Creating shared value and clusters
The case of an Italian cluster initiative in food waste prevention

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Abstract
Purpose – The purpose of this paper is twofold. First, it aims at reconciling the literature on creating shared value (CSV) with the one on cluster development, searching for complementarities and similarities. Second, it aims at understanding the role of cluster development in CSV. For these reasons, the authors operationalized the general idea of cluster development with the widely accepted concept of cluster initiatives, i.e. systematic efforts aimed at cluster development. The authors focused on exploring the process of launching and supporting local cluster initiatives through empirical evidence. In particular, the authors aimed at analyzing how a CSV strategy can be defined and developed when adopted within a cluster initiative.

Design/methodology/approach – The research draws on a critical review of the literature focusing on CSV and on a conceptual reconciliation between the literature on the CSV ecosystem with the one on clusters, and more specifically on those initial cluster initiatives. The authors relied on an exploratory case study of an Italian cluster initiative in CSV, i.e. the Science and Innovation Food District (SIFooD) cluster promoted by Whirlpool. Thanks to the richness and great availability of information about the case, this study primarily relied on the use of secondary data.

Findings – The case of SI FooD has highlighted how Whirlpool promoted the cluster initiative within its CSV framework to achieve sustainable and collaborative innovation in food waste prevention and, conversely, how SI FooD enhanced CSV of its cluster members. To arrange its network development process, SI FooD has implemented all the elements that prior literature has considered fundamental for launching and supporting a successful cluster initiative. On the other hand, SI FooD was able to adopt a collective-impact approach, implementing the five elements needed in its ecosystem to create shared value. Moreover, thanks to all the activities comprised in the SI FooD cluster initiative, shared value was actually created.

Research limitations/implications – The present paper has some limitations. First of all, the empirical analysis focuses only on one cluster initiative; thus, cross/comparative analyses with other cluster initiatives may illuminate the findings better. Second, the authors relied on a very recent cluster initiative in a particular field (food waste prevention) and in one specific institutional context (Italy); thus, data may suffer from temporal, industrial and geographical biases.

Originality/value – Literature on the border between CSV and clusters is still in its infancy and almost nothing is known about their relationship, despite them being intimately related since the inception of this field. The paper qualifies for a very first attempt to understand how firms promote clusters, through cluster initiatives, for the sake of CSV and how clusters may enhance CSV of firms.

Keywords CSR, Cluster, Shared value, Ecosystem, Cluster initiative, CSV

Paper type Research paper
Introduction
The idea of creating shared value (CSV), introduced by Porter and Kramer in 2011, has gained enormous popularity among business scholars and management practitioners in the past few years. CSV means integrating societal improvement into economic value creation itself.

As it is a relatively recent field, prior literature on CSV has almost exclusively focused on enriching the theoretical background of CSV, trying to extend the CSV theory (Moon et al., 2011; Aakhus and Bzdak, 2012; Szmidt and Rutherford, 2013; Pavlovich and Corner, 2013; de los Reyes et al., 2016; Corazza et al., 2017) or to guide the development of a CSV business strategy (Michelini, 2012; Michelini and Fiorentino, 2012; Spitzeck and Chapman, 2012; Pirson, 2012; Pfizer et al., 2013; Najmaei and Sadeghinejad, 2016). Scholars have also offered several empirical instances of shared value strategies from different countries and business sectors (Koizumi and Widdersheim, 2016), focusing in particular on large and multinational corporations (MNCs) and their practices of implementing and optimizing shared value initiatives (Maltz and Schein, 2012).

In these cases, they have first dug into how firms reconceive customer needs, products and markets and second how they redefine productivity along the value chain to meet CSV principles. In the seminal paper by Porter and Kramer (2011) there was also an explicit reference to a third level of shared value, i.e. enabling cluster development, provided that clusters may enlarge the opportunities offered by CSV strategies, boosting collaborative innovation and productivity.

However, the literature about the border between CSV and clusters is still in its infancy (Lee et al., 2014; Berti and Mulligan, 2016 and Serra et al., 2016). Anecdotal evidence and examples on cluster development with relation to CSV have been acknowledged with reference to Silicon Valley, Kenya flower cluster, Yara and African logistic clusters and the diamond cutting in India (Porter and Kramer, 2011), as well as Nestlé and the milk district in Rajasthan (Porter et al., 2011). In fact, CSV occurs even by building clusters to improve company productivity while addressing gaps in the framework conditions surrounding the cluster. Despite the availability of several empirical examples, empirical research that might help theorizing on the topic is largely missing.

In the present paper, we aim at understanding the role of cluster development in CSV. We operationalized the general idea of cluster development with the widely accepted concept of cluster initiatives. A cluster initiative is “an organized effort to increase the growth and competitiveness of a cluster within a region, involving cluster firms, government and/or the research community” (Sölvell et al., 2003). In this paper, we investigate how firms promote cluster initiatives for the sake of CSV and conversely how cluster initiatives may enhance CSV of firms. In particular, we aim at investigating how a CSV strategy can be defined and developed when adopted within a cluster initiative.

We relied on a case study approach with an explorative intent. The case refers to Science and Innovation Food District (SIFood), an Italian cluster initiative launched by Whirlpool within its CSV framework, to promote sustainable and collaborative innovation in food waste prevention. Whirlpool is very active in CSV, promoting innovation that matters for society with purposeful products in a sustainable way. In 2012, Whirlpool promoted a cluster initiative in Italy called SIFood. SIFood stands for SIFood, which is the name of the new cluster for technological innovation for food sustainability. SIFood comprises 16 actors: large firms, SMEs, research centers and universities involved at large in the food production, processing and conservation.

