RESILIENCE: A MULTI LEVEL APPROACH AND ITS RELEVANCE FOR THE DEVELOPMENT OF ORGANIZATION FOCUSED RESILIENCE FRAMEWORKS

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Conceptual definitions are of utmost importance when identifying and describing dimensions and variables needed for conceptual operationalization. That is all the more true for the very fashionable term of resilience considering the litmus test it needs to survive under the constraints and challenges raised by the current Covid-19 pandemics. Consequently, the tenet of this article is that for concepts to become reality, they first need to be translated into formal standards and frameworks guiding action at multiple levels. As a result, the aim of the paper is that, by employing a system based approach and a multi-level investigation into the concept of resilience to lay the minimum grounds for nuancing the definition of resilience at organization level.

Key words: *resilience, multi-level approach, socio-economic environment, people resilience, organization resilience.*

1. INTRODUCTION

Crises and disturbing events are the litmus test validating or not whether organizations are resilient enough to withstand adversity and prosper. Establishing organizational resilience maturity levels and assessing those is where difficulty lies. The conundrum does not necessarily reside in the absence of such standards since so far two such standards are in place, namely the British Standard 65000, Guidance for Organizational Resilience (BSI, 2014), and the ISO 22316:2017, Security and resilience – Organizational resilience – Principles and attributes (ISO 22316:2017). It is rather the definition each organization provides for resilience and the operationalization of the concept into relevant dimensions and variables based on which assessment indicators along with the right measurement

tools can be established that influence the applicability of the concept into practice. The aforementioned standards list and describe the main dimensions of the concept based on very similar definitions highlighting resilience as organizational ability (British Standards Institution, 2018) or capacity (ISO 22316:2017) to "anticipate, prepare for, respond and adapt" or" "absorb and adapt" under changing circumstances in order not only to survive, but also to prosper. Nonetheless, as it always happens with general frameworks or with benchmarking initiatives, they fail to actually address the nuances that provide for the tangible application of the definition of resilience in particular organizations. In other words, a general definition and manner of approaching aspects related to survivability and thriving endangers the identification of individual differences that may or not contribute to the overall goal of securing a resilient posture. Consequently, the assumption underlying the current article is that based on a multi-level approach to the general concept of resilience, the key dimensions and variables are identified. The paper does not aim at a comprehensive approach, but it rather focuses on highlighting a number of key aspects that need to be taken into account when focusing on the development of a specific resilience framework for a given organization.

As a result, when identifying the key areas for conducting the multi-level approach to organizational resilience, the article starts from the following assumptions based on which the chapters are developed:

1. Organizations are open systems which means that their definition of resilience must be first and foremost approached from a threefold perspective: the resilience of inputs, resilience of throughput and resilience of outputs and outcomes.
2. Organizations are highly dependent on the environmental factors that have an impact on their strategic direction and performance outputs and outcomes. Consequently, understanding resilience from a socio-economic perspective, but also from a national/ state perspective is of utmost importance when identifying, refining and applying a specific definition or organizational resilience.
3. From the same system-based perspective, organizational throughput is made of people, technology, structure and processes. Hence, defining and operationalizing these components in terms of their resilience and in relation with the organization's position within its external environment and the resilience of

its outputs and outcomes from the perspective of any organization's goal to secure competitive advantage contributes to better understanding of the key areas to be taken into account when developing standards in the field.

2. MAIN TAKEAWAYS FROM A SYSTEM BASED APPROACH TO RESILIENCE

Applying a system based model to understanding and defining resilience allows for the identification of the relevant actors and the interdependencies among those and thus leads to understanding the complexity of the whole system and its dynamics. Furthermore, as Marleen De Smedt, Enrico Giovannini and Walter J. Radermacher (in Stiglitz, J., J. Fitoussi and M. Durand, 2018) note, the positive or negative non-linearities, self-organization principles, emerging features, "tipping points" expose the system to endogenous and exogenous impact factors whose interactions define the resilience level of the system. The same authors note that resilience, along with risk and vulnerability are the key concepts underpinning a system's based approach. Furthermore, they identify resilience as the main pillar of any system and its related monitoring efforts as the means informing a policy framework in this respect.

The system model to resilience has the advantage of applying the seemingly simple loop logic of input, throughput, output and outcome to a complex interplay of varying factors and actors contributing to viewing resilience as both a trait of system components and an outcome.

