Rubizmo

Report on the role of clusters and multi-actor networks in the creation of shared value in rural areas

DELIVERABLE N. 5.2

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[1] PU = Public
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Summary

Rural areas form the majority of the EU's land area and the backbone of its primary sector but they are facing a large number of challenges and they are often lagging behind in terms of development, services and infrastructure.

Creating Shared Value (CSV) is a concept which refers to "policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates" (Porter & Kramer, 2011). In contrast to Corporate Social Responsibility (CSR) which focuses mostly on reputation and has only a limited connection to business, "CSV is integral to the company's profitability and competitive position" (Porter & Kramer, 2011).

Clusters, which are ever-present in all successful and growing regional economies and play a crucial role in driving productivity, innovation, and competitiveness, especially in rural areas, are in an ideal position to meet several of the prerequisites for creating shared value.

The deliverable includes six case studies of different rural clusters from different European countries. The clusters are active in the food value chain and the bio-based value chain. An overview of their activities shows that they produce several social and environmental benefits for local communities as an integral part of their business strategy, meaning that they are creating shared value.

In short, the deliverable shows that the features of rural areas offer a very good fit for the features of clusters and the features of specific value chains, and these in turn are ideal for the creation of shared value. Overall, the theory on shared value, its application on clusters and networks, and the overview of the selected case studies shows that clusters have an extremely promising potential for the creation of shared value in rural areas.

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1. Introduction

The current work in the present report is based on the preliminary work performed for deliverable 5.1 ("Methodological guide for identifying factors influencing cluster and network effects"), which provides a guide for identifying the factors influencing cluster and network effects. Some of the key concepts mentioned there are worth summarising here as well, as an introduction to the topic in this report. The understanding of the following features of rural areas and their economies and how different types of collaboration fit into them is essential in order to examine the concept of shared value and the role of clusters play in it. This will then be illustrated in practice through presenting a number of case studies, which will in turn allow for a comparison between theory and practice.

Rural areas cover 75% of the European Union's land area, but are home to only about 25% of its population, although the latter percentage is roughly double in the case of the 13 newer member states (Perpina Castillo et al., 2018). Rural areas are obviously the backbone of Europe's primary sector. On a positive side, unemployment rates tend to be significantly lower in rural areas, although this can vary considerably between different countries (Eurostat, 2017).

However, rural areas tend to face a number of significant challenges[1] such as low access to markets, limited range of services, limited job opportunities and labour supply, and a higher risk of poverty and social exclusion (Perpina Castillo et al., 2018). GDP per capita tends to be significantly lower, standing at 72% of the EU average in 2014, although this variation is not as distinctive as the East-West divide, which is exacerbated by the rural-urban divide. Per capita GDP in the rural parts of some Eastern member states is lower than 40% of the EU-28 GDP average, while in rural regions of the Netherlands it stood at 113% (DG Agriculture and Rural Development, 2018). In addition, the lack of high-speed internet infrastructure in sparsely populated rural areas, along with other factors (lower literacy and education, computers skills and language skills, and cultural factors) creates a digital divide which can further hamper the development of rural areas (Eurostat, 2017).

In order to overcome such challenges and boost their economy, rural areas are turning to collaboration between businesses, as well as between businesses and other important institutions (e.g. public authorities, research centres, universities etc.), which is one of the most efficient tools for rural sustainable growth (Coppock, 2006). Collaboration is, essentially, the pursuit of a common goal, but it is strengthened when innovative ideas, new services, improved products and growth are accomplished (Burton, 2005).

As in Deliverable 5.1, collaboration is viewed mostly through the perspective of SMEs (Small and Medium Enterprises), as they play a major role in economic growth providing new jobs (OECD, 2000) guarantee social security (Herte, 2017) and have a strong linkage with their surrounding rural areas (Kihonge, 2014). Collaboration is a crucial tool for SMEs to handle a number of issues that are critical to their survival,

[1] See the short policy brief at https://rubizmo.eu/publications for the state of modern rural economies.

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especially when facing challenges such as the aforementioned ones, which are typical of rural regions.

Many large companies also engage in business collaborations in order to build competence, develop products, services or technology, and/or gain new market access. Universities, research institutes and labs can also prove to be crucial actors in such collaboration, providing critical skills development (education, technology and training), along the lines of the Triple Helix model, in which academia, industry and government interact in order to produce knowledge, achieve innovation, create the basis for developing further spin-offs and become a source of economic development (Leydesdorff, 2000). In the more advanced, Quadruple Helix model, society also has an active involvement in this process of collaboration (Carayannis & Cambpell, 2009; Carayannis & Rakhmatullin, 2014).

The most relevant types of collaboration for the demands of rural areas are business networks and business clusters. A business network is a group of companies being in the process of creating value, improve performance and skills through common actions. The main aim of networking is to decide on tailored solutions and minimised costs and time. Business networks have no limitations concerning number, size, sector or location. Firms agree on a structure in order to face globalization stress, become more competitive and find new partners having better economic performance as the ultimate goal (Håkansson & Ford, 2002).

Clusters, which have gained increasing prominence in economic development in the last couple of decades, can be viewed as geographical concentrations of interconnected firms and institutions in a certain field, and can act as a way for regions to identify and develop their existing regional competitive advantage (Porter, 1998; Porter, 2000). Geographic concentration is the main driving force when it comes to clustering. When firms come together they are able to resolve problems mainly on innovation and knowledge. Members of clusters benefit from their proximity since it allows them to acquaint themselves with the characteristics of their competitors. Governments worldwide regard clusters as important potential drivers of economic development and innovation (UNIDO, 2013). In many cases, clusters are viewed as competent policy instruments, as they allow for resources and funding to be targeted in specific areas with a high growth and development potential that can spread beyond these sites (via spillovers and multiplier effects).

Clusters and networks share some common features but also a lot of differences (Peltoniemi, 2004). A key difference is geographical proximity. In clusters, the basic idea is concentration or locality. The geographical aspect stimulates cluster creation, while for business networks location is usually irrelevant. The goal of the collaboration may also vary between clusters and networks. While in the former, a shared goal from the members could be the driving force, this is clearly not the case in business networks. Knowledge is a key feature in both models, yet in networks it is a necessary resource for growth and prosperity while in clusters it is merely a desirable outcome.

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2. Definition of Shared Value

Image 1: Schematic representation of shared value (from Shared Value Initiative)

Shared value is a concept which first appeared in a 2006 article by Michael Porter and Mark Kramer (Porter & Kramer, 2006), elaborated in a 2011 piece (Porter & Kramer, 2011), and further defined and clarified in several articles and writings by both authors ever since, which discuss the creation of shared value. Essentially, Creating Shared Value (CSV) refers to "policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates" (Porter & Kramer, 2011). As defined by the Shared Value Initiative, founded by Porter and Kramer, "shared value is a management strategy in which companies find business opportunities in social problems" (Shared Value Initiative, 2019).

According to the authors' optimistic view, based on observing the launching of shared value initiatives by a number of companies known for their hard-nosed business approach, the concept of shared value —which focuses on the connections between societal and economic progress— has the power to unleash the next wave of global growth and redefine capitalism (Porter & Kramer, 2011). This perspective has, of course, received criticism (Moon & Parc, 2019). For example, Beschorner (2014) argues that the concept is too normatively thin and too economically narrow to reconnect businesses with society, explaining that the reinvention of capitalism requires companies to develop moral capabilities and specific skills in order to be "fit" for and contribute to new societal contexts (Beschorner, 2014).

Despite the criticism, the concept of shared value has gained considerable ground in the years since the term was coined, and it has become an established strategy. Companies have embraced it, building and rebuilding business models around social good, which sets them apart from the competition and augments their success (Shared Value Initiative, 2019). The application and social impact of shared value is assisted by the quadruple helix concept (Carayannis & Rakhmatullin, 2014), as the involvement of NGOs, governments, and other stakeholders, offers businesses the power of scale to create real change on major social problems. The realisation that corporations and society can provide mutual benefit to each other can create a virtuous cycle of increasing value for both (Moon & Parc, 2019).

In addition, shared value has been the focus of many theoretical papers, articles, methodologies attempting to measure the concept, and case studies demonstrating how shared value is produced in the case of businesses, clusters, networks or entire geographically based ecosystems. Such material will be presented below, in order to

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review how shared value is created, and to examine the latest trends on the topic, as well as a few suggestions for moving beyond it.

2.1. The Differences between CSR-CSV

Understanding shared value, requires understanding the earlier concept of Corporate Social Responsibility (CSR), against which CSV was defined in the original paper (Porter & Kramer, 2006). CSR originated somewhere in the social upheavals and activist movements of the 1960s and 1970s, with the rising demand for businesses to engage in open and free competition without deception or fraud (Moore, 2014). It can be generally defined as a form of ethical self-regulation of businesses (Sheehy, 2015). It encompassed not only what companies do with their profits, but also how they make them, and how they manage their economic, social and environmental impacts (Moore, 2014).

A common, simplistic approach to CSR by businesses is that of corporate philanthropy (Tilcsik & Marquis, 2013), but the concept goes beyond philanthropy (Moore, 2014). It encapsulated several policy directives and goal with the aim of limiting a corporation's negative impact on local communities, the environment and promoting a positive consideration of human rights issues. This can be achieved, for instance, via: programs in local communities designed to specifically benefit residents, socially responsible investment ensuring that the business only works with positive partners, developing relationships with employees and customers that go beyond standard business arrangements or environmental protection and sustainability measures that help offset some of the ecological damage caused by the business (Yates, 2018).

However, in their original paper, Porter and Kramer (2006) noted that while many companies had already followed CSR and done several things to improve their social and environmental impacts, these initiatives were not as productive as they should be. This was mainly because (i) CSR pits business against society when the two are clearly interdependent, and (ii) CSR pressures companies to think about social responsibility in generic ways instead of in a way that is more appropriate to the firm's strategy. According to them, "the prevailing approaches to CSR are so fragmented and so disconnected from business and strategy as to obscure many of the greatest opportunities for companies to benefit society" (Porter & Kramer, 2006, p.2). Thus, CSV arose from this shortcoming of CSR, as a novel way to look at the relationship between business and society which treats corporate success and social welfare as mutually beneficial instead of as a zero-sum game.

In their 2011 paper on the topic, the authors note that while CSR initiatives "focus mostly on reputation and have only a limited connection to the business, CSV is integral to the company's profitability and competitive position" (Porter & Kramer, 2011, p.6). Kramer (2011) further clarifies the confusion created among readers with regard to CSR and CSV by explaining that, while they overlap, the two concepts represent very different decisions from the perspective of strategy as well as management. CSR is widely perceived as cost-centred, not profit-centred. In contrast, CSV is about new business opportunities that create new markets, improve profitability and strengthen competitive positioning. Simply put, while CSR is only

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about responsibility, CSV is about creating value (Kramer, 2011). According to the Shared Value Initiative, "while philanthropy and CSR concentrate their efforts on "giving back" or minimizing the harm business has on society, shared value focuses company leaders on maximizing the competitive value of solving social problems in new customers and markets, cost savings, talent retention, and more" (Shared Value Initiative, 2019). In any case, whether CSV is viewed simply as "a new form of CSR" or as a novel approach, there should be little doubt that it is radically different from the CSR activities taking place a few years earlier (Kramer, 2011).

