

## CASE STUDY SERIES

# PROTRACTED DISASTER DISPLACEMENT

This case study series addresses a significant gap in awareness and knowledge about people caught in protracted and chronic displacement situations in the context of disasters and environmental change.



## RECOVERY POSTPONED

The long-term plight of people displaced by the 2011 Great East Japan Earthquake, tsunami and nuclear radiation disaster

6 FEBRUARY 2017

## Introduction

2016 marked the halfway point in the ten-year timeframe for reconstruction set by the Japanese government following the devastating “Great East Japan Earthquake” disaster.<sup>1</sup> According to the Japan Reconstruction Agency’s estimates, the combined impacts of the massive earthquake and tsunami on 11 March 2011, followed by radiation leaks from the crippled Fukushima Daiichi nuclear power plant, internally displaced some 470,000 people from their homes, though actual figures may be significantly higher.<sup>2</sup> While good progress has been made in the recovery of many of the affected municipalities, some areas have lagged behind and the disaster is far from over for some 134,000 evacuees who remain displaced almost six years later.<sup>3</sup>

As seen in other cases worldwide, the impacts of prolonged and protracted displacement have profound and disproportionate impacts on the most vulnerable members of society.<sup>4</sup> For Japan’s devastated Tohoku region, this has proven to be particularly true for older generations for whom the loss of their former homes, the break-up of close-knit communities, uncertainty about the future and lack of prospects for immediate progress has been debilitating and even fatal. As this case highlights, considering the un-quantified but profound social and psychological consequences of displacement is as important as the reconstruction of infrastructure and environmental remediation. Mitigating, preparing for and addressing issues that drive, worsen and prolong the risk and impacts of displacement are critical to the full recovery of people affected by disaster and in the best interests of the State.<sup>5</sup>

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## Displacement drivers: Extreme events and testing preparedness

The succession of natural and man-made hazard events that brought on this major disaster were, by all measures, extreme. The 2011 magnitude-9 earthquake – a rare one-in-a-thousand-year event – was the most powerful recorded in Japan since instrumental seismic observation began in 1900, and the fourth most powerful ever recorded worldwide. The main event was preceded by a number of large foreshocks that started a couple of days before the main earthquake, and that were followed by more than thirty 6.0-plus magnitude aftershocks.<sup>6</sup>

An estimated ten to thirty minutes after the main earthquake, the first of many tsunami waves hit Japan’s Pacific shoreline.<sup>7</sup> While the country’s tsunami early warning system forecast wave heights of up to 10 metres, they reportedly reached up to 34.7 metres above sea level at Onagawa city,<sup>8</sup> travelled as far as 10 kilometres inland at Sendai, and flooded approximately 561 square kilometres.<sup>9</sup>

The disaster was further compounded when the tsunami knocked out the cooling systems at the Fukushima Daiichi nuclear power plant in the town of Futaba, operated by the Tokyo Electric Power Company (TEPCO). The worst nuclear plant accident since the 1986 Chernobyl disaster in the Ukraine followed as radioactive material was released into surrounding municipalities. Large-scale decontamination works commenced in 2012, aiming to gradually bring ambient radiation measures below 20 millisieverts per year in the contaminated areas, in line with guidance on exposure limits from the International Commission on Radiological Protection (ICRP) and costing an estimated 2.5 trillion yen (US \$25 billion).<sup>10</sup>

In economic terms, this disaster is one of the costliest in history. Thirty-two trillion yen (US \$263 billion) has been secured to meet reconstruction needs in the affected areas.<sup>11</sup> Damage extended from the north-eastern Tohoku region down to the southern Kanto region where the capital, Tokyo, is located. Residents of the Tohoku region prefectures of Miyagi, Iwate and Fukushima suffered the worst impacts (see table 1). Around 19,000 people lost their lives and over 2,000

**TABLE 1: LOSS AND DAMAGE IN THE PREFECTURES WORST AFFECTED BY THE GREAT EAST JAPAN EARTHQUAKE DISASTER**

Prefecture	Deaths* (persons)	Missing (persons)	Injured (persons)	Houses destroyed	Houses severely damaged**
Miyagi	10,553	1,234	4,145	82,999	155,130
Iwate	4,673	1,123	213	19,507	6,568
Fukushima	3,703	3	183	15,194	79,597
Ibaraki	24	1	712	2,630	24,374
Chiba	21	2	258	801	10,152

Source of data: National Police Agency of Japan, 9 September 2016<sup>13</sup>; Fukushima Prefectural Government, November 2016<sup>14</sup>; Miyagi Prefectural Government, 10 November 2016<sup>15</sup>

\* The total death toll includes both direct deaths and disaster-related deaths. In Fukushima “disaster-related” deaths (2,099 persons) exceed the number of direct deaths. For Miyagi and Fukushima data, the more recent prefectural government reports have been used rather than the National Policy Agency report.

