

SwitchMed



REGIONAL INCEPTION WORKSHOP FOR GARMENTS AND TEXTILES PROJECT

*"PROMOTION OF CIRCULAR ECONOMY IN THE
TEXTILE AND GARMENT SECTOR THROUGH THE
SUSTAINABLE MANAGEMENT OF CHEMICALS AND
WASTE IN LESOTHO, MADAGASCAR, SOUTH AFRICA
AND ETHIOPIA"*

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Chief Technical Adviser, UNIDO

Implemented by



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



Barcelona
Convention



the UNEP/MAP Regional
Activity Centre for SCP

Co-funded by



Generalitat de Catalunya
Departament d'Acció Climàtica,
Alimentació i Agenda Rural



Agència de
Residus de
Catalunya



Italian Development
Cooperation
Ministry of Foreign Affairs
and International Cooperation

The SwitchMed programme

Led by **UNIDO** in partnership with **UNEP Economy Division** and **MedWaves**. Since 2013, **creation of new business opportunities & decent employment** while **reducing the environmental footprint** of existing industrial activities.

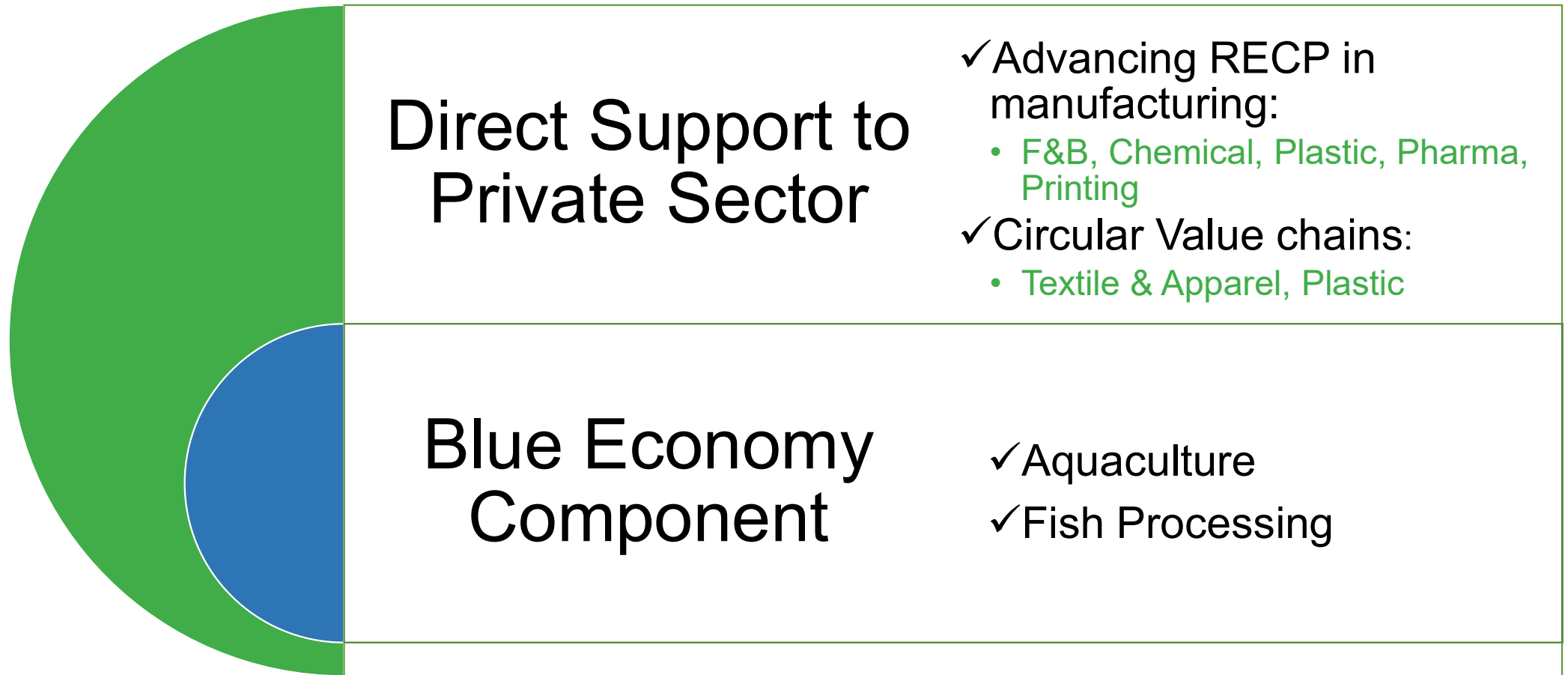
Contributes both to the **Green Deal** and the **Circular Economy Action Plan** in the context of the **European Neighbourhood Policy** ⇒ “**A regional benchmark**” and “**EU flagship programme** that provides **high-quality support services**” (NEAR Acting Director General Maciej Popowski).