Fig. 1. Basic System Components

In relation with input, establishing resilience as a strategic goal (i.e. system direction in Figure no. 2) is heavily influenced by the results any analysis of the external environments generates in terms of defining the resilience of factors like political will and government stability, continuity, geo-political stability, sociological factors like population age, distribution and culture, legal factors like the rule of law and the stability of the legal framework, the evolution of technology relevant for the type of industry to which an organization

belongs, environmental factors like climate change and associated global initiatives in the field in terms of their probability to influence a given organization and their impact. The narrative employed by the analysis is also important, in our opinion, because references to risks inherent in environmental factors as vulnerabilities, challenges or opportunities prominently influences the definition of resilience at organization level and the thereafter initiatives.

From this perspective, the British Standard 65000, Guidance for Organizational Resilience (BSI, 2014) represents a good starting point for discussing throughput, even though, in our opinion, in quite a limited manner since it only focuses on leadership, people and processes. From this point of view, taking into account the traditional outlook on the throughput of a system and defining also the resilience of organizational structure and technology employed to conduct organizational processes contributes to identifying the shades of grey that inform on the fine differences between various organizations and hence contributes to factoring them in when it comes to defining the resilience of a specific organization.

Concerning the result component of a system's view, we believe that the capacity of an organization to demonstrate resilience in terms of recovering from a disruptive event and return to its normal state is provided by the clear-cut relationship between the organization's strategic direction, its definition of outputs and the measurement criteria employed for sustaining that link. Nonetheless, we believe that an organization's definition of outcomes and its work towards permanently aligning it to its strategic direction as informed by the resilience of external factors and by the actions sustaining the resilience of its key components influence its capacity to thrive. For example, if we define the goal and hence the outcome of an organization as securing people's well-being, then the verb and the noun phrase should be properly operationalized. Thus, an organization's resilience from the perspective of such envisaged outcome should be understood as possibly people's security (e.g. personal safety, safe access to resources), assurance of basic materials for living a good life (e.g. access to goods, resources of quality and the right amount, adequate livelihood standards), health (e.g. access to unpolluted water and air, feeling well and strong), social relation (e.g. cohesion, mutual respect, ability to help other people), and freedom of choice and action (Constanza Robert, 2008).

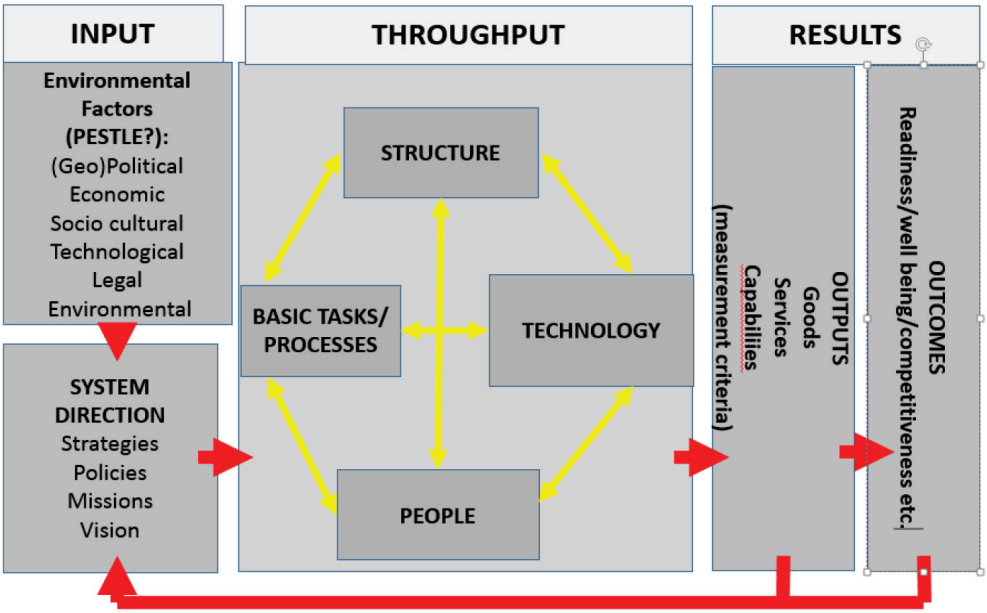

Fig. 2. Organization focused system view

In conclusion, translating the definition of resilience into a system view of an organization or of a nation/society generates increased complexity. Despite that, the possibility of capturing the critical interdependencies and hence the thresholds where tipping points may emerge and lead to the breakdown or recovery and possibly transformation of an organization represents the major advantage of employing such a model of analysis. In this respect, the proposal of Constanza et al. (1997) of an economic ecological system may be a better contributor to defining organizational resilience as a complex multi-level concept that builds upon a plethora of relationships that are both overt and covert.