\*\* “Damaged” categories include “partial destruction” (severe damage) and “some damage” (minor damage). Only severely damaged homes are included here.

continue to be reported as missing.<sup>12</sup> In total, 121,739 houses were destroyed and 279,067 damaged, either washed away by the tsunami, damaged through ground shaking in hilly areas and through the liquefaction of land that had been reclaimed or located on old river courses, or burnt down by fire.<sup>16</sup> Extensive destruction or radioactive contamination rendered towns uninhabitable and displaced entire communities. Reconstruction of the disaster-affected regions is central to government policy for the economic development of the country as a whole.<sup>17</sup>

*Extensive destruction or radioactive contamination rendered towns uninhabitable and displaced entire communities*

### Fatal assumptions: Earthquake and tsunami early warning and evacuations

The delivery of early and accurate warning to hazard-exposed populations is critical for timely evacuation to minimise loss of life and other serious harm. On 11 March, residents of Tokyo received a minute of warning before strong shaking hit the city and this, together with stringent seismic building codes, prevented many deaths by preventing building collapse and by stopping high-speed trains and factory assembly lines. Data collected by seismometers was converted into initial Tsunami Warnings or Advisories issued by the Japan Meteorological Agency (JMA) and updated based on actual sea level data and wave detection.<sup>18</sup> An earthquake and tsunami of this magnitude in the northeast had not been factored into predictive models and preparedness, however. Initial warnings issued were significant underestimations and data flows were disrupted, which impeded accurate updates.

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Evacuations in response to tsunami warnings were delayed or interrupted as some people assumed that seawalls or moving to a higher storey in a building would protect them. Others prematurely assumed that a tsunami would not arrive after a certain amount of time had elapsed.<sup>19</sup> In some prefectures, including Miyagi and Fukushima, only 58 per cent of people fled for higher ground immediately after the earthquake.<sup>20</sup> Many pre-designated community evacuation sites, often in public structures such as schools and shrines or upland parks and vacant lots, were located within areas reached by the tsunami. At least 101 sites in Iwate, Miyagi and Fukushima were inundated and people who fled to them were swept away.<sup>21</sup> Local knowledge and preparatory measures based on prior experience actually increased vulnerability in this very extreme situation.<sup>22</sup>

Lessons from this tsunami are now being applied. In March 2013, the JMA introduced a new tsunami warning system that gives high priority to community-based education and awareness-raising to ensure appropriate evacuations in response to

the warning system and to inform independent decisions to evacuate without waiting for official warning and orders.<sup>23</sup>

### Radiological risk, evacuation zoning and ongoing public safety concerns

The situation of people displaced because of radiation exposure risk has been mired in ongoing political controversy about public safety related to Japan's dependence on nuclear energy. An official report to the Japanese parliament from the Fukushima Nuclear Accident Independent Investigation Commission concluded that the disaster was primarily man-made, rather than a consequence of the tsunami - the result of collusion between the government, TEPCO and regulators at the nuclear and industrial safety agency who had failed to take adequate safety measures, despite the area's exposure to powerful earthquakes and tsunamis.<sup>24</sup> TEPCO has admitted that it had failed to take stronger preventative measures for fear of inviting lawsuits or protests against its nuclear plants.<sup>25</sup>

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On 11 March 2011, evacuation plans in preparedness for such a major disaster of this nature were not in place and evacuations ordered in the days and weeks following the disaster's onset were repeatedly revised and inconsistently communicated to the affected residents.<sup>26</sup> Information shared by the government and TEPCO with exposed populations about radiation risk and ambient radioactivity levels left communities confused and without clear and trusted guidance on which to base their decisions as to whether and when to evacuate, where to go and how long they would need to leave for.<sup>27</sup> Displacement from these areas was, therefore, undertaken on the basis of both official orders to evacuate and residents' own perceptions of risk based on other sources of information.

During the chaotic initial period of the crisis, orders issued on 11 March instructed residents within a two kilometre radius of the nuclear plant to evacuate. The following day, the national government greatly extended the orders to about 78,000 people living within a 20 km radius of the nuclear plant, while around 62,000 people living between 20 to 30 kilometres of the plant were advised to shelter in their own homes, implying that evacuation was not mandatory. In late April, a further 10,000 people living farther to the north-west of the plant (referred to as the "deliberate evacuation zone") also came under evacuation orders because high levels of radioactive material carried by prevailing winds were detected.<sup>28</sup> Some residents outside the initially designated evacuation zones were exposed to high levels of radiation for more than five weeks before evacuation orders were issued, including families who had been hosting evacuees from areas closer to the plant who then became evacuees themselves.<sup>29</sup>

