LCA4Regions benchmarking

Debora Paolini and Paolo Marengo

ACR+

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LCA4Regions initial benchmarking

1. **Methodology**: comparison of main information & regional SWOT analysis

2. **RABs SWOT & transferability opportunities**

3. How to improve the RAB
1 Methodology: comparison of main information + regional SWOT analysis

Degree of similarity between regions in order to:

• Identify and address differences between regions
• Favour the EoE among the regions according to the following DIMENSIONS:

I. PRODUCTION STRUCTURE Economic and industrial sectors (Life Cycle methodologies potential)
II. REGIONAL POLICIES AND REGULATORY FRAMEWORK on circular economy
III. LCA TOOLS, DATABASE & EXPERTISE already present in the region
IV. KEY THEMATIC PILLARS - Field of greater value and relevance where LC approach seems to have the higher potential
**Lodzkie Region**

**Main Profitable Industries:**
- **Food**
- **Construction** (the most interested in LCA)

- High level of industrialization
- Key role of training and capacity building (universities centres)
- Availability and diversity of natural resources

- Low industry innovation
- 3rd sector not developed
- One of the least developed region in comparison to UE standards (even if the most developed in Poland)
- Sensitiveness of the regional economy to market fluctuations
- Scarcity of large business entities and low impact of small business in innovativeness of the regional economy
- Low demand for specialists from knowledge-based economy

- High level of public sector investments
- Young human resources with higher education
- Opportunities for enterprises development and investing (growing interest in circular economy and renewable energy)
• Managing authority to **shape regional policies** & active participation in **circular economy projects**

• **Databases** and statistics useful for diagnosis connected to circular economy

• Network with the **business community**

• Implementing a circular economy model in the national policy

• Promotion of EU policies for resource-efficiency and environmental protection + social activity and renewable energy development

• Openness to changes: Changes in regional policy would contribute to faster development and dissemination of the LCA technique in practice, strengthening awareness of the role of environmental protection and efficient use of existing natural resources.

• Complex and slow process for implementing changes in regional policy instruments after decision-making

• Many projects started but not completed

• Currently regional policy does not interfere with the development and implementation of LCA but at the same time it does not sufficiently support them.

• Susceptibility to political changes and related changes human resources and priorities for the development of regional policies
• Inclusion of green criteria in **public tenders**

• National **circular economy** and sustainable development legal acts and **guidance for regional governments**

• Regional Innovation and Development strategies are potential regulatory documents for LCA provisions

• Local authorities actions for introducing innovative regulatory instruments

• Currently no other direct provisions regarding LCA in regional policy

• Susceptibility to political changes and related changes in human resources and priorities
LC tools:

- Eco-label Center for Testing and Certification (2005)
- Polish eco-label Ekoznak

offset paper, cleaning agents, cosmetics, textile, products, magazines, printed matter

Electronic equipment, paper, paints and varnishes, detergents, soil improvement measures

N. Of certificates issued
- 138 (2014)
- 42

Sector of greater value and relevance of LCA

Implementation and application of LCA here needs to be considered more at national level. Still few companies with valuable experience (young phenomenon), the construction industry leader in the implementation of LCA (even if little development)
The greatest progress is seen in the field of CAPACITY BUILDING (university education) – level of knowledge for the future, considered to be implemented in the earlier stage of education.
Production structure

Lodzkie

- Industrialization (food and construction)
- Training and capacity building (universities centers)
- Natural resources diversity
- Public sector investments
  - Young human resources with higher education
  - Opportunities for enterprises
- Sensitiveness of the regional economy to market fluctuations
  - Scarcity of large business entities and low impact of small business in innovativeness of the regional economy
  - Low demand for specialists

Navarre

- Industry good health (food, machinery, transport equipment, extractive, chemical, textile, electrical and computer equipment) & and companies size (manufacturing industry)
- Natural resources
  - Good innovation results
- European political trends to reduce climate change (Green Deal).
  - LCA as competitive advantage (purchase argument and image of products, services, organisations etc).
  - Promotion of life cycle methodologies through subsidies or deductions.
- Competitiveness disadvantage compared to other autonomous regions
  - Time, cost of LCA, lack in interpretations of results
  - Production inertia and conflicts of interests

In common

Can compensate
Cornerstones: **energy production**, Offshore, process industry, ports and logistics and food industry.

Health care, automation and robotics, business service, electronics.

**Decline of investments in R&D** in public and private sector

**INDUSTRIAL SYMBIOSIS MODEL** (Chemicals)
Regional plans and programmes

Lodzkie
- Managing authority to shape regional policies & active participation in circular economy projects
- Databases and statistics useful for diagnosis connected to circular economy
- Network with the business community

Navarre
- Economic capacity for the development of new programmes (social and institutional capital above the average)
- Lack of coherence and comprehensive approach
- Lack of public procurement strategy
- No incentives or support for eco-innovation, LCA, eco-design products

- Implementing a circular economy model in the national policy
- Promotion of EU policies for resource-efficiency and environmental protection + social activity and renewable energy development
- Openness to changes: Changes in regional policy would contribute to faster development and dissemination of the LCA technique in practice, strengthening awareness of the role of environmental protection and efficient use of existing natural resources.
Satakunta Regional Plan 2050: LC methodologies can be adopted in:
- Bio and circular economy, industry and tourism
- Food and natural products
- Transportation system
- Sea area
- Land use plan

2012 Programme to Promote Sustainable Consumption and Production, “More from Less – Wisely” which aims to reduce the environmental impacts and greenhouse gas emissions of households and the public sector.