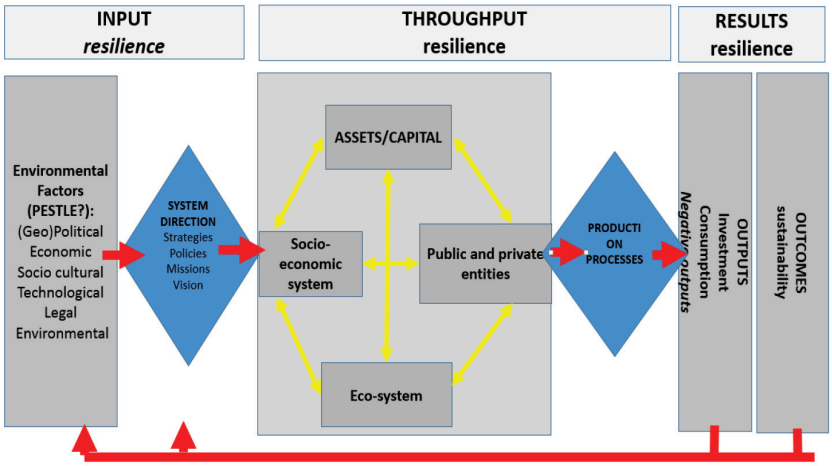

Fig. 3. An economic ecological system based model, Adapted from Costanza, R., J. C. Cumberland, H. E. Daly, R. Goodland, and R. Norgaard. 1997. An Introduction to Ecological Economics. St. Lucie Press, Boca Raton, 275 pp.: https://clf.jhsph.edu/sites/default/files/2019-10/robertcostanza-presentation-event.pdf.

All of the above considered, we will focus in the chapters to follow on those elements that, as a result of the aim of the current article, remain general enough to allow for the identification of specific features when addressing them at the level of a real organizations. Consequently, we will only discuss socio-economic resilience, people resilience and organizational resilience in order to highlight the need for nuancing the concept of resilience when it comes to translating general standards or frameworks in the field into specific organizational frameworks.

3. SOCIO-ECONOMIC RESILIENCE

Socio-economic resilience of states is approached in a Joint Research Centre resilience framework (Manca, A. R. et al.,) and furthered in a study that evaluates the behavior of EU member states to the financial and economic crisis unfolded between 2007 and 2012 (JRC, 2018) from a resilience perspective. According to the study (Joint Research Center, 2018: 13), a country's resilient behavior can be analyzed in terms of a number of indicators that can be broken down from a set of general resilience characteristics describing the respective country's education, digital development, innovation and R&D, labor market policies and support, gender equality, government expenditures, macro-economic performance, financial performance, market development and regulation,

quality in government, quality of life, regulatory environment, people's trust in state institutions, etc.

The JRC resilience framework defines resilience as the ability of society or of a system to continue delivering well-being sustainably despite de major shocks or hindrances it may encounter.

According to the JRC framework, societal resilience requires three types of capacity, depending on the level of stress induced (i.e. "disturbance intensity") and the time the latter manifests ("time of exposure") (as presented in Figure 4): absorptive capacity, which requires the employment of capabilities to resist the stress of an event that manifests at a rather low level of intensity and for a short period of time; adaptive capacity, which consists in the ability to be flexible and generate incremental changes that do not contribute in any way to increasing the level of discomfort already manifest; transformative capacity required when the extent of damage inflicted or the time length the disturbance lasts makes it no more possible to manage the system in an as is form and hence generates the need to engineer large scale changes.

