A Proposed Framework for Rural Resilience – How can peripheral village communities in Europe shape change?

Alistair Adam-Hernández and Ulrich Harteisen

University of Applied Sciences and Arts, Göttingen, Germany

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Abstract: Rural communities and villages across Europe currently face great challenges imposed by the social, economic and ecological transformations of the Anthropocene. Despite this, some of them successfully adapt to processes of change and develop positively, even though they are situated in regions where demographic change or the structural transformations in the agricultural sector promise an uncertain future for rural population. In search of plausible explanatory approaches, practitioners and academics fall back on the fuzzy concept of resilience. Can the concept of rural resilience explain this surprising adaptive capacity? What attributes does a resilient rural community or village possess? This article presents a conceptualisation of rural and village resilience inspired by three long-standing disciplines in this area of research: psychology, social ecology and community development. The conceptual framework developed will then be tested by means of a mixed-methods approach, combining questionnaires, interviews and participative observation in three potentially resilient villages in the following European peripheral rural areas: Oberndorf (Oste) in the Federal Republic of Germany, Wooler in the United Kingdom and Albarracín in Spain.

Keywords: Resilience, rural communities, rural development, systems approach, peripheral rural areas.

Una Propuesta de Marco para la Resiliencia Rural —
¿Cómo moldear los procesos de cambio desde los pueblos periféricos en Europa?

Resumen: Las comunidades rurales y los pueblos de Europa se encuentran hoy en día frente a grandes desafíos impuestos por las transformaciones sociales, ecológicas y económicas del antropoceno. Sin embargo, algunos pueblos son capaces de adaptarse con éxito a los procesos de cambio y desarrollarse de forma positiva, a pesar de estar situados en regiones donde el cambio demográfico o las transformaciones estructurales del sector agrícola auguran un futuro incierto para la población rural. En búsqueda de enfoques explicativos plausibles, tanto en el ámbito técnico de la praxis como el académico se recurre al ambiguo concepto de la resiliencia. ¿Puede el concepto de la resiliencia rural explicar esta asombrosa capacidad adaptativa? ¿Qué atributos posee una comunidad rural o un pueblo resiliente? Este artículo presenta una conceptualización de la resiliencia rural y de los pueblos inspirada en tres disciplinas científicas veteranas en esta área de estudio: la psicología, la ecología social y el desarrollo comunitario. El marco conceptual desarrollado será puesto a prueba por medio de una metodología mixta (mixed methods) combinando cuestionarios, entrevistas y observación participativa en tres pueblos potencialmente resilientes de las siguientes zonas rurales periféricas europeas: Oberndorf (Oste) en la República Federal Alemana, Wooler en el Reino Unido y Albarracín en España.

Palabras clave: Resiliencia, comunidades rurales, desarrollo rural, enfoque sistémico, zonas rurales periféricas.

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Alistair Adam-Hernández. ORCID 0000-0002-6513-4697. E-mail: alistair.hernandez1@hawk.de

Introduction

Since the late 1990s the use of the term resilience has undergone an exponential increase. In the meantime it has risen to become a key element of scientific and popular scientific publications (Vogt, 2015; Bürkner, 2010).

In the context of declining populations, economic downturn and ecological imbalance, village communities in so-called "shrinking rural areas", particularly in Western Europe, are perceived mainly as losers (Schneider, 2015). The contentious concept of resilience may possibly deliver empowering answers for dealing successfully with these threatening processes of change in the countryside (Christopherson, Michie & Tyler, 2010; Cheshire, Esparcia & Shucksmith, 2015; Wink, 2016). However, definitions, characteristics and a suitable specific policy for promoting rural resilience are subjects of a lively scientific debate. Furthermore, for practitioners the concept is still abstract and difficult to integrate into the everyday practice of development work (Steiner & Markantoni, 2013).

This article aims to shed light on the fuzzy concept of resilience in rural development through a multidisciplinary lens and by means of proposing and discussing a conceptual framework developed by the authors which also provides insights into the characteristics of a potentially more resilient village. For this purpose, the current state of interdisciplinary research into resilience will be presented

considering the disciplines of psychology, social ecology and community development. Subsequently, an outline of the situation of European rural areas and villages, as well as the scope and added value of the concept of resilience in this context is described. At the heart of the article, a conceptual framework for village resilience based on the interdisciplinary findings is presented. Thereafter, this conceptual framework is dissected into its empirical elements and then discussed. Finally, in the last section, limitations and challenges of the current and upcoming research are examined against the backdrop of planned empirical testing in villages from Germany, Spain and the United Kingdom.

State of Research: Interdisciplinary Approach to the Concept of Resilience

New answers on how to handle multiple crises and challenges

Various phenomena on a global scale point towards a deep systemic crisis of humankind: the financial and economic crisis, ongoing since 2008, the increasing frequency of extreme weather events, the rapid loss of biodiversity and soil accompanying climate change, the intensification of social inequality and the crisis of legitimacy affecting democracy are among the many symptoms of this crisis. Whether they be irregular shocks or processes of creeping decay: the temporal convergence of crisis events confronts the human race with what are probably the most massive economic, environmental and social challenges in its history (Etxagibel Azkarraga, Sloan, Belloy & Loyola, 2012).

Increased awareness of these crises and challenges in all walks of life, in rural areas too, has led in recent years to an intensive search for more appropriate answers. Against this background, concepts such as "vulnerability" and "resilience" are experiencing a renaissance and are being used to better analyse and influence change processes in a very wide range of disciplines. Resilience has been quoted more and more since the 1950s (Vogt, 2015) and research thereon has seen a veritable explosion in the last 15 years or so, with huge growth in publications, citations and projects (Folke, 2016). However, due to its high degree of complexity and the need for explanation, the term is classified as hazy (Gruber, 2011; Wink, 2016).

The concept of resilience comes from cybernetics. Cybernetics, according to its founding father Norbert Wiener, is the "science of control and regulation of machines, living organisms and social organisations" and has been described as "the art of controlling". The Latin origin of the term (*resilire:* "bounce back") describes the ability of a system to tolerate disturbance (Lukesch, Payer & Winkler-Rieder, 2010) and only reveals one of its possible interpretations.

