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Resilience in Practice: A Survey of Recent European Union Projects

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Authors' note:

This paper is part of the output of the project *Samhällsresiliens i Sverige: styrning, sociala nätverk och lärande (RISE),* financed by the Swedish Civil Contingencies Agency (MSB), which aims at investigating the concept of resilience in the Swedish local governance level through the examination of three theoretical fields (governance, social networks, and learning), and three empirical areas (climate change adaptation, refugeehood, and learning).

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Introduction

Recently there has been increased traction in political, social, and economic terms, in high- and low-income nations alike, to build resilience as an agenda that can promote "holistic, positive, and lasting changes" (Mitchell, 2013, p. 2). Indeed, thinking about resilience is another way to think about change (Miles and Petridou, 2015). Although the needs of high- and low-income nations may be different, the need for increased resilience capacity at all societal layers and levels of governance is imperative for the successful handling of crises. A fair number of papers and studies on resilience start with the oft-used caveat that the concept is slippery (Beccari, 2016) and that its proteanism renders it useless while the term also gets critique for the instrumental way it is used in the setting of haphazard political agendas.

Though resilience has been touted as "the new big thing" in terms of its perceived positive benefits for society at large, often there has been little substantive guidance for practitioners on the ground regarding how to implement the resilience approach (Michell, 2013, p. i). Such guidance often comes in the form of resilience indicators (qualitative or quantitative), toolkits, and/or roadmaps. These serve a variety of purposes: they may raise community awareness; help the community prioritize its goals; shed light on the costs and benefits of strengthening resilience, and more fundamentally, they reveal the complexity and contingencies that characterize system and how they respond to shocks (Cutter, 2016, see also Linkov et al., 2014; Prior and Hagmann, 2014). What is more, the underlying, overarching normative aim of such tools is the well-being of the community (see Cutter, 2016; Mitchell, 2013). There are thus syndetic relationships, theoretical as well as practical, among the concepts of resilience, community, and attendant indicators. A number of the material intended to serve as guidance to practitioners is produced in the context of funded projects, and specifically in the European context, funded by the European Union (EU).

The main aim of this paper, scoping in focus, is to investigate the concept of resilience and the intentionality of community-resilience indicators through the thematic analysis of completed EU-funded projects on resilience. The research questions guiding our analysis are as follows:

- How is *resilience* conceptualized in completed EU-funded projects?
- Is the concept of *community* present in the discourse of completed EU-funded projects?
- What are the characteristics of resilience *indicators* produced in the context of completed EU-funded projects?

An empirical objective of this paper as part of the output for RISE (as explained in the authors' note) is to situate this discussion and its relevance in the Swedish municipal context.

In the section that follows, we briefly delimit the concepts of resilience and community in addition to presenting the analytical model we use to assess the resilience tools. This is followed by a brief section of the relevance of the terms *resilience, community,* and *indicators* in the Swedish context. We then explain the methodology and data for this short paper, followed by a presentation of results and some concluding remarks.

Definitional delimitations

Resilience

Though resilience is a concept that has been researched, stretched, and applied by scholars of various disciplines as well as politicians and practitioners alike, it is not a term that fits snuggly in the Swedish context. The focus of this paper is not theoretical, but we must articulate what we mean by "resilience" in order to anchor the synthesis of the project results. We view resilience as a state of

affairs that is not necessarily an achievable stasis, but an ideal set of societal relationships and arrangements to which societies strive toward in conditions of flux. Resilience implies a functioning governance structure with the ability to maintain the stability of central functions, as well as the ability to adapt—long- and short-term. At the same time, the importance of the community level cannot be overestimated, partly due to the very local consequences global events have. At that level specifically, social relations are most salient. Resilience at the community level is mostly a bottom up process were policy and praxis continuously adapt to people's capacities and resources, which in turn contributes to the development of new knowledge and learning.

Despite the variety of definitions in the literature, there are some common threads: the ability to bounce back from an extraordinary event (see, for example, Holling, 1973; Wildavsky, 1988); preparedness to handle extraordinary events that may lead to major disturbances (see, for example, Bhamra et al., 2011), the ability to adapt (see, for example, Davoudi, 2012); tenacity to survive (see, for example, Norris, 2008), and the willingness of a community to mobilize for a common cause (see, for example, Linnell, 2014, Miles and Petridou, 2015).