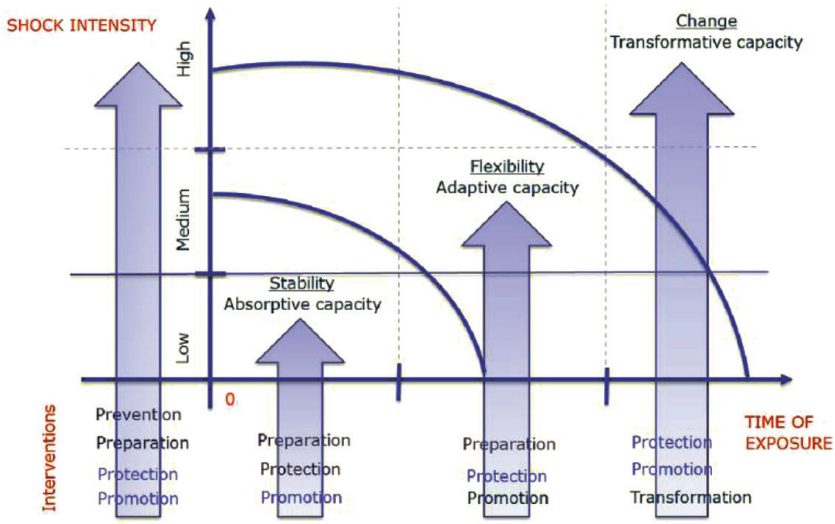

Fig. 4. Capacities needed for societal resilience
Source: Manca, A.R., P. Benczur and E. Giovannini (2017), "Building a scientific narrative towards a more resilient EU society – Part 1: A conceptual framework", *JRC Science for Policy Report*, No. 106265, Publications Office of the European Union, Luxembourg, http://publications.jrc.ec.europa.eu/repository/bitstream/JRC106265/jrc106265_100417_resilience_scienceforpolicyreport.pdf.

Worth noting is the following, according to Stiglitz et al. (2018): "…the three types of capacity often act simultaneously, at multiple levels (individuals, community, regional, country, institutions) and with potentially different intensity at different levels. In other words, they are different perspectives of the same reality rather than opposing or competing components."

The strategies for sustaining the three types of capacities are prevention (e.g. mitigation or transfer measures to reduce identified risks), preparation/ protection (e.g. management reserves for unforeseen situations, establishment of coalitions/agreements), promotion (e.g. investments in assets, policies aimed at facilitating flexibility in various socio-economic areas) and transformation (e.g. policies focused on an outcome and their inherent gradual implementation). Depending on the envisaged capacity, the strategies can be coupled. Thus, to maintain existing stability, prevention, preparation/ protection, and promotion strategies are needed. To achieve stability after a stressful event, as well as to ensure flexibility to adapt, preparation/ protection and promotion strategies must be put in place. Last but not the least, to enhance transformative capacity, protection, promotion and transformation initiatives must be employed.

One important idea expanding the concept of resilience proposed by the JRC framework is that of "bouncing forward", namely the capacity of an entity to seize the opportunity and develop better in comparison with the pre-crisis situation (Joint Research Center).

Another aspect worth noting when it comes to discussing socio-economic resilience is its inherent relation with state/national resilience. In this respect, government continuity is one key aspect guaranteeing stable definitions of resilience at societal and economic level, and hence at organization level. Another one is related to the existence, dissemination and internalization of a commonly agreed, enacted and endorsed set of values like human rights, equality, rule of law, democracy, etc. In our opinion, the absence of these two renders the operationalization impossible.

4. PEOPLE RESILIENCE

According to the British Standard 65000, Guidance for Organizational Resilience (BSI, 2014), the people dimension of organizational resilience refers to the following variables:

- Culture (i.e. shared values and behavior, consolidation of trust and employee engagement);
- Community (i.e. the organization's relations as part of a community, social responsibility)

- Awareness and Training (i.e. viewed by levels);
- Alignment (i.e. in terms of exogenous factors influence and their related threats, risks, opportunities).

In our opinion, while this standard highlights one key component in the throughput area of the organizational system, it is not enough to adequately describe what is meant by people resilience. Therefore, we believe that approaching this dimension from the perspective of individual resilience, community/group resilience and societal resilience may be more beneficial for describing resilience at organization level and in relation with the external environmental inputs.

Individual resilience is anchored in a value system (Coutu, 2021:10). The latter's strength is validated by the extent to which people espousing it show willingness and demonstrate capacity to adhere to it in times of difficulty. Values allow for the interpretation of reality. Loyalty to them when undergoing challenging situations is what tests people's belief in them and shows their worth. In this respect, the way people choose to find meaning in what they encounter and thus accept reality as shaped by external factors and perceived through individually honed values makes the difference between resilient and non-resilient individuals.

