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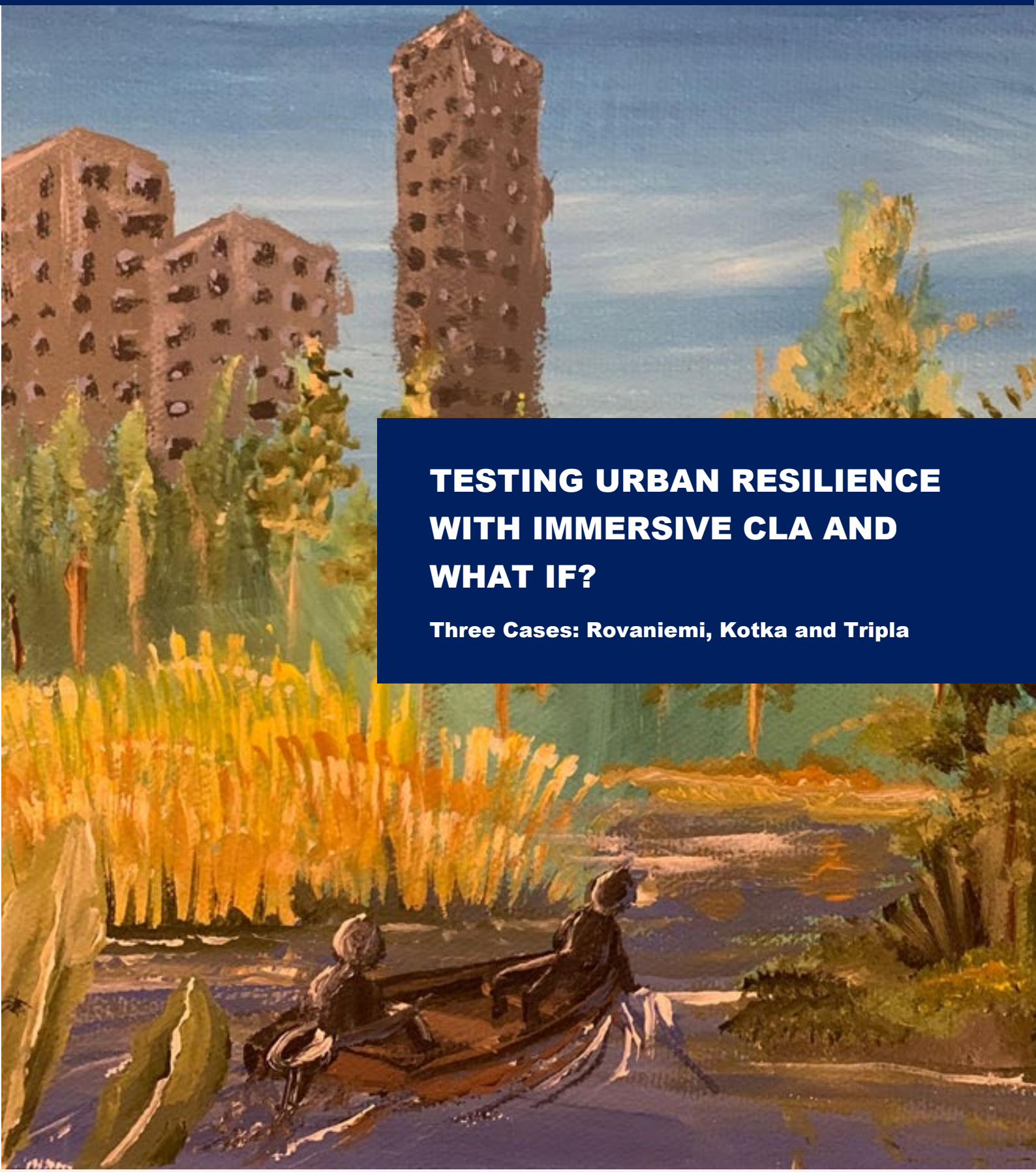

TESTING URBAN RESILIENCE WITH IMMERSIVE CLA AND WHAT IF?

Three Cases: Rovaniemi, Kotka and Tripla

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* *Kontula* is a quarter of Helsinki, Finland, part of the Mellunkylä neighborhood. It was built mostly in the 1960s and 1970s, when more housing was required in Helsinki. The area was at first a quiet, isolated neighborhood. The reputation of it changed to more notorious, after its population increased, an open-air shopping mall was built, and traffic infrastructure with an underground connection was constructed. Especially in the eyes of the early inhabitants, Kontula is still the local and self-serving location close to the nature, even though it is well connected within the capital region urban structure, and it is one of the largest suburbs in Finland. (E.g. Kokkonen 2002, Sädevirta 1994 & Tuominen 2018) Without the suffix "-la" that in Finnish is often added to names of places, the word "kontu" has the meaning of house, estate, or home (Itkonen 2001); for example, the word "shire" as it is described by Tolkien in "The Lord of the Rings" was translated "kontu" in Finnish (Juva 2021). It can be questioned, what will suburbs like Kontula become without or in the midst of future crises or polycrises.

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**“In CLA approach we are on a journey,
co-creating, growing together, and creating an alternative future.”**

– Sohail Inayatullah –

PREFACE

For many CLA is a simple process to analyse data that comes in many forms. These forms include the litany, visible data; the system, the rules and structures; the worldviews, the deeper perspectives; and the myths and metaphors, the unconscious stories.

However, CLA done to transform goes beyond a simple taxonomy. It moves to transformation. This transformation is understanding the present system and moving from passive acceptance of the current reality to a transformed state. This means inaction to action – movement toward a better and more resilience future.

What strikes me most about this impressive work is not just how they have shifted stories but how they have linked these new stories to systemic and litany changes. They have moved foresight from merely being about anticipation to creating the possibility of emancipation. For example, some powerful responses to their energy crisis hypothetical include: “what does not kill you makes you stronger” accompanied by strategic assessment of current legislation, crisis management plans and backup options. Another powerful metaphor focuses less on getting stronger and more on making the best of any situation, being wiser. Participants wrote: “a good time to relax,” with litany changes being ensuring there is enough food, drink, and heating so relaxation is enabled. A third group suggested that strength comes from community – taking care of their neighbour – with very clear rules and regulations to enhance trust. Another group understood that rules during crisis are different suggesting centralised protection centers with a metaphor of the “spirit of the Winter War.”

What is clear from the novel and innovative report is that participatory futures work can make a difference. Knowledge can transform.

5th January, 2024

Sohail Inayatullah

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ABSTRACT

The world is full of volatility, complexity, uncertainty and ambiguity (VUCA), nurturing rapid change and disruption with much potential for crises. Alone in this century, societies have been shaken by multiple crises. Futures studies can help imagining and envisioning sustainable post-crises worlds that are better for all living species. Crises should be counterbalanced by strengthening **crisis awareness, crisis preparedness and crisis resilience** as is our aim within the RESCUE project (Real Estate and Sustainable Crisis Management in Urban Environments). Testing and rehearsing crises via cognitive, multistakeholder foresight processes helps build futures preparedness and preventive stances. Futures literacy is expanded to embrace crisis awareness and preparedness as a key to robust **futures resilience**.

Constructing cities worldwide has direct impacts on nature, health, wellbeing and equality. Simultaneously, digitalisation is transforming the urban space profoundly. The sustainable twin transition of the green and the digital requires careful balancing. We should be addressing and modifying the built environment, both land and space, as a rescue mode in crises. **Anticipatory governance** can drive crisis preparedness and help determine the resilience of urban environments. In this experimental foresight exercise, we apply the metaphor *constructing the future* in our inquiry on the kinds of governance and regulations that would be needed for making cities and the built environment resilient. What policies would have to be changed; and how should they be framed, for them to become truly transformative? In addition, we look for potential barriers and incentives for promoting successful crisis preparedness, as well as suggestions for concrete policy actions and recommended practices that would promote actor involvement, equal power relations, and collaboration, and as a result enable community empowerment toward resilient urban environments. Methodologically we apply a *rehearsing futures* approach and use empirical data from three futures cliniques for testing and analysing possible direct and indirect impacts of a crisis. For this exercise the crisis chosen was total electronic blackout and for analysing it we applied the foresight method *causal layered analysis* (CLA). The data presented in this report was subsequently collected with stakeholders in three different urban cases: 1) **Rovaniemi**, 2) **Kotka** and 3) the **Tripla** complex in Helsinki.

Keywords: crisis awareness, futures resilience, anticipatory governance, resilient cities, CLA, futures cliniques, rehearsing futures

RESUME

Le monde contemporain est plein de volatilité, de complexité, d'incertitude et d'ambiguïté (VUCA), en catalysant des changements et des perturbations rapides, avec un grand potentiel de crises. Rien qu'au cours de ce siècle, les sociétés à travers le monde ont été frappées par de multiples crises. Les études prospectives peuvent aider à imaginer et à envisager « des mondes post-crise » durables qui sont meilleurs pour toutes les espèces vivantes. Les crises doivent être contrebalancées par ***le renforcement de la sensibilisation aux crises, de la préparation aux crises et de la résilience aux crises***. En réalité, c'est également l'objectif dans le projet RESCUE (Real Estate and Sustainable Crisis Management in Urban Environments). Tester, apprendre et pratiquer les implications des crises à travers des processus de prospective multi-acteurs aide à renforcer la préparation aux avenirs multiples et les positions préventives. L'alphabétisation des futurs (futures literacy) est élargie pour adopter la sensibilisation et la préparation aux crises comme la clé pour parvenir à ***une résilience des futurs (futures resilience)***.

La construction de villes dans le monde entier a des impacts directs sur la nature, la santé, le bien-être et l'égalité. Simultanément, la numérisation transforme profondément nos espaces urbains. **Une double transition durable entre le vert et le numérique** nécessite un équilibre prudent. En réaction, nous devrions aborder et modifier l'environnement bâti, tant terrestre que spatial, et le concevoir comme moyen de sauvetage en cas de crise. **La gouvernance anticipative** peut à la fois favoriser la préparation aux crises et, en fin de compte, déterminer la résilience des environnements urbains. Dans cet exercice de prospective expérimentale, nous appliquons la métaphore de « construire l'avenir « pour identifier les types de gouvernance et de réglementations qui seraient nécessaires pour rendre les villes et l'environnement bâti résilients. Quelles politiques faudrait-il changer ? Et comment devraient-elles être formulées pour qu'elles deviennent véritablement transformatrices ? En outre, nous recherchons les obstacles et incitations potentiels pour promouvoir une préparation réussie aux crises, ainsi que des suggestions d'actions politiques et de pratiques recommandées qui favoriseraient l'implication de multiples acteurs, des relations de pouvoir égales et la collaboration, et permettraient ainsi l'autonomisation des communautés vers des environnements urbains résilients. Comme méthodologie, nous appliquons une approche de répétition des futurs et utilisons les données empiriques de trois cliniques des futurs pour tester et analyser les impacts directs et indirects possibles d'une crise. Dans notre exercice, la crise choisie était une panne totale du réseau électrique et pour l'analyser, nous avons appliqué la méthode prospective d'analyse causale multiniveau (ACM). Les données présentées dans ce rapport ont ensuite été collectées auprès des parties prenantes dans trois cas urbains différents en Finlande : 1) **Rovaniemi**, 2) **Kotka** et 3) le complexe Tripla à **Helsinki**.

Mots-clés : conscience de crises, résilience des futurs, gouvernance anticipative, villes résilientes, analyse causale multiniveau (ACM), clinique des futurs, répétition des futurs

RESUMEN

El mundo está lleno de volatilidad, complejidad, incertidumbre y ambigüedad (VUCA), lo que fomenta cambios rápidos y disrupciones, y con ello el incremento de la probabilidad de que surjan crisis. Sólo en este siglo la sociedad se ha visto sacudida por múltiples crisis. Los estudios del futuro pueden ayudar a imaginar y visualizar mundos sostenibles después de superar crisis que sean más favorables para todas las especies vivientes. Las crisis deben contrarrestarse fortaleciendo la concienciación, preparación y resiliencia ante de que éstas ocurran, como es nuestro objetivo dentro del proyecto RESCUE (Real Estate and Sustainable Crisis Management in Urban Environments). Probar y ensayar las crisis a través de procesos cognitivos de previsión de múltiples partes interesadas ayuda a construir posturas preventivas y de preparación para el futuro. La alfabetización sobre el futuro se amplía para abarcar la conciencia y la preparación ante las crisis como clave para una sólida resiliencia en el futuro.

La construcción de ciudades en todo el mundo tiene impactos directos en la naturaleza, la salud, el bienestar y la igualdad. Al mismo tiempo, la digitalización está transformando profundamente el espacio urbano. La doble transición sostenible hacia un entorno construido verde y digital requiere un cuidadoso equilibrio. Deberíamos abordar y modificar el entorno construido, tanto terrestre como espacial, como modo de rescate en crisis. La gobernanza anticipada puede impulsar la preparación para las crisis y ayudar a determinar la resiliencia de los entornos urbanos. En este ejercicio experimental de prospectiva, aplicamos la metáfora de la construcción del futuro en nuestra investigación sobre los tipos de gobernanza y regulaciones que serían necesarias para hacer que las ciudades y el entorno construido sean resilientes. ¿Qué políticas habría que cambiar? ¿Y cómo deberían enmarcarse para que lleguen a ser verdaderamente transformadores? Además, buscamos posibles barreras e incentivos para promover una preparación exitosa para las crisis, así como recomendaciones de acciones políticas concretas y prácticas que promuevan la participación de los actores, las relaciones de poder equitativas y la colaboración y, como resultado, permitan el empoderamiento de la comunidad hacia un desarrollo de entornos urbano resiliente. Metodológicamente aplicamos un enfoque de ensayo de futuros y utilizamos datos empíricos de tres clínicas de futuros que permiten examinar y analizar los posibles impactos directos e indirectos de una crisis. Para este ejercicio la crisis elegida fue el apagón electrónico total, y para analizarla aplicamos el método de prospectiva análisis causal en capas (CLA). Los datos presentados en este informe se recopilaron posteriormente con las partes interesadas en tres casos urbanos diferentes: 1) Rovaniemi, 2) Kotka y 3) el complejo Tripla en Helsinki.

Palabras clave: concienciación de crisis, resiliencia de futuros, gobernanza anticipatoria, gobernanza preventiva, ciudades resilientes, CLA, clínicas de futuros, ensayando futuros

1. INTRODUCTION

It has become crystal clear that we are already living in the VUCA world: a world with rapid changes and disruptions – full of volatility (V), complexity (C), uncertainties (U), and ambiguity (A). Nurtured by the vulnerable VUCA soil, both creeping, cascading and sudden crises are accumulating.[1] Surprises have become the new normal (Heinonen et al. 2017a; 2017b). After the financial crisis started in 2008, we have faced the triple crises of Fukushima earthquake-tsunami-nuclear-accident in 2011, the COVID-19 pandemic in 2020 and the war in Ukraine that started in 2022[2]. The downward cycle of ever accumulating crises should now be counterbalanced with ever strengthening crisis awareness, crisis preparedness and crisis resilience. Here, futures studies, foresight and anticipation can and should help address imagery of a sustainable post-pandemic world (Giurca et al. 2022). Furthermore, crises should be imagined from the futures preparedness perspective or as preventive stance. It is their responsibility to influence the ways futures are imagined, envisioned for and depicted as narratives – above all for making a better world for humans and all living species. (Bell 1997). Futures literacy (Miller 2011; 2018) must embrace crisis awareness and preparedness as a key element, so that we end up with robust **futures resilience**. This is defined as the capacity to survive the crises, overcome them, learn from them and essentially re-think the current organisation and activities, and possibly renew them accordingly (Heinonen et al. 2022a; Heinonen 2022a; Karjalainen et al. 2022a; 2022b; Heinonen & Toivonen 2021).

Futures hang upon us heavily. Not only is the present pregnant with futures (Poli 2011), but the **future is pierced with the present**. The present being pregnant with the future reveals the capacity of us humans at the present day to make decisions that will formulate the future, embedded in our visions, presumptions, expectations, aspirations and decisions today. The future being pierced with the present reflects the same interlinkage, while focusing on the ultimate creation of futures and on the Heidegger-echoed '*question concerning the futures*'. Here, especially the questions around the **futures agency** become relevant. Who owns the futures? Who builds the futures? Who rents the futures? Who discounts the futures? Who occupies the futures? These issues are related to the classical thematique of colonising the future (Inayatullah 2008; Ramos 2005). Futures have become an ethical and political territory. A compelling question for agency is: **who makes the futures fair and flourishing for all?** Let us avoid segregation and gated communities both in urban planning and in anticipation of preferred futures. Let us accordingly also make communities and cities resilient for all.

We apply here the metaphor of *constructing the future* that reflects our focal interest of the study – the built environment. Constructing cities worldwide, urbanisation as a megatrend, has a huge impact on nature, on the use of natural resources, as well as on our health, wellbeing and equality. Digitalisation is transforming the urban space in a profound manner (Ferreira et al. 2022). Such progressions are often taken for granted and their impacts are too often detrimental. The European Union has an official strategy towards the twin transition of green and digital (Muench et al. 2022). Such pursuit is ambitious and requires careful balancing. For example, the aim to create smart cities is not enough, we need **eco-smart cities**. Smart cities are often technologically oriented and require a lot of digital devices, solutions and networks. If the recyclability of such technologies is not high, then the ecological footprint is large. Consequently, we should be addressing and modifying the built environment (land and space use) both as a rescue for us in various crises – and as a source of health, wellbeing, wealth and environmental quality on an equal basis.

Anticipatory governance (Heo & Seo 2021) can boost crisis preparedness. In many countries, the public sector steers land use planning as part of their chosen land use policy (Behrend 2017; Fernandes & Chamusca 2014). Therefore, the role of the public sector is crucial, when determining the resilience of urban environments. The values, views and expectations they favour are reflected via land use plans and building regulations into the creation of future cities and their characteristics (Yrjänä et al. 2018). Our inquiry is accordingly focused on the kinds of governance, and related regulations would be needed for making cities resilient. What policies would have to be changed and how should they be framed (Wardekker 2021) for them to become truly transformative for the purpose above?

Transformative policies are needed, because of the ever-changing interplay between the built environment and society and interrelated phenomena, including a variety of risks and future crises (Toivonen & Viitanen

[1] Besides crises themselves, attention can be proactively drawn to catastrophic risks. See, for example, Hendrycks et al. (2023) for a discussion paper on catastrophic AI risks, which can be categorised into four types: malicious use, AI race, organisational risks and rogue AIs. This highlights the complexity and diversification embedded in any of single risks. David Wood from the UK Node of the Millennium Project recommends this paper and describes how it points out ways, in which these four categories of risk interact making them harder to handle. It also contains suggestions for how to mitigate and govern these risks.

[2] This is a reference to the latest aggression of Russian against Ukraine, the war in Ukraine actually started already in 2014.

2016; Masik & Gajewski 2021). In addition, various actors, such as households, companies using retail and office space, developers, or investors and financiers, are involved in the built environment scene. They all have strong and at times even contradictory aims, hopes and fears concerning the future development (Innes & Gruber 2005; Lawrence 2000; Toivonen 2011). Therefore, also potential barriers and incentives for promoting successful crisis preparedness are being sought for. We look for suggestions for concrete policy actions and recommended practices that would promote actor involvement, equal power relations and collaboration, that would as a result enable community empowerment toward resilient urban environments (Rashidfarokhi et al. 2018).

The ultimate goal is to explore possibilities for providing urban space that is crisis resilient, prone for healthy living and wellbeing, enabling a fair living model for all. We do not want a crisis resilient 'urban farm' where some lots are more resilient than others, instead, we seek a comprehensive approach. On the other hand, the resilience of a city might be based on the idea that some parts or properties of the city are built to be more resilient than others, but in case of emergency offering access for all.

We aim to bridge the research gap between research and policy by bringing the future closer to present decision-makers. For the purpose, we highlight the process, where immersion in futures may bring forth ideas and solutions based on the future-oriented realisation of the contexts and contents of crises hitting urban areas. The following figure shows the outline of this report: the first chapter introduces the VUCA world and the need for futures resilience, presenting the analytical framework (section 1.1), moving on to futures provocation needed to highlight the importance of futures thinking (section 1.2). Next, the CLA methodology and the chosen experimentation (section 1.3), as well as the introduction of Jerome Glenn is provided (section 1.4). The second chapter includes the results from the three CLA workshops conducted as futures cliniques. The third and final chapter comprises analysis of results and concluding remarks.

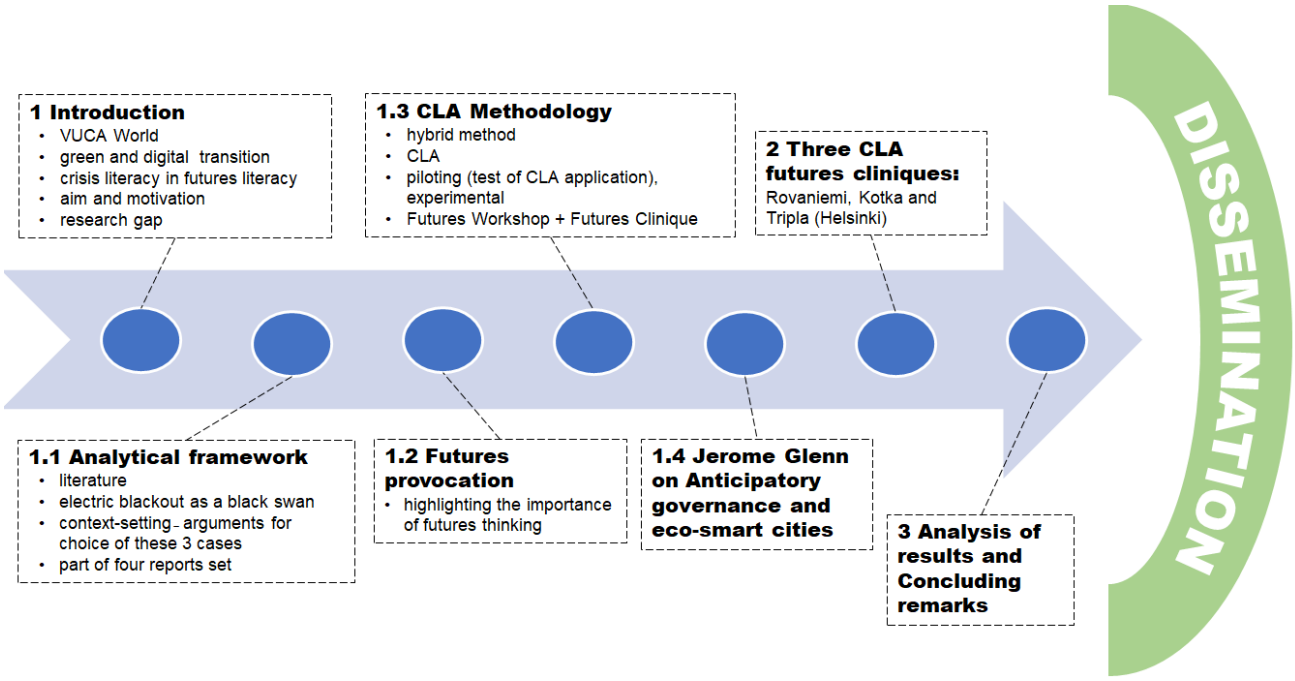

Figure 1. *The outline of the contents of this report.*

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1.1 Analytical Foresight Framework

RESCUE (Real Estate and Sustainable Crisis Management in Urban Environments) is an interdisciplinary research project focusing on the role of real estate, space and land use in both anticipated and unanticipated crisis situations. The project consortium includes partners from three universities; Aalto University (department of Built Environment and department of Architecture), University of Turku and Tampere University aiming together to promote the dynamic resiliency and crisis preparedness of societies. A great variety of crises are expected to be born in the future from the different domains of society and many of them will have an impact on the built environment and lead into secondary social, environmental and economic consequences (Tähtinen et al. 2023; 2024). The findings from RESCUE project manifest that real estate should be acknowledged not only as the culprit to several future crises but also as a powerful tool to fight against multiple future crises and to build resilience at different levels of the built environment including micro, meso and macro solutions in different contexts related to e.g. living, working and leisure and for a variety of actors in the built environment (Castaño-Rosa et al. 2022; Tähtinen et al. 2023).

Within the RESCUE Project, an extensive literature review was conducted to address the diverse realm of crises, encompassing a thorough exploration of crisis-related content. Initially, we provided a concise overview of both classical and contemporary literature on crises. Drawing insights from futures studies literature and contemporary foresight reports, we derived key findings to create a 'crisis landscape.' The primary objective of the literature review was to enhance a collective understanding of how crises are framed and comprehended in society. We considered a broad range of available materials, including books and reports, which underwent analysis. Additionally, we conducted a focused literature review using futures research and foresight journals. Initially, 208 articles were identified, systematically filtered for analysis. Titles and abstracts of these articles were scanned, leading to a closer examination of the most compelling abstracts. Subsequently, we identified 20 articles as the most relevant for the study. These chosen articles primarily focused on the intellectual history, nature, and categorisation of crises, along with related theoretical perspectives. As well, articles that specifically addressed the role of governance in crises, disasters, complexity, and urban development were purposefully retained for future reference. In general, the report titled 'Landscapes of Our Uncertain Futures' (Heinonen et al. 2022a) addresses the complex literature on crises by mapping themes, first by considering classical and popular literature, and then addressing three sub-themes: economic/financial crises, COVID-19 pandemic books and more contemporary titles. This crisis-related literature review provided fertile ground for choosing one topic (one crisis) for closer scrutiny via our hermeneutically generated CLA exercise. (Heinonen et al. 2022a).

According to a study by Tähtinen et al. (2023) crises can influence real estate in various ways including impacts on both soft elements (changes in various non-material capacities of real estate) and hard elements of real estate (e.g. instant or gradual physical damage to building materials and structures). In addition to the target of the impact, the nature of the impact itself can vary related to its time of appearance (sudden or slowly progressive condition) or the level of severity (total collapse or minor disturbances). Tähtinen et al. (2023) also found that some of the crisis impacts on real estate can lead into transformations and structural changes in the existing frameworks in the built environment, its institutions and steering mechanism.

We chose in this CLA exercise to address total electronic blackout as a black swan, an improbable but highly impactful event. That crisis was embedded in the original set of 153 crises identified within the RESCUE Project. Therein, it was titled as ‘large-scale and prolonged inaccessibility to energy systems’ (electricity grid and heat networks).

We wanted to take three very different cities in Finland: Rovaniemi, Kotka, and Tripla, Helsinki, as case studies. These were geographically different places as well as different types of cities.[3]

Urban space and the built environment stand out as long-lasting and rather inflexible elements in the face of an everchanging horizon where constant changes take place and challenge the ability of real estate to respond to raising circumstances and novel requirements. Despite the evident need for future orientation, many real estate related processes still lack far-reaching projections and market actors do not necessarily consider

[3] The tentative results were presented at the international Anticipation conference in November 2022 (Heinonen et al. 2022b). Presentation’s full information: Heinonen, S.; Karjalainen, J.; Taylor, A. & Toivonen, S. (2022). *Constructing fair and flourishing futures – transformative policies for living in crisis-resilient spaces*. Virtual presentation in 4th International Conference on Anticipation 2022, Arizona 4th November 2022.

alternative futures but instead base their future plans on short sighted and monofuturistic views (Toivonen 2011; Toivonen 2021). Decision making and utilised risk management method in the real estate field are often based on probabilistic and narrowing analyses without a holistic review on the variety forces (Toivonen et al. 2023) that can include surprises and also lead into unwanted future consequences. Consequently, we wish to integrate to that approach a crisis 'lens' and a systematic futures perspective. Rehearsing and testing the resilience of the urban context as plunged in a future context is an interesting foresight methodological experiment. It is an attempt to probe and achieve foresight knowledge for needed transformation through immersive foresight techniques. Immersion in futures during an interactive futures clinique is expected to create an understanding of the context-based crises and of the policies and solutions required. It can thus create futures experiences. Latour (2020) claims that the corona virus was a dress rehearsal for further crises, especially for climate change.

Methodologically, we apply the suggested approach of 'rehearsing' futures. Our claim and a corresponding **hypothesis** in this study is: testing and rehearsing futures (futures images, scenarios, narratives, etc.) – or some events embedded in them – will enhance urban futures resilience. Accordingly, our research question is looking for a pragmatic solution: **how to rehearse futures to test urban resilience?** The project researchers applied this in the very beginning of the project by using empirical data from a set of futures workshops for identifying possible crises and by analysing possible direct and indirect impacts within the RESCUE project[4]. Now, for this report at hand, we documented process and outcome of three case studies in very different urban contexts from Finland. We tested and rehearsed the context of an imaginary crisis caused due to a sudden black swan.

The urban contexts are 1) the northern city of **Rovaniemi**, experiencing heavy losses in tourism, one of its main industries, due to the pandemic and the war in Ukraine; 2) **Kotka**, a pioneering coastal city with proactive crisis anticipation capacity and a strategic geographical location, and 3) **Tripla,** a metropolitan development combining culture, residences, retail stores, business and transportation within a single construction complex in Helsinki.

This report specifically addresses the themes of urban resilience, crisis preparedness, future urban policies and anticipatory governance. It discusses, how power is manifested in current urban planning processes and how it could be better shared. It also probes, how anticipatory practices could enhance the inclusiveness of city planning. The topic of time and temporalities is further relevant here – the built environment is constructed for several generations. How could the voices and needs of future generations be considered? How could the built environment that is aimed for crisis resilience have endurance for diverse future crises that might be of highly varying and even unimaginable nature? Such questions will be approached in the light of the data from futures workshops on crises that evaluate crisis resilience in the three cases mentioned above in futures dialogues based on the futures clinique method.

This CLA report represents one methodological pillar in our analytical foresight framework and a set of four futures exercises, reported as four publications (see Heinonen et al. 2023a; 2023b; 2023c; and this report at hand) accordingly (see Figure 2). Our current report is concerned with testing **one single crisis** – total electronic blackout – as impacting three very different locations, conducted in three different futures cliniques, respectively. In another exercise, we further conducted one single futures clinique – not only addressing this chosen crisis but four other crises as well (Heinonen et al. 2023a). Still in another exercise we went further in testing polycrises – basing the previous work of the five crises tackled in combination to other crises i.e. resulting polycrises (Heinonen et al. 2023b). Finally, one exercise was made in the form of expert interviews and it included an open question for creeping crises (Heinonen et al. 2023c).

Our rationale for applying CLA (see the method described in section 1.3) is the following. Crises and their direct and indirect effects touch and reflect on different layers of society, and CLA helps to demonstrate this. On the other hand, the built environment itself has different levels and different actors, from public to private, and different institutions. Consequently, crisis communication at these different levels can be studied appropriately with CLA. Moreover, real estate is also a very specific type of wealth, because it involves a lot of emotional issues, beliefs and even non-rational actions, which can remain hidden but CLA can reveal them.

[4] Identification of policies needed was later formulated into a set of top ten theses necessary for urban resilience. Comments by several stakeholders in the real estate and construction field as well as in futures studies were taken into consideration in this process. Heinonen 2023; Heinonen et al. (forthcoming 2024).

Figure 2. *This CLA report is part of a framework of four contents-wise closely interrelated, but methods-wise variating foresight exercises.*

1.2 Futures Provocation to Highlight the Importance of Futures Thinking

The futures clinique approach contains several elements of which a futures provocation is in a key role (Heinonen & Ruotsalainen 2013). A futures clinique process is an open interactive platform where participants from various disciplines and lines of business, NGOs or government together with experienced futures researchers may participate in. The futures provocation as well as the whole futures clinique process is intended to provide inspiration and materials for the participants' own work and aspirations, too, besides to gather empirical evidence for futures research and ongoing projects (Heinonen 2022b). Futures research is a multidisciplinary field, and likewise the background of attendants show diversity. An important prerequisite is that futures cliniques should always seek to include both experts on the topic in question and 'outsiders' to broaden perspectives and allow questions outside the usual domain.

