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INDUSTRIAL WASTE MAPPING IN GEORGIA

Learnings and recommendations that form the bases for Industrial Waste Mapping (IWM) in in the municipalities of Zestaponi and Rustavi

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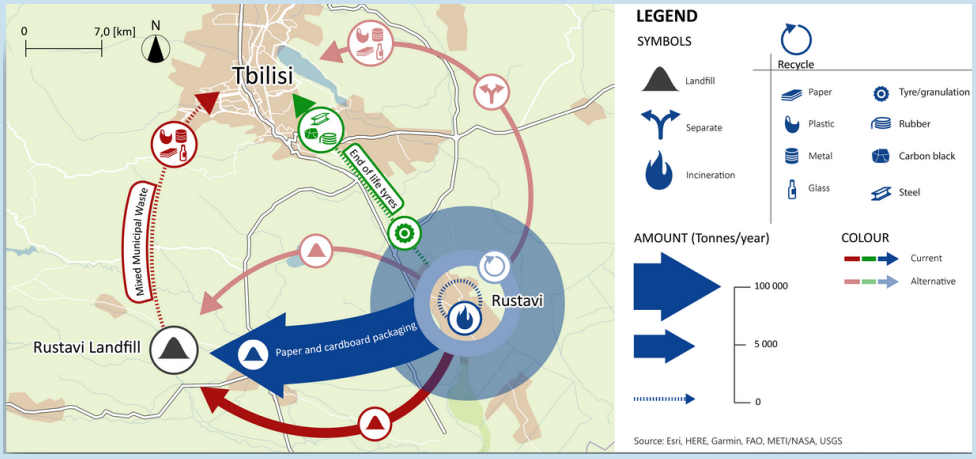
INTRODUCTION

The industrial waste mapping pilots conducted in the Rustavi and Zestaponi municipalities described how certain wastes from industry are managed including their origin, waste journeys and financial impacts. It was complemented by research on legislation, fiscal instruments and institutional arrangements that govern waste management in the country. Engagement with businesses identified the practical and commercial realities involved.

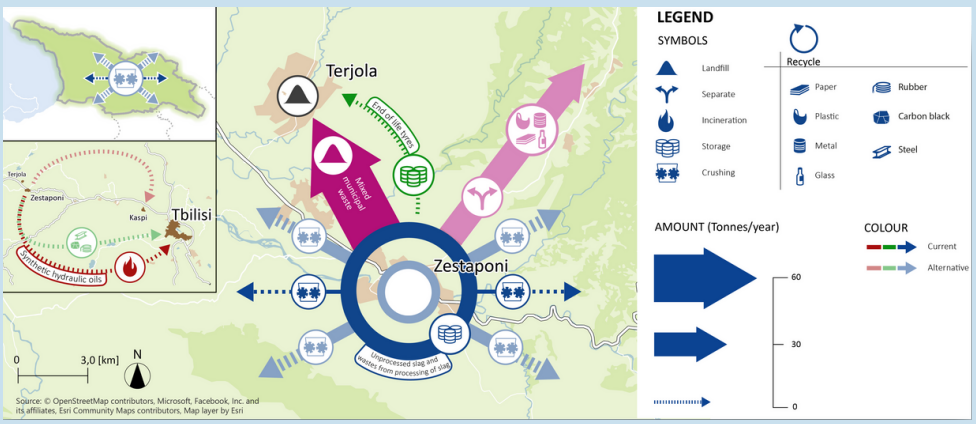
The result was a picture of how key wastes are handled and of the broader waste and resource management system in Georgia. This leaflet identifies how findings can be translated into tangible steps. Circular economy measures affect everyone, but governmental departments such as the Ministry of Ecology and Natural Resources, regions, municipalities, donors such as EU4Environment and individual companies can take leading roles in driving forward the sort of change that is advocated.

Across Rustavi and Zestaponi, the cases of paper and cardboard, mixed wastes, slags, oils and tyres were researched and mapped. All pointed towards significant potential for circularity that is currently unfulfilled. Potential alternative scenarios were also identified. In most cases these scenarios involved significant material savings, cost savings of 50% and increases in material value ranging from 30% to several hundred per cent. There are clear potential benefits.

However, the key value from the exercise was in reinforcing the need to invest in underlying structures for the resource management system to become more circular.