Public procurement:
Government Decision-in-Principle on the promotion of Sustainable environmental and energy solutions (Cleantech solutions) in public procurement

Green public procurement in Slovenia in the year 2018
- 20 subjects
- General and Infrastructural
- 1) Good 2) Service 3) Construction

Smart Specialization Strategy (SPS) – strategic document to determine the investments of development funds in research, development and innovation for enhancing natural resource efficiency and transition to a circular economy in the areas that will have the greatest effects on the economy.
- Advanced materials and pulp and paper products«
  - new biomass-based products and composite materials based on natural fibers and biopolymers for applications in the products of the automotive, construction, electrical and other industries and advanced technologies and devices for material (secondary raw material extraction) and final energy recovery of waste.
Regulatory framework

Lodzkie

- Inclusion of green criteria in public tenders
- National circular economy and sustainable development legal acts and guidance for regional governments
- Regional Innovation and Development strategies are potential regulatory documents for LCA provisions
- Local authorities actions for introducing innovative regulatory instruments
- Susceptibility to political changes and related changes in human resources and priorities

Navarre

- Currently no other direct provisions regarding LCA in regional policy
- Own legislative capacity, regulatory powers and fiscal framework
- Carbon footprint calculation restrictive regulation
- Starting from scratch with LCA implementation
- Legislative changes to adapt to LCA
- Not unified regulatory framework with methodologies
- Non-compliance with the Contract Law and its reference to the life cycle from the cost part and the environmental part.
Based on National legislation: not direct inclusion of LCA methodology.

Acts on: biofuels, eco-design, land use and constructions, water management, packaging (Public procurement with involvement of LCA and eco-labels criteria for tenders).

Regulations concerning transport, land use and construction, agriculture and forestry, waste management, and environmental protection.

Waste shipments: control of the import, export and transit of wastes and the related permits.


Green deal agreement between the State and the business sector.
No data useful for LCA identified for any sector

Practice < theory
Lack of specialist knowledge

Cost of LCA analysis
Cost of experts service = the major financial barrier

LCA experts:
- Scientists and researchers with great experience
- Exchange with domestic companies/international advisors

New database on products, packaging and waste management
Reacher regions faster implementation of LCA: because of + availability of resources and + n. of supporting agencies offering higher services

Cost of LCA analysis
Cost of experts service = the major financial barrier

High level of qualified personnel in the region (administration and interprofessional associations)
Integration of new models that respect the environment
Availability of interested agents

Development of new consulting companies in LCA, attracted by the concept.

Few and very specific examples of LCA
Lack of technical knowledge, resources and training for companies and administrations
No data on training and capacity building and public procurements
High cost of LCA, absence of tools, absence of structured info
Lack of comparability of results

Missing LCA in carbon footprint, MFA & input-output tables, regional environmental footprint
Missing organisational LCA
Missing LCA in green procurement, bioeconomy and sustainable supply chain, industrial ecology, EPR (Extended Product Responsibility), LCA materials management, Cradle-to-Grave System, calculation of carbon footprint for agrifood, PEF (Product Environmental Footprint)

LCA case studies
- Umberto, Energy flows
- SimaPro environmental, social and economic impacts, associated with a product or service throughout its life cycle (eco-design, eco-labels, carbon footprints, water footprints)
- SIMUR, waste management
- EURENERS, ENECO (emissions)

TOOLS for
- Calculating volume of greenhouse gas emissions
- Healthy menus in municipal schools Pamplona
- Reusable products

Navarra

Lodzkie

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Life Cycle Assessment Guidelines for Industrial Symbiosis (IS) Assessment

Very few case studies, mainly in the quantification of existing systems (environmental accounting); Not decision-oriented; No regular indicators (measurement for sustainable procurements)

Use of sustainable criteria in many public procurement practices, but not directly involvement of LCA

The environmental point of view was defined for the entire lifecycle of the product or service in only 15% of the invitations to tender

LCA in waste management is considered in 9 municipalities out of 80 (11%)

LCA counting or counters was utilised often or relatively often by 33% of municipalities

Use of eco-labels: 40% of municipalities use Nordic Swan Ecolabel criteria during procurement process

Main obstacle: inadequacy of strategic support and the inadequate resourcing in procurement services

Lack of a common "procurement language" between the purchasers and suppliers

Lack of market knowledge and the absence of a life cycle approach and budgeting support

Western Slovenia

The Public Procurement Directorate in Slovenia tendered for road transport vehicles (meet the latest Euro emissions standard)

Academic and research institutions:
National Building and Civil Engineering Institute
• Ljubljana, Mechanical Engineering
• Maribor, Chemistry and Chemical Technology & Economics and Business