This paper is explorative in nature and qualifies for a very first attempt in understanding the role of cluster initiatives in CSV.
The paper proceeds as follows. First, we conduct a literature review on CSV with a focus on the main research areas explored by prior empirical and theoretical studies so far. Second, we offer a tentative conceptual reconciliation between the literature on CSV with the one on clusters development, searching for complementarities and similarities. This is followed by a methodological section, where the research design of the study is illustrated. Next, we present and discuss our results on the empirical analysis of the case study of SIFooD. We conclude by providing final reflections and contributions as well as limitations.

Theoretical background

Creating shared value

In this section, we provide a review of the relevant literature on CSV, trying to identify the main research areas explored by prior empirical and theoretical studies and, conversely, which areas should be further developed. Porter and Kramer introduced the concept of CSV in 2011 and it has gained enormous popularity among business scholars and management practitioners in the past few years (Crane et al., 2014; Dembek et al., 2015; Wójcik, 2016). CSV involves creating economic value in a way that also creates value for society by addressing its needs and challenges through the business itself, with a business model (Porter, 2016).

Porter and Kramer (2011, p. 17) presented the concept of CSV as “the key to unlocking the next wave of business innovation and growth”. Seeking to address the task of regaining trust in business in the current age of crisis, they claimed that it could be a powerful driver of economic growth and reconciliation between business and society.

The approach of CSV is characterized by corporate policies and procedures that enhance the competitive position of a business organization while simultaneously advancing the economic and social condition of the communities around it. Porter and Kramer argued that companies, looking at decisions and opportunities through the lenses of shared value, and no more with un-coordinated and sometimes counterproductive corporate social responsibility (CSR) initiatives, would be able to generate greater innovation and social progress.

Shared value is not about redistributing existing value. Instead, it is about expanding the overall amount of economic and social value. In that sense, CSV is different from CSR (Ghasemi et al., 2014; Lee et al., 2014; Motilewa et al., 2016; Wójcik, 2016) and is not philanthropy or sustainability. Corporate responsibility programs have emerged largely as a reaction to external pressure, to improve firm’ reputations and are treated as a necessary expense, while CSV is integral to a corporate strategy, profitability and competitive advantage (Porter and Kramer, 2011).

Porter and Kramer (2011) suggested also an integrative framework to articulate shared value strategies consisting of three distinct avenues:

1. **Reconceiving products and markets**: Companies should continuously monitor unmet societal needs and social ills to discover profitable business opportunities for differentiation and repositioning in traditional markets, and to recognize the potential of new markets they previously ignored or underestimated (Porter and Kramer, 2011, p. 7).

2. **Redefining productivity in the value chain**: Company value chains are affected by many societal issues and negative externalities which can increase their economic costs. It is in these fields that companies can find opportunities to create shared value, rethinking their value chains in a sustainable manner, cutting costs and reinforcing the mutual relationships with all the stakeholders (Porter and Kramer, 2011, p. 8).
Enabling local cluster development: Companies do not operate in isolation from their context. Instead, they need a competitive business environment (including supporting companies and infrastructure) to compete and prosper and are strongly influenced by clusters. Companies can create shared value and improve their productivity by enabling local cluster development identifying and addressing gaps in the framework conditions surrounding it (Porter and Kramer, 2011, p. 12).

These three avenues are not independent; rather, they reinforce each other in a virtuous circle of shared value (Porter and Kramer, 2011).

According to Lee et al. (2014), the literature in this field has until now focused on the theoretical background of CSV, since it is a relatively recent field, trying to extend the CSV theory (Moon et al., 2011; Aakhus and Bzdak, 2012; Szirmai and Rutherford, 2013; Pavlovich and Corner, 2013; de los Reyes et al., 2016; Corazza et al., 2017) or to guide the development of a CSV strategy (Michelini, 2012; Michelini and Fiorentino, 2012; Spitzzeck and Chapman, 2012; Pirson, 2013; Pavlovich and Corner, 2013; Najmaei and Sadeghinejad, 2016). Nevertheless, scholars mainly adopted a corporate view and focused on a restricted number of societal fields such as environmental policies, social entrepreneurship, and low-income markets. To give some examples, Pirson et al. (2013) noted that many corporate leaders are struggling to implement CSV strategies all around the world and thus suggested the most important factors for success:

- restating goals around societal needs;
- focusing efforts on defined unmet needs;
- tracking value creation for the firm and for society; and
- bringing in partners for mutual benefit.

Aakhus and Bzdak (2012) provided a new framework of categorizing corporations by considering different degrees of corporate benefits and social benefits, and four steps of strategies for pursuing effective CSV. Pavlovich and Corner (2013) developed a mechanism and labeled inner knowledge creation, useful to resolve tensions and paradoxes inherent in shared value and coming from the fact that companies adopting a shared value strategy face the challenge to integrate the contradictory elements of social and economic values. More recently, Nichols (2016) has highlighted how corruption control offers several attractive features with respect to CSV strategies, especially in emerging economies.

Prior literature on CSV has also offered several empirical instances of shared value strategies from different countries and business sectors (Koizumi and Widdersheim, 2016). In addition to the examples discussed by Porter and Kramer (2011) such as Google, IBM, Intel, Johnson and Johnson, Nestlé, Unilever, Wal-Mart, other authors have investigated the implementation of CSV concept in different companies (Spitzzeck and Chapman, 2012; Ghasemi et al., 2014; Invernizzi et al., 2015; Smith, 2016), both in advanced and emerging countries, mainly focusing on MNCs and their practices of implementing shared value initiatives (Maltz and Schein, 2012). Among others, case studies of CSV have been applied in global health (Peterson et al., 2012), tourism (Vaidyanathan and Scott, 2012) and steel industries (Ghasemi et al., 2014). According to Maltz and Schein (2012), MNCs are able to optimize shared value initiatives and to expand the social component of the initiatives beyond the boundaries of firms, drawing on three main capabilities: supply-chain expertise, collaborative capabilities and research and development (R&D) capabilities. Thereby, MNCs are setting standards and best practices in CSV strategies.
Creating shared value ecosystem
Kramer and Pfister (2016) have recently introduced the concept of “shared value’s ecosystem”. They stated that companies pursuing shared value creation may come across many barriers, such as government policies and cultural norms, because they exist within a specific ecosystem and do not operate in isolations.