Consequently, resilience, understood as meaning robustness or persistence, puts the focus on maintaining the status quo and stability in the system examined. In addition, the initial effects of disturbance can be compensated for in the system by a kind of shock absorption and the system as a whole will "spring back" to its original state. This rather static understanding of resilience was taken from the physical-technical notion in engineering and physics and introduced into psychology in the 1950s by Jack Block for describing a positive trait of personalities in dealing with a variety of challenges or stressful situations (Wunsch, 2013). As expounded below in this article, social ecology - largely through the work of the Canadian ecologist Crawford S. Holling - has further developed the concept of resilience in an interdisciplinary and systematic manner (Lukesch, 2016). Based on these developments, there is now a more dynamic understanding of the resilience concept that has placed the adaptability of systems or even their radical ability to transform into the focus of academic discussion.

For the conceptualisation of resilience in rural and more specifically in village development, a look at two disciplines seems necessary (Sánchez Zamora, Gallardo Cobos & Ceña Delgado, 2016) which in the course of the 20th century have dealt with it intensively: psychology and social ecology. Furthermore, it is worthwhile reviewing the realm of community development, which has produced a highly applied conceptualisation of resilient urban and rural communities.

Psychologically resistant people - resilience from the perspective of psychology

In the discourse about resilience in the context of psychology, the focus is on people's ability to cope successfully with stressful and potentially traumatic events (Bengel & Lyssenko, 2012). The American psychologist Emmy Werner is often regarded a pioneer in this field. She observed the healthy development of children despite adverse conditions on the greenest Hawaiian island based on the longitudinal study "The

Children of Kauai", from the 1950s until the 1990s (Fooken, 2016). Another pioneer of resilience research in the health sciences was Aaron Antonovsky and his concept of salutogenesis, published in 1979 wherein he addressed the question "Why do people stay healthy?" (Bengel, Strittmatter & Willmann, 1998). The conceptual framework of resilience was only found increasingly in therapeutic literature and practice from the 1990s onwards (Borst *et al.*, 2016). Today it is an established, fashionable (Wink, 2016) and also controversial (Webber, 2017) area of research and practice.

How psychological resistance can be achieved is currently being researched at the neurological, psychological and molecular-biological level. At the same time, the understanding of resilient individuals as possessing a stable and innate personality trait is being firmly called into question. Resilience is thus to be understood as the interaction of various influencing factors which are subject to a dynamic, variable, situation-specific and multidimensional development (Bengel & Lyssenko, 2012). Which influencing factors (also called protective or resilience factors), and in which interactive combination these make resistance to adverse conditions possible, continue to be discussed intensively in psychology (Bengel & Lyssenko, 2012; Mourlane, 2017; Webber, 2017).

Persistence in the face of constant change - resilience from the social ecology perspective

Unlike psychology, social ecology not only focuses on humans but on the entire ecosystem and its ability to survive in the face of adverse circumstances. From this disciplinary perspective, the disturbances analysed or challenges overcome by resilience also differ. From a socio-ecological perspective, adversities within ecosystems are not long-lasting and constant, but abrupt, irreversible and radical (Sharte & Thoma, 2016). The article "Resilience and Stability of Ecological Systems" by C.S. Holling published in 1973 is considered as the start of the discussion on resilience in social ecology. In it, the author describes how ecosystems are able to absorb changes and shocks and to continue in their original state.

Holling and other colleagues came to the conclusion that the hitherto prevailing assumption that ecosystems obey known physical laws and show singular, stable, controllable states of equilibrium had to be refuted (Folke, 2006). Rather, multiple equilibria or basins of attraction had to be assumed (Blum, Endreß, Kaufman & Rampp, 2016). Consequently, the concept of ecological resilience developed which

differs significantly from the notion of engineering resilience. The researchers' interest shifted from the behaviour of the given system after disturbances had occurred until it returned to its original state towards the investigation of all framework conditions that made it possible for the system to adapt to new conditions (Folke, 2016).

This new perspective accompanied a turnaround in complexity theory that rejected a reductionist and deterministic view of phenomena. The conceptual underpinning of this new perspective was related to the following observation: the dynamics of complex adaptive systems are characterised by high uncertainty and unpredictability (Allen, Pope & Fontaine, 2011) due to non-linear interactions among the system elements, as well as by emergent events.

The definition of socio-ecological systems emphasised the conceptualisation of "humans-in-nature" and the indissoluble connection between society and the ecosystem (Gallopín, 2006). The major contributions of social ecology (Holling, 1973; Holling *et al*., 2001; Kotschy, Biggs, Daw, Folke & West, 2015; Walker & Salt, 2006) over the past 40 years in ecosystem research have helped to understand resilience as an internal control of systems (Lukesch, 2016) and furthermore to consider the changes that affect systems from a complexity perspective.

Resilient and adaptable communities - resilience in the context of community development

"Community Development" is defined by the United Nations as "a process in which members of a community come together to solve common problems through collective action" (United Nations, 2018). It is defined by the International Association for Community Development (IACD) as "a hands-on profession and academic discipline that promotes participative democracy, sustainable development, human rights, economic opportunity, equality and social justice through the organisation, education and empowerment of people in rural or urban spaces regardless of whether they be local, identity-based or interest groups" (2017). When we speak of community in this context, we mean a social organisation with a broader meaning than the sum of the individuals in a given space. Thus, the members of the community maintain characteristic social and economic relationships. They share ideas, values, customs, interests, institutions and services with varying degrees of conformity and conflict (Uriarte, 2013).

From the perspective of community development, resilient communities are able to recover from disturbing events and, moreover, adapt to them (Cinderby, Haq,

Cambridge & Lock, 2014). Resilience is defined as "the existence, development and use of community resources by community members" (Magis, 2010, p. 402). The community can thus thrive in an environment characterised by change, uncertainty, unpredictability and surprises. Other authors consider resilience in the community rather as a bundle of common skills that are used for the positive development of the community (Norris, Stevens, Pfefferbaum, Wyche & Pfefferbaum, 2008).

Experts agree that resilient communities do not emerge from individual, isolated factors but that there is a high level of interrelatedness of diverse resilience-promoting conditions and attributes (Steiner & Atterton, 2015). The concrete characteristics and specific conditions that favour resilient local communities are currently being sought by political decision-makers, funders and practitioners (Steiner & Markantoni, 2013).