The EU defines resilience as "the ability of an individual, a household, a community, a country or a region to withstand, to adapt, and to quickly recover from stresses and shocks" (European Commission, 2012, p. 5). This is a two-faceted definition encompassing the strength of an entity to withstand a shock, as well as its capacity to recover quickly (European Commission, 2012). Having said this, both the 2012 European Commission communication referenced above and the 2013 *Action Plan for Resilience in Crisis Prone Countries 2013-2020* seem to suggest that the need for resilience is extra-European and more specifically tied to humanitarian issues in Less Developed Countries (LDCs). Resilience is the EU's central objective in development activities and humanitarian work (European Commission, 2019). The question that emerges is, how does the European Union view resilience within Europe? We use the description of recent, funded projects as a proxy for the EU's outlook on, and intentionality regarding, resilience, with the rationale that investments in research aim at providing evidence and a foundation for decision- and policy-makers.

Community

As important a term as 'resilience' is its modifier, the term 'community'. Unsurprisingly, perhaps, the term is not unproblematic. Beyond the academic debate one could engage in for the sake of theoretical clarification and conceptual delimitation, the term has practical implications both for academics and practitioners. More specifically, for academics, what is the audience of the various toolkits that are produced? For practitioners, how do they envision 'community'? What is community, what does it contain and what kind of tools does it need in its kit?

Titz, Cannon, and Krüger (2018) report on the inflationary nature of the term as connoting grass-roots, bottom-up, "based on what is considered a 'moral license' that supposedly guarantees that the actions being taken are genuinely people-centered and ethically justified (or even mandatory)" (introduction, n.p.). The authors go on to challenge the notion of community as a collection of homogenous individuals sharing common interests or a network bounded by a common location.

Conversely, drawing from a number of studies (Alshehri et al., 2014; Frankenberger et al., 2013; MacQueen et al., 2001; Miles, 2015; Twigg, 2009), Sharifi (2016) defines community as "a diverse group of individuals in a shared geographical area, who have common interests, are linked by dynamic socio-economic interaction, and engage in collective action" (p. 630). This definition implies people, territory, interactions, and a common purpose, but perhaps says as much about community as it does not say about it. This definition leaves plenty of room for interpretation when it comes to bounding community as it offers no specifics regarding its size. What is more, communities are rarely delineated and tend to be nested (Sharifi 2016), often in a hierarchical arrangement. If communities consist of people who are engaged in collective action and interact with each other, this necessarily connotes a certain kind of dynamism and change, i.e. not stasis. At the same time, are we to assume that the

members of the community who are not engaged in collective action are not members of the community at all? And how are we to understand cultural differences between the members or sub-groups of the community? Also, there is the issue of scale. Sharifi (2016) delineates the range of the size of the community somewhere between a neighborhood and a county. This range has certain implications. First, it privileges the spatial aspect of community as Sharifi does not define community as a collection of people, i.e. the neighbors or the inhabitants of a county. Secondly, whereas a county is an administrative unit, a neighborhood is not. Thirdly, the spatial fixity of community also perhaps misses a community of professionals or a network of organizations working together across jurisdictions.

The issue of whether a community is also an administrative unit has practical implications. For example, how can a toolkit or another be assessed if there is not an administrative mechanism attached to the community to do so?

Additionally, there is a need for an analytical framework against which resilience assessment tools are themselves assessed. Sharifi (2016) reports that an effective community resilience assessment tool must necessarily be comprehensive and address multiple dimensions of resilience, while being sensitive to the multi-scalarity of resilience—and for that matter community. An effective tool should also capture temporal shifts on either side of a disrupting event, address uncertainties, encourage participation by stakeholders and has a provision for developing action plans. Cutter (2016) warns that there is not a one-size-fits-all tool to assess community resilience because of the sheer number of actors, contexts, aims and disciplines involved in the process. Tools are one of three main categories of assessment, which include indices and scorecards. Toolkits are guidelines for assessing resilience with the help of sample procedures and instruments, often providing a ready-made mechanism for assessing resilience with the help of data, models and procedures (Cutter, 2016).