LCA workshop: Making Circular Changes in the Economy Using Product Life Cycle Analysis (LCA)

Strategic research and innovation partnership

Difficult to obtain detailed information from businesses

General tools: CIRCit Norden, CIRCPRO Smart Circular Procurement, CIRCULARAPP

Calculator for decreasing carbon footprint: municipalities, raw material requirement of public procurement and household consumption, Food services
Key thematic pillars

**Lodzkie**
- Public procurement
- Green criteria for public tenders
- Training & Capacity building

**Western Slovenia**
- Public procurement
- Training & Capacity building
- Academic & research institutions

**Navarra**
- Resource-efficiency
- Waste & material flows
- Plans on Energy efficiency, water use and waste flows management (KLINA), carbon footprint

**Satakunta**
- Public procurement
- Low-carbon procurement
- Public procurement for city transport
- RISS, Finnish Industrial Symbiosis System (Motiva)

**University centres** (Eco City, Product design & commercialization, LCA programs, Environmental management, REPAIR)

**Monitoring & evaluation**
Navarra

ROP Priority Axis: Transition to a low carbon economy

Specific investment priority:
Support for energy efficiency, smart energy management and renewable energy in public infrastructures

Satakunta Region

Sustainable growth and jobs – Structural Funds Programme Finland

Specific objectives:
• Fortify human activity and productivity as entrepreneurs and workers
• Preservation of natural and cultural heritage and biodiversity
• New regional development models for sustainable, resource-efficient economy

Lodzkie

ROP Priority Axis: Preservation and protection of the natural environment and support for effective resource management

Specific objective:
Support for improving the effectiveness of waste management in relation to LCA and diagnosis of regional value chains

Western Slovenia Region

ROP Priority Axis: Implementation of the EU Cohesion Policy. Networks for the transition to Circular Economy.

Specific objectives:
• Improve material efficiency
• Establish 5 new value chains with completed material flows
3 Project SWOT & transferability opportunities
Navarra
- Own legislative capacity, carbon footprint regulation, good results in innovation

Lodzkie
- Green criteria in public tenders, national circular economy, own legislative capacity, connection with companies, training and capacity building (theory), LCA opportunities in the construction sector

Western Slovenia
- Industrial symbiosis model, green public procurement (2018), smart specialization strategy, biomass-based products, biopolymers, secondary raw material extraction, LCC in public procurement (road vehicles), LCA expertise examples (workshop)

Satakunta
- Energy production, public procurement (LCA & eco-labels), natural resources (forests), guidelines for industrial symbiosis, use of eco-labels, low carbon procurement, LCA appears in the construction sector

Public procurement strategy, incentives for LCA, eco-innovation, eco-design products, companies network, LCA expertise, data on training and capacity building, no data on public procurements

Innovation in industries, strategic support, LCA professional expertise

The legislation does not include the use of LCA

Market knowledge and expertise, strategic support, measurement of LCA for sustainable procurements
Ability to innovate and launch new processes and models

Lithuania

Baixo Alentejo

Lombardy

Need for substantial change: Limited implementation of innovations due to limited business expenditure on research and tech development, low commercialization. Scarcity of natural resources
Pillars

Public procurement

Waste and material flows

Training and capacity building
Project SWOT

- **Circular economy actions**
- Developed life cycle methodologies theory, research and good level of data availability
- **Independence of some regions** in decision making (ex. responsibility for waste management)
- **Public procurement** pillar

- Integrate life cycle approaches in decision making for key economic sectors of each region (Sustainable industrial development)
- EU/National policies
- Investment potential (ex. incentives/EU funds for companies for training activities)
- More life cycle-based vision of waste management (resource efficiency and prevention)
- Transfer of theory in the economic sector

- Low awareness and lack of technical specialization on LCA & professional expertise (lack of market knowledge)
- Life cycle tools of limited sustainability scope (often very specific)
- Absence of long term criteria for development decision-making from LCA

- High cost of LCA, absence of incentives and strategic support
- Production inertia, slow political changes
LCA4Regions Challenges

• How to connect LCA theory and practice? (lack of awareness)

• Integrate life cycle approaches in key economic sectors of each region (identify the ones with common sectors); identify the proper LC tools in relation to regional sustainable objectives

• Identify common challenges and opportunities to transfer competences

• Good practices: the “enzymes” that activate the regional policies transfer process
4 How to improve the RABs

Content

• SWOT analysis of the LC methodologies currently implemented (not only a list of tools, but an assessment of their effectiveness). E.g. Finland: a tool is actually used by the 33% of the municipalities

• **STAKEHOLDER MAPPING** (including level of engagement), useful to identify: actors that can reinforce some regional weaknesses (ex. innovation --> Research institutions);

• **Pillars identification**

• **Economic sector where LC could have the most important impact**

• Share **RESULTS** of the existing policy instrument (2014-2020)

• Know what you want: list the **NEEDS** of the regions in relation to the more relevant obstacles to implement LC (expectations from the EoE)
Do you identify yourself?

Suggestions?
Thank you!

Questions welcome

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