"Voluntary" evacuees, so-called because their homes were located outside the officially designated evacuation zones in Fukushima, also felt compelled to evacuate because of their

fear of health impacts, particularly on young children who are generally more at risk than adults of tumour induction from radiation.<sup>30</sup> One estimate puts their number at 36,000 as of May 2015 while the Fukushima Prefectural Government estimated them to number some 25,000 people as of the end of 2015, 20,000 of whom were staying in locations outside the prefecture.<sup>31</sup> Some 10,000 evacuated children whose families fled Fukushima prefecture, around half of whom were “voluntary” evacuees from outside the official evacuation zones, had not returned as of March 2016.<sup>32</sup>

The enormous and unprecedented task of decommissioning the damaged reactors in Fukushima is expected to take many decades and is not without ongoing risks, including the removal of melted fuel and managing the build-up of some 850,000 tons of contaminated water used to cool and keep the reactors stable.<sup>33</sup> Meanwhile, national polls show the majority of public opinion to be against restarting the country's working reactors that were closed for safety checks after the disaster.<sup>34</sup> In spite of this, the restarting of nuclear reactors commenced in the second half of 2015 amid ongoing concerns about safety risks. On 12 August 2016, a fifth reactor was brought online at Shikoku Electric Power Company's Ikata nuclear plant in earthquake-prone Ehime prefecture.<sup>35</sup> A lack of planning for a multi-hazard disaster such as seen in Fukushima and inadequate provisions for the safe evacuation of all residents in the event of such a situation were reported.<sup>36</sup> In January 2017, the city of Imari in Saga Prefecture expressed similar concerns over evacuation preparations as two reactors at the Genkai plant, run by Kyushu Electric Power Company and located within 30 kilometres of the city, passed a key state safety assessment.<sup>37</sup>

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## Displacement patterns and trends

### The scale of displacement and uncertain numbers

The Japan Reconstruction Agency (JRA), a cabinet-level body created following the disaster to coordinate recovery efforts through to 2021, estimates a peak number of “more than 470,000” people evacuated or otherwise displaced in areas variously affected by this multi-hazard disaster.<sup>38</sup> However, regular JRA situation reports on evacuees up to one year after the disaster did not reflect this reported peak figure. Instead, they show a peak figure of some 344,000 evacuees one year after the disaster's onset. This discrepancy points to uncertainty around evacuee figures reported during the earlier phases of the disaster in particular. Reasons for this may include changes made to data collection, recording and methodology

at the local to national level by different agencies, such as the counting of people displaced to areas both within and outside their home prefectures and staying in a variety of temporary shelter or transitional housing settings.

Analysis of available data reveals that the 470,000 figure may also be a significant under-estimate of the full scale of displacement. Taking peak evacuee figures reported by local government in the two worst affected prefectures alone (Miyagi and Fukushima) accounts for 485,750 evacuees. The peak evacuee figure reported by Miyagi prefecture is 320,885.<sup>39</sup>

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Fukushima prefecture reports a peak number of 164,865 residents were displaced from designated evacuation zones.<sup>40</sup> At the same time, deducting the number of direct disaster deaths in Fukushima prefecture (1,604 deaths; see table 1) from the pre-disaster number of registered residents of those municipalities that came under mandatory evacuation orders (212,753 people) suggests a higher displacement estimate for Fukushima in the region of 211,000, and this excludes so-called “voluntary evacuees”.<sup>41</sup>

The number of houses rendered uninhabitable in Fukushima as they were completely destroyed or severely damaged by tsunami or earthquake impacts, suggests displacement of some 237,000 people if the national average household size of 2.5 persons is applied. This does not account for people with undamaged houses who fled the area under evacuation orders or because they feared radiation exposure. Considering all affected prefectures, such housing destruction and severe damage data provides an estimate of up to 673,000 people displaced from their homes (see table 1).

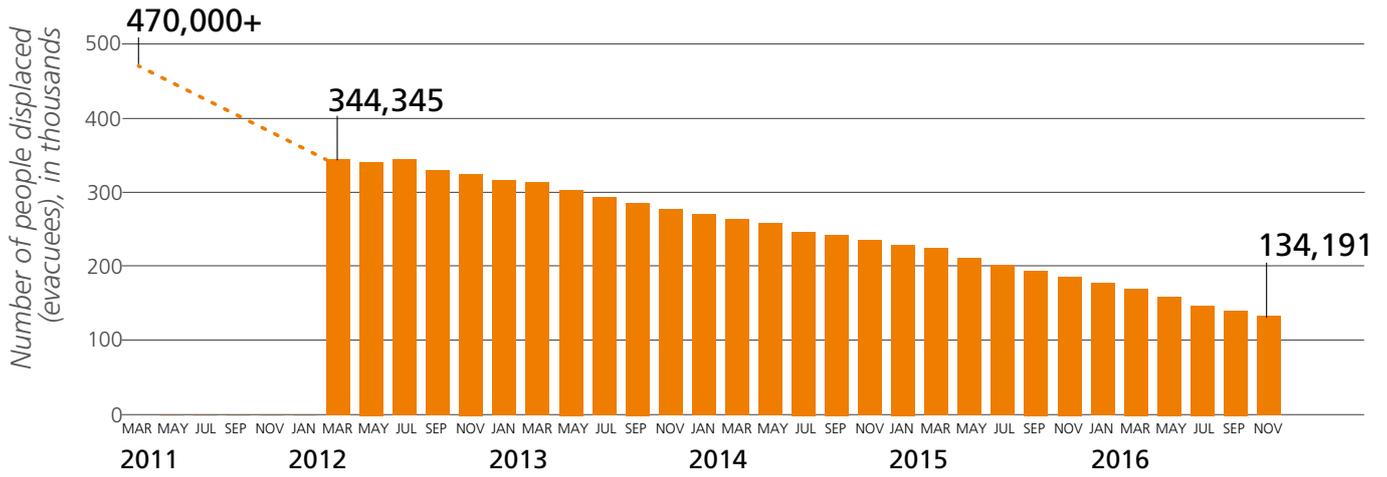
*Within eight months, most [evacuation sites] had closed or been restored to their former functions and evacuees had moved into [...]transitional accommodation, where they continued to be counted as evacuees*

