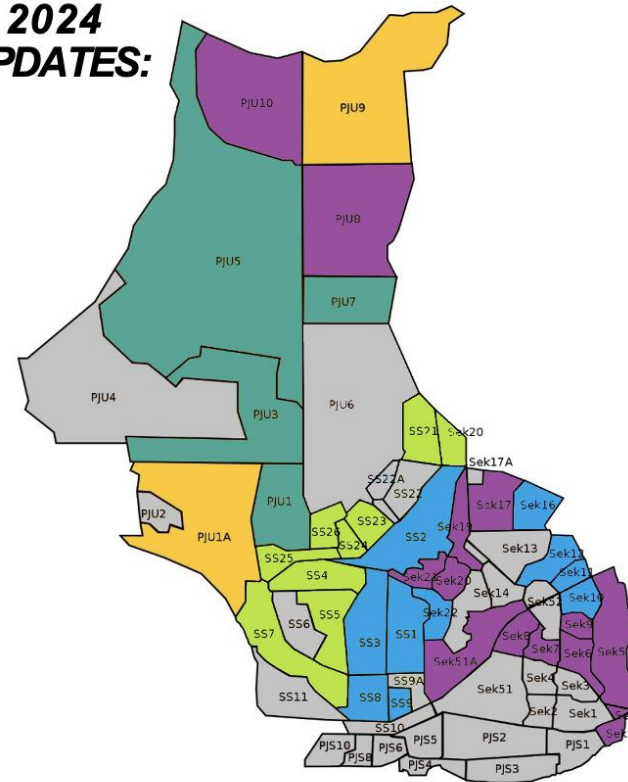


Sorted recyclable materials are sent for re-processing into secondary recycled materials/products



Sorting of DMR at KPT Recycles MRF (Materials Recovery Facility)
DMR is sorted into:
Paper • Plastic • Metal • Glass
• Beverage carton
• Non-recyclables

2024 UPDATES:



- Phase 1 - 2020
- Phase 2 - 2021
- Phase 3 - 2022
- Phase 4 - 2023
- Phase 5 - 2024
- Phase 6 - Future Area

- Total participants – 49,962 houses (70.4%)
- Average recyclables collected per month – 150 tonnes

FURTHER IMPROVEMENTS

- To monitor the recycling informal sectors activities (scavengers in bicycle, motorbike & tricycle).
- To increase the participation rate.
- To identify a long-term sustainable solution of recycling receptacle for non-gated areas.

**150 tonnes = 150,000 kg per month
equivalent to**



Weight of 1 Blue Whale



Weight of 1 Boeing 787-9

Circular Economy – The Journey with Cities in Asia-Australasia

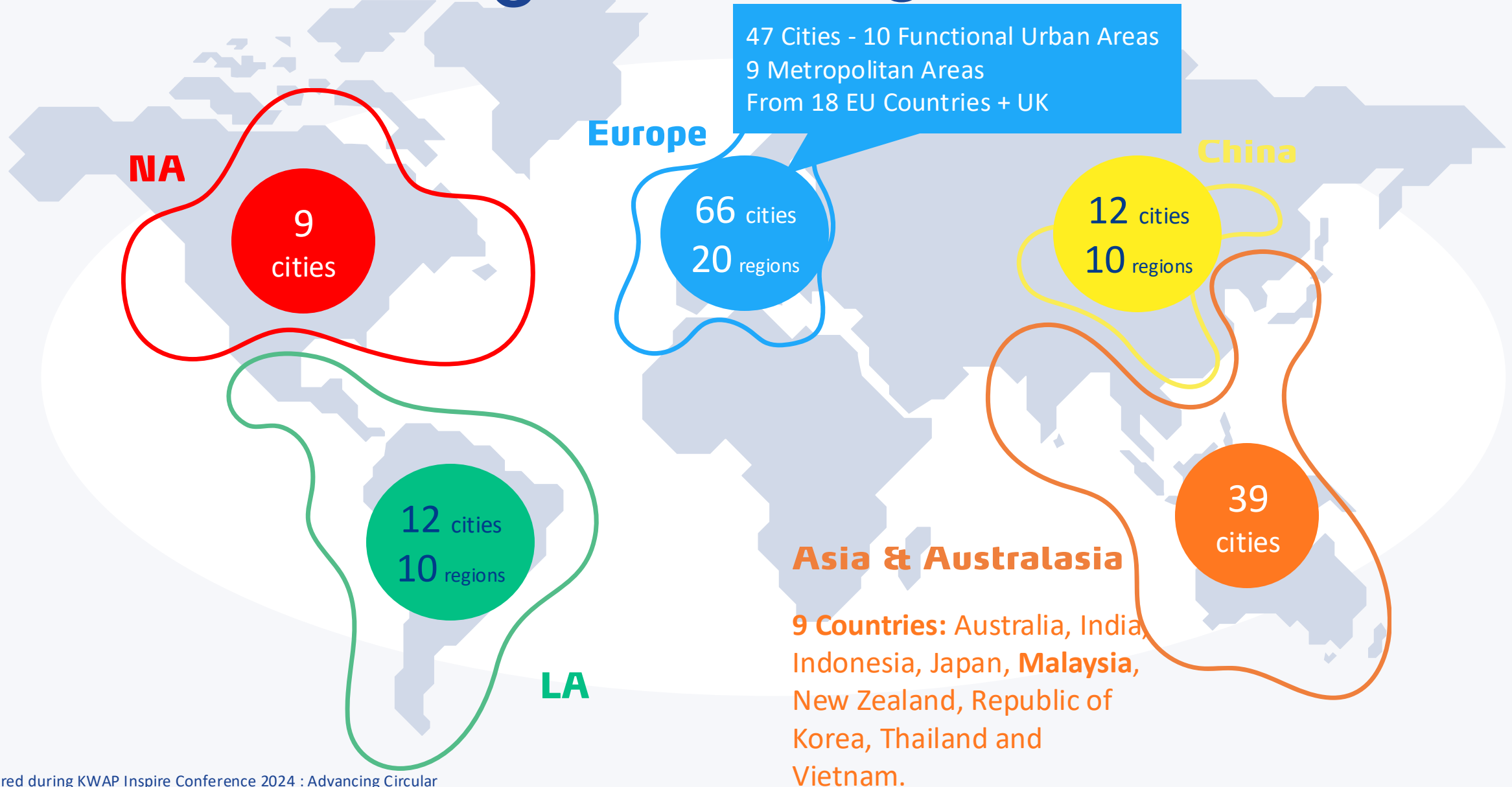
Urban Resilience: The role of cities in climate action implementation

Presenter: Jacqueline Chang, IURC Country Coordinator |
Circular Economy Specialist

