

Abstract: This paper aims to contribute to the conceptualisation and practice of ‘everyday-life preparedness [*seikatsu bosai*]’ (EP) initially proposed by Yamori. It reinforces existing community-based disaster risk reduction (CBDRR) systems through embedding preparedness thinking and practice in communities’ daily lives. International agencies, governments and experts promote CBDRR to engage ‘all of society’ and to achieve ‘a culture of DRR’. At the same time, the challenges of how to engage communities in DRR actions and how to sustain them in the communities are also recognised. Drawing on three case studies from Japan, the paper suggests that EP could be one approach to respond to these challenges. A need for integrating DRR and community development has already been identified by some authors. Taking this position further, the paper proposes EP as one of the methodologies of integrated CBDRR approaches.

Keywords: everyday-life preparedness, community-based disaster risk reduction, embeddedness, integrated approaches, coexistence model, Japan

1. Introduction

The purpose of this paper is to contribute to the conceptualisation and practice of ‘everyday-life preparedness [*seikatsu bosai*]’ (translation mine), which is an innovative reinforcement for existing disaster management (DM) structures. ‘Everyday’ does not necessarily mean thinking about and engaging in disaster risk reduction (DRR) every day. The idea is about embedding DRR thinking and practice in daily life. What this paper intends to do is threefold: 1) to relate the concept of everyday-life preparedness (EP) to the existing literature of community-based (CB) DRR; 2) to demonstrate three example cases of EP from Japan, utilising the EP framework offered by Yamori [1]; 3) by doing so, to sharpen EP conceptually, as well as to clarify its role in disseminating CBDRR.

The DRR community has developed a consensus that community engagement is significant in reducing disaster risks and hazards. It was Maskrey in 1989 who introduced the concept of ‘community-based’ approaches to the field of DM, although communities around the world had engaged in DRR actions before [2]. He argued that involving local populations was effective in mitigating disaster impacts, and that longer-term reduction of vulnerability would not be possible without taking local environmental, socio-economic and political contexts into consideration. A paradigm shift in DM occurred when the response of the 1995 Kobe (Hanshin/Awaji) Earthquake demonstrated that local populations greatly contributed to rescue operations, not formal first responders [3]. The emphasis on CBDRR was reflected in the Hyogo Framework priorities for action 2005-2015. CBDRR is currently defined by UNISDR to mean ‘the involvement of potentially affected communities [in DRR]...at the local level’ [4].

The past couple of decades has seen a number of research projects which develop and implement community-based initiatives and models (e.g. [5] [6] [7] [8]). The theme of community-based approaches has been carried over in the Sendai Framework for DRR 2015-2030. One of its guiding principles clearly indicates the requirement of the ‘engagement from all of society’ [9]. The Framework stresses the significance of empowering local authorities and communities, while acknowledging the leadership role of national and federal governments. Furthermore, in disaster-prone countries like Japan, the notion of ‘a culture of DRR’ to live *with* disasters has increasingly been emphasised [10]. International agencies, governments and DRR experts promote CBDRR as a means to engage all of society and as an end to achieve ‘a culture of DRR’. At the same time, the challenges of how to engage communities in DRR actions and how to sustain them in the communities are also acknowledged. The paper suggests

that EP could be one approach to respond to these challenges. Following UNISDR's definition, the paper focuses on DRR, which refers to the policy objectives of DM that is an overall organisation, planning and application of disaster measures [4].

'Preparedness', which refers to 'the knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of...disasters' is also central to this study [4]. It concurs with Paton et al's critique of the 'homogenous' treatment of 'preparedness' [11]. As UNISDR's definition indicates, it is a complex notion, needing 'multidimensional' treatment. The study's focus lies on 'community preparedness', which is part of Paton et al's 'comprehensive' preparedness typology.

As the paper discusses Japan, how CBDRR is promoted in the country should be explained briefly. The 2013 revised Disaster Countermeasures Basic Act introduced a new system of Community Disaster Management Plans. Every community is encouraged to create a plan. Aiming for a collaborative model for DRR, the system enables community residents to participate in the process of developing a plan, together with the municipal government disaster management council. Learning from the experience of the 2011 Great East Japan Earthquake and Tsunami, policy-makers and experts have emphasised the balancing of public help (*kojo*), self-help (*jijo*) and collaborative help (*kyojo*). One of the key measures has been the system of Community Disaster Management Plans. The government has offered subsidies and expertise to support communities in creating plans [12].

The paper is structured as follows. First, it reviews recent literature on CBDRR to discuss its rationale and challenges. In response to those challenges, EP approaches will be suggested. The paper applies the EP theory as a conceptual and analytical framework for the study. The section on methodology follows explaining the details of the design of the small-scale study. The study examined the cases of three communities in different parts of Japan. The paper then discusses the findings of the study, reviews the EP theory and concludes with a suggestion for the role of EP in CBDRR.

2. Literature review

The first part of this literature review distils the rationale for CBDRR from the existing literature. Despite its affirmative role, CBDRR faces some challenges, which are examined in the second part. The review then locates EP in relation to those challenges.

2.1 Rationale for CBDRR

There is a body of literature that applies *social capital* as a methodological lens for CBDRR research. Their common finding is that the higher the level of social capital in a community is, the more prepared and resilient the community deems to be (e.g. [13] [14] [15] [16] [17]). Some argue that social capital is central to disaster preparedness, response and reconstruction of communities [18]. Social capital is indeed a key concern of this paper, particularly in relation to how 'trust' and 'relationships' are built in a community.