Patterns of displacement vary according to the multiple and evolving impacts in different disaster-affected areas, as seen in the timing of peak displacement figures recorded at the prefectural level. The peak figure in Miyagi is recorded as of 14 March 2011, three days after the direct and initial earthquake and tsunami impacts.<sup>42</sup> The peak figure for Fukushima, on the other hand, is recorded some 14 months after the onset of the disaster, and is closely related to the revision and communication of official evacuation orders to residents in areas surrounding the crippled nuclear plant over time, as discussed in the previous section.

### The slow decline in evacuee numbers

Initially, more than 2,000 evacuation sites such as school gymnasiums and public buildings provided shelter to evacuees. Within eight months, most of these sites had closed or been

**FIGURE 1: TOTAL NUMBER OF PEOPLE DISPLACED BY THE GREAT EAST JAPAN EARTHQUAKE, MARCH 2011 TO NOVEMBER 2016**



Data source: Japan Reconstruction Agency situation reports.<sup>44</sup> Note: Monthly data not available for 2011.

restored to their former functions and evacuees had moved into different types of temporary or transitional accommodation, where they continued to be counted as evacuees.<sup>43</sup> A year after the disaster’s onset, the total number of people reported to still be living as evacuees was about three-quarters of the JRA’s reported peak figure of 470,000 (just over 344,000).

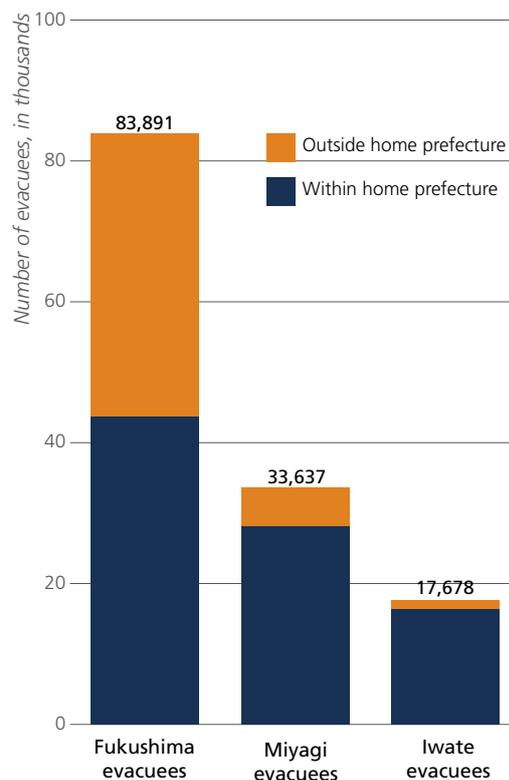
In the years following the disaster’s onset the number of evacuees has very gradually fallen by 61 per cent to just over 134,000 people as of November 2016 (see figure 1). JRA evacuee data shows the slow overall rate at which evacuees have been able to find permanent settlement solutions. While reports are not clear on the criteria being applied for removing people from the evacuee data, this appears to be linked either to the return of evacuees to their rehabilitated former homes or their relocation into new, permanent housing (see section E below).

After a substantial reduction in the peak number of evacuees in the first year of the disaster, the second year data shows a sluggish rate of improvement (-9% from March 2012 to March 2013). This rate slightly increased over the third and fourth years (to -16% and -15% respectively) and then sped up a little more from around mid-2015 (-24% from March 2015 to March 2016).<sup>45</sup> If this rate is not substantially increased, in another five years (March 2021) there will still be over 100,000 people who will have been living in displacement for 10 years. 2021 is also the final year of the Japan Reconstruction Agency’s mandate after which responsibility for maintaining national-level oversight of the recovery situation for people who may still be displaced remains unclear.