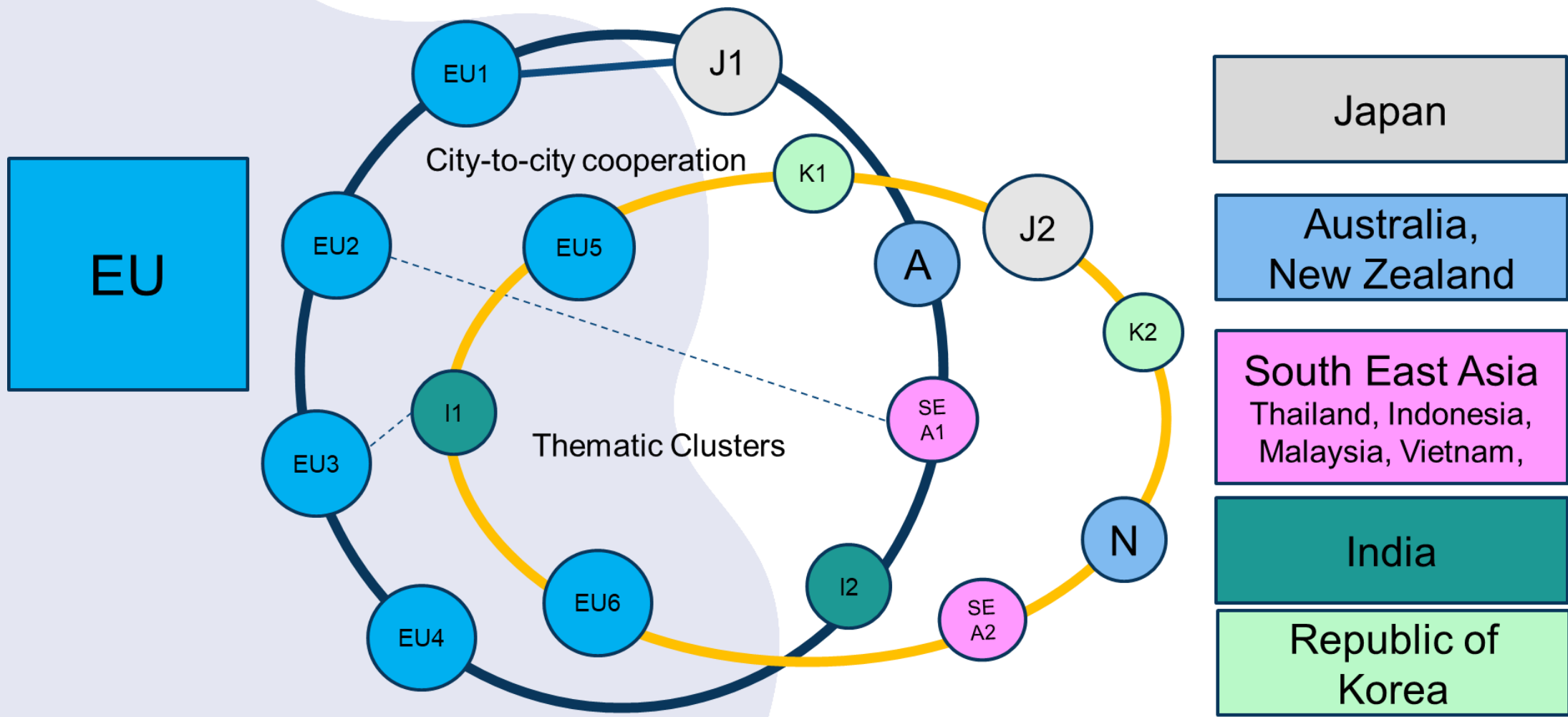
Implementation Period : January 2021 to December 2023