For this reason, businesses must adopt a collective-impact approach, which involves all the actors in their ecosystem. In particular, the authors recognize the importance of five elements:

(1) A common agenda: The actors must align their effort in a shared vision for change and a joint approach to a solution. The common agenda must embrace each participant’s interests and perspective, and should not be imposed by companies but maybe initiated by them (Kramer and Pfister, 2016, p. 6).

(2) A shared measurement system: Participants must define a list of indicators to be aligned on how to measure and report success, and, eventually, be able to set future stages for ongoing course adjustments (Kramer and Pfister, 2016, p. 7).

(3) Mutually reinforcing activities: Each participant must focus on what can do best and engage in activities that could reinforce each other. Typically, this occurs in different working groups initiatives addressing different aspects of the problem (Kramer and Pfister, 2016, p. 8).

(4) Constant communication: To build trust and be aligned with common objectives, all actors must engage in frequent and structured communication (Kramer and Pfister, 2016, p. 8).

(5) Dedicated “backbone” support: Independent single or multiple organizations are needed to guide vision, strategy, activities and shared measurement system. The advantage to have a dedicated backbone support is also related to its neutrality (Kramer and Pfister, 2016, p. 9).

Putting in place all these five elements can ensure that the totality of players involved will work in a constructive way, overcoming barriers. They also introduced the figure of the “system leader”, as the essential player able to frame his own interest and the overall situation together, and to build trust among all the participants.

With regard to Porter and Kramer’s (2011) framework to create shared value presented above, all three avenues:

(1) reconceiving products and markets;
(2) redefining productivity in the value chain, and
(3) enabling local cluster development - require a sufficiently robust market ecosystem.

Instead, a collective-impact approach may not be needed to reconceive products and markets and to redefine productivity in the value chain, but it is always necessary to strengthen local clusters.

Despite the fact that there was an explicit reference to clusters and their relationship to CSV concept in the work of Porter and Kramer (2011), the literature on the border between CSV and clusters is very recent (Lee et al., 2014; Berti and Mulligan, 2016; Serra et al., 2016). As said, examples on cluster development and CSV have been acknowledged with reference to Silicon Valley, Kenya flower cluster, Yara and African logistic clusters and the diamond cutting in India (Porter and Kramer, 2011) and Nestlé and the milk district in Rajasthan.
(Porter et al., 2011), etc., but research on the topic is still in its infancy. Moreover, according to Koizumi and Widdersheim (2016), the few cases analyzed in literature, highlighting how companies have enabled local cluster development, used the concept of shared value just to re-describe what companies would do anyway, re-branding them as shared value practices.

To date, scholars have explored the relationship between industrial clusters and environmentally and socially responsible business practices (Lund-Thomsen and Pillay, 2012). In particular, attempts have been made to understand whether clusters could play a key role in promoting CSR initiatives in developing countries (Accountability, 2006; Sachdeva and Panfil, 2008; Lund-Thomsen and Nadvi, 2010a, 2010b; Khara and Lund-Thomsen, 2012; Mezzadri, 2010, 2014a, 2014b; Anh et al., 2011; Possenti, 2012). In all the initiatives analyzed, local industrial associations were at the heart of the collective action, collaborating with international agencies, NGOs and public and private actors to achieve economic, social and environmental goals (Kennedy, 1999; Blackman, 2006; Lund-Thomsen, 2008; Khara and Lund-Thomsen, 2012; Pietrobelli and Stevenson, 2011).

Offering the potential for local joint-actions, local clusters initiatives are a basis for improving local compliance on CSR through collective monitoring and local governance (Lund-Thomsen and Nadvi, 2010a). However, there is an important trend in the literature on CSR, which criticizes cluster-based CSR initiatives in developing countries for being able to respond mostly to the Western NGOs, consumers, and brand buyers without addressing more immediate poverty reduction issues (Seidmann, 2007; Lund-Thomsen and Nadvi, 2010a; Mezzadri, 2010, 2014b). Cluster-based firms often decide to initiate CSR practices to respond to international branded buyers requirements in terms of “codes of conduct”. However, the influence that international lead firms are able to exercise in deciding which type of CSR values and norms should dominate production in industrial clusters, might be questioned (Lund-Thomsen and Nadvi, 2010a).

Despite these contributions, still too little is known about how firms promote clusters development for the sake of CSV and conversely how clusters development may enhance CSV of local firms.

Clusters and creating shared value

In the present paper, we aim at filling such empirical and conceptual gap in CSV literature by exploring the role of cluster development in CSV.

In cluster literature, cluster development or “an organized effort to increase the growth and competitiveness of a cluster” that involves the entire local ecosystem is usually referred as a “cluster initiative” (Sölvell et al., 2003). Hence, in our study we decided to focus on the exploration of a cluster initiative specifically meant for the creation of shared value.

In this section, we first offer a reconciliation of the literature on CSV with the one on clusters development, searching for complementarities and similarities and using – as said – the concept of cluster initiatives to operationalize the general understanding of cluster development. To do this we rely on the very recent article by Kramer and Pfitzer (2016) who have introduced the concept of “shared value’s ecosystem” that recalls the idea of clusters development for CSV.

