

- ANDREJ KRŽAN, NATIONAL INSTITUTE OF CHEMISTRY, LJUBLJANA, SLOVENIA
- FEASIBILITY and STRATEGY

STARTING POINT





Capacity

 Central Europe has a large capacity in paper and plastics and manufacturing.

Opportunity

Flexible growing industries

Need

CE lags in sustainable product use





FEASIBILITY - About Feasibility





What is feasibility

- Likelyhood of bringing options to function in real life:
- Option: Environmentally advantageous solutions in paperplastic multimaterial packaging and other products.
- Real life: production and use of biocomposite multimaterial products in Central Europe (also serving a broader region).







Background context

- 1. Environmental benefits
- 2. Resources
- 3. Economic conditions
- 4. Use/demand
- 5. Lessons learned / best practices
- 6. Policy







1 Environmental benefits

- Resource efficiency (circular economy)
- Safety
- Reduced environmental burdens (pollution, CO₂ footprint etc.)
- LCA







2 Resources (in CE)

- Paper and plastic
- Converting industry / technology
- Production/ Logistics/ Trade/ Access to markets
- Know how (internal/external) /HR / knowledge support
- Innovation system
- Markets / consumers
- Waste treatment capacity (recycling, composting, biogasification facilities)







3 Economic conditions

- Economic capacity for investment
- Purchasing power
- Structure of industry (paper, plastic, converting, trading)
- Public support for sustainability goals
- Economic situation: growth, jobs







4 Use / demand

- Awareness (NGOs etc)
- Regulatory support
- Purchasing power
- Export markets (direct indirect)







5 Lessons Learned / best practices

- Projects
- Market trends and players elsewhere
- Successes and failures analysis (inherent reasons)







6 Policy

- Existing policy
 - Domestic
 - Foreign
- Expected policy (trends)
- All levels of policy (national, local, industry, company)
- Support for policy implementation







Need for a situation assessment

- 1. External factors
- 2. Internal factors

3. Guided process through PaperBioPack



FEASIBILITY





Strategy



FEASIBILITY - STRATEGY





Approach - market

- Follow demand/ market (established competition)
- 2. Create demand /market (alone but risky)
- 3. Anticipate demand (prototype, trials) temporary!







Approach - products / technology

- 1. Commodity
- 2. Niche (sufficient for sustainability, loss making piggyback)

- 3. Technology (existing, new expansion)
- 4. End of life (recycling, composting, incineration)

5. Identify value chain and role in it







Approaches - external conditions

- 1. Knowledge (obtain, academic, organizations/associations)
- 2. Support (projects, partners, institutions, programmes)

Guided process through PaperBioPack



FEASIBILITY





What is needed







Part 8

Implementation scenarios







Implementation scenarios

The listed goals can be achieved through a number of measures. In principle, two main scenarios can be distinguished:

- 1. Scenario 1 in which development is supported through strong official innovation and sustainability policy.
- 2. Scenario 2 that relies on "soft" non policy measures.







Scenario 1

Relies on policymakers at local, national, regional and European levels to continue and deepen in very specific ways the current support for innovation, circular economy, bioeconomy and sustainable development goals.







There are several regulatory approaches that could be taken:

- Prohibiting combined packaging (vs. monomaterial packaging)
 on the basis that it limits recycling taking into account
 available recycling technology.
- 2. Mandating that paper/plastic composites are designed to standards that support:
 - 1. easy paper (and plastic) recycling or
 - 2. composting (alternatively aerobic biogasification).







In order to reach regulatory change:

- 1. Public pressure and support for change
- 2. Awareness of the issue
- 3. Sufficient information that supports the need for change
- 4. Existing solutions that can realistically be applied
 - □ Reliant on media, NGOs, science/research, industry (offering workable solutions).

- Long term, hard to influence, unpredictable
- + positive trend, good track record







Scenario 2

Relies on a voluntary change in packaging value chain







The change can be initiated by different stakeholders in the value chain:

- 1. packaging waste management companies,
- 2. retailers, especially large with significant market shares,
- 3. local government that regulates public systems such as municipal markets or publicly owned businesses,
- 4. companies, selling to the public as well as NGOs and similar,
- 5. producers of packaging.







Role for local government











Specific measures to reach packaging change

- 1. Providing accurate and objective arguments for stakeholders
- 2. Setting proper alliances to make change possible
- 3. Solving technical issues
- 4. Certification
- 5. Communication with stakeholders including policy-makers



FEASIBILITY - Implementation scenarios





Most important:

There are many ways to change - each will be special and different. Key is to want to change.



THANK YOU