Consequently, we had specialised experts in each of the three futures cliniques with local knowledge from authorities or residence point of view. However, expertise or local knowledge was not a prerequisite for attending a futures clinique – it was also an opportunity to participate from the perspective of futures research and foresight. Futures provocation within a futures clinique is a kind of 'futures shower' in the beginning of the event. Its purpose is firstly to highlight the importance of futures thinking and secondly, and equally importantly, to stimulate futures thinking, broaden it, and even provoke it. Then after a futures provocation, each futures clinique will delve deeper into the specific topic in question. For our cases this meant depicting the whole context of three chosen cases and the methods to be used (futures clinique and CLA), and how we are applying this methodology to our cases. The participants of each futures clinique received tentative results and they can still feed into the process some comments or observations after the event.

Futures provocation is based on the Latin terms 'pro' and 'vocare'. They mean to call forth futures. So, through brainstorming, thinking, developing, and applying methods in a futures clinique, we are also trying to consider possibilities that might not typically come to mind concerning the topic in question. We can free our thinking to explore different, alternative perspectives and use peripheral vision (Day & Schoemaker 2006) to broaden our horizons, thinking about wholes. The attendants of our three futures cliniques perceive the cases

Rovaniemi/Kotka/Tripla as part of their respective region in Finland, the whole of Finland, Northern Europe, the whole of Europe, and the world as a global context. Futures provocation within a futures clinique is also helping to consider causal chains. This involves opening up potential future scenarios, images and the approaching concept of **open futures**, so that we do not exclude futures that hold positive opportunities (Taylor & Balcom Raleigh 2021, Karjalainen et al. 2022a; see also Bussey 2014).

If one does not know anything about futures research, knowing the following key three principles will open the futures field quite sufficiently for the purpose (Amara 1981). We do not predict the future, because the future cannot be predicted. We cannot precisely say what the future holds, for example, for Rovaniemi, Kotka or Tripla, Helsinki, ten years from now, but we can anticipate it. The future is also not predetermined; there are multiple futures possibilities and numerous alternative pathways towards them. The third crucial futures principle is: you can influence the future. Participants in a futures clinique can concretely influence how the futures unfold. If ideas presented and discussed in a futures clinique lead to new plans, proposals, actions, and strategies – thus one has already started to shape and realise the future by such ideation and subsequent commitments.

When we think about futures, whether they are scenarios or more confined futures images, it is important to bear in mind that there are various types of them. Firstly, there are possible future images – what could be possible for Rovaniemi, Kotka or Tripla in the future? Then secondly, there are probable futures images, and thirdly, desirable ones. All of these are needed, but often businesses and even public administration focus too much on probable futures and scenarios. In our open foresight, we primarily aim to explore the range of possible futures and then, in a multi-actor context, make choices about the desirable directions we want to pursue.

When conducting foresight, horizon scanning is often first and foremost performed, and there are various ways and levels to do that. The easiest way, and one we definitely must do, is to monitor megatrends – strong global development directions that cannot be easily altered but must be taken into consideration in whatever we do, such as climate change, digitalisation, urbanisation, etc. Then there are moderately strong development trends. Trends are quite well-known directions, but they can also stop or change through disruption. Moreover, there are two areas that often go unnoticed. Weak signals, which are indications of emerging phenomena, can be strengthening and leading to emerging trends, and these can turn out to be significant.[5] Recently, crisis management also requires considering not only weak signals, too, but also unexpected events, even if they are highly unlikely. These are referred to as wild cards or black swans. The weak signals form perhaps the most polemic and hottest area in futures research. They cannot be quantified or verified until developments move forward, and we see if they strengthen or not.[6] However, if you recognise emerging phenomena and they do develop and step into the foreground, then you are closer to the futures i.e. then you possess anticipatory information.

The second area that we need to pay increasing attention to is risks and crises. We are already amidst many crises, facing numerous risks, as discussed in the beginning of this report. There are creeping crises and improbable ones – it is worth considering those, too. Accordingly, the new normal is uncertainty and unpredictability, and the future is full of surprises. In foresight, it is important to be prepared for that. A whole uncharted temporal territory is provided by the so-called un-futures. The foresight capacity is strengthening if we also pay attention to the other side of the coin – uncertain, unlikely, unseen, unspoken and undesirable futures. (Heinonen et al. 2022a, p. 9).

The future is full of surprises, but they can be approached by developing futures literacy and futures resilience as indicated earlier. UNESCO's foresight expert, Riel Miller (2011; 2018), has particularly developed the concept of futures literacy, which is the ability to use systematic futures thinking and future-related materials for present decisions. It means using futures images and thoughts in the present and recognising the potential for futures hidden in the present. The Finnish Futures Studies Association publishes a magazine called Futura. A special issue was themed on crisis thinking and futures resilience (Heinonen & Toivonen 2021). It is recommended for anyone interested, as it defines futures resilience as the ability to survive crises, not just to anticipate them, but to cope and learn from them.

[5] In the futures cliniques we used a method of futures window for showing weak signals (Heinonen & Hiltunen 2012).

[6] See e.g. Kuusi & Hiltunen 2011; Szabó (2023).

In general, foresight aims quite far ahead, it differentiates from quarterly perspectives and shorter-term standard strategy work. There can be a long timeframe to think about and outline trajectories, even up to hundreds of years, which may seem impossible for many.[7] However, when we think about crises, they demand swift action. In such cases, if we've had long-term foresight and future thinking, we can draw strength from there, perform foresight, prepare in advance, react to crises, and try to overcome them. That is resilience. Foresight is now strongly emphasised in the EU, particularly in the green digital transition. Recently, the United Nations has also become active in risk anticipation and analysis (see e.g. United Nations 2021; see also Foresight on Demand report by Weber et al. 2023[8]).

The futures field comprises numerous methods. The Millennium Project has a CD package containing more than 30 futures studies techniques (Glenn & Gordon 2009).[9] One of the methods included in that toolbox is CLA.[10] Earlier mention was made on specific CLA handbooks by Inayatullah. Moreover, the Finnish Society for Futures Studies (FSFS) has a methods book in Finnish and English[11], where CLA is described by Anita Rubin (2017). The Finnish Futures Academy (FFA) also published a methodological handbook in 2022, including a chapter on CLA (Aalto et al. 2022; Aalto 2022).

Lastly, in the spirit of futures provocation, our three futures cliniques were throughout experimental – both in the approach of rehearsing the futures, in using the same crisis reflected upon three different contexts, and in the way an anticipated/imaginary crises context was analysed via CLA layers.

1.3 CLA Methodology and the Chosen Foresight Experiment

In rehearsing futures in the context of a crisis caused by a black swan, we applied the causal layered analysis (CLA) method (Inayatullah 2008; Ianyatullah & Milojević 2015; Inayatullah et al. 2022) as a key tool. The hybrid method we formed for the purpose consisted of futures cliniques, CLA, analysis of a black swan, and a what if? approach. Futures clinique is developed into a specially structured process based on futures workshop (Heinonen & Ruotsalainen 2013). A black swan is a sudden, unexpected event that, if realised, has dramatic impacts (Taleb 2007). For our study, we chose a **total electronic blackout**[12] as a black swan to be applied in testing the situation, in which it has happened. CLA is a method of transformative and critical futures studies, developed largely by Sohail Inayatullah. He has published three handbooks of the method, each later version including applications of CLA by different authors (2004; Inayatullah & Milojević 2015; Inayatullah et al. 2022). According to Inayatullah, if we uncritically start from the unconscious assumptions of the present, we only strengthen current thinking patterns. By using CLA, we can open such structures and assumptions of the present and try to create inspiring and alternative images and directions for the future. CLA is about deconstructing and re-constructing after an opening and sense-making process of analysis, where alternatives organically emerge. The agency is that of a reflective practitioner and with epistemological mindfulness. Inayatullah et al. (2022) propose CLA of the self as well, and claim that it is not about changing others *per se* but about finding a voice, a role for oneself in a changing world.[13] We are in the universe, not as objective

7 A special issue of FUTURA concentrated on a futures perspective of one hundred years (Heinonen et al. 2018).

8 Foresight on Demand is a new foresight instrument by the European Commission where a group of acknowledged experts is gathered to conduct a study on a given topic with a tight schedule and rapid delivery to policy-makers.

9 The CEO of the Millennium Project, Jerome Glenn, came to Finland to participate in the World Summit for Futures Committees, organised by the Finnish Committee for the Future in October 2022. During the same visit he attended our futures clinique using CLA for Tripla, Helsinki, where he gave us a keynote (Glenn 2022, see sections 1.4 and 2.3).

10 The Millennium Project currently launched an initiative to renew and complement the futures research methodology toolkit (Glenn & Gordon 2009). The decision was made and a small group convened on that initiative during the Millennium Project Planning Committee meeting held in Dubai in November 2023. Sirkka Heinonen was part of that group.

11 The Finnish version is by Kuusi et al. (2013) and the English edition by Heinonen et al. (2017d).

12 Total electronic blackout is not a black swan in a sense that it has been raised as a very distant possibility, but in its massive manifestation (total) eventually shutting down all electronic devices it can be considered a black swan.

13 In November 2023 at the Dubai Future Forum Sirkka Heinonen attended Sohail Inayatullah's futures workshop that he conducted with Maree Conway on "*Futures and the Sel(ves): How We Can Use the Future for Inner Transformation?*". The workshop demonstrated finding common stories in strategy work with the help of changing identities and metaphors that describe them.

change agents, but as characters with the possibility of inner and outer transformation, of co-creating alternative futures. Thus, CLA is fluently using narratives and a tool for immersing in futures in order to come out of such mental voyage as transformed. CLA is both a method and a theory of its own, seeking to integrate empiricist, interpretive, critical and action learning modes of research. (Inayatullah et al. 2022; Aalto 2022). It aims at creating transformative spaces for the analysis and the creation of alternative futures. It is also useful in developing more robust, efficient, and effective – as well as deeper, inclusive and longer term – policy and strategy.

CLA is very appropriate to be applied in futures workshops and other participatory and action-learning processes. It draws largely from poststructuralism, macrohistory and postcolonial multicultural theory. CLA aims to move beyond the superficiality of conventional social science research and forecasting methods, because these methods are often unable to unpack discourses – worldviews and ideologies, not to mention archetypes, myths, and metaphors. According to Inayatullah et al. (2022), they forecast within the terms of the present, instead of reframing through the use of alternative worldviews and narratives as is done with CLA.

The method consists of four levels, i.e. layers: 1) litany, 2) social or systemic causes, 3) discourse or worldview and 4) myth or metaphor. The first level is the litany – the official unquestioned future. It is all about rhetoric. The second level is the social, technological, economic, environmental and political causation level – the systemic causal level. At this second level, the data of the litany is explained and questioned, thus reflecting on the previous level. The third level is the discourse or worldview. Deeper, unconsciously held ideological and discursive assumptions are unpacked at this level. In addition, it is explored, how different stakeholders construct the litany and system. The fourth level is the myth or metaphor, the unconscious emotive dimensions of the issue. In our view, this fourth level is perhaps the most inspiring and intriguing of the levels. However, sometimes it is at the same time the most challenging one by the participants to tackle. One of the pitfalls of CLA is to confuse the levels, for example, the litany and myth levels may sometimes go mixed or misunderstood. Nevertheless, going back and forth between the levels is an essential element in any CLA exercise. It is encouraged in order to embrace different ways of knowing and e.g. for finding new and better metaphors to use and reflect upon. In this way, changing one of the levels directly affects each of the other levels to also transform. In this way changes in worldview for example have direct impact upon systems (and even physical infrastructures) requiring new metaphors and litanies as well. Yet, strong facilitation and thorough discussion on the terminology are essential when working with CLA.

Inayatullah et al. (2022) encourage that different perspectives (including those of stakeholders, ideologies and epistemes) are in particular brought in at the third and fourth levels – the levels of worldview and myth. This allows for breadth. The found differences are then used for reconstructing the first two levels, the more visible ones, social policy and litany. In this transformed future, the system that supports and the litanies that quantitively measure the new reality are thus transformed. In a nutshell, CLA intends, not just to question and deconstruct the future, but to transform the future, open up the present and re-interpret the past. (Inayatullah et al. 2022).

CLA can be used in several different ways. It can be applied as a stand-alone method or as a part of a larger foresight process. It can be used for unpacking a problem, for creating a preferred future, or as a game or role play. The key effort is to create a new integrated way forward (Inayatullah et al. 2022).

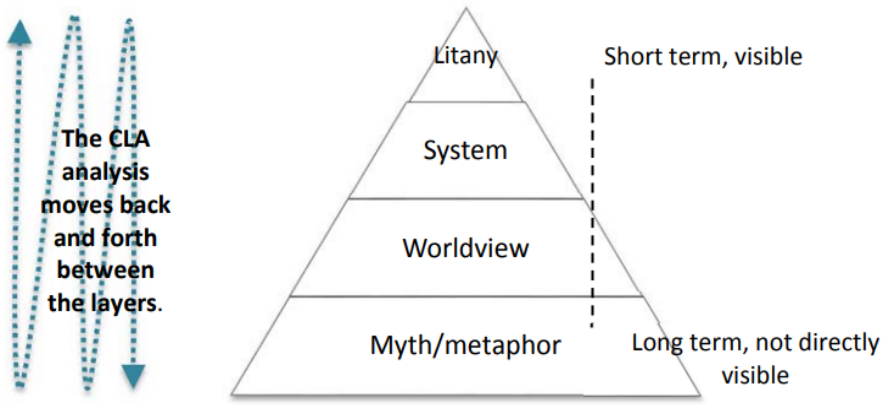

Figure 3. *The Causal Layered Analysis Pyramid (modified from Inayatullah 2004).*

A few years ago we experimented at FFRC with CLA in order to disrupt scenario work (Minkkinen et al. 2018). We studied how a complex method hybrid, consisting of CLA and scenarios, can be made accessible to first-year master's degree in futures studies students. The results from this experiment showed that the CLA exercise improves dialogue and discussion, creates more space for reflective thinking and helps to teach many of the important elements of scenario thinking, including creative thinking, critical questioning and coping with discomfort. Before that, already in 2015, we conducted a major foresight exercise by modifying the CLA method into a game format, testing the so-called Neo-Carbon Energy Scenarios by running them through role playing and CLA analysis (Heinonen et al. 2015; Heinonen et al. 2017c). It was a unique opportunity to do this, since we had Sohail Inayatullah as a keynote speaker in our FFRC Conference and he also participated in this CLA futures clinique.

Our ambition in this RESCUE study at hand was to test urban resilience by using CLA combined to a "what if" type of a framework and workshop process. We set the context so that one black swan was chosen, and one urban milieu was 'bombarded' with that sudden event at a time, but in three different cases. Why CLA? In times of rapid change and high uncertainty, qualitative de-constructing or re-constructing methods may cover a wider range of possibilities, as they require re-thinking and as unexpectedness becomes the norm. The change is so unpredictable that quantitative probabilistic methods may not be helpful to cover the amoeba of uncertainty. Therefore, a qualitative hybrid method entity was chosen for testing. We claim that surprises may become the new norm (Heinonen et al. 2017a)[14]. Accordingly, reference scenarios and futures images known as BAU (business-as-usual) turn into *BAU 2.0* (**business-as-unexpected**). This is part of our anticipatory quest for charting unknown territories of our lives.

1.4 Keynote of Jerome Glenn on Anticipatory Governance to Build a Better Future for Cities

This section presents Jerome Glenn's keynote at the third and final futures clinique on 14th October, 2022, at Tripla, Helsinki in our set of three CLA based futures cliniques for the RESCUE Project (Glenn 2022).[15] He asked us to think of the 15 global challenges (Glenn et al. 2019) like systems in our body. We have the respiratory system, the skeletal system, and so forth. We do not know all the details of our body, but we know enough when we walk down the street what is happening, when we eat we know what is happening. One does not claim that the respiratory system is more important than the skeleton system. And yet, the press almost always asks which one of the 15 challenges is the most important. This is very annoying.

The truth of the matter is, **the world is complex**. Oversimplifications are not doing us a favor, but this MP framework of 15 global challenges is as simple as we can make it. They are not the goals of the United Nations (UN) – those are goals, but these are ongoing challenges. You can have goals within them.[16]

Anticipatory governance is **a system of rules**, i.e. to make the right decisions about something that does not exist yet. It is very annoying, when somebody says that this advanced technology stuff is far in the future. **The whole Idea of anticipatory governance is beforehand**! If we had put together the International Atomic Energy Agency (IAEA) today, we probably would have had dirty bombs and more nuclear disasters in the past. **One main idea of the futures research is to know the future in the sense of: if this, then that**. Well, if that is possible, then how do we make sure we have a management system to prevent the bad side and capture the good side?

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[14] See also Interview of Karlheinz Steinmüller on the deepening VUCA World and Surprises by Sirkka Heinonen at Finland Futures Research Centre (FFRC), Helsinki 2020. Audio and text: https://www.utu.fi/sites/default/files/public%3A//media/file/On_Risks_and_Surprises_in_the_VUCA_world-Transliteration.pdf and an Interview with Sohail Inayatullah conducted by Sirkka Heinonen on Futures Studies and CLA, on the occasion of the XVI International Conference on Sustainable Futures Infinite, organised by Finland Futures Research Centre, University of Turku, in Helsinki on 11 June, 2014. https://www.youtube.com/watch?v=sic1tZHItss

[15] The results from the small groups of the Tripla's futures clinique are presented in section 2.3.

[16] See the Millennium Project website for this framework https://www.millennium-project.org/. It gives you an overview, some suggestions of what to do, and some regional implications.

Two examples, first, the UN Secretary General's Office report Our Common Agenda has five foresight elements, to make the UN more future oriented. Currently, the UN is a reactive system, and then they argue. For the future, the UN would like to have an anticipatory system and related cooperation. (United Nations 2021). The second is **the most important question of the planet today**, which is: **How do we create a governance system**? Before artificial general intelligence occurs we should think about a management system.[17] The science fiction stories you hear about are certainly plausible.

The Millennium Project assessed these proposed five foresight elements for the Secretary General's Office and proposed numerous ideas about how to make the upcoming UN Summit of the Future work right. The UN has never done that before, and there is a lot of preparation. Glenn claims that futurists should talk with their ministry of foreign affairs to make sure that Finland's input into that UN Summit is excellent.[18]

Figure 4. *Jerome Glenn giving his keynote on anticipatory governance for cities in the third futures clinique in Tripla, Helsinki. Photo: Tolga Karayel.*

Among the proposed five foresight elements is the UN Trusteeship Council. Its task would be to manage the transition from colonialism to independence. In Glenn's judgment, the Secretary General has done the boldest thing in the history of multilateralism in proposing to repurpose the Trusteeship Council as a multi-stakeholder anticipatory or foresight body. First of all, there has not been a body for foresight in UN yet and secondly, there has never been a multistakeholder body. Such a body would be composed of not just government representative but also representatives from businesses, universities and other representatives from futures research. The body should be using the most advanced management techniques[19].

Then, the Envoy for Future Generations would lead the work on future generations in the UN system. Regarding strategic foresight – a Strategic Foresight Report would be published every five years, or even every two years. The Futures Lab is supposed to be basically the UN's think tank in the Secretary General's office,

[17] The Millennium Project has published the first phase of study on AI (the Millennium Project 2023; Heinonen & Pättikangas 2023). The second phase based on a Delphi study is underway.

[18] The Helsinki Node of the Millennium Project sent a memorandum on this to the Ministry for Foreign Affairs of Finland to help them prepare for the Summit.

[19] This could be gigantic, but it is currently on hold, as the UN Charter would have to be amended and the amendment would have to go to the General Assembly for approval.

to pull together futurists' work, Americans' work, Russians' work, pull it all together and put out these things together.

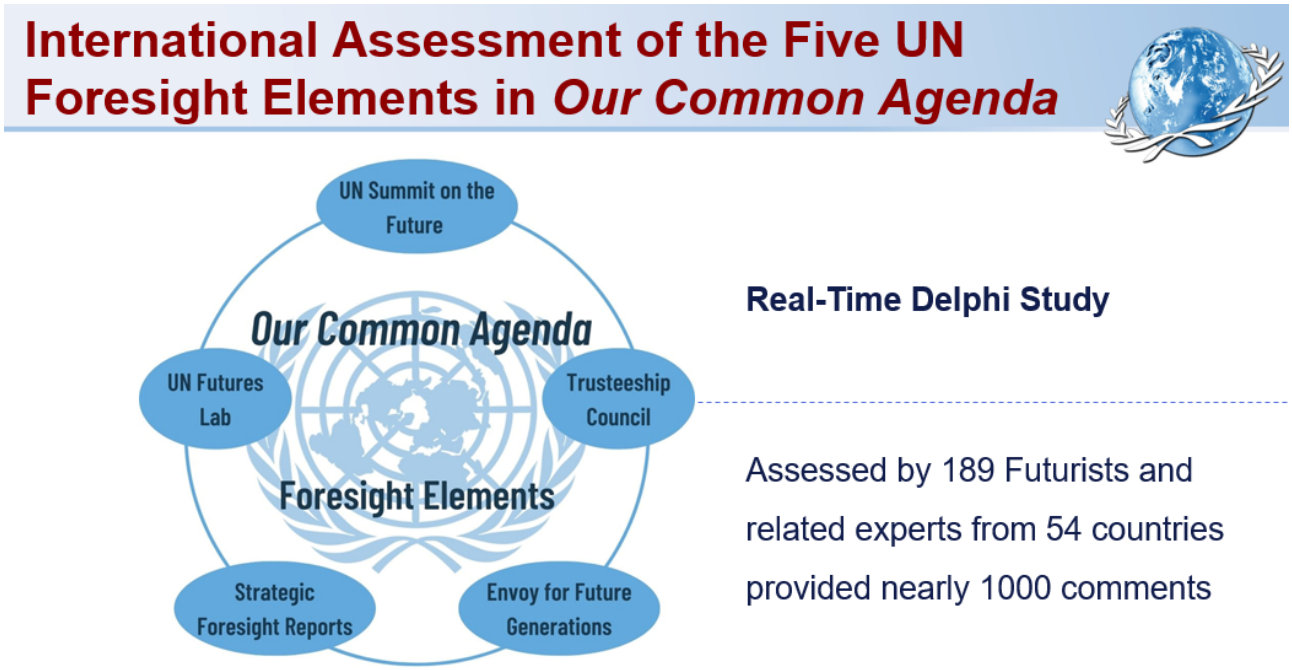

Figure 5. *Five foresight elements In Our Common Agenda (United Nations 2021), assessed by the Millennium Project (2022).*

Glenn then moved on to address the **three forms of artificial intelligence**. The artificial narrow intelligence (ANI) we have today drives a car kit but does not diagnose cancer. However, this machine learning continues to get faster and faster. Then, the artificial general intelligence (AGI) is sometimes misinterpreted as human level intelligence, although its **intelligence is already beyond human level intelligence**. Face recognition, playing sports, doing my taxes – there are about 20 or 30 things that it is way beyond a human's capacity to do. In addition, general intelligence can work on different goals at the same time. Humans' respiratory system has a single purpose, but we hope that our brain is more like general intelligence. However, general intelligence cannot deal with novel problems.

Artificial super intelligence (ASI) is general intelligence with a big difference. It emerges from general, but is super by definition – acts without your knowledge, without your control, without your understanding. It can do everything that all the general intelligence can do but make its own decisions. That is what science fiction warns about. We have to figure out how does that turn out to be OK, which is not guaranteed.

What is then happening in your urban situation? We are making the autonomic nervous system of society with artificial narrow intelligence that controls your heat and electricity, et cetera. **Think of your urban environment as the autonomic nervous system run by AI**, **eco-smart, resilient, healthy cities, sensors connecting almost everything**. That is, however, narrow again. Furthermore, internal self-repair, but also **the possibility for the citizens to have a say in correcting the system**. **The whole city is a participatory management process**, because managing the city is too complex for the poor mayor to handle all of it.

The sensors are embedded not only in the built environment, but in the natural environment as well, sensing the water, your smart agriculture and so forth. Then the two relate together **connecting the satellites**. Our bodies will have **microtechnology in and on our bodies**, so as we walk down the street, it can be interacting with the built environment and with the natural milieu. **We become one integrated whole conscious technology**. **The distinction between consciousness and technology starts to blur.**

With ANI evolving into AGI by Internet of Things means that when we talk about artificial Intelligence management, we also have to talk about Internet of Things management. The vulnerability of the Internet of Things is gigantic. If you think you will have a problem about keeping the virus out of your laptop, that is nothing

compared to what happens when you have got billions of things there – each one of those points is a potential vulnerable spot. Cyberwarfare and information warfare have to be taken seriously and prevented as fast as possible. All we need is an integrated system of conscious technology. This means that we are very vulnerable to AI and eventually to AGI as well. We have got to have anticipatory governance. There are people who do not share the urgency of the issue, but when we get there we will be shocked, and it will be a mess.

We now have a variety of narrow intelligences on a single platform. That is not yet artificial general intelligence but just an efficient way of managing narrow intelligence. There is a narrow intelligence right now called AlfaZero. They are all inherited to AlphaGo, to beat the [Alpha]Go Master. AlfaZero did not have data before, but AlphaGo had all this data to make the artificial intelligence work. AlfaZero and AlphaGo played against each other and in 15 minutes AlfaZero had developed strategies to beat AlphaGo. That happened already a couple of years ago.

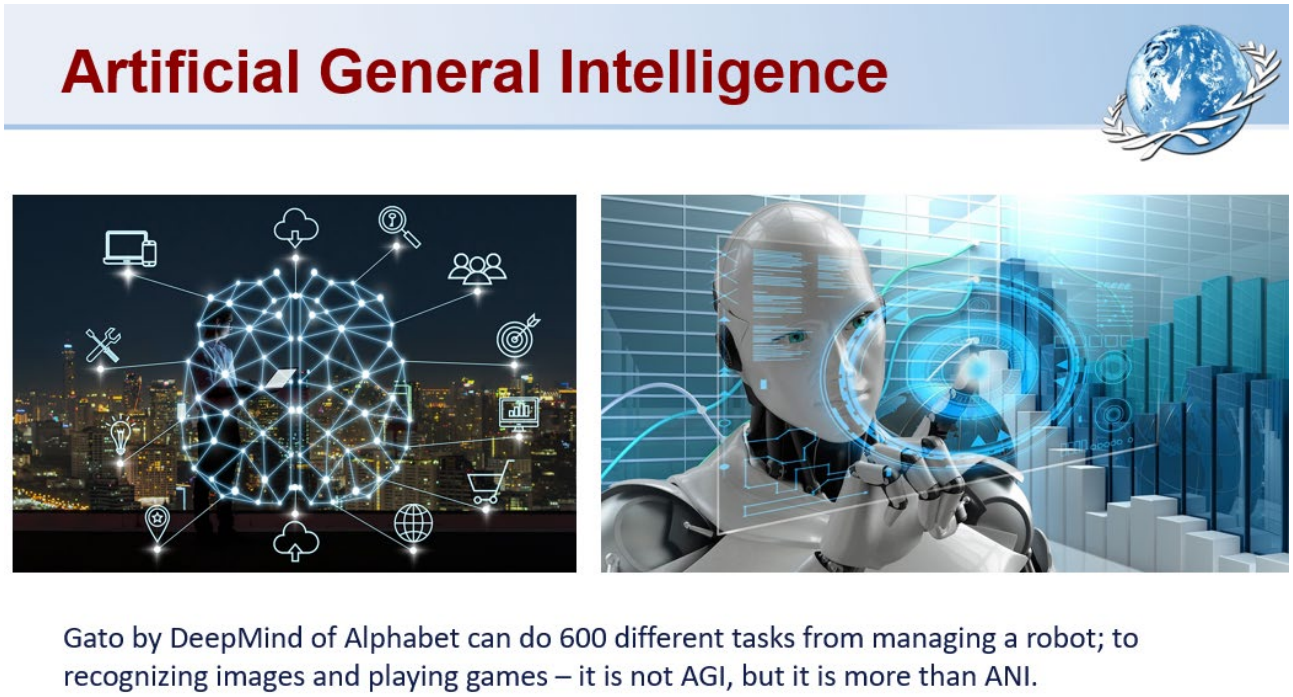

Figure 6. *Glenn (2022) differentiated between artificial narrow, general and super intelligences (ANI, AGI, ASI).*

We have our own sensors, but general intelligence has sensors worldwide that work simultaneously. We cannot do that ourselves. It can make phone calls, interview people, make logical deductions, and reasoning similar to the humans – learn from experience and reinforcement, without the need for massive database. Unlike for humans, the massive database may not be necessarily an issue for general intelligence. In addition to the amount of information, you need to know how to use it. That is for artificial intelligence the ability to rewrite or edit its code to be more intelligent continually.

So, we should get the initial conditions right, which means multiple guidelines that need to be defined decisively. We should create auditing systems for managing the AI, like ISO and IEEE standards. The auditing system would have to be continual, not only once a year, because AI is changing all the time. It is also likely that the management of AI will require cooperation with national AI authorities and/or policing agencies. The ongoing auditing system would be sent automatically to Interpol, and Interpol would come and freeze it if needed.

Glenn's presentation inspired a lot of questions. One attendant exclaimed that he has a feeling that we tend to focus more on the anticipation part of foresight, than on the governance. We talk a lot about scenarios, but what comes out of these scenarios? There is a disconnect. How could we solve this problem, **do we need a new era of foresight**?

In the Millennium Project's report on Future of Work and Technology 2050 (Glenn & the Millennium Project Team 2022) this gap is being bridged. In the report, there are three detailed scenarios, 10 pages per scenario. Scenarios have to contain cause and effect and all there is in between. A lot of scenarios do not do that meaning they are really not scenarios, but descriptions of a future. A scenario is a story, it is plausible. This scenario report also included recommended actions. What is the relationship between foresight and strategy? Foresight is the food. Strategy is the muscle. Strategy is what you do, but without that nutrition the muscle does not work, and vice versa.

Sohail Inayatullah's video greetings for the RESCUE CLA session in Tripla:

Photo: pixabay.com

"Welcoming greetings from Islamabad. Pleased to see you folks with your new CLA project. Thanks so much, Sirkka.

Report on CLA 3.0 is now out – another 600 pages of theory, methodology, and case studies. The work mostly I have been doing these days, is on the CLA itself. In every project we try to develop our own narrative, our own story about the project, what it means, and where it could lead to. Of course, sometimes there's tension between stories. With one large organisation they wanted the project to be the 'oracle'. Of course, this was about forecasting, getting it right, versus the CLA approach, where we are on a journey, co-creating, growing together, and creating an alternative future.

Alternatively, I was working in WHO in Mongolia. For them, in the health sector, the CLA was quite a delight. Particularly, they could speak about health communication, in language and stories, that made sense to them. Once a doctor talked about that, she was a 'step girl', on the Mongolian steps where time is endless. But this does not work in a hospital, so she changed her story to the 'city girl'. Another head of the hospital said, she has been the 'golden fish', making everyone happy, always pleasing, but now she's moving her story to the 'bamboo forest': resilient, flexible, but allowing the junk to go through to the other side, to create a new future."

2. RESULTS OF THREE CLA WORKSHOPS CONDUCTED AS FUTURES CLINIQUES

This chapter presents the process and results of the three CLA futures cliniques that were organised as futures cliniques within the RESCUE Project. This was a participatory and experimental foresight exercise for testing and rehearsing a crisis situation in urban milieu.

In the beginning of the RESCUE Project we used empirical data from a set of futures workshops conducted for identifying possible crises and by analysing possible direct and indirect impacts. A total of 153 crises were identified.[20] From among this set of crises we chose one for closer scrutiny and testing, to obtain further empirical case data. Consequently, the aim of the set of futures cliniques documented in this report was to rehearse futures in a crisis caused by a single but dramatic black swan. The objective was to test urban crisis resilience in three cases, especially with a view on the built environment. The wild card chosen for the exercise was a total electronic blackout, with unknown duration, seen as an implausible but possible event. The chosen crisis was rapidly assessed across the four CLA layers in three very different urban cases and contexts accordingly. We asked for ideas, solutions and policies for resilience in three workshops using the four CLA layers (see Figure 3).