SwitchMed supports:

- **Industry and Service Providers (65) to build national skills** on resource efficient production and demonstrate **resource efficient and circular business models in more than 220 companies**
- **Policymakers** in developing National SCP AP and National Roadmaps for scaling up
- **250+ start-ups and entrepreneurs, and 14 civil society initiatives**

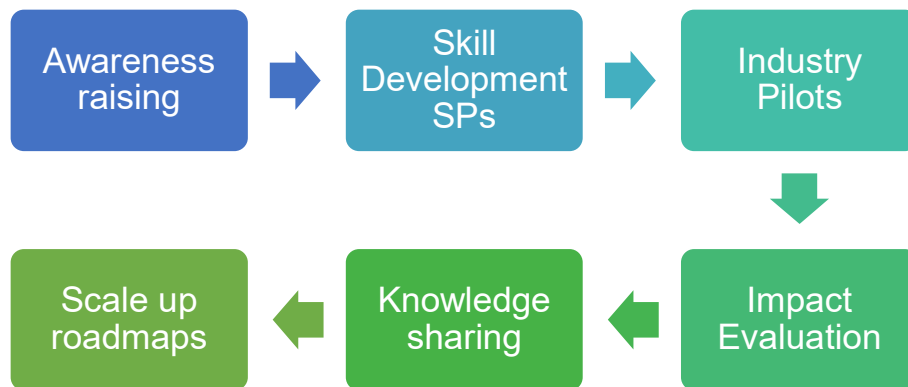


SwitchMed UNIDO Components



UNIDO approach