While the largest peak displacement figures were reported in Miyagi in the immediate aftermath of the disaster, over five and a half years on the highest number of remaining evacuees (some 84,000 people) are from Fukushima, where evacuation orders have yet to be lifted on significant areas around the nuclear plant. Return rates in areas where they have already been lifted have been low. Almost half of displaced Fukushima residents are staying outside their home prefecture. In contrast, most of the remaining evacuees from Miyagi and Iwate are

staying within their home prefectures (see figure 2), even where recovery continues to lag behind in some devastated areas. In the severely impacted town of Otsuchi in Iwate, for example, almost a quarter of the town’s population (3,000 people) were still living in temporary housing units five years on and only about a third of 962 planned public housing units for disaster-displaced households had been built. The remainder is expected to take another three years to complete.<sup>46</sup>

**FIGURE 2: DISASTER-DISPLACED PEOPLE (EVACUEES) FROM WORST AFFECTED PREFECTURES, AS OF NOVEMBER 2016**



Source of data: Japan Reconstruction Agency, November 2016

## Dislocated communities and households

While many members of displaced rural or small-town communities remained within the same prefectures they had been living in at the time of the disaster's onset, community ties and normal support networks were further weakened or broken for many others as they dispersed across more than 1,200 municipalities in the country's 47 prefectures, either temporarily or for the longer term.<sup>47</sup>

Official statistics show that in 2011 registered residents in the hardest hit prefectures of Fukushima, Miyagi and Iwate decreased by more than 40,000 persons for the first time since 1970.<sup>48</sup> As of July 2016, over 4,000 displaced people from Miyagi were still dispersed around the country, with the largest number staying in less affected areas of neighbouring Iwate prefecture or moving further afield to Tokyo.<sup>49</sup> Similarly, a significant proportion of Fukushima evacuees (45 per cent) were staying in areas outside their home prefecture as of May 2016, with the highest numbers reported in the neighbouring prefecture of Yamagata and Tokyo also. In contrast, evacuees who left less severely affected prefectures such as Chiba and Ibaraki were able to return early on to their former homes.<sup>50</sup>

Frequent changes in the temporary places of refuge or residence of evacuees and the separation of household members during their displacement show the instability of their situations, with effects on the structure of households along generational and gender lines.<sup>51</sup> Forty-seven per cent of Fukushima evacuees surveyed at the end of 2011 said that they had already had to move three or four times and 36 per cent five or six times.<sup>52</sup> As some radiation-affected evacuation zones were made partly accessible, evacuee families or family members split their time between living in their original residences inside the zones and outside them at their places of temporary refuge.<sup>53</sup> In many families, women with young children moved out of the prefecture, concerned about possible radiation risk, while fathers returned to work near their former areas of residence.<sup>54</sup> Older persons hoping to return to their former home areas one day have remained in temporary housing while many younger residents and families from the hardest hit areas have moved to urban centres in search of better work opportunities, access to education and housing.<sup>55</sup>

## The impacts of prolonged and protracted displacement

The recovery of evacuees stuck in prolonged and protracted displacement continues to be severely circumscribed by their situation and uncertainty about their futures. Evidence reveals profound social, physical and mental health impacts on individ-

uals, families and entire communities, and delayed economic recovery for displaced households and local areas in the worst affected prefectures.

## Physical and mental health and social well-being

Prolonged displacement has had serious consequences for the health and social well-being of evacuees<sup>56</sup>, related both to the impacts of the earthquake, tsunami and nuclear radiation accident, as well as to "fear and stigma related to the perceived risk of exposure to ionizing radiation", according to independent reports from the UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) published in 2013 and 2015.<sup>57</sup> At the same time, the reports found that no radiation-related deaths or acute diseases had been observed among the workers and general public exposed to radiation from the accident, though longer-term effects continue to be monitored.

While the evacuation of communities from areas surrounding the nuclear plant limited the direct exposure of residents and emergency workers to radiation by up to a factor of ten<sup>58</sup>, the evacuation process itself also created risks for some vulnerable evacuees, particularly older people who require special attention and care. Particular difficulties were encountered when evacuating people from hospitals and nursing homes.<sup>59</sup> A study of mortality risk among nursing home residents evacuated in Fukushima suggests that sheltering *in situ* rather than evacuation may have minimized health risks to them.<sup>60</sup>

Higher mortality among elderly adults was reported in all areas in the immediate aftermath of the disaster.<sup>61</sup> Older people have also suffered lasting impacts on their health, linked to the continual changes to diet and hygienic, medical and general care conditions for the elderly during their displacement.<sup>62</sup> The higher proportion of older people among Fukushima's evacuated survivors compared to Miyagi and Iwate prefectures may also account for a comparatively higher number of "indirect" deaths among evacuees from there.<sup>63</sup> Reported causes of indirect deaths include the physical and mental stress of being forced to move and staying long periods in collective shelters or temporary accommodation, a lack of initial care as hospital services were put out of action by the disaster, and suicides.<sup>64</sup>