Further, a study by Ostadtaghizadeh, Ardalan, Patton, Jabbari, and Khankeh (2015) finds that the lack of agreement on the resilience concept results in a divergent operationalization and in turn in a wide variety of tools that may or may not assess community disaster resilience. The authors suggest that in operationalizing community disaster resilience, five domains should be considered: social, economic, institutional, physical and natural. Cutter (2016) also finds different aspects of the disaster resilience concept (in the US), though she classifies them into two broad categories: attributes and assets (economic, social environmental, infrastructure) on the one hand and capacities (social capital, community functions, connectivity, and planning) on the other. Further, and potentially quite useful for the project at hand, is a set of meta parameters that can be used as way of evaluating indices, scorecards, and tools.[1] Cutter (2016) asserts that the focus of the research may be on the community as a whole (baseline) or on specific parts, which may be considered as assets, whereas the spatial scope may range from the community to the national level. Methodologically speaking, Cutter (2016) differentiates between top-down approaches, for example employing quantitative, national information as opposed to bottom-up approaches using qualitative or self-reporting data. Finally, a domain may refer to either the characteristics of the entity under investigation, or its capacities. Where characteristics refer to the quantity of some attribute, a capacity refers to the quality of this attribute.

These items are summarized in the figure below.

[1] We use these terms interchangeably.

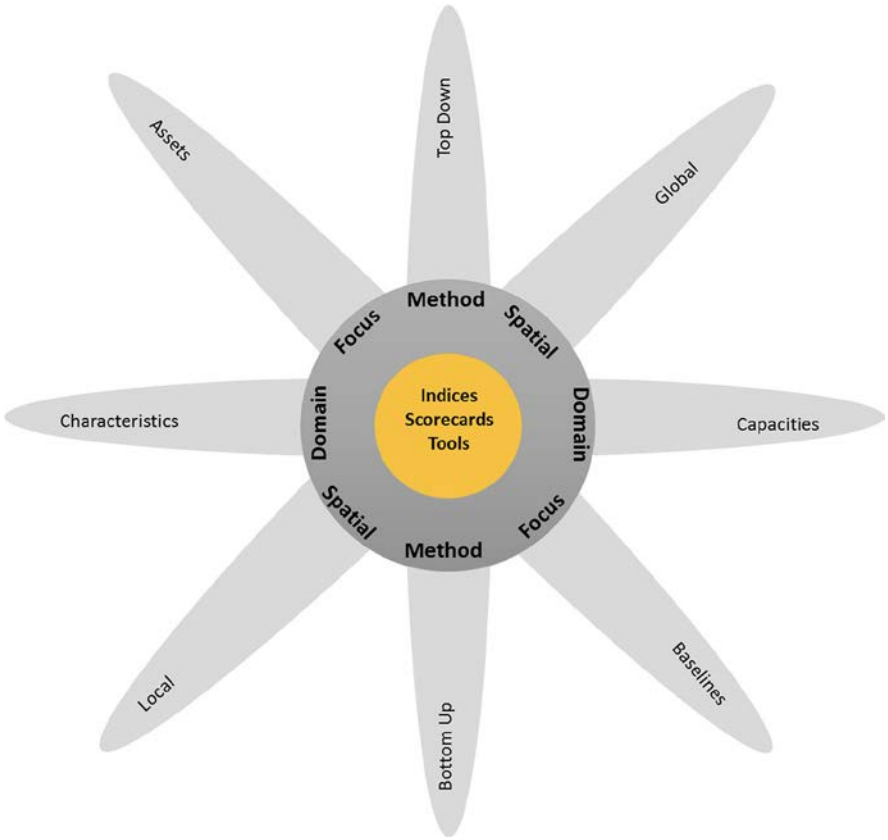

Figure 1: *The four main attributes of resilience assessment tools: domain, focus, method, spatial unit. Source: Cutter, 2016*

As mentioned earlier, Cutter's (2016) focus is on the American context, though her analytical framework is broad enough to apply to indicators and toolkits outside the U.S. Alternatively, Beccari (2016) uses a number of resilience loci to analyze 106 methodologies of disaster risk, vulnerability, and resilient composite indicators. These loci include: the social locus, including demographic characteristics, health, education, civil, society, and government; the built locus, including services and infrastructure as well as housing; the economic locus including economy, the labor market, and livelihoods; the natural locus including geography and the environment; and the threat locus, encompassing risk and vulnerability.