This CLA exercise is an experimental comparative case study with three cases chosen because of their different characteristics, and tested in the context of an imaginary crises through the black swan of total electronic blackout. In Latour's (2020) terms we made a dress rehearsal of the crisis. Intentionally we chose three very different urban contexts: two small cities (one landlocked in the north vs. one coastal in the south) and one prominent mega-complex of high technology ('a city of its own'). In particular, we focused on the following cases in Finland:

1. A northern town **Rovaniemi**, experiencing heavy losses in tourism, one of its main industries, due to the pandemic and the war in Ukraine.
2. **Kotka**, a pioneering coastal town in South-West Finland with proactive crisis anticipation capacity.
3. **Tripla**, a Metropolitan development combining culture, residences, retail stores, business and transportation within a mall complex.

***Table 1**. A comparative case study of three built environments.*

	Rovaniemi	Kotka	Tripla, Helsinki
Population	63 032 (2020)	51 869 (2020)	50 500 customers / day (2021)
Location	Lapland, Northern Finland	Kymenlaakso Region, Southeast of Finland	Pasila, Helsinki, Uusimaa Region, Southern Finland
Climate/ geography	Arctic circle, small centre, surrounded by vast areas of lands, city centre by Kemi River (Kemijoki)	City centre located at Kotka's island (Kotkansaari), rural-urban, at the mouth of Kymi River (Kymijoki)	Urban, in capital city, in the nexus of commuter and multiple local, regional (even international) transport flows
Past	Business center of Finnish Lapland since 1800s, centre largely destroyed and re-built post-WWII	Chapel built in 1440s, a harbour and later industrial town	Former railway warehouse area, waste land
Special characteristics and features	Gateway of international tourism, centre of education in Lapland	Heavy industry, port city, gateway of chemical transports at Baltic Sea, E18 highway route to St. Petersburg, Russia)	Combines culture, residences, retail stores, business and transportation within a mall complex

[20] For the analysis os crises and their impacts see Tähtinen et al. 2023; 2024.

The following figure shows the geographical location of the three cases.

Figure 7. *Case study of three different cities/city areas to test their crisis resilience, especially concerning the built environment. (Picture modified from wikipedia)*

In the workshops the participants were asked the same tasks subsequently. They were invited to respond on the four layers of the CLA framework answering to the following questions **1) Litany – Public problem description, problem definition, news headlines, and selected statistics.** What litanies will help us survive the crisis? **2) System – Cause-and-effect relations, social systems – take shape over the years.** How do the different systems of society help in a crisis? You can especially think about the importance of laws, policies and regulations. **3) World view – Paradigms, mental patterns, prevailing cultures with their values – take shape over decades or centuries.** What attitude, lifestyle or worldview is suitable for overcoming the crisis? **4) Metaphor or myth – Deep undercurrents drive societies or civilisations – often subconscious or unconscious.** What metaphor would describe resilience in this case?

Organisers and moderators were researchers of the RESCUE research project from Finland Futures Research Centre (FFRC), University of Turku and from Aalto University.[21] The first two futures cliniques, i.e. Rovaniemi (section 2.1) and Kotka (section 2.2) workshops were organised virtually.[22] They were also conducted in the Finnish language. The third futures clinique, i.e. Tripla workshop in Helsinki (section 2.3), differed from the two first futures cliniques in being intentionally an on-site event only and conducted in English. Moreover, the number of participants was higher in the third futures clinique. The process in all three futures cliniques, however, was basically the same. First, there was a futures provocation, introduction to the local context with background material, futures window and instructions for the event's flow. The second phase took place as moderated small group working. Finally, results from small groups were presented to other groups followed by a discussion. In the small group working phase, the group members presented themselves to each other

[21] FFRC was in main charge of organising this experimental methodological CLA exercise.

[22] The reason for organising the events virtually only was on one hand the aftermath of the pandemic situation, and on the other hand the easiness for online logistics.

briefly. The groups worked so that each participant was able to type notes online at the same time to the same sheet, and the notes were in real time visible for all (whether online or onsite). The notes in online cliniques were added anonymously, but the participants discussed later openly who added each of the texts, and anonymity was not intended to play a role here. Some time was consumed in the beginning of the sessions for explaining how the online work is planned to take place. Both in the online futures cliniques and in the third onsite futures clinique there were designated moderators for each small group.

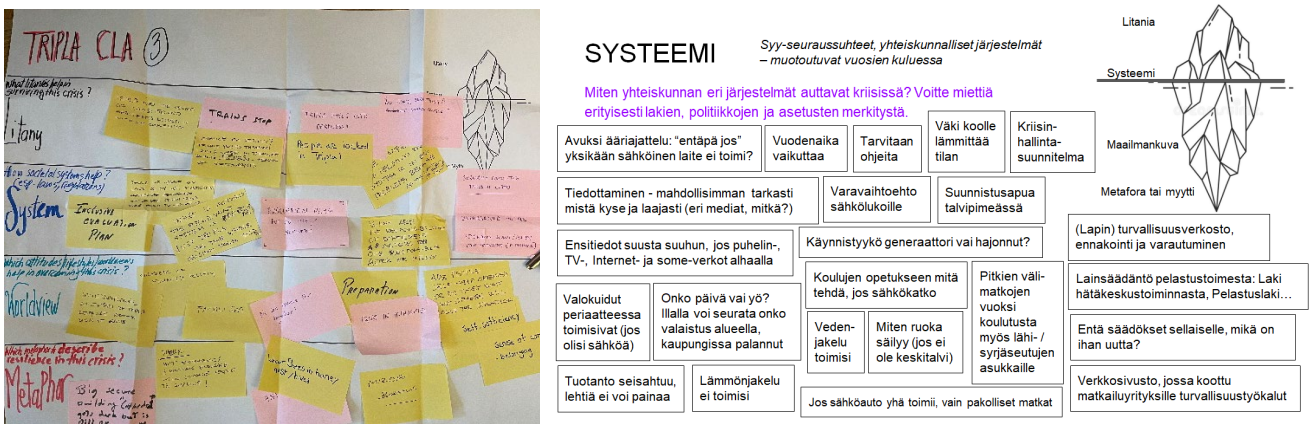

Figure 8. *An example of a worksheet used during an onsite futures clinique (left) and respectively another from the online one (right).*

Rovaniemi Group 1, Kotka Groups 1 and 2, and all five Tripla groups were documented based on the worksheets, audio or video recording, and moderator's comments.[23] The narrative regarding these groups attempts to follow the discussion mostly chronologically. As the group discussed issues of a certain layer, they may have mentioned elements that they consider belonging on another layer, and the narrative shows the flow of discussion. The labelled post-it or its digital alternative is referred to by bolded text with a letter L for litany, S for systems, W for world views, and M for myths or metaphors next to the bolded text to guide the reader in finding the post-it from the attached figure of the worksheet and the post-its on it.

2.1 Results from Rovaniemi Futures Clinique

The first CLA futures clinique in our set of three events was organised in Rovaniemi on 9th June 2022. The futures clinique was virtual only and conducted in Finnish. The preset questions for the attendants were[24]:

- What is your image of the ability of Rovaniemi to face crises?
- What do you think about the preparedness of Rovaniemi to face a total power cut?
- What political actions should get more attention to in crisis situations? (Ability of individuals to cope with the crisis, vulnerable groups, vulnerable trades and professions, vulnerable neighbourhoods, indirect societal)

[23] Rovaniemi Groups 2 and 3 as well as Kotka Group 3 were documented without audio or video recordings. This was due to practical or technical reasons. Hence, it was not possible to precisely follow the chronological development of the discussion, but the description in the groups is organised for the report as narrative running layer by layer.

[24] Similar questions were asked in all three futures cliniques.

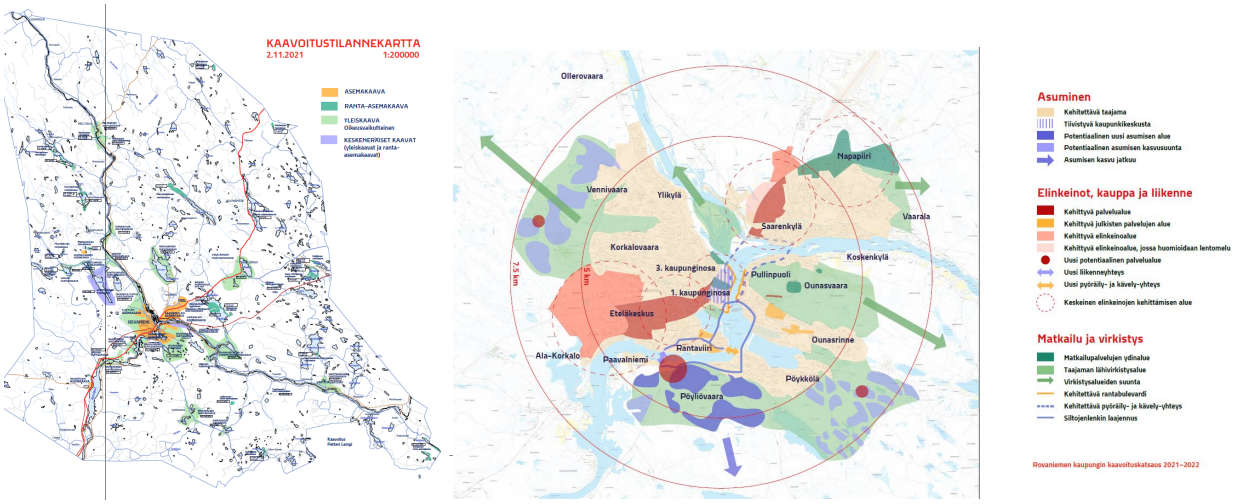

Figure 9. *Left: Structure of the built environment Right: Vision for Rovaniemi development 2035.*

The Rovaniemi futures clinique begins with representation of the participants, the topic and the method. The participants are listed in Appendix 2.

2.1.1 Results from Rovaniemi – Group 1

On the level of *litany*, the first thought about the incident in the group is that it would be crucial to start communications – **providing information (S)** – broadly via all possible channels to give as accurate information as possible to people, like in crises in general. It would be necessary for people to identify the available and trusted media for finding it. It was later added that normally **YLE[25] will tell us what is happening[26] (L)**, and you would try to access the social and other public media as well.

Otherwise, the first reactions could be many. Electricity is used widely in everyday life. The lack of it could at first create the idea of having a lot of excess time, since it would not perhaps be possible to go to work, to school, or to spend time on social media. However, where does the information come from, and where does a person eventually go to in this kind of a situation? If your phone did not function, or there was no Internet access, you would in the end find it difficult to get information. You would perhaps wait first for a while, expecting the power to come back, and start looking for causes of the power cut later. After all, most of us have experienced short power outages.

If networks and circuits were broken after the incident, then no electric device would function. There perhaps would be no broadcasting, tabloid papers, or other news media that would distribute information. Because **production stops, there would be no printed media (S)**. **Initial information would be shared by word of mouth, if the phone, TV, the Internet and the social media networks are down (S)**. You would think, **who will I contact (L),** and you would keep checking, **is the phone working, and how do I reach someone who knows what is going on (L)?** You would try to make calls and send messages thinking that **friends can help me (L)!**

The group marks down on the worksheet possible reactions: **I must find out, what to do next (L)**, **what is happening (L)**, **how do I know whether this crisis or blackout will last long (L)**, and **how wide-ranging**

25 YLE – the Finnish Broadcasting Company is Finland's national public service media company. YLE operates under *the Act on Yleisradio Oy* (https://yle.fi/aihe/artikkeli/about-yle/this-is-yle, cited 7th September 2023).

26 One should also note that when looking at individual concepts, the discussant in a futures clinique might have connected them to more than one level, the meaning of the concept depending on the context or the discussant. This naturally created a challenge for interpretation into the analysis. For example, a mythical phenomenon can be experienced as repeating itself in litanies. Whether you have to listen to the litany of 'YLE' or 'battery radio' is also a system-level issue.

is this problem (L)? Is it day or night? In the evening, you can monitor whether the lighting in the area or in the city is back on (S). If it is dark, as it can be in the northern hemisphere in the winter most of the day, you could look out and see if it is your house, your neighbourhood, or perhaps the entire city that has no lights and that suffers from the cut. If the entire country faces the same problem, you will run into greater difficulties. If at home, you would soon go out to discuss the situation with others, looking for answers, especially if there is no access to the media.

In such an incident, you would first think of your own survival, and again **it matters what season we are in (S)**. If it is winter, you would not need to worry about storing food, since it is cold outside. However, **how does food store if it is not midwinter? (S)** It would be dark in the winter, in one extreme the long polar night, and you would need to worry about staying warm. **Heat distribution would not work (S)**. If you happened to have a generator for spare power, **does the generator start or is it broken (L)**; and since it is used rarely, would you remember how to use it? One of the discussants writes on the worksheet: **backup option for electric locks (S)**, since with no electricity access to spaces need to be controlled as well. If you were not at home, but for example at work or on a university campus, a natural reaction could be to try to go home to secure at least your own property and affairs. In the dark, however, even orienteering would be difficult. How would you find your way? **Navigation aid in the winter darkness (S)** would be much needed. **If the electric car still works, only mandatory trips (S)** could be made to save power. In preparing for and surviving in such a situation **extreme thinking may help: 'what if' no electronic device will work (S)? Fiber optics would in principle work (if there was electricity) (S).** Traditional skills of survival would come of use – this way the situation would force you to **return to the good old times (L)**, to serve at least the basic needs: **let's secure food, drinks, and heating (L)!**

The group discusses their past experiences of short power cuts and finds that the above reactions have up to some point taken place. Repeating some of the earlier conversation, they find that it is difficult to tell how long it would take in a prolonged situation, before you begin to think that the event is more severe than normally, and perhaps would not pass quickly or at all. The normal would be, e.g. a cut cable or cabling works in the yard of the neighbour. There is less experience in the group about the cut of other utilities, like water outage. Perhaps the **water distribution would work (S)** some way or another – or you would perhaps not get water soon either if there was no electricity and the water distribution depended on it. However, any warning or better preparation beforehand could help face the situation.

Arriving to *systems*, the group acknowledges that various organisations have prepared for situations like this. Rovaniemi area hosts a lot of travelers, also international travelers, and businesses that organise activities for them are prepared and have a toolset for various situations. One of the group members is updating a website on Tourism Safety Tools[27]. The **website collects safety and security tools for travel companies (S)** in one place**.** The site lists laws and guidelines. For example, **legislation on rescue operations include Act on Emergency Response Centre Operations[28], Rescue Act[29], etc. (S)**, but **what about the regulations for something that is brand new (S)?** Based on the available information, the units of Finnish rescue services plan operations and practice foresight based on their normal ongoing activities, but are these units prepared for events that have not occurred before? How much do they base their foresight on weak signals or known megatrends, when preparing for various possible events? Another group member highlights that the focus areas of these activities and discussion have changed. For example, with the war in Ukraine there has been more discussion on air-raid shelters than before. When the focus is this way on details, like only the shelters, it remains obscure to the discussants, what the system for this kind of situation in its entirety could be, and what all can be expected to happen from the system's perspective, when an odd crisis occurs. It is relevant to think, is the region truly prepared for everything expected or unexpected, like this surprising power cut. Systematic planning and communications would be necessary. It is difficult to predict the nature and timing of crises.

[27] In Finnish *Matkailun turvallisuustyökalut*, https://blogi.eoppimispalvelut.fi/turvallisuusnormisto/

[28] In Finnish *Laki hätäkeskustoiminnasta*

[29] In Finnish *Pelastuslaki*

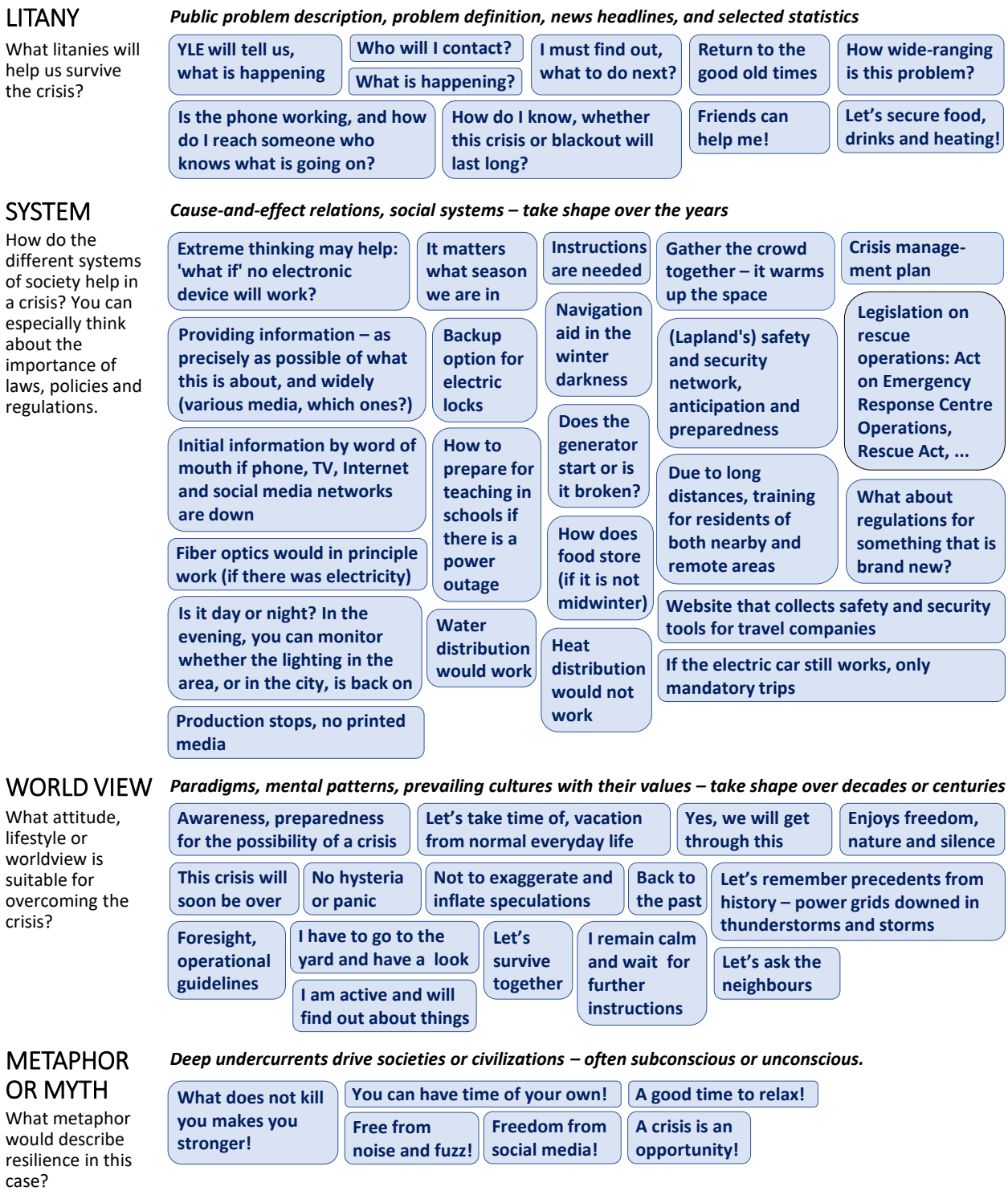

Figure 10. *Results from Rovaniemi Group 1 in four CLA layers (For YLE, please see footnote in page 26).*

The group discusses **crisis management plans (S)** and methods, and that **instructions are needed (S)**. For example, in extreme conditions with freezing -30 to -40 °C temperatures, it would be helpful to know, where operational fireplaces and wood-heated saunas exist, including summer cottages and other free-time facilities, so that people could go to those locations and at least stay warm. Besides, people produce heat. When you **gather the crowd together – it warms up the space (S)**. There is often also water near free-time apartments. Staying together could save lives and help distribute information. On the other hand, it is discussed later that those who live far from the city and potentially under harsh conditions would be more difficult to reach and help in this region. **Due to long distances, training for residents of both nearby and remote areas (S)** needs to be planned separately, communications as well.

Regions in Finland have safety and security networks. Rovaniemi hosts the regional **Lapland's safety and security network[30](S)**. Anticipation and preparedness are practiced visibly by it**.** The network operates so that the Regional State Administrative Agency[31] calls together Rescue services[32], the police, Kasper[33], and representatives of the Lutheran Church. The network of actors is about and for preparing for various regional crises. In history, the network has been needed after school shootings or other violent incidents. Their strength is in the ability to react in novel situations; in how it spreads information, handles situations, finds the right people on location, and so on. This leads to thoughts of general preparedness, for example, **how to prepare for teaching in schools if there is a power outage? (S)** Schools could teach students to prepare for such events, and train various events instead of mere fire drills. Education and training are common, especially within the travel industry.

The group ideates for a while the *world view* level of issues, and they mark down without discussion, for example, the following: '**Let's take time off/vacation from normal everyday life' (W), 'No hysteria or panic' (W), 'Not to exaggerate and inflate speculations' (W), 'Yes, we will get through this' (W), 'I have to go to the yard and have a look' (W), 'Let's survive together' (W), 'Enjoys freedom, nature and silence' (W), 'I am active and will find out about things' (W), 'I remain calm and wait for further instructions' (W), 'Let's ask the neighbours' (W), 'Foresight, operational guidelines' (W), 'This crisis will soon be over (W)'** and '**Let's remember precedents from history – power grids downed in thunderstorms and storms' (W).** These reflect the earlier discussion. A group member expresses that it is important in everyday life to remain active in finding information about ongoing events in general, domestically and internationally. This creates **awareness, preparedness for the possibility of a crisis (W)**. If you know more, you experience less uncertainty, and suffer less from the lack of knowledge in surprising situations.

The discussion turns back to the good old times (cf. litany), going **back to the past (W)**. For example, people trek in the north a lot, even north of Rovaniemi, so it is possible to survive in these conditions and perhaps even enjoy it. Living close to nature would mean change, after which the noise from the media would change to listening to the sounds of nature. You would take a leave from everyday life as we now experience it. A total power cut could bring us closer to nature. It is possible to find opportunities in the middle of crises. **A good time to relax! (M)**

At the level of *myths and metaphors*, the group is satisfied in finding that **a crisis is an opportunity (M)**. Without electricity, for example, **you can have more time of your own (M)** and be **free from the noise and the fuss (M)** we now experience, including **freedom from social media (M)**. The grit shows in the thinking that challenges make you stronger and not weaker, i.e. **what does not kill you makes you stronger! (M)**

In general, the group considered that the power cut could be total at worst, and lead to a crisis. There are, however, certain instructions and procedures for these occasions. Especially the Lapland safety and security network, which is called together by the Regional State Administrative Agency, that includes rescue services, operates so that when something happens, people are called together to ponder, what way the necessary units will be in needed locations. The network exists because of the need for foresight and preparedness for the cases of security related or crisis situations, or threats. There are also projects in the traveling (e.g. Lapland University of Applied Sciences), and one of these is about safety tools for the industry that serves travelers – companies in that business have in use various methods and tools for reacting in such situations that threaten safety.

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30 Lapland's safety and security network, or formally in Finnish *Lapin turvallisuusverkosto*, is an open collaboration and development network for improved safety and security in Northern Finland.

31 In Finnish *Aluehallintovirasto (AVI)*

32 In Finnish *Pelastustoimi*

33 *Kasper – Kasvatus- ja perheneuvonta ry* is an expert organisation that focuses on child guidance and family counselling.

2.1.2 Results from Rovaniemi – Group 2

As the *litany*, the group discussed the importance of **plans for different situations (L)**. For example, during a power outage, alternative sources of heating of properties would become necessary, especially burning wood, to keep houses warm. You would expect that **the authority will tell you about the preparedness and crisis measures of the city (L)** in this situation, and what the best reaction would be. **Instructions would be needed, for example, if you needed medical assistance (L)**. However, **where can one get information if the electronic media do not work (L)? Base stations operate on batteries only for a few more hours or a day (L)**.

In case the Finnish Broadcasting union YLE could send information, the message could be calming[34]. Expert opinion could be valuable as well – for example, if the power cut happened due to a space storm, **an expert or a researcher, an authority in that field, could explain the event, even how people could prepare and plan for it beforehand to be ready to act (L)**. Knowledge can perhaps be created during the event, forecasts, graphs, and expert articles, about the spread of the solar storm and how other areas are surviving from it. **Though again, acquiring, presenting, and delivering information can be difficult during power outage (L)**.

The group discussed helping oneself and **helping the neighbours (L)**. For example, it would be good to **activate your home supplies (L)**, to **save energy (L)**, to **deliver fuel for vehicles or wood for fireplaces as help for those in need (L)**. **People could be encouraged to move to a summer cottage if it is winter and their city residence does not have a fireplace (L)**.

On the level of *systems*, the group finds that **the COVID-19 pandemic has created trust in the work of the officials and their expertise (S)**. A solar storm could be different, however, because **the solar storm could destroy, for example, the devices of the health centers (S)**. **It may be necessary to prepare for security issues and looting (S). Alternative heating systems, instead of electrical heating, should be obligatory (S)**. **Campuses of educational institutions should recognise risks and prepare for them (S)**.

The citizens of Rovaniemi would not find them helpless, however, because of the survival skills and related hobbyism among them (S). Travelers may not be skilled that way. **Developing travel safety is important, and collaboration in the field of activities across the country borders (S)**. In fact, **international traveling has trimmed people to pay attention to international crises (S)**. Especially, **COVID-19 woke the citizens of Rovaniemi to prepare (S)** for extraordinary events. **The Lappish network for comprehensive security is known and awarded for its cooperation model and holistic safety thinking (S)**.

It is noteworthy that Rovaniemi city and the surrounding countryside are quite close to each other. Collaboration in between would help in the middle of a crisis. For example, wood supply and food production from the countryside to cities would benefit from it. (S) Farms and their preparedness are critical (S). What comes to supply and services, it is important to find ways to **deliver help to those who do not have care or who cannot move, to get them food, medical supplies, et cetera (S)**.

Regarding the *worldview*, certain self-sufficiency is assumed. **There are not enough police officers in Lapland, the situation has been the same for years (W)**. The lack of the police officers or other officials has not yet caused trouble, but if taking use of the circumstances, the situation is not good. **The staff shortage in the north is a security risk in general (W)**. **Since the police are not always reachable, other officials take care of their duties, and it has become necessary to consider replacing activities (W)**.

Rovaniemi is a military town, and many in Rovaniemi have a personal connection with the military, the presence of which is visible in the city (W). For example, **flight training and other daily activities ensure that the Rovaniemi people are aware of the military presence (W)**. **The defense forces provide official assistance (W)** in extraordinary situations.

[34] The note *Broas commented on YLE. No problem!* (L) on the litany layer refers to Chief Physician, Infectious Diseases Markku Broas from Lapland Hospital District, who led the fight regionally against the pandemic, commented frequently the situation in public media, e.g. for the Finnish Broadcasting Company YLE, and became known at that time nationally.

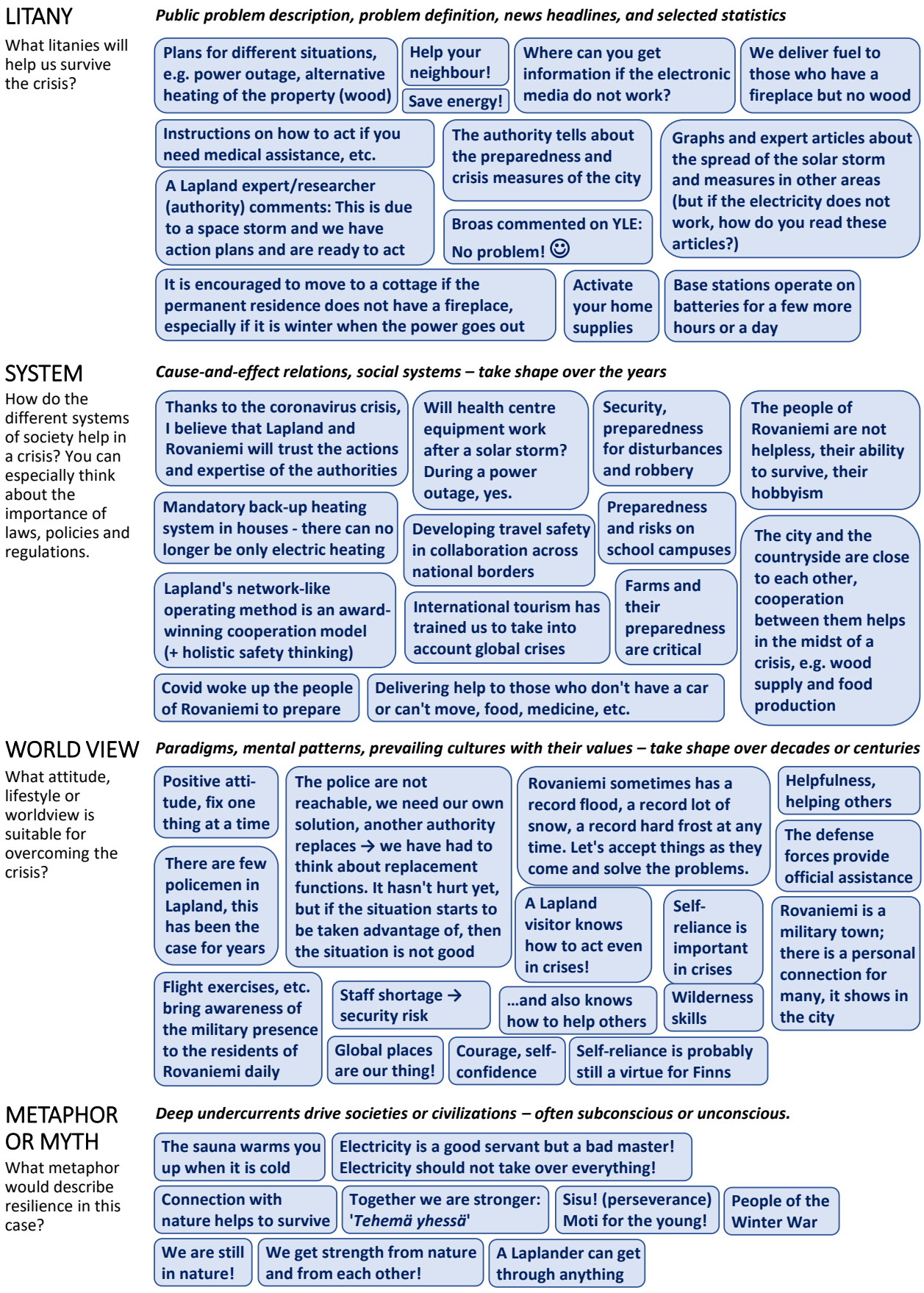

Figure 11. *Results from Rovaniemi Group 2 in four CLA layers.*

Rovaniemi has at times record-high floods, amount of snow, cold weather, or other extremities. Things are accepted and problems are solved as they arrive. (W) Self-reliance is probably still a virtue for Finns (W) and **important in crises (W)**. Independent initiative is important in crises. You have **courage, self-confidence (W)**, **a positive attitude and fix one thing at a time (W)**. There is **helpfulness and will to help others (W)**. **Wilderness skills (W)** and campcraft things are of value, a **frequent visitor to Lapland knows how to act in crisis situations even (W)** as well and **knows how to help others (W)**. Rovaniemi is an international city, and **global places are their thing (W)**.

Of *myths and metaphors*, the group found that in this incident, **electricity is a good servant, but a bad master. It is not to let electricity take over everything**. **(M)** Other suggestions included '**The sauna warms you up when it is cold (M)'**, '**We are still in nature (M)', 'The connection to nature helps you survive (M)'**, '**We get strength from nature, and we get strength from each other (M),** '**Together we are stronger, we will do this together ('tehemä yhessä'**[35]**) (M)',** '**We have 'sisu'**[36]**, and 'moti'**[37] **for the young (M)**', '**A Laplander overcomes anything (M),** and we are the '**People of the Winter War (M)'**. After the group session, this groups notes, in addition, that 'since the future is always uncertain, it is good to think that everything will be fine in the end'.