Social capital is often discussed in conjunction with *participation* and *collaboration*. Tanwattana, for example, reports in detail the 'participatory action research' of three flood-prone communities in Thailand [19]. The research team and the communities work together to develop a system for CBDRM with a focus on building 'Community Disaster Risk Management Organizations'. Its whole process places the community 'at the heart of decision making' in 'the formulation of plans', 'the attribution of roles and responsibilities to different

groups' and 'participation in implementation' [19, p. 800]. The research suggests having key actors (e.g. a community leader) and active involvement in e.g. community meetings as two main factors in the 'success' case of CBDRM. Stressing the value of the process of developing CBDRM, rather than a quantitative evaluation based on the number of communities trained, the research also recognises such informal approach to CBDRM allows an increase of social capital in communities.

Tanwattana's findings link with the notion of a 'horizontal' participatory model. According to McEwen et al 'horizontal' refers to an emphasis on 'co-working', or collaboration, in building 'community capital' amongst civil action groups and communities [20]. Despite a dramatic increase in the number of collaborations, the research indicates their challenges to fit for purpose reflecting on local needs. One approach to achieve this can be to promote collaboration with a school as the hub of the community. Oktari et al examine 'the school-community collaborative network' in the tsunami risk area in Indonesia, concluding school enables collaboration amongst different stakeholders, including school committees and not-for-profit organisations [21]. For a school-community collaborative network to succeed, the quality of leadership and mutual trust are among the most important enabling factors. 'Participation' and 'collaboration' actually refer to '*people first*', not disasters first. Ferdinand et al's research on four Caribbean communities critique conventional DRR models, which start interventions from the perspective of the hazard itself, e.g. hurricane warnings or flood mitigation [22]. The qualitative data gathered from stakeholders and training courses indicate that people are not put first, but last. This paper certainly supports 'people first' approaches.

CBDRR often involves *indigenous knowledge*, which has been another important research topic. Rahman et al analyse the development of the *Smong* story in Simeulue Island of Indonesia [23]. 'Smong' refers to the phenomenon followed by a strong earthquake, which is the receding sea water and the big wave that sweeps across the land. The study looks at how the notion emerged after the 1907 tsunami, handed over to the next generations and remembered in the 2004 tsunami. Supporting the position that indigenous knowledge is a source of community resilience, the research suggests the *Smong* story could be incorporated in CBDRM in the island to strengthen local populations' risk management. One of the author's previous studies examined indigenous knowledge of DRR as well [10]. It looks at the role played by two particular lores – 'do not rely on authorities' and 'be frightened effectively' – for volcano preparedness in the Sakurajima Island in Japan. The study found the lores, which intend to cultivate agency in the population and educate them with correct volcano knowledge, form the basis for the DRR model for 'living with an active volcano' implemented in the region. 'Coexistence [*kyozon*]' is an ultimate purpose of EP, and this will be discussed later in the paper.

The significance and effectiveness of community engagement in DRR planning and practice has been well rehearsed in these studies. Community members, who are aware of local needs having socio-economic, environmental and political knowledge of the local area, are at the heart of CBDRR.

2.2 Challenges of CBDRR

In parallel with such positive recognition of CBDRR, issues and challenges in actualising CBDRR have also been acknowledged in the existing literature. What would help a culture of CBDRR develop further is to address two specific challenges, which are most relevant to this study. One is around communities' engagement in DRR actions; and the other is around sustainability of such actions.

How to engage communities in DRR actions

Prior experience of disasters having an influence on the preparedness process seems to be an established view in DRR literature. A common understanding amongst such ‘experience-preparedness relationship’ research is communities that have experienced disasters tend to be more proactive in DRR [24]. As McEwen et al put it, it is the ‘shared memories’ of being affected by disasters tend to bond individuals and keep them working together [20]. The experience-preparedness relationship research has developed several models, including the Protective Action Decision Model and the mental models approach [24] [25] [26]. In parallel, the complexity of the experience-preparedness relationship is emphasised in these studies [24].

Becker et al’s research delves into this point, probing how and why individuals’ disaster experience contributes to preparedness [24]. The approach taken is to deconstruct the notion of ‘experience’ into direct, indirect, vicarious (via the experience of other people or the media) and life experiences. Their key finding is people tend to make judgments about preparedness drawing on all aspects of the four types of experiences. The study then suggests likely influences such experiences have on the development process of preparedness, which include prompting: ‘thinking and talking about hazard and preparedness issues’ and ‘community interaction on disaster issues’ [24, p. 188].

Paton et al’s two-stage research is informative in considering individuals and community engagement in DRR [11]. The first part of the study develops seven categories of preparedness (e.g. structural, survival, planning, psychological, community, livelihood, community-agency) from the data collected with ‘the affected group’ of the 2011 Christchurch Earthquake survivors. Their individual-level findings suggest that ‘the more knowledgeable people are about earthquake hazards and their consequences, the more likely they are to prepare’; ‘the more people think and talk about earthquakes the more likely they are to adopt survival measures’. The categories are then applied to examine the readiness of ‘the unaffected group’ in a pre-disaster context. One of the social-level findings particularly relevant to this study is the confirmation of individuals’ participation in community activities being an important factor in community preparedness actions. The community that demonstrates ‘collective efficacy’ and ‘empowerment’ tends to engage in planning and decision-making together to build community preparedness [11, p. 43].

Conversely, there are some indications as to why people do not participate in preparedness. A lack of resources and time is one. ‘Denial’, or ‘the normalcy bias’ in Omer and Alon’s term – the perception that ‘a disaster will not happen to us’ or ‘life will be unchanged, even after a disaster’ – is another [27]. Indifference or reluctance in participation is seen when people perceive they are compelled to participate in DRR activities instructed by an authority and delivered by a small number of experts [1]. In such top-down models, community members’ lack of agency tends to manifest, resulting in passive involvement without developing ownership in the activities.