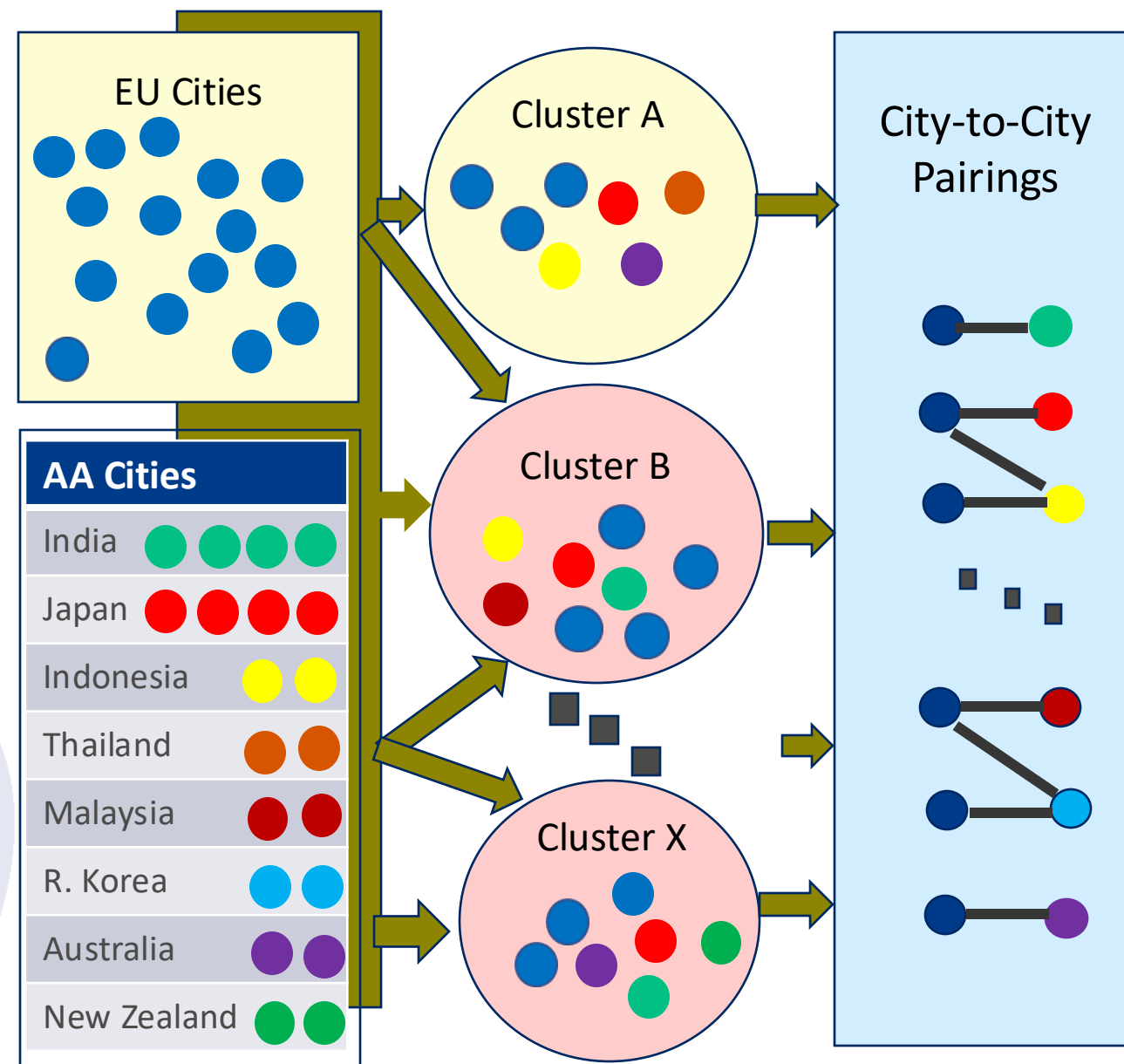
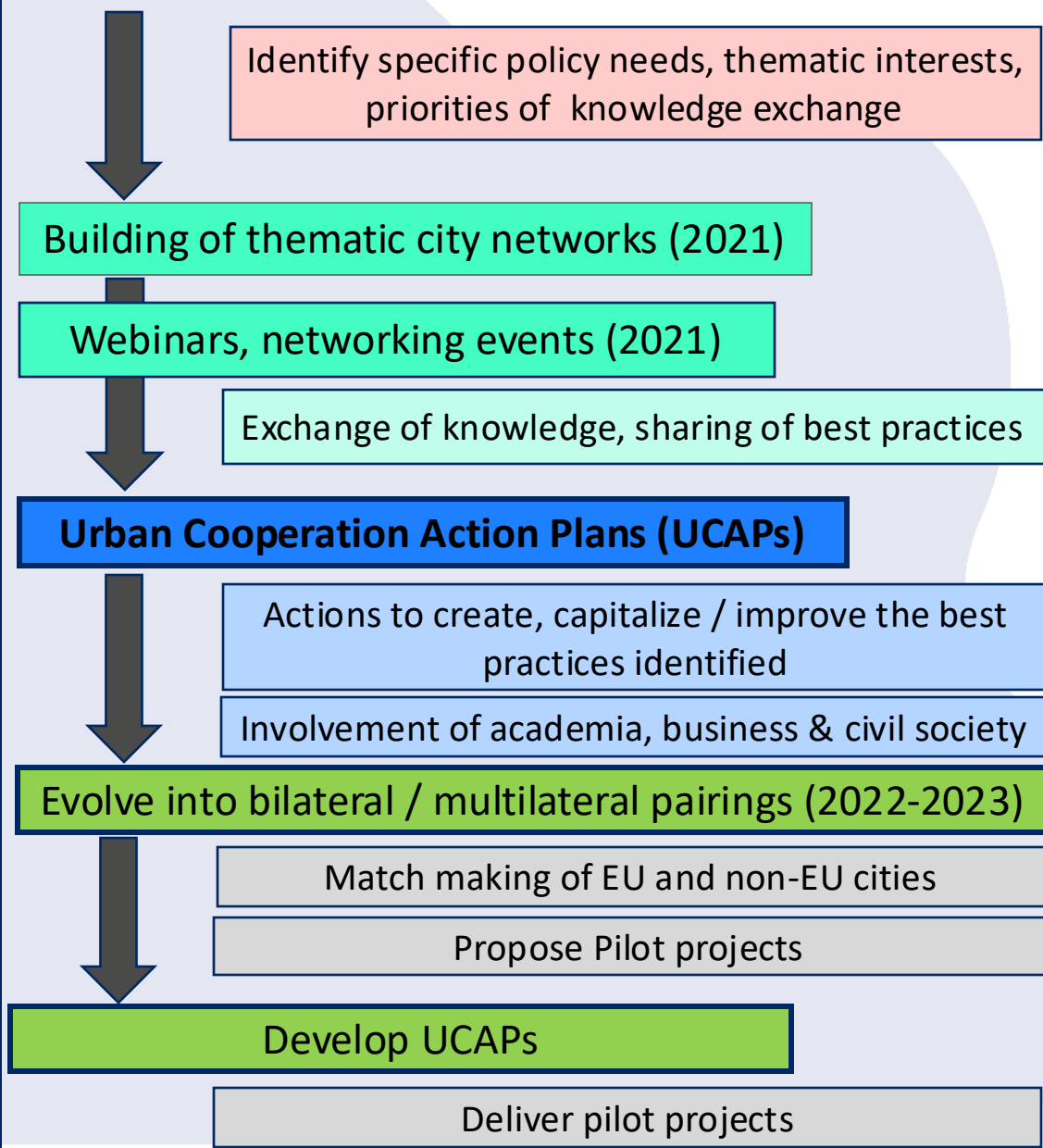
A Global EU Programme – 138 Cities