Systems and complexity thinking are the core of resilience thinking

As discussed so far in this paper, the conceptual framework of resilience has a broad range of disciplinary approaches. Despite their seemingly occasionally contradictory nuances, all interpretations of the resilience concept share a common body of thought. Resilience is understood as a process of constant development in the face of ongoing changes and not as a result or a stable state (Sánchez Zamora *et al.*, 2016; Steiner & Markantoni, 2013; Uriarte, 2013). The shortest, most understandable definition of resilience covering all disciplines is: the capacity of a system "to absorb shocks and undergo change while still maintaining its essential functions, structures, identity and feedbacks" (Schneider, 2016a; Walker & Salt, 2006).

At the heart of concepts such as transition, transformation and resilience lies a very specific way of looking at phenomena, namely from a complexity and systems perspective. For Baumfeld, Hummelbrunner and Lukesch (2009) a system exists not only of itself, but first as a social constructivist entity. A system consists of both wholes and parts, of its interactions with the environment and of the temporal and spatial context, which gives it its meaning. This holistic approach to looking at phenomena (Schilling, 2016) focuses not on a detailed understanding of proportions but on grasping all the key elements responsible for the dynamics of the system (Gunderson, Kinzig, Quinlan & Walker, 2010). The systemic and complex perspectives, as well as the heuristic models designed in the context of resilience research, help to understand the complexity, multidimensional and intertwined nature of present and future challenges (Lerch, 2015).

Critique of the concept of resilience

Resilience, regardless of the academic field where it is applied, is controversial. Terms with a wide range of applications quickly tend to become fashionable buzzwords (Davoudi *et al.*, 2012; Schnur, 2013) or "fuzzy concepts" (Christopherson *et al.*, 2010; Gruber, 2011). According to Swanstrom (2008), the scientific framework of resilience represents much more than a pure metaphor, but due to its still hazy nature, it has not attained status as a theory.

In addition, from different disciplinary perspectives, the concept has become bogged down for lack of means to detect and measure it (Christopherson *et al.*, 2010; Steiner & Markantoni, 2013). This is because resilience is a process of continuous development and not a state that once achieved can then be shelved (Lukesch *et al.*, 2010). Thus, the resilience of a system cannot be measured in absolute terms but always set in relation to a comparison system.

On the other hand, the conceptual term resilience is subject to normative and essentialist rhetoric which must be scrutinized from a critical sociological point of view (Cote & Nightingale, 2012). The concept is a social construction that is objectively neither good nor bad - contrary to the conventional interpretation it is therefore not mandatory that vulnerability is always interpreted as being negative and resilience always as being positive (Christmann, Ibert, Kilper & Moss, 2011). Firstly, it depends on the subjective evaluation or the normative assessment of "whence" and "whither" the system under consideration is supposed to be changing.

Moreover, resilience processes do not take place in a vacuum but embedded in existing political and social processes. The literature often finds fault with an uncritical adoption of the socio-ecological approach (Christmann *et al.*, 2011; Cote & Nightingale, 2012; Davoudi *et al.*, 2012) which puts a clear emphasis on the conceptualisation of natural processes and mechanisms in socio-ecological systems (Kotschy *et al.*, 2015). Human-induced framework conditions and institutions - governance aspects and rules - remain in the background but need more focussing on in the analysis (Cheshire *et al.*, 2015; Swanstrom, 2008).

Finally, attention should be drawn to the dangers of the discursive elements of self-reliance and self-regulation inherent in the conceptual framework of resilience (Davoudi *et al.*, 2012). The current expectations regarding local communities taking on the responsibility for their own resilience and their own risk management are considerably increasing. As the neoliberal discourse increases in volume, this dynamic can serve as a justification for shifting responsibility for maladministration and

undesirable developments from the state onto local communities (Cheshire *et al.*, 2015) 2015). In extreme cases, this interpretation of the conceptual framework of resilience can contribute to man-made climate change and the crises produced by the global economic order being considered as natural and normal (MacKinnon & Derickson, 2013). To avoid this, it is important to address the correct levels of scale for actions and measures that foster resilience. Politics and regulations should not be allowed to overestimate the real sphere of influence of local communities and uncritically assume that they can master all upcoming challenges on their own (Steiner & Markantoni, 2013).

Added value of the conceptual framework of resilience

Resilience is an equally confusing, enlightening and empowering concept. Nonetheless, in a world marked by abrupt changes and unexpected crisis events, it offers an approach with appropriate response to the challenges (Cote & Nightingale, 2012), is analytically superior (Schnur, 2013) as well as truly interdisciplinary (Wink, 2016) by building a bridge between social, health and science disciplines (Davoudi *et al.*, 2012). A perspective informed by systems and complex thinking can prevent interventions from failing due to a limited, reductionist understanding of the facts and so causing undesirable effects (Colussi, in Lerch, 2015).

Furthermore, resilience can draw attention towards examining the conditions for human prosperity and well-being, which according to Armitage, Béné, Charles, Johnson, & Allison (2012) "reflects a desire to move beyond narrow utility-based assumptions about individual rationality and mono-dimensional (poverty) indicators" (p. 3). It is also capable of highlighting alternatives to the predominant neoliberal discourse on growth and competitiveness (Bristow 2010, in Davoudi *et al.*, 2012) and helps to confront the fundamental mismatch between the behaviour of modern civilisation and existing planetary boundaries (Etxagibel Azkarraga *et al.*, 2012).

Even the similar and elastic notion of sustainability, which not so long ago seemed to be being quickly replaced by resilience (Davoudi *et al.*, 2012), may gain a fresh and more empowering perspective due to resilience thinking and its positive shift in focus. Thus, the focus is not on existing deficits or shortcomings but on detecting and making the most of endogenous resources and potentials, making crises seem opportunities, strengthening and extending the ability to act in order to overcome upcoming challenges (Schneider, 2016b).

State of Resilience in the Context of Rural Development in Europe

Scholars of rural geography, among others, are paying increasing attention to rural areas and villages that can remain resilient and adaptable in the context of cyclical economic uncertainty and ecological crisis (Roberts, Farrington & Skerratt, 2015).

European rural areas face threatening processes of change

Currently, challenges such as demographic and structural economic change are responsible for a self-reinforcing, downward spiral of shrinkage in rural areas (Harteisen & Eigner-Thiel, 2017): the aging, migration and the overall decline in the population in villages leads to under-utilization of the technical and social infrastructure (Born, 2009). Consequently, necessary basic public services become economically unviable and maintaining them in view of already strained public budgets is exposed to enormous pressure.