How to sustain DRR actions

Sustainable DRR has become a common agenda in the DRR community. It can be seen from the fact that the topic was covered in several sessions at the 2017 World Bosai Forum held in Sendai [28]. As Shaw and Okazaki indicate, community involvement often faces the problem of sustainability over a longer period of time [29]. The majority of CBDRR practices are ‘random and spontaneous’ because of a lack of resources and expertise, and therefore, ‘external intervention’ by experts is necessary [30]. However, a number of successful CBDRR projects

supported and delivered by governments, NGOs and international agencies struggle to retain the same level of impact in the communities once the projects are completed and the funds are ceased. According to Shaw, CBDRM becomes ‘popular’ shortly after a disaster, but the enthusiasm gradually decreases [3]. As Paton et al indicate, a shift from ‘passive’ preparedness initiatives to proactive participatory approaches is required to enable ‘sustained preparedness’ [11]. For sustainable longer-term CBDRM, it has to be connected to ‘the daily needs’ of the community since the characteristics of the local context determine the sustainability of DRR efforts.

Several strategies to help DRR sustainability in communities have been proposed. One is to link CBDRR initiatives to the local government activities and incorporate them into community-development policies [3]. Another strategy is to provide ownership of the activities to the communities. Yamori offers an example referring to a distributed hazard map being forgotten in many households [31]. Not having been involved in the process of the map creation, community members missed the opportunity to develop interest in DRR, to contribute to the process and as a result, to gain the ownership of the map. To ‘rely on’ the local leadership is also identified [3]. Linking ‘school education’ and ‘community education’ is proposed as well [32]. These strategies are also significant from the viewpoint of capacity building in the community.

Broadly, what above strategies aim at is the building of an ‘integrated’ model, which is based on the perspective that DRR and community development as complementary [6] [7]. There is evidence that integrated models are effective and sustainable in enhancing community resilience to adversity. Paton’s Community Engagement Theory, for example, measures individual/community/societal attributes to correlate them with preparedness and resilience with the viewpoint that people’s risk perception is influenced by those factors [7]. Understanding them helps develop an integrated DRR approach, which is considered more sustainable than conventional knowledge-transmission DRR models. This paper pursues the importance of integrated-ness in CBDRR, with a focus on what communities already do in building a sense of belonging, sharing the same interest and enjoying participating in activities.

Thus, in order to develop a culture of DRR in which CBDRR is a norm, the challenges of how to motivate communities to engage in DRR actions, and how to sustain them need to be overcome. As a means to manage these challenges, the paper proposes that the approaches of EP can fill the gaps in existing DRR structures. EP on its own is certainly not sufficient to address all aspects of DRR, and therefore, the proposal is about including EP perspectives in the existing systems.

2.3 EP as a supplementary approach to DRR systems

EP is underpinned by three principles. First, as Yamori puts it, it is a DRR practice rooted in ‘a culture of DRR’ [1]. Where EP differs from existing DRR initiatives is the former considers DRR activities to be ‘built in’ to one’s daily life. To reiterate, ‘everyday’ does not mean thinking about and engaging in DRR every single day. The aim is to embed DRR thinking and activities in daily life without even calling them as ‘DRR’. Second, while a hierarchical division between ‘the expert’ and ‘the layperson’ is created in knowledge-transmission models of DRR when the former ‘teaches’ the latter, EP approaches focus on what laypersons, i.e. community members, already do. This leads to the third principle, which is about agency and ownership. Community members’ participation tends to be passive when preparedness is taught top-down by experts. EP approaches are based on what community members need and/or enjoy, and therefore, they are more likely to exercise agency in the process of

engagement. When agency is present, the activities they are engaged in become theirs. EP approaches thus value agency and ownership of laypersons.

Yamori refers to a well-known anecdote in Japan to explain what ‘built-in’ preparedness looks, although the anecdote is not necessarily a community-based laypersons’ initiative [1]. Cherry-blossom viewing is a cultural event in the spring that the public enjoys. It is often referred to as ‘cherry-blossom viewing on the riverbanks [*dote no hanami*]’ because cherry trees are planted along the rivers in many cities. The reason behind this is DRR. The riverbanks frost and freeze during the winter. If nothing is done to maintain the soil before the rainy season comes after spring, there is a risk that the banks may collapse, causing flooding. Cherry-blossom viewing on the riverbanks is a means to mitigate the risk by gathering the public to tread down the soil of the banks, while providing them with an opportunity to socialise and enjoy cherry-blossom.

EP responds to the two challenges identified earlier in the following way. ‘Built-in’ means preparedness events and activities are not additional. They are already part of people’s daily routine – ranging from work, study, hobby and leisure at the individual level, to elderly care, children’s safety, festivals and sport events at the societal level. This means in any case, people are engaging in those activities, and therefore, there is little or no need to encourage or convince them to participate in the activities. Many of the viewers of cherry-blossom are not even aware that they are preparing for a disaster by stabilising the riverbank.

EP can also be considered as a sustainable model for DRR, given that it is embedded in what already exists. As an annual cultural event, people have attended and will continue to attend cherry-blossom viewing. Why many people voluntarily make an effort to go and view the flowers every year is because it is enjoyable. EP approaches require little or no extra time and costs in enhancing preparedness in people, which is also an attraction to policy makers, as well as the public. This point contributes to the continuity of DRR.

3. Theoretical framework

Based on the above perspective, Yamori presents five particular features of EP as follows. This paper applies them as a theoretical framework [1, p. 9]. The features are as follows, which have been elaborated by the author to clearly convey the meaning of Yamori’s original description.

‘In daily life’ – EP treats DRR as part of everyday life, not unusual activities detached from daily routines. The significance lies on embeddedness, not frequency. EP thus develops ‘a culture of DRR’ where DRR thinking and practice becomes usual.