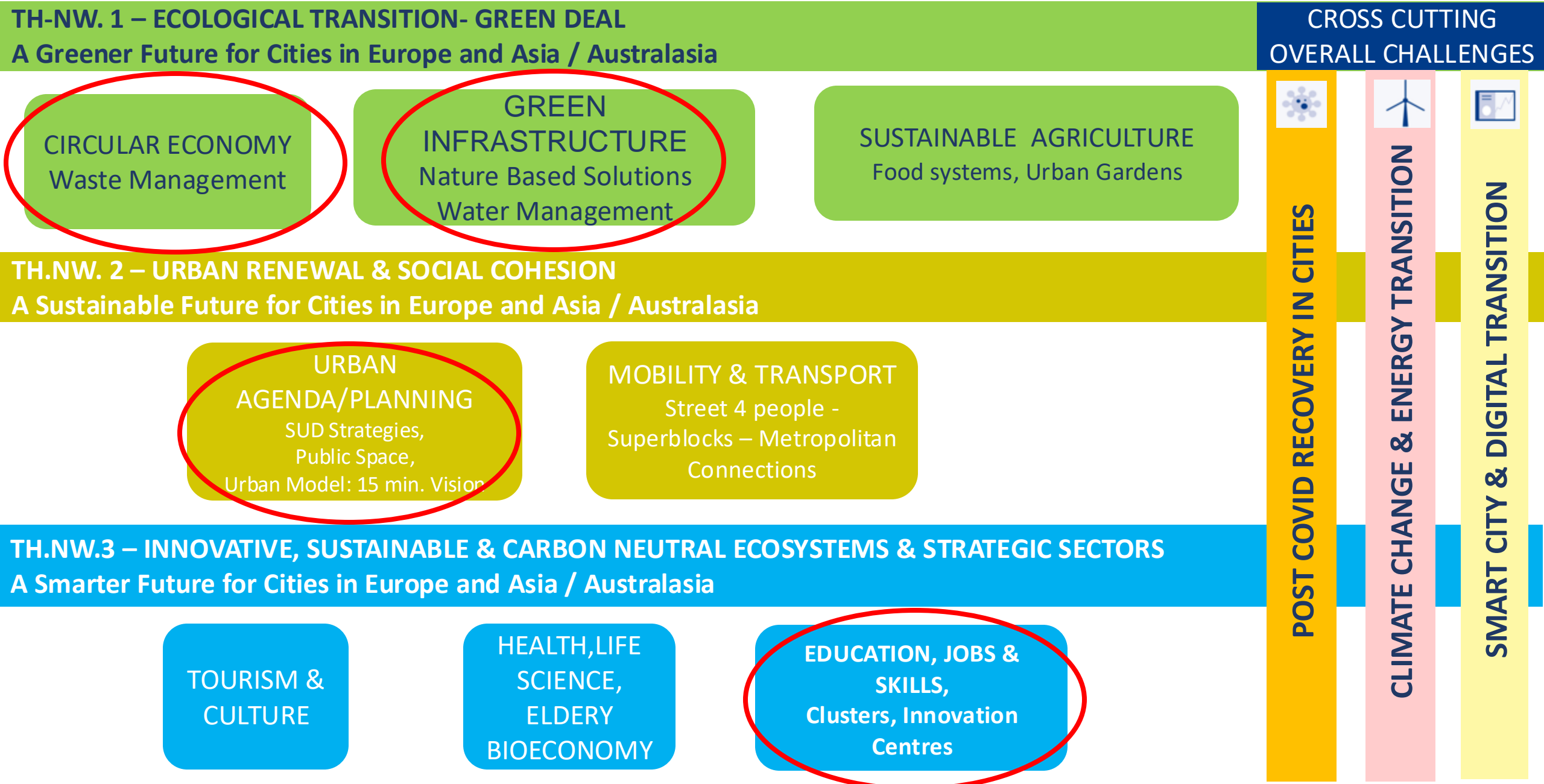
Methodology: Clusters and Sub-Regions



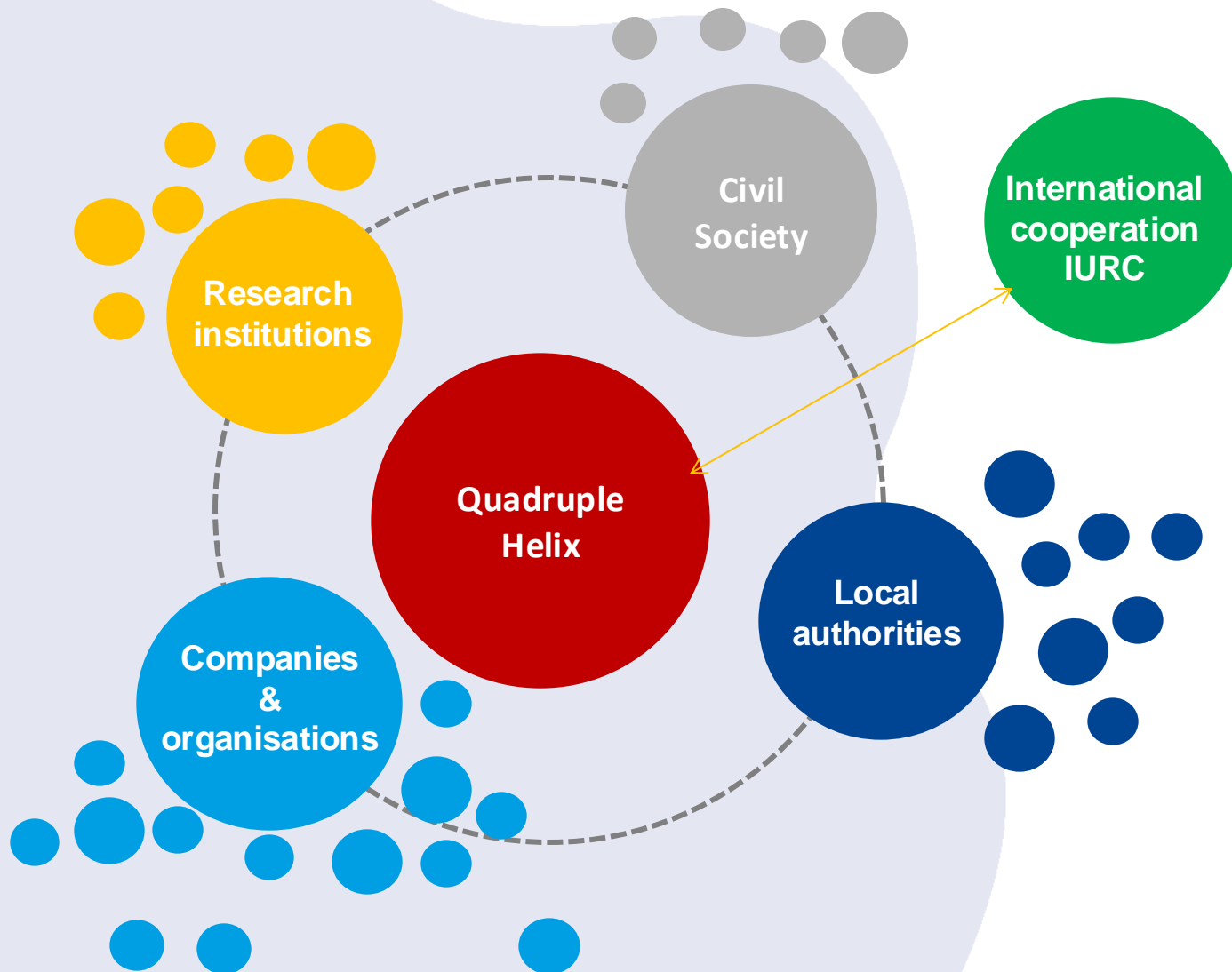
Methodology: City-to-City Pairing and Collaboration



Planning Process: Global Thematic Concentration for Cooperation



The Quadruple Helix Approach



Urban Cooperative Action Plan (UCAP)

- Identify key 4-Helix **stakeholders**
- Effective **matching & coaching**
- Identify **key concrete projects**
- Streamline **communication** (e.g. social media groups)
- **Follow-up** regularly (online)
- Define **decision-making** mechanism
- Develop implementation **roadmap**
- Remain at **project-level** work
- Promote **self-initiatives** by stakeholders

Closing the Loop on Food Waste: Targeting Wet Markets (city government – private sector collaboration)

Implementation timeline: January – June 2023
Sustainability of pilot: June 2023 - ongoing

RESULTS AND IMPACT



KEY FIGURES FROM BAGAN AJAM MARKET

72 vendors
trained to compost
organic waste daily on
site

~30-40kg
compost is generated
daily from market,
Sunday carnival &
nearby markets

**No plastic
bag day**
is practiced every
Monday, Tuesday &
Wednesday weekly

Potential of replicability : 115 wet markets in Malaysia

Closing the Loop on Food Waste: Targeting Wet Markets (city government – private sector collaboration)

LESSONS LEARNED

Empowering the community groups using a quadruple helix model (public-private sectors, academia & civil society) accelerates the adoption of circular economy lifestyles

Local Action Groups are key facilitators in implementing pilot projects on the ground to meet the targets of Seberang Perai Circular Economy Action Plan 2020-2030

Two pilot projects can be replicated in other cities in Malaysia which demonstrates strong city leadership in collaboration with community groups

Mobilising and inspiring the community groups with practical solutions resulted in tangible outcomes, created a win-win at the national level, spotlight the EU visibility & support during citizen centric campaigns to reflect the international collaboration

Why is he not retiring at 70? Collaborating with a pensioner



Chew Eng Seng

Head of Sustainable Community Unity
Seberang Perai City Council





For the circular economy roadmap to work

Closing the Loop on Food Waste: Targeting Wet Markets (city government – private sector collaboration)



CASE STUDY
Vila Nova de Famalicão & Maia
(Portugal) – Seberang Perai
(Malaysia)

IURC – Asia & Australasia

14 Dec 2022 until 31 May 2023

Thematic Network(s): Ecological Transition – Green Deal
Thematic Cluster(s): Circular Economy Waste Management
Cross-cutting challenge(s): (1) Digital Transition – Smart City &
(2) Energy Transition – Climate Change
Topic keywords: Closing the Loop with Community (e-waste and food waste)

www.iurc.eu



IURC
INTERNATIONAL URBAN AND REGIONAL COOPERATION



CASE STUDY
ESSEN (DE) – FORTALEZA (BR)

IURC - LA

JUNE 2023

Thematic Networks: Ecological Transition – Green Deal / Innovative, Sustainable & Carbon Neutral Ecosystems & Strategic Sectors
Thematic Cluster: Circular Economy & Waste Management
Cross-cutting challenge: Energy Transition – Climate Change
Topic keywords: waste management, circular economy, environmental education, recycling, green deal, climate change.