Along this line, we considered the five elements needed according to Kramer and Pfitzer (2016) for a CSV ecosystem to search for consistencies and additions in cluster literature:

1. A common agenda: Prior literature on clusters (Sölvell et al., 2003; Emmoth et al., 2015; Ffowcs-Williams, 2012; Kobzeva et al., 2017) has acknowledged the importance of setting up a common strategy and goals from the very beginning of the network development. Cooperation always requires some form of shared idea about the why and the how the cluster is supposed to work (Sölvell et al., 2003;
Laur et al., 2012). It might be collaboratively developed, and not imposed to be owned by all the cluster’s stakeholders (International Trade Department - ITD, 2009; Ffowcs-Williams, 2012).

(2) A shared measurement system: While a cluster usually has a shared vision, quantified targets are not so commonly adopted (Sölvell et al., 2003; Sölvell, 2008; Gibson, 2015). On the contrary, it would be necessary to audit the network activities and to collect strategic feedbacks from internal members to continuously improve the management of the network (Ffowcs-Williams, 2012; Gutiérrez-Martínez et al., 2015) and, moreover, to legitimize a new policy or program, as cluster policies have become more and more part of the political toolbox all around the world (Sölvell, 2008). Several authors (Sölvell et al., 2003; Sölvell, 2008; International Trade Department - ITD, 2009; Ffowcs-Williams, 2012; Ketels et al., 2012; Morgulis-Yakushev and Sölvell, 2017) have tried to develop conceptual models to understand and analyze a cluster initiative and identify what is needed to take the initiative to the next level. For example, in “The Cluster Initiative Greenbook”, Sölvell et al. (2003) designed a model, named “The Cluster Initiative Performance Model”, based on three drivers: the social, political and economic setting within a nation, the objectives of the cluster initiative, and the processes by which the cluster initiative develops components, affecting the overall performance of the cluster initiative itself.

(3) Mutually reinforcing activities: After having identified a shared strategy, it is necessary to identify some common projects to offer tangible benefits to the participating actors. Task forces could be established for priority projects, identifying whom from within the network has the right profile to participate in driving the projects (Ffowcs-Williams, 2012). A specialized division of labor through which different actors identify their core competence areas and use these competences for contributing to the cluster development seems important (Lundequist and Power, 2002). However, the overdependence of cluster initiatives on one or several key members may be dangerous, causing the loss of the linkages among actors. Instead, life in a cluster initiative is dynamic, and throughout its life, the degree of involvement and roles the actors play should change (Laur, 2015).

(4) Constant communication: Dynamic clusters represent systems of rivalry and intense competition which are central to fostering innovation. Interactions, exchanges and an open and effective communication are the main enabling tools for underpinning competition and stimulating innovation (Interreg IIIC Programe, 2006; Ffowcs-Williams, 2012). There is evidence in literature (Lundequist and Power, 2002; Ffowcs-Williams, 2012) 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. This could be a long process because it takes time for formal and informal conversations and interaction to develop and increase. Some practical ways to open up communications and to build relationships within and outside the cluster initiative have been suggested. Among others, the following communication channels should be applied: a communication platform, regular meetings and events, a website and an online cluster database (Interreg IIIC Programe, 2006; Ffowcs-Williams, 2012).

(5) Dedicated “backbone” support: Many strong clusters initiatives were able to reach higher collaboration by drawing on a new class of organizations defined as intermediaries able
to implement the planned tasks and strategies (Glaser, 2013). In cluster literature, they have been named Institutions for Collaboration (IFCs: Porter and Emmons, 2003; Ketels, 2003; Waxell and Malmberg, 2007; Waxell, 2009; Gutiérrez-Martínez et al., 2015) and in several other ways such as Cluster organizations (Ketels et al., 2012; Ketels, 2015), network administrative organization (Provan and Milward, 2001; Provan et al., 2007; Provan and Kenis, 2007; Jungwirth and Ruckdäschel, 2013), industrial or industry associations (Cooke, 2002; Watkins et al., 2015), civic associations (Wolfe and Nelles, 2009), regional development agencies (Peck and McGuinness, 2001) and institutional thickening (Andriani et al., 2005). 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 (e.g. training or information collection) for the provision of public goods (Porter and Emmons, 2003; Ketels and Memedovic, 2008; Gutiérrez-Martínez et al., 2015).

Table I summarizes all most cited factors.

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<th>The elements of collective impact</th>
<th>Cluster initiatives</th>
<th>Cluster initiatives’ elements</th>
<th>Literature references</th>
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<td>“Cluster bridge chart: a method for the development of cluster initiatives and evaluating their performance”</td>
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<td>International Trade Department - ITD (2009)</td>
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<td>Mutually reinforcing activities</td>
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Given the conceptual overlapping founded in those two topics in literature and the well-known and growing interest in both cluster development and CSV, it is surprising that almost nothing is still known about the relationship between them. Thus – as said – in the present paper we aim at filling this gap understanding the role of cluster development in CSV exploring the process of launching and supporting local cluster initiatives.

**Method**

The research design of this study relies on a case study approach with an exploratory intent and with the aim to enrich and detail the conceptual model introduced above (Yin, 2013), according to which several empirical sources contribute to offer a holistic understanding of the phenomenon of interest (Eisenhardt and Graebner, 2007).

Our research began with a critical review of the literature focusing on CSV. Then, we made a tentative conceptual reconciliation between the literature on CSV with the one on clusters development, and cluster initiatives in particular, searching for complementarities and similarities. After that, a case study approach was applied to gather empirical evidence.

The paper qualifies for a very first attempt in understanding the role of the Italian cluster initiatives called SIFooD in CSV. We chose SIFooD as a case, given that its sustainability concern was a strong driver behind the cluster initiative and because of its high potential to efficiently address the social and environmental issues related to food waste. As sustainability played a leading role in the cluster initiative, it qualifies as a shared value creation project.