The relevance of *community resilience* in the Swedish context

Beyond the cognitive threshold of introducing a new term to the glossary of the municipality worker, resilience thinking is not built in the Swedish bureaucratic structures, which deal with detailed plans or plans of action regarding specific issues. If an output of a publicly funded project, such as RISE, introduces a toolkit on community resilience in general without anchoring it to a concept already used at the municipal level, there is the risk of it not being used. Municipal workers deal with sustainability and crisis preparedness rather than resilience *per se*.

Additionally, some public servants, especially from smaller municipalities, expressed the need for a more prescriptive guidance from the national level during preliminary focus group interviews conducted in three Swedish municipalities in September, 2018. However, public officials in larger municipalities, which tend to see themselves as pioneers or mavericks with plenty of competence in the field expressed the opposite view, namely that they would rather have leeway and broad guidelines rather than some restrictive how-to manual.

Third, the delineation of "community" or the "spatial unit" according to Cutter (2016) has to be the municipality. Though there seem to be spatial specificities that may exacerbate or exemplify the problematic of climate change adaptation (waterfront redevelopment) or migration or violent extremism (segregation and ghettoizing), the focus of the project's level of analysis is the municipality. In reality, our focus is administrative rather than spatial.

Method and Material

The purpose of this scoping paper, as mentioned earlier in this paper, is to discuss how the EU has approached resilience within its borders. We do this through the analysis of the description of projects the Union has chosen to finance. In other words, we operationalize the EU approach to resilience as the intentionality that belies the calls and the projects that were funded. The data were derived from the European Commission's Disaster Risk Management Knowledge Center's (DRMKC) web site at www.drmkc.jrc.ec.europa.eu. DRMKC is an organization at the interface of EC directorates and end users, including policy makers, NGOs and others. It is a repository of knowledge produced by the projects financed through the various EU funding schemes, which makes for an extensive digital archive of these projects. We chose this database because it is the repository of research relating to disaster risk management, a field closely related conceptually and in practice with resilience research.

We conducted a search on the DRMKC's web site with "resilience" as the search keyword in the acronym, title, and description of projects, but not in project documents in an effort to eliminate irrelevant results. We did not specify a time period. Out of a total of 1788 projects on the web site data base, our search produced a total of 198 resilience-related projects, current and completed. Of these, we immediately discarded the projects with an extra-European spatial focus and internal, administrative projects, yielding a total of 194 projects. In a second round of evaluating the material for relevance to the RISE project, we further excluded projects that concerned specifically critical infrastructures and projects that were particularly narrow in focus in terms of geography, risk(s) addressed, and technical solution. This process yielded 36 relevant projects, which we entered into an excel spreadsheet including administrative details, budget, and the years they were in effect. Based on their description we classified them according to the Cutter (2016) framework above.

Reliability and validity

The two authors of this paper surveyed the material separately and then discussed both the reasons to exclude projects as well as the classification of the relevant ones. The existence of clear criteria as to what material is of interest – the relevance to the RISE project and a focus on societal/community resilience and related concepts – ensures the internal validity of the analysis. What is more, the fact that two researchers classified the projects independently and then discussed the process goes a long way into ensuring the reliability of the study. We elaborate on the results of our analysis in the section below.

Results

We begin this section by briefly describing the 36 projects that comprise the material for analysis. After that we use Cutter's analytical framework to categorize the projects and then end the section with some brief conclusions. The sum of the projects across attributes does not always add to 36 because some projects do not fit in a given category at all, or they fit in more than one.