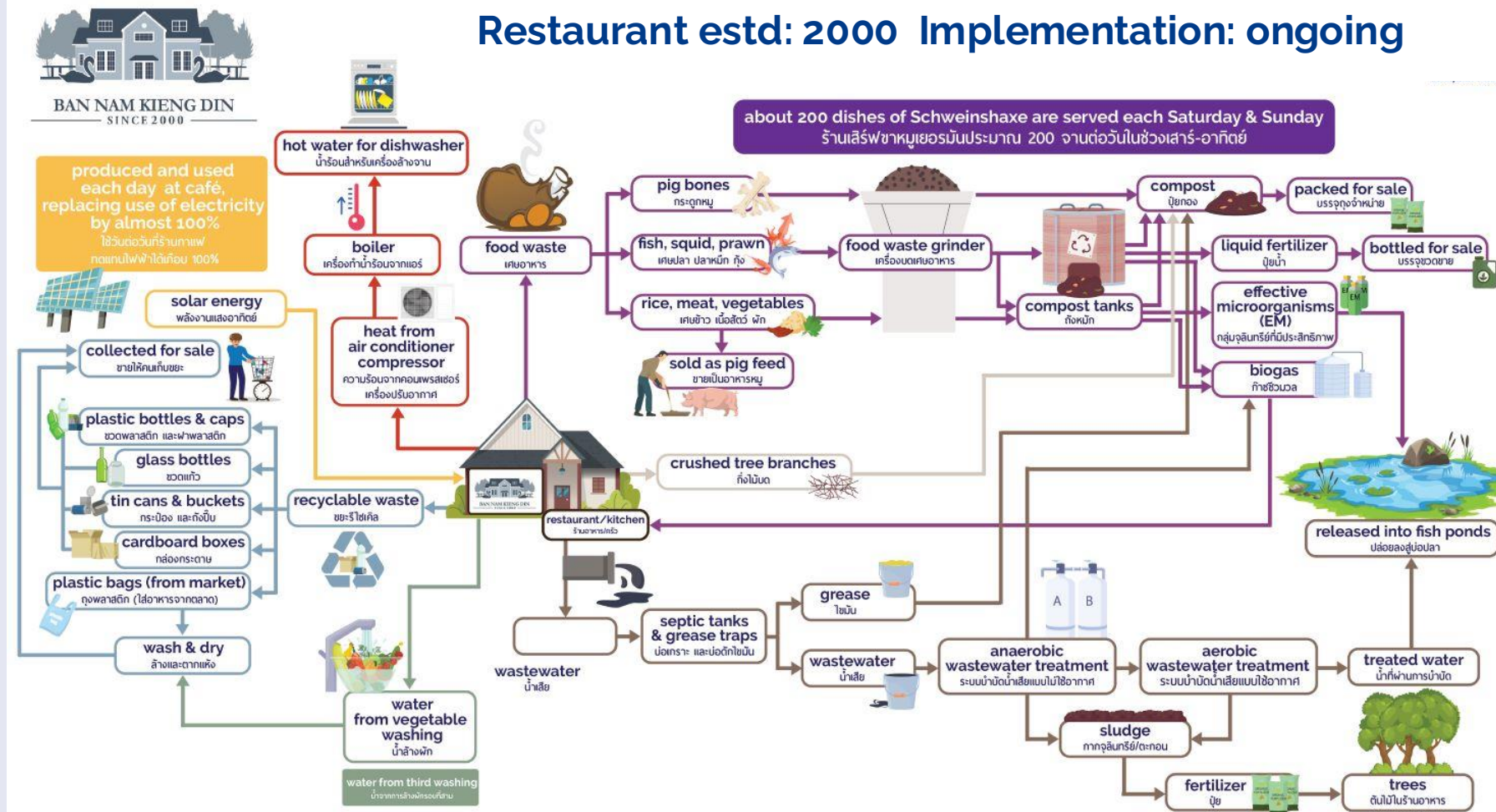
www.iurc.eu



IURC
INTERNATIONAL URBAN AND REGIONAL COOPERATION

Bangkok: How Restaurants are Embedding the Circular Model

Restaurant estd: 2000 Implementation: ongoing



Solutions implemented by staff:

Waste from kitchen to:

1. Circular Food Waste: compost for sale (passive income)
2. Compost tanks → biogas
3. Heat from air-conditioner compressors → boiler converted as hot water for dishwasher
3. Plastic and packaging circularity (reuse first, last resort : sell to recyclers)
4. Wastewater treated and released to fishponds, sludge to fertilizer used for plants & trees
5. Water from vegetable washing use to wash plastic packaging, clean and dry, send to recyclers

Waste and Energy Management at Ban Nam Kieng Din

การจัดการขยะและพลังงานที่ร้านอาหารบ้านน้ำเคียงดิน

This flow chart is supported by the International Urban and Regional Cooperation (IURC) programme of the European Union. The contents of the flow chart are the sole responsibility of IURC Asia & Australasia and can in no way be taken to reflect the views of the European Union.

IURC would like to thank Ban Nam Kieng Din for sharing its knowledge of waste management and the support from the Bangkok Metropolitan Administration and the Thawi Watthana District Office in arranging a visit to the restaurant and preparing this flow chart. The flow chart is a result from the City of Milan's visit to Thailand from 8 to 11 August 2022 as part of the IURC programme.

Eco-School: Youth Climate Actions contributing to National Targets



- Collaborated with the **Green Growth Asia Foundation (GGAF)**, national operator of eco-schools in Malaysia reporting to **Malaysia Green Technology & Climate Change Corporation (MGTC)** on EU-Malaysia student exchange programmes e.g. Portugal schools.
- Accelerating **EU-Malaysia youth climate action projects** in tackling all sorts of waste streams at primary and secondary schools and strengthening understanding of circular economy.
- Teachers and students encouraged to **create projects to earn various eco-schools' accreditations**.
- **SDG 4, 12, 13, 14, 17**



Implementation timeline: 2023 – ongoing by GGAF with our partners



flex



ECO SCHOOL VOCATIONAL TRAINING IN COLLABRATION WITH INTERNATIONAL URBAN AND REGIONAL COOPERATION (IURC) ASIA AUSTRALISIA



Closing the Loop on e-waste: Vocational training to repair old computers and distribute it to poor students



Closing the Loop on e-waste: Portuguese students learning from Malaysian students (EU-Malaysia student exchange programme)



Official launch by Chief Minister of Penang, Penang State Government and 1-2-1 with the teachers and students



Scaling Circular Economy Education : Implementing projects (Malaysian teachers & students in Portugal conducted a knowledge transfer workshop of how to upcycle old newspaper and hard to recycle packaging into creative products for sale)

CREATING OBJECTS WITH NEWSPAPER

Local knowledge transfer: Malaysian teachers and students were taught by the elderly and single mothers from Kepala Gajah and Kak Asni from Asni Craft

REUSING PLASTIC PACKAGING

Anak-anak Malaysia: Youth Climate Action: Proposal to audience



Games at home (multi-generational) : Fun and interactive



Scan me

Mr. Doug Woodring, Founder of Plastic Disclosure Project was awarded the coveted [Prince's Prize for Innovative Philanthropy](#) from Prince Albert of Monaco.

- Spark ideas on circular plastics, awareness and conscience
- Buy and watch at <https://www.oceanrecov.org/shop>



Award winning games created by four Malaysian youths

- Spark ideas on circular value chains (source-to-sea approach, keeping our oceans clean)
- Buy: <https://reefstakes.com/>