The group found important in emergencies, quite like Group 1, the networked operating model, which has been recognised and commended in the region. There is trust in public authorities and expertise, and maintaining the trust was found important as well. Of issues typical of Rovaniemi, survivability and hobbyism in basic survival skills is not politically guided, but rather an existing mindset within the region. This attitude could be strengthened by political means. The group also discussed the position of the weakest individuals. For example, if you cannot move yourself, the officials should find a way to provide food and help. The help from neighbours can be of importance. No-one should be left behind, and all should be taken care of.

In addition, the group discussed the urban-rural-connection. The countryside is close, and the connection should be seen collaborative. Collaboration could help during crises. For example, the rural communities could help in producing food and wood. It is noteworthy that Rovaniemi is rather an international city. Safety of travelers was mentioned. In addition, it is necessary to follow the developments globally. When you are aware of the developments and build connections outside the country, you understand better the international crises that can reach the Rovaniemi region. Following world events should become standard, a procedure. Finally, it is also typical of Rovaniemi that it hosts many students. Since campuses host a lot of people, the preparedness and risks at campuses were brought up and should be addressed.

2.1.3 Results from Rovaniemi – Group 3

Lapland got dark (L). On the level of *litany*, the group found it important to have a **security plan and to learn to know it prior a crisis (L)**. **Gatherings for discussing scenarios and the future (L)** are important. It is relevant to **go through various scenarios (L)**. However, when the **power is out, the city will be in trouble (L). Self-sufficiency or autarky will be valued (L)**, as well as all-round, **versatile competence (L)**. What comes to communications, for example, **it would perhaps be possible to use in the exchange of information the sort of 'walkie-talkies' that are used by hunters (L)**. **A major societal crisis can lead to differences in how regions pull themselves through. Some regions have better chances to survive. For example, Rovaniemi and Helsinki areas are different. In Helsinki people live in blocks of flats. Apartments do not have their own yard or a well. In Rovaniemi, on the contrary, wells are found on the yards of residential buildings. (L)**

[35] 'Tehemä yhessä!' means doing together, in local dialect. The idiom is used locally, when encouraging people to act towards the same goal – somewhat the same way as 'Let's do this!' in American English. It has been used as a slogan by the administrations in the Northern Finland highlighting collaboration and sharing responsibility.

[36] 'Sisu' is a Finnish term for a particular type of perseverance.

[37] 'Moti' is urban slang and means having the motivation for doing something or feeling like doing something (cf., bother, in Finnish 'viitsiä tehdä' or 'huvittaa tehdä'.)

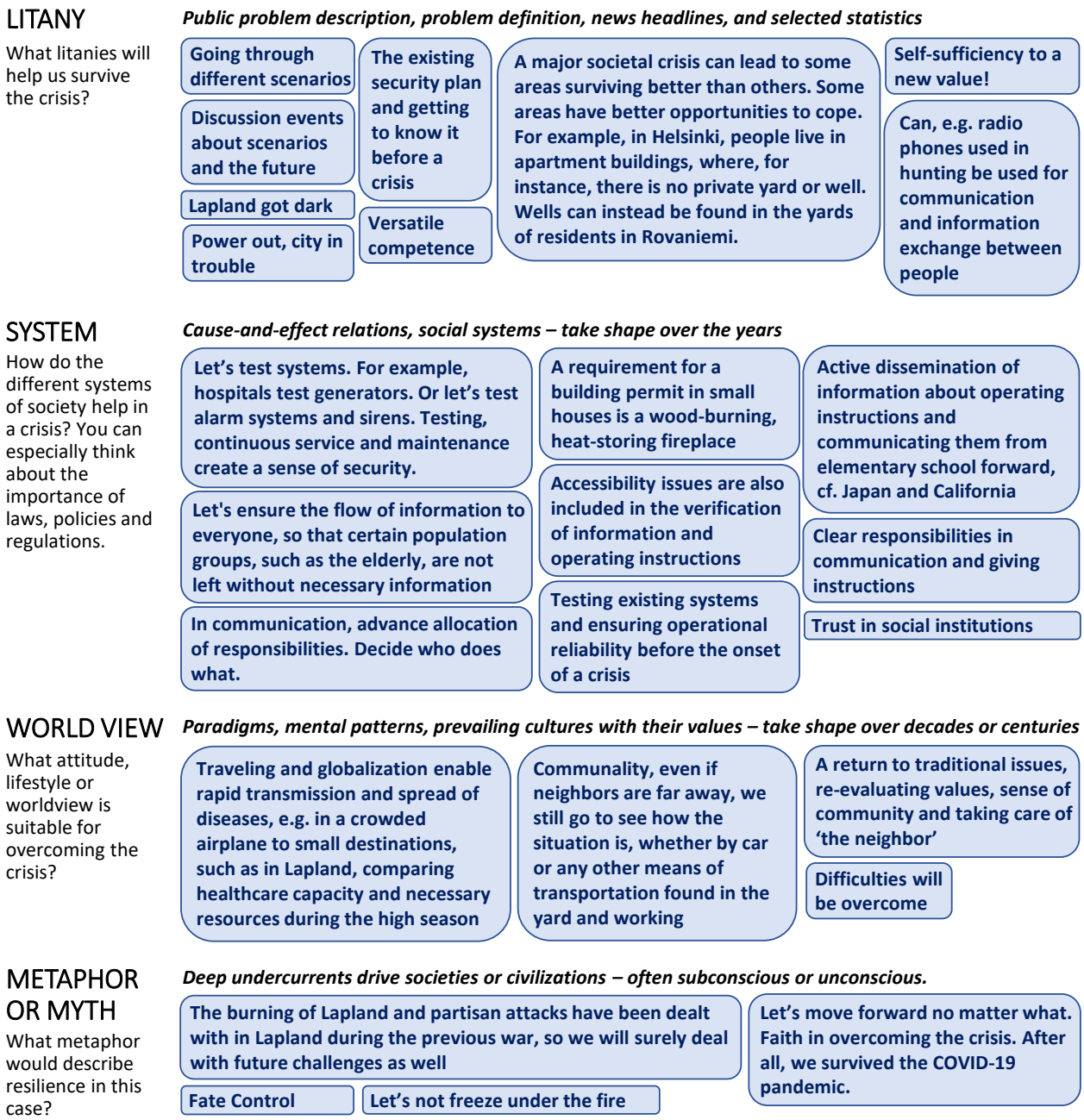

Figure 12. *Results from Rovaniemi Group 3 in four CLA layers.*

Regarding the *systems* layer, the actual **systems that are in use need to be tested. For example, hospitals test their power generators, and the city tests public warning or civil defense sirens. Continuous care and maintenance of systems increases the sense of security**. **(S) Testing and maintenance of systems, and looking after the reliability of their performance, is needed before crises break out (S)**. The group found, in line with the discussions in the other groups, that society could also prepare on a systemic level for extraordinary events. For example, the need for fireplaces was mentioned by this group as well; **to get building permission, single family houses should perhaps be required to have a heat-storing fireplace for heating by wood (S)**.

There is trust in institutions in society (S). Responsibilities should be kept clear in communications and in instructions (S). To secure the information and procedural instructions, it is necessary to consider issues of accessibility (S). Informing the public actively about the existing instructions should take place from the elementary education forward, comparing, for example, to Japan or California (U.S.) (S). A good flow of information should be secured for all demographics in the

population, so that, for instance, elderly people are not left without sufficient information (S). **In communications, it makes a difference to share responsibilities beforehand, in other words, to decide, who does and what (S)**.

In connection to the existing *worldviews*, the group mentions the strains of traveling. **International travel, and globalisation overall, make carrying and rapid spreading of diseases possible, for instance, in a full airplane to destinations that are small by their healthcare capacity and resources, such as locations in Lapland. During the seasonal peaks, the need for resources can be high compared to the carrying capacity of small municipalities in health care**. **(W)**

Nevertheless, a crisis like this would mean **returning to the traditional things, examining values, cohesion of the community, and taking care of the neighbours (W)**. Social relations are found important, and **communality. Even if the closest neighbours are far away, you would visit and see the situation by driving there by car or another vehicle that you have at your yard and that functions (W).** The group messages confidence: **difficulties will be overcome (W)**.

On the level of *myths and metaphors*, the group returns, like all others, to the legacy of past wars. **Since we survived from burning the Lapland and strikes of partisans in Lapland during the war, we will overcome future challenges as well (M)**, **control our fate (M), and not freeze under the fire [38] (M)**. **There is faith in overcoming a crisis, going forward no matter what**; **after all, the region survived from the COVID-19 pandemic (M)**. As a general comment, after the group discussion, this group mentioned that 'the aging of the populations builds challenges, what comes to constructing a functional and adequate model for the crisis'.

In conclusion, the group discussion brought up good comments about learning and the past. We have survived in the past, so we will also in the future. Future belief is generated, and the crisis will be overcome. On systems, in particular, the group pointed out active communications, in which all demographic groups are addressed – equally all people, including elderly people, whom we have in Finland quite much, and in the future even more. On the other hand, testing all devices and systems that exist for the preparedness or emergencies creates sense of safety and having these up to date would certainly help also in the crisis. Preparedness is important in this sense both on societal level, e.g. testing the emergency alarm systems and sirens frequently, and on personal level, e.g. checking own level of preparedness frequently. The latter can be encouraged by systemic changes, for example, by requiring fireplaces in the building code to enable self-sufficiency in surviving over the worst stage of the situation.

[38] The Finnish phrase '*Ei saa jäädä tuleen makaamaan*' that was used during the workshop means in old military slang that you should not stay put under the enemy fire but try to find ways forward. The saying has gained the more general meaning in Finland that you should try to go on, even though you would have to go through severest hardships.

2.2 Results from Kotka Futures Clinique

The second CLA futures clinique in our set of three events was organised in Kotka on 20th September, 2022. The futures clinique was virtual only and conducted in Finnish.

The workshop begins with representation of the participants, the topic and the method. The participants are listed in Appendix 2.

After the futures provocation, a presentation of the RESCUE Project was made. Information was given on Kotka[39] as the object of a case study, on its history and position as part of Kymi region. Future directions of development were also briefly shown. A special starting point for the Kotka clinique was based on the following two background pillars:

- Comprehensive security, ability to tolerate crises is about the skill to observe own strategic thinking systematically, and question the foundations of that thinking
- In the WISE project (Ahvenainen et al. 2021), Kotka organised experimental, strategic, risk management exercise following the thought that resilience is not just about preparedness and operative action

Questions for this futures clinique following the four CLA layers were: What is the resilience of Kotka in this crisis, how will we survive? What litanies help surviving from the crisis? How do systems (including politics, laws, regulations) support this? What attitude, life style or worldview fits with overcoming crises? What metaphor would describe resilience in this situation?

The groups were invited to think about an incident, in which they experience a total cut of electricity in their lives. The strike can be happening because of a solar storm, but the reason can be something else as well. The situation will be thought and discussed on four CLA-method levels.[40]

Figure 13. *Kotka from the land side. Photo: City of Kotka.*

[39] More information about Kotka is available in the following references: Kotka-Haminan seudun strateginen yleiskaava (2018); Kotkan kaupunki (2020) Aikakone: Kotkan keskustan kaupunkirakenteen kehitys & Kuntaliitto (2018) Kotka-Haminan seudun strateginen yleiskaava. 11.9.2018.

[40] The groups have approximately 10 minutes time per each level, but they were able to add notes on the slides afterwards, and they had an additional worksheet for adding afterthoughts or suggestions that do not necessarily belong under any of the CLA layers.

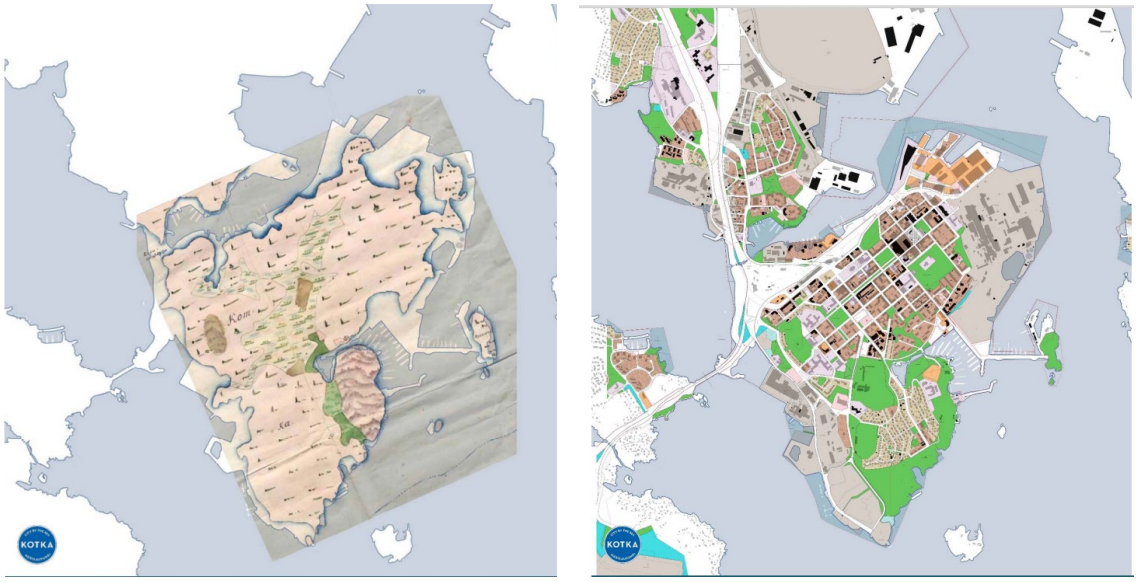

Figure 14. *Left: Kotka Island in the 1700s, before the Swedish era, the central parts of the island were shallow and wetland (Finnish Heritage Agency). Right: The vitality of the city center, heavy motorisation, wise utilisation of shores, monotony of modern construction, heavy industry, and delivering services are current challenges (Asemakaava 2018).*

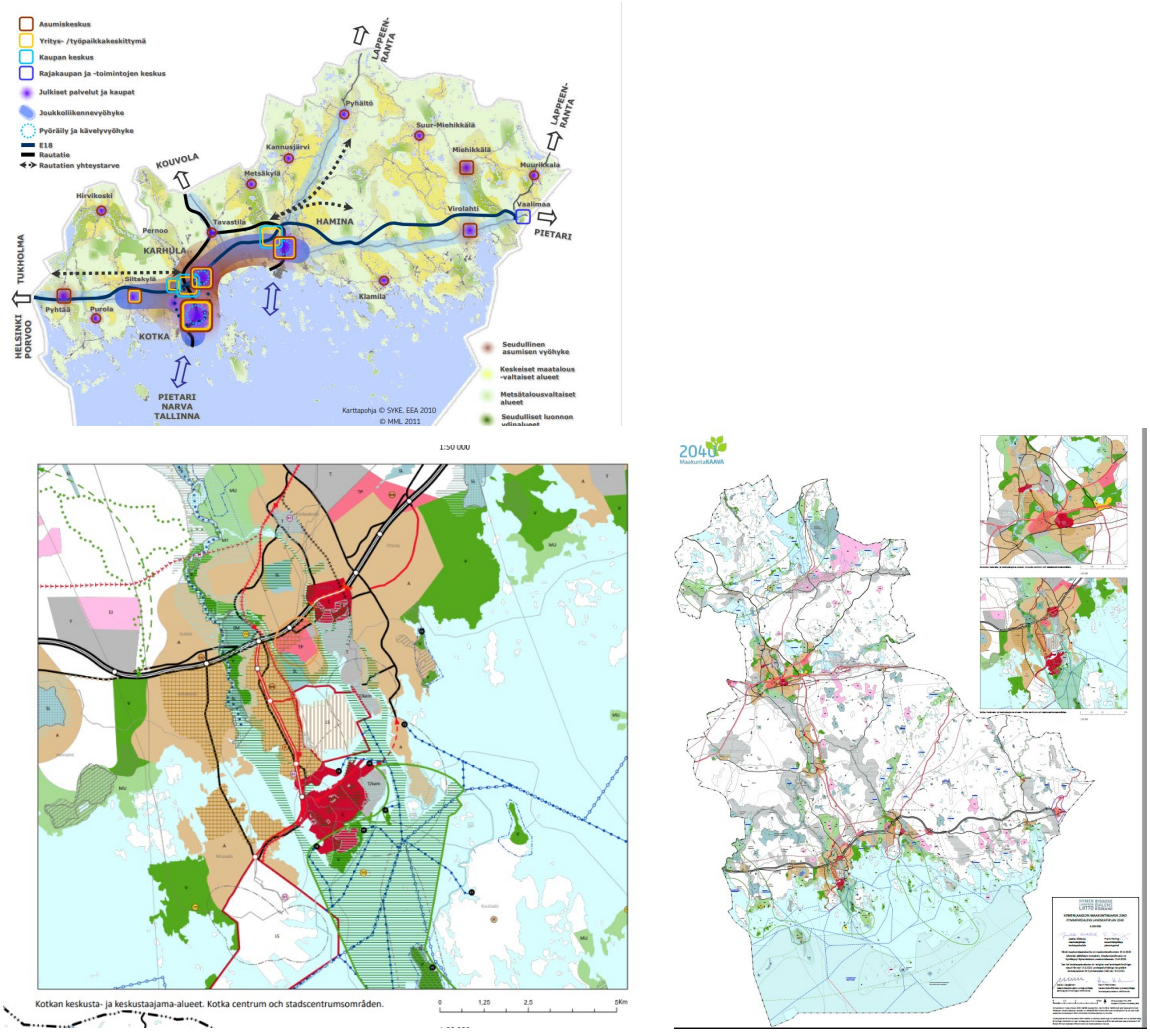

Figure 15. *On top: Kotka-Hamina or Southeast region developments (Kuntien hyväksymä seudun kehityskuva 2012). Left: Kotka area as part of Kymenlaakso from the viewpoint of the built environment, the urban area of the city of Kotka. Right: Kotka area as part of Kymenlaakso region from the viewpoint of the built environment, Kotka from the perspective of regional development.*

2.2.1 Results from Kotka – Group 1

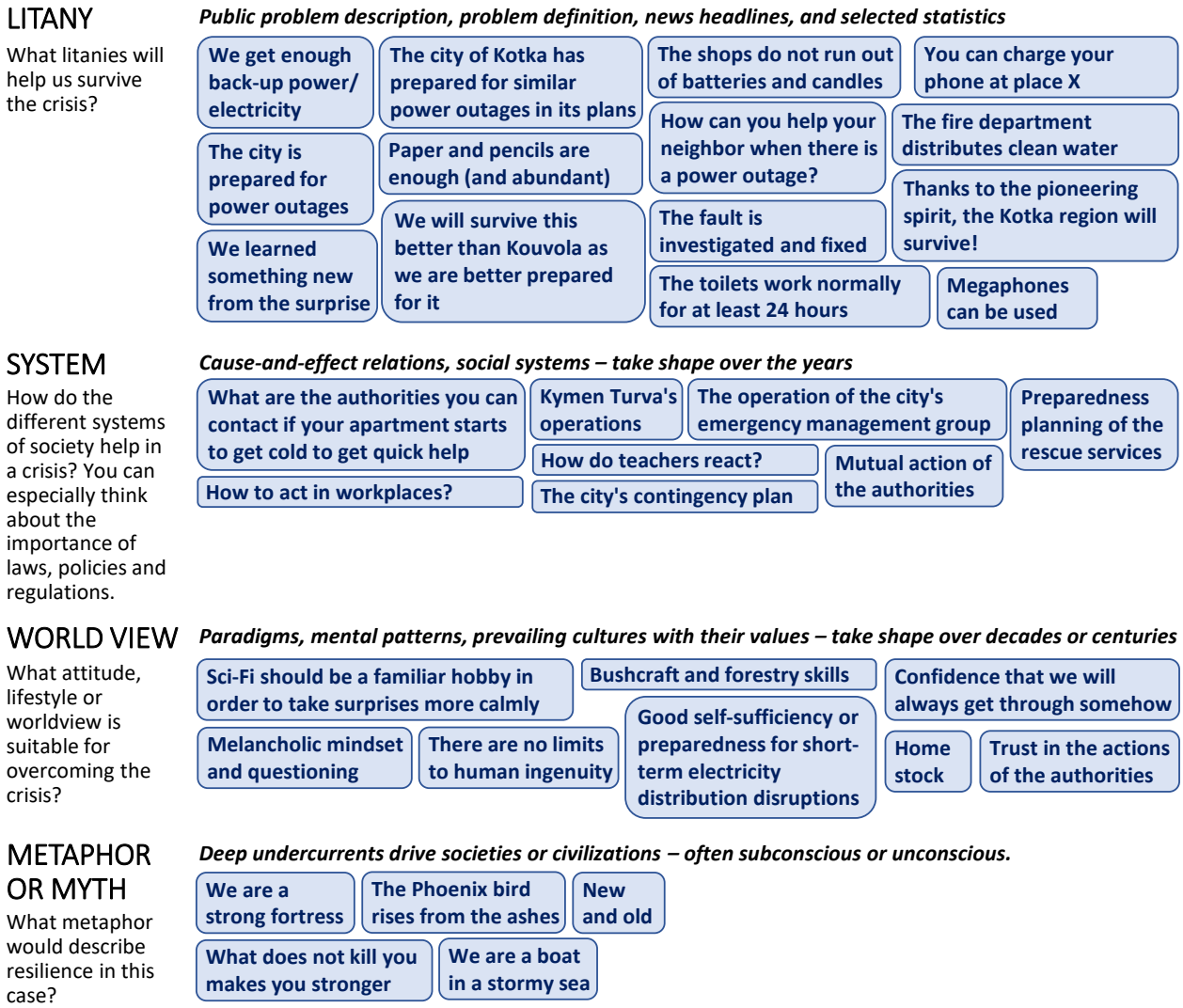

Figure 16. *Results from Kotka Group 1 in four CLA layers.*

The discussants notice first that at the level of *litany*, the expressions that are listed are expected to be positive; first expressions that help survive in the situation or that the officials would say to people. The group begins from the note '**The city of Kotka has prepared for similar power outages in its plans' (L)**. This was suggested, because Kotka has, in fact, prepared its administration for the line of situations, to know, how to start unraveling them. What comes to communications of the city officials, for example, those responsible for communications have a plan for finding electricity elsewhere, if it was not available from their own power outlets. Taking care of crisis communications can be difficult if there is no electricity. Without power in laptops, it would be difficult to get information to people. In Kotka, the Finnish Broadcasting Union (YLE) office is right across the marketplace from Kotka City communications, and they have emergency power. If all electrical devices get broken, we **will still have paper and pen (L)**, perhaps **megaphones**[41] **can be used (L)**, and **there are batteries and candles in stores (L)**. However, would the delicate technologies in cars get broken as well, it would be difficult go out to towns and residential areas and spread information. Repairing devices would take time, and the power cut could last hours or longer – the country could go into disarray.

Water is critical, and people will run out of it fast in this kind of a situation. **The fire department will perhaps distribute pure water (L)**. The discussion turns to infrastructure – for example, communications networks will become dysfunctional in just hours without emergency power. Even if we had mobile phones charged, there

[41] There are also mechanical megaphone designs.

perhaps would not be a network to connect to for long. We trust the administration, but act ourselves too – for example, we could take the candle to the neighbour ourselves.

The group marks down litanies without stopping to discuss them at this stage: '**We get enough back-up power/electricity' (L)**, **'You can charge your phone at place X' (L)**, **'How can you help your neighbour when there is a power outage?' (L)**, **'The city is prepared for power outages' (L)**, **'We will survive this better than Kouvola as we are better prepared for this' (L)**, **'The toilets work normally for at least 24 hours' (L), 'The fault is investigated and fixed' (L)**, **'We learned something new from the surprise' (L)**, and '**Thanks to the pioneering spirit, the Kotka region will survive!' (L)**.

The discussion on *systems* begins from the **preparedness plan of the rescue services (S)** and **the contingency plan of the city (S)**. **There is an emergency management group, whose operation is centric here (S)**. The written plans are mostly on the Intranet, in electric form. Some in the organisation have printed them all to have them in use during system malfunctions. In an earlier exercise there was discussion about that everyone should print those instructions that are most important to them. Kotka has a task force that can react, and Kymen turva is a regional organisation, in which Kotka is represented and officials from Kotka take part in. **Thus, there is mutual action of authorities (S)**. **Kymen Turva**[42] **has their operations (S)** and their own communications – communications staff from cities and municipalities within the region collaborate under this regional organisation.

How should we act in workplaces (S)? Thinking about schools, how do teachers react? (S) It has been noted earlier that teachers in schools should react in situations like this during the terms and it has been thought that teaching can go on normally by experienced teachers without problems even without electrical devices. However, if the described situation would last longer and exist on larger areas in Finland, the entire Finland, or even neighbouring countries like Estonia and Sweden, could we get help, for example, from neighbouring municipalities or would we stay alone with our problems? The length of the situation would affect also in, how rural areas should be thought of separately from the urban areas. It is asked, are there networks of ordinary citizens that could prepare for the situation, but the question is not answered. **What are the authorities you can contact if your apartment starts to get cold, and to get quick help (S)?**

At the level of *worldview*, it is discussed that if there are people who have considered choices in life, they can be better prepared for all kinds of incidents. In relation to that, for example, if you have a religious belief, this can give you a sense of trust in that you will survive, no matter what.

In Kymenlaakso area, the **mentality is a sort of melancholic and questioning (W)**. In addition, it is good to notice that there are quite a lot of people in the area that speak different languages. People speaking different languages have grown among different cultures and can have differing worldviews and attitudes. Those, who arrive from other countries, should be noted in communications, and they could not assume safely that the city administration can provide all information in their language, but they should themselves have it translated and spread the message forward to immigrants and refugees. It is difficult to try to put yourself in the position of someone that has a very different background and try to imagine their reactions in each situation. You come to think though that having seen riots and vandalism that can have followed extraordinary events in foreign countries, how Finns are peaceful and do not go to rampage out there, but you question as well, could there be negative behaviours in the given kind of situations as well. Worldviews are not necessarily shared, however, which may affect the way people respond.

World view level notes from the worksheet do not come up all in the discussion: **'Sci-Fi should be a familiar hobby in order to take surprises more calmly' (W)**, **'Bushcraft and forestry skills' (W)**, **'Confidence that we will always get through somehow' (W)**, **'There are no limits to human ingenuity' (W)**, **'Good self-sufficiency or preparedness for short-term electricity distribution disruptions' (W)**, **'Trust in the actions of the authorities' (W)** and '**Home stock' (W)**.

While thinking of **myths and metaphors**, the discussion first goes back to the melancholy of people in the region. This exists all over Finland, and not only in Kotka, but in Kymenlaakso things are not seen all positive and there are differences in how Finnish regions react to upcoming issues. Following this thinking, there is a tendency to resist everything that happens or does not happen. The resistance shows publicly in social media,

[42] Kymen Turva is the safety and security network for Kymenlaakso region.

discussion forums or text message listings[43] of news outlets and must be a part of Finnish mentality. Within the Kymenlaakso region it feels like even positive news gets a negative response in online forums for commenting news and text message listings of news outlets. The section of the population, who sees things via the negative instead of supporting and positive, comes up. The people in Kymenlaakso can feel inferior in comparison with the people from Western Finland. There is avoidance of stand on ceremony[44] – for example, 'this or I am not really important', 'did you have to go and cook me coffee', 'you do not need to do that just for me', or 'I did not nor cannot really do that much' – that shows in power of two in this region if compared to others. This is a Tavastian[45] behaviour, a group member notes, but common also in Kymenlaakso.

Regarding sea and related items as metaphors, they are not recognised in modern Kotka, even though the city is located on the coastline, and it would be easy to imagine myths and metaphors related to sea being strong. Though it was suggested that Kotka people **are a boat in a stormy sea (M)**, **strong as a fortress (M)**, and like **the Phoenix bird that rises from the ashes (M)**, or **new and old (M)** at the same time, the discussion was more about the mentality of people, which perhaps relates to the saying: **What does not kill you, makes you stronger (M)**. As a common comment from the group members, it was summarised that Kotka people will survive for a while and have select systems that can support the situation.

All in all, the group discussed from organisational starting point that there are groups that are prepared, administrative activity, instructions and plans, which are all kept up to date. In addition to Kotka, the regional Kymen Turva network was mentioned, and what roles schools and workplaces could have in situations like this, and how they could organise. In addition, different language-based groups were discussed. Cultural habits in everyday life can differ, but people from different areas and backgrounds should be noticed.

2.2.2 Results from Kotka – Group 2

The discussants check first that it is the space storm that should be considered as the cause of the power outage, and if the situation could be even a global problem of sorts that could lead to losing batteries in cars and driving down generators for spare power. It is concluded that the question may not be about a regular power cut, and the reactions should be considered from that perspective.

On the level of *litany*, it is possible to think of, for example, what the local newspaper would write about it. However, under a total power cut, it may not be probable that news would be written for the print media at all. You have some power on your phone, some may have secured power supplies (Uninterruptible Power Supplies, UPS), but it is possible to imagine that in this kind of a situation we all would go home to save what we have.

It was projected that there can be **shared awareness of the opportunity, realistically and without intimidation (L)**. It is good to **recognise what all depends on electricity, what you can do about it (L)**, and how modern society is in the end dependent across the board on whether there is electricity and if it is made available, what can be done for having it available in all situations. The problem might be that no technological device would function during the time the solar storm passes the Earth. This could cause quite a severe crisis, **a momentary return to the Middle Ages (L)**. The group discusses the length of a solar storm, would one occur, and would we be warned beforehand of a coming solar storm. Any time in between would make preparing for the storm possible. One of the group members knows to tell that the probability of solar storms can be predicted some, perhaps a week or so beforehand. However, in the worst case the storm hits the earth without warning by speed of light after eight minutes from the moment the sun becomes active. There could be **electrical chaos in Kotka (L)**.

On the level of *systems*, there is discussion first about how long it would take before there is electricity and electrical devices will work again. There perhaps has not been an event like that in history. Bright aurora borealis was seen surprisingly far south in the North America in the 19th century, and there are known disturbances in radio transmission, but the level of incident that would kill all electrical devices has perhaps not happened. Thinking about true coincidences of this kind of incident would be guessing, but in the worst case, electrical devices could get all broken. All devices that were not protected broke down and will need to

[43] The group discusses the so called '*tekstaripalsta'* (in Finnish, means a column that consists of independent short messages), where followers of a media outlet can send short opinions as a text message for the outlet to publish.

[44] The word 'kursailla' that is used refers to diminishing yourself and your needs below the actual expectations.

[45] 'Hämäläinen' refers to people living in 'Häme' region.

be replaced. This would cause a crisis on a level that we have not experienced before. This discussion has quite a lot of layers and is not about the production and distribution of electricity, but also about not having equipment that uses electricity left.

