















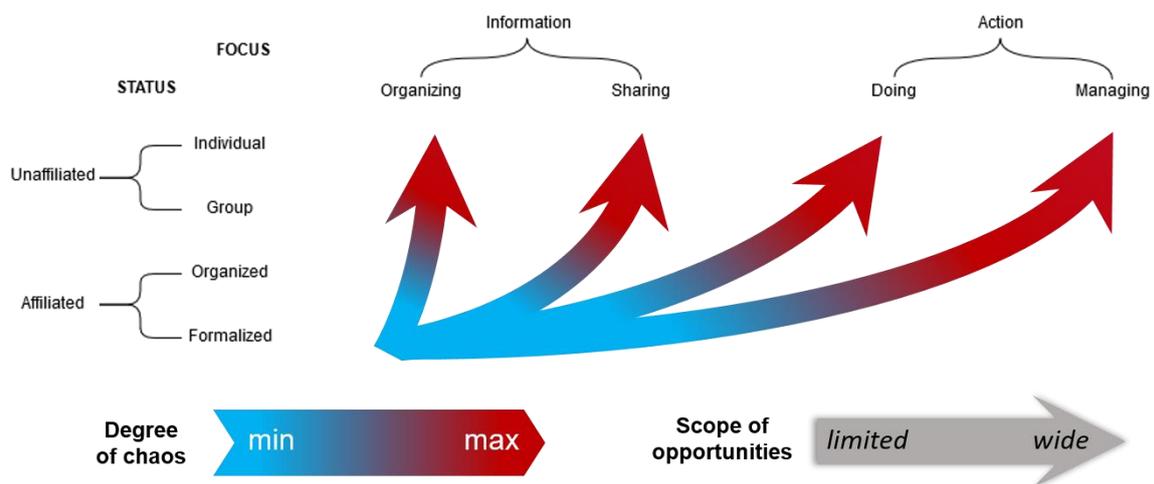
regarding data quality, trust and format, and social media can lead to rumor propagation, panic, or rise new ethical challenges (Alexander 2014; Crawford and Finn 2015; Rizza and Pereira 2014). Secondly, interviews we have conducted with crisis responders show that integrating citizen action remains the most challenging part for professionals. Whether it is about supporting or just letting the action being done by a citizen is for professionals a risk of endangering an individual whose own objective should be his/her own safety.

Last but not least, first discussions with official crisis responders, volunteers and researchers in the field tend to indicate that as the crisis situation becomes more complex, the professionals’ decision-making process tends to be disturbed because of stress, uncertainty, time pressure, heightened public scrutiny and cognitive overload, which could result in tunnel vision and information bias (Cao et al. 2008; Schraagen and van de Ven 2008; Svedin 2011). Thus, in a highly chaotic crisis, we can assume that a large range of volunteerism types will be present, bringing a lot both on the action or on the information side, but the professionals might close their cooperation doors to focus on a small range of tasks they have to accomplish with partners they already know.

Given these considerations, we make the assumption that there are different levels of severity of the crisis at which it could be relevant for professionals to take citizen initiatives into account. The more complex the crisis, the more diverse the citizen initiatives will be. At the same time, it should be considered that the more complex the crisis, the more opportunities professionals will have to integrate these initiatives, starting with the most formalized and information-focused ones, and progressively opening their mind to less formal, more spontaneous and action-focused initiatives. Thus, based on the taxonomy presented before, we can develop a map of levels of opportunities of volunteer consideration in the crisis response, depending on the severity of the situation (i.e. the “degree of chaos”). This map is presented in Figure 3.

Note that in this hypothesis, the “degree of chaos” is a notion that might rely on a diversity of parameters that can affect the complexity of the situation. As a first attempt to specify this *degree of chaos*, the influencing parameters could be the crisis type, its duration, the variety and volume of the needs professionals have to address, the professionals’ competences and resources, the ethical, legal and social aspects regarding the integration of a citizen, or the risk that this integration might represent. The *degree of chaos* can be seen as an extension of Franco et al’s “disaster impact index” (2008), and further research is needed to clarify this concept.

Future research will be conducted to refine the parameters influencing these opportunities, and to understand professionals’ needs, to help them converting an opportunity into a concrete integration of an initiative.



**Figure 3. Scope of opportunities of volunteer consideration by professionals, regarding the degree of chaos of the crisis**

**ANALYSIS AND DISCUSSION**

Regarding the taxonomy itself, one important dimension that doesn’t appear is the skill level of the volunteer regarding the action he or she is doing (i.e. *regular / non-regular tasks* (Dynes 1970)), combined with the spontaneity of the initiative. As presented before, these parameters could be joined as a third dimension in the taxonomy, representing the volunteer’s inclination to help.

Having in mind the goal of integrating citizen initiatives, or at least be aware of them during a crisis response, it could be relevant to think about prioritizing the volunteerism forms that might be relevant to take into account.