Games at home (multi-generational) : Fun and interactive



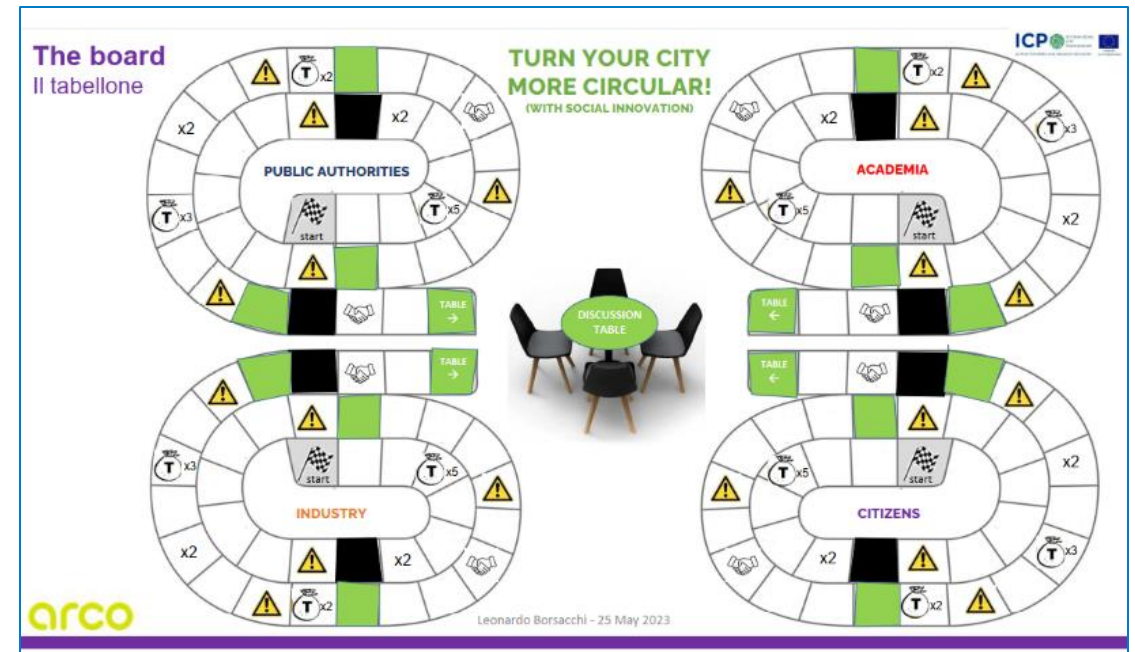
Download: <https://c.ramboll.com/hubfs/RMC/Content/ICP-AGIR%20Taichung-Prato-%20Boardgame%20Circular%20economy.pdf>

Funded by
the European Union

INTERNATIONAL CITY
PARTNERSHIPS



ACTING FOR GREEN AND
INCLUSIVE RECOVERY



Promoting Circularity in Tamil Nadu Leather Clusters for Solid Waste Management

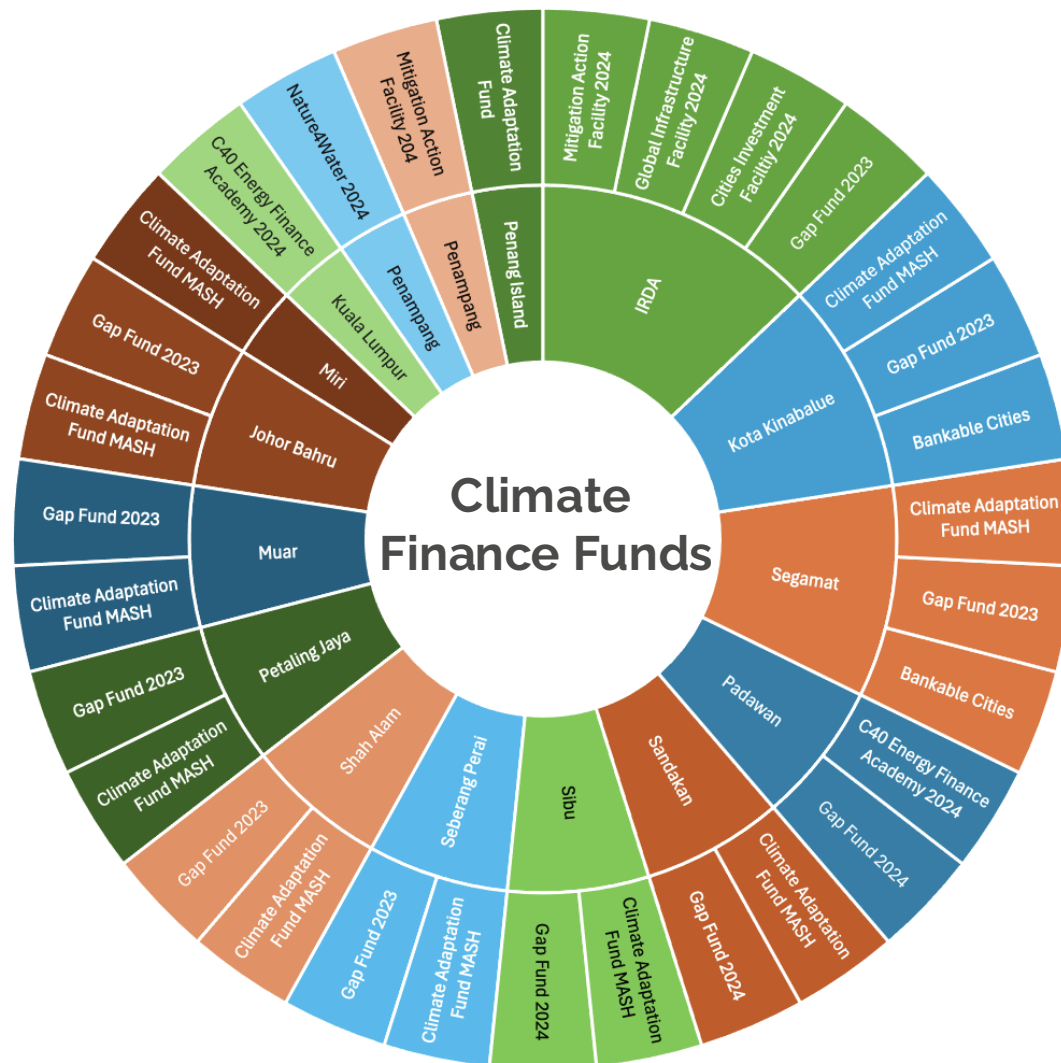
Weaving Circularity Into Every Stitch Mini- Exhibition

Tuesday, 6 August 2024

Solidaridad



Climate Finance Strategy for Local Authorities



BANKABLE CITIES' CLIMATE
PROJECTS: APPLY NOW TO GET
SUPPORT FROM GCOM



OVER **600**
MILLION



On behalf of

Supported by:

Federal Ministry for Economic Affairs and Climate Action

on the basis of a decision by the German Bundestag



Exploration Journey for Collective Actions

PROJECT PREPARATION FACILITIES	Offer
Green Climate Fund project preparation facility (readiness program)	Technical assistance, grants and scale up financing instruments
ASEAN Catalytic Green Finance Facility	Technical assistance, scale up financing
Asian Infrastructure Investment Bank	Technical assistance, grants, scale up financing
ADB Asia Pacific Project Preparation Facility (AP3F)	Technical assistance, grants and scale up financing instruments
GEF UrbanShift (Global Platform for Sustainable Cities/Sustainable Cities Impact Program)	Technical assistance and investments
Asia Investment Facility (EIB)	Technical assistance, blended finance, scale up financing instruments
City Climate Finance Gap Fund	Technical assistance
Transformative Actions Program (TAP) – managed by ICLEI & COFLA	Technical assistance
Cities Development Initiative for Asia (CDIA)	Technical assistance
C40 Cities Finance Facility	Technical assistance
Transformative Urban Mobility Initiative	Technical assistance, grants and financing
Global Fund for Cities Development (FMDV)	Technical assistance
UN Habitat Sustainable Urban Development Project Investment Pipeline Facility / Cities Investment Facility	Technical assistance and access to scale-up financing
Canada's Asia Pacific Project Preparation Facility	Technical assistance
Global Infrastructure Basel Foundation (GIB) - Indonesia only	Technical assistance