Data collection for the case study primarily relied on the use of secondary data (Reddy and Agrawal, 2012), thanks to the richness and great availability of information about the case. To collect data on the launch of the cluster initiative and the role of cluster development in CSV, we conducted archival research of available public and confidential material from Whirlpool itself and the cluster organization promoting the SIFooD initiative. We relied also on documentary sources, including previous studies, industry archives (of industry associations and institutions), press archives of local and industry newspapers and magazines, websites, official press releases, and public reports. All empirical sources are reported in the references list. Secondary data were collected and analyzed to convene the requirements of the research objectives of this paper.

Data analysis was conducted with a twofold aim:

1. exploring the process of enabling local cluster initiative development; and
2. understanding the role of the cluster initiative in CSV, investigating how firms promote cluster initiatives for the sake of CSV and conversely how cluster initiatives may enhance CSV of firms.

The underlying logic of data analysis was primarily theory building, which involves inducting insights from field-based case data (Glaser and Strauss, 2009).

**Empirical context**

In this section, we provide contextual information about the case of the Italian cluster initiative named SIFooD.

*The case of the Italian SIFooD cluster initiative*

SIFooD was launched in 2012 by Whirlpool within its CSV framework to promote sustainable and collaborative innovation in food waste prevention. SIFooD is the name of a newly launched cluster for technological innovation for food sustainability, and so far, it...
comprises 16 actors: large firms, SMEs, research centers and universities involved at large in the food production, processing and conservation (SIFooD, 2013a).

The cluster initiative started when Lombardy Region launched a call for application inviting research and development organizations to establish partnerships with companies to participate to the initiatives jointly promoted by the Lombardy Region and the Italian Ministry of Education, University and Research (MIUR) aimed at giving support to industrial research projects, experimental development and training activities for the strengthening and/or the creation of high-tech clusters (Giovannelli, 2013). Partnership leader was Whirlpool R&D, a company established on purpose by Whirlpool in 2012 to carry out research and development projects (basic research, industrial research, experimental development), as well as design, study and analysis activities in the field of household appliances (SIFooD, 2013d).

Right after the creation of an initial partnership among actors, during the same year, the Association SIFooD was created to support the launch and development of the cluster initiative (SIFooD, 2013c).

SIFooD focuses on the sustainability of the food supply chain, in particular on the household consumption stage. It aims at continuously supporting the creation and management of technological innovation projects in a collaborative way, generating internal and external networking opportunities (SIFooD, 2013b).

Early studies by SIFooD actors, based on FAO reports of 2011 and 2013 (Food and Agriculture Organization, 2011, 2013a, 2013b), suggested that each year one-third of the all food produced for human consumption in the world was lost or wasted, and that the economic cost, based on 2009 producer prices, of this waste in 2007 totaled about $750bn (SIFooD, 2013d). Regarding the amounts of food waste along the food supply chain, upstream waste volumes, including production, post-harvest handling and storage, represent 54 per cent of the total waste, while downstream waste volumes, including processing, distribution and consumption, is 46 per cent (SIFooD, 2013d; Giovannelli, 2013; The European House Ambrosetti, 2013). Moreover, an analysis of the food supply chain phases by region reveals that waste occurring downstream, at the consumption level, is more frequent in high-income regions, representing 31-39 per cent of the total waste, than in low-income regions where it accounts for 4-16 per cent. In Italy, food waste totaled 1.19 million tons in 2012 and was worth €8.7bn, just over €7 per family every week. It is estimated that food waste is 3 per cent of the national energy consumption. However, the overcoming of food waste is more and more perceived as a societal urgent need. The Italian public opinion is increasingly sensitive to the issue of food waste, which is considered a major problem by 88 per cent of the population (SIFooD, 2013d; Giovannelli, 2013; The European House Ambrosetti, 2013).

For these reasons, SIFooD decided to focus its attention on the consumer, and the need for a balanced and complete food style. While in other steps of the food supply chain waste could be potentially recoverable, at the household consumption level prevention is the only action manageable and controllable, after a careful and thorough analysis of the causes and kinds of foods most affected by the phenomenon (SIFooD, 2013c).

Findings
In the following section, the results from the case study analysis are presented. To understand how the cluster initiative addressed the creation of shared value, we analyzed the potential strategy that SIFooD intended to implement to address the societal issues related to food waste, applying the framework developed by Porter and Kramer (2011).
Then, we explored the collective-impact approach of SIFooD applying the reconciled framework introduced above (Table I).

**The role of Science and Innovation food District in creating shared value**

The CSV concept is defined as policies and operating practices that create business values by tackling social issues or converting social issues into tangible business opportunities by using three means:

1. reconceiving products and markets;
2. redefining productivity in the value chain; and

Hereafter, the potential strategy that SIFooD intended to implement to address the societal issues related to food waste is analyzed applying the framework developed by Porter and Kramer (2011). The case analysis showed how SIFooD strategy qualifies as a shared value strategy and more precisely as an example of enabling local cluster development. However, thanks to all its operating practices and the impacts generated at the local community level, SIFooD also managed to reconceive products and markets and to redesign productivity in the value chain.

**Reconceiving products and markets.** To address food waste prevention, SIFooD focused its attention on the consumer, and the need for a balanced and complete food style. Over-purchase of foodstuffs and expiration dates were indicated among the main causes behind downstream waste. Cluster members, therefore, identified two levers on which to act: technological innovations and consumer habits. With technology, it could be possible to extend food’s life, trace it and improve the packaging, but consumer awareness turned out to be essential, and thus the need to analyze consumer’s habits. For all these reasons, SIFooD worked toward two scientific guidelines:

1. to rationalize the purchasing process through the development of Big Data; and
2. to develop technologies for better managing the label’s expiration dates and the qualitative deterioration of food.