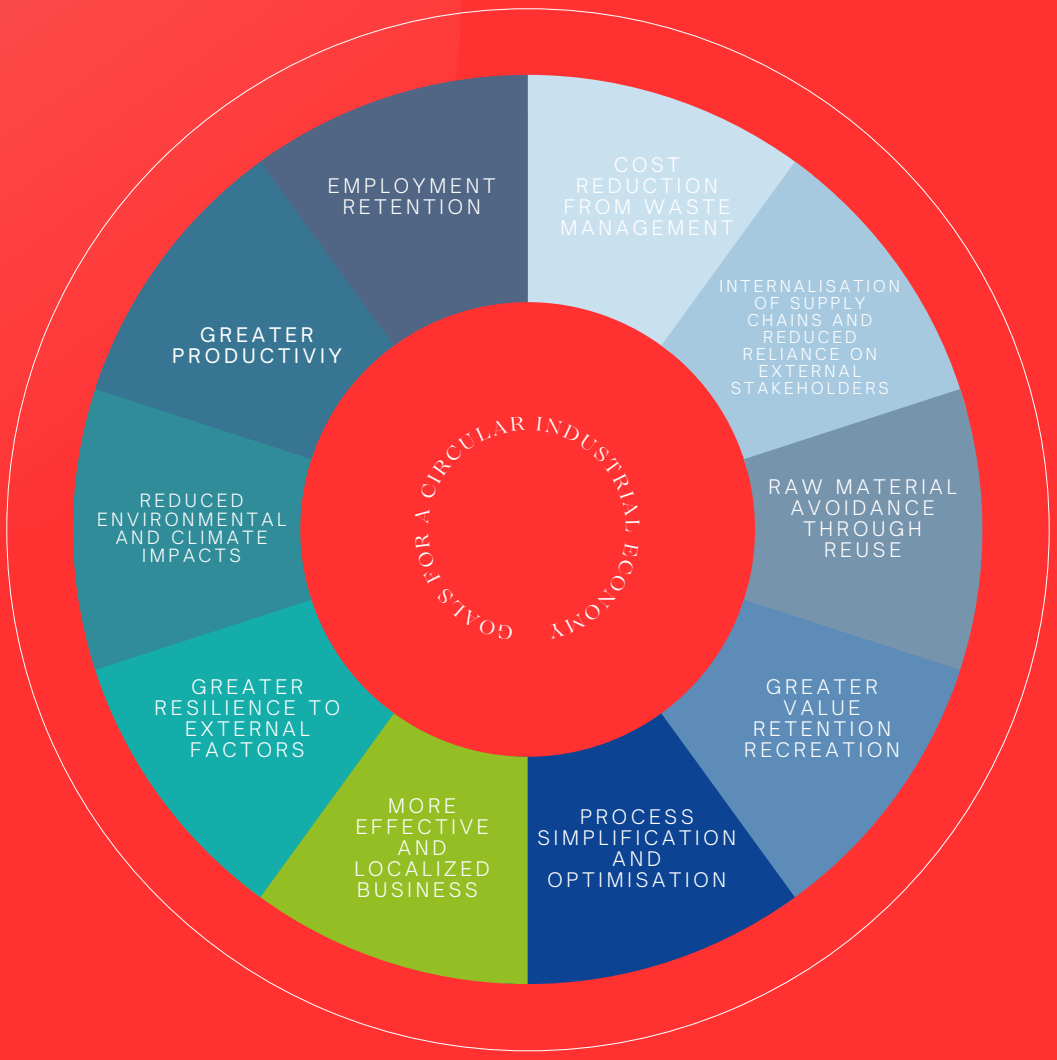


By nature, circular economy is a broad subject, and it is dependent upon stakeholders at all levels. There are common factors that enable the transition to the circular economy and they should be addressed concurrently. This leaflet identifies lessons from the industrial waste mapping exercise and proposes simple goals that would accelerate the regions and Georgia towards circularity. The lessons noted here are notably similar to experiences elsewhere in the world.



GOALS FOR A CIRCULAR INDUSTRIAL ECONOMY

An overarching goal is to manage resources as if there is no concept of waste. The benefits of circular economy can seem vague when discussed in a conceptual or academic way, but when articulated in terms of what it means for business then it is very compelling.



Circular economy is desirable for businesses even if sustainability is not a central motivation. Better and more effective business and commercial processes are possible, which in turn drive more sustainability as a by-product.

SUMMARY OF KEY LESSONS LEARNED FROM THE IWM PILOTS

The waste mapping pilots in Georgia identified specific challenges and opportunities that can be tackled, but the critical finding is that they are ultimately dependent upon deeper, more structural changes being implemented. Waste mapping is an ideal tool to understand where regions or businesses are in their journey towards the circular economy. It considers the whole system, not just the physical journeys and the stakeholders involved. It takes into account the legislative, financial and strategic context.