CSR	CSV
Values: doing good	*Value: economic and societal benefits relative to cost*
Citizenship, philanthropy, sustainability	Joint company and community value creation
Discretionary or in response to external pressure	Integral to competing
Separate from profit maximisation	Integral to profit maximisation
Agenda is determined by external reporting and personal preferences	Agenda is company specific and internally generated
Impact limited by corporate footprint and CSR budget	Realigns the entire company budget
Example: Fair trade purchasing	Example: Transforming procurement to increase quality and yield

Table 1: How shared value differs from social responsibility (Porter & Kramer, 2011)

Another fine distinction is provided by Yates (2018), who notes that the two concepts differ in terms of:

- **Philosophy and ethos:** While CSR can create value in the local communities, this is usually as a compensation, not as a direct result of enterprise. In CSV, value is created from the approach of using business as a solution for social issues.
- **Separation:** CSR treats social issues as if they are separated from the company's core business while CSV questions how the core business of the company can resolve social issues in a beneficial manner.
- **Motivations:** CSR is often led by pressures from outside agencies and groups, while in CSV the company's actions are driven internally, with the goal of finding social issues to address.
- **Profitability:** CSR assumes that a percentage of the organisation's profits are redistributed to pay for activities to resolve selected social issues, while with CSV the organisation aims to create economic value in tandem to social values by addressing the issues that relate to the company's core business.
- **Publicity:** CSR activities are still often dismissed as stunts designed to distract from the real impact of the business, while with CSV the business becomes the marketing, and as core business activities are generating real social value this impact becomes part of the public consciousness.

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2.2. Ways to Create Shared Value

The idea that not all profit is equal has been lost in the narrow, short-term focus of financial markets and in much management thinking. According to Porter and Kramer (2011), profits involving a social purpose represent a higher form of capitalism, which can enable society to advance more rapidly while allowing companies to grow even more. This creates a positive cycle of company and community prosperity and, as a result, profits that endure (Moon & Parc, 2019).

There are three key avenues which companies can follow to create shared value opportunities (Porter & Kramer, 2011; Shared Value Initiative, 2019):

- **Reconceiving products and markets:** Meeting societal needs through products and addressing unserved or underserved customers.
- **Redefining productivity in the value chain:** Changing practices in the value chain to drive productivity through better utilising resources, employees, and business partners.
- **Enabling local cluster development:** Improving the available skills, supplier base, and supporting institutions in the communities where a company operates to boost productivity, innovation, and growth. The development of clusters is a way to achieve this prerequisite.

Note that these three avenues for creating shared value are mutually reinforcing rather than mutually exclusive. For example, enhancing the cluster will enable more local procurement and less dispersed supply chains. New products and services that meet social needs or serve overlooked markets will require new value chain choices in areas such as production, marketing, and distribution. And new value chain configurations will create demand for equipment and technology that save energy, conserve resources, and support employees (Porter & Kramer, 2011).

The main question is how is shared value created in practice? Several examples can be cited. The Shared Value Initiative (2019) provides different real-world examples for the three aforementioned avenues to shared value creation. In reconceiving products and markets, Novartis reaches out to customers without health access in rural India, offering a portfolio of affordable and appropriate medicines tailored to common regional health issues, which is increasing regional sales and doctor visits. In redefining productivity in the value chain, Walmart reduced packaging and improved delivery logistics, saving $200M in distribution costs while growing the quantities being shipped. In enabling local cluster development, Chevron launched “Partner Initiatives in the Niger Delta” using a data-driven approach to identify new market opportunities and local solutions to unemployment in the region, building prosperity and improving its operating environment (Shared Value Initiative, 2019).

Other examples abound. Marsé et al. (2015) mention how Nestlé, the world’s biggest food and agriculture company, has invested in the creation of shared value through all long the production chain, as a way of achieving long-term benefits for its

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shareholders as well as for society in general. In terms of employee welfare, for example, Nestlé has launched a Welfare Plan in its Barcelona offices, creating a favourable labour environment by educating employees on the benefits of correct nutrition, correct body posture, and motivating them to exercise or follow yoga classes. In Cameroon, the company has a long-term plan to eradicate the outbreaks of malaria affecting employees by 2016 (Marsé et al., 2015).

IBM, the multinational IT giant, has created the CSC (Corporate Service Corps) to aid in integration and more efficient running of its offices in Africa, Asia, Eastern Europe and Latin America. The project allows the creation of shared value from the training of management teams, not only in business terms but also in terms of the specific culture and problems of societies in which the teams operate. The CSC studies the problems of the city or region in which the company establishes new offices and, together with local organizations and NGOs they create a strategic plan in order to improve life conditions and the attraction of these regions. In this respect, shared value is created in various ways. Communities tackle local problems, IBM employees are trained on leadership and development, and IBM develops new markets (Marsé et al., 2015).

Ghasemi et al. (2014) record the shift from CSR to CSV in the Mobarakeh Steel Company, the largest steel maker and one of the largest industrial complexes in Iran. The company took corporate social responsibility into account from as early as 1983, taking into account the features of the area and founding an "Industry and Village Relations" committee which implemented a green belt concept, cooperating with villages and farmers nearby to ensure adequate water supply, build pools for locals, plant trees, and build new roads for easier accessibility. Mobarakeh Steel consciously shifted from CSR to CSV in 2010, in order to strive for achieving global excellence awards and enhancing the company's competitive edge in global markets. In this context, the company has launched social initiatives including training and health schemes for employees, encouraging them to establish work-life balance, and obtaining feedback from local communities regarding its practices (Ghasemi et al., 2014).

Another example comes from Brazil, where BASF, a leading global chemical company, founded the non-for-profit organisation FEE in 2005, with the mission to ''promote sustainable development in society, by transferring know-how and technology, especially through the implementation of solutions in eco-efficiency, environmental education and reforesting focusing on the balance of social, environmental and economic aspects. BASF and FEE have been cooperating with the Andre Maggi Group, a large agricultural conglomerate, since 2008, to validate and enhance the eco-efficiency analysis of FEE for application on Brazilian agriculture. An analysis by Lenssen et al. (2012) shows that this cooperation creates shared value via the redefinition of productivity in the value chain. Cost reductions, meeting emerging export conditions and legal compliance issues all operate to enhance competitiveness. For example, the production and shipping of soybeans on the Tucunare farm is more socio-eco-efficient mainly because of the waterway shipment model used there. This cooperation offers a way for BASF clients to reduce negative impacts while increasing their financial, social and environmental performance. This

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created closer and long-term relationships with clients, as BASF delivers more than just economic value (Lenssen et al., 2012).

Finally, it is worth noting that new concepts have emerged in the last few years advocating for a move beyond CSV. Visser and Kymal (2015) have developed the concept of Creating Integrated Value (CIV), which combines components of CSR and CSV but focuses on integration. CIV is a tool for innovation and transformation, a methodology for turning the proliferation of societal aspirations and stakeholder expectations into a credible corporate response, without undermining the viability of the business. It helps companies to integrate their response to stakeholder expectations through their management systems and value chain linkages (Visser & Kymal, 2015). While the concept does not seem to have gained considerable traction yet, its existence, built upon CSV as well as CSR, provides further evidence for the establishment of Creating Shared Value as a legitimate and widespread approach.

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3. Clusters and Networks as Value-Creating Entities

Creating value and capturing returns from that value are fundamental functions of business and the main reasons for the existence of collaborative relationships (Shafer et al., 2005). As Porter and Kramer (2011) note, no company is self-contained. Industrial organisations are naturally related to each other. They are dependent on each other's production, distribution, use of goods and services (Herrala et al., 2011). Every company's success depends on the supporting companies and infrastructure around it. Productivity and innovation are strongly influenced by "clusters," or geographic concentrations of firms, related businesses, suppliers, service providers, and logistical infrastructure in a particular field. California's Silicon Valley is a primary example of this. In the field of innovation in particular, it was gradually realised in the 1980s that firms' ability to innovate is greatly affected by external sources of knowledge and technology -the entire ecosystem around them. This prompted the move from Schumpeterian neo-classical approaches to evolutionary approaches viewing innovation as a systemic phenomenon (McCann & Ortega-Argiles, 2013).

Clusters or networks, however, are not simply about the companies themselves. Especially when they pursue shared value strategies, businesses inevitably face barriers at many turns, which include issues such as societal conditions, government policies or even cultural norms. Such conditions are beyond the control of any single company or actor (Kramer & Pfitzer, 2016). Network, therefore, draw on many actors apart from companies, including nearby institutions, such as academic programs, trade associations, and standards organisations, as well as on broader public assets in the surrounding community, such as schools and universities, clean water, fair-competition laws, quality standards, and market transparency (Porter & Kramer, 2011). This is proof in action of the quadruple helix concept interlinking companies with government, academia and society (Carayannis & Rakhmatullin, 2014).

Clusters are ever-present in all successful and growing regional economies and play a crucial role in driving productivity, innovation, and competitiveness. The availability of capable local suppliers fosters greater logistical efficiency and ease of collaboration. Stronger local capacities in such areas as training, transportation services, and related industries also boost productivity. On the other hand, productivity suffers without a supporting ecosystem forming a cluster or network. Firms create shared value by building clusters or networks to improve company productivity while addressing gaps or failures in the framework conditions surrounding the cluster or network. This type of thinking has been missing in many economic development initiatives, which have failed because they involved isolated interventions and overlooked critical complementary investments (Porter & Kramer, 2011).

Value networks and partnerships, including clusters, essentially exist because it is usually not reasonable to create value just through the firm itself and its limited resources and competencies. Collaboration with other firms can complement the

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firm's existing competencies and increase the chances of creating added value for customers. In these collaborative initiatives each actor focuses on the things it does better, providing a crucial part of the creation process and seizing benefits from the partnership in the form of experience, profit, or visibility. By working together, firms are able to create increased value for the customer without making major sacrifices and even gain more back from the net result than they originally gave away (Helander, 2004).

According to Herrala et al. (2004), a value-creating network is a complex network structure in which firms' core competencies are linked to each other through value exchanges such as flows of information, material, resources and money. In value-creating networks different economic actors, suppliers, partners, and customers work together to create value. Activities within the network are sequential as well as parallel, forming a network of core activities which produce value for the end customer. Instead of concentrating only on their own core competencies, firms understand the meaning and importance of the network around them and know how to benefit from it. This makes it possible for different actors to maximise and optimise the whole network instead of small pieces of the whole. Value, instead of pure cost, is the key driver in the construction of any competitive strategy and the value network is designed around the activities required to produce the end product (Peppard & Rylander, 2006).