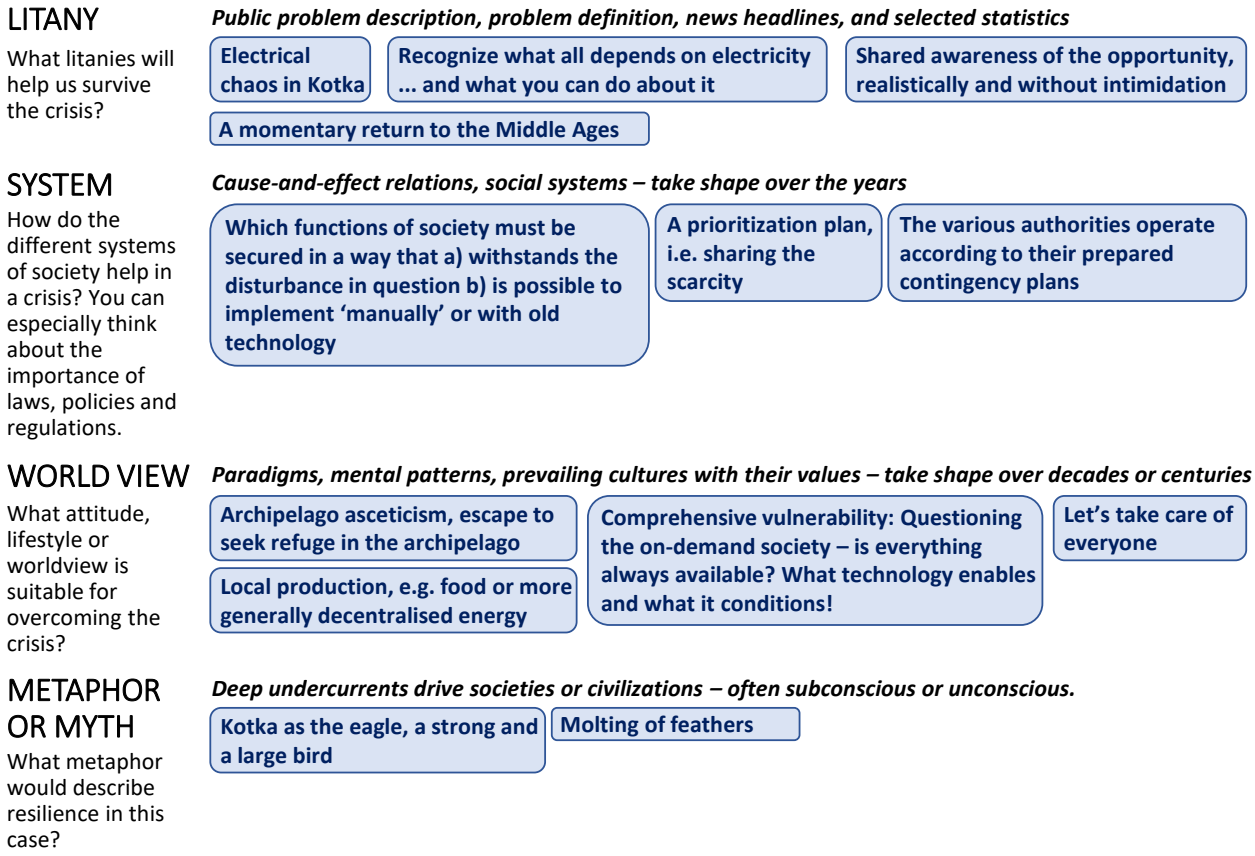

Figure 17. *Results from Kotka Group 2 in four CLA layers.*

There is one large hospital in Kotka, Kymenlaakso Central Hospital, and they have emergency power. If the emergency power supply unit would get broken in a solar storm, there perhaps would not be power there either. And even if the backup power unit would function, how long could the hospital go on using that power alone? In relation to this, the question of preparedness plans comes up. There at least should be **contingency plans that the various authorities follow and operate by (S)**. Having electricity is so crucial that situations that are caused by power cuts should be trained in locations like hospitals. At nuclear power plants the exercises go to elementary level, you work step by step following given instructions. In surprising situations, you cannot start planning, but will need to act right there and then.

Society should recognise its dependence on electricity, and what all can be done without it. The way to prepare for what may come is peculiar now in the sense that we somehow assume or expect that certain basic structures will remain, though it is possible that the basic structures will collapse. You do not get fuel from the pump, do not have any means of paying, do not have means of communicating over a distance, and so on – the situation is impossible to imagine, even if you look at such a possibility from within current society. It would be good to understand **which functions of society must be secured in a way that withstands the disturbance in question or can run with old technology, e.g. manually (S)**. **It may become necessary to prioritise, for example, when you plan to share scarce resources (S)**.

As the discussion turns to the *worldviews*, one of the discussants recalls that during the civil war, **people escaped to the islands to be safe in ascetic conditions (W)**. That may not fit perfectly to this crisis but is perhaps something in the history of the Kotka region that would still affect thinking and would be possible now. The group has suspicions, however, about resilience with the existing worldviews. It is perhaps meaningful, where food, energy, and other necessities are produced. Local production could help but is it possible to have

large enough local production so that it would serve, for example, the need for food for the entire city of Kotka, if the crisis continued for longer periods. **Decentralised production of foodstuff and other products could encourage into also producing energy locally (W)**, which is good to consider from the crisis point of view, though this does not fit well with the current globalisation mindset. When we build society, we may not understand or be able to notify all impacts and consequences. While enabling things we also condition things. **Vulnerabilities that spring up would be good to have comprehensively included, when we question the functionalities of the on-demand society – if we have everything that we need always available, and by what conditions (W).** We should also ask what technology enables and in what conditions. It is necessary to **take care of everyone (W)**. Municipalities are responsible for their citizens. We seldom have emergency supply kits for long enough time, so that we would not need to find outside sources of supply. The system would need to be built so that we would not run to stores, where electrically controlled doors will not open and there are none other than electric methods of payment. We should practice foresight and think of scenarios that may now be missing.

While discussing *myths and metaphors*, the group returned to thinking the severity and size of damage that this crisis would bring, would increase strongly in time, if it lasted for a longer time. You would first think that the power would return, but once the situation prolonged, things would get worse. The original problem setting did not assume any time of the year, which would make a difference. This kind of an incident would not cause problems in the summer, but if it occurred in the middle of winter, it would be cold, and you would need to think how to heat homes. You would perhaps hope that you would have blocks of wood to burn in your baking oven. Will Kotka people suffer from **molting of feathers[46] (M)** or **fly strong and large like an eagle[47] (M)**?

In the group summary, the group notes that it makes a big difference, if this would be the worst-case scenario, where everything electrical stops working, including cars and phones, in comparison with a situation that lasts only a couple of hours. The administrative officials have prepared plans and their thoughts on foresight. There perhaps has been training, what comes to anticipated crises. The severeness of the solar storm makes a difference – would all electrical devices suffer or how things would fold out. The group discussed fairly practical issues, like should we get to the stores to pick up things, and should we prioritise our needs for the kind of situations. It would be good to recognise the mobility in society. If there were no electricity, what sort of challenge would that be?

2.2.3 Results from Kotka – Group 3

Regarding *litany*, the group discussed first functions that are critical to the city of Kotka in crises, and the network of stakeholders that need to be invited to collaborate – for example, if businesses and other organisations should be involved, and in what way. The supply chains of critical resources, for example, in the food services, are after all dependent on various actors. It was discussed that the city needs to be seen more broadly, including other stakeholders, in addition to the city organisation.

The group ended up marking down title-like topics, as well as elements that the litany should contain, for example, in official communications. **The authorities' joint view of the situation (L)** was found noteworthy, as well as **communications, including instructions to citizens (L)**. There was trust in that the nearby city **Lappeenranta supports Kotka in crisis resilience (L)**.

As examples of more practical measures, it was found imperative that **the city will secure critical functions with backup power (L)**, while the citizens of the city should, for example, have a **three-day self-sufficiency kit (food, water, batteries, etc.) (L)** and **keep the car tank close to full (L)**.

On the *systems* level, the group found that it is important to be able to adapt administratively and operationally in situations of disruption, for example, with the possibility of officials to make faster decisions without such strong political participation. The ***Emergency Act* (S)** is a clear existing example of how responsibility and power can be shared in the event of disturbance. Resources must be allocated and valued in such a way as to be able to operate as versatilely as possible. **The municipality's and well-being services county's[48] administrative regulations and their modifications for normal and exceptional conditions (S)** are centric.

[46] The word 'höyhenkato', loss of feathers, was used in Finnish.

[47] The generic noun 'kotka' translates to 'eagle' in English.

[48] 'Hyvinvointialue' in Finnish.

The Rescue Services and Departments[49] **are key actors that exist for disruptions, and the adequacy of their resources is emphasised (S)**, but also **food aid and voluntary activities of organisations, such as the Finnish Red Cross (S)** play a role. All related organisations should be considered as part of the actor network. **Joint exercises between authorities (S)** strengthen systems, and cross-sector training and preparation are centric. Different time horizons and needs should be considered in planning the collaboration and during the crisis it is necessary to consider, how do needs change as the crisis continues longer. This could be helped by **centralised protection centres, if the crisis continues for a long time (S)**. It is further necessary to contemplate, who will take the lead in such a situation, would, for example, Fingrid[50] be able to take it, quite like the Finnish Institute for Health and Welfare during the COVID-19 pandemic?

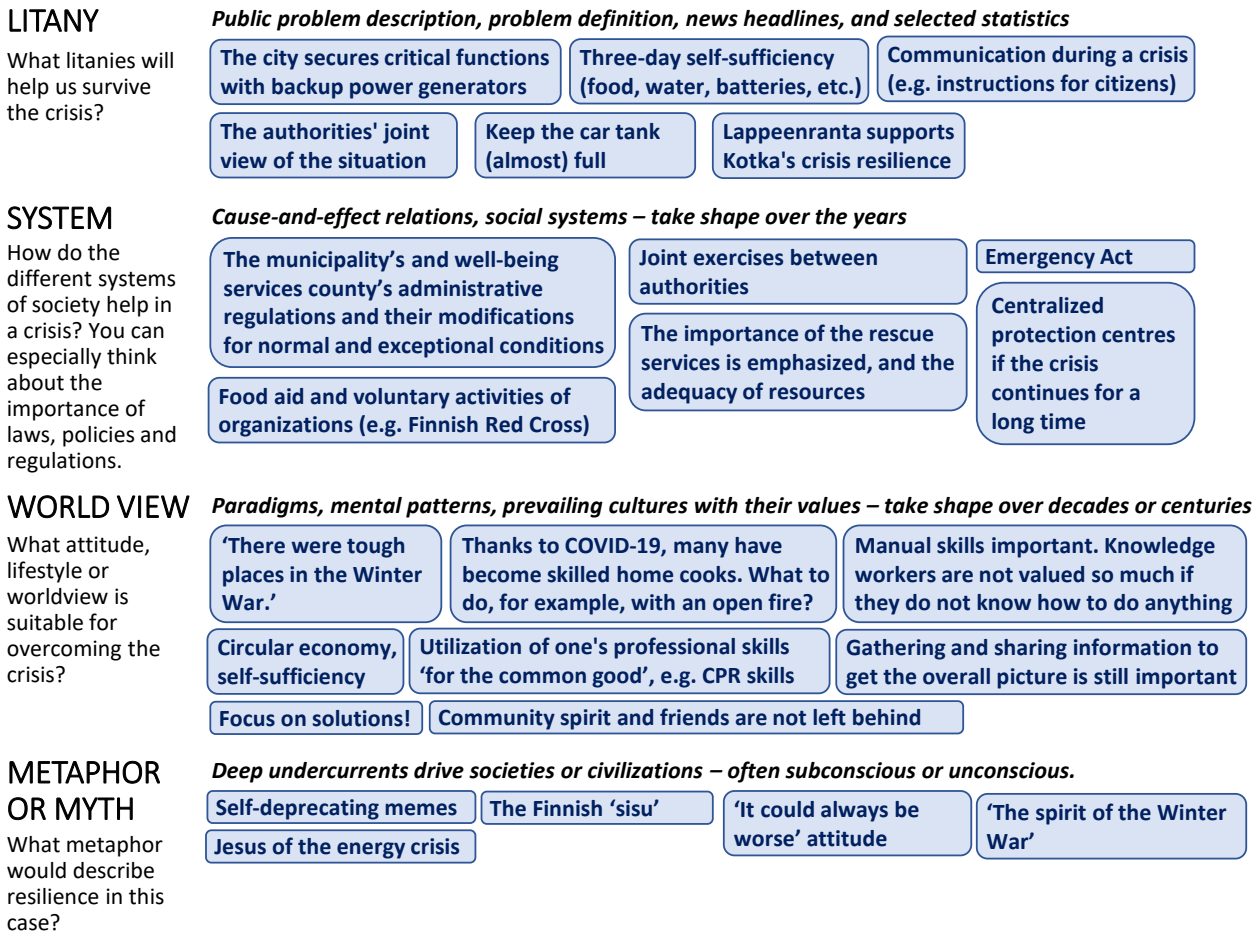

Figure 18. *Results from Kotka Group 3 in four CLA layers.*

The cohesion of the community is at the center stage in the worldview. There is discussion on the reality of it. Would you take care of your own family, compromising the wellbeing of others, or would you share resources and help others, under common threat? **Manual skills and physical work ('real work') would perhaps find value, but what role and value would the knowledge worker obtain? (W)** Would the importance of knowledge in society increase or weaken in a crisis? The know-how of the knowledge workers would perhaps not be valued as high if they did not possess capabilities that can be utilised. **During the COVID-19 pandemic, many became skilled home cooks. Without electricity it would be useful to know, for example, what to do with an open fire. (W)** Disseminating and gaining competence and professional skill would be important, as also material **circular economy and self-sufficiency (W)**. **Gathering and sharing information to get the overall picture is still important (W). Focus would be on solutions (W)**. **Community spirit and friends would not be left behind (W)** and **utilisation of one's professional skills for the common good, for**

[49] 'Pelastuslaitos' in Finnish.

[50] Fingrid is Finland's transmission operator.

example, CPR skills (W), could be valued. You would need to consider carefully where to direct your effort – to avoid burdens and to ensure that the important jobs are done – for example, in collecting and sharing information and creating a full picture of the situation. The ability to learn from crises would have purpose; the attitude, lifestyle, and world view would have developed more resilient (e.g. cooking skills during the pandemic). We would survive, in any case: **'there were tough places in the Winter War.' (W)**

At the level of myths and metaphors, self-irony and Finnishness are of use, when you need to accept miserable conditions with laugh and smiles, and **self-deprecating memes (M)**. You have **the Finnish 'sisu'**[36] **(M)**, and the **'the spirit of the Winter War' (M)**, when you fight against the lack of energy and the threat of collapsing living conditions. **It could always be worse (M)**. Crises can turn people inwards, so that you would worry overly about your own affairs. How could things be turned towards the positive, and motivate people so that they would do their share? In crises there are, at times, role models or thought leaders, such as the Mikas[51] during the COVID-19 pandemic in Finland, but who could be **'the Jesus of the energy crises' (M)** – that someone who rises above others, freeing people from their troubles, and uniting them under the threat?[52] There would be use for such an organisation, institution, or an expert, who gives the face for overcoming the crisis, and to grow resilience.

In conclusion, the group discussed adaptability and resilience, adaptation of organisatorial administration to disturbances. For example, the municipality and their ability to adjust practices for abnormal disruptions, supports you so that you can then be bend the bureaucracy and make decisions in more agile manner, without having large democratic processes and political bodies on the background of decisions. You could also think here that emergency powers legislation[53], which is a solid legislative element, and it is also about that you can then share resources in between reacting to dangers and overcoming critical situations. Organisations that provide food aid or other voluntary activity, like that of the Finnish Red Cross, was brought up, but also outside such organisations the role of rescue services is significant. The time of the year can make a difference, in winter conditions can be harsher than in summer. Policies can lead to competences and capabilities, collaborative exercise and foresight, and centers of protection would the situation prolong. Different time horizons in terms of what the needs are.

[51] Mika Salminen (Finnish Institute for Health and Welfare) during the COVID-19 pandemic, and Mika Aaltola (Finnish Institute for International Affairs), when the war against Ukraine began.

[52] This thought resembles the idea of looking for pioneers who may show the ways toward futures (Heinonen & Karjalainen 2019a).

[53] 'Valmiuslaki' in Finnish.

2.3 Results from Tripla Futures Clinique

This section presents our third and final futures clinique within this methodological experiment as a CLA exercise, in hybrid mode combining futures clinique approach, CLA, what if? and a black swan. The futures clinique was held on 14th October in Tripla complex, in Helsinki.

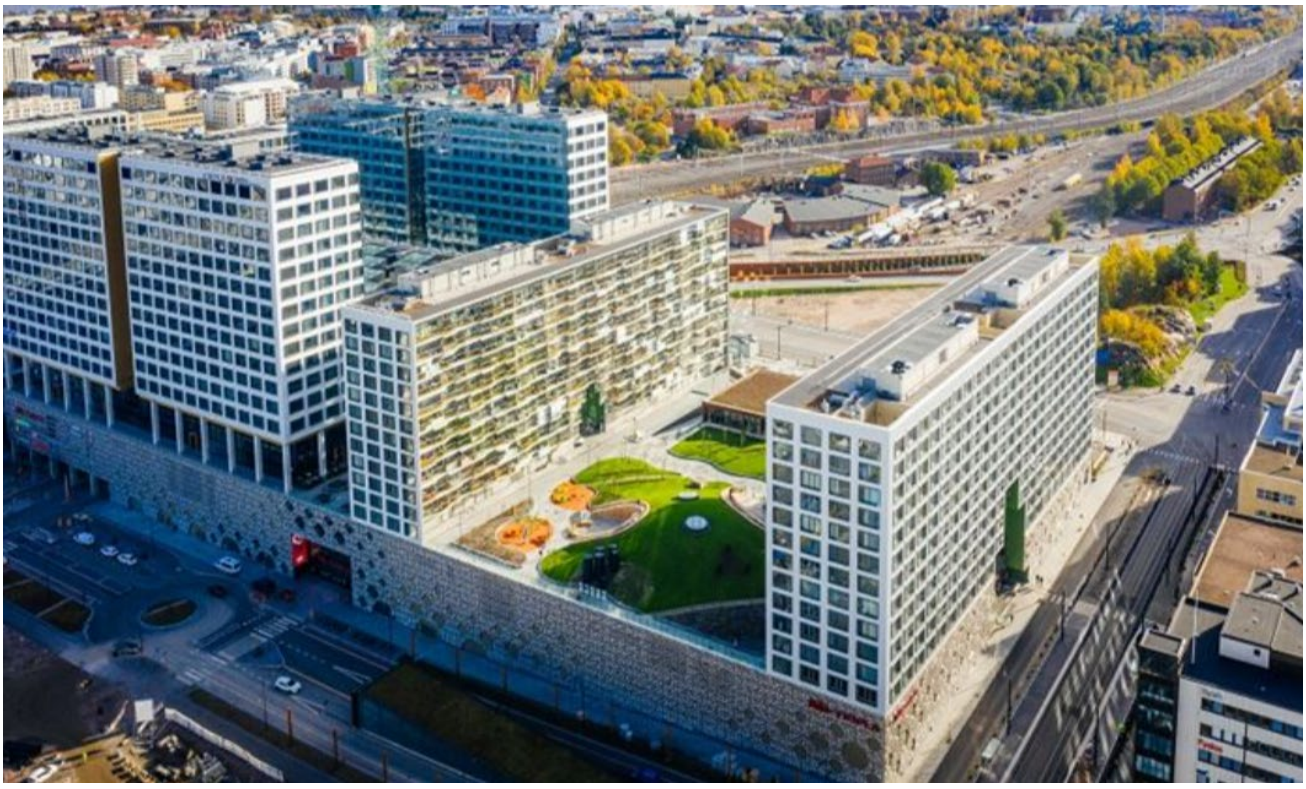

Figure 19. *Tripla is a 'micro-city' – it comprises key urban activities. Photo: YIT.*

Tripla consists of three urban blocks of culture, retail stores, business and transportation all in one place, hence the name Tripla. It forms a triangle of mobility (railway station), businesses and nearby housing.

In the beginning of the futures clinique in Tripla, Helsinki, the attendants were given illustrative background information of the construction company YIT which had built the complex. After those presentations, Jerome Glenn, CEO of the Millennium Project gave his keynote tailored to this specific futures clinique (see section 1.4).

Juha Kostiainen from YIT presented the background for constructing Tripa complex. YIT is the largest Finnish and a significant North European development and construction company, which focuses on housing, business premises as well as infrastructure. YIT strategy 2022–2025 emphasises sustainable success by creating better living environments. Sustainable living is pursued through ESG indicators with a focus on future-proofing.

Antti Seppälä gave a presentation about Tripla, its history and how it fits into the surrounding urban environment Pasila. As a starting point of the presentation, he highlighted key trends in urban development around Europe. These were, for example, creating more compact urban structures, improvement of public transportation, already mentioned smart city, wow-architecture and mixed-use when it comes to housing, jobs and services.

The main argument of his detailed presentation was that Tripla changed the area from wasteland to a cultural hotspot. It was also noted that Tripla's location maximises connectivity because there is a wide variety of transportation in the area varying from trains, to busses, trams, cars and even bicycles. Furthermore, Tripla is located so that the Helsinki airport is easily accessible. It was also stated that over 100 000 train passengers

enter and leave the Pasila station daily and the number of people is even higher if bus and tram travelers are taken into account. However, Tripla is not only a hub for the traffic. Rather, it can be argued that Mall of Tripla is a green urban centre when traffic, construction, recycling and energy consumption are considered. Furthermore, Tripla combines hotel, railway station, mall, office spaces and housing together. Overall, the area is very diverse and combines different functions together.

Figure 20. *Juha Kostiainen presented YIT and the construction company's view in developing the Tripla complex. Photo: Tolga Karayel.*

Figure 21. *Antti Seppälä presenting the background and development of Tripla. Photo: Tolga Karayel.*

Figure 22. *Tripla developed from wasteland into a cultural and commercial hotspot. Photos: YIT.*

After the presentations by Kostiainen and Seppälä, Heinonen gave a futures provocation and Karjalainen gave instructions for the process in working in small groups. When small group working started, the moderators described in the beginning the ways to proceed. Each group has a sheet on their table. The purpose is to write with markers notes on the sheet. Usually you would deconstruct first, and then criticise, but here the purpose is to go to the solution straight ahead. If a total power cut happened, what kinds of ways of speaking or messaging there would be, how the events would be announced, and what would help in surviving the total power cut. The participants are asked to imagine themselves in that situation, think for a moment, and then write notes and open discussion.

Figure 23. *Sirkka Heinonen circulated in all small groups during the futures clinique. Photo: Tolga Karayel.*

2.3.1 Results from Tripla – Group 1

The group starts their discussion on *litanies* by figuring out **what happened (L)** and finding what would take place right after the incident in that very space, where they physically sit. You would worry about yourself, but you would also worry about your family. In the physical environment, the windows are large, and they could perhaps be broken, or the electric doors are perhaps locked and would need to be forced open. It would be normal to want to **go outdoors (L)**. You would wish to **reunite with your family and friends (L)**, since nothing works in that location, and you would not want to stay put and think how you would survive in this 'coffin'.

The group continues to discuss the possibility of having winter and not much light. You would hope to have signs that are visible in daylight, but also in the dark, like fluorescent markings, to find main exits. You would wish to have instructions for getting out, or to have **authorities that you can trust (W)** to give **guidance to leave the building (L)**. Normally you could try to call an emergency number in most parts of the world, but in these situations, where crowds need information simultaneously, you would rather need a platform that could provide instructions to many at the same time. There would not be enough routers for everyone to call at once. People are different – for example, some find information themselves and make it their business to spread the information around, while others could behave so that they would only try to get out as soon as possible, without waiting for instructions, to save themselves.

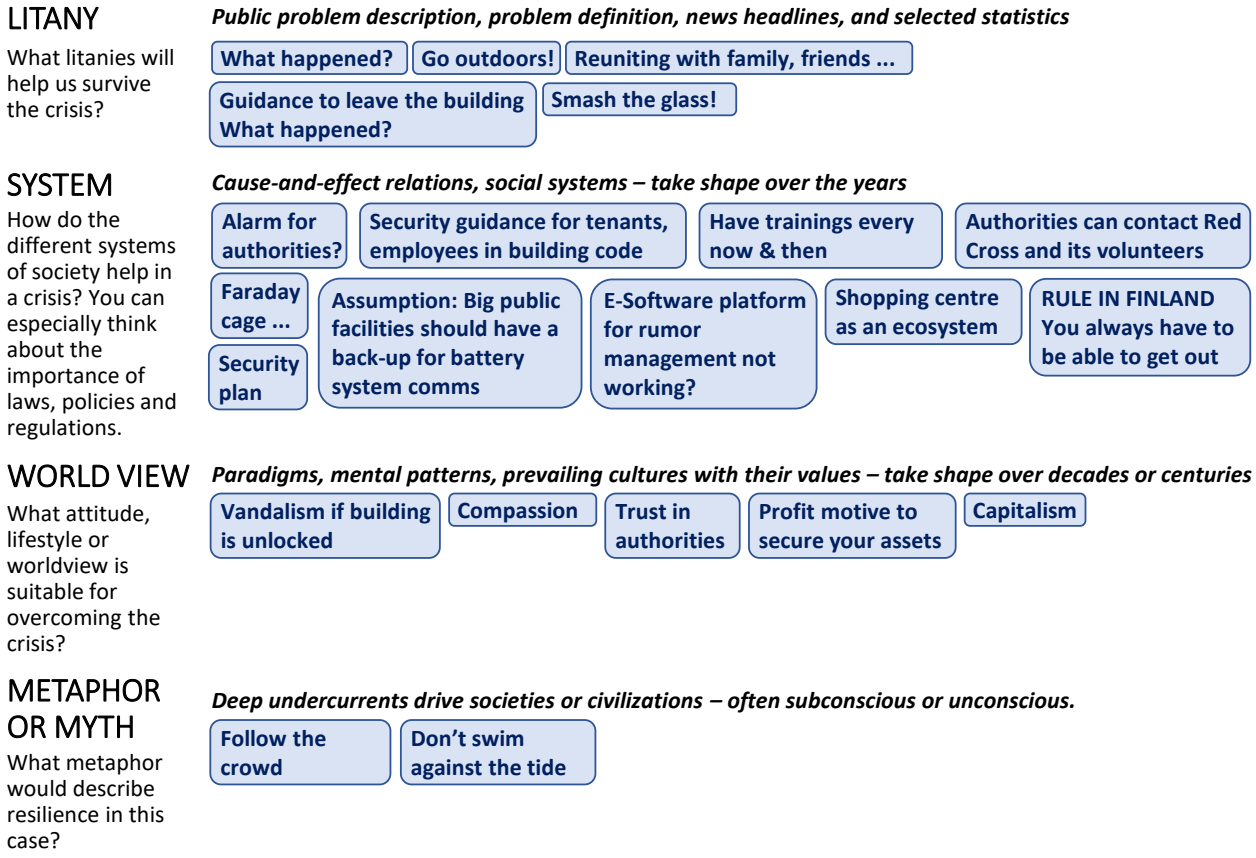

Figure 24. *Results from Tripla Group 1 in four CLA layers.*

Regarding *systems*, calling would be difficult though if phones would not work. Or if phones would work, routers and repeaters might not work – these devices also need electricity. In addition, the situation could continue for days or even longer. You would eventually have to think, is it safer to stay in or go out, and if the electrical doors, elevators, and escalators did not work, how would you get out? The entire building could be malfunctioning. You would think that you may have to **smash the glass (L)** doors and windows to get away. The building owners should make sure that people can get out of the building, if they want, even during power cuts, but unlocked buildings would be problematic as well. This begins to be a building code related issue. It

should be in the code that locks will open during the cuts. In Finland, however, this is already so that **you always must be able to get out (S)**, the route to exits is marked with green buttons, or a manually functioning solution, and if you know this system, you may not end up to 'smash the glass'. Similarly, if elevators did not work, there should be a way to get out of them to staircases. The group does not know how this would or could be done.

The need to lock buildings is due to the need to keep burglars out. There are always people who will start behaving differently, when the opportunity arises; they perhaps would not wish to get out, but rather get the diamonds from the jewelry store. **Vandalism takes place often during emergencies, and especially unlocked locations (W)** could be in danger, which is why the police, security, or even the military are necessary to bring in. A discussion of the criminality in New Orleans, U.S., after a hurricane outbreak, was followed by a question about the Finnish cultural context – would stealing and vandalism happen in Finland? Finns may be so honest that you would not need to worry.

Figure 25. *Group 1 moderated by Joni Karjalainen contemplating the crisis scope and context. Photo: Tolga Karayel.*

The group returns to discuss the initial situation. If there was a power cut, would that stop everything in your mind – after all, there is no bomb in the building that you know of – you would perhaps think what caused this, and is it only us that do not have power or also others. The basic supplies could be a problem, like food and water. The complex and its **shopping center can be seen as an ecosystem (S)**, which should have a **security plan (S)**. **The building code should include security guidance for tenants and employees should have security guidance as well (S)**. **The kind of situations should be trained for every now and then (S)**. It would be harmful to the businesses if the customers were left out of the building, but the group does not focus more on solutions for continuing business.

Eventually, you would wish to know what happened**,** and the magnitude of it – is this something that is local or is this global, is this about that 'the nuclear' has been launched or is this something else. Knowledge of the scope of the situation would help in the decision of, for example, whether to stay in or go out. But instead of

knowing, the situation can be unclear, and other people can be our fears; they can provide right or wrong information – who can we trust? There would be all sorts of information, how would you control the situation, especially if there is no informative and trustworthy **software platform for 'rumour management' that is working (S)**[54].

The discussion briefly goes back to considering litanies, after the group notes that people would expect authorities to take responsibility. On the other hand, the fact that we trust in authority is a *world view* issue. The authorities would not be able to have a public announcement system in use, though **in this large and public facility you may have back-up systems required in the building code, perhaps even battery backup (S)**. Would there be backup for the digital networks – perhaps repeaters and web hosting would work? There should be an **alarm for authorities (S)**. In Ukraine they have a system that somehow corrects itself, if a rocket hits it, a genius system that a discussant in the group knows of. Social media platforms have helped, for example, Facebook during e.g. the Nice shootings in France; you could let others know, for example, that you are in the crisis area, but safe. Various mechanisms are available, but an electromagnetic storm could make electricity backups fall, thus a solar flare from the sun or an electromagnetic pulse could break some of the gadgets. There are perhaps systems for protecting against such events, like digging cables deep under the ground or a **Faraday cage (S)**. If you wipe out the electricity, you could wipe out your electronic storage and other digital properties, e.g. NFTs, perhaps as well. And gadgets in your body – for example, heart pacers, which is scary, though there are airport safe models. Thinking about potential crisis-aware-worldviews, there could be an incentive to pay for a device that can last extraordinary events, thus there is a **profit motive for securing your assets (W)**, **capitalism (W)**. However, it is unlikely that people would aim to correct things particularly by shopping for something new that would help them if a crisis is already on.

The group starts wondering if there would be simultaneously other disturbing events, such as fires going on, but perhaps if there were no electricity, at least electricity would not cause fires. Further, there is the train station, which means there would be a variety of people coming, for example, from the airport. It is not safe to assume that everyone would share the same cultural background and experiences. For example, if this is your first visit to Finland, how would you react and feel. There could be languages issues. The differences of *myths and metaphors* that people are influenced by can be large. You would perhaps end up **following the crowd (M)** and **not swim against the tide (M**), though it can also be that 'if everyone else falls from the cliff you would follow'.

Perhaps the authorities would be afraid as well and would not know what to do. The first respondents would be the people that happened to be in Tripla themselves, until the police come in. Normally, we have plans, we communicate and respond, the authorities make contact, and soon we know how many we can get out and when. Volunteers would be in place comforting, bringing snacks, blankets, and giving information – they could be from pre-existing organisations prepared for emergencies, or just people from the street helping whatever way they can based on their skills. The **authorities could contact the Red Cross and its volunteers (S)** to get help. For example, during the pandemic the American Red Cross provided housing, responses, and blood; in such situations you will not have time to think and plan, instead anticipatory governance is needed in crises. The volunteer mindset would include **compassion (W)**. Perhaps first aid is needed, but it is often enough, if you are there to give support to people or for bringing in informal discussion. But if the situation was truly severe, would professionals and volunteers not also decide to go to their families?

In the middle of the winter, in the evening, with no lighting, people shopping, and outside office hours it could be chaotic at first. Trains and trams would not run, buses would be crowded, if they ran. Or if you had your own car and it worked, there would be long queues out. If you had to walk, distances could be long, and if you could not walk, you could be in trouble. If your electric car worked, you could perhaps not charge it and you would be in trouble with an empty battery and would not perhaps want to leave your expensive Tesla behind.