‘Through participation and collaboration’ – EP approaches are inclusive, welcoming participation by all. In many cases, EP activities are undertaken through collaboration. EP is organised and implemented by community’s initiative.

‘Repeatedly’ – EP is about making DRR thinking and practice a habit. This means it is repeated weekly, monthly or annually. If it can be continued, it is likely to be sustainable.

‘Killing two birds with one stone’ – there is a limitation to attract participants to events which are solely for DRR purposes. Combining with other activities that can accommodate DRR perspectives is the basis of EP.

'Locality principle' – how everyday life looks varies largely depending on where people live. Responding to local knowledge and characteristics, EP accepts uniqueness without aiming to develop one model which fits all.

4. Methodology

Taking an interpretivist position, the author investigated the practices of EP utilising a case study approach. Three communities in different parts of Japan were identified through the discussion with the author's contacts. The first community is Kakogawa Green City (KGC) in Kakogawa City, Hyogo Prefecture, which was severely hit by the 1995 Kobe Earthquake. KGC is an apartment block built in 1989, in which 2,000 households reside. The KGC Disaster Reduction Association (KGC Association) has developed a number of DRR initiatives and tools over the years based on the principles of EP, without referring to the theory at the beginning. The second community is Kadan-Ote Town in Sendai City, Miyagi Prefecture. Many parts of the prefecture are still in the recovery process of the 2011 Great Eastern Japan Earthquake and Tsunami. Located 10 minutes away from the city centre, Kadan-Ote Town has about 1,000 households who have lived there for generations, as well as new families recently moved in. The 'Urban Farm [*machinaka noen Fujisaka*]' developed by the community is considered as an example of EP. Unlike the other two communities, Kumanoura Ward is a rural coastal village with a small population of 50 households in Kuroshio Town, Kochi Prefecture. The people in the town were stunned when the government announced a revised prediction of forthcoming mega earthquakes and tsunami in March 2012 – the Nankai Trough Earthquake which would hit Kochi Prefecture could be as big as the seismic intensity of seven, and the tsunami could be as high as 34.4 metres [33]. Since, Kuroshio Town, as well as Kochi Prefecture, have been investing in both soft and hard DRR measures. The discussion of EP in Kumanoura is about its monthly forum. The choice of these locations is to see whether the past-present-future temporal difference in terms of their disaster experience differentiates their approaches to EP. The term 'community' is used to mean the smallest administrative and geographical unit in society.

The author stayed in each community for several days between 2014 and 2017 in gaining an understanding of its DRR policies and programmes, as well as community activities in probing the following research questions:

1. To what extent can the features of EP be identified in the community's activities?
2. How do they respond to the two challenges of CBDRR?
3. How does being in different phases of disaster experiences manifest in their EP practices?

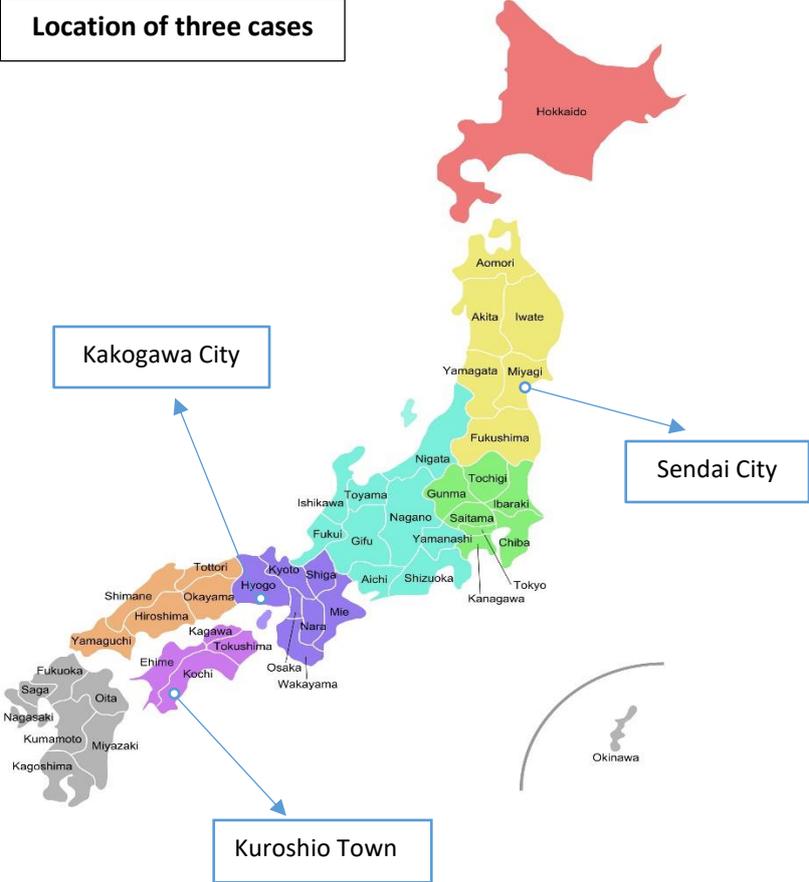
Three qualitative data collection methods employed were documentary analysis, observation and semi-structured individual and group interviews. The extent to which the three communities make their information available via documentation and website varied. KGC has a well-established website from which detailed information on their DRR practice was obtainable; Kadan-Ote's website is less developed, but a range of published materials was given to the author during the visit; a rural small community Kumanoura has neither a website nor documentation, which meant its data was all empirically collected. For observation, I visited the sites relevant to DRR (e.g. the Urban Farm) and tools (e.g. hazard maps) in the communities, but also non-DRR activities such as forums and festivals, making notes on stakeholders' interactions. For the interview, I spoke to the following key stakeholders in the communities to obtain balanced views on DRR and community development generally. The paper refers to the interviewees by their roles in the community for anonymity purposes – A stands for KGC, B for Kadan-Ote and C for Kumanoura. Member A-1 and B-1 were group interviews, comprising six members. They are treated collectively as one interview because the

duration of the interview was same as that of Member A-2 and B-2. Two officials were interviewed in Kumanoura to complement the lack of documentation and website.