Project descriptions

Climate change adaptation was a theme that was the explicit focus of 10 projects. Two of the them were very specific, with a special focus on manufacturing SMEs (LIFE IRIS) and farming (LIFE AGRI ADAPT) respectively. A further five projects (EUPORIAS, RESIN, SCALAR, RESCUE, and RISK) put emphasis on modeling, assessment tools, forecasting, and standardizing routines and measures, while

an additional three (LIFE LOCAL ADAPT, EPICURO, and ESPRESSO) had a policy and administration track.

Four projects explicitly targeted local public administrations: one took up the cyber security threat in local public administrations in Europe (COMPACT), while a further three (PEP, POP-ALERT, and DRIVER) concerned themselves with the local governance level but from a crisis management angle in terms of knowledge transfer, learning, and community.

Disaster Risk Reduction (DRR) in an urban context features in five projects (MERCI, USCORE, USCORE 2, EDUCEN and SEE URBAN), one of which (MERCI) had a specific focus on the civil society's role in preparedness and strengthening the salience of volunteer organizations while another (EDUCEN) put emphasis on networks and knowledge sharing. Also, in the urban context, two projects dealt with two complementary themes: urban design (and safety) (VITRUV) and urban planning (DESURBS). A particular spatial focus was the topic of three projects (HERACLES, PROTECHT2SAVE, and RESCULT) dealing with cultural heritage: One project developed a technical solution to assess damage to cultural heritage sites, another's focus was risk assessment from climate consequences and especially rain, while the third, a much larger project, included both technical tools and damage assessment mechanisms.

The theme of two projects (CAPHAZ-NET and ENHANCE) was natural hazards, both emphasizing the need for partnerships, networks, and cross-sectoral knowledge sharing. A further three projects focused on disaster resilience from the perspective of specific population subgroups: children and young people (CUIDAR), vulnerable groups (ADAPT) and people at risk of exclusion (MARGIN), the latter with a clear focus on personal security. Two projects had a pronounced technical profile: A4A focused on early warning systems, while COMRADES had a socio-technical approach to community resilience. The political was the focus of only one project (EU-LISTCO), which looked at weak governments in the EU's east and south and the consequences of these to global and regional security. Knowledge transfer in general and learning from accidents and disasters in particular was the subject matter of two projects, A&R and ECHO_2938 respectively.

Finally, the two most comprehensive EU funded projects on resilience were DARWIN and EMBRACE. DARWIN, a H2020 project with a budget of almost €5 million and six participating countries, aimed at developing a set of EU-wide resilience management guidelines. The empirical domains of DARWIN were Air Traffic Management and health care. EMBRACE, with a budget just over €4 million and seven participating countries, dealt with the definition of, and measurements for, resilience.

Table 1: *Projects included in the analysis, sorted by funding programme.*

Project	Full title	Years	Budget[2] (€ 1 000)	Programme
U-SCORE	Managing Urban Risks in Europe: Implementation of the City Disaster Resilience Scorecard	2014	376	ECHO
A&R	Aware and Resilient	2012	461	ECHO
ADAPT	Awareness of Disaster Prevention for Vulnerable Groups	2014	473	ECHO
MERCI	Multi-site Events Response and Coordinated Intervention	2016	531	ECHO
ECHO_2938	Baltic Every Day Accident, Disaster Prevention and Resilience	2013	564	ECHO
SEEURBAN	South East Europe Urban Resilience Building Action Network	2016	577	ECHO
RISK	Risk Management via an Innovative System Based on Knowledge	2012	665	ECHO
RESCULT	ResCult - Increasing Resilience of Cultural heritage: a supporting decision tool for the safeguarding of cultural assets	2016	792	ECHO
EPICURO	European Partnership of Innovative Cities within an Urban Resilience Outlook	2016	885	ECHO
USCORE2	City to City Local Level Peer Review on Disaster Risk Reduction	2016	1 010	ECHO
CAPHAZ-NET	Social Capacity Building for Natural Hazards: Toward More Resilient Societies	2009-2012	1 131	FP7-Environment
EMBRACE	Building Resilience Amongst Communities in Europe	2011-2015	4 245	FP7-Environment
ENHANCE	Enhancing Risk Management Partnerships for Catastrophic Natural Disasters in Europe	2016-2019	7 687	FP7-Environment
EUPORIAS	European Provision of Regional Impact Assessment on a Seasonal-to-decadal timescale	2012-2017	13 245	FP7-Environment
PEP	Public Empowerment Policies for Crisis Management	2012-2014	1 065	FP7-Security
POP-ALERT	Population-Alerting: Linking Emergencies, Resilience and Training.	2014-2016	1 135	FP7-Security
DESURBS	Designing Safer Urban Spaces	2011-2014	4 110	FP7-Security
VITRUV	Vulnerability Identification Tools for Resilience Enhancements of Urban Environments	2011-2014	4 521	FP7-Security
A4A	Alert for All	2011-2013	4 910	FP7-Security
DRIVER	Driving Innovation in crisis management for European Resilience	2014-2018	46 573	FP7-Security
SCALAR	Scaling up Behaviour and autonomous Adaptation for Macro Models of Climate Change Damage Assessment	2018-2023	1 500	H2020
EDUCEN	European Disasters in Urban centres: A Culture Expert Network	2015-207	1 645	H2020
MARGIN	Tackle Insecurity in Marginalized Areas	2015-2017	1 881	H2020