In the private sector, the real estate vacancy rate as well as the associated loss of value of buildings results in rural areas being significantly less attractive. This, in conjunction with the prevailing shortage of skilled labour, means a lack of conditions for preserving added value and entrepreneurship in the countryside.

The situation described does not apply to all rural areas of the European Union. The existing diversity of ruralities (Roberts *et al.*, 2015; Sanchez Zamora, Gallardo Cobos, & Ceña Delgado, 2014; Ward & Brown, 2009) also offers ample space for prosperous rural areas as well as for courageous rural communities which, despite all adversities, design and implement suitable adaptation strategies (Born, 2009) and thus maintain their quality of life.

A thorough analysis of the overall picture of European rural areas allows us to refute the lack of alternatives noticeable in public discourse (Kröhnert, Kuhn, Karsch & Klingholz, 2011) and soberly assess the extent of the challenges. Since there are no one-size-fits-all approaches for successfully dealing with threatening changes in rural areas, there is a societal need to develop new paths (Etxagibel Azkarraga *et al.*, 2012).

Here, rural areas and their active dwellers could play a significant pioneering role in designing the path for genuine sustainable development.

Resilience in theory and practice of rural development in Europe

It was Wim Heijman (2007), who, among others for the first time, considered rural areas and complex, adaptive socio-ecological systems related to European rural development (Rivas Portillo & Ríos, 2014). Building on this foundation, other scientists further developed this conceptual framework to become an evaluation tool for resilient rural development policy in the EU (Schouten, van der Heide, Heijman & Opdam, 2012; Schouten, Van der Heide & Heijman, 2009).

Away from policy analysis, resilience plays a significant role especially at the level of local communities in rural areas. The "community resilience" perspective examines various aspects of rural development, such as the contribution by companies (Steiner & Atterton, 2015) and especially by farms (Darnhofer, Lamine & Knickel, 2013; Darnhofer *et al.*, 2014) towards building rural resilience, the role of community management of land resources (Skerratt, 2013), the implementation of a digital agenda for rural areas (Roberts, Anderson, Skerratt & Farrington, 2017; Roberts *et al.*, 2015) and the potentials of endogenous development in the context of less active village communities (Steiner & Markantoni, 2013).

Outside of these disciplines, other authors in related subject areas of spatial and regional sciences conducted research on this topic, for example on the framework conditions for resilient regional development (Gruber, 2011; Lukesch *et al.*, 2010), resilient civil protection (Kuhlicke, Steinführer, Begg & Luther, 2012; Twigger-Ross *et al.*, 2015) or resilient neighbourhood development (Barter, 2013; Cinderby *et al.*, 2014; Schnur, 2013).

Added value of the resilience perspective for rural development in Europe

Despite the limitations mentioned previously, based on the complexity perspective the concept of resilience manages to show that strategies and measures to control change completely or prevent change in rural areas are not worthwhile. It is much more worthwhile to understand the adaptation mechanisms of this complex

overall system in order to shape or, if possible, to steer unstoppable change. From the perspective of spatial and regional sciences, this conscious dealing with change (Schneider, 2016a) permits a holistic and dynamic understanding of rural areas and their linkages to other spatial areas which can lead to more successful interventions and analyses (Swanstrom, 2008). Thus, the resilience perspective can help to definitively invalidate the outdated approach of uncoordinated, sectoral, and vertical top-down rural and village development (Ambrosio-Albala and Delgado-Serrano, 2008).

Moreover, and as described earlier, promoting resilience increases the likelihood of designing more sustainable and desirable paths of development in the context of changing conditions (Folke, 2006). In terms of European rural policy, this means challenging, among other guidelines, the Lisbon Strategy and its embedded panacea of sustainable economic growth as well as its enabling narrative of competitiveness, cohesion and inclusion (Brown & Schucksmith, 2016).

Finally, working on rural development against the backdrop of this conceptual framework means that there is a clear impetus for endogenous, bottom-up and transdisciplinary approaches. Based on the frequently mentioned interdisciplinary and holistic viewpoint, alternative living and economic styles can be designed through broad and cooperative participation of the rural population and tested through an innovative, networked, territorial and cross-sectoral approach.

Methodology and Sources: A Conceptual Framework for Village Resilience

Methodical approach for the conceptualisation of resilient villages

The foundation for a multidisciplinary academic discussion about resilience is a comprehensive literature review in line with the classic snowball system based on specialist articles, essay collections, books and dissertations from all three previously described disciplines. To find the common thread linking the concept, an essential filtering mechanism was to analyse sources that demonstrated specific resilience-enhancing system properties (also called attributes) and framework conditions.

In the field of psychology and social ecology, two current summary works on resilient properties were accessed, which provide important pointers for the sought-after conceptualisation. In the area of community development, however, a more in-depth analysis of 20 selected publications proved necessary. The sources shown below in Table 1 were evaluated, based on the structuring qualitative content analysis in accordance with Mayring (2010). In the first step, theory-based initial categories - in this case resilient properties - were determined. Suitable text passages served as model examples for the assignment of further findings in the texts. After multiple material analysis, the category system and the definitions were revised to give the result shown in Figure 1.

Resilient system properties and attributes from the perspective of psychology

Resilient protective factors are currently the subject of much controversy in psychology and other health sciences. Thanks to a meta-study by Bengel and Lyssenko (2012), the state of research on psychological protective factors in adulthood has been updated and critically examined. Based on this comprehensive literature review in databases for the period from 1998 to 2011, up to eleven protective factors were able to be identified, evaluated and critically assessed. In the analysis, a consistent and empirically reliably verified protective effect could only be determined with the following five factors: 1) Regular positive emotional experiences, 2) Optimism as a stable tendency across time and situation towards expectations of positive results , 3) Goal orientation as the ability to define and actively pursue goals, 4) Expectation of self-efficacy as the subjective expectation to cope with specific situations on one's own and 5) Social support as concrete help from within the circle of family, friends and community.

Resilient system properties and attributes from the perspective of social ecology

The state of socio-ecological knowledge about resilience is being extended exponentially (Folke, 2016) and seems to be associated with fewer controversies than in psychology. In the 2015 publication "Principles for Building Resilience: Sustaining Ecosystem Services in Social-Ecological Systems" (Kotschy *et al.*, 2015) the leading

institute, Stockholm Resilience Center, summarized the following seven principles for building resilience in socio-ecological systems: 1) Maintain and control system diversity and redundancy, 2) Control connectivity in the system, 3) Control slow variables and feedback loops, 4) Support complex-adaptive systemic thinking, 5) Stimulate learning in systems, 6) Foster broad stakeholder participation and 7) Establish so-called polycentric governance structures.