The government's handling of information provision and consultations with the public has been widely criticised as having failed to ensure access to transparent and reliable information as the basis for affected populations to make informed decisions about their lives.<sup>65</sup> There is deep mistrust of official information from the government and from the nuclear plant operator, TEPCO, and this in itself has contributed to stress among the displaced population. Survey results from Fukushima Medical University published in June 2016 show that 30 per cent of evacuees from Fukushima evacuation zones

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*"Radiation stigma" [...] towards Fukushima evacuees has created additional stress [...]. Evacuee children from Fukushima experienced bullying at schools*

are still occasionally or frequently affected by anxiety about the effects of radiation.<sup>66</sup> At the same time, communication has improved in the aftermath of the disaster as lessons were learnt and some improvements made to include evacuees in decision-making about their recovery.<sup>67</sup> As the IAEA has observed in its high-level recommendations to member states, trust and engagement of the affected population is necessary for recovery to be acceptable and effective.<sup>68</sup>

Long-lasting psychological distress has been widely observed among evacuees, with impacts varying in relation to the location of affected populations and to whether or not the earthquake, tsunami and/or nuclear components of the Tohoku Disaster affected them. “Radiation stigma” and discrimination towards Fukushima evacuees has created additional stress for them. Evacuees from the Fukushima evacuation zones were refused entry to some shelters in other prefectures due to fears that they could transmit radiation to others, and were asked to present certificates of being ‘radiation free’ in order to gain entrance.<sup>69</sup> Evacuee children from Fukushima experienced bullying at schools they had moved to in other prefectures.<sup>70</sup> Research has found that evacuees from Fukushima suffered from higher rates of post-traumatic stress disorder (PTSD) and depression for a longer period of time than those affected in other prefectures.<sup>71</sup> Links have also been shown between the adoption of alcohol drinking behaviours by evacuees from Fukushima and a high increased risk of serious mental illness.<sup>72</sup>

*Many evacuees from Fukushima have felt pressured to return once evacuation orders have been lifted*

In addition to psychiatric and mental health problems, comprehensive health checks show that lifestyle-related problems among evacuees have included an increase in rates of obesity, an increased prevalence of hypertension, hepatic dysfunction and other health-related behaviours which contribute to increased risk of cardiovascular disease.<sup>73</sup> Five years later, many evacuees from both inside and outside official evacuation zones were suffering from sleeping disorders, anxiety, loneliness and depression.<sup>74</sup> Recognising these problems, government provision of medical treatment, including nursing and mental health care, as well as community-based psychosocial activities to support community building, has been increased.<sup>75</sup>

Mental health impacts are not confined to evacuees from radiation-exposed areas. A survey of residents in Miyagi and Iwate five years after the disaster found that the incidence of mental health problems was declining overall but remained above the national average. Some women still living in temporary housing complexes, however, were found to be suffering from significantly higher rates of post-traumatic stress disorder (PTSD) and insomnia.<sup>76</sup>

Physical and mental health impacts are strongly associated with the impacts of the ongoing dislocation of evacuees from close-knit communities, familiar surroundings, loss of homes and employment and the separation of families caused by their displacement. Around a third of people displaced from evacuation zones in Fukushima (34.4 per cent) surveyed by

the Fukushima Medical University in 2014 were having to live separately from their families as a result, and the number of people living alone after the disaster compared to before it had almost doubled.<sup>77</sup> Reclusive behaviour among evacuees living in temporary housing units has also been linked to their loss of employment and sense of purpose.<sup>78</sup>

As the reconstruction process slowly moves forward, residents of temporary housing units, including a disproportionate number of older persons, have been moving into more permanent public housing or into rebuilt private homes. Those left behind, however, are reported to be feeling increasingly isolated.<sup>79</sup> Isolation has contributed to a growing number of “stress-related” deaths and the phenomenon of “*kodokushi*”, or people dying in isolation and unnoticed, particularly among older people.<sup>80</sup> As of March 2014, a survey found that the number of evacuees who had died of poor health since the disaster, brought on by fatigue and stress while living in temporary housing, had risen to 3,076, around 90 per cent of whom were older people aged 66 or above.<sup>81</sup> In Fukushima, the number of these types of deaths among evacuees (2,068 as of July 2016) exceeds the number of direct deaths caused by the disaster.<sup>82</sup>

