



Forum for Sustainability
through Life Cycle Innovation

in collaboration with

université
de **BORDEAUX**

Workshop Report

Life Cycle Approaches to Regional Sustainable Development

04. – 05.03.2019

Talence, France



Life Cycle Approaches to Regional Sustainable Development

Workshop-Report | 04. – 05.03.2019 | Talence, France

Authors:

Philip Strothmann
Fritz Balkau
Guido Sonnemann

Acknowledgements:

This report describes the discussions and final outcome of the workshop. The text has been reviewed by workshop participants who provided valuable input and comments. For their participation and contribution, we would like to thank in alphabetical order:

Alberto Bezama, Bertrand Laratte, Carlos Silveira, Cyril Baldacchino, David Sotillo, Irene Eslava, Joan Prummel, Jolanta Dvarioniene, Marc Jourdain, Margarida Franca, Naeem Adibi, Nancy Tarjenian, Natalia Ortega, Pekka Maijala, Philippe Loubet, Pierrick Audureau, Raúl Salanueva, Turid Wulff Knutsen

Published on the 10.07.2019 by:

Forum for Sustainability through Life Cycle Innovation e.V.
Registered: VR 33946 B
Charlottenstraße 2
10969 Berlin
Germany

Copyright © Forum for Sustainability through Life Cycle Innovation e.V., 2019

This publication may be reproduced in whole or in part, provided acknowledgement of the source is made. FSLCI e.V. would appreciate receiving a copy of any publication that uses this publication as a source. No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from the FSLCI e.V.

Introduction

The Forum for Sustainability through Life Cycle Innovation (FSLCI) organized a lunch-to-lunch workshop on “Life Cycle Approaches to Regional Sustainable Development” in collaboration with the University of Bordeaux, in Talence, France from 4 – 5 March 2019.

The workshop brought together representatives of regional administrations and their scientific advisers from eight European regions / countries: Central Portugal, Navarre Spain, Nouvelle Aquitaine & Hauts de France, Lithuania, Satakunta Finland and Oppland Norway.

Objective of the workshop was to exchange views on the best ways to introduce regional decision-makers to life cycle approaches as a tool to enhance sustainable development.

During the workshop participants were introduced to the concept of life cycle thinking as well as to specific life cycle assessment tools. In addition, participants from various regions presented their respective sustainability programs and activities, with an emphasis on life cycle assessment (LCA) and circular economy.

Regional decision-makers are key stakeholders to foster the uptake of more sustainable development pathways through their ability to set policy implementation frameworks and through the influence of their budgets in purchasing, contracting and providing services. In order to address this situation, FSLCI has set up a working group to reach out to the public sector as both target and actor, learning more about its situation, its opportunities and needs, and to bring the sector closer to the center of life cycle assessment and life cycle management (LCM) activity. In addition to running workshops such as the one in Talence, the working group is organizing the annual International Summer School on Life Cycle Approaches for Sustainable Regional Development. Working group members also published a book on Life Cycle Approaches to Sustainable Regional Development¹ which provides a good starting point for anyone interested in the subject.

¹ Massari S., Sonnemann G., Balkau F. (Eds): Life Cycle Approaches to Sustainable Regional Development. 360 pp, Routledge, Abingdon-on-Thames, UK, 2016

Following ‘input sessions’ at the beginning of both days, workshop participants discussed key questions in interactive break-out groups and made a number of recommendations for attention by various stakeholders. This report provides a summary of the key outcomes of these discussions and serves as a starting point for a broader discussion about sustainable regional development within the life cycle community and beyond.

This workshop report summarizes in the following pages key messages from the workshop which are grouped into the four areas around Governance, Capacity Building, Communication and Collaboration and Fostering the Use of Life Cycle Tools. In addition, an Overview of Regional Circular Economy and LCA activities of the participating regions is presented at the end of the report.