3.1 Clusters and Shared Value

Whether in developed or developing countries, companies need to identify gaps and deficiencies in areas such as logistics, suppliers, distribution channels, training, market organisation, and educational institutions. This should be done in order to address such gaps by supporting cluster development in the communities in which they operate. After identifying them, the next step is to focus on the weaknesses that represent the greatest constraints to the company's own productivity and growth, and distinguish the areas that the company is best equipped to influence directly from those in which collaboration is the more cost-effective solution. These are the areas where opportunities for the creation of shared value will be greatest. Initiatives that address cluster weaknesses that constrain companies will be much more effective than community-focused CSR programs, which often have limited impact because they target too many areas and do not often take value into account. Clusters are crucial in this because efforts to enhance infrastructure and institutions in a region often require collective action. Companies should try to enlist partners to share the cost, gain support, and assemble the right skills. The most successful cluster initiatives are those involving not only the private sector, but other actors as well, such as trade associations, government agencies, and NGOs (Porter & Kramer, 2011).

Clusters, apart from producing value through the mechanisms of collaboration, outlined above, are also inherently suited to the shared value concept. Clusters are well suited to creating shared value and a part of creating shared value for enterprises is building new clusters. Shared value helps to align the activities of actors within clusters (Tracy & Clark, 2003), but also, the collaboration and

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knowledge exchange on shared value which takes place in the context of clusters can improve their environmental and social performance (Anh et al., 2011). There are plenty of examples of this in practice.

Sienko-Kulakowska et al. (2016) explain how the Aviation Valley cluster (AVC), in Podkarpackie, the poorest region in Poland and one of the poorest in the EU, has created shared value. Since the AVC was founded in 2003, its directors realised that the region's underdevelopment posed a significant barrier to its growth, and attempted to resolve this situation by creating shared value. The cluster invested in social capital, cultivating close links with local and regional governments, education leaders, and other organisations to convince them to jointly invest in developing human capital, which would in turn guarantee the highly skilled workforce needed both to further develop the AVC and to bring prosperity and economic development to the region. Industry-wide surveys, interviews and official statistics demonstrate a relationship between the economic and social development achieved by the cluster and region in the last ten years, demonstrating that the AVC created shared value (Sienko-Kulakowska et al., 2016).

With the launch of the Nespresso brand, Nestlé also worked to build clusters, which made its new procurement practices far more effective. The company set out to build agricultural, technical, financial, and logistical infrastructure and capabilities in each coffee-producing region, to further support efficiency and high-quality local production. Nestlé led efforts to increase access for local farmers to essential agricultural inputs such as plant stock, fertilizers and irrigation equipment, to strengthen regional farmer co-ops by helping them finance shared wet-milling facilities for producing higher-quality beans, and support an extension program to advise all farmers on growing techniques. It also worked in partnership with the Rainforest Alliance, a leading international NGO, to teach farmers more-sustainable practices that make production volumes more reliable. All these measures improved Nestlé's productivity, apart from having a beneficial social impact (Porter & Kramer, 2011).

Yara, the largest mineral fertilizer company in the world, is a good example of a company working to improve framework conditions in its cluster. The company realised that the lack of logistical infrastructure in many parts of Africa was preventing farmers from gaining efficient access to fertilisers and other essential agricultural inputs, as well as from transporting their crops to markets efficiently. Yara is tackling this problem through a $60 million investment in a programme to improve ports and roads, which is designed to create agricultural growth corridors in Mozambique and Tanzania. The company is working on this initiative with local governments and support from the Norwegian government. In Mozambique alone, the corridor is expected to benefit more than 200,000 small farmers and create 350,000 new jobs. The improvements will address the original problem identified and help Yara grow its business, but they will also support the whole agricultural cluster, creating huge multiplier effects and major social benefits (Kramer & Pfitzer, 2016).

SiFood is a cluster launched by Whirlpool, in Italy's Lombardy region, to promote

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sustainable and collaborative innovation in food waste prevention. It consists of 16 actors, including large firms, SMEs, research centres and universities involved in food production, processing and conservation. Since food waste is not only a major financial loss (estimated at around €8.7 billion in Italy, corresponding to €7 per family per week), but also a major social issue, SiFood focuses on promoting a balanced and complete food style for the consumer, as research conducted by the cluster showed that this is the only effective solution for reducing waste at the consumer end of the food supply chain. In short, SiFood sees addressing this social issue as a major part of its mission. It attempts to do so via the implementation of innovative technologies for real-time tracking of expiration dates and the more efficient preservation of food, as well as via cultivating less wasteful food purchasing habits, aided by the use of Big Data to identify the problems more accurately (Alberti & Belfanti, 2019).

Marsé et al. (2015) mention three examples of less well-known clusters creating shared value in Catalonia. The ACTM cluster initiative, producing clothes under the CONFORT&CARE brand, uses technological innovations which make the production process more comfortable for employees and more environment-friendly and its products more comfortable for customers, considering all these as part of the same cycle. The inter-cluster initiative between FEMAC and AQÜICAT provides know-how and low-cost technology to small producers with the aims of improving the productivity and sustainability of rural aquaculture. The success of this initiative led to its adoption in Mexico as well. Finally, another inter-cluster initiative, between INNOVACC and CWP, supported by the Catalan Institute for Water Research, focuses on innovation in water treatment, with more efficient filtering and water reuse in the processing part of the pork meat industry (Marsé et al., 2015).

3.2 Collective Impact: shared values through Clusters or Networks

The shared value created by clusters can be enhanced by the presence of a collective impact approach. Collective impact is a relatively recent concept developed by John Kania and Mark Kramer, which can be defined as “the commitment of a group of important actors from different sectors to a common agenda for solving a specific social problem” (Kania & Kramer, 2011, p.36). The concept is based on the idea that social problems arise from and persist because of a complex combination of actions and omissions by players in all sectors and can therefore be solved only by the coordinated efforts of those players (Kramer & Pfitzer, 2016). It involves a centralised infrastructure, a dedicated staff, and a structured process that leads to a common agenda, shared measurement, continuous communication, and mutually reinforcing activities among all participants (Kania & Kramer, 2011, p.38).

Collective impact is a multi-sector/multi-agency, collaborative leadership approach to large scale social change in communities, and it is usually place based, focusing on a particular community or area (Smart, 2017). It can also be viewed as a framework for facilitating and achieving large scale and long-lasting social change

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(Howard, 2018). The concept is based on the premise that no single policy, government department, organisation or program can tackle or solve the increasingly complex social problems we face as a society, so multiple organisations or entities from different sectors must abandon their own agenda in favour of a common agenda, shared measurement and alignment of effort (O'Neil & Graham, 2013). What collective impact actually does is changing how the system functions (Kramer & Pfitzer, 2016).

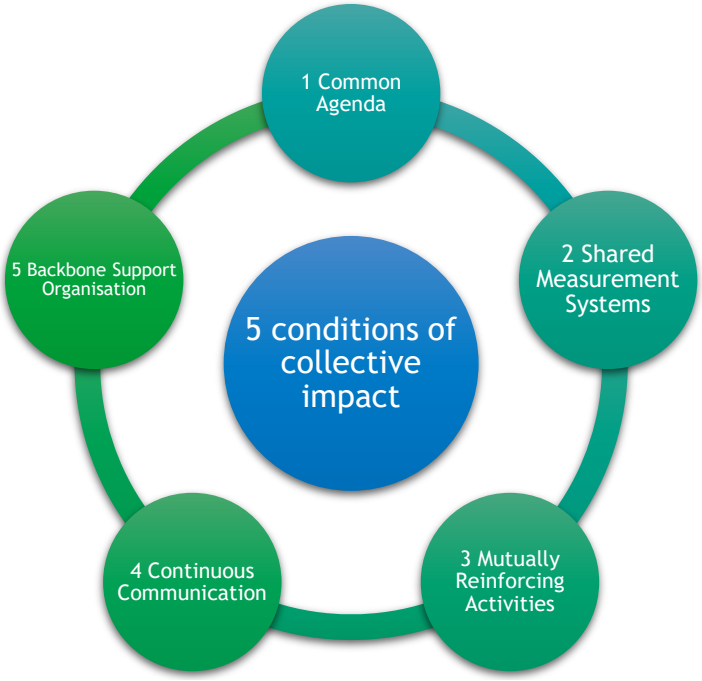

Image 2: The 5 conditions of collective impact https://sustainingcommunity.wordpress.com/2019/03/11/what-is-collective-impact/

Collective impact is a concept above simple cooperation or collaboration due to the existence of five specific preconditions (Kania & Kramer, 2011):

- **Common agenda.** All participants have a shared vision for change including a common understanding of the problem and a joint approach to solving it through agreed upon actions.
- **Shared Measurement.** Collecting data and measuring results consistently across all participants ensures efforts remain aligned and participants hold each other accountable.
- **Mutually Reinforcing Activities.** Participant activities must be differentiated while still being coordinated through a mutually reinforcing plan of action.
- **Continuous Communication.** Consistent and open communication is needed across the many players to build trust, assure mutual objectives, and create common motivation.
- **Backbone Support.** Creating and managing collective impact requires a separate organisation(s) with staff and a specific set of skills to serve as the

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backbone for the entire initiative and coordinate participating organisations and agencies.

Without collective impact each participant typically views the problem at hand solely from its own perspective, which is usually limited or biased. By engaging in a collective impact effort, the first step is bringing together all the relevant parties and ensuring rigorous data collection and careful facilitation. This way, collective-impact initiatives foster a shared understanding of the problem, which is the first step toward solving it (Kramer & Pfitzer, 2016).

Collective-impact efforts have had a significant impact on a variety of issues, including education, homelessness, juvenile justice, substance abuse, childhood obesity, job creation, and pollution (Kramer & Pfitzer, 2016). However, collective impact has been criticised for what is seen as a failure to adequately address equity, include the voices of community members and leaders and to seek policy and systemic change (Smart, 2017). The thinking is that without the full and meaningful engagement of community members, actions and solutions to issues may not be appropriate, acceptable or compatible with community needs or effective in the local context, or the changes may reinforce existing inequitable power structures (Wolff, 2016).

Such criticisms may have to do with the implementation of collective impact, as Mark Kramer, one of the concept's creators, has explained that for a collective impact initiative is to succeed, each entity must be represented by senior leaders with the authority to execute change within their organisations. Local communities affected by the problem must be included and empowered, and any data analysis or proposed actions must account for their perspectives (Kramer & Pfitzer, 2016). Indeed, collective impact projects are likely to be more effective if they research the issue and context, include community members in decision-making, and examine the evidence for effective strategies (Smart, 2017).

The effective implementation of collective impact requires practitioners and leaders to have skills different to those needed for organisational management or traditional program delivery (Smart, 2017). Private enterprises bring essential assets to collective-impact efforts. They know how to define and achieve objectives within a limited time and budget. They understand change management and the art of negotiation. And corporate pragmatism, accountability, and data-driven decision making can cut through the red tape and ideological disagreements that often stymie governments and NGOs in their own efforts (Kramer & Pfitzer, 2016).