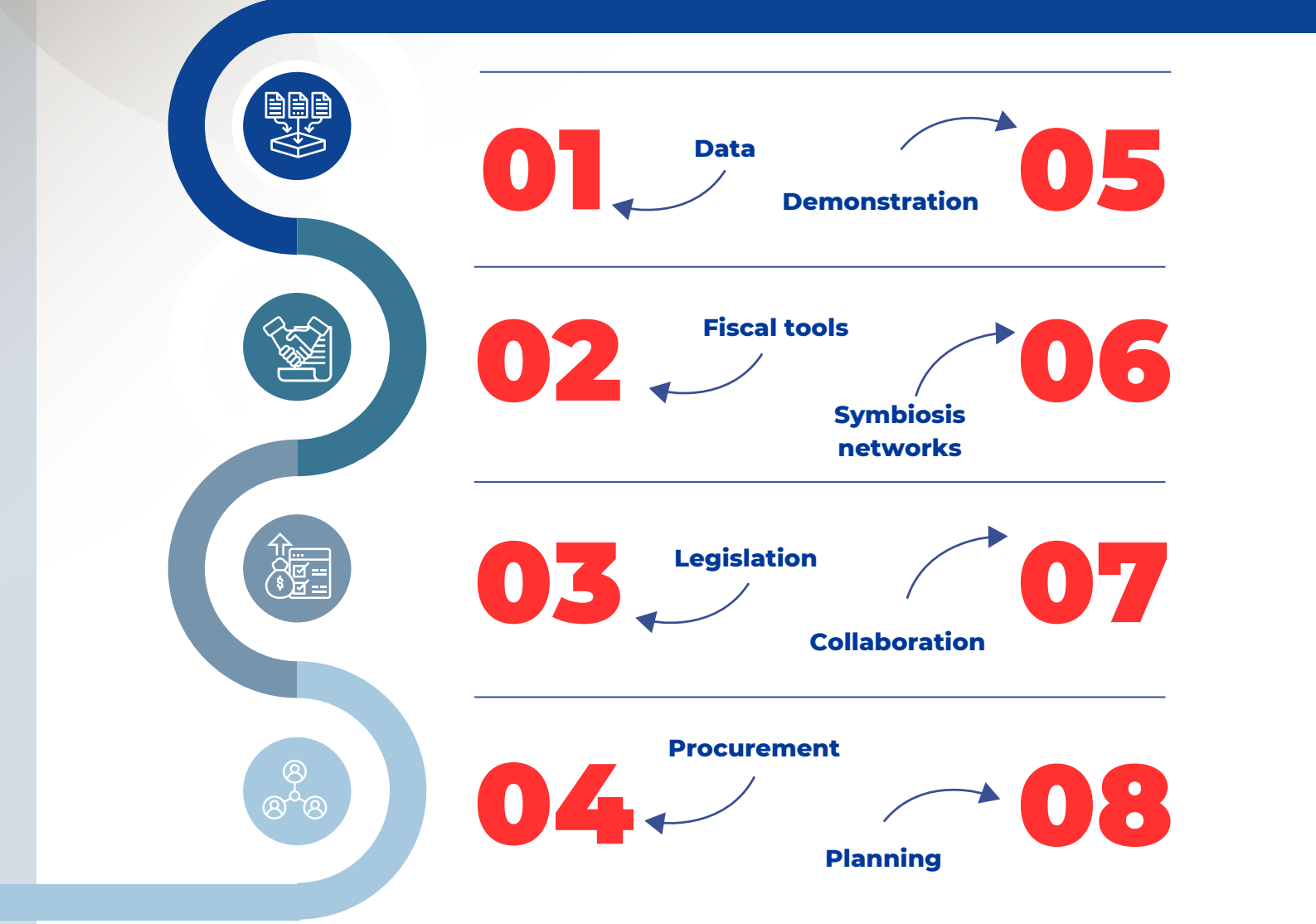
"Tunnel vision" *vs* ***"broad view"***

Tunnel vision approaches usually focus on one single aspect, while waste mapping lets us see the whole picture.
The mapping found that there are no single, instant solutions to implementing circularity. But, at the same time, none of the identified scenarios were new either.
Several projects could be pursued which help develop the conditions needed for circular economies to thrive. These are presented below.

Narrow individual approach

OR

Broader regional waste mapping



DATA

Data. Better data is a pivotal requirement for circular economy, and indeed for any functioning business environment. Without reliable data it is difficult to plan treatment capacities, plan for new collection systems, set material prices or take commercial decisions for investment. It is harder to identify problems or to articulate the benefits of opportunities. Businesses need confidence to implement changes, and this is less likely if changes are based on guesswork. The mapping exercises in Rustavi and Zestaponi identified a fundamental issue with waste data in Georgia. For example, there was no recorded data on paper and card that was disposed of to landfill, only estimates. There are gaps throughout the Georgian waste data reporting system. Until data is improved, the ability to implement all other measures to develop circular economy will be severely restricted.

