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INDUSTRIAL WASTE MAPPING IN AZERBAIJAN



**Learnings and recommendations that form the bases for Industrial
Waste Mapping (IWM) in Absheron-Khizi and Baku Economic
Regions**

Action implemented by:



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INTRODUCTION



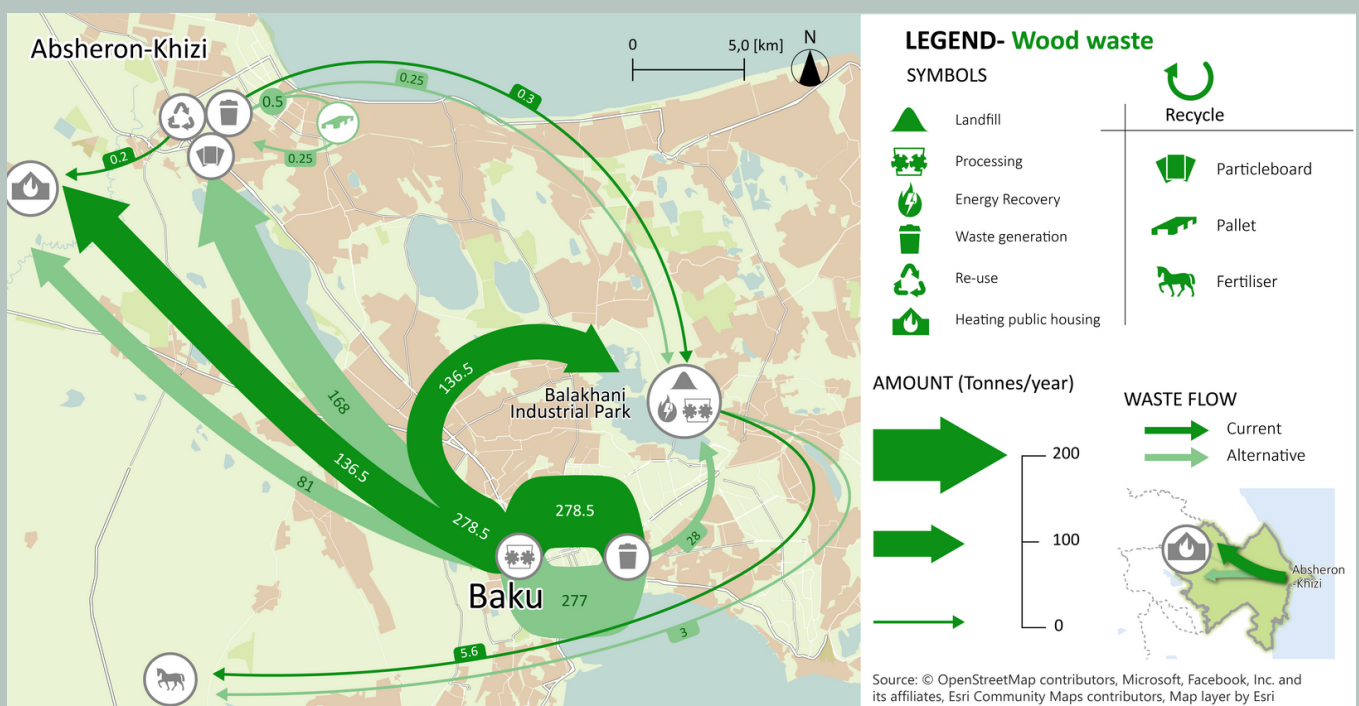
The industrial waste mapping pilots conducted in Absheron-Khizi Economic Region and Baku Economic Region described how certain wastes from industry are managed including their origin, waste journeys and financial impacts. It was complemented by research on legislation, fiscal instruments and institutional 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 Azerbaijan. This leaflet identifies how findings can be translated into tangible steps. Circular economy measures affect everyone, but national governments, regions, municipalities, and individual companies can take leading roles in driving forward the sort of change that is advocated.

Across Absheron-Khizi Economic Region and Baku Economic Region waste oils, wood, metals, paper, glass and textile wastes were subject to a waste mapping case study. All pointed towards significant potential for circularity that is currently unfulfilled. Potential alternative scenarios were also identified. In most cases these scenarios involved hundreds of tonnes of material savings and the transition of waste as a cost to an income thanks to reuse and recycling. 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.