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## Employment and earnings

The recovery of livelihoods and the local economy is essential to post-disaster recovery and self-reliance among affected populations, yet is undermined by the prolongation of temporary and unstable displacement conditions. The disaster caused widespread disruption and losses to the local economy and livelihoods of the affected areas, including in the agricultural, fisheries and other industrial sectors and small local businesses. Japan’s compensation system for nuclear damage recognises such losses as damage specifically associated with evacuation or displacement, that includes falling revenue from sales and trading in directly affected areas as well as areas adjacent to evacuation zones.<sup>83</sup> Several years following the disaster, the financial circumstances of around a third of residents from the evacuation zones in Fukushima continued to be worse than “normal”, with 10.9 per cent in a “tough” situation.<sup>84</sup>

*Residents of temporary housing units [...] have been moving into more permanent [...] homes. Those left behind, however, are reported to be feeling increasingly isolated*

Recent studies of labour market outcomes in terms of the employment and earnings of evacuees displaced by this disaster using nationally representative data from the 2012 Employment Status Survey in Japan provide some further insights on economic impacts at the household level. The first study finds

that evacuation and change of residence because of this disaster were strongly associated with being jobless after leaving a job or taking a leave of absence after the earthquake.<sup>85</sup> The second suggests that evacuees who were still away or displaced had lower employment rates and earnings compared to evacuees who had returned or relocated their homes elsewhere, and to non-evacuees. The earnings of those who relocated or returned, on the other hand, were not statistically different from those of non-evacuees. The report notes that this is understandable because of the relative difficulties to be expected in securing employment while living in temporary housing or in new and unfamiliar areas.<sup>86</sup>

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## Looking ahead: obstacles to durable solutions

As the situation of people still living as evacuees shows, those who remain displaced for long periods of time while others are able to move forwards are typically those most vulnerable and without the means, capacity or support networks to forge their own paths. Their access to assistance and compensation from the government and TEPCO (now a nationalised company) together with support from local authorities and the wider community where they are displaced or intend to settle, become all the more important.

Principle 28 of the Guiding Principles on Internal Displacement recognizes that the competent authorities have “the primary duty and responsibility to establish conditions, as well as provide the means, which allow IDPs to return voluntarily, in safety and with dignity, to their homes or places of habitual residence, or to resettle voluntarily in another part of the country” (added emphasis in italics).<sup>87</sup> The rights and legitimate interests of internally displaced people (IDPs) and recognition of their diverse situations and needs should be the primary considerations guiding all policies and decisions on solutions to displacement.<sup>88</sup> This requires considering the needs of people displaced wherever they are located and wherever they were displaced from, including both within and outside officially designated evacuation zones.

## Conditions for safe, voluntary and sustainable return

Government policies for reconstruction and recovery following the disaster have focused on the restoration of ‘hometown’ areas, and with this the promotion of evacuees’ return to areas assessed as safe enough to live in. The meaning of the Japanese concept of hometown (*furusato*) carries with it the importance of both place and community to peoples’ sense of belonging, particularly in rural areas and small towns such as those worst hit by this disaster. Return-oriented policy and

assistance has prioritised physical reconstruction and decontamination of radiation affected areas. Relatively less attention has been given to fostering social networks and encouraging community-driven development options and initiatives, first and foremost through ensuring evacuees’ right to meaningful consultation and participation in the decisions affecting their futures. The lack of consultation has been widely cited as a particular weakness that has undermined progress in finding solutions that respect the dignity and rights of evacuees.<sup>89</sup>

After the passage of more than five years, the desirability and sustainability of return has become less likely, even where it is physically possible or permitted. The primary concern expressed by IDPs from Fukushima immediately following the disaster was to know when they would be able to return home. The government has invested heavily in decontamination measures in Fukushima to bring down ambient radiation levels, with the aim to lift evacuation orders in affected areas as soon as possible. Many evacuees from Fukushima continue to be concerned about radiation levels and risks to their health, however, with low levels of trust in government assurances. As the Guiding Principles on Internal Displacement state, “Under no circumstances should IDPs be encouraged or compelled to return or relocate to areas where their life, safety, liberty or health would be at risk.”<sup>90</sup> Their ability to judge that risk is dependent on improved access to trustworthy and independent information and inclusion in the decision-making processes about their futures so that their decision to return, where taken, is both well informed and voluntary.

The government’s approach has struggled to recognise and respond to evacuees’ diverse and shifting attitudes to return as time goes by. The dispersal of former communities has raised doubts among former residents as to what they will be returning to. Some worry about the lack of basic infrastructure such as schools and hospitals in their former home areas, and about becoming isolated given that few of their family members, former neighbours and friends plan to return.<sup>91</sup> This points to other impediments that include but go well beyond the mitigation or removal of immediate risks and drivers of their original displacement.