Resilient system properties and attributes from the perspective of community development

Current research indicates that the local level is the most appropriate level of action for building resilience (Cheshire *et al.*, 2015). In addition, several authors point out that in the specific framework of village and rural development both a deepening of theory formation (Bürkner, 2010; Cheshire *et al.*, 2015; Lukesch *et al.*, 2010; Schouten *et al.*, 2012), as well as the applied testing of new operationalisation approaches (Sánchez Zamora *et al.*, 2016; Steiner & Markantoni, 2013; Wink, 2016) in direct dialogue with communities (MacKinnon & Derickson, 2013) are needed.

A selection of 20 publications from the point of view of community development was analysed with the aim of identifying resilience-promoting conditions and properties. Some sources use other related terms instead of resilience, such as vital, vibrant or thriving communities.

Table 1.
Overview of the literature analysed on the basic principles of resilience in community development (AU: Australia; AT: Austria; CA: Canada; EI: Ireland; NZ: New Zealand; SE: Sweden; UK: United Kingdom; USA: United States of America)

Document title	Author	Country	Year	Type
Neighborhood Sustainability Indicators Guidebook	Meter	USA	1999	Scientific Report for political consultancy
The Community Resilience Manual. A resource for rural recovery and renewal	Colussi	CA	2000	Practitioners Handbook
Innovation in Rural Queensland. Why some Towns Thrive while others Languish	Plowman, Ashkanasy, Gardner & Letts	AU	2003	Research Report
Assessing a community's capacity to manage change: A resilience approach to social assessment	Maguire & Cartwright	AU	2008	Research Report
Building Resilience in rural Communities Toolkit	Hegney et al.	AU	2008	Research Report
Building Inclusive and Resilient Communities	Australian Social Inclusion Board	AU	2009	Practitioners Handbook
Community Resilience Toolkit	Schwind	USA	2009	Practitioners Handbook
The Community Resilience Manual - Version II	Canadian Centre for Community Renewal	CA	2009	Practitioners Handbook
Beyond Economic Survival: 97 Ways Small Communities Can Thrive - A Guide to Community Vitality	Stolte & Metcalfe	CA	2009	Practitioners Handbook
Assessing Resilience in Social-Ecological Systems: Workbook for practitioners. Version 2.0	Gunderson et al.	SE	2010	Practitioners Handbook
Localisation and Resilience at the Local Level: The Case of Transition Town Totnes	Hopkins	UK	2010	Dissertation
Wie gehen Regionen mit Krisen um? Eine explorative Studie über die Resilienz von Regionen	Lukesch et al.	AT	2010	Explorative Study
Exploring Community Resilience in times of rapid change	Wilding	UK	2011	Practitioners Handbook
Regionale Resilienz - Neue Anforderungen für Österreichs Regionalpolitik?	Gruber	AT	2011	Scientific Report for political consultancy
Resilience and Transformation - A Regional Approach	ECOTRUST	USA	2012	Scientific Report for political consultancy
Strengthening Neighborhood Resilience - Opportunities for Communities & Local Development	Barter	CA	2013	Practitioners Handbook
Community Resilience To Climate Change: an Evidence Review	Twigger-Ross et al.	UK	2015	Research Report
Rural Vibrancy in North-West Europe - The Case of South Kerry	O´Keeffe	EI	2015	Research Report
Six Foundations for Building Community Resilience	Lerch	USA	2015	Practitioners Handbook
Building Community Resilience	Blakeley	NZ	2016	Scientific Report for political consultancy

Source: Compiled by the authors.

Analysis of the operationalisation approaches contained in the literature reveals the following resilience characteristics of systems and system elements from the perspective of community development: 1) the diversity of people and resources in the system, 2) the interconnectivity of system elements, 3) learning and self-reflection in the system, 4) the structures and processes of social problem-solving and decision-making (governance) and 5) the state of so-called social capital and social networks in the system. Also present are aspects such as 6) the attitudes, values and beliefs of groups and individuals in the system, 7) the role and styles of leaders, and 8) the systemic and complexity-aware view of phenomena. Lastly, the importance of 9) a strong local economy, 10) the awareness of ecological limits, and 11) a minimum level of physical infrastructure and basic public services are mentioned for the resilience and survival of communities.

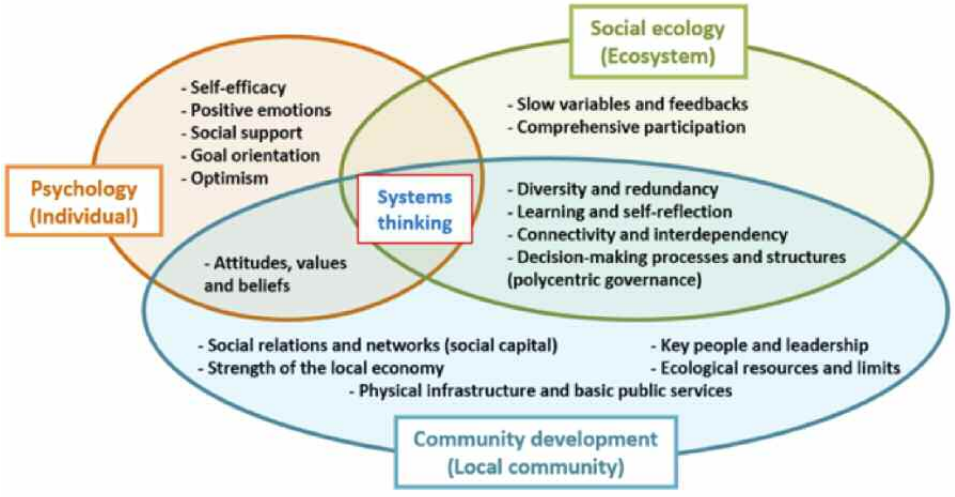
Figure 1.
Evaluation result: Resilient attributes and framework conditions of local communities from the perspective of community development

Source: Devised by the authors based on the analysis of the documents in Table 1.

Results: Intersections of Psychology, Social Ecology and Community Development and their Implications for the Development of a Conceptual Framework for Village Resilience

The intersections of the three disciplines presented earlier are illustrated below by figure 2. Here, the focus is on similarities and differences of the so-called resilience-promoting framework conditions and characteristics or attributes that each discipline has determined from its own perspective.