Collective impact corresponds with our current knowledge of the most effective way to address complex social issues, and theory and evidence from related fields suggests that it may be a promising approach. To implement collective impact effectively, practitioners must engage with the resources and literature of the broader collective impact field and supplement this with theory and practice from other areas, such as community development and public health (Smart, 2017).

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As expected, collective impact plays a key role in a shared value ecosystem, and clusters are a crucial pillar of such an ecosystem. Moreover, clusters are a perfect manifestation of the multi-sector/multi-agency, collaborative approach which lies at the heart of the collective impact concept. Despite this, the literature seems to have paid relatively little attention to the relationship between the two. Alberti and Belfanti (2019) comment on how the five conditions of collective impact are connected to the main features of clusters:

- **Common agenda.** Setting up a common strategy and goals from the very beginning of the network development is a typical prerequisite in the creation of clusters. Cooperation always requires some form of shared idea about the why and the how the cluster is supposed to work (Sölvell et al., 2003).
- **Shared Measurement.** This condition requires the consistent collection of data and measurement of results. While clusters are based on shared visions, monitoring based on quantitative measures in not commonly adopted (Gibson, 2015). However, there are cases of clusters using both qualitative and quantitative measures to assess not only their economic impact but their social impact as well (Sienko-Kulakowska et al., 2016). Furthermore, Sölvell et al. (2003) have designed a model, "The Cluster Initiative Performance Model", measuring cluster performance along social, political and economic lines.
- **Mutually Reinforcing Activities.** This condition requires activities which are differentiated yet still coordinated through a mutually reinforcing plan. A specialised division of labour according to the core competences of members is a feature of clusters (Lundequist & Power, 2002). However, cluster initiatives often over-rely on one or several key members, which carries the risk of a loss of the linkages among actors. Instead, since a cluster initiative is dynamic, the degree of involvement and roles the actors play should change over time (Laur, 2015).
- **Continuous Communication.** Evidence shows that successful cluster initiatives are closely related to the existence of an information and communication system to foster the development of social capital, trust, collaboration, increased information and knowledge exchange. Such a system can be based on the existence of a communication platform, regular meetings and events, a website and an online cluster database (Ffowcs-Williams, 2012).
- **Backbone Support.** This condition requires dedicated staff with a specific set of skills to serve as the backbone for the entire initiative and coordinate actors. This is consistent with what takes place in many strong cluster initiatives, which were able to reach higher collaboration by enlisting a new class of organisations defined as intermediaries, and dedicated to implementing the planned tasks and strategies (Glaser, 2013). In cluster literature, they are called Institutions for Collaboration (IFCs) (Porter and Emmons, 2003). IFCs affect cluster productivity and competitiveness by playing a crucial intermediary role in connecting the parts of the business environment and supporting efficient collective actions.

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Overall, this comparison shows that clusters, due to their features, are ideally suited for implementing the collective impact concept in practice and reaping its benefits. This, however, requires a closer alignment of cluster initiatives with the five conditions for collective impact. In practice, this means the application of consistent measurement of results, the adoption of more flexible and mutually reinforcing roles by cluster members, closer communication between them with the help of IT platforms as well as more frequent meetings, and the use of IFCs to coordinate actors and the entire initiative more efficiently.

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4. Case Studies: Clusters Creating Shared Value

In order to demonstrate the above concepts in practice in a way which is directly related to the RUBIZMO project, six case studies of specific clusters which create shared value are presented below. Each case provides some general information on the cluster, explains how it creates shared value according to the model put forward by Porter and Kramer, and outlines the cluster's vision for the future.

A brief overview of the cases summarises the lessons learned by the clusters, connects the ways in which they create shared value to what was reported in the literatures, identifies good practices, and examines the degree to which the conditions for collective impact are present. The main question to be answered is the role of clusters in the creation of shared value in rural areas.

The case studies below, describe the following clusters:

- **CluBE** (Cluster of Bioeconomy and Environment of Western Macedonia) Greece.
- **Processum** biorefinery cluster, Sweden.
- **AgroTransilvania Cluster**, Cluj, Romania.
- **CRPV** (Crop Production Research Centre), Italy.
- **Cluster Food Industry**, Brandenburg, Germany.
- **Green Bio-Refining Cluster**, Denmark

4.1. Case Study #1: CluBE

i) Cluster identity and General Information

The Cluster of Bioenergy and Environment of Western Macedonia (CluBE) is a non-profit company established in 2014 among local actors and stakeholders of the Region of Western Macedonia. Based on a continuous interaction among regional players during a series of previous projects, analysing for instance the regional biomass potentials, the core cluster structures, the regional innovation system of the energy sector and many other related topics, CluBE is largely in place due to the commitment and engagement of a local Champion –the cluster's current director- who brought in the experience from many other Bioenergy Clusters around Europe and saw in the scenery of Western Macedonia, amid the economic crisis in Greece, the perfect nursery for a collaborative scheme.
CluBE aimed at developing R&D (Research and Development) and business activities in the fields of bioenergy and environment, in order to reinforce the green economy in the region and its neighbouring area.

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More specifically, its initial strategic objectives include:

- Energetic exploitation of biomass for household and industrial use,
- Energetic exploitation of biomass for district heating systems for small, medium or large towns
- Co-firing with lignite in existing power stations and/or future heating plants
- Optimization of heating systems
- Improvement of energy efficiency for households, public and private buildings

CluBE members include the Regional and Local Authorities, Universities and Research Institutes, as well as various enterprises, such as municipal district heating companies, boiler manufacturers and wood industries, biomass logistics enterprises, forest and agricultural associations, etc. The cluster encourages the alternative involvement of all members in various activities, changing partner roles in the process, to make sure all members are involved and thus maximising its collective impact.

During its early period, it became already obvious that its members would expect the Cluster to move beyond the issue of waste-to-energy exploitation to higher added value processes. Combined with the strategic guidelines of the European Commission, CluBE is now shifting its activities to bioeconomy, through this bottom-up driven need of its members.

CluBE is itself a partner of the RUBIZMO project.

ii) How the Cluster Creates Shared Value

In its early establishment, CluBE already recognised the need for shared value. While the initial focus was on biomass for bioenergy, it is now gradually shifting its focus to a larger spectrum of activities and to the broader topic of bioeconomy, which is key to tackling environmental challenges.

SHARED VALUE in CluBE is produced by:
-a focus on education and training (of members)
-a focus on the environment which benefits both ecological targets and the cluster itself, by providing room for expansion
-focus on decarbonisation and a change of the region's current specialisation on coal to prevent social issues and unemployment, raising awareness, especially for future generations
-activities go beyond awareness-raising and include briefing companies about real costs and activities
-meeting companies' need for more help and support

A barrier to the creation of shared value was caused by regional authorities, which did not initially share the Cluster's objectives. This obstacle was only lifted when the region changed goals and moved towards bioeconomy, following a change in the leadership of regional authorities.

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iii) Vision for the Future

One of the main drivers for the establishment of CluBE has been an envisaged process of decarbonisation of the power production, which has been dominating the productive profile of Western Macedonia for many decades. While the decommissioning of many coal – based power plants affects positively the environment in Western Macedonia, it also involves severe negative impact to the employment and income indicators of the Regional economy. Based upon this picture, the Region is moving away from fossil fuel production to a low cartbon economy and within this framework, CluBE and its members promote Bioeconomy as a significant pillar of its greener future. To this end, CluBE considers that Bioeconomy should be globally accepted as a political priority, to be later on specified in the existing or upcoming relevant tools to support the development of the regional economy (Structural Funds 2021-2027, S3 Smart Specialisation Strategy, Local Development Fund, Just Transition Fund, etc)

4.2. Case Study #2: Processum

Text based on a recently published book chapter

processum
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Dubois, A., & Kristensen, I. (2018). The role of biorefineries in the revitalisation of (old) industrial rural regions. *Strategic Approaches to Regional Development: Smart Experimentation in Less-Favoured Regions*, 103.

i) Cluster identity and General Information

Processum is a biorefinery cluster located in the Örnsköldsvik municipality in the north Swedish county of Västernorrland. A biorefinery may be approached as "a new business model involving the complete valorisation of biomass in energy, food, feed, biomaterials and bio-based chemicals" (Sauvée and Viaggi 2016). Biorefineries typically integrate agricultural (crop production, logging), research (lab and live experimentations) and industrial (processing and manufacturing of new materials or products) activities in the same geographical location.

During the 1990s the pulp and paper industry suffered from a global recession which led to the loss of around 5,000 jobs in the Örnsköldsvik area (Tesar and Bodin 2012). The situation was further aggravated by increased import of raw forest-products as well as raising concerns about the environmental damage caused by certain industrial operations (Arbuthnott, Eriksson et al. 2010). Increasingly, territorial actors came to the understanding that the regeneration of forest-based industries in the region will require a new territorially-based collective approach.

Regional entrepreneurs and politicians came together to find new solutions to reduce the over-reliance on a single value chain (i.e. the paper pulp industry) and thus

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reduce the risks of economic downturns (Tesar and Bodin 2012). The diverse solutions were territorially anchored implying that new business ideas emerged from the region's natural resource abundance (i.e. forestry and wood industry) as well as existing industrial capabilities and competence basis. The outcome of this "experiment" was a new regional biorefinery initiative marking the industry transformation towards higher-value outputs (Arbuthnott et al. 2010, Tesar and Bodin 2012, Hansen and Coenen 2013). The idea was quickly supported by both the municipality of Örnsköldsvik and the county government of Västernorrland and in 2003, Processum Technology Park AB was established to coordinate and facilitate the development of high value products and energy solutions with wood as raw material. The biorefinery is founded upon an existing infrastructure on the site of the original pulp mill, located close to the High Coast of Sweden. Biorefinery inputs - the feedstock (timber) - are mainly produced domestically but also imported from abroad.

The Processum case was provided by RUBIZMO partner SLU.

ii) How the Cluster Creates Shared Value

The clustering of actors on the site of the biorefinery facilitates cross-sectoral collaboration initiatives and spill-overs that may generate an impact on science, industry and society. Especially, the integration of industrial and R&D facilities unlocks new opportunities for bridging the gap between fundamental research performed at university laboratories and product-and-process development leading to new market outlets. The presence of demonstration, experimental and testing facilities on the biorefinery site has been instrumental in internalising knowledge flows and shortening the pathway from research to market. The biorefinery complex can be characterised as a **cluster in related variety**, by inducing specialized diversification processes across related sectors, and can be deemed a concrete operationalization of the concept of 'domains' in smart specialization thinking.

The cluster took shape organically around the site of the Domsjö paper mill and got quickly the support of both local and regional authorities. In that respect, the further development of the wood-based activities into a full-fledged cluster was made possible by the cooperation between local authorities and industrial actors and the idea that not only should traditional wood-based activities be present in the region, but that there were new opportunities to get into associated activities.

