


# Chapter 17

## Microbusiness Collaboration as a Strategy to Increase Resilience in Natural Disasters: The Case of Coastal El Niño in Peru 2017

**Jorge Vargas-Florez**  
*Pontificia Universidad Católica, Peru*

**Eliseo Vilalta-Perdomo**  
*University of Lincoln, UK*

**Martin Hingley**  
 <https://orcid.org/0000-0003-0281-959X>  
*University of Lincoln, UK*

**Rosario Michel-Villarreal**  
*University of Lincoln, UK*

### ABSTRACT

*Microbusiness, MB, importance for the global economy is uncontested; they have huge participation of the world's production. In Peru, small-and medium-enterprises, SMEs, are 99% of the total of existing companies and contribute approximately 47% of the country's GDP; MBs are grouped within SMEs. They are the greatest generators of employment, although this may be informal and of poor quality. MBs confront difficulties, mainly due to their limited human and financial resources. Theories around how to deal with it have been developed mainly with big enterprises in mind, and this has little connection with what happens inside MBs. Accordingly, this chapter offers "collaboration" as a response strategy in case of a disruptive event to support MB resilience construction. This is contextualized from the experience of the Peruvian Coastal El Niño 2017 and illustrated through the actions that a MB case (a beekeeper) took to deal with it.*

DOI: 10.4018/978-1-5225-8160-4.ch017

## **BACKGROUND**

MBs are usually grouped inside the concept of Small and Medium Enterprises (SMEs). SMEs importance for world's economy is uncontested as they account for at least 70% of the world's production (Moore and Manring, 2009). They often constitute more than 90% of all enterprises inside a country (Poon and Swatman, 1999; Cull et al., 2006; Ozgulbas et al., 2006). Ates and Bititci (2011) cite a European Commission report, which asserts that SMEs perform a significant role in EU competitiveness. In the particular case of Peru, the influence of SMEs is also important, as they represent 99% of the total of existing businesses (INEI, 2014). According to Vásquez (2015), SMEs contribute to almost 50% of Peru's GDP, and are the largest generators of employment; even though, these jobs may be informal and low-paid. In the particular case of micro-businesses (MBs), these are the most common size of business organization in the World. For example, more than 90% of businesses in the European (EU28) formal economy are MBs, which employ 30% of the workforce, and contribute with more than 20% of the added value to the European GDP (Muller et al., 2014). In Peru, to be considered a MB current legislation states that it should generate annual sales below USD \$187 thousand or have less than 10 workers.

Even though MBs have positive impacts for the economy, they suffer a high-mortality rate. For instance, in Peru, it is estimated that 200 thousand companies close every year (Diario Correo, 2014). Zorrilla (2013) says that after two years of operation, 50% of the SMEs, and particularly new ventures, close. This phenomenon is not restricted to Peru; for instance, in UK only 4 in 10 survive after 5 years (ONS, 2016). There are several reasons for such a level of attrition. A survey, carried out by Avolio et al. (2011) concerning eleven Peruvian SMEs, determined that 46.3% of the tasks that can limit their growth are associated with supply chain challenges; for instance, the control of their inventories, the management of suppliers and sales, and the conducting of market research. This coincides with the wide-held view that logistics and supply chain management are key disciplines for achieving the success and competitive performance of firms (Kherbacha and Mocan, 2016). Furthermore, companies are no longer just competing between each other; with the supply chains where they participate are the new arena for competition (Holland, 1995; Christopher, 2005).

Negative effects can be found in the intersection between logistics and supply chain management and disasters, man-made or of natural origin. Concerning the latter, climate change has been associated as a cause of natural disasters. Lately, these have been of greater magnitude and frequency (Benedon and Stephenson, 2004; Thibault and Brown, 2008). The effects of natural disasters on supply chains can provoke negative consequences in their performance; for instance, the volcanic eruption of Eyjafjallajökull in Iceland (April 2010) that stopped Europe-America commercial flights, or the Japanese tsunami (June 2011) that impacted negatively Toyota's international supply operations. There is a multitude of studies concerning the risks associated to natural disasters, and their impact on the supply chain (Chopra and Sodhi, 2004; Christopher and Lee, 2004; Helfferich and Cook, 2002; Martha and Vratimos, 2002; Semchi-Levi et al., 2002; Sheffi, 2005). These works highlight the lack of organizations' preparation to deal with disturbances, due to vulnerabilities present in their organizational design and architecture. Several categories of supply chain risks have also been discussed, Christopher and Peck (2004) consider: (i) internal risks to the firm (processes and controls), (ii) external to the firm but internal to the supply chain network (demand and supply), and (iii) external to the network (environmental issues). In addition, Kleindorfer and Saad (2005) state there are two kinds of risk; those arising from the problems of coordinating supply and demand, and those arising from disruptions to normal activities. Further, Grossi and Kunreuther (2005) indicate how uncertainty affects stakeholders' risk in the modelling process on

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:  
[www.igi-global.com/chapter/microbusiness-collaboration-as-a-strategy-to-increase-resilience-in-natural-disasters/231980](http://www.igi-global.com/chapter/microbusiness-collaboration-as-a-strategy-to-increase-resilience-in-natural-disasters/231980)

## Related Content

---

### Circular Economy and Closed-Loop Supply Chains in Industry 4.0: Importance to Achieve Sustainable Development

Jorge Lara-Guillén, M Dolores Méndez-Aparicio and Ana Isabel Jiménez-Zarco (2024). *Digital Transformation for Improved Industry and Supply Chain Performance* (pp. 299-333).

[www.irma-international.org/chapter/circular-economy-and-closed-loop-supply-chains-in-industry-40/346176](http://www.irma-international.org/chapter/circular-economy-and-closed-loop-supply-chains-in-industry-40/346176)

### Improving Performance and Customer Satisfaction via the Use of Information Technologies in Public Transportation and Logistics Systems

Dicle Yurdakul Sahin and Deniz Tursel Eliiyi (2013). *Supply Chain Management: Concepts, Methodologies, Tools, and Applications* (pp. 1019-1029).

[www.irma-international.org/chapter/improving-performance-customer-satisfaction-via/73383](http://www.irma-international.org/chapter/improving-performance-customer-satisfaction-via/73383)

### Assessing the Integration of Blockchain and Supply Chain Management: The Case of China

Mohamad Zreik (2024). *Achieving Secure and Transparent Supply Chains With Blockchain Technology* (pp. 38-56).

[www.irma-international.org/chapter/assessing-the-integration-of-blockchain-and-supply-chain-management/337345](http://www.irma-international.org/chapter/assessing-the-integration-of-blockchain-and-supply-chain-management/337345)

### A Service-oriented Methodology for Supporting Business Process Architecture Layers in Supply Chain Management

Mohsen Mohammadi and Muriati Mukhtar (2017). *International Journal of Information Systems and Supply Chain Management* (pp. 18-43).

[www.irma-international.org/article/a-service-oriented-methodology-for-supporting-business-process-architecture-layers-in-supply-chain-management/188652](http://www.irma-international.org/article/a-service-oriented-methodology-for-supporting-business-process-architecture-layers-in-supply-chain-management/188652)

### Sourcing Decision in a Multi-Period Model under Demand and Supply Uncertainty

Shantanu Shankar Bagchi and Sourabh Bhattacharya (2014). *International Journal of Information Systems and Supply Chain Management* (pp. 50-68).

[www.irma-international.org/article/sourcing-decision-in-a-multi-period-model-under-demand-and-supply-uncertainty/120161](http://www.irma-international.org/article/sourcing-decision-in-a-multi-period-model-under-demand-and-supply-uncertainty/120161)