Figure 2.
Interdisciplinary intersections of psychology, social ecology and community development in a conceptual framework for village resilience



Source: Devised by the authors based on the analysis of the documents in Table 1.

The common denominator of all three disciplines considered in the context of resilience is the perspective anchored in systems and complex thinking. Regardless of the object of observation (individual, ecosystem or community), a reductionist view of phenomena is rejected in all three disciplines. Using this shared perspective, problems are conceptualized taking into account complexity, uncertainty and risk factors in order to plan and execute effective interventions (Sposito & Faggian, 2013). Systems and complex thinking should thus be anchored in the conceptual framework established for resilience in villages.

The most significant overlaps among the resilience-promoting frameworks and characteristics analysed exist between social ecology and community development. Both disciplines emphasise the advantages of diverse or heterogeneous but also of intelligent and highly networked system elements. Both disciplines equally focus on processes and structures of decision-making, as well as self-reflection and learning within the socio-ecological systems.

Of the socio-ecological principles for building resilience presented in the previous chapter (Kotschy *et al.*, 2015), two of them do not overlap with community development: controlling slow variables and feedback, and promoting full participation of relevant stakeholders in the management of socio-ecological systems. Behind the first of these two principles is the assumption that few but significant variables in the system under consideration are responsible for the configuration of the system and are mostly ignored (Walker & Salt, 2006).

It remains undisputed that, for example, global or regional demographic and economic trends have a significant impact on the development of villages. However, controlling them from within the village is only possible to a very limited extent. Therefore, the central idea behind this principle is considered valuable for the context analysis of villages, but due to the lack of control possibilities by the actors on the ground, there is no input as a basic principle into the conceptual framework.

The second principle will be included in our own conceptual framework in two different categories: in the basic principle "Social relations and networks" (Category: active social participation), as well as in the basic principle "Community action and decision-making" (Category: processes).

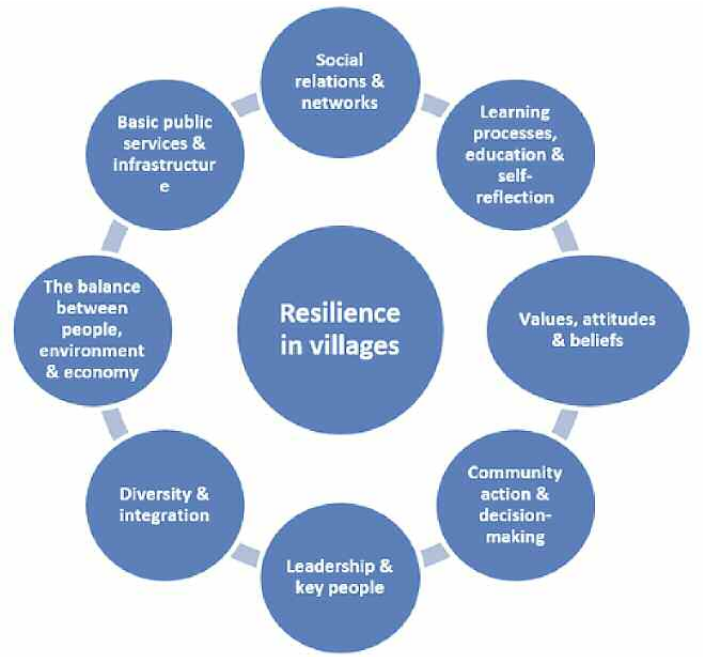
Further relevant findings from the perspective of community development for the resilience of villages are included in our own conceptual framework. These are the quality of social relationships and networks, the role of key people and leadership in the village community, the strength of local economic structures, the protection of

ecological resources and the existence of basic infrastructure and basic public services for the sustainability of village life.

The discernible intersections between psychology and community development are also taken into account as a basic principle for establishing our own conceptual framework. The existence of a community attitude to change and challenges is reflected in a variety of community development publications and is described as a "resilient mentality or mindset". This consists of resilience-promoting attitudes, values and beliefs that characterise the community spirit.

In figure 3 below, the conceptual framework for resilience in villages developed by us is presented as a result of the intersections discussed.

Figure 3.
Basic principles of the conceptual framework for village resilience



Source: Devised by the authors based on the analysis of the documents in Table 1 and on the subsequent integration of the disciplinary approaches from social ecology and psychology.

As already mentioned, resilience is a process of continuous development and not a state that once achieved can then be shelved. This is why classifying villages on the basis of resilient and non-resilient may be misleading and from now on we choose the wording "somewhat more resilient villages".

Discussion: Basic Principles in the Conceptual Framework for Village Resilience

Social relations and networks

In a somewhat more resilient village, the density and functionality of social relationships would be crucial. The sum of contacts and relations among individuals marks social networks that function based on their own rules of trust and reciprocity. The majority of these relationships are explained in the publications analysed on the basis of the concept of "social capital" (Putnam, 2000), originating from sociology and widely discussed in academia. According to this, aspects such as a trusting and supportive atmosphere, genuine opportunities for active social participation, a strong sense of identity, or a strong sense of belonging would ensure greater resilience in a village.

Social capital can be classified into three types. "Bonding capital": inward-orientated networks of people of similar attitudes, responsible for trust, reciprocity, and a sense of belonging. "Bridging capital": outward-orientated networks and relationships between different types of people who are responsible for exchanging ideas, innovating and initiating meaningful change. And finally, "Linking capital": connections with actors in other systems of power and status at different levels who are responsible for access to outside resources (Wilding, 2011).

Learning processes, education and self-reflection

In a complex environment of constant change, resilient socio-ecological systems depend on constantly developing their understanding and knowledge of dynamics that are taking place. In villages, a strong learning culture would mean that an active and continuous involvement of the community with the multiple facets of

influential challenges can lead to greater resilience. Developing a deeper and broader understanding of context and complexity enables community members to develop new interests, provide new opportunities and create meaning, hope, and self-esteem.

Learning processes take place in a somewhat more resilient village if suitable learning and meeting places exist and appropriate methods and offers are made available. In addition, reflection, self-learning and the integration of learning results into everyday life are conducive to learning processes in villages. From a formal or informal learning process, behavioural changes, new skills and responses to challenges arise, both for individuals and for the village community as a whole. The development of an innovative climate, open to experiment, in which skills and knowledge exchange is possible would thus foster resilience.