SHARED VALUE in Processum is produced by:

- Increasing the material flows of waste and inputs from the different facilities of the biorefinery;
- Sustaining the demand for wood-based produce;
- Embedding the co-creation and application of knowledge in Örnsköldsvik;
- Creating more stable revenue generating activities for the local economy by spreading demand over multiple global value-chains;
- Promoting future-oriented cooperation between industrial and policy actors.

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iii) Vision for the Future

Hence a key challenge for the sustainable development of biorefinery project is to find a suitable governance model to attract and embed knowledge production and application as this requires different modes of coordination than the industrial processes of the biorefinery (Schieb et al. 2016). The biorefinery project enable biomass producers to project themselves in the future and invest in what could lead to stability and expansion of the market outlets for their commodities at hand. Biorefineries promote the convergence of the interests of local industries (e.g. less sensitive to global or sectoral downturns), regional/local public authorities (e.g. increase of well-paid and qualified local employment opportunities) and academia (e.g. securing long-term funding to support fundamental and applied research). Hence, as a territorial development instrument, biorefineries operationalise a systemic approach to local development that include investments in both hard and soft infrastructure (North and Smallbone 2006). The convergence of local investments and the attraction of long-term external funding through partnerships and joint ventures unlocks a **multiplier effect** for the local economy as financial capital invested in the biorefinery complex feeds simultaneously multiple industrial processes.

4.3. Case Study #3: AgroTransilvania Cluster

i) Cluster identity and General Information

AgroTransilvania Cluster is a non-profit company established in 2013 because a public institution felt the need to cultivate collaboration between actors from one end of the same value chain to the other, from producers to processors and distribution networks. Cluj County Council formed the cluster and even today the president is also the vice-president of Cluj County Council.

The AgroTransilvania Cluster is located in the Nord-Vest Region of Romania. However, it includes members of other development regions and it is constantly developing. Initially founded by 20 members, it now has 85, including many other types of organisation besides the main core of companies related to the value chain of agriculture and food. Cluster members include regional and local authorities, universities and research institutes, as well as diverse facilitators, such as chamber of commerce, consulting companies, financial institutions, television, ICT etc.

The activity of the cluster and its resource allocation (time, logistics, labour and funds) was changed during mid-2017, when its strategy was reviewed by the management team. A change was made from emergent cluster strategy to innovative cluster strategy. The decision was made because: the number of the members increased (attracting two new research institutes) and the complexity of decision making process increased too; the knowledge about cluster management

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improved, and the strategic planning process needed to be updated; new possibilities appeared for financing, both at national and international level, mostly for clusters involved into research and technology transfer. As a result of this evolution, The European Secretariat for Cluster Analysis (ESCA) granted to AgroTransilvania Cluster The "Cluster Management Excellence Label GOLD - Proven for Cluster Excellence" of the European Cluster Excellence Initiative. This was an acknowledgement that the AgroTransilvania Cluster demonstrates highly sophisticated cluster management and is committed to further improving its organisational structure and for achieving an even higher performance.

According to the new strategy, the new vision of cluster development is to support the development of the agro-industrial sector, with the stated aim of supporting the increase of competitiveness for every member, both on the national and world markets. The AgroTransilvania Cluster aspires to become a major partner for actors in the field, and a model of good practice for network activities. The objective of the management team the AgroTransilvania Cluster is to become an Integrator Pole of research, innovation, technology transfer and sustainable development of the Transylvanian agribusiness sector.

The strategy is based on 6 strategic activities some of which have been updated based on the new objective:

1. Increasing the research and development capacity in the field of bio-economy. Strengthening the cluster's image as an innovative smart specialization cluster nationally and internationally. Creating and equipping research laboratories to develop new activities and research directions. Advancing R&D activities in the cluster by attracting highly qualified personnel. Creating scientific added value in the field of bio-economy. Involvement in research, innovation and technology transfer.
2. Increasing the Sustainable Competitiveness of the Agri-Industrial Sector in Transylvania. This can be achieved by: - increasing agricultural production to the average level of the EU; - improving technology in agriculture; - increasing the share of animal husbandry, processing and manufacturing in agriculture.
3. Encouraging the set-up and/or the development of clusters and networks, in the following fields: - plant production; - animal husbandry; - processing and manufacturing; - marketing sector.
4. Increasing the quantity and quality of the cluster members by: - Creating the brand AgroTransilvania Cluster® (quality standards) - making investments with common positive potential (storage and selling facilities, irrigation, slaughterhouses); Creating new locations for selling the products of the members.
5. Integrating producers and/or clusters and networks into the Value Chain: - creation of the AgroTransilvania Cluster Trademark; - Visibility as an association with common goals - Mediation with authorities, administration, international relations - Organising and participating in trade fairs, exhibitions etc.

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6. Supporting the development of local and regional initiatives: - providing consultation - identification and support for local initiatives (logistics, consultancy and financial) - internship for students.

Through these goals, the cluster pursues the more efficient use of local resources (natural, human, research and innovation), as, at the moment, the outputs of the agribusiness sector are far below its potential. This can be attributed to either inefficient administration, or simply because of other inefficiencies or not recognising the sector's potential.

The AgroTransilvania Cluster case was provided by RUBIZMO partner ARAD.

ii) How the Cluster Creates Shared Value

The value chain generated by the cluster is complex and is not limited only to production, but locally and regionally integrates the entire agro-business system. The value chain starts from the suppliers for the agricultural and food industry (whether specialised in the field or operating across several fields), and naturally, ends with local marketing facility units for the products of the cluster members. The AgroTransilvnia cluster looked for practical solutions to shorten the marketing chain and increase the share of local products in the local markets. This took place through the creation of a cluster shop inside the shopping centre Iulius Mall. This resulted in the successful project SC Food Transilvania Market SRL, representing the opening of a store in one of the biggest shopping centres of the Cluj-Napoca city. This could be called a success story as it significantly contributes to the efficiency of the cluster's marketing chain, thus increasing its visibility.

A more ambitious goal is to conduct an image campaign to promote the AgroTransilvania cluster through the products that meet the following minimum requirements: a good traceability system, high quality, exclusively local production, and a competitive price. The AgroTransilvania cluster will serve as a guarantee for these requirements towards the consumer. One of the mid-term strategies of the cluster is to ensure cluster brand recognition, and that will be followed by the creation of the cluster's own quality standards (higher than average), designed to surpass the customer expectations.

The internal analysis of cluster members revealed certain restrictions for some of them in fundraising for specific projects, the development of common projects and, therefore, in working as a part of large and complex teams. That is why, as a measure of improvement, it was decided to involve the cluster members and the executive management in common specific projects in accordance with every member competencies, under the cluster's guidance. This goal meets the aims of the cluster's strategic objectives to integrate actors and networks into the value chain and increase the quantity and quality of the cluster members.

The shortening of the value chain and marketing chain of the cluster and its members represents a defining element for its sustainable development. The success of the

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first store opened in one of the biggest shopping centres of Cluj-Napoca has increased the cluster's visibility. This generated the interest of other important shopping centres wishing to collaborate with the cluster. At the moment, advanced negotiations are carried out to open a second store for the cluster members' products in another shopping centre. Certainly, the financial contribution brought by such commercial activities is significant for the cluster and its members.

iii) Vision for the Future

A common vision for the future is vital for the AgroTransilvania Cluster, as it is focused on taking advantage of the opportunities provided by its multi-actor nature and potential collaborations and expansion opportunities.

The vision for the future expressed into the mission of AgroTransilvania Cluster is to promote collaboration and cooperation between business entities in the agricultural industry and encouraging the competitive restructuring of the sector, as well as ensuring participation in multiple commercial projects, both national and international. This is why cluster members decided to join forces to support the development of the agro-industrial sector, with the aim to build on the competitiveness of the cluster and its members in the national and international markets. The cluster's aim is to become an Integrative Pole of Sustainable Development for the Agri-Industrial Sector in Transylvania (North-West of Romania) by supporting the sustainability and competitiveness of Agri-Industrial Sector.

The AgroTransilvania Cluster is open for collaboration based on mutual agreement and advantage with other clusters in the agri-food field. The AgroTransilvania Cluster had already identified potential international partners (companies, national authorities, professors, counsellors etc.) within numerous countries: The Netherlands, Italy, Switzerland, Hungary, Germany, Iraq, Denmark, France, Poland, Portugal, Spain, Hashemite Kingdom of Jordan, China, South Korea, Japan, Jordan etc. At the same time, several international organisations like the Food Cluster Initiative, ClusterLand, ClusterPoliSEE, European Foundation for Cluster Excellence, Cluster Collaboration Platform have been contacted to facilitate access to other clusters and organisations in the field for potential synergies. Also, the AgroTransilvania Cluster is member of 2 European Strategic Cluster Partnerships (ESCP-4i or ESCP-S3): FoodNet and TRACK.

The AgroTransilvania Cluster is, also, involved in 3 European projects:

- Horizon 2020, Call: H2020-RUR-2016-2017 (Rural Renaissance - Fostering innovation and business opportunities), Proposal acronym: PANACEA.
- COSME 2016. Call Cluster Go International COS-CLUSINT-2016-03-01. FoodNet - Food in Eco Network - Internationalisation and Global Competitiveness of European SMEs in Food and Eco Logistics Sector, 2017-2019
- COSME 2016. Call European Strategic Cluster Partnerships for smart specialisation investments COS-CLUSTPARTNS-2017-03-02. TRACK - Tracking opportunities to develop and strengthen data collection and big data in agri-food chain to increase competitiveness of SMEs.

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4.4. Case Study #4: CRPV

i) Cluster identity and General Information

CRPV (Crop Production Research Centre - www.crpv.it) is a cooperative company located in Cesena (Northern Italy), operating in the development of research on crop production, through four main topics:
a) fruit, vegetables, seeds, floriculture; b) viticulture, oenology and olive oil; c) cereals, beets and oilseed crops; d) bio-energy.
The CRPV members are producers associations, institutes for technical assistance and professional education, provincial administrations and the main economic organizations. Most of the members are at regional level, but there is growing interest from structures located throughout the country. the technical and scientific results of the research expressed through annual and multi-annual programmes and to involve associative, cooperative, consortium bodies, companies and other bodies whose institutional aims include the planning and enhancement of plant production sectors.
CRPV main activities carried out are:

a. research for sustainable crop protection for both organic and integrated crop production,
b. genetic improvement and patents (Plant Breeders' Rights) management,
c. research for production's optimization and integrated production guidelines updating,
d. application of modern ICT tools in agriculture,
e. bio-energy development,
f. economic analyses to support farmers' development,
g. planning and experimentation about the use of biomasses for bio-energy production,
h. supporting chain producers in quality and traceability certification process,
i. dissemination of research results and technologies transfer.