[2] The budget is the rounded total cost for each project.

COMRADES	Collective Platform for Community Resilience and Social Innovation during Crises	2016-2018	1 999	H2020
CUIDAR	Cultures of Disaster Resilience among Children and Young People	2015-2018	2 010	H2020
ESPRESSO	Enhancing Synergies for Disaster Prevention in the European Union	2016-2018	2 374	H2020
COMPACT	Competitive Methods to Protect Local Public Administration from Cyber Security Threats	2017-2019	4 283	H2020
EU-LISTCO	Europe's External Action and the Dual Challenges of Limited and Contested Orders	2018-2021	4 990	H2020
DARWIN	Expecting the unexpected and knowing how to respond	2015-2018	4 999	H2020
HERACLES	Heritage Resilience Against Climate Events on Site	2016-2019	6 564	H2020
RESIN	Climate Resilient Cities and Infrastructures	2015-2018	7 466	H2020
RESCCUE	Resilience to cope with Climate Change in Urban areas - a multisectoral approach focusing on water	2016-2020	8 097	H2020
PROTECHT2SAVE	Risk assessment and sustainable protection of Cultural Heritage in changing environment	2017-2020	2 151	INTERREG
LIFE IRIS	Improve Resilience of Industry Sector	2015-2019	1 659	LIFE
LIFE AGRI ADAPT	Sustainable adaptation of typical EU farming systems to climate change	2016-2019	2 161	LIFE
LIFE LOCAL ADAPT	Integration of climate change adaptation into the work of local authorities	2016-2021	3 070	LIFE

Project classification according to Cutter (2016)

Twenty-two projects fell into the methodological category of *bottom-up*, implying that the data used for working with the resilience term were self-reported or qualitative. For example, CUIDAR, aimed at addressing the exclusion of children and young people from the disaster planning and management process, included consultative workshops with children as a means of collecting (and producing) knowledge. Conversely, 14 projects were *top down* on the Cutter (2016) scheme, denoting the use of national, quantitative data, of a more "objective" leaning. One such project was EUPORIAS, which aimed at developing climate services and better tools for forecasting based on climatological data, in order to inform the decisions of policy makers in sectors such as water management, energy, health, transport, agriculture, and tourism. Notably, one project, (SCALAR), employed both methodological approaches in the sense that they aimed at bridging the gap between the micro and macro levels when it came to damage caused by climate change.

Though a number of projects had more than one spatial focus (local, national, supranational), at least one of the foci of 25 projects was local (vs 10 national and supranational each), pointing to the salience of the local level when it comes to resilience. The projects that dealt with crisis preparedness with a community focus (POP-ALERT and PEP for example) also featured social networks, while COMPACT targeted public administration at the local level, both points of importance for RISE.