Governance

Regions have different levels of independence and urbanization

During the workshop participants highlighted that different regions have quite different levels of independence and regulatory responsibilities. Depending on how the respective state system is organized, some regions in a federal state might have significant regulatory powers, whereas regions in more centralized states might function more as an implementation arm for decisions made at the national level.

In addition, regions have different levels of urbanization. Some regions encompass predominantly vast rural areas whereas other regions represent metropolitan areas. Regions can also vary to quite some degree in their respective sizes with regards to geographical size as well as the size of their populations. Each of these differences lead to different policy implications and need to be considered when determining which life cycle tools are the most relevant for their respective needs.

Sustainability champions on the regional level are needed

In order to properly incorporate sustainability objectives on a regional level, a vision with a strong focus on sustainability needs to be supported and promoted by senior leadership on both the political and administrative side of things. To this end participants highlighted especially the role of administrations and their managers which is crucial to ensure ongoing support for sustainability programs in times of changing political leadership. Furthermore, it was highlighted that beyond raising awareness among the political leadership, mobilizing colleagues and stakeholders inside regional administrations would be important to ensure actual impact. In this context it was noted that drivers and motivation for sustainability programs depend on the political context and that regions might have different starting points. Some might have a focus on fostering a regional Bioeconomy, a Circular Economy, or seek to promote clean energy. Others might focus on a low carbon society in the context of a Green Economy or even broader pursue the achievement of various Sustainable Development Goals (SDGs). Either way, these higher objectives should be focused on when promoting sustainability rather than specific tools to achieve these objectives. Once the goals are agreed, the latter forms part of the implementation program.

External drivers are needed to ensure cross-domain ownership

Participants confirmed that many regions are still very much organized in traditional organizational and administrative structures along specific domains, a feature that hampers cross-domain partnerships in sustainability activities. External drivers are thus needed to create linkages between different administrative entities, such as e.g. the urban development and environmental department, or even the links between sub-departments. Only by establishing these cross-domain partnerships can activities survive when political priorities change. To this end the important role of the financing and budget departments was highlighted as a key to ensuring the ability to implement longer term projects and sustainability initiatives.

Capacity Building

Different levels of life cycle capacity need to be developed

Participants agreed that within regions there is currently little awareness or knowledge about life cycle approaches and or tools, and how to best implement a circular economy vision. They highlighted the need to begin to build life cycle capacity within regional administrations, policy makers and consultants. To this end they noted that several different levels of life cycle awareness and competencies are required. Regional administrations for example need personnel that has a good conceptual capacity and understands the purpose and objective of life cycle approaches. They should also know how to implement decisions based on life cycle information generated through commissioned studies. Regional administrators do not require the same deep technical competence in LCA as consultants or scientific support service who will carry out any detailed assessments that may be needed. Still, regions usually rely on their scientific institutions such as universities and research organizations to develop capacity and thus these institutions themselves need to build inhouse capacity so they can help regions implement life cycle-based programs.

Successful case studies are important to make the business case along with regular exchange around best practices

Participants also highlighted that successful case studies and business examples are needed to convince regions to apply life cycle management (LCM) as a way to enhance their sustainability efforts. Case studies should ideally highlight the positive aspects of using life cycle information to advance on the Sustainable Development Goals, which includes showcasing economic value in harmony with social development and environmental protection that could be generated for the region. Arrangements that enable an ongoing exchange between regional decision makers on these issues are key to sharing knowledge and experiences about challenges and successes when using life cycle management strategies to advance sustainable regional development.

Sector-based and regional approach needed to foster the implementation of LCM in SMEs

Although Life Cycle Management (LCM) is becoming commonplace in larger corporations, it is far from mainstream. To achieve sustainable production and consumption patterns, LCM needs to be taken up by whole supply chains that include small and medium sized enterprises (SMEs)². From a business perspective, this represents a competitiveness issue, as these SMEs are increasingly under pressure from clients and legislators to provide more information about the environmental impacts of their products, and to take responsibility for them both up and down the value chain. Therefore, a sector-based and regional approach is needed to foster the implementation of LCM in SMEs.