The CRPV was created with public funding and subsequently involved private entities, some of which are members of the CRPV itself.

The CRPV case was provided by RUBIZMO partner UNIBO.

ii) How the Cluster Creates Shared Value

CRPV is a research and development centre that seeks to respond to the needs of the market, the requirements and the problems of farmers. It allows the contact between the research and development sector and all stakeholders. On the one hand, farmers and technicians who need to learn and train continuously and, on the other hand, third parties operating on the market who need to have products with specific characteristics.

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It transforms the needs of market players into research projects involving universities, other research institutions, farms and associations of farmers. CRPV ensures that farmers are able to respond to market demands. It publishes the results of research and experimentation in sector magazines, organizes conferences and training courses and constantly updates internal databases, which are also linked to external databases.
Therefore, the projects coordinated by the CRPV involve different public bodies such as the Universities of Northern Italy, the Region, the municipalities (and etc..) and also private bodies such as farms, small and large cooperatives, associations of producers, etc..
The direct involvement of farms in projects and the dissemination of research data reduce the sense of alienation and detachment between researchers and technicians/farmers and make the farmer an informed subject and, therefore, more aware and responsible for the effect of his actions.

CRPV supports the producer's activity from beginning to end, bringing genetic innovation to crops, innovations in crop management techniques and in the enhancement and marketing of the product.
Varietal innovation allows to increase the production potential and the sustainability of the ecosystem, introducing new characteristics of resistance to pathogens and ability to exploit resources. The innovation of cultivation techniques, the development and spread of ICT tools allows to rationalize and optimize resources and to adapt the different technical lines and strategies of defence, in line with the evolution of cultivation scenarios, climate changes and the increasing need for zero residue production.
Moreover, the CRPV analyses the strengths and weaknesses of the supply chains, studies new strategies and sales methods that could increase competitiveness and profit margins. It analyses the potential of the territory and the possible integrations between agricultural production, rural territory and its commercialization (valorisation of the territory through the history and the agricultural culture, the typicality and the characterization of its typical products).

iii) Vision for the Future

To date, most of the projects carried out are financed by public funds. One of the main objectives of the CRPV is to increase funding from third entities marketing and processing plant products and stakeholders.
There is a need to improve the training of its entire staff and increase external collaborations to make up for the lack of skills in emerging sectors (such as Bioeconomy). The aim is to encourage generational turnover, participate in several international research projects, improve control over the activities carried out by other subjects and improve communication with the general public. Provide more services for members and customers (for instance assistance and training for new Organic and integrated production specifications, etc..).
Over recent years, CRPV aims to spread the concept of agriculture as a protector of the public good, hence the objective of stimulating international thematic networks and a multi-actor approach that can facilitate the transfer of good practices from more developed realities, with the aim of spreading the development of agriculture and its role as protector of the public good.

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4.5. Case Study #5: Cluster Food Industry

i) Cluster identity and General Information

The cluster of food sector cluster in Brandenburg is established in 2012 to enable collaboration among food sector cluster in the region. The cluster is established with the importance of food sector in the region with 3,400 companies and over 57,000 employees along the value chain including agriculture, food and beverage industry, logistics and trade. Members include small and medium sized enterprises as well as large national and international companies.

The cluster comprises fields in the production and processing of food and feed to customers. This makes the cluster to include various actors along the value chain. The cluster, therefore, is not limited to the food sector, but takes into account exchanges and interactions of actors in the production of food and feed. This includes the supply and service relationships of the food industry with trade, agriculture and food analytics, as well as cluster-spanning Cooperation.

One of the main activities of the cluster is creating networks between research organizations, in particular for small and medium-sized enterprises. The availability of various research and academic institutes in nutrition-related areas enabled to the numerous small-sized companies to utilizes this potential and promote research and development which ensure dynamic results.

The Cluster Food Industry case was provided by RUBIZMO partner ATB.

ii) How the Cluster Creates Shared Value

The cluster establishment bases on the importance of the food sector in the region. The cluster comprises tradition, innovation, farm shops and sales logistics as the main feature which characterises the food industry cluster in Brandenburg. The traditional food and beverages are famous throughout Germany. A healthy environment combined with highly efficient production makes Brandenburg successful in global market and health conscious consumers.

Shared Value in the food cluster in Brandenburg includes:

- Sophisticated logistics and distribution systems, ensuring that products received by local consumers are as fresh as possible.
- Members pool their resources to cooperate in processing and marketing.
- Growing with the trends: regionality trend which lead to significant improvement of market opportunities for local businesses.

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- Brandenburg original brands: Strong brands call Brandenburg home on various food traditional brands that ensure the region is known for its culinary delights far beyond its borders, improving export potential.
- An eye on international markets.
- Key research and development activities: the food sector is particularly geared toward networking between business and research organisations. This enabled it to have a strong focus on technical innovation, which benefits local businesses and provides them with a competitive advantage.
- Making the region an attractive production site for international brands, ensuring jobs and increasing economic growth.
- One in ten farms in the region operates under strict ecological guidelines, making the region Germany's leader in environmental farming.

iii) Vision for the Future

The main objective of the cluster bases on the importance of the food sector in Brandenburg region. The following are the main fields of actions of the food sector cluster:

a) **Marketing regional image of the product**: enhance the image of the Brandenburg food to increase demand
b) **Development regional value chains**: aim to expand regional value chains in order to improve the use regionally produced raw materials in the target markets and to increase the value addition of the raw materials.
c) **Technical innovation from field to plate**: supporting innovative product and process solutions in particular in the areas of logistics, food safety and packaging along the entire value chain as well as in the food products, especially in small and medium-sized enterprises.
d) **Health and nutrition**: The goal is a more health-conscious diet for the people in the region by providing information on the link between nutrition and health

4.6. Case Study #6: Green Bio-Refining Cluster

i) Cluster identity and General Information

This case study is about an emerging cluster in the region Central Denmark: the cluster of green bio-refining. Green biomass can be processed into a variety of products from biogas to high-value compounds. Green biomass encompasses in principle all kinds of greens that can be processed such as leaves from sugar beet tops, lettuce, green parts of crops and grass – just to mention some examples. Grass is a crop that grows well in Northern European countries and farmers are used to manage this crop. In 2017, the regional government of Central Denmark announced a strategy to develop into a leading region for bio-refining with particular emphasis

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on green biomass (Region Central Denmark, 2017). The green bio-refining cluster is located in the region of Central Denmark.

Aarhus University, a major research facility located within the region and with core competences in agriculture, food and bio-based processing established a pilot plant for green bio-refining at a test site located in Foulum. Together with the local incubator Agrobusiness Park, the University established the interdisciplinary Centre for Circular Bio-economy (CBIO). The scope for CBIO was to promote collaboration with industry and improve the bio-refining process. The regional government defined grass as the first green biomass to work on and provided funding for a demonstration program with the aim of establishing networks and initiate innovation projects. Another key partner for encouraging valorisation of green biomass was the Agricultural Advisory Services, also located in the region Central Denmark.

Since 2017, several activities have been initiated to encourage collaboration, technology improvement and for building relations among stakeholders. The overall aim is still valorisation of green biomass, particularly grass. The green bio-refining cluster revolves around the CBIO but to date there is no formal organization of the cluster. Hence, activities to promote valorisation of green biomass come from different stakeholder groups and materialize as projects, conferences, and contracted production.

The Cluster Food Industry case was provided by RUBIZMO partner IFAU

ii) How the Cluster Creates Shared Value

The cluster dynamics are rooted in projects about developing and commercializing new value chains centred round production and processing of organic clover grass (Hamann et al, 2019). The projects are funded by the regional government or the Danish government though innovation grants and private co-financing. The outcomes to date have demonstrated that it is possible to process grass into a feed concentrate that works in praxis; that grass protein concentrate matches the nutritional value of presently used feed protein sources; and if a proper and feasible value chain can be established there would be new opportunities for farmers and businesses for generating an income from growing and processing grass.

The projects have increased practical knowledge about the growing and processing of the biomass, logistics, how to use the protein paste as feed, and the feasibility of the value chain. Overall, the projects have provided much detailed knowledge and practical experiences about how the new grass-protein value chain should be organised and, stakeholders with commercial interests (e.g. compound feed producers, pig and poultry farmers, and technology providers) have identified new business opportunities. Some challenges have been identified since the work on green bio-refining was initiated, especially challenges related to technology and overall feasibility.

To solve the challenges, it required collaboration and knowledge sharing across stakeholder groups. For example, a company producing equipment for harvesting grass developed a new harvesting machine to improve the grass yield, and this

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machine is now on the market. A compound feed producer has tested the protein paste in existing compound feed and is interested in buying more of the paste on commercial terms. Furthermore, a survey (Hamann et al, 2018) carried out among farmers revealed that there is genuine interest in growing more organic clover grass for bio-refining, and that producers of organic pigs and poultry are willing to use the protein paste in the feed.

The case study of the green bio-refining cluster in Central Denmark demonstrates that there is a motivation in diverse stakeholder groups to work towards developing the green bio-refining venture. The motivation comes from the production side (farmers and bio-refining process) and the market side (livestock farmers, feed producers, and technology providers), so in principle the gap between supply and demand could be bridged. Achieving economic feasibility from the valorisation of organic clover grass is still posing challenges and to date the best options are identified within the organic value chains. When the experiences gained from the projects are properly materialised into new value chains, there will be more substantial shared values to gain.

Economic benefits	Social benefits	Environmental benefits
Improved income opportunities for farmers and businesses; Patented bio-refining technologies that could be scaled up; New machines and feed products available in the market; Improved self-sufficiency with organic feed protein	New jobs created in rural areas; Sustaining organic farms; Provision of organic pork, poultry meat and eggs to satisfy consumer demands in Denmark and selected export markets; Collaboration across stakeholder groups with a common goal	Improved environmental impact as grass prevents N-leaching into the water; Elimination of transportation of soybean concentrates from China; Local production is in line with the principles of organic agriculture; Sustaining of biodiversity

Table 2: The shared value created in the green bio-refining cluster in Central Denmark

iii) Vision for the Future

As a consequence of the strong stakeholder interest and a growing market demand for organic feed protein there is a need for scaling up of the pilot plant for green bio-refining. In 2019, the regional government provided co-financing for a demonstration plant that would support the cluster to grow to the next level: commercial production. The outlook for developing the cluster (maybe even into a formal organization) is optimistic. This is because cultivation and processing of organic clover grass contributes to increase the sustainability of organic livestock production; the cluster provides business opportunities; there are new options for income generation and jobs in rural areas; and there are economic, social and environmental benefits to be gained at more governance levels.