The first aimed at the development of ICT technologies to process data arising from distribution and sale stages, data on consumer habits, available from distributors, and data on processing and storage at household level (and so, the development of new technologies and services). In particular, the Scientific Committee of SIFooD wanted to explore the possibility of launching a pilot project in Lombardy intended to guide the purchasing process through the development of a joint platform involving distributors and users of household appliances. For this activity, fruit and vegetable were the food categories to focus on because believed to be the most considerable sources of food wastage at the domestic consumption level.

The second guideline aimed at developing traceability and connectivity technologies, together with active and intelligent packaging allowing a real time tracking of expiration dates, functional packaging to improve food preservation, advanced systems of food preservation for the extension of products shelf life, innovative food preparation and cooking technologies allowing to a better management of both frozen and fresh foods or ready meals and advanced sensor systems to provide feedback on the status of food storage in the refrigerator.

**Redefining productivity in the value chain.** SIFooD aimed at changing practices in the value chain to drive productivity through nutritional improvement, food safety, food waste
and overall reduction in energy consumption. The cluster initiative intention was to create new business opportunities by tackling these social and environmental issues. The positive medium and long-term impact would be measured in terms of increased capacity of the R&D system to produce marketable results, also empowered by public-private partnerships, and of high-tech startups flourish that would have enriched the local productive system. The potential strategy developed by SIFooD would have also foster the local supply of highly skilled employees, even in R&D systems, increasing local attractiveness and generating positive effects on local employment. Moreover, it would have resulted in the development and consolidation of excellent private-public high-tech centers.

Enabling local cluster development. Whirlpool R&D was established in 2012 by Whirlpool, which is global leader in the production and commercialization of large and small household appliances. With about 100,000 employees, Whirlpool has a commercial presence in more than 170 countries. In Europe, Whirlpool Europe has about 12,000 employees and production facilities in four countries. Whirlpool identified gaps and deficiencies related to food waste social issue and decided to focus on the local weaknesses representing the greatest constraints, but at the same time, the greatest opportunities to the supply chain productivity growth and development. Whirlpool also recognized the absolute need for collaboration and communication among all the actors of the food supply chain (private or public and business or non-business players) because of the highly dependence on each other and the influence that their activities could exert on the consumption behavior of the final domestic consumer. Thanks to its international presence and innovative nature, Whirlpool R&D promoted and invested considerable resources in the cluster initiative that aggregated 16 actors, including large firms, SMEs, institutions, research centers and universities, involved at large in the food production, processing and conservation. First of all, SIFooD aimed at facilitating internal and external networking opportunities and to explore the project and the financial emerging opportunities at the local, national and international levels.

They have identified four key working areas for enabling the cluster initiative development:

1. **R&D projects**: The design and the development of R&D projects represented the core of the cluster value proposition. SIFooD aimed at facilitating complementary businesses matchmaking and collaboration to support the development of cutting-edge solutions.

2. **Education, training and knowledge sharing**: SIFooD considered education, training and knowledge sharing activities essential to both the development of the cluster initiative and to increase members' knowledge capital, with a special focus on generating and managing innovation and technology skills related to food and food wasting.

3. **External networking**: SIFooD aimed at supporting its members also in the development and maintenance of active and positive relationships with the technical-scientific community and with external institutional partners.

4. **External positioning and lobbying activities**: The external positioning and lobbying activities aimed at supporting the Association and its members to find an optimal position among the relevant institutions partners, locally, nationally and internationally. The goal was to ensure the identification and exploitation of project opportunities, and the achievement of some positive outcomes in terms of broader issues (taxation, labor, etc.) to all its members. At an early stage of the cluster initiative activity, Whirlpool R&D strongly supported the achievement of
this goal by making available its internal structure as an asset, by opening its Italian and European networks already working on key issues for SIFooD and by providing its expertise to all the cluster’s members.

Moreover, SIFooD took a leading approach to financially support new startups, launching a call for ideas. This aimed at enhancing the establishment of four startups with innovative projects for reducing food and packaging waste, for improving the sustainability of the food products life cycle and the entire supply chain efficiency, and for projects related to food safety issue. As a result, new jobs, businesses and opportunities turned out.

The collective-impact approach of Science and Innovation food District
SIFooD participants recognized that the different actors in the entire supply chain are highly dependent on each other and their actions and practices can influence the actions of final consumers. Therefore, they adopted a collective-impact approach involving the key actors of the local ecosystem for the sake of economic value and strategic benefits for all of them (Porter and Kramer, 2011). Hereafter, the five elements of the collective impact identified by Kramer and Pfitzer (2016) and putted in place by SIFooD are described and analyzed. According to the Kramer and Pfitzer (2016), the five elements are a common agenda, a shared measurement system, mutually reinforcing activities, constant communication and a dedicated “backbone” support.

A common agenda. In 2012, SIFooD decided to adopt the legal form of technical-scientific association, with all the expected governance instruments, to ensure a correct representation to the interested parties as a whole. They identified, and reported in the Statute and in the Strategic Plan, a common shared vision about objectives and related activities, the conditions and the modalities of becoming members and of exercising the right of withdrawal, and all the financing arrangements of the Association. They adopted a lean governance model, composed by the General Assembly, the Scientific Committee, the Operative Committee and the Secretariat, with different roles and objectives. The government bodies provided the guidelines for all of the Association’s activities, also through constant internal communication and relationships. Starting from the scouting and identification of project activities among the members, the government bodies ensured that all actions were collaboratively developed, shared, and consistent with the mission and the objectives of the Association. Considering all the analysis about global and national food wastage and the Association goals, SIFooD identified two main R&D guidelines, with a view to include the largest number of members. Moreover, SIFooD set three more annual agendas: the Scientific and Strategic Agenda designed by the Scientific Committee, the Strategic Agenda designed by the Operative Committee, and the External Positioning Plan designed by SIFooD team (composed by professionals provided by Whirlpool R&D as contact persons for lobbying):

All the elements described above and adopted by SIFooD as part of the collective-approach of the cluster initiative, match what cluster literature also considers a priority from the very beginning of the network development and it is defined “shared vision” or “preferred future”.