Assets are taken up in the domain field of the above framework with characteristics referring to the enumeration of assets while capacities pointing to their quality. Thirteen projects focused on characteristics while 25 dealt with capacities. There was overlap in one project, UCSCORE2, aimed at

developing a tool to enable resilience planning trough the measuring as well as the evaluation of community resilience.

Finally, 20 projects concern themselves with the spatial unit as a whole (classified as baseline), while 15 take up a specific asset. An example of the former is EU-LISTCO, examining the political weakness of the east and the south of Europe, while a project exemplifying the latter is LIFE IRIS, dealing specifically with the consequences of climate change on industrial SMEs. Two projects fell outside this classification.

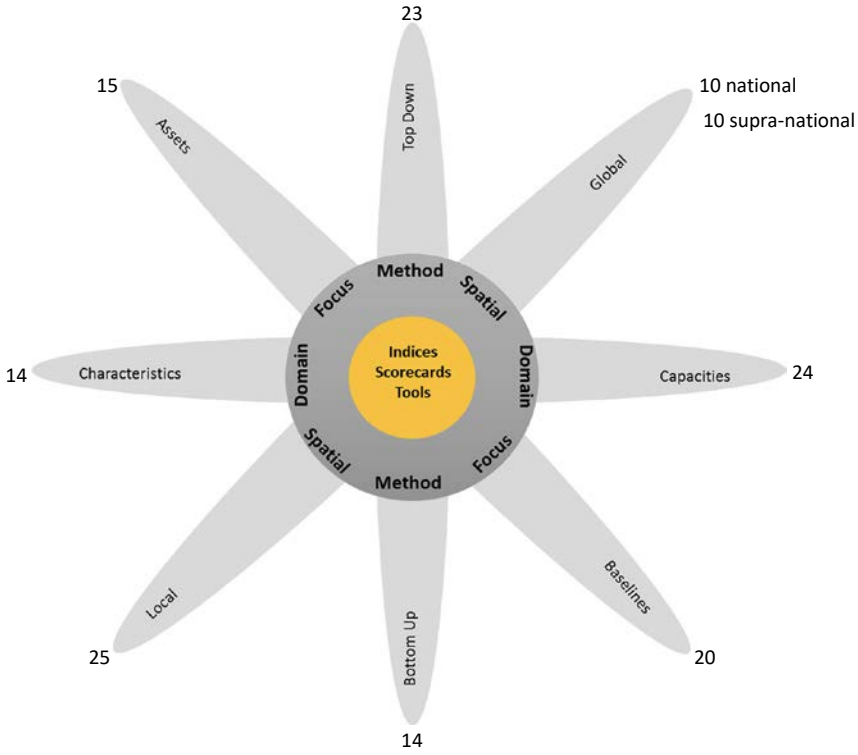

Figure 2: *Classification of 36 EU-projects in four domains (Cutter 2016).*

Conclusions

The research questions this scoping paper aimed to answer concerned the way resilience is conceptualized in the EU context operationalized by the intentionality implicit in the funding of projects under various calls; whether the concept of *community* is present in the discourse of completed EU-funded projects, and finally the characteristics of resilience *indicators* produced in the context of completed EU-funded projects.

Our analysis of 36 relevant projects revealed, *inter alia*, an articulated focus on climate change adaptation issues, including combating the consequences of climate change, better forecasting, and better preparedness. Concomitantly, almost 70 per cent of the projects included the local level as a spatial focus, though just over 40 per cent employ a bottom up methodology, which may point to a lack of taking into account the 'community' in 'community resilience'. The implication is, of course, that if local public sector officials or residents do not buy into a plan or are not even aware of it, the chances of its implementation are rather slim. Of relevance for the Swedish context is the framing of any such toolkit in a manner that is consistent with the workflow to public servants must adhere to in their day-to-day activities.

Finally, and this is a criticism against evaluation instruments as much as advice for current and future projects, evaluation frameworks such as the ones mentioned in this paper seem to lack agency (Becker, Schneiderbauer, Forrester, and Pedoth, 2019). In other words, various kinds of assets and attributes are evaluated, but not what people actually do with them. Again, we seem to lose the community in whatever it is that we attempt to keep resilient.

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