As Diane Coutu (2021:14) notes, apart from the capacity to find meaning in adversity, the ability to improvise, along with the capacity to persist and endure in a course of action regardless of the level of strain endured are the hallmarks of individual resilience. However, there are nuances to the statement above. First, in relation with the capacity to improvise or to demonstrate creativity it is worth noting that it can be enacted as long as basic knowledge in the field where improvisation is required is mastered, while the use of associated tools and techniques becomes second nature. Nonetheless, there are limits to the manifestation of creativity and those pertain to life threatening circumstances, as Karl E. Weick indicates. Second, finding meaning in times of difficulty is about establishing worthwhile goals, having the freedom to choose under normal circumstances and exercising the freedom of choice in a responsible manner even under tense conditions. The capacity to find meaning is not blind optimism, but rather what Victor E. Frankl (1984: 159) calls "tragic optimism", namely an individual's choice to live, and find a reason for doing that despite extreme circumstances like pain, guilt or death.

Individual resilience requires resources, namely a set of "protective mechanisms" that allow for a person to demonstrate endurance in times

of distress. They range from the robustness of the neurobiological system, and the temperament of the person to the level of the same person's sociability, intelligence and communication skills. Furthermore, personal characteristics related to levels in self-efficacy, self-esteem, flexibility, determination, internal locus of control, the strategies employed to tackle stress add to the capital acquired by people during their developmental stages. In this respect, a psychosocial perspective informs that extreme stress makes people regress to their "most habituated way of response" (Diane Coutu). That equates behavioral responses learnt during developmental stages (i.e. Hendrix's developmental theory describing the stages of attachment, exploration, identity, competence, concern and intimacy pertaining to age groups from 0 months up to 19 years of age), the emotional needs characteristic of these phases (i.e. RILEE's theory of relating and the emotional needs it describes as attachment security, attention, acceptance, approval, acknowledgment, affection) (Darlyne G. Nemeth, Traci W. Olivier, 2017:89) and individual and environmental responses, either positive or negative, experienced when evolving from one stage to another.

Individuals cannot live by themselves, though. Therefore, family, community, along with the socio-economic environment play an important role in meeting individual needs, shaping individual responses and hence consolidating resilience. In this respect, based on analyses of how community response contributed to securing people resilience and solidarity in the case of Hurricane Katrina and the state of Louisiana, USA was confronted with the Great Flood of 2016 Darlyne G. Nemeth and Traci W. Olivier identify some key indicators that, in our opinion, provide an operational definition of resilience in the case of individuals as part of a community. Thus, individual resilience can be viewed as the capacity to be "firmly present in today…by learning from yesterday…and see themselves in a better tomorrow" (Nemeth et.al, 2017:99).

Community resilience, according to Norris et al (2008) is the result of four types of adaptive capacities: economic development, social capital, information and communication, community competence.

Social resilience, according to Hall and Lamont (2013) refers to adaptation, transformation of individual behavior or of social structures providing meaning to behavior either by old or new means in order to secure a given community's or society's members well-fare (i.e. seen as psychological or physical well-being, material sustenance, and the sense of dignity and belonging to a given group).

According to Brown (2016), the everyday forms of resilience are resistance, rootedness (i.e. viewed as identity markers), and resourcefulness (i.e. in terms of both knowledge, innovation, learning and the means by which resources can be accessed and employed as a result of changes).

Last but not the least, it is worth noting that "Resilience is embedded in people's behaviour, and it is built by proactive approach to mobilizing resources, abilities to respond and perform under a variety of conditions." (Tasic et.al., 2019)

5. ORGANIZATIONAL RESILIENCE

Similarly to individual resilience, organizational resilience is built on a set of values. However, some authors argue (Coutu, D., 2021:11) that in the case of organizations the existence and enactment of a system of commonly agreed, accepted and enacted values is more important for an institution's capacity to overcome difficulties and prosper, rather than its reliance on a number of resilient employees. Individual resilience leads to highly personal choices when not coupled with the goals of a community of interest. That only emphasizes the role played by a trust-based organizational climate and by an organizational culture built around a set of commonly agreed principles and values guiding employee behavior. Resilience as a trait at organizational level is validated by people's behavior. The manifestation of individual resilience over organizational resilience may signal organizational weaknesses and the areas where, provided that a given organization experiencing adversity outlives it, the need for improvement.