This has been done for instance in Northern France, where professional support organizations, including clusters, business federations and Chambers of Commerce, have come together under the auspices of the [avniR] LCA Platform to explore ways to help businesses to adopt LCM. Nine pioneer sectors, textile, seafood, packaging, mechanical, food, wood, construction, recycling and renewable energies, have undertaken an ambitious project to integrate LCM into their business. The methodology for all nine sectors follows five major steps: benchmark, sector maturity assessment, needs identification, action plan and implementation.

Cross-sector collaboration may help unlock hidden sustainability potentials

Participants noted that regional economic clusters can benefit from cross-sector life cycle management strategies by improving internal efficiencies and reducing external impacts. It was noted that collaboration across regional industry sectors can also lead to the identification of potential synergies and sharing opportunities.

² Sonnemann G., Margni M. (Eds.): Life Cycle Management, Series: LCA Compendium – The Complete World of Life Cycle Assessment. 349 pp, Springer, Dordrecht, The Netherlands, 2015

One study referenced in this context was conducted by Hildebrandt et al (2019)³ who carried out an exhaustive analysis on the effects of coupled and cascade use (in other words, industrial integration) in a German bioeconomy region. The evaluated value chains included companies from several industrial and manufacturing sectors such as wood producers and their associated logistic and management services, sawmills, chemical sectors, and companies associated to the production of advanced construction materials, among others.

A particular focus of the work was to determine the effects of a step-wise integration (material integration, material and energy integration) in terms of the competitiveness in sustainability indicators of the products associated to the integrated value chains when compared to their reference fossil-based products. The results of the study show that the solely implementation of bio-based technologies for the production of bio-materials does not ensure the competitiveness in sustainability of the regional goods. In fact, only when key technologies came into play to allow a material and energy integration among the different sectors the resulting "network" of value chains became competitive against the reference fossil-based products.

Participants thus concluded that a focus on the creation of a regional bio economy would only make sense if industrial synergies were built up to enhance an overall sustainability performance of the region.

Communication & Collaboration

There is a need to bridge the communication gap and create shared interest in using sustainability assessment tools for decision making

Workshop participants noted that information is only useful if it informs decisions being made. They highlighted that the quantity and complexity of information generated through

³ Hildebrandt, J., O'Keeffe, S., Bezama, A. and Thrän, D.: Revealing the Environmental Advantages of Industrial Symbiosis in Wood-Based Bioeconomy Networks - An Assessment From a Life Cycle Perspective. Journal of Industrial Ecology. DOI: 10.1111/jiec.12818

life cycle assessments needs to be reduced to better guide decisions being made. Decision makers will only request life cycle-based information if they can use the information provided to make better decisions in view of achieving respective policy targets as previously outlined. The format in which life cycle information is provided is thus as important as the information itself.

Life Cycle Information needs to be simplified to best support Sustainable Public Procurement efforts

A significant intervention point highlighted by regional participants was the purchasing power of regions. They reiterated that life cycle information needs to be simplified to best support sustainable public procurement efforts. It was suggested that procurement and life cycle professionals should collaborate to ensure better guidance on the subject. Capacity building efforts on use of life cycle tools should thus also target procurement professionals to help them understand what kind of life cycle information they should request from suppliers. In addition to information on environmental impact provided by LCA, economic information provided by life cycle costing is also relevant. Such information should be formatted to allow them to easily understand the implications of their choices.