1. A community leader who has the key role in the development of the community (Leader A; B; C);
2. Community members who do not necessarily have a leading role in the community (Member A-1, A-2; B-1, B-2; C-1, C-2);
3. A local government official who has been involved in the policy-making of DRR (Official A, B, C-1, C-2);
4. An academic researcher who is familiar with the community through research (Researcher A, B, C).

A combined analysis approach of both deductive and inductive processes was adopted. First, the documentary data and the empirical data were examined by thematic analysis to identify the five key features of the EP framework. This allowed the theory of EP to be essential to the deductive coding process. In the second-round analysis, utilising Yin's strategy of working the data from the 'ground-up', inductive data-driven coding was undertaken not to miss emerging new themes which had not been part of the original EP framework [34]. The combined method was significant for the purpose of strengthening the conceptualisation of EP.

Location of three cases



5. Analysis

The following table summarises the analysis of the three case studies in relation to the five features of the EP framework. Each case is detailed below.

Table 1: Summary of case study analysis

	<i>In daily life</i>	<i>Through participation/ collaboration</i>	<i>Repeatedly</i>	<i>Two birds/one stone</i>	<i>Locality</i>
KGC DRR Association	Normalising DRR thinking through Greeting Campaign/skills registration scheme etc	An established self-governed voluntary organisation; its events and activities enabled by residents' participation	Connecting DRR with regular fun activities to promote continuous participation	Every community activity having dual purposes, e.g. wells	Building a sense of community in urban apartment blocks
Urban Farm in Kadan-Ote	Farming itself being a daily activity; seasonal events are in community's annual timetable	Managed by a sub-committee of the revitalisation committee; 'everybody is involved one way or another'; collaborating with wider partners	Seasonal events attracting wider audiences; in return, community members motivated to continue	The farm is to revitalise the community; seasonal events function as cooking drills	The farm as a hub in a urban diverse community
Monthly community Forum in Kumanour	The monthly forum being an important part of community's life	Participated by all members of the community	Valuable occasion, which residents are keen to attend	The meeting having multiple health, social and DRR purposes	Rural community with 'the countryside culture'

5.1 The KGC DRR Association

Setting up a voluntary disaster prevention organisation in every community is promoted in the Japanese Disaster Countermeasures Basic Act [35]. The 1995 earthquake shifted the approaches to DM to include soft as well as hard measures, and one of the emphases in soft measures has been community engagement. When subsidies became available in Kakogawa City to set up new voluntary disaster prevention organisations, KGC took the opportunity to create a multi-faceted association, amalgamating the crime/disaster prevention committee, the volunteer firefighters and the neighbourhood watch group [36]. Being in Hyogo Prefecture where the largest damage and fatalities of the earthquake were, the KGC residents became more proactive in developing disaster preparedness and resilience. KGC has developed a self-governed community by themselves, with an emphasis on DRR (Official A; Researcher A). The following analysis focuses on some of the main initiatives of the KGC Association.

In daily life: The KGC DRR Association has two strong underlying principles for their DRR practice. The first one is 'you cannot behave differently (in a disaster) if you are not behaving as such in your normal life' (Leader A; Member A-2), which resonates with the first characteristic of EP. One signature campaign that they have been running is the 'Greeting

Campaign'. A sense of 'community' was non-existence in the urban apartment block when people moved in. 'Now at the premises of KGC, everyone says "hello" (Leader A).' The campaign is valued because getting to know each other starts from greeting. Once you know someone, trust and respect can be built. If you trust and respect the person, you are willing to help her/him (Leader A; Member A-1; Official A). The KGC Association also introduced a system to which residents register their skills and capabilities, e.g. carpenter, childcare (Leader A). It is to familiarise residents with who can do what so that help can be sought from the right persons in emergency situations [36].

Through participation/collaboration: The KGC Association's other principle, 'making DRR activities enjoyable' (Leader A; Member A-1; Member A-2; Official A), exhibits the second feature of EP, 'through participation and collaboration'. Too much emphasis on 'DRR' puts people off, and therefore, it has to be combined with fun events that both children and adults can participate (Leader A; Member A-1; Researcher A). One example is a summer festival, which is voluntarily organised and implemented by KGC residents. A lot of food is prepared for the festival. The KGC Association has bought a barbecue equipment to cook 'fried squid', which is a popular dish in the region [37]. What they have in mind is the barbecue set can be used in an emergency situation, and barbecuing squid is a preparedness activity (Leader A; Researcher A). The participants enjoy cooking and eating without referring to DRR, although they are aware of the activity having DRR purposes (Official A; Researcher A).

Repeatedly: The Greeting Campaign, the summer festival, and other initiatives that the KGC Association have developed have been repeated with adjustment if needed. They call their approach as 'Hybrid DRR', which is 'the approach that takes little energy but enables long-term continuity' [37]. In order to retain CBDRR practice, they apply the strategy of normalising DRR thinking and connecting DRR with fun activities (Official A; Researcher A).

Two birds/one stone: In other words, KGC's CBDRR has been sustained owing to its approach being 'killing two birds with one stone', which has already been illustrated above. Hybridity denotes multi-purpose. To add one more example, KGC in their premises has two wells. They dug them bearing water failure in mind to protect subsequent generations. At the same time, the wells are a communal space where people can gather and relax, decorated with fountains, lights and artefacts [37].