Everyday habits and experience are important assets for any organization and they become even more important when encountering bumps on its way to accomplish goals and objectives. Nonetheless, they can easily transform into challenges, threats and eventually high impact risks in times of crises if they sustain a silo mentality, a lengthy and time consuming decision-making process resulting from redundant processes and red tape. Therefore, working towards acquiring and maintaining a pristine outlook on the rules and regulations that ensure institutional resilience and its survival in times of crisis is of utmost importance. Eliminating the burden of organizational processes, systems, assets which are superfluous and create unnecessary pressure not only in times of normal operational tempo but also in times of difficulty is mandatory. An existential crisis during an organization's lifetime requiring mere survival and recovery unveils the areas where irrelevance is mostly poignant.

Striking a balance between perpetuation and continuous innovation is required for resilience to be an after-crisis positive trait for an organization. Gary Hamel and Liisa Välikangas' (2021:25) opinionate that innovation is not solely a goal by itself that has to be assumed at strategic level and translated at operational and tactical level, but it should be an underlying theme of those aspects that secure the very existence of an organization, namely its values, processes and behaviors. In this respect, the authors equate resilience with efficiency and signal the imbalance that may manifest between the operational level and the strategic level of an organization. Hence, even though an establishment may score high in terms of its efficiency related measures and indicators for the operational level that prove the capacity to perpetuate, it may be found faulty when assessed for its strategic efficiency in terms of the organization's capacity to innovate.

The basic elements identified by Pricewaterhouse Coopers (PwC) as needed by an organization to be resilient at the minimum level are connected to its capacity to adapt, respond, recover to stress scenarios and real disruptive events by maintaining key services and associated requirements for operating, efficient communication channels, and a proactive culture coupled with a learning attitude of its employees which is the result of training and preparation for the worst.

According to PwC, resilience can be built only in already well-functioning organizations, and, to extend their argument further, based on existing and time tested and validated processes and values.

Based on the approach proposed by PwC, the following conclusions sequential can be drawn when it comes to building/consolidating resilience in an organization:

- resilience thinking and associated initiatives starts from understanding and considering the needs of the primary stakeholder and an organization' products or services serving those. For that strategic thinking and change management skills are necessary.

- a backwards type of thinking needs to be applied in order to map the key processes and the key systems contributing to satisfying stakeholders' needs. The key areas that need consolidation in this respect are the infrastructure (physical and digital altogether) and its associated protection in terms of assets (both tangible and intangible) and continuity.

- understanding an organization's external dependencies and its multiple stakeholders contributing to sustaining key services, and their relationships and role in the

organization's key processes and systems is paramount for applying risk management thinking, and for employing incident and crisis management knowledge tools and techniques.

6. RESILIENCE FROM A STRATEGIC AND OPERATIONAL PERSPECTIVE

Reflecting on the positive impact that the Covid 19 epidemics could have on approaching resilience from a strategic perspective, Martin Howard in an article titled *Resilience is the New Black* proposes a six step approach to a resilience focused strategy at national level centered on: research, resource, readiness, respond, recover, review. Thus, for top decision-makers is of utmost importance that scientists, intelligence experts scan the future and map it in terms of its challenges providing the necessary scenarios that best inform strategies. Decisions have to be supported though by allocation of necessary resources and in this respect an integrated approach to leadership and crisis management in central and local structures, alongside with the provision of contingent capabilities are necessary. Furthermore, existing systems, structures, processes have to be tested and adapted/transformed through simulations, exercises or other means of testing their resilience. As a result of that the conclusions have to be enacted, otherwise a key aspect to building resilience is skipped. When crises strike, relying on contingency planning in a timely manner is the best option. However, gaps are an inherent part of the tension between thinking and acting and they give room to employing planning just as a baseline and not as the ultimate solution. Furthermore, responding requires balancing recovery efforts with running day-to-day businesses in an as close to normal conditions as possible to allow for the "bouncing back" effect to occur. Last but not the least, generating lessons learned through a review process and feeding them into the previous steps is of utmost importance for a system, structure, behavior to be truly called resilient.