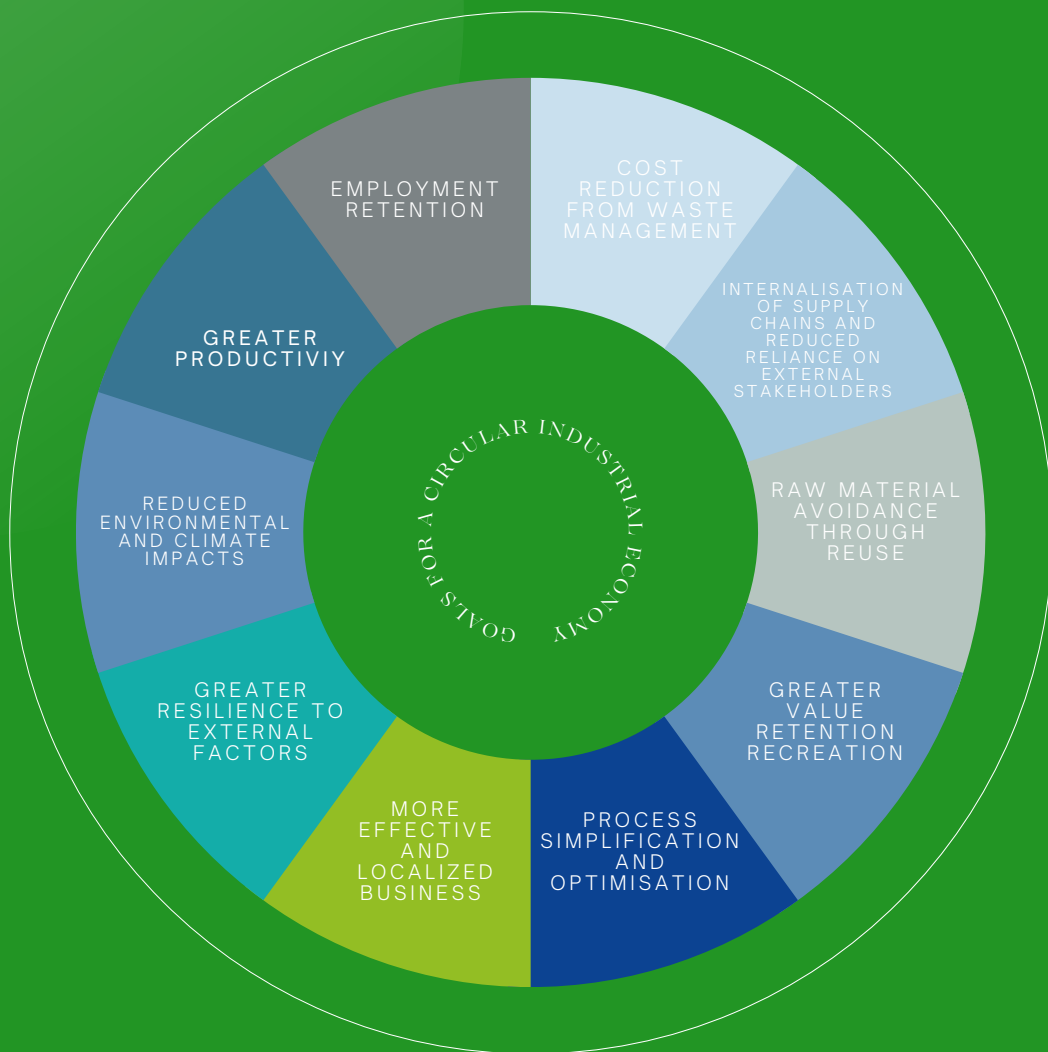
By its nature, circular economy is a broad subject, and it is dependent upon stakeholders at all levels. There are common factors that enable the transition to the circular economy and they should be addressed concurrently. This leaflet identifies lessons from the industrial waste mapping exercise and proposes simple goals that would accelerate the regions and Azerbaijan towards circularity. The key target groups are the Ministry of Ecology and Natural Resources, other EU4Environment beneficiaries and key donors (e.g. EU), but also UNIDO, municipalities and enterprises. 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 Azerbaijan 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.