In conclusion, the underlying assumption here was that of a guiding human sentiment to 'try to get out'. Concern for family members and others, and a feeling they might worry for you, would prevail. Presumably, it would somehow be possible to get out of the Tripla complex. If not, the situation would be far more dramatic. In terms of social interaction and group dynamics, traditionally Finland has been a culture of high homogeneity and levels of trust. However, given Tripla's strategic location at the crossroads of mobility flows, there could be high volumes of people with diverse languages, some even coming directly from the airport. There could

[54] The idea of software platform comes from that call centers cannot respond to individual calls, if there are many callers, but instead the information needs to be offered to larger crowds on a platform of sorts, as described earlier in this group's discussion.

be local, regional, national, and international passengers with divergent levels of knowledge, some already familiar with the facility, others total strangers to it. An already multi-purposed complex could be, indeed, complex to navigate. The centre offers hybrid features and hybrid spaces that cater for multiple audiences and needs. The timing of the crisis and its prolongation would matter. Should the total blackout occur for instance in a dark autumn evening, the human sentiment of fear and panic could be more prominent. In the event of a total blackout, it could already be pitch-black inside, as thousands of people are inside shopping for private goods, groceries, and aiming to return home from offices or going to their hobbies.

Should people be trapped inside, at any point in time, people search for instructions and leadership. Where there is no clear authority, they must rely on their peers and trust their senses. They begin to exercise their own reasoning and judgment. A 'back to basics' attitude of remaining calm and not panicking are necessary starting points that people should be reminded of, perhaps especially those who are from a vulnerable group. People follow the herd; it is our natural behaviour. If for some reason people follow a wrong, charismatic yet irrational leader, there is a danger of things going awry and spiralling out of control. Human behaviour is contagious, and in the absence of authority, norm enforcement would be weaker, so calm reasoning would help. An interesting contrast could stem from the fact that if the crisis occurs in a capitalistic facility that primarily promotes consumerism, all the sudden, instead of an individualistic 'every man for himself' attitude, the necessity to show compassion and to care for others would help people triumph in the crisis.

There seemed to be many assumptions on how systems would work, but even the Finns in the group did not have certainty if those measures are in place. Building Codes in Finland have been designed to ensure that there is always a way out of a building. Whether electrification and intensified application of technology affect this was unclear, but it was assumed that they should not interfere. In the worst case, it would be necessary to make a joint effort to smash a glass. Presumably, in a blackout, backup systems should immediately kick in, as they do in public facilities, like hospitals. If people were indeed trapped in such a facility, in the absence of electricity, announcements would rely on analogue public speakers. Although an autonomous power source, as a backup, should re-power the facility, a geomagnetic storm could have harmed some of the smart ICTs i.e. auxiliary devices that for instance control power transmission. In terms of human capacities, shop-owners are assumed to train their staff occasionally, should a crisis, such as a fire, occur, so they would have some agency. If cell phone/ICT lines would not work, marking oneself safe, as is possible in Facebook these days in a crisis event. Should the crisis be prolonged, for example that people are somehow trapped inside, authorities could call and mobilise for supportive volunteer staff through requests from crisis organisations such as the Red Cross. In this group, metaphors like 'Follow the herd!' or 'Get Out!' were quite straightforward, and seemed more like immediate reactions, and could be refined to ensure maximal resilience.

2.3.2 Results from Tripla – Group 2

Instead of assuming the location of a focal person, this group notes at first in their approach to *litanies* that **you could be either outside or inside the Tripla (L)**[55] complex at the time of the event, because there are also exterior locations. If you are inside, it is **a warm place (L)** to begin with. **It is possible to think that people want to come together, this is a remarkable happening or an event, after all (L)**, and you would wish to see others and ask: what has happened and is this all really happening? Quite like in Group 1, it is soon found that getting to other people can be difficult, if **nothing works: the elevators, escalators, lights and doors (L)** may not function, and **nobody can get out (L)**. Also, the lighting would go off, it could be all dark. You could be anywhere in the building, even inside a car. There are stairs, but not too many, and you should find your way to them. In addition to wondering **how to get down without an elevator (L)**, it is questioned, **how to get help and is there backup power and where, how to put it on, and what would be the impact of all this on people (L)**[55]**?**

A group member knows that the **automatic backup power (L)** would normally work during power cuts, and it starts if the main power goes off. Without backup power, however, even toilets would not work. During a fire alarm, doors open and it is possible to get out, but if there is no power anywhere, things could be different, and perhaps **nobody can get in (L)**, for example, from the trains. Could there be a **railway evacuation route (L)?** Without power, and depending on the scope of the incidents, **no trains (L)** would run, **trams could be stopped in the middle of junctions, and people could be locked inside (L)**. On the other hand, there would not be more people coming in, though none would be leaving either. People with trollies or with accessibility

[55] This Post-it had many issues, so is visible on more than one location here: **Doors closed: men out or inside Tripla, How to get help? Do we have the backup power – where – how to put it on? What's the impact on people?**

issues could be in trouble, even in homes, and **how would they contact emergency services, when phones are not working (L)**.

Thinking about positive reactions or outcomes, **people would help each other (L)**. Some people have the will to self-organise and take care of others – this would be a kind of crisis management as well. This is necessary, because if the whole area or even the whole of Helsinki is having a blackout, officials may not find their way, or they could be outnumbered. Even Finns, who do not talk much, would need to talk to each other, come to each other, and keep in contact. In the other extreme, and **though the behaviour of others could help, there could be hysteria and panicking (L)**. All people do not behave the same way. Even crimes could happen. **There are lots of open shops with no camera surveillance (L).**

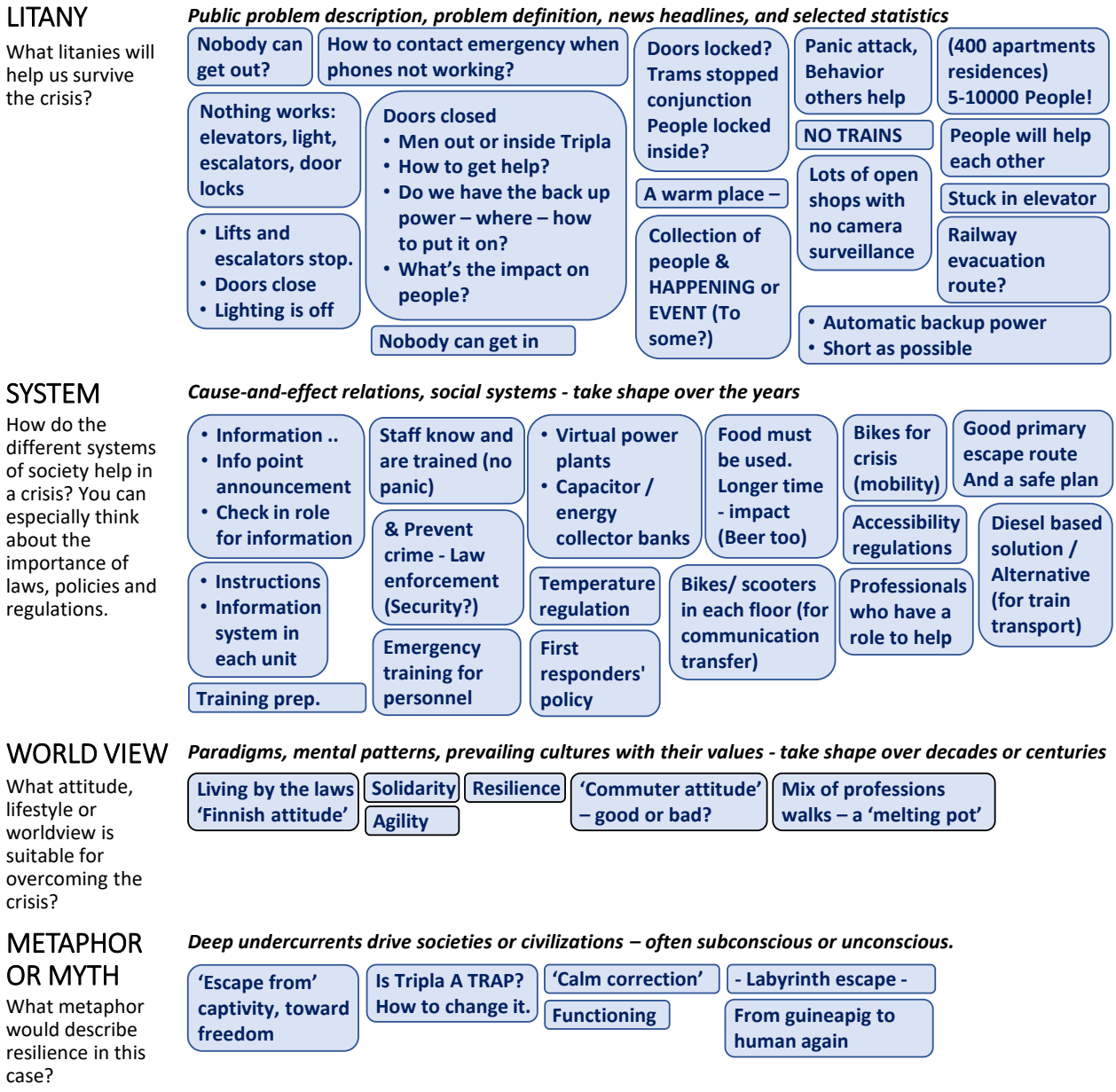

Figure 26. *Results from Tripla Group 2 in four CLA layers.*

Thinking about people and *systems*, the group questions, are the employees of the various organisations that reside in Tripla trained so that they know their way around. There should be a **first responders' policy (S)**. **With trained and knowing staff, there perhaps would be less panic (S)**. **The staff could help, and its behaviour could also prevent crimes, even though law enforcement and security are needed as well (S)**. **The role of those that are professionals is to help (S)**; they can take control, help people and calm them down. Some level of education, **emergency training (S)** and other **preparatory training (S)** must exist. In any case, workers who come around every day should have training, even first aid skills. There are specialised safety organisations also, who most certainly are trained for extraordinary situations. They could be in-house, but fire departments, ambulances, and other similar resources and organisations exist for backup. The availability of the latter would depend on the scope of the incident: If the event was city wide, regional, or even wider, would there be enough resources that could sufficiently help Tripla?

It was mentioned that climate change is about to change things for the worse, more extreme, so perhaps also in crisis situations. High summer temperatures, however, if **temperature regulation (S)** is not possible without the non-operational air conditioning, would not be good for old or sick people, and children could suffer from the heat and stuffy air. Food could be spoiled in restaurants and shops as well. It is good, perhaps, that people have food around them and can eat – in a longer time impact, the **food must be used (and beer maybe too) (S)**, because it would otherwise be spoiled. Shops and restaurants would lose money when the business stops, but people would suffer without necessities. In winter, it would not be warm even inside for long.

There is a six-floor parking hall in the facility. People may wish to leave in their car, but cars cannot go out if they start, since the door mechanisms require electricity. Going back to litanies and first reactions, you could also be **stuck in an elevator (L)**. Being trapped could cause panic, and panic situations should be prevented. For example, if everyone wants to get out at the same time using the stairs, there could be a rush. People with poor mobility could be harmed and be injured by the pressure from others or fall. **Good primary escape routes and safety plans (S)** and **accessibility regulations (S)** are important, but they should be made for all. There should be help for those who cannot move well or otherwise survive on their own in given conditions. Without electricity, people could probably not be evacuated to trains and trams, which would otherwise be a logical solution. **Traditional diesel locomotives perhaps still exist (S)**[56], but would they be accessible in time, and would they be fueled beforehand? **Some of the backup systems are powered by diesel engines (S)**[56].

Coming back to first reactions, one of the discussants asks if it is truly so that people would wish to go out or need to be evacuated. If the power goes off, you may not want to run away – you perhaps would look out of a window, take the weather conditions into account, and for example during poor weather conditions wish to stay inside, and find Tripla as shelter. The group shared a story from the history of another discussant. Under a terrorist threat, the city center of Turku started closing, but the shift manager of a 24/7 store did not know how to respond, when customers started requesting that the doors, which in practice never close, should be closed at that instant to protect people inside. Nobody knew how to lock the doors. Plans for emergencies cannot always be made anymore when things have already started folding, but preparedness and training are important beforehand.

The discussion has thus far been primarily about instant reactions and actions – whether they were about litanies or systems. As the discussion continues, the group asks next, what would happen if the incident lasted longer, days or become even a more permanent situation? During the pandemic, we changed to a new living style that finally lasted quite long. If the situation prolonged, what would Tripla become then? If Tripla would become a safe place, it would have proven its value also in that new situation. People would be in shock at first, but they could be assumed to calm down and go on living. It is pointed out that **resilience (W)** is something that can be learned as individuals, organisations, societies, nations, and the entire 'cosmos'. Learned resilience could perhaps be culturally and generally so strong that people in Tripla would not notice anything peculiar in the power cut, but just live through it, if the situation did not last long. A longer incident would probably be more meaningful to all.

In addition to not functioning at all, systems can malfunction. For example, fire extinguishers could go on and flood the building, or emergency exits might not work as supposed. The discussion goes back to back-up systems that would require diesel. Another large complex in the capital region, in Espoo, has a large battery

[56] The post-it notes mention a '**Diesel based solution or an alternative train transport' (S)**, and in the discussion the diesel-based solution is generalised as an alternative to electric systems. Backup power and locomotive are examples of systems that operate by diesel fuel.

bank that is shared as a power reserve with the local electricity distributor and can be used as a backup power system during power cuts. Similar **virtual power plants and capacitor energy collector banks (S)** exist also elsewhere in Finland. Tripla does not produce solar energy, but eventually all electrical systems, backup systems or other equipment with electrical components can 'fry' under a solar storm and could not be used, also phones.

Figure 27. *Group 2 moderated by Amos Taylor immersed in discussing the CLA layers for Tripla case. Photo: Tolga Karayel.*

The operation of phones, the actual devices, would depend on where you are at the time of the incident, because the cause of the power cut would not hit perhaps similarly everywhere. The functionality of it could depend also on the operator. People in Tripla would need information, however. There is discussion about battery radios that are recommended to Finns, but they may not function in this situation either, even if you found one from the shops of Tripla. If the phone is discharged or does not work either, how would you know what is happening? You would perhaps go outside and try to understand what has happened.

Discussing the next required policies, management training is mentioned, and would Tripla be required to stay open or be forced to close? What would be the most helpful with no electricity in the place? Would Tripla become the hub for all residents in the area, for example, for getting information and a check-in spot? The discussion collects ideas from earlier discussion. If something like this was planned for, again training of staff would be of importance – and repetition of training since people change in staff positions. Preparedness is needed for various situations, for example, crime, solar storms, or other, which all may become more frequent than we have experienced before (for example, climate change is referred to as the driver of increasing turbulence). The people of Tripla could further be trained in communications – to have someone circulate around, informing people, helping them calm down and enjoy their soft drinks, and to not worry about alarms going on or other specifics of the situation. This would reduce panic. Policies should include education, training, and communications. Tripla has a health center, which has personnel who could help in emergencies. Even the staff of Tripla may need help, not only clients, commuters, and people passing by.

Coming to *world views* and attitudes, as mentioned when considering litanies, people do not all behave in the same manner. For example, if there was no power, and because you have more shops than almost anywhere in Finland, some would perhaps take advantage of it. It could become chaos. There is always security organised on location, but additional law enforcement and crime prevention would be necessary. Yet, there are 250 shops in Tripla, and outside even more. You could not have someone guarding every shop. Anti-panic

would mean remaining calm. There is **solidarity (W)**, people can watch out for one another. There are people among us, who are ready to unite, help, and take responsibility. It is sensed that most people would behave reasonably in Finland – for example hockey and football games are organised without problems, unlike it can be in the UK or South European countries. The **attitude of Finns is like that, living by the laws (W)**. In Tripla, you would have a lot of travelers, who are not Finns though, and they would not know local policies and behaviours. A participant in this group knows that daily around 100 000 commuters pass by Tripla, using public transportation and stopping for groceries or other shops and services. Would the **commuter attitude be good or bad (W)** here? A smaller number of people just spend time and hang around. If the power cut happened at 6 a.m., there would not be that many people yet in the complex, but the situation would still be problematic. In average there would be **5000-10000 people inside Tripla at a given time, plus the people in the 400 apartments (L)**, so less than in Tampere Arena in a hockey game, which is 11000 persons, if sold out. The number of residents in the complex is smaller – there are about 400 apartments, thus in maximum 800 persons. The offices and the shopping center have more. If the incident happened at 2 p.m. on a working day, the number of people in the building could be closer to 10000. **There would be people from all professions and walks of life, this would be a melting pot (W)**. The group finds that it is important to understand the volume and variety of people, and that they are scattered around the large complex and, therefore, difficult to reach.[57]

The reachability of people takes the discussion back to communications, and it is questioned if there were other means for communication than electric ones. Could, for example, information be written and drawn by hand on posters for people to come and see, quite like in silent protests, where digital communications or announcement systems cannot be used. **Bikes could be reserved for better mobility (S)** and for the purpose of taking the message to people around the complex – perhaps even all bikes parked on the ground level could be put into emergency use. **Scooters or bikes used in floors (S)** could not be electric if the electric ones did not function. Or it could be roller skates, but mobility of those with information would be useful. You could reserve paper packs in every shop and office in case of emergency. The staff could then communicate with the passersby with notes and posters, instead of only telling people where to go, what to do, where to sit down, to be calm, and so on. Communication needs to be structured: in addition to information, **there could be known information points that can be used for announcements, and to which people know to go to check in to find the latest information (S)**. Most of the shops and offices are compact, not many people inside, and informing people in them could be easy, whereas reaching the entire complex by anyone would be difficult. **Instructions and information systems could be available in each operational unit (S)**. **Agility (W)** is needed in solutions.

Arriving to *metaphors or myths* behind resilience, the group finds that Finns are normally, if not in all cases, reasonable and think before they act. You would need to be flexible, solidary – **calmly correcting (M)** the situation – clear in communications and building safety without panic. You would need to connect other people in such situations, which would be important to learn culturally in Finland, assuming Finns do not have this in their culture. All things included, it would be difficult to think of good sides, if the entire Tripla was under a shock, **people captured as guinea pigs in a trap and wanting to feel human again (M)**. The dream would be to have everything **functioning (M)** again, and **to escape from captivity (M)** and to **escape from the labyrinth (M)**. You would value freedom and being outdoors. On the other hand, it was discussed about whether **a complex like Tripla is really a trap or a shelter, and how could such image be changed (M)**.

In the feedback to the group, an initial metaphor is highlighted: Tripla as a trap, maybe. In an emergency, we need to get everybody out. Getting out can be seen as a kind of mobility, and getting everybody out to the doors and exits might be difficult. Information sharing with large crowds would be important, and just the kind of training for staff members in giving information, informing people, on what to do and how to be, in away having resilience and agility training. Thus, staff know and are trained, but then there are also practical tips, or things that could be implemented, for example, bikes or scooters that could be used during the crisis to transfer information around, so to circulate the information. All the food is going to start to go off, so all the food, maybe even the beer could also be opened and used – if people are stuck there all day, food is going to be wasted, so it is good to use that. Another metaphor was the labyrinth and escaping from it or escape from captivity towards freedom. It is important that we talk about using all those people who are working here in different places, like shops. There are so many people who come to Tripla on a regular basis, and these people could be the first responders. They can be trained. We cannot train everyone who is coming or passing by from different directions, but at least those people, a lot of people who are working here, can be the first people who

[57] The ballpark level estimations were given to this group on location by the management of Tripla. They are not verified from actual data, but exact figures not found relevant for the purpose of the workshop and the discussion of this group.

reduce panic and who give information to people. The discussion of scale is notable here. The group is not talking about what happens in one hour either, but also in the long run; and again, it is useful to understand the numbers of people. Finding ideas, such as having a bicycle running is interesting, but this could touch a paranoia, on the other hand, with the trap part, which is interesting too.

2.3.3 Results from Tripla – Group 3

As the other groups in Tripla, the group members introduce themselves and the method of working is presented. However, the time is divided into time slots more deterministically, certain time per layer, than in the other groups. The futures clinique gives freedom and flexibility to the small groups to decide among themselves temporal and analysing procedures as long as the goals are reached within a larger context (total time slot). The group finds that, instead of a generic event, this one comes as a surprise, and early in the morning, and as the complex is in its current state, but otherwise there are basically no other presumptions. It is questioned by the group members, if the discussion could or should be based on certain imaginary plans, for instance, the use of AI based solutions, and it is decided that there is no need to limit imagination by focusing only to certain topical issues.

Regarding *litanies* it is discussed, if also contradictory optimistic vs. pessimistic thoughts are good to have expressed. It is agreed that all kinds of ideas are welcome. As with other groups it is reminded that the litany level could be titles on the news, websites or elsewhere on the power cut. **'Tripla falls into darkness' (L)** is immediately suggested, and there is discussion about whether the train traffic will be going through or would **trains stop (L)**. The impact of the power cut would clearly depend on how wide it is. It is not only that the trains may not be moving, but there would be no water or lighting, and security systems would not work. The litany could be in the case: 'It would be fixed quite soon'. However, if trains stopped without power, people would be stuck in them. **'The centre of Helsinki traffic system is in problems due to the lack of electricity.' (L)**

This early in the morning, people would probably be able to not get inside in all places. There could be cleaners and maintenance personnel, who are spread around the complex, but otherwise the spaces in the complex could be empty. Locks and doors would not function. The group wonders if there are people staying overnight, who could be locked indoors, including the elevators. **'People are locked in Tripla!' (L)** The hotel is quite popular, and it is realistic to think that people would be inside during the power cut. In buildings, doors must normally open outwards, so that people can get out, though the locking systems would not function. Doors cannot be fully open, however, since then just anybody could get in and ransack the place. Normally surviving this type of incident would involve having instructions on the radio or other public media. Those messages could be like **'no panic', 'everything is under control' (L)**, to make people feel better. There is a garden area outside, which is quite the opposite to the rest of Tripla. It feels safe to go since it does not seem to have immediately breaking elements. You could think of litanies or news titles, such as: '**Chance or destiny? People passing Tripla were in treasure during electro lockdown – they found a heaven of restaurants.' (L), or 'Tripla was the centre of chaos: 150000 habitants locked in with no connection' (L).**

The group returns to the use of artificial intelligence that was mentioned in the beginning of the discussion as an example of possible means to control. Tripla could be a sensor equipped and AI supported ecosystem, in which AI would control, for example, the safety of the place, shops and other spaces, and what would happen in them. There would be sensors of a kind that function together, so it would be necessary to think what will happen if the sensors are not working. In principle, AI could save time – if the rescue services knew, for example, how many individuals there are on each floor, they could better adjust their work. It is pondered, however, if an AI based systems could have backup systems that could help start them again. There is a more theoretical discussion on satellite systems censoring and warning about the event in advance, but perhaps satellites and related systems would also be affected. The discussion returns to the broadness problem: The scope of the incident is narrow, there is perhaps help a kilometer away, but if the entire country is under blackout, the situation is totally different. Referring to Jerome Glenn's presentation (cf. Chapter 1.4), if information is the muscle and information does not flow during the power cut, the administration loses its muscle. Help might find its way to those in need, but perhaps could not be managed remotely. It is reasonable to ask, **what is actually the relevant system in problems: just Tripla or the whole Helsinki travel system (S)?**

LITANY

What litanies will help us survive the crisis?

Public problem description, problem definition, news headlines, and selected statistics

- Tripla was the centre of chaos: 150000 habitants locked in with no connection
- TRAINS STOP
- 'Tripla falls into darkness'
- People are locked in Tripla!
- Chance or destiny? People passed threatened Tripla were in treasure during electro lockdown – heaven of restaurants
- The centre of Helsinki traffic system is in problems because of the lack electricity.
- 'No panic, everything is ~~alright~~ under control'

SYSTEM

How do the different systems of society help in a crisis? You can especially think about the importance of laws, policies and regulations.

Cause-and-effect relations, social systems - take shape over the years

- Inclusive evacuation plan
- Should we update our laws or our ways of anticipating ~~inpropriate rescue plan~~ out of date design Tripla made hard to rescue op.
- What are the responsibilities of different actors One responsible actors or many
- Security committee takes a lead
- Evacuation plan put in use/ activated
- What is actually the relevant system in problems just Tripla or the whole Helsinki travel system.
- Secondary plans / system are activated (if possible)
- Underground shelter

WORLD VIEW

What attitude, lifestyle or worldview is suitable for overcoming the crisis?

Paradigms, mental patterns, prevailing cultures with their values - take shape over decades or centuries

- Multinational diversity of Tripla require common signs of crisis
- Calmness of Finnish society
- We can survive this together
- Preparation
- Trust in authorities
- Are people self-help oriented or do they wait that others will solve the situation
- Fatalism
- Self-suffiency
- Sense of community changing - belonging

METAPHOR OR MYTH

What metaphor would describe resilience in this case?

Deep undercurrents drive societies or civilizations – often subconscious or unconscious.

- Big secure building 'Cathedral' gets dark but is still OK. Then we light the candles.
- Phoenix Past experiences & historic endurance will courage people to survive!
- Labour bees in honey nest / hives
- Aurora borealis
- Ant nest

Figure 28. *Results from Tripla Group 3 in four CLA layers.*

Figure 29. *Group 3 moderated by Anahita Rashidfarokhi carefully contemplating the elements they wish to include in the CLA matrix. Photo: Tolga Karayel.*

On the level of *systems*, the **evacuation plan would be put in used and activated (S)** - and pre-existing security measures should become active – both following the existing legislation. The architecture is 20 years old by design. The regulations and laws on how buildings must be constructed must have changed quite a bit, but do facilities change at the same pace? This kind of code, quite like the high-level emergency plans, is probably kept up-to-date nationally, thinking that people should continue their everyday life, no matter what. There is an inbuilt idea of resilience, but if everything stops, problems will begin to cascade. In technologically primitive regions power is perhaps cut off more often, but everything works, because you are used to it. In technologically advanced contexts, the problem can be bigger, and you may not be able to do your duties without the computer. Shops and schools should be open, but can they be? Maybe there is a backup system for trains, but they could stop? There will be severe changes in everyday life. However, if you think from the return-on-investment perspective, a billion-euro complex should be usable for quite a while, before the investment has been paid back. On the roadmap and the life cycle of the building laws and regulations will change many times, and activities in buildings as well, which is a challenge. But because of the size of the investment and the complex, and the necessity of activities in it, including jobs, you cannot change everything radically in an instant moment. This can cause inertia, and unwillingness to change things on higher levels of administration or political decision making. **Should we update our laws or our ways of anticipating out of date design Tripla made hard to rescue op (S)**.

Tripla is the center of the capital area traffic system. If people who are from Tripla or nearby, are prepared, that is one thing, but are they, who arrive from everywhere, prepared, and are they being considered. It is questioned whether the system that the group should be thinking about is Helsinki or something wider? And what is the system here? If you think about evaluation plans, there are special needs and accessibility requirements. If elevators are not running and there is no lighting, how will they find their way – plans and regulations should exist also for them. As discussed, there is a hotel in Tripla – how will you manage the evacuation of people that speak different languages and children who cannot yet follow written instructions? This would be more difficult than instructing people who have been instructed beforehand and work for the same enterprise. Tourists may not have a clue. Crisis management plans should include the idea of having different kinds of people in need; an **'inclusive evacuation plan' (S)** is needed.

In any case, there should be **'secondary plans and systems' that are activated (S)**, plan B, for electricity generators or other power supplies in places like this. For example, the green light that shows the way out and that is visible to all in the workshop space is probably powered via a secondary system. Other kinds of back plans are necessary as well. In addition to the elevator, you need to have stairs, and so on. Further, if there are many actors, the collaboration of them is important to consider: **What are the responsibilities of different actors – one responsible actor of many (S)?** There could be a **security committee (S)** or a similar organisation to have them as one organised actor in the play. All these systems need rechecking, so that they are up to date and operational in surprising situations. For example, during the COVID-19 pandemic, there were masks in stock that were out of date, and then the plan was not working the way the administration would have wanted. Evacuation plans should be reviewed on a regular basis. The building can be old, but blackouts have been there even longer. A country prepared by crises with so many residential protection **underground shelters (S)** in basements, so bunkers against major crises, must have a plan in place for blackouts, someone in the group concludes. Also, Tripla perhaps has bunkers under the ground.

Coming to *worldviews*, the **calmness of Finnish society (W)** and its people is mentioned. On the other hand, there can be various nationalities present: Workers and hotel guests too. Tripla is a kind of a hub, all trains coming to or leaving Helsinki stop here in Pasila where Tripla is located. In this kind of a situation, **people can be reactive and self-help oriented or passive, waiting for others to make decisions (W)**. Active planning or **preparation (W)** would help in overcoming crises, and not only on the level of large complexes, but **self-sufficiency (W)** could be promoted on an individual level: Securing food, energy, and water for personal needs. The pandemic has set us all in a crisis interested mood in a new way. For example, 20 years ago we might not have been as recipient or aware as we are now. We have overcome it, so we can get through other crises as well, **'we can survive this together' (W)**. **Fatalism (W)** typical of religious beliefs would perhaps lead to different kinds of behaviour, the group thinks – would you perhaps pray, or assume events as 'meant to' happen. This could create an obstacle for the crises management. Or spirituality in general. Differences in beliefs could be socially challenging. It would be important to avoid panic and achieve peace of mind. **A sense of belonging or a sense of community (W)** can help. If people trust that society will not end, there would perhaps be less misbehaviour, for example, ransacking and robbing shops. **Because of the multicultural and multinational diversity in Tripla, you would need to be able to signal the crisis so that everyone understands it (W)**.

Trust in authorities (W) is high in Finland, but it does not necessarily help though, since sometimes the authorities themselves are wrong. They may not have correct information and can base decisions on false information. On the other hand, the group continues to discuss, things can go wrong, if you try on your own, and if you do not know how to do the right things. Whether one would wait for authorities depends on culture as well. Some of the discussing group arrives from foreign regions, where you would want to be proactive, since otherwise you might not end up being helped. In Finland, people perhaps wait a little bit and watch, and are not immediately reacting. You would perhaps ask around what happens and try to reflect: 'sense of community' or 'sense of how the community helps'. The idea of a crisis brings in minds apocalyptic movies, but also the comic of someone willing to act like a hero, like 'this is my moment', but ending up messing things up, perhaps leading to wrong direction across the cliff. It's like a crisis singularity, it can go to any direction.

The discussion proceeds to *myths and metaphors*. It is common rhetoric that the Finnish society has lost devastatingly things in the past – like after the WWII parts of the country were burned and in ruins, and Turku was built again after the fires further down in history, literarily from ashes – but the nation has risen again, like the **Phoenix bird from ashes, utilising past experiences and historic endurance that encourage survival (M)**. The endurance of society shows in these events if the community sticks together and builds itself again. On the other hand, the recovery could happen less painfully. **Like if electric lights are cut in a cathedral, but someone lights a candle, and you have light again. So, 'light your own candle' (M)**. **Ants in their nest come to mind (M)**. Ants would start building up again, emergently and remaining self-organised doing good teamwork. **Labour bees in honey nest and hives could be a similar metaphor (M)**. From Finnish characterisations, Russian eagle trying to steal the law book from the hands of the Maiden of Finland, is mentioned. During the second world war, Russia was referred to as bear in David and Goliath type of a setup, to encourage David win. Regarding Lapland, it is noted that tourists travel to Lapland because of **aurora borealis (M)** – and since the geomagnetic storm would be a massive event of the kind, perhaps it would bring people together, to watch and share excitement, like aurora borealis would as foxes leave their trail on the sky[58]. Northern lights are temporary – you see them for a while, and then they go away. Temporality gives hope in crises. The good in this bad thing could be that it is temporary, we will pass it, and we could gather to look at it and see the light.

Taking that the people in Tripla, of which many are Finns, would assume that they would survive, would they see the situation that way, because they had survived before. Would the assumption be similar if this happened in another country? The group can think of other locations, where the situation would soon be chaotic without shared excitement over the northern lights. In many cases, where crises happen, they can trigger something positive as well. They can induce change, they have that power, in good and bad. Systems often grow, until there is a crisis, then they collapse and are built again. Where societal systems collapse, they can be built in a new way.