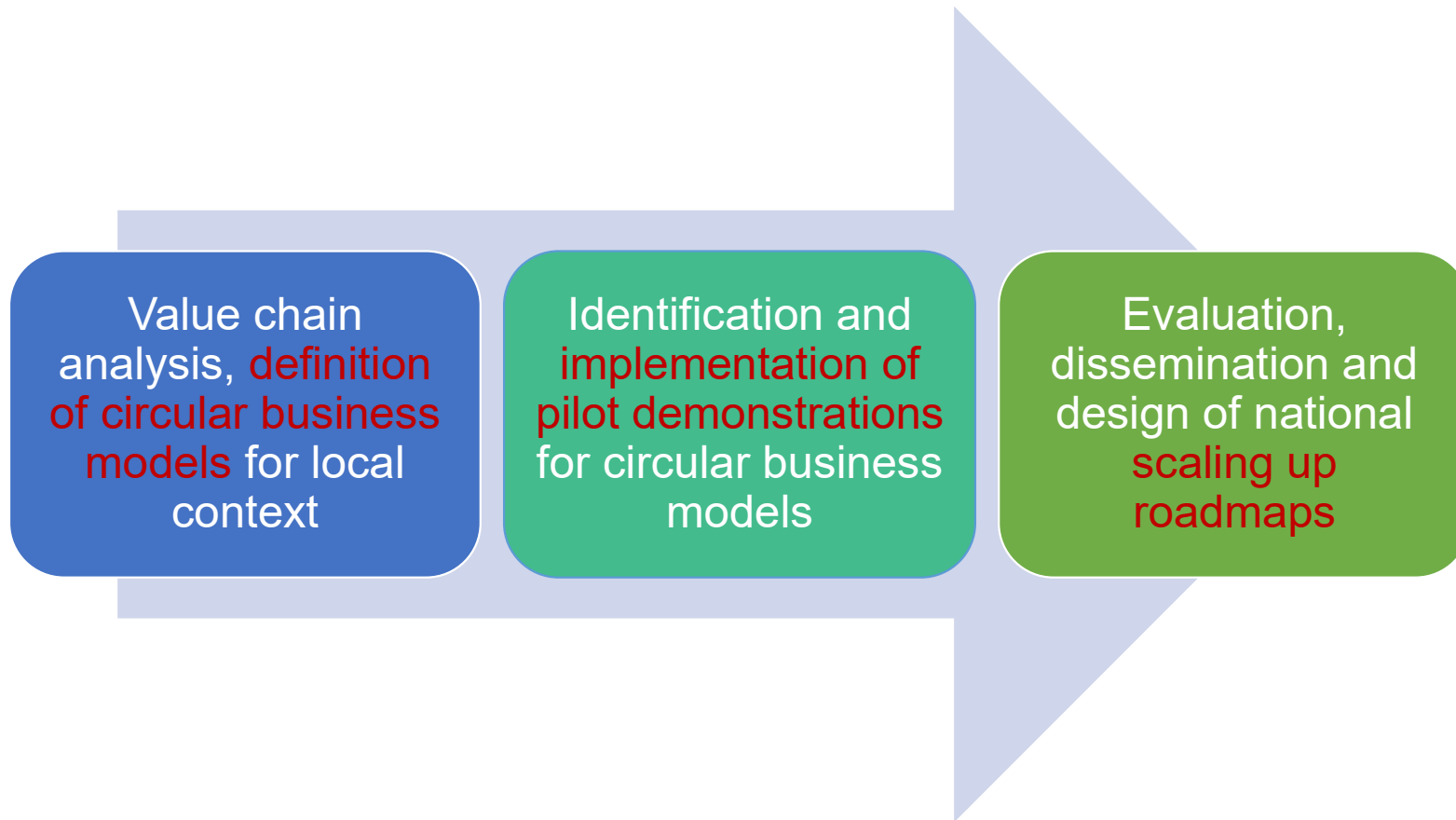
Industrial Resource Efficiency



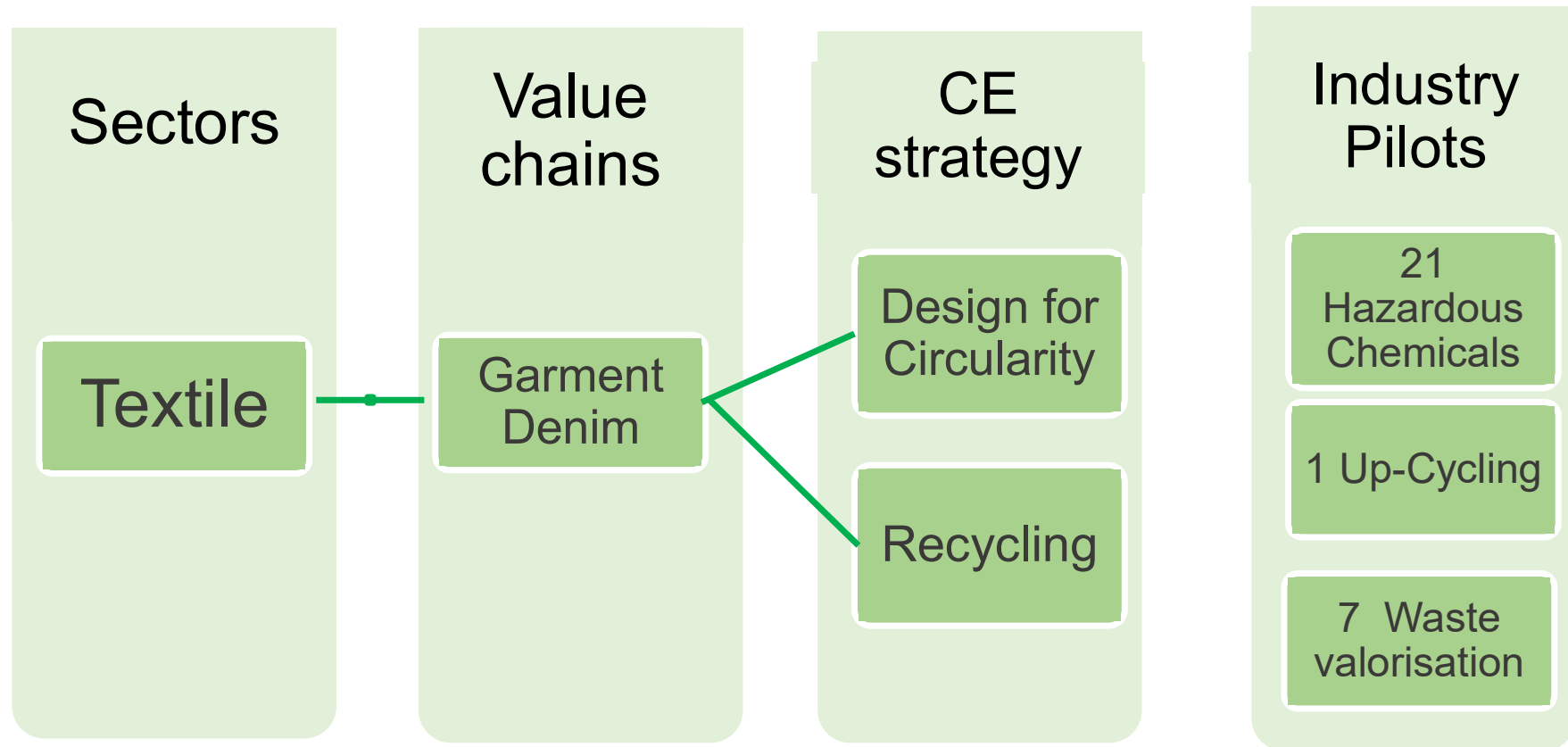
Circular Value chains



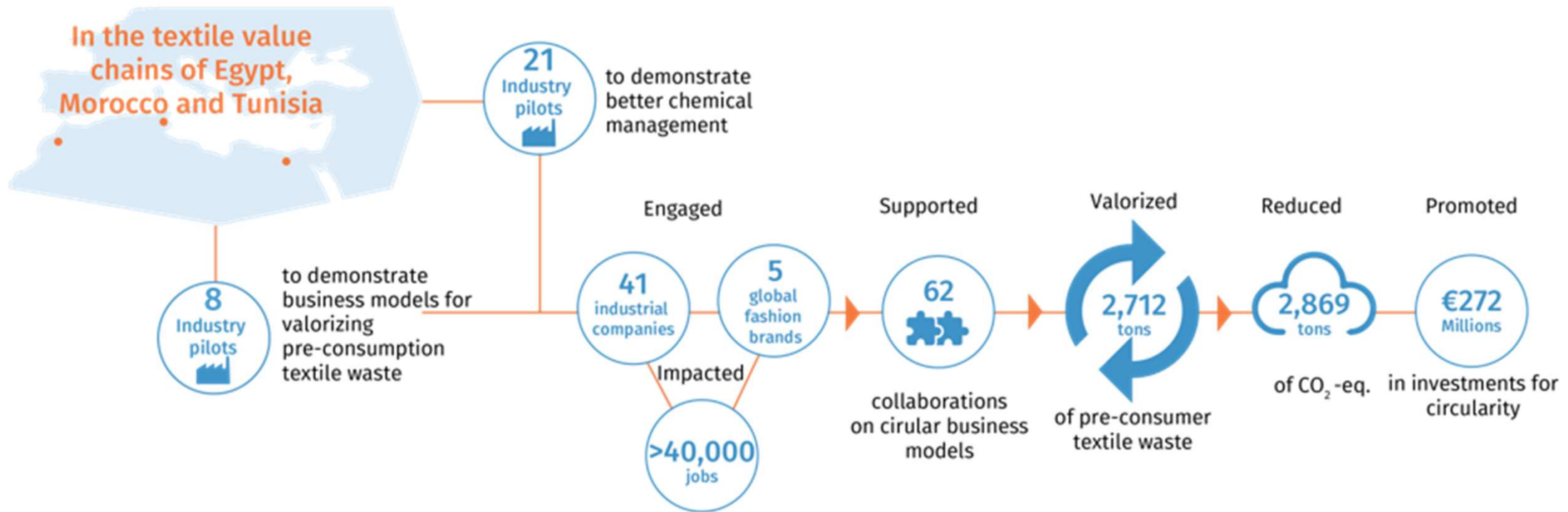
Direct Support to Private Sector - Circular Value chains