Values, attitudes and beliefs

The world view of individuals as well as communities as a whole is very important for their adaptability as well as for their progressive development. The parameters mentioned in the literature examined, such as self-efficacy, willingness to change, optimism, vision or drive, form a clear bridge to the disciplinary approach of psychology. This refers to protective factors that show similarities and interactions with those in the context of social capital. The focus on personal thinking patterns serves mainly as a distinguishing feature. Somewhat more resilient village communities would provide villagers with regular positive emotions, such as festivities or other communal attractions and activities. In these villages, people would perceive an atmosphere of social support. In addition, attitudes, values and beliefs such as high self-efficacy, strong goal orientation or sustained optimism would characterise the villagers.

Community action and decision-making

Another key factor for a higher degree of resilience in the village would be to facilitate well-functioning collective action and decision-making processes. If a balance is found between autonomy, cooperation and dependence among the actors involved on different scales, these processes can be successfully managed. Such balanced systems are referred to in the literature as "polycentric governance systems". These build upon transparent and efficient communication and are the source of

institutional diversity, broader participation, a strong culture of learning and experimentation, and improved system networking. Here, however, lies a major challenge in dealing with the conflicts of aims and interests that are carried out in the open, as well as with the winners and losers of the decisions taken.

Accordingly, the quality of democratic processes at local and regional level would be crucial for the resilience of a village. Here, the politically legitimized structures and the administration play a very important role. The genuine participation of a wide range of actors with diverse interests within the village and the integration of local knowledge and skills would serve as a valuable resource for meeting present and future challenges.

Leadership and key people

Within a somewhat more resilient system, the role of individuals with special social responsibility for the optimal interaction of the significant actors would be crucial for functioning and satisfactory decision-making processes. In the village, this would be ensured, in particular, by key and leadership figures, capable of achieving a consensus, mediating in conflicts of interest. In the literature analysed it is recommended to act actively against concentration of power in few hands by forming a "choral" leadership with diverse and representative leaders. This is best achieved by limiting mandate periods and strategically fostering young talent through proactive succession management. Good leadership embodies further attributes such as integrity, determination, competence and vision.

Diversity and integration

Moreover, in a village, a pronounced diversity of residents and of economic, environmental and cultural resources would lead to higher degree of resilience. The diversity, disparity and balance of system elements is the subject of analysis in the vast majority of the publications analysed. The diverseness of, for example, the age, background, culture, opinions, experiences or expertise of the villagers would provide a basis for division of labour, specialisation and innovation. This would also offer a wealth of options to face the challenges prevailing in rural areas.

In contrast to a high diversity, it may be that the simplicity and efficiency of decision-making processes in villages could be undermined by the variety of actors and interests. In extreme cases, this could lead to a reduction in resilience and a strengthening of conflicting goals that could eventually lead to a division into winners and losers. The prerequisite for a positive contribution to the resilience of the village is therefore that the inhabitants show tolerance of their own diversity and are able to generate added value from it.

The balance between people, environment and economy

Looking at the subject of this research project, i.e.: villages, the interactions between their ecological, economic and social dimensions cannot go unheeded. Due to the indissoluble embedding of the "village" as a form of settlement in the biophysical substructure of the earth and the relevance of all natural resources as well as biodiversity for the village community, the way humans handle their environment decisively influences resilience in the village. To this end, a far-reaching awareness, taking into account ecological limits in one's own lifestyle, would be of essential importance. In defending environmental interests, their advocates would have to gain a significant social position and make their voices heard in decision-making processes and on official bodies.

All the facilities and actions that serve the purposeful satisfaction of human needs in the village affect its economic development. Villages that are somewhat more resilient would have dynamic economic activity with roots in the locality, as well as entrepreneurship with a strong sense of belonging to the area. Decisions on economic activity in the village taken from outside should be limited.

Finally, given the close social relations and livelihoods of the villagers, the social component of villages is undoubtedly the most important in the overall conceptual framework for village resilience. Aspects such as sufficient income, job opportunities, personal security, available health services or recreational facilities in the immediate vicinity have an impact on the resilience of the community.

Basic public services and infrastructure

There are pointers in the literature as to what constitutes a minimum level of infrastructure and basic public services, which would be necessary for a village

community's survival. In order to connect local communities to global events, not only physical connections such as roads and rail are important, but also undoubtedly a functioning digital infrastructure (e.g.: broadband and mobile internet). Other aspects such as affordable housing, health infrastructure, access to public administration or an adequate infrastructure for leisure and cultural activities are also relevant. Maintaining a minimum level of functioning basic public services and the availability of places where people can meet and events can take place are a key factor for positive development and a higher degree of resilience.

Table 2 below summarizes the basic principles and categories as a pre-operationalisation of the conceptual framework developed for village resilience.

Table 2.
Overview of basic principles and operational categories in the conceptual framework for village resilience developed by the authors

BP 1 - Social relations and networks			**BP 5 - Leadership and key people**		
Categories	Bonding capital	Trust	**Categories**	Diversity and representativeness	Inspiration and vision
	Bridging capital	Sense of belonging		Initiation and renewal	Facilitation and mediation
	Linking capital	Identity		Empowerment and enabling	
	Reciprocity	Active social participation			
BP 2 - Learning processes, education and self-reflection			**BP 6 - Diversity and integration**		
Cat.	Spaces and resources	Knowledge and skills	**Cat.**	People	Local economy
	Willingness to experiment	Learning culture		Clubs, associations, groups and activities	Nature and countryside
	Reflection and evaluation				
BP 3 - Attitudes, values and beliefs			**BP 7 - Balance between people, environment and economy**		
Cat.	Positive experiences	Self-efficacy	**Categories**	Health	Inclusion
	Optimism	Social support		Jobs	Nutrition
	Goal orientation			Biodiversity and nature conservation	Energy
BP 4 - Community action and decision-making				Local businesses and economic sectors	
Cat.	Processes	Conflicts			
	Role of authorities and administration	Communication			
BP 8 - Basic public services and infrastructure					
Cat.	e.g.: Childcare services, possibilities of care for the elderly, health care, schools, possibilities for further education and training, public facilities, private services to the public, possibilities for leisure and cultural activities, fire brigade and emergency services, real estate market and house building, public mobility, public transport infrastructure, water management, water supply and sewage disposal, …				

Source: Devised by the authors based on the analysis of the documents in Table 1 and on the subsequent integration of the disciplinary approaches from social ecology and psychology.