2.3.4 Results from Tripla – Group 4

The group starts by discussing first what *litanies* are. They find that they are outspoken thoughts, headlines, announcements, or other superficial talk and writing. They would be rather positive, constructive things that would come up as the event strikes, and they would help to survive. The group wonders also what they mean by **survival (W)** – should they focus on the moment or a prolonged situation, but the immediate reactions, as litanies, would of course be those from the early morning. Also, the group questions soon if the power outage is limited to the mall but assumes that if the cause is the electromagnetic storm, the effect of it is directed to the whole society. Is this **local, regional, or national (S)**? Further, to understand the effect of the event, it would help to understand why people are in the mall.

It is realised quickly that phones would not work because of the storm, thus it would be a world of diesel chargers and megaphones – and riding by horses! Even if phones worked, the network could be down, and you might not have connection to the Internet. Arguably, Tripla is safe to stay in, so it could be advisable **P.A.[59] context of crisis to keep it calming and goal oriented (i.e. remain where you are) to avoid panic (L)**. In moments of confusion, messages do not need to be complicated, but provide focus. **'We have prepared for this', would be a good litany from the mall security staff (L)**, even if it was not true, but a lie. Coming back

[58] The legend is that aurora borealis comes from the tail of a fox that runs through the sky (cf. Finnish word 'revontulet').

[59] P.A. refers to public announcements or public announcement systems.

to the people in the mall: it would be helpful if the management of Tripla would know where people are, like in a ship the captain knows where everyone is.

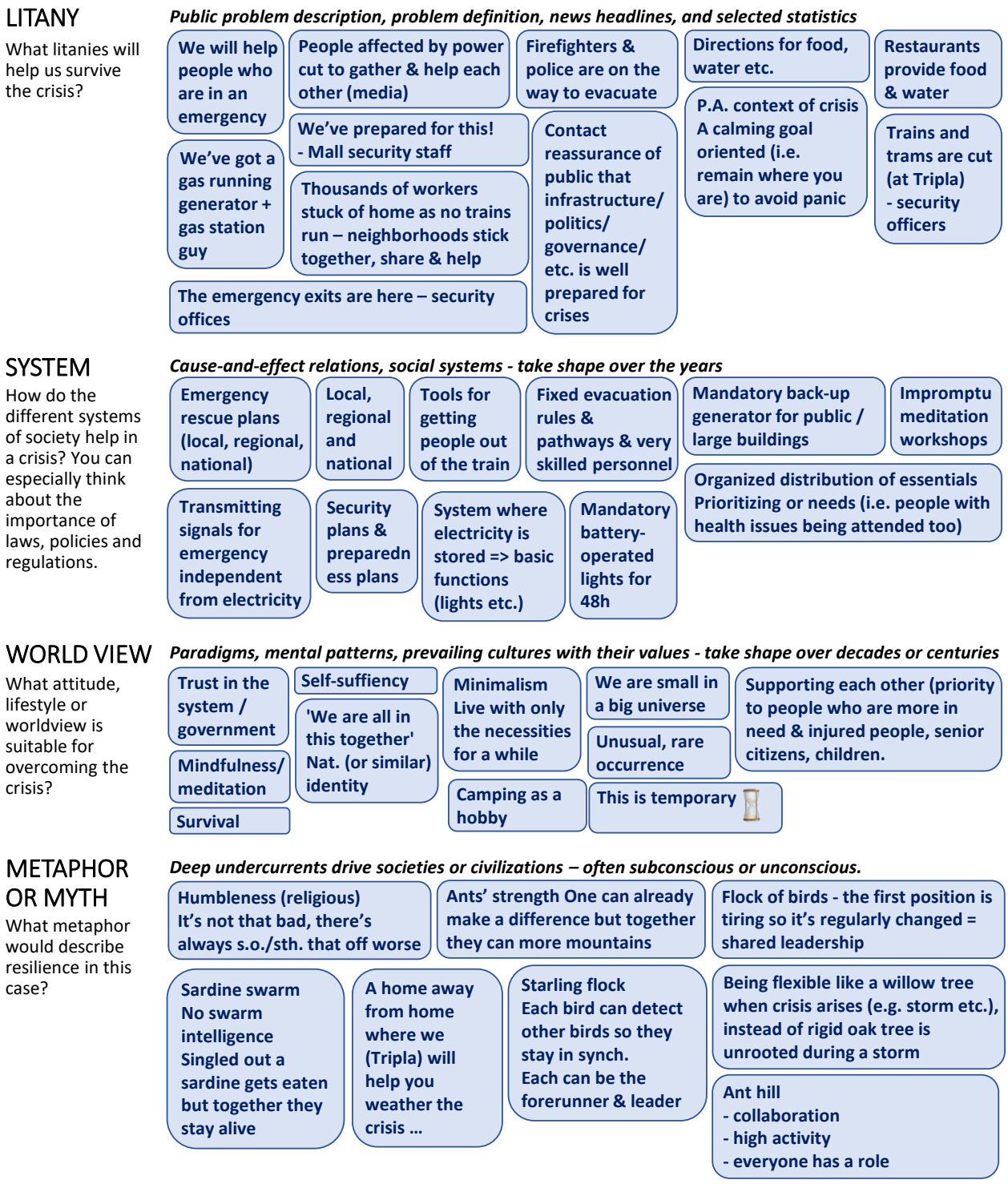

Figure 30. *Results from Tripla Group 4 in four CLA layers.*

If there were headlines about the event, the public would know that trains are not running, and everyone would stay home and help each other out there. This would mean then that the incident would consider also a number of people who would not leave home and would be stuck there. Yet, there would be more people coming to the mall, while others would try to find emergency exits or means to get out from being stuck in elevators. It is helpful to stick together. You could shout in a megaphone: 'we we'll save everyone in the elevator', 'we have

staff on the way, in the next hour or so' or '**firefighters and police are on the way to evacuate' (L)**. If this kind of situation continues, you will need water and food for the coming days. Some of the post-its were marked down, but not specifically discussed, such as **'we will help people who are in an emergency'(L)**, **'people affected by power cut to gather and help each other (media)' (L)**, '**the emergency exits are here – security offices' (L), 'thousands of workers stuck of home as no trains run – neighbourhoods stick together, share and help' (L)**, and **'we've got a gas running generator and a gas station guy' (L)**.

The **train and tram traffic would be cut, which would require security officers for help (L)**. There would be no public transport unless buses ran. Cars have computer-like technology nowadays that could be harmed. Even in other than electric cars having fuel would not help if the guiding electrical systems were wiped out. Older vehicles, like diesel tractors, could work. If some transportation could continue, the level of disturbance would depend on the connectedness of individual vehicles to the larger transportation network and its control. For example, what comes to public transport, trains are monitored and guided from a distance, but buses could be more autonomous.

It is noted that the matters that have been spoken by the group thus far could be something that would come up in the news, but on the other hand, are there any news outlets. Locally, there could be at least someone walking around shouting and spreading the information. Some others could learn from manuals about the prearrangements that were made, when anticipating coming incidents. It would be good for everyone to know that lines are cut, and the train is not coming, or the **directions to supplies and services, such as food or water (L)**, and hygiene products that may exist in Tripla. Without a generator provided backup power, you could not get water from outlets, toilets would not work, and would the sewage system even work – you may need to set aside an area to have washroom facilities and personal hygiene and have signs like 'you can't flush' or 'distribute buckets'.

Systems would not be created in that instant, but they would need to be created beforehand. As a plan of action, you could have care packages, a predefined amount of water and food per person. So, **organised distribution of essentials, prioritising by need (S).** This perhaps could be organised with the food stores that the complex would in a crisis event contractually 'confiscate'. To have a plan for action, the tenants could be required to take part in solving the kind of situations, especially by giving out food that is going to get bad without cooling or freezing and charge their losses later. **Restaurants can provide food and water (L)**. A group member had been in Toronto during somewhat a similar event that forced people in a closed location, and there the restaurants opened doors and started giving out food that would contaminate soon anyway.

If the public and the administrations are prepared for crises with reassuring policies about the system, people would perhaps not panic automatically, and could trust in the system to help them (L). The system could not provide emergency hotlines to reach the police or firefighters if you could not call. You would need other kinds of signalling that would not require electricity or satellites. A loud (mechanical) siren perhaps, with which you could indicate what is happening. Having a radio should be mandatory and **fixing evacuation pathways and having skilled personnel (S)** should be in regulations – the training for the kind of events should be frequent, e.g. once a year. Something like this simply must exist. **Security and preparedness plans (S)** are necessary for large facilities like Tripla, but they should perhaps be regional, as well as **emergency rescue plans (local, regional, national) (S)**. Further, **backup generators should be mandatory (S)**, as well as **48-hour battery secured lights (S)**, lines as markings to see pathways in the dark, and a **system that stores electricity to secure basic functions (S)**. In addition, you should have **tools for getting people out of trains (S)**, if they shut down. There could be a non-electrical system for towing trains in and out of the covered station area, to get people out to platforms. There could also be a system for prioritising activities – for example, when giving out food from stores in a certain order and contaminating food stuff first, there could be a tier system for distribution. Thinking about this, for example, ice cream would be good to calm people and avoid panic! The group discusses like other groups as well about the access through the doors. Without power there would be a bit of both, doors locking and opening, a group member knows and tells the others. Doors cannot be fully open, to avoid looting, but you need to always have access to get out.

Figure 31. *Group 4 moderated by Hazel Salminen present their results from joint ideation for the CLA layers. Photo: Tolga Karayel.*

Coming back to the problem of electrical devices that are not working, could there be a peer-to-peer radio or landline connection of a kind for these situations that would work and would transmit without outside electricity source or connection to networks and satellites that might not function? This would be 'walkie talkie' kind of connectivity, but with a device that could survive the storm. **Transmitting signals for emergency independent of electricity (S)**. Very old telephone technology could work, and systems perhaps exist for even a nuclear holocaust elsewhere in strategic global locations as last means of communication. Perhaps we should collect yoghurt cups or boxes to communicate with them via a string in between, a group member illustrates.

As a *world view*, **camping as a hobby (W)** could help. Camping would be possible inside or outside of Tripla, and there are the kinds of stores in the building that store such equipment. People who are familiar with camping would find it easier to survive and be resilient The idea of paying attention to others, or instead closing the situation from your thoughts, picks attention. **Mindfulness or meditation (W)** could help you keep calm, maintain the ability to function, to be aware of the internal processes, and then function, despite intensive emotions or thoughts. For example, you may remain silent, unless somebody is screaming, and then finally you must stop. Knowing these effects could be useful. The element of mindfulness should be added among characteristics of the concept of resilience. Meditation works – so perhaps **impromptu meditation workshops (S)** too. A person that discusses in the group tells a lighter example of laughter yoga, where, for example, in an assignment you think of an annoying thing, and go 'Oh no, oh no', and laugh about it, which lowers stress levels. Laughter catches on and can calm you down – or at times changes to hysterical.

Trust in the system and the government (W) is a good attitude to have. Having trust is not self-evident though. For example, in the North American rhetoric, people are saying that **'we are all in this together' (W)** and will stay together, but during the COVID-19 pandemic this did not always become true. In Tripla, however, people would be literally together during the power cut and facing the situation. The group notices a paradox of a kind in between 'let's work together' and **'self-sufficiency' (W)**, though they both are beneficial and would characterise being in the given crisis. Perhaps 'self-sufficiency' is best to the extent that you also help others. In an airplane you would put the mask on yourself, so you remain the capability to help the person next to you.

The ability to survive helps everyone around you, and the more efficient you are in helping yourself, the faster you can help others. This takes one to think about **minimalism, living with only the necessities for a while (W)**. Also, this makes one realise that under this **unusual and rare occurrence (W) we are eventually small in a big universe (W)**. Further, it does help to think that assigning blame brings nothing new to the table, a solar storm is not in particular someone's fault, and it is better to just deal with it. The people in Tripla could be very heterogenic for their abilities and conditions, and some of them may need help more than others. There could be injured people, senior citizens, and children. Altruism, and willingness to help those in need would help. **Supporting each other (priority to people who are more in need and injured people, senior citizens, children) (W)** would be normal.

The discussion turns to *myths and metaphors*. The group notifies that they have been discussing related things already earlier, but perhaps without acknowledging this and giving myths and metaphors specific titles. Being in the same boat that floats, for example, could describe being in this together. Metaphors like that could help look outside the situation that you are in in practice, and colour the experience more positive, a group member thinks, seeing only the things from within the situation could make the experience more negative. Or **ants and their strength (M)**: in an **ant's hill (M)**, their nest, everyone has a role, there is collaboration, and everyone is taken care of. On the other hand, the temporality of events is good to acknowledge, as with sand glass that is usually a metaphor for things coming to an end: **this is temporary (W)**, when sand runs out, we are good. **Being flexible like a willow tree when crisis arises (e.g. storm etc.), instead of rigid oak tree is unrooted during a storm (M)** is similar to the bamboo metaphor that Inayatullah (cf. Chapter 1.4) gave, being flexible, strong but bending. So, perhaps **humbleness (religious): it is not that bad, there is always something or someone that is worse off (M)**. The systems of Tripla and not only people should be adaptable and not too rigid. Tripla could also be seen as the place that helps weather the crisis – **home away from home (M)** – an umbrella that provides home, shelter or anything you need for that time. Home was chosen here, because it is a concrete place with comfort and safety and would serve the narrative of not going anywhere but rather staying.

Nature provides examples of staying together. For example, **'sardine swarm, no swarm intelligence, singled out a sardine gets eaten but together they stay alive' (M).** Other fish and birds, like starlings, when they move in large swarms, for example, a **starling flock (M)**. This is called murmuration. In a televised documentary it was explained how starlings keep track of a half a dozen other birds around, because you cannot keep track of the whole swarm. They end up moving in synchronised ways based on where the closest ones are. This could be a good metaphor, since if you consider not having phones, you can keep track of people next to you, and they in turn can keep track of the next to them, and so on. This could construct a similar network as described by the '6 degrees of separation' theory, but in closer distance. In addition, in a **flock of birds (M)**, birds follow others that lead, and when the one that others follow is hurt or tires out, others will take over. The kind formation can keep changing all the time maintaining its ability to function. Leadership is changed continuously also in V shaped wedges of flying birds – or, in skiing competitions, where competing athletes can take lead in turns to keep up faster pace and save energy against the air resistance, instead of power struggles all the way. The dynamic behaviour of bird swarms can help under a threat, a group member knows. The fastest hawks can fly, for example, way over 100 km/h, and are comparatively successful when they hunt. Although some of them are so advanced and capable of envisioning everything, starlings are so in sync that they can outmaneuver the hawk. If you look at examples from the other side, successful hunters by hit rate hunt in groups, for example, lion prides or wolfs packs tire their catch. The fastest mammal cheetah, who hunts alone, must try more often. On the other hand, the pride member is required to share the prey. The discussion goes in the end to AI: once the AI takes over, perhaps there are solutions that the group did not come to think about; we could relax over coffee, while things are put back to normal by it.

2.3.5 Results from Tripla – Group 5

The group starts the discussion, like group 4, by searching to find a common understanding for *litany*, reviewing briefly also the other layers, and starts discussing crisis specific announcement, news, or common thinking. This group, like group 4, has a guideline to spend certain time with each layer, and the approach is more deterministic than in the other groups in that sense. You would think that this kind of place would have **a backup generator (L)**, but in the case of an electromagnetic pulse everything is destroyed. You could think though that eventually it would be possible to get generators on, after a short or a longer period has passed. 'We were prepared for this', but to be prepared you would assume that there was a plan. You would wonder, 'will this last long?' or think **'this can't last long' (L)**. The problem could be the same everywhere, even globally. The temporal aspect is interesting, even considering this discussion, the group agrees. In, say, three hours you would not perhaps yet know what all was happening around the world, but after a couple of days the situation could look quite different. If we are now thinking about immediate reactions as litanies, we would be very confused about all that is happening, and perhaps think first that there are **'no injuries, everybody is OK' (L)**.

There would not be headlines really. Nobody would be creating them for a long time, unless there were people with posters walking around. Helsingin Sanomat would need a poster and pen to announce 'Helsingin Sanomat: Black out'. If there were no generators, perhaps there could be energy storage as a backup plan, and a location **where people could charge their phones (L)** or their car. If you had a car running, a discussant reasons, and you had plans for the day, you would normally try to go on and follow the plan and find connectedness with people you know outside Tripla. You also normally **should go to the Internet to check what has happened (L)**, and for other information, but there probably would not be Internet connection. Next you would think of **finding a radio to listen to official broadcast (L)** for finding out, what is happening, because the litany in at least in Finland is that you must find a **battery radio for reliable information (S)** and public announcements to citizens. This is taught in schools even, but even radios are probably not working now. **Are there landlines (L)**?

The following litanies were not really discussed, but marked on the sheet: '**Disabled people?' (L), 'We are in a first world country, so there are no worries' (L), 'This has happened before …' (L), 'Tripla has prepared for this …' (L), 'Temporary' (L), 'So this is how the war begins, I should find my military unit' (L), 'Officials have plans for these situations' (L), 'How do I get home? (Need to walk)' (L)**, and **'Stay calm and wait for emergency services (L)'.**

Tripla is at a crossroad of transportation routes, and it would be in the interests of many to find a way to go home. Everything else in traffic is at part electric but would buses run? Under a strong electromagnetic pulse electronics in cars would probably also be 'burned'. There is vagueness though since the kind of pulse could affect different devices in different ways. It could affect, for example, only handheld devices and the electric grid, but you would need to prepare for the case that all electronics is gone and all that survives is mechanical. Old cars and power production technology without electronics could survive, and non-electric bicycles.

Coming to *systems*, the group realises that quite a large share of the discussion thus far has already been about systems – for example, whether the radio and other communications work or not. To control the situation, you should perhaps have a **crisis management team (S)**, since response from some active organisation is needed. Further, when people try to get out, they can panic and cause injuries. Some of the doors are electric, which could be a problem. A **Tripla evacuation plan (S)** and a **communications strategy (S)** would be needed. With all electrical gone, you would not even have emergency lighting, and would have to be evacuated because it is dark. On the other hand, the situation might not be any better elsewhere, and it could be freezingly cold outside, and you might as well stay inside in Tripla. No lights outside either, or perhaps you could not get in your car if you had one.

The kind of situations should be trained for. Some organisations have rehearsals for surprising situations, but all citizens are not within such training and rehearsing, and you would also take the situation differently, when it is real and happens by surprise. There should be **crisis rehearsals and preparedness (S)** on that level. **There would be shelters that are marked clearly (S)**. The use of them and other spaces should be linked to civil protection teams that know how to utilise these facilities. In crisis sites, you often see such groups with tents and vests that have the best information and instructions for the ongoing activities. It supposedly is a part of the policies that we all know that if the guy with the vest arrives, it is safe to follow the person.

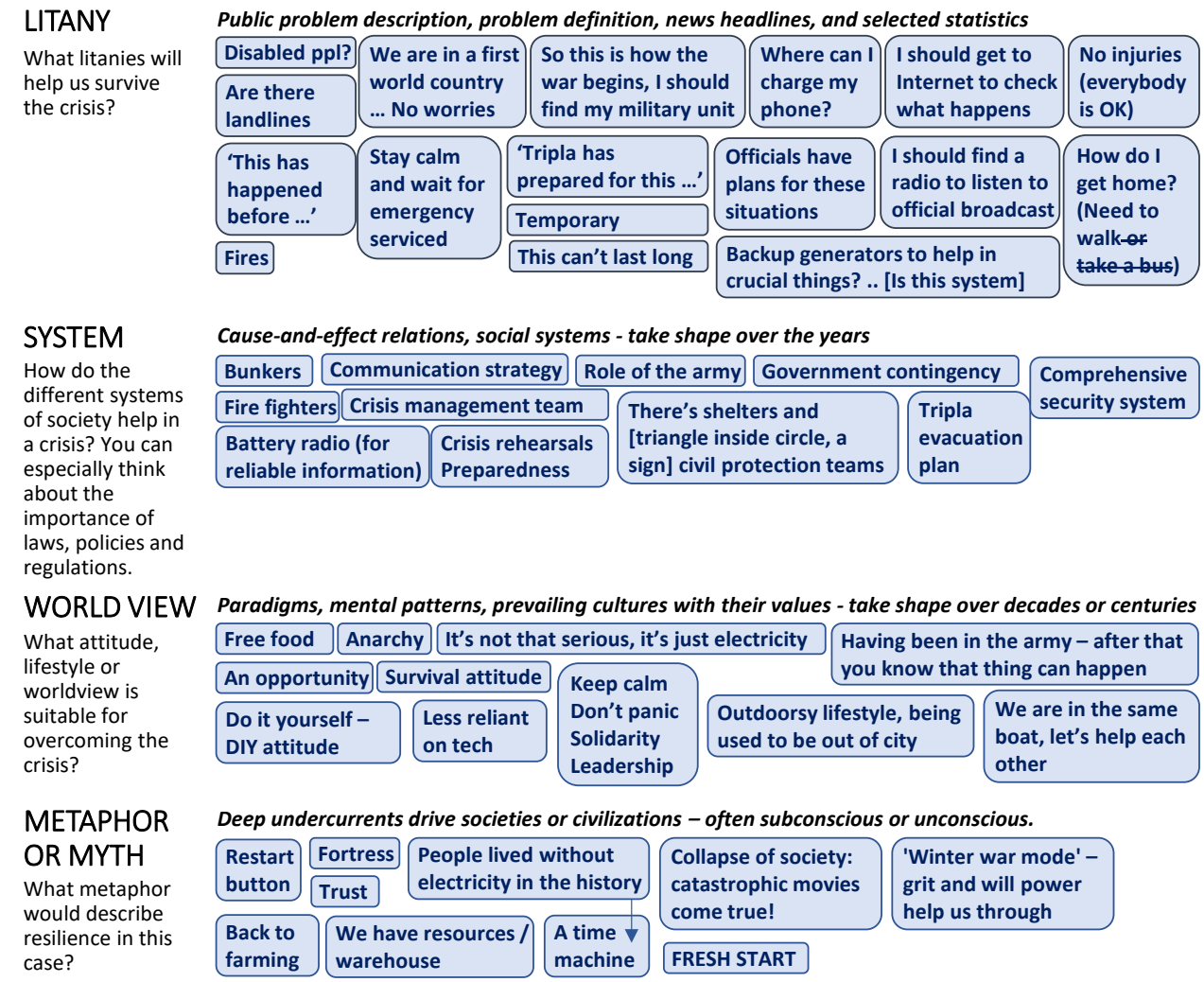

Figure 32. *Results from Tripla Group 5 in four CLA layers.*

Figure 33. *Group 5 moderated by Annamari Kiviaho co-creating elements to the CLA layers. Photo: Tolga Karayel.*

At the systemic level, you need to notice that there are different kinds of buildings in the same complex – residential areas, offices, the mall, and the station – and they all have their own practices and policies that may be contradictory in special situations. Helsinki has a lot of **bunkers (S)**, someone recalls during the discussion on spaces, and the operation of them is mechanical; depending on their safety measures they could have access to electricity.

Returning to the rescue teams, it is questioned, how they can communicate without electricity. Their organisations may be clear, especially in the military. Getting on top of the situation would be a temporal issue again, since even if you had plans for the kind of blackout and the evacuation of Tripla, the only functioning organisation could even be the army, and you would not know the ways to communicate. In a more regular situation, the police and **firefighters (S)** would be asked to help before the army – **the role of the army (S)** is to provide help, when others cannot anymore – but again, would their modern gear, cars and radios work. There could be megaphones.

We would not know about the severity of the crisis either. Are there fires all around, are people hurt, or is this just a black out. The incident could have occurred on a different level of severity. It would indeed be possible that the incident would lead to other crisis situations, such as fires. There could be connected litanies at Tripla, such as 'there are **fires (L)**, we are going to die'. It seems that it is not good to rely too much on modern technology, when you plan safety measures. A group member remembers a man, who decided to live without electricity and what he could and could not do. He would be **less reliant on technology (W)** than most of those in Tripla. In the other extreme, people living in smart homes where everything functions with electricity, fully reliant on Siri or Alexa[60], would find a very different reality.

Coming to *world views*, the power cut could be seen as **an opportunity (W)** to survive a crisis that could be even worse, and to see the event as a real-world exercise. After all, **it is not serious, it is just electricity (W)**. The group discusses the scope of the incident – your attitude and actions would be defined quite a lot depending on this occurring in only Tripla or within wider boundaries. If the storm arrived from space, you could assume that it was not so precise that it had hit only Tripla, but rather the entire society. Confusion of what would be the group members' own personal reaction is communicated, but the confusion can appear on different levels in real situations as well. A group member knows that during the events of Tahrir square, Egypt, for example, the government cut mobile phone communications to govern the situation. A company realised that they do not have the phone numbers of their employees to reach them via landlines that then existed. The chains of command are also built on assumptions and systems that might not work under all circumstances.

Thinking of policies, it is difficult to tell what they should be. Should they just allow people their freedom to go on the beach, to go to Nuuksio to pick berries, or to leave the country. An **outdoorsy lifestyle, being used to be out of city (W)** and **do it yourself (DIY) attitude (W)** could be of use. You would make most of what you have, and see this as an opportunity to practice, because if it is not more serious than it is, it can always be seen as an opportunity to learn more. Tripla has a wave surfing area underground, the discussants remember. If that is a bunker really, being there could be fun, but at least there is water. There are probably spaces that could be quickly turned into safe space. Buying food would be difficult. There is plenty of it because of the restaurants, but you could not just take it. There is trust in the discussing group in **solidarity** (**W**)[61], which has been possible to test earlier in emergencies, such as earthquakes and storms. You would need **leadership** (**W**)[61], to **keep calm** (**W**)[61] and to build the thought that you **do not panic** (**W**)[61]. The 'boat' metaphor does not come up in the conversation, but there is a post-it that states **'We are in the same boat, let's help each other' (W)**. It would probably be open doors, what comes to necessities, like **free food (W)**, water, diapers. Perhaps what would be seen, because there must be an evacuation plan in these situations, is that the staff would guide people out, but people would soon realise that the situation is perhaps even global, and Tripla would become a **fortress (M)** of **resources and a warehouse (M)** and you would want to come back in there. Tripla could be a prison, on the other hand, if it was seen negative, like a trap, with no electricity and no elevators.

In Tripla, you would have a community around you, if you were able to create it and people do not turn against each other. **This would be a time machine (M)**, a trip back to old times, learning to live like people before electricity used to live. Back to basics, back to the stone age. There is water, shelter, food, and this would be

[60] Siri (Apple Inc.) and Alexa (Google/Alphabet) are smart assistants that help accessing information and communication systems.

[61] **Keep calm, Don't panic, Solidarity and Leadership (W)** are mentioned on a single Post-it note, though discussed some separately.

again like an experience from Mexico City, when there was an emergency, and lights went off – shops started giving a way food that they would compose and save all you cold store for later. 'It is a warehouse' or 'Mexico City 2.0', someone suggests. A discussant remembers a power outage that lasted for 40 minutes or so, last spring. This does not often happen in Helsinki. The first reaction was to find a flashlight and candles, but you did not know how long the situation would last, and that was the weirdest thing. The uncertainty of time and finding water as well – this could be the lapse of society, or the end of the world or just a bypassing power cut. In movies the protagonist is activated in these situations.

The metaphor would be different too depending on the temporality, the time frame you discuss. '**Survival attitude' (W)** and 'adaptation' are mentioned. People would read traditional books again, since Kindle would not function. Beginning from emotions of a surprise at 6 a.m., this could gradually affect whole our thinking. If electric devices do not function, it would take a long time to manufacture electric devices again. It would be like a civilisation **'restart' button (M)**, but also a civilisation 'refresh' – a **fresh start (M)**. The army could run out of resources soon as well. Who would be running society, or would there be any society as we know it anymore – what would society mean in that situation? If we all were on the same page, a restart could be a positive new opportunity, but there are opportunists that would sweep with their own ideals and visions. Perhaps 'looting everything and going and living in Nuuksio' would be a choice to make, a group member says laughing. There is discussion about **anarchy (W)** as the worst-case scenario belonging to metaphor, litany or worldview. A **Winter War mode (M)** is mentioned since many Finns talk about that. A group member has military refresher training ahead and there is an ongoing war in Europe, which both drive the defense related mode in the group. **Having been in the army, you know that things can happen – you tend to be more aware (W).**

The group summarises their thoughts now. Infrastructure is needed, bunkers and other, and clear rules. There are different kinds of parts in this complex – offices, hotels, and shops – that have their own ruling, and because of that there needs to be clear communication. Towards the end of the discussion the group voices suspicion regarding a potential lack of a **comprehensive security system**[62] **(S)**, even though such system is being discussed everywhere. They though feel that there must be a **government contingency plan (S)**, and there is **trust (M)** in the societal systems overall in society. If we trust in the existing systems, we sense that we know that the government is prepared. The trust we have is multilevel trust within society since you would also trust other people around you. You would not start thinking first that people would cause harm, for example, or would rob others. Such trust could be considered typical of Finland, and a luxury you may not have in all locations of the world. The discussion goes back to litanies – the expressions have been optimistic: it will not last long, this has happened before, we trust in the system and each other, there will be a solution somehow very soon, and 'It will be solved'. The temporality aspect is brought up again, however. You would sense trust in the beginning, but the trust would perhaps faint after a week or two if the situation continued. Trust does not come from nothing, on its own – there is a history behind it. For example, military training builds trust: you know you are prepared. Because of the trust that is built in, you would perhaps believe in the government, if they say that they have done everything they can. You would then see that this is just a crisis that you will have to face – especially if you have experts who know to explain how things are and why they are as they are. In a different scenario, you would not have a government to trust anymore. It is hard to say, would the basic functions of society be there, for example, after a month. When even the army runs out of fuel, there is no energy and no radios, there perhaps would not be an organised society left. What kind of anarchy would there be if everything that has electronics is gone and there is no means of producing anything electric. A **collapse of society: Catastrophic movies come true (M)**!

Taking care of the necessities would be important, distribution of food and medicine. In countries that do not have winter, there perhaps would not be as good reserves as in Finland. The world survived the pandemic, so eventually we will manage again. **People lived without electricity in history (M)**. Our ancestors managed; we just need a shift in our mindset. It is discussed that it would be better to go **back to farming (M)**, back to basics, but in winter it would be difficult to start just that, and it would be in many ways difficult to switch from city life to self-subsistence in a month, for example. You would need a longer time frame. People in this society are not used to living without electricity. The situation could be different in other parts of the world, where the dependence on electrical devices is not as high. In parts of Africa, someone knows to tell, there are no electric utilities the same way, and the temperatures would not be as cold as in Finland. Society is built in a certain way, and it would be a shock if the situation changed.

[62] The Finnish term *kokonaisturvallisuusjärjestelmä* is used in the discussion in Finnish, which is translated here as *comprehensive security system*.

There is discussion about the comprehensive security system that should be an answer to discussed after the event problems. Crucial functions of society are the starting point in that thinking. There is a system but is the system functional in these extreme cases. Finland must have the most foresight professionals per capita, and foresight is integrated in policy work and praxis – referring again to defense training and education – ministries are connected to foresight. There can still be extreme situations, for which nobody can be truly ready. If people live through crises, however, something will always come out, perhaps not immediately, but in time. You would try to survive the first 24 hours first, and you could still think that this is an 'interesting experiment, let's see, what happens'. There are bunkers and home reserves that would give time for building responsive action; bunkers would not provide food, but would have generators, water, and other supplies – this all has been in discussions and thoughts more than before because of the Russian invasion to Ukraine that has prepared people to think about other kind of realities in Finland.