A shared measurement system. The review processes occurred at two different levels: one related to the overall activities realized by the Association during the year and conducted during the annual General Assembly, and the other related to specific projects carried out by all the concerned members. These measurement systems helped SIFooD to evaluate what was or was not working among the activities conducted and, in case, set revised stages for ongoing course adjustments:
This area of intervention described above and adopted by SIFooD as part of the collective-approach of the cluster initiative, matches the several conceptual model developed by cluster literature and summarized in Table 1 to audit the network activities and to collect strategic feedback from internal members. This would help to continuously improve the management of the network.

**Mutually reinforcing activities.** One of the first activities that the cluster initiative realized was to map all the competences owned by its members together with a gap analysis. Thanks to this, SIFooD was able to identify coherent scientific guidelines, and the key actors to be involved, that could steer the R&D projects of the cluster initiative. Furthermore, the scientific guidelines were designed to be updated in case of acquisition of new members with new competences. R&D projects could be developed according to three different formats either:

1. SIFooD autonomously detects an external opportunity and acts as “process owner”, coordinating the project activities and identifying the key actors.
2. SIFooD detects a potential opportunity and acts as “process promoter”, making it available to its members who organize themselves independently.
3. SIFooD acts as structured “process supporter” of members’ initiatives.

The Operative Committee, in collaboration with the Scientific Committee, decided on the role that SIFooD would have played identifying the mode and the intensity of the Association participation according to the three guidelines identified (owner, promoter and supporter). In case of intervention as “process owner”, SIFooD would have designed the project and identify the key actors with the proper specific competences:

The activities described above and adopted by SIFooD as part of the collective-approach of the cluster initiative match what cluster literature also considers as a specialized division of labor particularly noteworthy for the successful performance of a cluster initiative.

**Constant communication.** SIFooD decided to focus on the sustainability of the food supply chain, particularly on the domestic consumption stage. It aims at continuously supporting the creation and management of technological innovation projects in a collaborative way, either as Association or as specific working groups of members. They recognized as absolutely necessary a constant communication among all the actors of the food supply chain because of the highly dependence on each other and the influence that their activities could exert on the consumption behavior of the final domestic consumer. Moreover, only a structured communication system, could build trust and foster knowledge sharing and learning, fundamental for the development of technological innovation projects. At the operational level, the General Assembly, composed by all SIFooD members, met at least once per year and was the opportunity for them to participate in the definition of the Scientific and Strategic Agenda. Members could contribute by filling a structured questionnaire in which they could communicate their ideas and priorities about the guidelines for the following year. During the General Assembly, all the members were also informed about the main projects and activities developed in the previous year presented with ad hoc case studies. The Scientific Committee met regularly three times per year and during the meeting the Operative Committee and the President of the cluster were also involved. Knowledge sharing and learning occurred thanks to the organization of specific technical boards on macro-themes, useful to the identification of project opportunities of potential interest and feasibility. The R&D projects were also shared and communicated to the General Assembly which would be asked to intervene as a co-designer, if SIFooD was
the “process owner” of the project, or would be only informed if SIFooD was the “process supporter” or “process promoter”:

This area of intervention described above and adopted by SIFooD as part of the collective-approach of the cluster initiative matches what cluster literature also considers key for the development of trust and collaboration, and to transform information into useful knowledge, affecting and boosting cluster productivity and competitiveness.

_Dedicated “backbone” structure._ In the initial stage of the cluster initiative, Whirlpool R&D provided SIFooD with the operative and coordination support. After an initial period of collaboration and studies, SIFooD decided to establish its own operative office in ComoNExT Science and Technology Park. The cluster chose that location since it was a collaborative hub animated by specialized technical and recognized skills in the business incubation, acceleration and consultancy field in which there were over a hundred companies and startups. SIFooD decided to establish its own office to be the contact point of the cluster and to be the intermediary connecting the parts of the business environment and supporting efficient collective actions. In addition, it aimed at being independent, even if it remained partially funded by Whirlpool R&D:

This area of intervention described above and adopted by SIFooD as part of the collective-approach of the cluster initiative matches the new class of organizations identified by the cluster’s literature as fundamental to foster collaboration.

**Conclusion and discussion**

This study is positioned in one of the hotspots of research in strategic management, where a social turn in strategic management studies (Porter and Kramer, 2011; Alberti and Varon Garrido, 2017) and cluster theory (Delgado et al., 2014; Porter, 2008) meet.

In the present paper, we aimed at going back to the roots of the so-called shared value paradigm where “enabling cluster development” was suggested by Porter and Kramer (2011) as a way through which clusters may enlarge the opportunities offered by CSV strategies, boosting collaborative innovation and productivity. Despite such explicit reference to clusters in CSV studies, research so far has not offered either conceptual frameworks and approaches to investigate the phenomenon, or robust empirical evidence (Porter and Kramer, 2011; Porter et al., 2011; Lee et al., 2014; Berti and Mulligan, 2016; Serra et al., 2016). Very recently, Kramer and Pfützer (2016) have moved a step forward along this line, introducing the concept of “shared value’s ecosystem” that resembles the enabling cluster development for CSV.