In a very similar vein to Martin Howard but from an operational perspective, Gerhard Wheeler resorts to past examples from wars to sustain a six fold approach to building operational resilience. The steps he proposes are as follows:

1. anticipate by employing alternative ways of thinking, scenario-based planning or red teams.

2. detect warning signals that foretell the emergence of threats. In this respect one important aspect underlined by the article is the use of empowered deputies whose role is to relieve the burden placed on top leadership by the priorities of

the day and take care of aspects that pertain to the daily running of the organization and that could also signal the potential appearance of challenges.

3. deter by first and foremost acknowledging the existence of such a need and then by employing a "stick and carrot" approach that is mostly anchored in knowledge of human behavior as provided by behavioral psychology, game theory.

4. withstand, namely providing the necessary capacity to resist adversity until a solution is identified and responding becomes possible. In this respect, the author notes the following: "…effective military resilience plans are designed to absorb losses, disperse assets, build in redundancy, focus protection on vital resources, maintain reserves, secure supply chains, disguise strengths, and defend in depth. Most importantly, they ensure that the whole of the organization is prepared and trained to act in a crisis."

5. respond asks for the ability of the organization to counter a threat at a faster pace than the latter's capacity to adapt. In such a case tools like integrated systems that communicate in no time critical information to decision-makers and a "leadership culture of delegated responsibility" are some of the key ingredients.

6. recover by reflecting on past actions, learning from those and institutionalizing the conclusions into clear standards.

In the same realm of operational resilience in a document titled *"Operational resilience. Your Swiss army knife to survive the next crisis"*, PWC defines the concept in the business area as the ability of an organization to „protect" and „sustain" those core services that are critical for its clients both in times of normalcy and in times of difficulty. The major drivers behind the need for operational resilience are customers' expectations for ongoing availability of services, extreme weather conditions and climate change, increasing complexity of cyber threats, tighter regulatory supervision, higher risks of internal failures associated with increasing system complexity. Compared to traditional risk management approaches that look at disruptive events from the perspective of hypothesis formulation, the resilience narrative treats the same events as future certainties. Thus a shift from the „if" speech to the „when" discourse marks the difference between risk thinking and resilience thinking.

7. CONCLUSIONS

Resilience is the ability to grow, develop along change and its associated uncharted territories and not despite it. From such a perspective, the concept is associated

with flexibility and ever-changing conditions which require systems of management that nurture these qualities over maintaining stability.

A strong, resilient system is desirable but once the desideratum achieved it may run counter the changing times and the need for permanent renewal. Consequently, breaking the resilience or reducing the resilience in order to allow for alternatives to emerge is the next step ahead.

Resilience is about the capacity of a system to preserve identity while deliberately changing, adapting in anticipation or as a response to internal or external factors.

Three key words are associated with resilience as a defining element of social-ecological systems, namely: adaptability, transformability and persistence. These concern actually answering the question "for what?". Thus, resilience acquires meaning when associated with them in phrases like: resilience for adaptability and resilience for transformability.

People's adaptability as part of the resilience approach incurs their capacity to "learn, combine experience and knowledge, innovate and adjust responses and institutions to changing external drivers and internal processes" within given critical thresholds of a system. Transformability concerns the crossing of existing boundaries, already known system thresholds and generating new pathways when a system become "untenable". Planning and controlling are no longer the focus in approaching resilience for transformability. Building experimentation spaces free of the fear of failure, allowing for small-scale experiments, encouraging cross-learning and facilitating the spread of new initiatives across the whole of the system are some of the tools endorsing such an approach. The only threshold in such a case is the sustainability of the system.

One key trigger or obstacle to resilience for adaptability or for transformation is cultural identity (Walker et al. 2009, Rotarangi and Stephenson 2014, von Heeland and Folke 2014).

According to Bene et al. (2016) resilience is the sum of absorptive capacity, adaptive capacity and transformative capacity, each of these leading to interim and final outputs like persistence (i.e. in the case of absorptive capacity), incremental adaptation and transformational reactions.

Resilience thinking runs counter stability, predictability. It is the outcome of employing various types of capabilities and strategies that are context dependent to survive disruptive events or to adapt to incremental changes, achieve robustness coupled with agility and thrive in the long run. Nonetheless,

as the BSI report on 2018 trends in business across the world (BSI, 2018:16) unveils, in times riddled with continuing uncertainty, securing product resilience via innovation, horizon scanning and adaptation is not under the radar of organizations.

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