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5. Analysis and Results

5.1. Overview of Cases

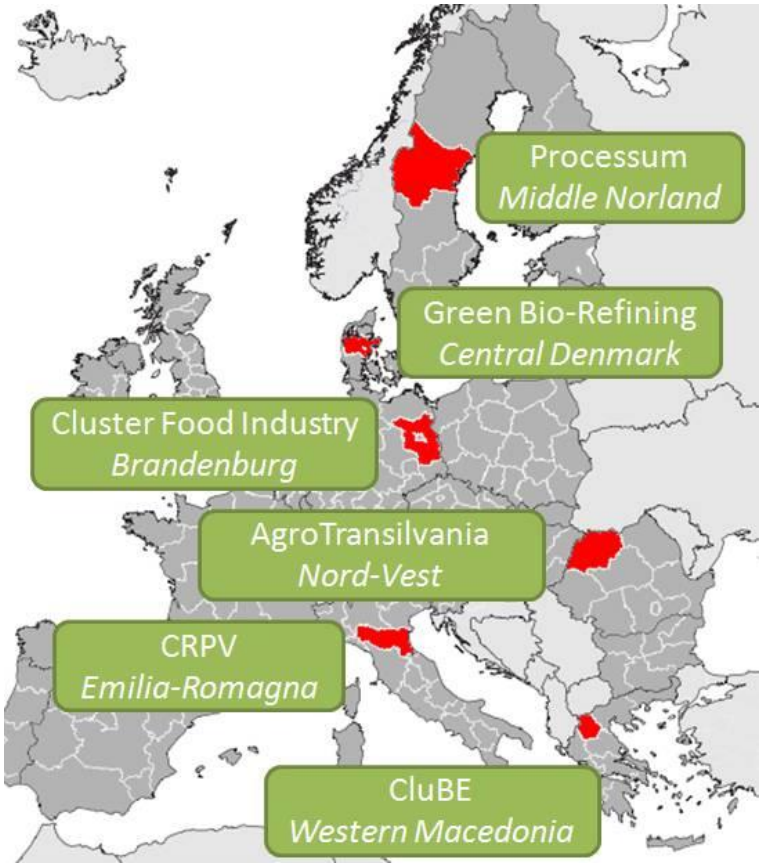

Image 3: Location of the Cluster cases in a NUTS2 level

The case studies described in the previous chapter include six different clusters located in six different European countries: Denmark, Germany, Greece, Italy, Romania and Sweden.

Two of these clusters (Processum and Green Bio-Refining) are biorefining clusters, one (CluBE) is a bioeconomy and environment cluster, one is an agricultural cluster (AgroTransilvania), another is focusing on agricultural research (CRPV) and the last one is a cluster consisting of local food industries (Cluster Food Industry). Broadly, however, it can be said that the first three are mainly focused on bioeconomy whereas the other three are mainly focused on agriculture.

CluBE aims at developing R&I (Research and Innovation) and business activities in the fields of bioeconomy (including bioenergy) and the environment, in order to reinforce green economy in the region and its neighbouring area. CluBE members include regional and local authorities, universities and research institutes, as well as various enterprises of all sizes, such as municipal district heating companies, boiler manufacturers and wood industries, biomass logistics enterprises, forest and agricultural associations.

Processum Technology Park AB was established to coordinate and facilitate the development of high value products and energy solutions with wood as raw material. Processum came about as entrepreneurs and politicians came together to find new solutions to reduce the over-reliance on a single value chain (i.e. the paper pulp industry) and thus reduce the risks of economic downturns for the region. It is based on new business ideas emerging from the region's natural resource abundance (i.e. forestry and wood industry) as well as existing industrial capabilities and competence basis, transforming the industry towards higher-value outputs.

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AgroTransilvania Cluster was established by Cluj Country Council to cover the need for collaboration between actors from one end to other end of the same value chain, from producers to processors and distribution networks. It currently includes 85 members including, companies active in the agriculture and food sectors, regional and local authorities, universities and research institutes, as well as diverse facilitators, such as chamber of commerce, consulting companies, financial institutions, ICT etc.

CRPV (Crop Production Research Centre) is a cooperative located in Cesena (Northern Italy), operating in the development of research on crop production, including fruit, vegetables, cereals, seeds and bio-energy. It's focused on sustainable crop protection, genetic improvements, production optimisation, application of ICT, bio-energy production, supporting farmers' development, dissemination of research results and technology transfer. The CRPV members are producers associations, institutes for technical assistance and professional education, provincial administrations and the main economic organizations.

The **Cluster Food Industry** was established to enable collaboration between companies in a region in which the food sector is key. Members include small and medium sized enterprises as well as large national and international companies in fields that involve the production and processing of food as well as its delivery to consumers. Member companies are active in agriculture, the food and beverage industry, logistics and trade. One of its main activities is creating networks between research organizations, in particular for small and medium-sized enterprises.

The **Green Bio-Refining Cluster** came about due to a strategy announced by the regional government of Central Denmark to develop into a leading region for bio-refining with particular emphasis on green biomass. The overall aim of the cluster is valorisation of green biomass, particularly grass, which grows well in Denmark. The cluster is new, and there is no formal organisation yet. Aarhus University together with the local incubator Agrobusiness Park established the interdisciplinary Center for Circular Bio-economy (CBIO). Activities come from different involved stakeholders as projects, conferences, and contracted production. So far, a demonstration program was funded with the aim of establishing networks and initiate innovation projects

5.2. Lessons Learnt

5.2.1. Shared Value Created by the Cases

As should be evident by their specialisation, all clusters are primarily rural in nature. All of them are based on a sustainable mobilisation of local resources, whether to produce renewable energy or to produce food with added value by environmentally-friendly agricultural methods. The most important common feature with regard to the purposes of this deliverable, however, is that all of these clusters can create or are already creating shared value (Porter & Kramer, 2011), since their operating

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practices designed to enhance their competitiveness are simultaneously advancing economic, social and environmental conditions in the communities in which they operate.

Case Study	How Shared Value is Created (summary of main ways)
CluBE	❖ Education and training of members ❖ Focus on decarbonisation and a change of the region's specialisation to prevent social issues and unemployment, raising awareness ❖ Briefing companies about real costs and activities ❖ Meeting companies' need for more help and support
Processum	❖ Disposing waste in a more sustainable manner ❖ Ensuring sustainable energy for the region ❖ Sustaining the demand for wood-based products and jobs ❖ Embedding the co-creation and application of knowledge ❖ Creating more stable revenue generating activities for the local economy
AgroTransilvania	❖ Integrating the agro-business system locally and regionally ❖ Increasing the share of local products in the local market ❖ Providing traceable, high quality local products ❖ Shortening the value and marketing chain from the cluster to its members, which represents a defining element for its sustainable development
CRPV	❖ Providing high quality skills training to local farmers and technicians ❖ Utilising research and development to benefit the region's farming and agriculture, and therefore economy ❖ Bringing latest innovations in genetics, crop management and marketing of products to the farmers, enhancing their competitiveness locally and internationally ❖ Increases the production potential and sustainability of the local agricultural ecosystem ❖ Studying new strategies and sales methods to increase competitiveness and profit margins for local agriculture
Cluster Food Industry	❖ Sophisticated logistics and distribution systems maintain products as fresh as possible for consumers ❖ Regionality leads to significant improvement of market opportunities for local businesses, and an emphasis on strong traditional brands from Brandenburg with a high appeal ❖ Key research and development activities benefits local businesses and provides them with a competitive advantage ❖ Strict ecological guidelines for many of the region's farms, leading in environmental farming
Green Bio-Refining Cluster	❖ Improved income for farmers and businesses ❖ New machines and feed products in the market ❖ New jobs created in rural areas ❖ Sustaining organic farms and providing organic produce to satisfy consumer demands in Denmark and selected export markets

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	❖ Improved environmental impact as grass prevents N-leaching into the water ❖ Local production is in line with organic agriculture and sustaining of biodiversity

Table 3: A summary of the creation of shared value in the case studies

The cases presented demonstrate elements of shared value creation in all three different ways specified by Porter and Kramer (2011). Societal needs are served by developing better quality or healthier or sustainable final products, whether these are energy or food products. The cases redefine productivity in the value chain by better utilisation of resources, employees and business partners. And, finally, the clusters in question clearly improve available skills, supplier base, and supporting institutions in the communities where they operate to boost productivity, innovation, and growth (Shared Value Initiative, 2019). This is achieved both by their own nature as clusters, bringing different stakeholders and enterprises together and closer to society in the quadruple helix model, and by further networking actions that they perform in their regions, bringing R&D organisations closer to companies and professionals, or closer to local authorities.

In addition, since these clusters all feature a centralised infrastructure, a dedicated staff, and a structured process that leads to a common agenda, with continuous communication, and mutually reinforcing activities among all participants, the cases seem to include several prerequisites of the concept of collective impact (Kania & Kramer, 2011), even if they are not actively attempting to enforce the concept in practice.

Virtually all of the cluster cases provide important benefits in terms of know-how, technology or market reach to their members, and this also tends to spill over to the local communities. This seems to be a result of the original plan which led to the creation of these clusters. Whether their creation was a public initiative or the result of the efforts of a local champion, the original actions were top-down and were aimed at boosting regional R&D activities and making the local economy more competitive and more sustainable.

CluBE, for example, has the key aim of developing R&D and business activities in the fields of bioenergy and environment, in order to reinforce the green economy, while CRPV was founded to advance research on crop production and protection as well as bio-energy, and the modernisation of agriculture via ICT tools, development in genetics and other state-of-the-art methods. Creating network between research organisations is also one of the original objectives of the Cluster Food Industry. In every case, however, the clusters have reached a stage where private initiative driven by private interests has taken or is taking a major part of the responsibilities and energy needed for moving forwards.

This means that the shared value (combination of economic competitiveness with beneficial social consequences) is essentially a direct result of the primary aims set by the clusters' founders, but in doing so, they have formed an agenda or framework which the cluster members, including private enterprises, are also willingly pursuing on their own, propagating the creation of shared value. Still, this is also facilitated

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by the fact that the sectors in which these clusters operate (i.e. bioenergy, bioeconomy, sustainable agrofood) are sectors which are predisposed towards producing environmental and social benefits. Unsurprisingly, size and geographical coverage also play a key role in this. Larger clusters, with more members, more employees, more public authorities, NGOs and research organisations involved, and covering a wider geographical area, will have a larger social and environmental impact in their regions.

In terms of differences between the features of the clusters studied and which features best fit a cluster's needs, it unfortunately seems that the sample of case studies is too small to produce meaningful conclusions. It is possible to conclude, however, that all the case studies where designed top-down in a way that was planned to meet the region's economic, social and environmental needs. This is one of the potential benefits of this top-down design process.

5.2.2. Good Practices

Since the cases presented in this deliverable are rural clusters operating with state-of-the-art and innovative methods, it would be useful to identify a number of good practices from their activities in order to put them forward for potential replication of other clusters or networks. What follows below is a short list of good practices from the six clusters studied, which represent successful business practices and also include social and/or environmental benefits for the local communities, therefore having the potential to create shared value.