Conclusions and Next Steps: Upcoming Empirical Testing

Conclusions

As an introduction, this article points to existing gaps in the definition and discussion of rural and village resilience. Taking its orientation from the current state of research, an interdisciplinary contribution to the conceptualisation and theoretical anchoring of resilience research in the context of rural and village development has been developed. We were able to discern systems and complex thinking as the core of the resilience perspective and common denominator of its contextualisation in various scientific disciplines.

In addition, the compilation of resilience-enhancing frameworks and characteristics, originating from the disciplinary approaches of psychology, social ecology and community development provides a scientifically sound foundation for establishing the proposed conceptual framework for village resilience. The findings and their discussed overlaps were able to be pre-operationalised. Whether this new conceptualisation offers a true new opportunity to analyse villages and their development processes from a widened and holistic perspective will be tested in an empirical investigation in particularly active and adaptable villages from Germany, Spain and the UK.

A particular challenge in this context is the difficulty of establishing and measuring rural resilience. We understand resilience as a process of which only a snapshot can be captured using the conceptual framework. As a result, the aim is not to classify villages and rural communities as resilient or non-resilient; rather, the indicators of the characteristics and categories named should make it possible to compare them in terms of resilience.

In addition, restrictions resulting from the disciplinary transfer of the resilience concept make it even more challenging. For example, from the perspective of psychology, so-called protective factors for the resilient individual are recorded that cannot be comprehensively applied to a group of people. The empirical testing of the framework concept and, for example, supplementary theoretical approaches from organisational resilience in corporate and personnel management (Götze, 2013) could help close these gaps.

Finally, the way villages are embedded in the local and regional spatial structural situation, as well as in the existing political and social power relationships, should be reflected as critically as possible.

Testing and further development of the conceptual framework in the rural communities of Wooler (UK), Albarracín (ES) and Oberndorf an der Oste (DE)

To test the developed conceptual framework, three rural communities were selected through short interviews with representatives from academia and national rural development networks. All of the example villages display a considerable variety of activities and structures that serve to shape the transformation processes taking place in the respective area by means of systematic village development. These are the small town of Wooler in the English county of Northumberland, the village of Albarracín in the Spanish province of Teruel and the village of Oberndorf an der Oste in the German Rural District of Cuxhaven. Their key demographic and geographical data are displayed in table 3 below:

Table 3.
Key demographic and geographical data of the rural communities under study

	Geographical entity	Inhabitants	Area (km²)	Population density (people/km²)
Village	**Wooler**	1.983	12,58	157,63
LEADER	NULAG (NE)	55.271	3.232	17,10
NUTS 3	County of Northumberland	316.028	5.013	63,04
Village	**Albarracín**	1.093	425,70	2,41
LEADER	ASIADER	5.013	1.508,60	3,32
NUTS 3	Province of Teruel	136.260	14.804	9,20
Village	**Oberndorf (Oste)**	1.401	32,71	42,83
LEADER	Kehdingen-Oste	40.276	618,33	65,14
NUTS 3	District of Cuxhaven	196.607	2.057,77	95,54

Sources: Adapted from ONS, 2011 Census in NULAG, 2014 - Rural Development Strategy; ASIADER, 2016 - Estrategia de Desarrollo Rural LEADER; LEADER Region Kehdingen-Oste, 2015 - Regionales Entwicklungskonzept Kehdingen-Oste.

A location on the periphery, structural weakness and demographic change are common challenges that affect all the villages under study to a different degree. In addition, all communities are subject to their very own specific circumstances such as political, administrative embeddedness or the scope for action of local organisations and institutions. Therefore, the focus for findings is to be kept predominantly on correlating the empirical insights on framework conditions and factors of village resilience with the author s own theoretical development, instead of making potentially misleading comparisons among the villages themselves.

Methods envisaged for the upcoming empirical testing of the conceptual framework

During a ten-week stay in each village, the lead author will apply a mixed methods approach for the empirical study. Firstly, he will undertake continuous participant observation at a recognised local rural development organisation. This will be recorded and evaluated methodically by means of field diary and relevant documentation. Secondly, in order to draw conclusions from the explanatory power of the resilience concept in the context of progressive village development, a statistically representative village survey will be carried out. This will have the basic principles and characteristics of the conceptual framework for resilience in the village presented in this article explicitly applied in a deductive approach. Thirdly, guided interviews with experts are to be conducted as inductive components in order to gain insights into system properties and the framework conditions conducive to village resilience. The final component of the study will be a preliminary evaluation of the resilience self-evaluation reports as part of a village talk (focus group) and a discussion with interested residents. This methodological combination, still to be fully developed, will constitute a refined operationalisation of the proposed conceptual framework for village resilience.

Finally, this "mixed methods" approach can achieve more comprehensive and multi-perspective results. The quantitative results are intended to sharpen the eye for details and orientate the subsequent qualitative research work. Finally, the generalization chances of qualitative results increase in combination with the findings of quantitative research (Kuckartz, 2014).

Outlook

This research aims to explain to what extent rural communities are able to adapt more successfully to processes of change based on the established basic principles and categories of resilience. Nevertheless, the categories adopted from the literature should not be rigidly adopted and applied, but continuously readjusted and supplemented in the context of the upcoming empirical testing. Conceptualising resilience in rural and village development through sound scientific debate and practical operationalisation could provide an opportunity to equip rural communities with effective ways of influencing their development. The completion of this research project is scheduled for 2019.

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Authors' contribution

	ITEM	Alistair Adam Hernández	Ulrich Harteisen	Total
1	Conceptualización	90 %	10 %	100 %
2	Tratamiento de los datos	100 %	0 %	100 %
3	Análisis formal	0 %	0 %	0 %
4	Acceso financiación	0 %	100 %	100 %
5	Investigación	100 %	0 %	100 %
6	Metodología	100 %	0 %	100 %
7	Gestión del proyecto	80 %	20 %	100 %
8	Recursos	0 %	0 %	0 %
9	Software	0 %	0 %	0 %
10	Supervisión	0 %	100 %	100 %
11	Validación	0 %	0 %	0 %
12	Visualización	100 %	0 %	100 %
13	Redacción (borrador)	90 %	10 %	100 %
14	Redacción final (revisión y edición)	80 %	20 %	100 %

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