RECOMMENDATIONS

- It is noted that work is ongoing on the Georgian waste data strategy which should be prioritised. There should be mandatory reporting of all wastes.
- Investment in equipment that aids data gathering, such as weighbridges.
- Until reliable data reporting structures are in place, investigate tools or pilots that will improve estimates e.g. volume density conversion tools (i.e. converting m^3 to tonnes based on known density factors).
- There is still significant disposal of mixed wastes without segregation or sorting. Invest in updated commercial and industrial waste composition studies that identify the profile of mixed wastes. Such data steers efforts towards the diversion of valuable waste streams.

FISCAL TOOLS

A lack of financial incentive appears to be a key cause of low levels of recycling and reuse for some materials. The mapping exercise found that landfill prices are relatively cheap in comparison with the collection of other materials for recycling. Landfill tax in other countries has been a major factor in steering practices away from landfill and towards waste avoidance, reuse and recycling.

RECOMMENDATION

- Accelerate the development of fiscal tools that disincentivize wasteful practices e.g. landfill tax.

LEGISLATION AND GUIDANCE

Waste legislation has taken large strides in Georgia, for example with the Waste Code and Producer Responsibility. However, guidance is needed to support legislation. The use of targets could be reviewed and aligned with the goals of circular economy.

RECOMMENDATIONS

- Accelerate the development of End of Waste protocols for certain wastes, such as waste slag waste that can be used in roadbuilding. The waste mapping exercise in Zestaponi found that legislative uncertainty persists as to the status of the wastes and its applications. Guidance could also be drafted to assist with the introduction of the Extended Producer Responsibility, such as clarifying which wastes and activities apply and how Producers participate.
- Georgian Waste legislation also follows the model set by early European Waste legislation by acknowledging the importance of the waste hierarchy, but then formulates many targets around recycling rates. There could be an investigation at a national level into how innovative target-setting can focus on, for example, waste avoidance, reuse and carbon impacts. There are simple tools in Europe that can be emulated that apply carbon weightings to waste management.

PROCUREMENT

Experience elsewhere has shown procurement to be a highly effective driver in circular solutions. Public sector procurement departments are increasingly stipulating requirements for recycled materials and local materials.

RECOMMENDATIONS

- The waste mapping exercise identified issues in Zestaponi regarding the reuse of slag in that only a portion of wastes produced appeared to be used in civil engineering reuse applications. Investigate how such applications can be stimulated by procurement clauses in public contracts.
- Wastes such as oil remain problematic and mainly incinerated. Model clauses could be developed that stipulate and/or incentivize the reuse of wastes in public procurements, the use of products that are more easily recylable, and processes that help avoid consumption.
- Investigations should be made into how electrification can be accelerated which would avoid the use of certain oils.

DEMONSTRATION PROGRAMMES FOR NEW BUSINESS MODELS

The transition to circular practices can be helped by providing case studies and demonstrations of their implementation. This helps de-risk the process for others by providing template methodologies and evidence.

RECOMMENDATIONS

- Create a public platform for showcasing circular case studies. This is common in many countries and helps to normalize circular business models. Such a platform could be a library of case studies, good practices, tools and resources.
- Pilot projects into the use of reusable containers that circulate between producers and clients on a take-back basis. Damaged paper bags for the transport of cement in Rustavi produce tens of tonnes of waste per year which is landfilled. Reusable systems could avoid this. The principle is not new and is widely used elsewhere in industry. A pilot project could create a template for much wider use and applications.

SYMBIOSIS AND COLLABORATION

Collaboration is essential in optimizing resource consumption between businesses. The success of symbiosis networks are due to organizational as well as technical factors. In addition to investigating if and how certain symbioses can occur, structured organisations and platforms are needed that enable businesses to meet. See the example of the Alholmen business park in Finland as an example of creating conditions and structures for symbiosis.

RECOMMENDATIONS

- Establish local and regional symbiosis networks. The mapping exercise identified potential projects that symbiosis programmes could investigate in a structured way e.g. use of tyres as a feedstock for cement plants. One large business indicated that they would be willing to consider this. These challenges are not technical, but instead around logistics and assurances on a consistent supply.
- A symbiosis demonstrator project would detail how options in symbioses are explored, e.g. in an industrial park, and how stakeholders are brought on board, as well as the practicalities of how such an arrangement works. A symbiosis project would also look at how data can be shared, such as on shared portals. Greater transparency and data sharing encourages reuse.

WHOLE-SYSTEM PLANNING

For new developments, municipal and regional governments can take a greater role in strengthening the need for new developments to share waste heat or water.

RECOMMENDATIONS

Investigate how town planning processes can encourage symbioses and mandate new developments to consider these. Investigate the use of planning conditions that include features such as symbioses and resource-sharing within a locality.