One of the good practices that can be identified among **CluBE**'s activities is the active effort to organise the alternative involvement of all members in various activities, changing partner roles in the process, to make sure all members are involved and thus maximising the collective impact of the cluster, building more efficient synergies, and enhancing the experience and know-how of its members from all parts of the triple helix.

In the case of **Processum**, a good practice is regenerating the regional economy to produce social, environmental and economic benefits while also taking advantage of the region's existing tradition, resources and infrastructure. This was achieved by maintaining the region's forestry specialisation but shifting from the traditional paper pulp industry to biorefining, making use of the region's rich natural resources, its industrial capabilities and competence basis, and even of the infrastructure of the original pulp mills.

In the **AgroTransilvania Cluster**, the good practices are building common values throughout the production chain, and using the "traditional" agricultural sector as a basis to expand into broader bioeconomy activities via joint efforts and the promotion of a common brand name.

In **CRPV**, the main good practice is building a direct connection between R&D institutions and SMEs. This reduces the gap that often appears between research and practice, cultivates a common language and many synergies. This way, the SMEs benefit directly from the latest scientific breakthroughs in their field, while the

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research organisations have an opportunity to immediately test new developments in real-world conditions.

The **Cluster Food Industry** is built upon one of the region's traditionally strong sectors. A good practice in this case, is the use of the cluster to enhance the already prevalent food sector with modern R&D, logistics and ecological practices. In doing so, the cluster is maintaining the region's strong brand name and the quality with which it has been associated by consumers.

In the case of the **Green Bio-Refining Cluster**, the main good practice is making sustainable and profitable use of a traditionally abundant crop by bringing together R&D and industry and applying innovative ideas and state-of-the-art technologies. This is one of the key goals for regional development in rural areas.

5.3. Considerations for Further Research

While the creation of shared value has been explained thoroughly in the 2nd and 3rd chapters of this deliverable via the theoretical definitions (including the original article by Porter and Kramer) and several examples from major enterprises to local clusters, actually measuring the concept in practice is not a straightforward task. A report by Porter et al. (2011) explains that the measurement of shared value is a key component of shared value strategy. The process of shared value strategy and measurement includes four stages, in which the company (1) identifies the social issues to target, (2) makes the business case, (3) tracks progress and (4) measures results and uses the insights to unlock new value, therefore starting the process all over again, as demonstrated in image 4.

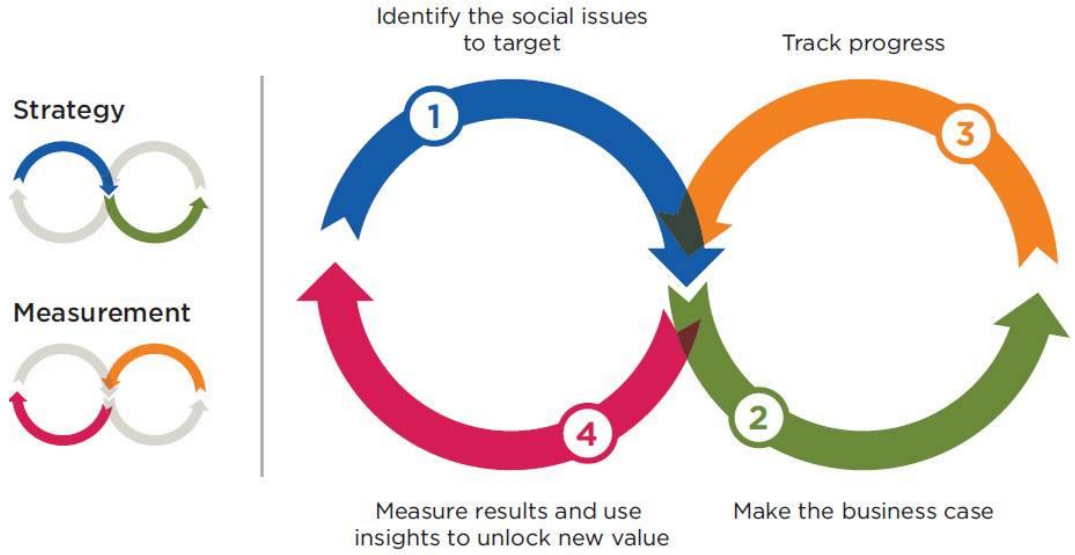

Image 4: The process of shared value strategy and measurement according to Porter et al. (2011)

The problem, however, is that measuring the result in order to measure shared value "objectively" is dependent on each individual case. There is no specific set of

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indicators or measurement scale in the literature which can be used to measure shared value. Porter et al. (2011) provide a comprehensive list of business result and social results which can be used for the assessment of shared value per level (reconceiving products and markets, redefining productivity in the value chain, or enabling cluster development), this comes with two different challenges. First of all, some of these results, especially the social ones, are difficult to measure numerically (e.g. improved job skills or improved nutrition). Secondly, even with the results which are straightforward to measure (e.g. increased revenue for enterprises or increases incomes for local residents) it is difficult to demonstrate the extent to which these are the direct result of shared value as opposed to external variables.

The complications become apparent by examining a number of examples. Shared value is easier to assess in the case of major dedicated initiatives with a specific goal, such as those which are sometimes launched by major multinational companies, which have the means to do so. This is true in the case of Coca-Cola's Coletivo initiative in Brazil, which creates shared value by increasing the employability of low income youth while strengthening the company's retail distribution channels and brand strength to increase local product sales. In this example, Coca-Cola assessed results using four key indicators: 1) youth job placement; 2) youth self-esteem; 3) company sales; and 4) brand connection. It used rigorous measurement by region, community, and model during the pilot phase of the initiative in order to track progress and improve the process (Porter et al., 2011).

Similarly, Novo Nordisk, a global healthcare company with 88 years of leadership in diabetes care, has demonstrated the power of measuring shared value through its long-term growth strategy in the Chinese insulin market. In this case, Novo Nordisk conducted surveys which indicate significantly increased diabetes control rates. It also used the common measure of Disability Adjusted Life Years (DALY) to report an estimated 80 percent improvement in total patient life years, and quoted an increase in its market share from below 40% to 63%.

When shared value arises from an enterprise or cluster's key practices, it can be more difficult to pinpoint its results, although there are examples of this as well. In the case of the Aviation Valley cluster (AVC) in Poland's Podkarpackie region, which was mentioned above (section 3.1), Sienko-Kulakowska et al. (2016) mention that industry-wide surveys, interviews and official statistics demonstrate a relationship between the economic and social development achieved by the cluster and region in the last ten years.

Such measures, however, are challenging to produce. In order to back up the claim that AVC creates shared value, the measurements used were very comprehensive, encompassing different types of research methodology and utilising data from a whole decade. In addition, the AVC has a key and transformative role in revitalising the region's economy which makes its impact easier to measure compared to a smaller cluster with a more limited reach and a more modest impact, or compared to a cluster in a region which is already highly developed or undergoing several other development initiatives at the same time.

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A case study by SVA Consulting (2015) mentions that the measurement of shared value can be achieved by: developing indicators for each outcome area, focusing on incremental financial benefit to the community or local organisations resulting from the company's contribution, and developing tools to collect the data required and a set of reports to present the outcomes.

With regard to the six case studies of clusters creating shared value presented in this deliverable, the measurement of the economic and social results they produce would entail the development of a specific set of indicators for each cluster, according to its specific impacts in terms of shared value, and then obtaining suitable data in order to assess these indicators over a specific length of time in order to demonstrate impact.

In addition, broadening the scope of the study to include more case studies of clusters and networks from Europe, would allow for the collection of quantitative data which would show how the network structure, location, size and activity domain of each case can have affect the efficiency of its cluster, the needs of its members, and the creation of shared value.

5.4. Conclusions

Overall, the theory on shared value, its application on clusters and networks, and the overview of the selected case studies shows that clusters have an extremely promising potential for the creation of shared value in rural areas. First of all, clusters, due to their collective nature and collective action, are in the ideal position to meet several of the prerequisites for creating shared value, especially when they involve not only the private sector, but other actors as well, such as trade associations, government agencies, and NGOs (Porter & Kramer, 2011). This is the case for the clusters studied above. Apart from being well suited to the creation of shared value, clusters are also inherently well suited to the creation of rural prosperity and sustainability (Irshad, 2009). Clusters, with their multi-actor approach along the rungs of the triple helix can be ideal for covering the more geographically sparse nature of rural areas.

Secondly, the sectors in which the case study clusters are active, namely, agrofood, bioenergy and bioeconomy in general, are extremely innovative sectors. They belong to the priority sectors set by the European Cluster Observatory, making them ideal for Porter and Kramer's (2011) original (and highly ambitious) premise of using shared value to reinvent capitalism and unleash a wave of innovation and growth. In addition, these sectors are extremely well suited to the creation of shared value, since value for society is created through the fulfilment of social needs as health, better housing and, environmentally friendly products and operations (Porter & Kramer, 2011). Regarding the specialisation of the cases examined here, the environmental benefits of bioenergy should be extremely clear (Naud, Carle & D'Amours, 2015), while research also shows that agriculture can also have major social benefits, especially in terms of health (Kaufman et al., 2017).

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Finally, the role of clusters in the creation of shared value is also demonstrated by the six case studies examined. The clusters in question produce several social and environmental benefits as an integral part of their business strategy. This should be clear by their contribution to the education and training of the local workforce, creating new jobs, improving local incomes, production of sustainable energy, production of healthy, sustainable and additive-free food etc. (see chapter 4 for a full list).

In short, rural areas offer the right conditions to develop clusters especially within the sectors of bioenergy, bioeconomy and agrofood. These, in turn are ideal for the creation of shared value. This means that clusters, with their potential for shared value creation, can constitute a powerful engine for the revitalisation and development of rural areas in the EU (and the world), addressing the significant challenges which they are currently facing (Perpina Castillo et al., 2018).

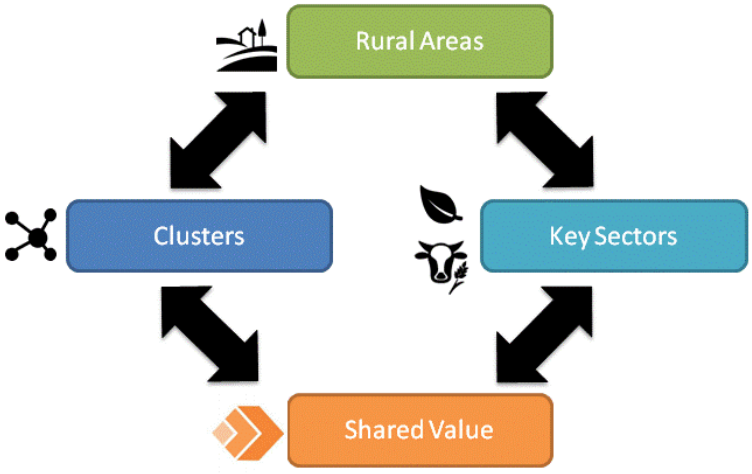

Image 5: The match between rural areas, clusters, specific sectors and shared value.

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