In this paper, we first reconciled the literature on CSV with the one on cluster development – operationalized through the concept of cluster initiatives – searching for complementarities and similarities. We offered a point-to-point comparison of the two perspectives and suggested overlapping and possible integrations, thus arriving at an integrative conceptual framework to understand how clusters may have a role in CSV.

Second, with the aim of understanding the role of cluster development in CSV, and in particular of analyzing how a CSV strategy can be defined and developed when adopted within a cluster initiative, we explored how the CSV strategy of SIFooD has been implemented through empirical evidence. The case analysis gave us some useful insights into the implementation of a CSV strategy in a cluster initiative.

To clarify this point, we started by presenting SIFooD CSV strategy and clarifying how it qualified as an example of enabling local cluster development and how, thanks to all its operating practices and the impacts generated at the local community level, also managed to reconceive products and markets and to redesign productivity in the value chain.
In line with the majority of the empirical evidences presented in prior literature on CSV (Porter and Kramer, 2011; Bockstette and Stamp, 2011; Pfizer et al., 2013), the case of SIFooD showed how MNCs provide the initial and pivotal input to support and facilitate the emergence of cluster initiatives. In fact, Whirlpool decided to launch the SIFooD initiative within its CSV framework and, in the initial stage of the SIFooD life-cycle, the company guaranteed essential resources for cluster development. Whirlpool provided both financial resources, to support the budget of SIFooD, and human resources, to compose the different teams and Committees and making SIFooD able to leverage on their expertise, competences and networks (SIFooD, 2013b). Therefore, at the beginning the CSV strategy resulted to be basically conceived by a MNC, setting out the framework and acting as the main founder and organizer of the shared value initiative.

Then, we showed how the cluster initiative, to arrange its network development process, implemented all the elements that prior literature on cluster initiatives consider essential to the launch and support of a successful cluster initiative and, on the other hand, how SIFooD was able to adopt a collective-impact approach implementing the five elements needed in its ecosystem to create shared value.

By clarifying these processes, we reversed the typical view in literature, offering a cluster view on CSV and complementing extant literature on CSV, MNCs and clusters that typically is a corporate view, where shared-value strategies at the corporate level may have positive drawbacks on a whole ecosystem of actors, and thus on a cluster. Looking at CSV strategy from a cluster’s perspective, CSV can be defined not just as a management strategy characterized by operational procedures and policies run by one or several corporations, instead it resembles what in literature is called a “shared meta-strategy” (Huxham and Macdonald, 1992; Huxham, 1993). In the case of SIFooD, all the actors involved in the cluster initiative shared the mission (which is a meta-mission) of promoting sustainable and collaborative innovation in food waste prevention to be carried out through the objectives (which are meta-objectives) identified and reported in the Statute and in the Strategic Plan. Therefore, the CSV strategy of SIFooD is a shared meta-strategy developed with a meta-mission and meta-objectives. SIFooD aims at continuously supporting the creation and management of technological innovation projects in a collaborative way, generating internal and external networking opportunities and thus creating new business opportunities for the local community. This CSV strategy and the collective impact approach adopted would help Whirlpool contribute to the creation of collaborative advantage. In fact, the strategy would help its business grow by tackling the social and environmental issues, but will also support the whole cluster initiative, creating huge economic, social and environmental positive effects in the cluster’s ecosystem for all its members (Porter and Kramer, 2011).

In prior literature, the few examples and anecdotal evidence about companies strengthening the local clusters (Porter and Kramer, 2011; Bockstette and Stamp, 2011; Pfizer et al., 2013), mainly adopted a corporate-centric focus, describing how companies work to improve their framework conditions investing their own resources and creating partnerships with local actors. We made a step forward, showing how the CSV strategy, after the initial input and support from a cluster member, might be even independent from its initiator. It results to be prompt no more by just the individual project of Whirlpool and its own related corporate mission and objectives. Instead, the cluster initiative generates shared value by itself, thus enhancing CSV of its cluster members, thanks to the support of the cluster organization and through the orchestration of those elements derived from the CSV ecosystem literature.
The potential positive outputs of a strong cluster are well documented in literature (Humphrey and Schmitz, 2002; Nadvi, 1999; Schmitz and Nadvi, 1999; Puppim de Oliveira and de Oliveira Cerqueira Fortes, 2014; Ketelhöhn et al., 2015). Clusters enhance the flow of knowledge (Alberti and Pizzurno, 2015), stimulating shared ideas and innovation in both products and business processes, help local firms to access important inputs, such as trained workers, service providers, transportation firms and specialized suppliers, reduce transaction costs of firms and tend to facilitate collective action through local industry associations or public–private partnerships. Our paper gives some useful insights and enriches the existing literature on clusters offering empirical evidence on how a cluster initiative, promoted by a MNC, may also enhance the CSV of firms and ultimately how clusters create shared value.

The present paper has some limitations. First of all, the empirical analysis focuses only on one cluster initiative and cross/comparative analyses with other case studies may illuminate our findings better. Second, we relied on a very recent cluster initiative in a particular field (food waste prevention) and in one specific institutional context (Italy); thus, data may suffer from temporal, industrial and geographical biases.

Future studies may analyze more deeply how the CSV strategy, or meta-strategy, could be developed when implemented in a cluster initiative. Evidence from a cross case analysis, using match-pairs approaches to check for similarities and differences in several institutional, geographical and industrial contexts may be helpful to clarify this point. Further, a longitudinal view on a long-time evolution of CSV inspired cluster may offer insights on how the ecosystem evolves and transforms in time, suggesting new elements in the conceptual framework we suggested here.

In conclusion, our findings have illuminated the relations between MNCs, clusters and CSV and open the way for further conceptualizations and empirical investigations.

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