Locality: The aforementioned greeting scheme and skill registration are small initiatives but fundamental in embedding preparedness in ordinary life. These points are associated with the 'locality' feature as well. As an apartment complex in an urban setting without a history as a community, KGC's focus has been to develop in residents a sense of belonging (Leader A; Member A-1). The accumulation of such small initiatives has been to build social capital in the KGC community.

5.2 Urban Farm in Kadan-Ote Town

The Urban Farm had no DRR link when it started in 2007. The purpose of the farm was to revitalise the community which was increasingly ageing (Leader B; Official B; Researcher B). When the city's plan to make a new road was cancelled, the community requested to Sendai City to turn the land of 3,300 square meters into a farm [38]. Harvesting was thus not a priority. When eight towns including Kadan-Ote were amalgamated into one Katahira Ward, and a coalition neighbourhood association was set up, a need for safety strategies for communities was discussed. This was just before the 3.11 disaster. Until then, people's awareness towards preparedness was low in Katahira, even though a voluntary disaster prevention organisation

existed. Being away from the coast, and having a firm ground, Katahira was considered a ‘safe’ area. In fact, their damage from the 2011 disaster was small (Member B-2). However, having learned about its impact on the Tohoku region, people in Katahira began thinking about a need to develop their preparedness. Under the Katahira Ward Community Development Project launched in 2013, ‘strengthening the local disaster prevention system’ was set out as one of the four key agendas. Mainstream DRR issues such as evacuation and shelters were raised in there [38]. Where the Urban Farm was mentioned was on the agenda to set up ‘an intercommunion space’. The ongoing plan is to develop a hub space around the farm adding a playground and a café. Thus, the Urban Farm is primarily for community development, but DRR perspectives are included in farm-related activities as follows.

In daily life: Farming requires people’s daily commitment. For about 24 members of the Kadan-Ote community who are regulars, having an allocation of a piece of the Urban Farm, farming is part of their daily routine (Member B-1). Some also like to be on the farm because ‘communication emerges with others working on the farm (Member B-2)’ and residents passing by the farm (Member B-1). Not all members of the community are engaged in the farming itself, but ‘everyone gets involved one way or another (Member B-1)’. The Urban Farm is not only an allotment, but has become a broader project over the years offering seasonal events [39]. They have the opening of the farm in spring, a summer festival, a harvest festival and in winter, a rice-cake making event. After the 3.11 experience, the Kadan-Ote community made a decision to relate their activities of the farm more strongly to DRR (Leader B; Member B-1). They began to utilise the farm as a stockpile, built a storage by the farm to keep firewood, emergency food and a pot that cooks for 200 people and secured a water supply. The seasonal events became opportunities for practising cooking in emergency scenarios using the crops from the farm. As the practising has already been done a number of times, participants are familiar with the procedure of preparing food, exercising an excellent team-play (Member B-1). It can thus be considered these seasonal events, as well as farming activities have a position in people’s life in Kadan-Ote (Researcher B).

Through participation/collaboration: ‘Everyone getting involved’ through participating in and contributing to the above events (Member B-1; Official B). As one of the members puts it: ‘The farm is the core of our community, which brings us together (Member B-1).’ The Urban Farm is entirely managed by a subcommittee under the Katahira Ward Coalition Neighbourhood Association (Leader B). Collaborators’ involvement has also been significant, particularly in actualising the seasonal events. For instance, not-for-profit organisations co-ordinate events to promote community development, and a local agricultural high school worked together with the community in developing a farm, providing them with the guidance and advice of farming [39].

Repeatedly: The seasonal events which are participatory and enjoyable have attracted wider audiences, which in return has given motivation to community members to carry on farming and organising events. As the following comments demonstrate, participation derives from members’ wanting to participate, not from being told to get involved: ‘We very much look forward to festivals, particularly the harvest festival (Member B-1; Member B-2)’; ‘I want to see children’s happy faces (Member B-1)’; ‘I don’t get pushed when I say no, which is a good thing (Member B-2)’. Farming being a continuous activity giving a joy of harvesting must have contributed to the continuity of the Urban Farm, but equally, the events have also played a pivotal role in retaining the farm (Researcher B). Other efforts to carry on the farm includes involving younger generations. The farm is open to the local primary school from which pupils come and grow their own fruits and vegetables. ‘They love working with the earth, even

weeding (Member B-1).’ The principle that ‘fun has to come first (Leader B; Researcher B)’ appears to have been a major factor for sustaining the Urban Farm.

Two birds/one stone: The Urban Farm brings multiple benefits to the community, starting from crops, enjoyable events, a sense of belonging, to preparedness building. The research conducted by a local university team summarises ‘the significance of the Urban Farm’ as follows [40]. The Urban Farm builds relationships amongst community residents, develops safety and reassurance in the community, involves senior citizens and people with disabilities without barriers, offers active learning opportunities to children and revitalises the community through a range of collaborations including those with external organisations [40]. As one of the members indicates, ‘in the past five years or so, the community has really changed (Member B-1)’. The Urban Farm has played an important role in the process of Kadan-Ote’s revitalisation (Leader B; Official B; Researcher B).

Locality: An urban context with a limited space and diverse populations could have been a disadvantage for the revitalisation project. The Kadan-Ote community however has made the most of their context, developing creative, fun events utilising external support networks. In the ageing community where not many interactions and activities were happening, the Urban Farm chosen as a method for revitalisation has had a positive impact on the community, as illustrated by the comment of one of the members: ‘My husband and I can stay healthy, thanks to the farm (Member B-1)’. ‘By linking DRR comfortably to community activities, communities can develop preparedness and sustainability at the same time (Official B).’