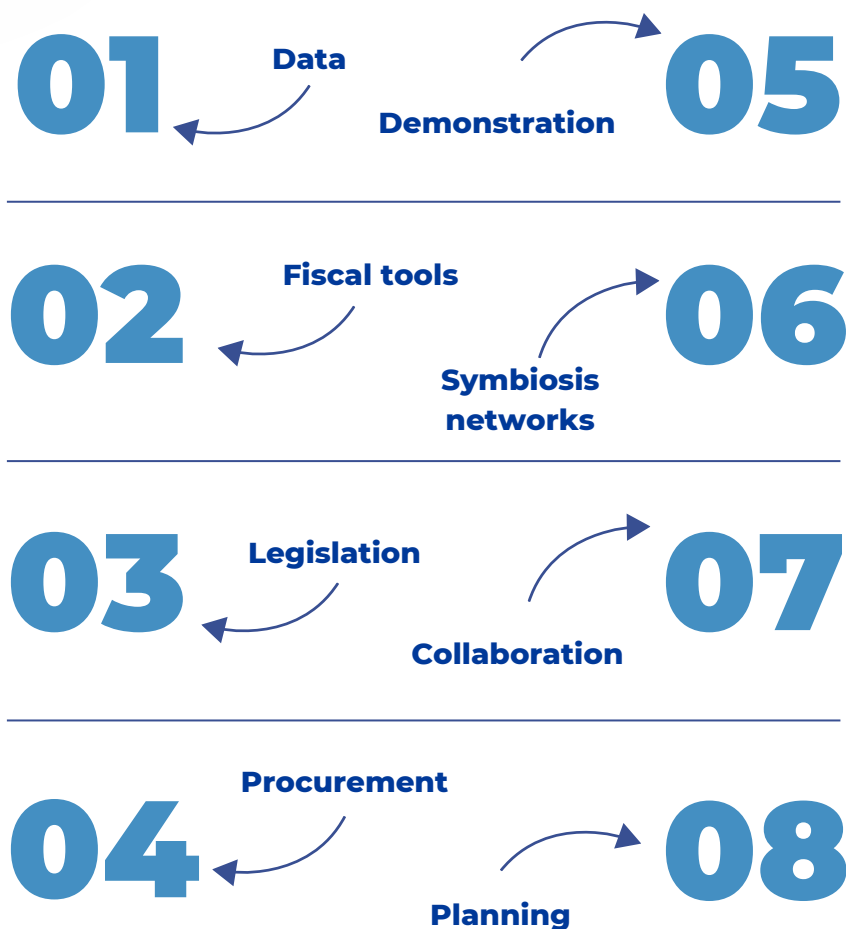
Narrow individual approach



Broader regional waste mapping

OR





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 Absheron-Khizi Economic Region and Baku Economic Region identified a fundamental issue with waste data in Azerbaijan. The country is largely lacking a proper waste data reporting system. Until data is improved, the ability to implement all other measures to develop circular economy will be severely restricted.

RECOMMENDATIONS

- Develop a waste data strategy with mandatory reporting of all wastes. Require protocols for the reporting of waste at production and reception by waste treatment facilities, including statistical protocols to avoid double counting.
- It is noted that major investments have been carried out in Balakhany industrial park and sanitary landfill. Further investments in equipment that aids data gathering, such as weighbridges, are recommended in the entire country.
- 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 m³ to tonnes based on known density factors).
- There is still significant incineration and disposal of mixed wastes without segregation or sorting, despite existing infrastructure in some sites. 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, recycling and energy recovery.

RECOMMENDATION

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

LEGISLATION AND GUIDANCE

Waste legislation has taken strides in Azerbaijan, for example through amendments in the Law on Industrial and Household Waste. However, guidance is needed to support legislation. The use of targets could be reviewed and aligned with the goals of circular economy.

RECOMMENDATIONS

- Strengthen waste hierarchy perspective in waste strategy and laws. The Law on Industrial and Household Waste does not explicitly identify the pivotal role of the waste hierarchy. It promotes source separation and recycling, but a greater focus on waste avoidance is arguably needed.
- Accelerate the development of End of Waste protocols for wastes, to reduce the risks of wastes being handled in improper ways while making it easy to reuse and recycle waste. 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.
- Financial incentives that encourage waste management practices according to the waste hierarchy are currently lacking in Azerbaijan. Positive motivation could be introduced, such as subsidies for interest for certain investments. One type of investment is equipment for pre-processing of waste to be used as fuel in cement plants.

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

- Wastes such as plastic 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 recyclable, and processes that help avoid consumption.
- Approx. 12,000 tonnes of wood waste are generated in Azerbaijan per year and mostly incinerated. At the same time, there are no producers of particle board due to cited lack of raw material. If public sector procurement would prioritize wood particle boards from recycled material in public tenders, that would drive investment in such a process.

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 for the use of glass bottles (or other reusable containers) that circulate between producers and clients on a take-back basis. Reusable systems in this scenario and others like it could avoid waste costs, which is particularly important as no recycling of coloured glass is carried out in Azerbaijan. Similar take-back systems exist in, for instance, Turkey where the bottles are re-used at least 8 times. A pilot project could create a template for new waste types, wider use and additional applications.

SYMBIOSIS AND COLLABORATION

Collaboration is essential in optimizing resource consumption between businesses. The success of symbiosis networks is 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 a truly circular economy-driven symbiosis network, based around for instance Balakhany industrial park and nearby sites. The mapping exercise identified potential projects that symbiosis programmes could investigate in a structured way e.g. use of plastic as input material for manufacturing plants or as a feedstock for cement plants.
- 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.

INTEGRATED 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.