TRANSFORMING PLASTIC RECYCLING FUNDING

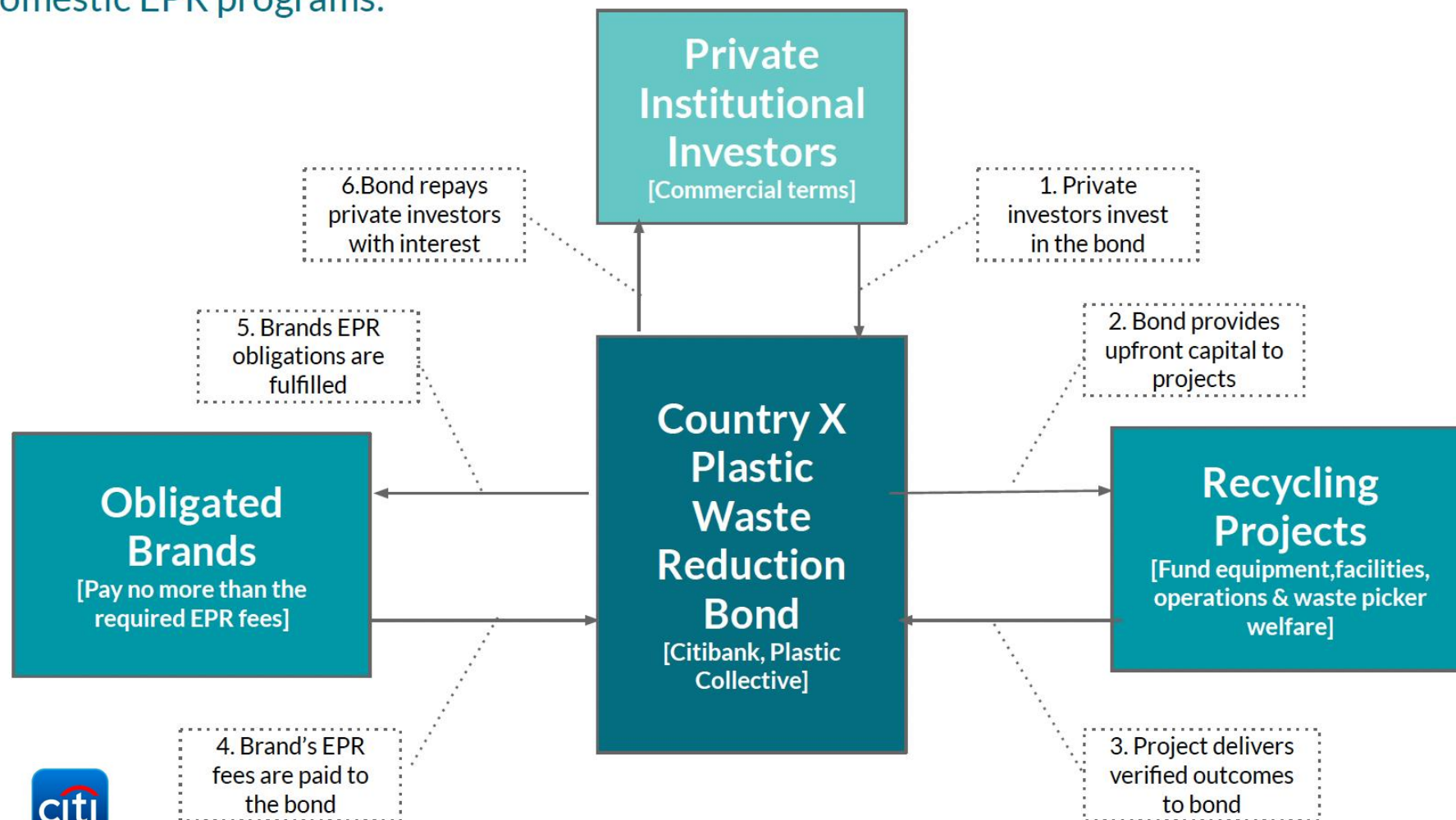


TRANSFORMATIONAL PLASTIC WASTE REDUCTION BOND

Plastic Collective has launched with the World Bank and Citibank the first Plastic Waste Reduction Bond, a highly scalable and locally replicable financing solution that is ideally suited to fund the rapid expansion of domestic recycling capacity under domestic EPR programs.

How it works?

- 1 The “Bond” is a medium term debt financing mechanism that provides direct capital to projects to build plastic recycling infrastructure & capacity.
- 2 Projects deliver verified outcomes in the form of collected & recycled plastic waste.
- 3 In the short term brands redirect their EPR fees to service the Bond
- 4 In the medium term, brands transition from paying EPR fees to buying recycled feedstock from the project they have supported



OUTCOME BOND EXAMPLE

Helping Communities Remove and Recycle Plastic Waste

On January 24, 2024, the World Bank (IBRD) issued a **Plastic Waste Reduction-Linked Bond**, a principal protected outcome bond, that channels private capital to a project with positive climate and development impacts.

- Investors forego regular coupon payments to provide up-front financing for **projects that aim to reduce and recycle plastic waste in vulnerable communities** in Ghana and Indonesia.
- Projects help to reduce plastic pollution, create improvements in local pollution and air quality, reduce associated health impacts, and create jobs in marginalized communities.
- In addition to return of principal and a small guaranteed return, investors receive variable **coupons linked to Plastic Waste Collection Credits, Plastic Waste Recycling Credits and Voluntary Carbon Units** expected to be generated by two projects.
- Investors include: Velliv Pension, Skandia, Mackenzie Investments, T. Rowe Price, Muzinich & Co

[Plastic Waste Reduction Bond Press Release](#)

USD 100 million 7-year Bond	
Summary Terms and Conditions	
Rating:	AAAp
Maturity:	7-year
Total Amount:	USD 100 million
Settlement Date:	01/31/2024
Maturity Date:	01/31/2031
Issue Price:	100%
Plastic & VCU-Linked Interest Payment:	Linked to the number of Plastic Credits and Verified Carbon Units (VCUs) issued from the projects, each subject to a cumulative ceiling
Minimum coupon:	1.75% per Specified Denomination
Lead Manager:	Citibank



Net proceeds of the bonds described herein are not committed or earmarked for lending to, or financing of, any particular World Bank projects or programs. The bonds are not funded by any particular World Bank project or program.



An aerial, high-angle photograph of a dense urban landscape, likely New York City, during the "blue hour" or dusk. The sky is a deep, dark blue, and the city's lights are beginning to glow. Numerous skyscrapers and mid-rise buildings are visible, packed closely together. Many windows are illuminated with warm, yellow light, contrasting with the cool tones of the twilight sky. The perspective is from directly above, looking down on the city grid.

Creating Shared Value in action:

Key takeaways from EU funded projects



Reflective

Using past experience
to inform future
decisions



Resourceful

Recognizing alternative
ways to use resources



Inclusive

Prioritize broad
consultation to create a
sense of shared ownership
in decision making



Integrated

Bring together a range
of distinct systems
and institutions



Robust

Well-conceived,
constructed, and
managed systems



Redundant

Spare capacity
purposefully created
to accommodate
disruption



Flexible

Williness, ability to adopt
alternative strategies in
response to changing
circumstances