5.3 Monthly Forum at the Kumanoura Community Centre

Kumanoura Ward, which has both the seaside and mountains, had two specific challenges that had to be overcome. The prediction of the height of the tsunami being 20 meters in Kumanoura, the community and evacuation centre had to be replaced as the tsunami would swipe the building away (Member C-1). A new access road called ‘the road of life’ leading to the other side of the mountain had to be made as well. The other challenge stems from that the average age of Kumanoura’s population is 70, no one being under 65 (Member C-1). Senior citizens tend to refuse evacuating, arguing ‘there is no point’ (Official C-1). In Kumanoura, however, there has been a collective preparedness effort, which is supported by a multi-purpose monthly forum at the new community centre, which can be considered as an example of EP.

In daily life: As a small rural community, there is no public space where residents can get together, apart from the new community centre in Kumanoura. Most of the population are subsistence farmers or retired (Researcher C). A monthly regular gathering at the centre is an important occasion to see each other, to confirm everyone is healthy and to spend some time together (Member C-1). Despite the meeting being once a month, it can be considered it is part of the people of Kumanoura’s ‘everyday’ because of its embeddedness in their lives.

Through participation/collaboration: The Kumanoura Community Centre is managed by the Kuroshio Town Hall, and the monthly meeting is also organised by the Health and Welfare Section of the town hall [41]. A nurse is sent to carry out a regular health checkup for the senior residents. Moreover, the meeting has developed, and community members now have other activities after the checkup – having lunch together, making handicrafts, exercising and discussing matters arising (Member C-1; Member C-2). Their main agenda at the time of the author’s visit was to prepare the stockpile in the shed attached to the centre (Researcher C). Compared with the previous two cases, self-governance is less seen in the case of Kumanoura, but an element of ‘participation by all’ can certainly be identified.

Repeatedly: The regular once a month meeting has been repeated since the new centre opened in 2016. ‘Monthly’ seems to be the suitable frequency for the Kumanoura community for a regular meeting. More frequency may be burdensome for some, while less frequency could make individuals feel isolated. The motivation of the community members to attend the meeting is high because it is a valuable opportunity to have their health checked and for all members to get together in one place (Member C-1; Member C-2). Their wanting and needing the meeting appears to have been contributed to the continuity of the meeting.

Two birds/one stone: The Kumanoura Community Centre as a facility itself has dual purposes – a meeting place and an evacuation shelter. The monthly gathering held at the centre therefore entails health, social and DRR purposes. The regular health examination is particularly helpful to the residents as a hospital is far away from Kumanoura (Member C-1). Social activities give them enjoyment and reassure solidarity. Collective decisions concerning the community are made at the meeting as well. Another important role of the meeting is it provides the residents with an evacuation drilling opportunity, as one member says, ‘when I walk here, I am checking whether I am fit enough to evacuate by myself (Member C-1)’. The ways from the residents’ houses to the centre are the designated evacuation routes. Their monthly walk to the centre is therefore an evacuation drill, as one member indicates, ‘we have familiarised ourselves with the new evacuation routes (Member C-1).’

Locality: Most of the residents are from the village of Kumanoura, if not the villages nearby. ‘We all have a good knowledge of the sea and the mountains (Member C-1).’ Since they learned about the new prediction of the forthcoming tsunami, they have become more aware of a need to develop their preparedness. ‘First, we need to be responsible for our own safety, and then, we look after others (Member C-1).’ Those who live on their own have a bell that they ring when they need help (Member C-1). The small size has also helped in bonding the community: ‘We get on very well. We know how others behave. We have always helped each other (Member C-1).’ ‘There is an established community here’ (Official C-2), which can be attributed to ‘the countryside culture’.

7. Discussion

The three cases illustrate EP’s embedded nature in communities’ day-to-day life, with variations in terms of their DRR emphases. The variations appear to have derived from communities’ responses to geographical, demographic and cultural needs, rather than their experience of a large-scale disaster in the past, their recent experience of one or their likely experience in the near future. The data did not suggest any clear association between ‘experience’ and ‘preparedness’ in the target communities. The reason for this is, as this paper suggests, experience of disasters is not necessarily relevant in EP as it is about communities’ day-to-day lives, putting ‘people’ before ‘disaster’.

The above EP analysis has highlighted some common elements of CBDRR practices, which address the two key challenges around engagement and sustainability. This is the discussion of this final section. In parallel, it links the two themes newly identified in this study with the EP analysis.

With the challenge of how to engage people in DRR actions, EP actually deals with the question reversely – how to include DRR elements in what people already do in their daily life. KGC’s Greeting Campaign, Kadan-Ote’s farm and Kumanoura’s forum have all begun with how the communities live, and what their interests and needs are. DRR elements have been combined

with or added to the initial purposes of the activity. The cases represent ‘integrated’ models that connect community development with preparedness building. KGC and Kadan-Ote are probably clearer cases in terms of integrated approaches. As the KGC DRR Association refers to their own approach as ‘hybrid’, they have aimed to develop social capital which was non-existence in the urban apartment blocks, whilst raising residents’ disaster awareness. Kadan-Ote’s DRR was an offshoot of the community revitalisation project that has used the farm as a tool to involve various stakeholders. Because their integrated approaches derive from the community members’ interests and needs of everyday life, they exercise agency in planning, implementing and participating in initiatives and events. As they organise and manage the initiatives and events themselves, they are bound to develop a sense of ownership in them. It can be considered EP approaches are able to contribute to the development of self-governing communities.