Fostering the Use of Life Cycle Tools

Input-output data on a regional level needs to be developed to support regions in identifying the best sustainable development pathways

Workshop participants also highlighted that a good overview of input and output flows would provide regions with key information on regional environmental impacts and vulnerabilities to the supply of natural resources as well as possible intervention points. Regional input-output statistics comprise regional supply and use tables and the input-output tables based on them. The data in these tables improve the precision and add depth to regional accounts data. They describe the structure of production in the regions,

relationships between economic activities and the dependence of regions on the product flows in other regions and abroad. In particular the use of environmentally extended input-output analysis at regional level allows for quantifying the overall sustainability impacts of one economic sector in relation to another and hence to identify the best sustainable development pathways for a region. Unfortunately, regional input-output data and materials flow information are currently missing in most countries.

To address Circular Economy aspects various life cycle tools are needed

Participants realized that the circular economy is currently understood in many different ways by various stakeholders, and usually represents a conceptual vision rather than a tool – a conclusion shared in a previous FSLCI report⁴. Accordingly, it was accepted that the circular economy needs to be addressed from various perspectives and within various sectors in order to make it work.

Within many policy agendas on national and supra-national the most visible Circular Economy component is waste management while a more holistic materials flow concept is common in the business sector. Regions thus need to define their respective focus areas and then choose the life cycle tools which respond best to the different regional challenges but should move beyond a waste focus and apply a broader systems perspective. To this end it is likely that a range of tools is required that help evaluate interventions proposed as part of Circular Economy initiatives.

Conclusions

Many regions are striving towards sustainable development, using multiple concepts such as Bioeconomy, Circular Economy, Green Economy etc. but few are familiar with life cycle-based approaches. Building life cycle capacity within regions thus is urgently needed and also demanded. Workshop participants were interested in learning more not only about life

⁴ Strothmann, P. & Sonnemann, G.: Getting to Grips with the Circular Economy vision, Berlin 2017

cycle tools and concepts, but also about the business case for regions to adopt life cycle-thinking for sustainable development. The example of LCM being applied at a regional cluster level in Northern France could inspire other regions to apply a similar approach.

Sustainable public procurement was identified as one important application of life cycle-based tools leading to more sustainable purchasing decisions. But also in other areas regions could significantly benefit from implementing life cycle based decision making, e.g. when it comes to the assessment of bioeconomy concepts etc.

In summary the workshop clearly highlighted that life cycle-based tools can be useful to regions in working towards sustainable development, but need to be adapted for their respective regional relevance. Key messages identified were:

- Regions have different levels of independence and urbanization
- Sustainability champions on the regional level are needed
- External drivers are needed to ensure cross-domain ownership
- Different levels of life cycle capacity need to be developed
- Successful case studies are important to make the business case along with regular exchange around best practices
- Sector-based and regional approach needed to foster the implementation of LCM in SMEs
- Cross-sector collaboration may help unlock hidden sustainability potentials
- There is a need to bridge the communication gap and create shared interest in using sustainability assessment tools for decision making
- Life Cycle Information needs to be simplified to best support Sustainable Public Procurement efforts
- Input-output data on a regional level needs to be developed to support regions in identifying the best sustainable development pathways
- To address Circular Economy aspects various life cycle tools are needed

Outlook & Perspectives

FSLCI will continue to work on this subject with its working group on Regional Sustainable Development and LCA with the aim of supporting regions to address the above outlined issues. The working group will continue to work on further adapting life cycle tools for regional use, and will further pursue its objective of bringing regions and life cycle professionals closer together. This is also a key objective of the FSLCI's annual International Summer School on Life Cycle Approaches for Sustainable Regional Development with which we will continue to help build capacity among regional stakeholders.

On the international level the RETRACE project - A Systemic Approach for Regions Transitioning towards a Circular Economy⁵, created already a great starting point among European Regions to advance on Circular Economy strategies. Another major step forward will be the Interreg project 'LCA4Regions'⁶, which will be carried out during 2019 – 2022 to allow regions to learn from each other, and ultimately build meaningful life cycle capacity within European regional administrations.

⁵ <https://www.interregeurope.eu/retrace/>

⁶ <https://www.interregeurope.eu/news-and-events/news/2787/fourth-call-projects-approved/>