Funded by
the European Union

One sentence takeaway

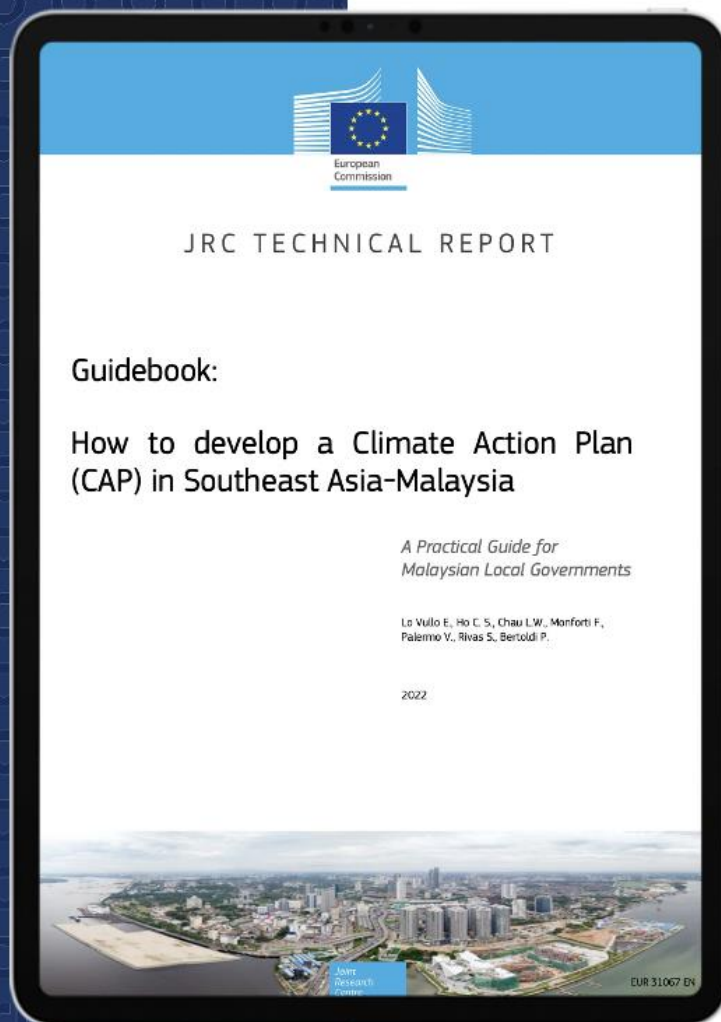
The new motto for implementing climate actions in Malaysia:

*The higher replication potential,
the greater support!*



Funded by
the European Union





National governments can lead the way by integrating their Climate Action Plans into their national climate policy and NDC development processes.

The Guidebook shows us how to get there.

Learn more at
<https://publications.jrc.ec.europa.eu/repository/handle/JRC129159g>



Resources on Circular Economy Waste Management

- Case Study: Seberang Perai and Vila Nova de Famalicão (Malaysia-Portugal)
Access: https://www.iurc.eu/wp-content/uploads/2023/07/IURC_AA_VNF_Maia_Seberang-Perai_Case-Study.pdf
- Case Study: Essen and Fortaleza in Latin America (Germany – Brazil)
Access: https://www.iurc.eu/wp-content/uploads/2023/07/4.-IURC_LA_Essen-Fortaleza_Case-Study.pdf
- Case Study: Ottawa (Canada)
Access: https://www.iurc.eu/wp-content/uploads/2023/03/iurc_ottawa_waste_management_circular_economy_takeaways.pdf

Resources on Nature-based Solutions

- Case Study: Haikou-Stuttgart-NCI Bologna (China-Germany-Italy)
Access: https://www.iurc.eu/wp-content/uploads/2023/02/02-Takeaways_EN_NBS-Webinar.pdf
- Case Study: Surat and Rotterdam (India-Netherlands)
Access: https://www.iurc.eu/wp-content/uploads/2023/09/IURC_AA_Rotterdam-Surat_Case-Study_June-2023.pdf
- Case Study: Puerto Montt and Piraeus (Chile – Greece)
Access: https://www.iurc.eu/wp-content/uploads/2023/03/iurc_ottawa_waste_management_circular_economy_takeaways.pdf

Knowledge Library

<https://www.iurc.eu/iurc-knowledge-library/>



Refine Your Search

» Show all languages

- Resource type

+ Geographical focus

+ Thematic Cluster

+ Cross Cutting Challenges

- All
- Case Studies
- Factsheets
- Reports
- Webinars & Trainings

IURC Knowledge Library

Knowledge Library

<https://www.iurc.eu/iurc-knowledge-library/>



Refine Your Search

» Show all languages

+ Resource type

- Geographical focus

+ Thematic Cluster

+ Cross Cutting Challenges

All

Worldwide

Latin America

North America

China

Asia & Australasia

Knowledge Library

Knowledge Library

<https://www.iurc.eu/iurc-knowledge-library/>

+ Resource type

+ Geographical focus

- Thematic Cluster

+ Cross Cutting Challenges

All

Ecological Transition & Green Deal

Renovation Wave

Circular Economy- Waste Management

NBS-Greening-Water Management

Sustainable Agriculture- Food Chains

Technology 4.0

Urban & Regional Renewal and Social Cohesion

Urban Agenda / Planning

Urban Poverty- Deprived Neighbourhoods

Mobility & Transport

Industry 5.0

Innovative sustainable & carbon neutral ecosystems and strategic sectors


Education, Jobs & Skills, Innovation Centres, Business Clusters

Tourism – Culture

Healthcare - Life Science

Regional Innovation (RIS 4)

Latin America



Takeaways. Piraeus and Puerto Montt: Blue Economy Cluster (BEC)

Factsheets

Piraeus and Puerto Montt consolidated the Blue Economy strategies.

The main objective is to generate a platform for innovation in both cities, focusing on sharing technical knowledge.

Innovation and Research Tourism sector and Port and logistic activities

Read the takeaways.

diversify local development

ed in the local development of

ue Economy

Knowledge Library

<https://www.iurc.eu/iurc-knowledge-library/>



Refine Your Search

» Show all languages

+ Resource type

+ Geographical focus

+ Thematic Cluster

- Cross Cutting Challenges

All

Digital Transition & Smart City

Post Covid Recovery

Energy Transition & Climate Change

IURC Knowledge Library

KEY OFFERINGS

The Institute offers the highest designations in the field. It provides continuing seminars, training, webcasts, and publications to allow alumni and other stakeholders to stay current on developments in the circular economy industry.



CERTIFICATES

Gain the highest international accreditations recognizing circular economy expertise.



TRAINING

Receive online and in-person training worldwide for small and big groups.



ALUMNI NETWORK

Benefit from knowledge exchange and collaborations with other certified professionals.



Certificate of Completion

The Circular Economy Institute (CEI) certifies that:

Marlene Johler

Has been successfully certified as a:
Circular Economy Instructor

ANNA TARI

Founder & CEO
Circular Economy Institute (CEI)



As of January 15th, 2021



CIRCULAR ECONOMY
INSTITUTE

CERTIFICATES



CIRCULAR ECONOMY TRAINED £280

Provides succinct knowledge about how the circular economy is currently being deployed in the real world.



CIRCULAR ECONOMY SPECIALIST

£460

Hands-on theory and implementation tools about the upcoming ISO International Standards on Circular Economy. Sector-specific certificates available: Electronics, Fashion, Furniture.



CIRCULAR INSTRUCTOR £930

ECONOMY

Provides all necessary knowledge and materials to instruct about circularity in any course format.





TRAINING

FEATURED PAST TRAINING CONDUCTED BY CEI



HARVARD GRADUATE SCHOOL OF DESIGN

The training consisted on circular applications to the built environment with a focus on circular design, architecture and buildings as material banks.



CITY OF LONDON HIGH LEVEL OFFICIALS

A hands-on training where high level officials of the City of London worked to identify circular opportunities to implement in the metropolis.



UNITED NATIONS ONE PLANET NETWORK

The seminar was co-organized by the UN World Tourism Organization, and CEI presented key concepts around the circular economy and tourism.



THANK YOU

www.ceinstitute.org
info@ceinstitute.org

6 Liberty Square
Boston, MA 02109
UNITED STATES



CIRCULAR ECONOMY
INSTITUTE