In addition, inclusive approaches welcoming everybody in the community and beyond yield social capital leading to collaborations. This is particularly seen in the first two cases: KGC has a number of internal collaborations being a large apartment complex; external partners contribute to the development of the Urban Farm in Kadan-Ote. It could be suggested when people are bonded based on positive relationships, they tend to engage more, as Kadan-Ote’s members’ comments about wanting to make children happy demonstrate. It should also be noted people tend to be encouraged by seeing others participating [1]. Usual activities such as a local festival, farming and a forum offer an opportunity for community members to interact and connect. Such ‘people first’ approaches seem to enable engagement of community members. In other words, as seen in Kumanoura’s case, even without an experience of a disaster, community engagement in DRR actions can be achieved with utilising EP perspectives.

With the challenge of how to sustain DRR actions, as the three cases have illustrated, when participated and enjoyed by community members as part of their daily lives, initiatives and events deem to be repeated again. If they are meaningless or too demanding, organisers and participants will be less motivated to keep going. Quarterly seasonal festivals are the suitable types of initiatives for the Kadan-Ote community which has diverse human resources. Such events will not function with Kumanoura’s residents because of their demographics – a monthly forum is an appropriate type of activity for them. The strategy to kill two birds with one stone is significant for DRR sustainability as well. One activity holding more than one purpose is the common feature in all three communities. There are financial implications of this as communities need to think about what the value for money is. For instance, if KGC had purchased a barbecue set only to cook and enjoy fried squid, that spending would have had less value to the community.

Respecting and responding to the locality, which is manifested in all three cases, also has an impact on the sustainability of DRR. As Shaw indicates, sustainable CBDRR stems from the appreciation of local socio-economic, demographic as well as environmental, geographical circumstances. KGC’s emphasis has been to develop trust and relationship in the large urban apartment complex, in which residents lived in isolation with limited communication with neighbours. Conversely, it was not the case in Kumanoura where the community had already had a high level of bonding capital as expressed as ‘the countryside culture’.

Two themes, which are not necessarily identified in the original EP theory, have emerged from the study. One is about leadership. All officials, researchers and some members of the three communities being interviewed referred to the significance of the effective leadership (Official

A, B, C; Researcher A, B, C; Member A-2, B-1, B-2). In KGC's case, 'it is the leader himself and the leadership team that holds the key. They have rich ideas and marketing capability' (Official A). Kadan-Ote has a devoted and trusted leader, who is 'a good listener' and 'brings everyone together' (Member B-2). Less leadership is exercised in Kumanoura because the small community operates like one family. Moreover, due to the urgency of preparing for the forthcoming mega disaster, leadership derives directly from the Kuroshio Town Hall, as seen in the relocation of the community centre to a higher ground [42]. What can be added to the point already indicated in the existing literature about the importance of a leader is the leader's allies are equally important [3] [19]. CBDRR has certainly not taken shape in communities where leaders are controlling leaving other members behind (Official A, B, C-2). The EP theory does not necessarily discuss leadership. The paper suggests democratic leadership to be taken into account as part of the second feature 'through participation and collaboration'.

All leaders and members of the communities said 'I love my community' at one point during their interviews, and this is the next theme (Leader A, B, C; Member A-1, A-2, B-1, B-2, C-1, C-2). Even though some were not born and grew up in the communities, they seemed to have developed a strong attachment to the area. Their love and care towards their communities is the motivation to engage in activities that will better the communities (Leader A, B; Official B, C-1, C-2). There are however, residents who do not necessarily feel such strong affection towards where they live. KGC's way has been to invite them to community activities with a hope that they will get to know each other and start liking the community. The seasonal festivals of Kadan-Ote have had a similar intention. They also employed an educational approach, running a project to investigate and learn the local history, with the view that 'you need to know about your area to like it' (Leader B). Because of 'the love of own community', one is willing to protect neighbours and the neighbourhood, and to get involved in DRR actions (Leader A; Official C-1, C-2). The EP theory probably takes it for granted that people like their communities.

8. Conclusion

This paper has argued that EP approaches could respond to the two challenges of CBDRR – how to engage people in DRR and how to sustain such actions. It should be emphasised that EP is to complement the current DRR systems, not an alternative. EP's role is to increase community engagement in CBDRR, which is built into the community's normal life to actualise a sustainable CBDRR model. But EP on its own is not sufficient in eliminating non-participation. In fact, the target communities except Kumanoura, were also experiencing non-participation by a certain number of residents, despite having achieved a high level of engagement and sustainability in their community activities. Whether there are residents who show no interest in community activities, and if so, what has been done to encourage their participation was one of the interview questions. KGC and Kadan-Ote both responded that they had always had few indifferent members who were not persuaded by invitations to get involved. Following on from the point about affection towards own communities, they may not feel so passionate about bettering their communities. Applying the EP perspective, linking their interests with community activities and linking those activities with DRR could be a way forward. The proposal therefore is to consider EP as one of the methodologies for CBDRR.

The paper also supports Yamori's claim that EP can be regarded as a 'coexistence [*kyozon*]' model. In disaster-prone countries, populations are required to coexist with disasters. This means embedding DRR thinking and practice in everyday life, instead of treating disasters as 'emergencies'. Some of the interviewees indicated that as long as one lives in Japan where disasters are usual, preparing for them should be considered as 'manners' (Leader A, B;

Official A, C-1). Engagement in DRR should be same as ‘going to get a bento [lunch] box every day’ (Official A). EP is one methodology that guides how to go about gaining such manners.

The paper certainly does not claim that EP is universally applicable. There is a limitation to the study because of its target communities being all from Japan. One question worth investigating is whether EP is associated with specific conditions of the country. Does EP work only in countries like Japan that already have a well-organised DRR structure? Does EP work only in countries like Japan that value harmony and rules? Can any aspects of EP be applied in the countries of which populations’ basic needs have not been met? The applicability of EP in different country contexts requires further research.

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