The group discusses towards the end the uncertainty of these situations. A total power cut, even under a geomagnetic pulse or storm is not a black swan truly, since it has been discussed in public. This kind of event is though left on the pages of science magazines and pushed aside in everyday life considerations. It is difficult to think that there could not be any mechanism that would give a sign earlier on. Just like the pandemic – the possibility of it was known, but preparedness was poor, and then the situation lasted very long. Known unknowns.

Figure 34. *Group photo of the futures clinique conducted in Tripla. Photo: Tolga Karayel.*

3. ANALYSIS OF RESULTS AND CONCLUDING REMARKS

This final chapter of our report provides the reader with an analysis of the results obtained from the three futures cliniques addressing the same chosen topic of a crisis – total electronic blackout – in different geographical contexts. The analysis of results highlights key points, similarities and dissimilarities. The results documented in the previous chapter are intentionally quite detailed and comprehensive, because they are meant to be available for all stakeholders to use, for example, in their planning of security and resilience strategies, as well as in the form of foresight empiria for students. We also give comments on the experimental methodological process conducted and suggest some further elements to be used in future exercises, both by researchers, practitioners, companies, urban authorities and citizens. In the spirit of open futures, we emphasis that our conclusions leave the space open for various other interpretations, too.

Our research question was: how to rehearse futures to test urban resilience? This was related to the overall objective of the RESCUE Project to improve sustainable crisis management in urban environment. A specific stance in the foresight exercise as reported here is the immersive and experiential approach in futures studies (Heinonen & Balcom Raleigh 2015). We also integrated creativity with criticality in the futures clinique process. Small groups were invited to address the issue creatively, looking for novelties, as well as critically, scanning for barriers for resilient solutions. As regards combining creativity and criticality, see further Balcom Raleigh & Heinonen (2018).

Our hypothesis in this study was that testing and rehearsing futures (futures images, scenarios, narratives, etc.) – or some events embedded in them – will enhance urban futures resilience. We found out that immersion in a future context and geographical location can happen cognitively. The first two cases were conducted as virtual futures cliniques.[63] For the outcome, however, it was necessary that before the small groups started working, there was briefing about specific geographic and urban planning situation. The third case was organised as onsite event, which naturally added to the sense of immersion since the event happened there and then – at 6 a.m., and everyone remembered how they had entered the premises.[64] From the futures clinique angle, the Tripla venue was excellent, suitable both for small group working and for joint sessions.

There were some repeating topics that were emphasised practically in all futures cliniques and all small groups. Firstly, security plan, preparedness and resilience strategy were considered quintessential for survival and resilience.[65] Here, preparedness-related training was deemed as important. One group emphasised the importance of not just any but of an inclusive evacuation plan. Secondly, the supply for basic needs was considered a must – food, water, heating (Finland is a cold country in the autumn and winter time). An element

[63] CLA is often proposed as a complex process and not to be utilised in short time. However, within the RESCUE Project we had made initial internal experiments at Heureka Science Centre and it became quite a smooth way for stakeholders and other types of disciplines to organise and reflect on complex ideas. Our two online-only events were stripped down as simply as possible, utilising Google Slides as an easy for everyone format. As an important element, there was also sufficient room for discussion. All groups managed online to produce solid work in a compact format.

[64] Our face-to-face event had advantages with a larger group of attendants at Tripla, with longer time slot, and with keynote presentations to go deeper in the backgrounds. The result was accordingly elaborated insights with having the direct sense of the location. These experiential aspects are increasingly important. We maintained the format and same crisis so that all of insights could be compared. The exact Finnish language results from Rovaniemi and Kotka were not compared with the Tripla attendants (the third event being held in English only), so obviously in that sense there is a divide in our data. However, one must bear in mind that there was not any intention to spread the results from a previous futures clinique to the next one. The main idea was the awareness of all attendants being part of this foresight exercise with three different cases, and the comparisons to be made after gathering and analysing the results.

[65] As one of the commentators stated, the plan is not the main thing, it is the skills and capacity to plan, to act and to adapt when the situation so requires. Municipal authorities should have this kind of flexibility and wisdom also to take two steps back if needed. Furthermore, crises preparedness can benefit from reminders. The old phrase 'out of sight, out of mind' matters. To be prepared for crises, the saying can be turned into the form 'in mind, when in sight'. For example, in Lisbon there are signs on the beach throughout the old town to warn about a possible tsunami, and in the lifts there are warnings about a possible earthquake and a reminder not to use them then. In 1755, the Great Lisbon earthquake in combination with subsequent fires and a tsunami almost completely destroyed Lisbon and adjoining areas. The death toll was estimated as 12,000, making it one of the largest earthquakes in history. The earthquake created political tensions in Portugal and profoundly disrupted the Portuguese Empire. As the first earthquake studied scientifically for its effects over a large area, it led to the birth of modern seismology and earthquake engineering.

closely related to this aspect was back-to-basics attitude, preferably combined with the DIY stance. Thirdly, role of communications was deemed crucial, as well as availability of facts, and functioning information systems. Situational knowledge and awareness should be at hand – like in the head of the captain of a ship. Fourthly, trust and the calmness of Finnish society was seen as a life-saving pillar.

In our northern Rovaniemi case there were several contextual characteristics that were highlighted. On one hand, extremities in climate such as the darkness, cold, and harsh conditions were seen as especially challenging to survive crises. Also, the region depending on tourism poses its own challenges when the tourists do not know how to act. They cannot 'read' Nature and possibly do not understand instructions. On the other hand, the toughness of the people in the region and the Lappish perseverance was perceived as an asset that helps overcome hardships, even this kind of crisis. Innate willingness to help neighbours was valued. Besides, preparation for crises, also prioritisation of measures was considered important. The following findings were highlighted among the responses from Rovaniemi case attendants: 1) Cultivate in advance a futures mindset, e.g. set up discussions on futures and scenarios; 2) Networked-like approach is a rewarded cooperation model; and 3) If distances are long, ensure those far away are provided for – rural/ urban interaction.

In our coast-bound southern Kotka case the proximity of a nuclear plant was included in reflections. The melancholic attitude of the Kymi region people was also discussed widely and interestingly, this issue was far more important than for example geographical location of the city of Kotka near the sea. In the level of metaphors, this kind of attitude was presented by stating that 'what doesn't kill you, makes you stronger' rather than emphasising inspiring myths and metaphors like strong like a fortress or a boat in a stormy sea. If we compare this to Rovaniemi region where toughness of the people was emphasised, we get a very different sense of crisis resilience. On the other hand, in one group there was a discussion about the spirit of Winter War and Finnish 'sisu' as a way to deal with the crisis. However, group also stated that people would need motivators in this dire situation and called this kind of person the Jesus of the energy crisis.

As a place Tripla is very diverse – consisting of commerce, housing, cultural activities, and transportation hub. Consequently, there are actors with various roles – those of residents, shopkeepers, commuters, visitors etc. Would the staff of Tripla need extra training for crisis management?

An important observation was that personal skills for survival and resilience are different. This is the case especially between standard demographic and vulnerable groups (children, aged, disabled people), but also depending on one's personality and upbringing. Rovaniemi is already strong in traditional skills of survival. Navigating in the winter darkness is business-as-usual. Cultural approaches and skills may also reflect in the degree of resilience, and in responses to the crisis. In Finland, there is trust in authorities and in each other. Consequently, in several groups there was discussion that perhaps there would not be much looting as a reaction to the crisis. Instead, the crisis was seen to arouse solidarity and empathy, people willing to help each other. Only in a longer time span hysteria and panic may arise. People already accustomed to an outdoorsy lifestyle, camping or forest tracking would be in an advantage. The power of rehearsal could be present if camping were innovatively allowed during normal times in the built environment (now usually only in forests).

Temporal aspects became prominent in many of the group discussions. Impacts depend on the temporality of the crisis. The timing of the crisis matters, and especially a prolongation of the crisis could affect people's behaviour and wellbeing. Responses may vary according to which season or which time of day it is. In winter, for example, the problem of melting refridgerators is solved by keeping food outdoors. One group entered in theoretical discussion on whether satellite systems could be sensoring and warning about the event in advance. Temporal aspect was also present in many thoughts about going back in history – time machine would take us to the time before the Internet – back-to-basics, and without electrical devices it might feel almost like back to the Stone Age.

An important aspect was also raised in small group discussions concerning the responsibility of actors. Legal responsibility lies with the authorities but discussion showed that citizens and households themselves are better off when taking themselves a lot of responsibility for resilience, and not just passively waiting for the official rescue. In a crisis situation, strong and just leadership is needed.

The litany layer was easy to start working in small groups as is often the case. The ethos of surviving was in many suggested litanies: we will survive as we have previously survived war and coronavirus pandemic.

Systems view[66] was well adopted when a chain of events was sketched. A major obstacle might follow from problems in finding your way out of the building. Systems view pays attention to both those inside and outside the building complex. Even the idea of a polycrisis emerged when attendants were thinking what if simultaneous other disturbing events were to take place. Reflections were made on what could go more wrong? If there were a fire and fire extinguishers would not work, or malfunctioning caused flood in the building. One group turned their attention to tools for getting people out of trains if they shut down. They also claimed that there could be a system for prioritising activities. For example, when giving out food from stores there could be a tier system for distribution. A system view was strong when one group focused on the whole Tripla complex with different kind of buildings and built environment. The instructions and solutions might also differ for different structures. The problem in Tripla would involve the whole Metropolitan travel system (normally every train that passes by Tripla, also stops there). This reminds us that besides general security requirements the solutions might differ at local, regional and national level.

In the worldviews, local and regional characterisations were strong. Furthermore, in the cases, it was strongly emphasised that Finnish people can manage on their own and whatever happens, people will survive crisis in one way or another. Stereotypically, this is a very Finnish way to think about challenges and how people should manage with the difficulties that life throws at one's way. However, even though this Finnish ethos could be seen in all cases, there was also a strong emphasis on multicultural thinking. This came out in Rovaniemi as a notion about tourists and in Kotka as a mention about people who do not speak Finnish. Furthermore, the image of Tripla was identified as a cosmopolitan micro-city.

Figure 35. *Tripla as complex of diverse activities. Photo: YIT.*

In the small group working there could have been more reflection on solutions for how, for example, businesses could keep up their function in a crisis situation. Or, how rumor management should be done in order to avoid panicking.

It was interesting to observe that the small groups ideated metaphors quite smoothly, often with a localised sense. The metaphors for Rovaniemi in case of the total electronic blackout reflected self-sufficiency and strong

[66] It is essential to mention that in Rovaniemi and Kotka cases, the system level was emphasised, for example, only that level was presented in the final cross-fertilisation session where the groups opened up their findings to other groups. It was structured so that the litanies served as an introduction to systems, and worldviews and myths were only quickly reviewed in some of the groups, as an enrichening supplement, to some extent bringing up again what had come up in the previous discussion.

optimism: What does not kill you, makes you stronger! Freedom from social media. Sauna, sisu and co-creation rules – tehemä yhessä! A Laplander can get through anything. With Winter War spirit, we will survive future crises. Kotka metaphors similarly expressed resilience in difficulties and crises: a boat in a stormy sea, the Phoenix rising from the ashes, Eagle (Kotka literally is a strong eagle in the Finnish language), Winter War, and Sisu.

The metaphors of Tripla varied from one extreme to another: from trap to shelter, depending on the narrative a group was sketching. From candle in the cathedral to sand glass, labyrinth escape, and Aurora borealis. Several biomimic metaphors were also created: ant hill, sardine swarm, Phoenix, and the Finnish epitome of resilience – willow tree. A philosophical transformative metaphor was: from Guinea pig to human again. This last example of a metaphor is in the CLA spirit already transforming an image to a new one without going several times back and forth between the layers.

At the outset, our experimental methodological exercise was challenging. To conduct three futures cliniques, building the immersive context on one single crisis – total electronic blackout – nevertheless turned out to be fruitful. We received ample evidence of the power of co-creative anticipation and foresight to provide insights as preparedness for crises. CLA as a sophisticated method at no point was a hindrance in the flow of the process and specifically it was suitable for this type of subject and stakeholder/target group – as the systems relationship was more fully explored than would be done in a normal strategic risk assessment. Discussions frequently went directly toward outlier issues, the unspoken and assumptions.

Based on the small group results, we found for all three geographically and industrially different locations a certain number of universal recipes for resilience. On the other hand, it became evident that the strength of survival and resilience of a case is dependent also on its history, worldviews and cultural assets. Furthermore, one specific observation is noteworthy – the solutions ideated were not predominantly technological by nature. Instead, a plethora of suggested prerequisites for survival and resilience in times of the chosen crisis were socio-cultural. For example, when electricity-based heating breaks down, gathering people together will heat up the space.

We wish to remind the reader that this CLA report represented one methodological pillar in our analytical foresight framework and a set of four futures exercises, reported as four publications accordingly (section 1.1). This report tested a single crisis – total electronic blackout – as impacting three very different locations, conducted in three different futures cliniques respectively. Thus, we received insights of general policies and measures needed applicable for all, as well as some very contextualised notions that can influence the resilience level of the locality. In another exercise, we further conducted a single futures clinique – not only addressing this chosen crisis but four other crises as well. Still in another exercise we went further in testing polycrises – basing the exercise on the previous work on the five crises, crises were addressed in combination with other crises, i.e. resulting polycrises. Finally, one exercise was made in the form of expert interviews asking openly for creeping crises. In summary, this kind of different methodological and geographical triangulation is helpful adressing the amoeba of uncertainty and of opening up diverse perspectives from different actors. In each approach – 1) anticipatory analysis of a single crisis for three localities in three futures cliniques, 2) a single futures clinique for analysing five different crises (Heinonen et al. 2023a), and 3) one futures clinique for five sets of polycrises (Heinonen et al. 2023b) – there are several possibilities for extending the exercise to be conducted as several consecutive events, for analysing deeply the results, and for choosing different kind of crises from the set of possible crises identified in the RESCUE Project as a rich data bank. Futures clinique process, use of immersive CLA mode and what if? could also be recommended as testbeds for policy-making for example for municipal and regional authorities at large, for committees for the future worldwide, and for citizen arenas and NGOs with a focus on future generations' dimension. Educational institutes and media could also be invited to such foresight exercises.

Finally, as a result based on CLA analysis of crises, we can suggest addressing paradoxes as part of critical futures studies. The very concept of 'crisis' is a paradox itself as was also discussed in some of the groups. Crisis is a seeming contradiction, since it is both a threat and an opportunity. By immersing in imaginative but possible crises we can test our resilience. By addressing paradoxes we can dig deeper into underlying assumptions and reveal the root causes of problems, realise the need for transforming outdated systems, and come up with coping mechanisms or innovative solutions.[67] Paradoxes can be addressed in dialogue with metaphors and myths: they share contingent connotations. Perhaps, paradoxes could even be integrated to the method of CLA as an additional layer or at least as an auxiliary avenue for anticipation.

[67] We probed using paradoxes in anticipating and analysing futures of peace and futures of work in the 50th Anniversary Conference of the World Futures Studies Federation in our workshop (Heinonen & Wilenius 2023).

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APPENDIX 1 Invitations to the Futures Cliniques

KUTSU TULEVAISUUSTYÖPAJAAN

Turbulentti tulevaisuus haastaa kaupungit! Miten on Rovaniemen kriisikestävyyden ja tulevaisuusresilienssin laita?

Aika: **Torstai 9.6. klo 13-15**

Paikka: Virtuaalinen (osallistumislinkki ja ohjeet lähetetään ilmoittautuneille)

Luovan tulevaisuustyöpajan järjestää Tulevaisuuden tutkimuskeskuksen Helsingin toimisto (Turun yliopisto) ja sen tutkijat Sirkka Heinonen, Joni Karjalainen ja Amos Taylor Suomen Akatemian rahoittamassa RESCUE-hankkeessa (Kiinteistöt ja kestävä kriisienhallinta kaupunkiympäristöissä).

Tavoitteena on havainnollistaa tulevaisuudentutkimuksen CLA-metodin soveltamista **kaupungin kriisikestävyyden testaamiseen vuorovaikutteisella ja innovatiivisella tavalla**. CLA on kriittisen tulevaisuudentutkimuksen metodi, jolla avataan ennakko-oletuksiin perustuvia tulevaisuuskuvia.

Osallistuminen ei edellytä ko. metodin tietämistä. Rovaniemen tuntemus on hyödyksi. Osallistujia toivotaan eri taustoista: kaupunkihallinnosta, yrityksistä, kansalaisjärjestöistä jne., jotta työskentelyyn saadaan kokonaisvaltainen ote. **Osallistuja saa eväitä omaan tulevaisuusajatteluun, sekä työstetyt aineistot tilaisuuden jälkeen**. Tulokset saavat näkyvyyttä myös kansainvälisessä, loppuvuonna pidettävässä *Anticipation*-konferenssissa sekä muussa hankeviestinnässä.

OHJELMA

13.00 – 13.15 Tervetulotoivotus ja esittäytyminen
13.15 – 13.30 Tulevaisuusprovokaatio (Sirkka Heinonen, emeritaprofessori, FFRC)
13.30 – 13.55 CLA-metodin soveltaminen Rovaniemeen, alustavien tulosten esittely ja kommentointi
13.55 – 14.05 Tauko
14.05 – 14.45 Sukeltaminen CLA-metodin käyttöön Rovaniemen yhteisenä kriisitestaamisena
14.45 – 15.00 Loppukeskustelu ja jatkoideointi

TERVETULOA TULEVAISUUSKYLPYYN!

Sirkka Heinonen, Amos Taylor ja Joni Karjalainen, Turun yliopisto, Tulevaisuuden tutkimuskeskus
Suomen Akatemian RESCUE-hanke www.rescue-finland.com

Ilmoittautuminen 6.6. mennessä: joni.karjalainen@utu.fi

KUTSU TULEVAISUUSTYÖPAJAAN

Turbulentti tulevaisuus haastaa kaupungit! Miten on Kotkan kriisikestävyyden ja tulevaisuusresilienssin laita?

Kuvitus: Kotkan kaupungin webbisivut /iStock

Aika: **Tiistai 20.9.2022 klo 13-15**

Paikka: Virtuaalinen (osallistumislinkki ja ohjeet lähetetään ilmoittautuneille)

Luovan tulevaisuustyöpajan järjestää Tulevaisuuden tutkimuskeskuksen Helsingin toimisto (Turun yliopisto) ja sen tutkijat Sirkka Heinonen, Joni Karjalainen ja Amos Taylor Suomen Akatemian rahoittamassa RESCUE-hankkeessa (Kiinteistöt ja kestävä kriisienhallinta kaupunkiympäristöissä).

Tavoitteena on havainnollistaa tulevaisuudentutkimuksen CLA-metodin soveltamista **kaupungin kriisikestävyyden testaamiseen vuorovaikutteisella ja innovatiivisella tavalla**. CLA on kriittisen tulevaisuudentutkimuksen metodi, jolla avataan ennakko-oletuksiin perustuvia tulevaisuuskuvia.

Osallistuminen ei edellytä ko. metodin tietämistä. Kotkan tuntemus on hyödyksi. Osallistujia toivotaan eri taustoista: kaupunkihallinnosta, yrityksistä, kansalaisjärjestöistä jne., jotta työskentelyyn saadaan kokonaisvaltainen ote. **Osallistuja saa eväitä omaan tulevaisuusajatteluun, sekä työstetyt aineistot tilaisuuden jälkeen**. Tulokset saavat näkyvyyttä myös kansainvälisessä, loppuvuonna pidettävässä *Anticipation*-konferenssissa sekä muussa hankeviestinnässä.

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13.55 – 14.05 Tauko
14.05 – 14.45 Sukeltaminen CLA-metodin käyttöön Kotkaan yhteisenä kriisitestaamisena
14.45 – 15.00 Loppukeskustelu ja jatkoideointi

TERVETULOA TULEVAISUUSKYLPYYN!

Sirkka Heinonen, Amos Taylor ja Joni Karjalainen, Turun yliopisto, Tulevaisuuden tutkimuskeskus
Suomen Akatemian RESCUE-hanke www.rescue-finland.com

Ilmoittautuminen 14.9. mennessä: joni.karjalainen@utu.fi

INVITATION TO FUTURES WORKSHOP

Cities Challenged by Turbulent Futures! How Crisis Aware and Futures Resilient is TRIPLA?

Time: Friday 14th October at 1:00 – 3:30 pm
Venue: Big Room TRIPLA, Pasila, Helsinki

This futures workshop is organized by the Helsinki Office of the Finland Futures Research Centre FFRC (University of Turku) in co-operation with Aalto University and Tampere University within the **RESCUE** project (***Real estate and sustainable crisis management in urban environments***) funded by the Academy of Finland. The Finnish Society for Futures Studies and the Millennium Project are collaborating organisations for this event, and the venue is hosted by YIT.

The goal is to illustrate the application of the **CLA method** of critical futures research to test the urban crisis resilience in an interactive and innovative way. The CLA (Causal Layered Analysis) is a qualitative method for creating alternative better futures by deconstructing futures images based on presumptions. CLA consists of four levels: litany, social causes, worldview, and metaphor. The topic of urban resilience of TRIPLA case is addressed through CLA in developing more effective — deeper, inclusive, longer term — policy.

No prior knowledge of this foresight method, nor of TRIPLA is required. Participants are welcome from different backgrounds: urban planning, companies, non-governmental organizations, residents etc., in order to get a holistic approach. The participants will get their futures thinking strengthened and expanded, and receive the materials after the event. The results will also be presented at an international Anticipation conference in November and in other RESCUE project communications.

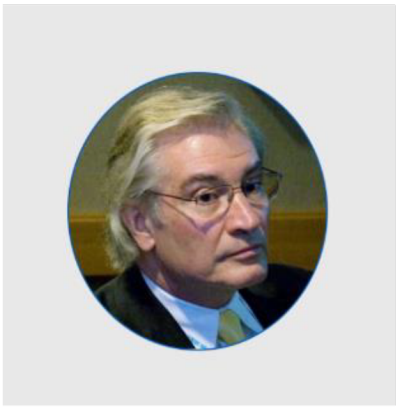
PROGRAMME

13.00 – 13.10	Welcoming words & coffee	**Juha Kostiainen**, EVP, Urban Development & ESG, YIT
13.10 – 13.20	Futures Provocation	**Sirkka Heinonen**, prof emerita, FFRC, Univ of Turku
13.20 – 13.30	Introduction to TRIPLA	**Antti Seppälä**, doctoral researcher, Aalto University
13.30 – 13.40	Refreshing Break	
13.40 – 14.00	Keynote: Strategic Foresight	**Jerome Glenn**, CEO, Millennium Project
14.00 – 15.00	Diving into the use of the CLA: TRIPLA's co-created crisis testing in groups	
15.00 – 15.30	Cross-fertilisation of results and concluding discussion	

WELCOME TO FUTURES BRAINSHOWER!
Sirkka Heinonen, Amos Taylor and Joni Karjalainen, FFRC & RESCUE Project

No attendance fee, but the **registration needed**, max number of attendants will be filled in the order of registrations received by **5th October** to: **joni.karjalainen@utu.fi**
See RESCUE Project: www.rescue-finland.com and
https://www.utu.fi/en/university/turku-school-of-economics/finland-futures-research-centre/research/rescue

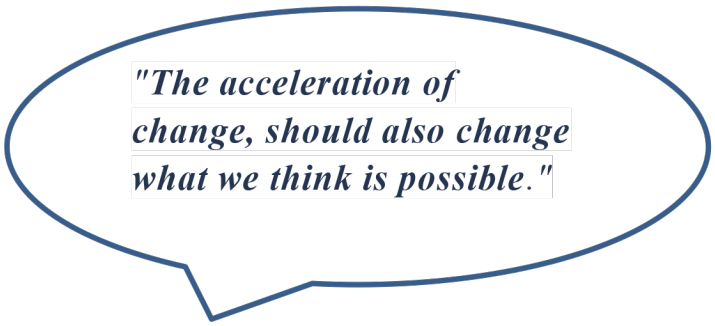
Our Keynote Speaker from the Millennium Project **Jerome Glenn**
https://dms.academy/faculty-jerome-glenn/



Jerome Glenn is the CEO of The Millennium Project, a leading global participatory think tank with 71 Nodes around the world, which produces the State of the Future reports for the past 25 years. He is the lead editor of Futures Research Methodology 3.0 the largest collection of internationally peer-reviewed futures methods. He invented the Futures Wheel and concepts such as conscious-technology, transInstitutions, tele-nations, management by understanding, self-actualization economy, feminine brain drain, and definitions of environmental security and collective Intelligence.

He wrote about information warfare in the late 1980s in his book Future Mind, sent his first email in 1973, and in the mid-1980s he was instrumental in getting x.25 packet switching in 29 developing countries which was key to low-cost access to the Internet. More recently he has conducted a global assessment of the five foresight elements of UN reform in Our Common Agenda by the UN Secretary-General and exploring global governance options for the transition from artificial narrow intelligence to artificial general intelligence. He has published over 150 future-oriented articles, spoken to over 1000 organizations, written several books (Future Mind, Linking the Future, and co-author of Space Trek: The Endless Migration), and has conducted 58 futures research studies.

Jerome Glenn will be visiting Finland in October to give a keynote at the World Summit organised by the Finnish Parliament's Committee for Futures.



The Millennium Project is a collaborating international partner in the RESCUE Project.
https://www.millennium-project.org/

APPENDIX 2 Participants in the Futures Cliniques

ROVANIEMI

Group 1
Joni Karjalainen – moderator (FFRC)

Erkki Aalto
Teija Sotkasiira
Sini Yli-Suvanto

Group 2
Saija Toivonen – moderator (AaltoUniversity)

Reijo Huhtala
Pekka Iivari
Paula Kallioniemi
Anna Vanhala

Group 3
Annamari Kiviaho – moderator (Aalto University)

Juho Kähkönen
Aulikki Laitinen-Tolonen
Piia Mikkonen
Kaisa-Maria Suomalainen

KOTKA

Group 1
Joni Karjalainen – moderator (FFRC)

Osmo Kuusi
Tiina Puhakka
Lotta Vuorinen

Group 2
Annamari Kiviaho – moderator (Aalto University)

Marko Ahvenainen
Antti Rajala
Tiina Rosberg

Group 2
Lassi Tähtinen – moderator (Aalto University)

Saara Ihanamäki
Antti Jakonen
Jani Voutilainen

TRIPLA

Group 1
Joni Karjalainen – moderator (FFRC)

Mohamed Achgaloun
Angelina Arial
Jerome Glenn
Heidi Hellman
Minna Leno
Charlotte Oertel

Group 2
Amos Taylor – moderator (FFRC)

Iryna Gerasymenko
Leena Kaukiainen
Viivi Koivuniemi
Juha Kostiainen
Ari-Pekka Muilu
Ira Verma

Group 3
Anahita Rashidfarokhi – moderator (Aalto University)

Tolga Karayel
Osmo Kuusi
Monica Seppänen
Kaisa-Maria Suomalainen
José Yépez
Mikko Östring

Group 4
Hazel Salminen – moderator (Finnish Society for Futures Studies)

Onerva Aula
Freya Fey
Antti Seppälä
Andrzej Tarasiuk
Jenny Truc-Mai
Paula Uski

Group 5
Annamari Kiviaho – moderator (Aalto University)

Anna Leinonen
Alejandro López Tenorio
Burgert Maree
Outi Martikainen
Soha Rashed
Jyrki Ylä-Juhakkala

LATEST FFRC eBOOKS

7/2023 Kuhmonen, Tuomas – Penttilä, Atte – Kuhmonen, Irene – Selänniemi, Marjatta – Saarimaa, Riikka – Savikurki, Anni & Karttunen, Kaisa: Suomen ruokajärjestelmän haavoittuvuus: Keskinäisriippuvuuksien verkko toimintakyvyn haasteena.

6/2023 Heino, Hanna – Ahvenharju, Sanna – Ahlqvist, Toni – Ferreira-Aulu, Marianna – Lehtiö, Kati – Puustinen, Sari – Pöllänen, Markus, Siivonen, Katriina & Arvonen, Anne (editors): Coolest Student Papers at Finland Futures Research Centre 2022–2023. Tulevaisuuden tutkimuskeskuksen valittuja opiskelijatöitä 2022–2023.

5/2023 Heinonen, Sirkka – Maree, Burgert – Sivonen, Risto – Toivonen, Saija – Viitamäki, Riku & Pättikangas, Paula: Towards Twin Transformations and Spaces – Convoluted Conversations on the Green and Digital Futures of Work.

4/2023 Heinonen, Sirkka – Maree, Burgert – Karjalainen, Joni – Sivonen, Risto – Taylor, Amos – Viitamäki, Riku & Pättikangas, Paula: Flourishing Urban Futures to Overcome Polycrises – Roadmap for Resilience 2050.

3/2023 Heinonen, Sirkka – Viitamäki, Riku – Karjalainen, Joni – Taylor, Amos – Toivonen, Saija & Tähtinen, Lassi: Pitkospuita eteenpäin katsovaan päätöksentekoon – vihreän, osallistavan, digitaalisen ja kriisinkestävän rakennetun ympäristön tiekartta 2050.

2/2023 Aalto, Hanna-Kaisa: Ideointia ja uudistumista ennakoiden – Innotutkan vinkkejä pk-yrittäjille.

1/2023 Heinonen, Sirkka – Karjalainen, Joni – Taylor, Amos – Rashidfarokhi, Anahita – Toivonen, Saija & Tähtinen, Lassi: Constructive Conversations on Resilient Urban Futures.

11/2022 Silvonen, Essi – Ahokas, Ira – Hurmerinta, Leila – Kiviluoto, Katariina – Lamberg, Johanna – Sandberg, Birgitta & Tapio, Petri: Arkiliikkumisesta bisnestä. Kestävän liiketoimintaekosysteemin tulevaisuuskuva.

10/2022 Knudsen, Mikkel Stein – Ferreira-Aulu, Marianna Birmoser – Shabanova-Danielyan, Elizaveta – Wang, Weiqing – Luukkanen, Jyrki & Kaivo-oja, Jari: International Energy Research Infrastructures: Mapping the Global Landscape of Energy RIS (RISCAPE). Based on Finland Futures Research Centre's contribution to the Horizon 2020 project European Research Infrastructures in the International Landscape (RISCAPE).

9/2022 Aalto, Hanna-Kaisa – Ahlqvist, Toni – Ahvenharju, Sanna – Balcom Raleigh, Nicolas – Jokinen, Leena – Lauttamäki, Ville – Marjamaa, Maili – Parkkinen, Marjukka – Puustinen, Sari –Siivonen, Katriina – Tapio, Petri – Tomas Martinez, Carmen – Villman, Tero & Arvonen, Anne (editors): Coolest Student Papers at Finland Futures Research Centre 2021–2022. Tulevaisuuden tutkimuskeskuksen valittuja opiskelijatöitä 2021–2022.

7/2022 Heinonen, Sirkka – Karjalainen, Joni & Taylor, Amos: Landscapes of Our Uncertain Futures. Towards mapping and understanding crisis-related concepts and definitions.

6/2022 Kuhmonen, Tuomas – Kuhmonen, Irene & Näyhä, Annukka: Maaseudun paikka tulevaisuuden kestävässä yhteiskunnassa.

5/2022 Saunders Vázquez, Anaely – Luukkanen, Jyrki – Santos Fuentefría, Ariel – Majanne, Yrjö – Sainz de Rozas, Miriam Lourdes Filgueiras & Laitinen, Jasmin (editores) Desarrollo del Sistema Energético Cubano – Desafíos y Posibilidades Tecnológicas.

4/2022 Saunders Vázquez, Anaely – Luukkanen, Jyrki – Laitinen, Jasmin & Auffermann, Burkhard (editores) Futuro Energético en Cuba. La transición hacia un Sistema Renovable de Energía – Factores Políticos, Económicos, Sociales y Medioambientales.

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TESTING URBAN RESILIENCE WITH IMMERSIVE CLA AND WHAT IF?

Three Cases: Rovaniemi, Kotka and Tripla

Sirkka Heinonen, Risto Sivonen, Joni Karjalainen, Amos Taylor, Saija Toivonen & Lassi Tähtinen

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