Direct Support to Private Sector - Textile Circular Initiative



UNIDO's- SwitchMed contribution to Circular Value Chains



Direct Support to Private Sector – Circular value chains

Sector: **TEXTILE**

CE Strategy: **Recycling, Design for Circularity**

Countries: Tunisia, Morocco, Egypt



✓ **Post Industrial and Pre-Consumer waste**

- 330,000 tons of textile waste are generated annually in the 3 countries

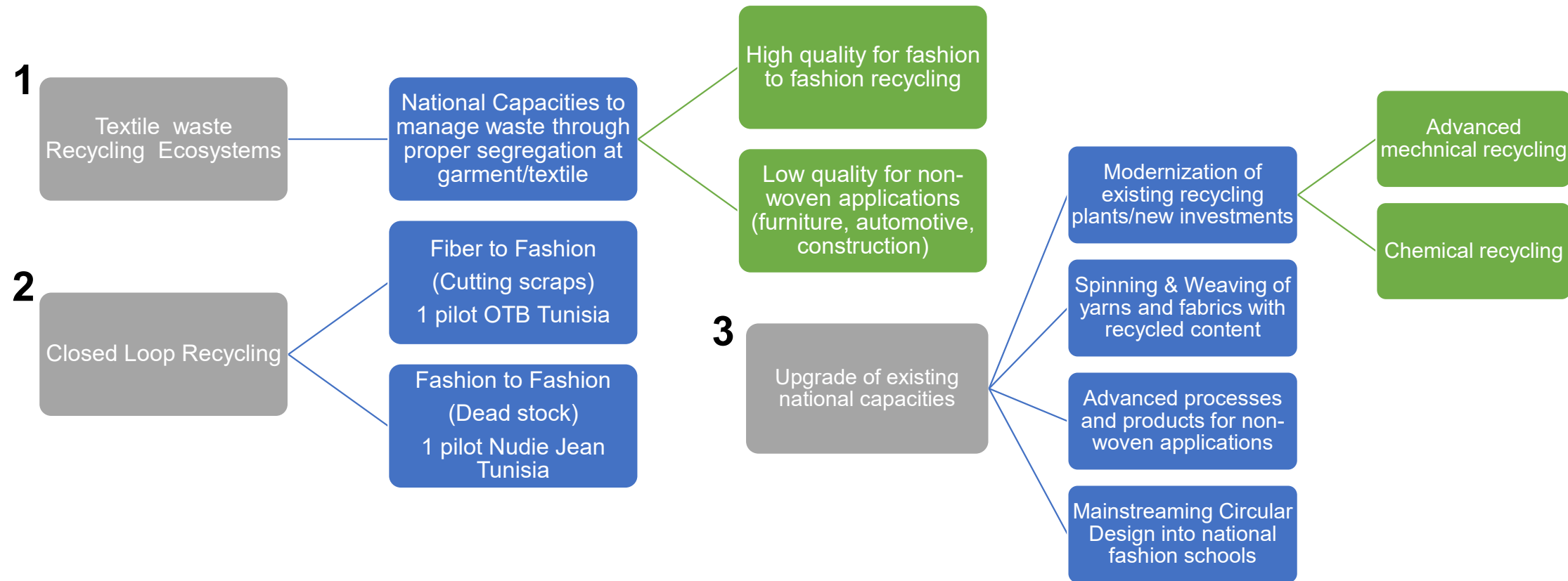
✓ **4 Circular Business Models validated for the MENA Region**

- Closed Loop Textile to Textile
- Textile to Non-Woven
- Textile Recycling Ecosystem
- Upcycling



8 Industrial pilots across the Region

Proof of concept of circular business models, 3 domains of intervention



Closed-Loop fashion to fashion Recycling



Fabric cutting

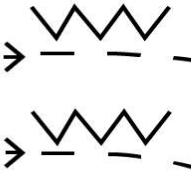


Segregation

low quality waste
270 tons

high quality waste
24.3 tons

Shredding



Blending

with other fibers



Blending

with recycled (35%)
and virgin cotton
(65%)



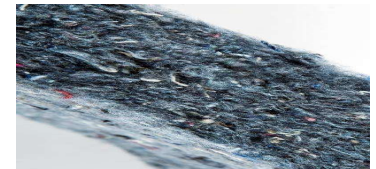
Felting

thermobonding



Nonwovens

sold to other
sectors



Spinning & Weaving



Warp: 65% recycled,
35% virgin cotton
Weft: 100% virgin cotton

57,200 pairs



of new jeans
with recycled
cotton content

Graphic: UNIDO

Direct Support to Private Sector – Circular value chains

TEXTILE

Country
Roadmaps for
scale up



Localisation of textile recycling value chains is a business opportunity that can reduce CO2 footprint of the sector and generate new jobs.

- ✓ Expand the national recycling capacity by 40-45 new lines across the 3 countries for a total investment envelope:

30-57 M€ for mechanical recycling	> 220,000 tons of yarns with recycled content
100-200 M€ for chemical recycling	> 85,000 tons of nonwoven products

- ✓ Transfer Know-how (waste segregation, spinning of recycled yarns, non-woven product development, etc..)
- ✓ Promote partnerships across value chain (brands, suppliers, recyclers)
- ✓ Regulatory improvements to accelerate uptake of CE business models
- ✓ Skill development of national design schools & designers on CE techniques

Direct Support to Private Sector – Circular value chains

Sector: **TEXTILE**

CE Strategy: **Design for Circularity**

Countries: Tunisia, Morocco, Egypt

More than 8,000 chemicals are used in the sector, most are hazardous.

Goal: Restrict use of Hazardous Chemicals and implement safer chemical management protocols.



✓ **Partnership with ZDHC Foundation & 5 Brands**

✓ **50 Companies trained**

✓ **21 Industrial pilots**

✓ **About 40% success rate – ZDHC Foundational level**

✓ **3 National Roadmaps for national scaling up**

Ø ZDHC
Zero Discharge of
Hazardous Chemicals



Safer Chemical Protocols for the textile industry

Partnership



- Awareness raising & Training
- 166 trainees (74% ZDHC Academy qualified)
- **39 companies**
- 2 local institutions

Phase 1

Phase 2

- **6 Industry Pilots**
- Brand nomination
- Full scale implementation of ZDHC protocols

- **15 companies**
- Training and capacity building for ZDHC foundational level
- 70 trainees (70% ZDHC Academy qualified)

Phase 3

236 employees trained
377 ZDHC certificates delivered
50 Companies engaged
19 companies achieved ZDHC Foundational Level

**Scaling up
Roadmap for
country
ownership**

Phase 2 – Industry Pilots Implementation

One -to-One tailored technical support over a period of 12-14 months –

Hand in hand toward putting in place all the elements of ZDHC guidelines:

1. **Chemical Purchasing Policy and Procedures:** Offering guidance on the formulation of policies and procedures for the procurement of chemicals.
2. **Preparation of a Chemical Inventory List:** Aligning with the ZDHC template, assistance was provided in creating a comprehensive Chemical Inventory List.
3. **Roadmap for Chemicals Substitution:** development of a roadmap for substituting chemicals, including a risk assessment of existing chemicals.
4. **Chemical Storage Management Audit:** Conducting an audit to assess and improve the management of chemical storage facilities.
5. **Wastewater Assessment:** Evaluating wastewater management practices to ensure environmental compliance.
6. **Effluent Treatment Plant Management:** Providing guidance on the management of effluent treatment plants.

Phase 3 – Extending technical support to other companies

1. Registration to the ZDHC Supplier to Zero Platform, and Baseline SELF assessment against the Foundational Level requirements
2. Gap analysis and training needs / company by company
3. Delivering 5 Training modules (chemical management, WW management, Effluent treatment plant management, Resource Efficiency, use of ZDHC on-line tools)
4. Ad-hoc technical support (3 m/d x company)
5. Evaluation, reporting and ZDHC supplier to zero assessment

Technical Assistance Progress Egypt (01/12/2023)

Egypt				Egypt						
Facility	S2Z Aspect	SA Score	Work Progress	Facility	S2Z Aspect	SA Score	Work Progress			
Egypt	Company 1	Policy	67%	100%	Egypt	Company 4	Policy	0%	100%	
		Assessment	60%	100%			Strategy	67%	100%	
		Chemical Inventory	60%	100%			Assessment	0%	70%	
		Output Management	50%	100%			Health & Safety	63%	80%	
		Wastewater and Sludge	83%	100%			Chemical Inventory	40%	90%	
		Continuous Improvement	67%	100%			Storage & Handling	75%	75%	
	Company 2	Policy	50%	100%		Company 5	Output Management	50%	50%	
		Strategy	67%	100%			Wastewater and Sludge	67%	67%	
		Assessment	60%	100%			Air Emissions	67%	100%	
		Chemical Inventory	80%	80%			Waste & Disposal	67%	80%	
		Air Emissions	50%	50%			Continuous Improvement	0%	50%	
		Continuous Improvement	67%	67%			Employee Training	40%	100%	
	Company 3	Policy	86%	100%		Company 5	Process Control	0%	50%	
		Strategy	67%	100%			Company 5	Policy	50%	100%
		Assessment	60%	100%				Strategy	67%	100%
		Wastewater and Sludge	67%	100%				Assessment	40%	100%
		Continuous Improvement	0%	100%				Continuous Improvement	33%	100%
		Employee Training	40%	100%				Employee Training	80%	100%
		Process Control	0%	100%						

Key areas for improvement

1. Policy for CMS including MRSL
2. Documented CMS strategy and risk assessment
3. Safety Data Sheet Management
4. SOP for reviewing CMS Performance
5. CMS performance and Incident review
6. CMS regular review to assess progress towards strategy goals
7. Document and Record control

<https://www.test-toolkit.eu/zdhc-case-studies/>

Lessons learned

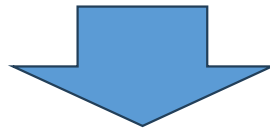
Working with textile companies

1. Impact of brand affiliation
2. Training response, Language preference and workforce empowerment
3. Establishing a robust chemical management system requires ad hoc TA
4. Dilemma of Chemicals substitution (quality vs. sustainability, extra costs and resources to identify and test substitutes)
5. Effective Documentation management (SOPs) is a challenge
6. Lack of awareness of the value of ZDHC certification
7. Chemical supplier involvement: MSDS, extra costs for testing for ZDHC platform registration
8. WWT to identify non conformities and root cause analysis

Lessons learned

Business ecosystem

1. Local knowledge Gap – service providers accredited by ZDHC using local expertise at more competitive cost
2. Skills development in the educational curricula and TVET
3. Lack of Accredited WW testing laboratories at local level, extra cost for compliance
4. Brand engagement and ZDHC leverage
5. Regulatory gaps, elevating WW discharge standards, market-based incentives



National scaling up Roadmaps for Safer Chemical Management in the Textile Industry

THANK YOU!

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Italian Development
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and International Cooperation