The number of people who have returned to areas where evacuation orders have been lifted since 2014 or who intend to return remains low, with older people being more likely to move back while other family members, especially those with young children, are inclined to stay away.<sup>92</sup> Only about 10 per cent of official evacuee households from four municipalities around the nuclear plant are hoping to return home, according to a 2016 annual evacuee survey conducted by the Japan Reconstruction Agency.<sup>93</sup>

Along with the need to accelerate the building of permanent housing, the importance of sustained physical and mental health support to people living in displacement, together with community building at public housing complexes, has

*After the passage of more than five years, the desirability and sustainability of return has become less likely, even where it is physically possible or permitted.*

been increasingly recognised by the government.<sup>94</sup> Efforts are also being made to improve consultation processes at the local level. The Japan Reconstruction Agency's basic concept for the reconstruction of Tohoku region says: "While housing and infrastructure is steadily in progress, revitalization of towns and villages requires recovery of people's active participation."<sup>95</sup> The draft policy on "Economic and Fiscal Management and Reform 2016" further states: "The government will provide seamless support for victims, responding carefully to their increasingly diverse needs."<sup>96</sup> Policy, plans and programming approaches will need to continue to be adjusted in order to meet those needs flexibly.

*Return-oriented policy and assistance has prioritised physical reconstruction and decontamination [...]. Relatively less attention has been given to fostering social networks and encouraging community-driven development options and initiatives*

## The right not to return

Displaced populations have the right to make an informed and voluntary decision on the settlement option they would prefer to pursue following displacement.<sup>97</sup> The different situations of evacuees were recognised in the initial approach taken by the government to estimate needs for continued public housing support, including evacuees "wanting to live there [in public housing] until evacuation orders for their home municipalities were lifted; people wanting to live there after evacuation orders for their home municipalities were lifted but until a liveable environment had been established; and people wanting to live in the housing permanently".<sup>98</sup> Policy on compensation and assistance at national and prefectural levels has changed over time and been handled differently by different prefectures, however, with eligibility conditions including return to evacuated areas, being recognised as official rather than "voluntary" evacuees, and whether they are staying within or outside home prefectures. Many evacuees from Fukushima have felt pressured to return once evacuation orders have been lifted.<sup>99</sup>

International guidance points out "no coercion must be used to induce or prevent return, local integration or settlement elsewhere in the country". Coercion includes tacit forms of coercion such as making assistance conditional on specific choices, and setting arbitrary time limits to end assistance before the minimum conditions conducive for returns, local integration or settlement elsewhere in the country are in place. With the lifting of evacuation orders, the official status of former residents of those areas changes from those forced to evacuate by the government, to those "choosing to remain in evacuation despite having the option to return". Correspondingly, the eligibility of evacuees from designated evacuation zones to receive compensation payments ends a year after the evacuation orders are lifted. Additional compensation from TEPCO of about 900,00 yen (US 7,900 dollars) is offered to those returning within a year after the lifting of the evacuation

order.<sup>100</sup> The Law on Special Measures for the Reconstruction and Revitalization of Fukushima, enacted a year after the onset of the nuclear disaster, states only "people who have been evacuated from zones under evacuation orders" and "people who have moved back to zones where evacuation orders have been lifted" are entitled to coverage under the central government's assistance measures for "ensuring stability".<sup>101</sup>

Free housing assistance that has been provided by Fukushima prefecture to "voluntary" evacuees will be cut as of March 2017 on the grounds that evacuated areas are safe and ready for return.<sup>102</sup> Half of more than 10,000 voluntary evacuee households, or some 26,000 people, currently live outside Fukushima and many do not wish to return. This is a serious concern for low income households and all those who remain dependent on this support, yet there is no unified approach across the 47 prefectures to public assistance for the evacuees and meeting this gap depends on where they live or move to.<sup>103</sup>

The durable solutions framework of the Inter-Agency Standing Committee (IASC) advises: "An IDP's choice of local integration or settlement elsewhere in the country, in the absence of the option to return, must not be regarded as a renunciation of his/her right to return should that choice later become feasible." This is particularly relevant for Fukushima evacuees who do not know whether return to their former home areas will be possible, and if so, whether return would offer safe and viable community life in future. At the same time, relatively little attention has been given to enabling evacuees to explore options to locally integrate in the areas they are displaced to or to relocate elsewhere rather than return. This is in spite of the wide dispersal of a significant portion of evacuees around the country (see section B). Assistance might include social, cultural and psychological considerations to enable participation in public affairs on an equal basis with the resident population and to address the stigma that some evacuees from the nuclear disaster-affected areas have faced.<sup>104</sup>

*Relatively little attention has been given to enabling evacuees to explore options to locally integrate in the areas they are displaced to or to relocate elsewhere rather than return*

## Uncertain timeframes and bridging long-term options

Timeframes set for reconstruction projects have tended to be unrealistic, leading to evacuees' hopes being repeatedly let down by delays to progress, such as in the case of collective relocation projects and the provision of public housing assistance. Overall, 48 out of 67 municipalities that applied for government reconstruction grants were scheduled to have completed their housing projects by the end of 2016, with the remaining 19 municipalities aiming for completion by the end of 2018.

As of August 2016, government plans for 30,000 public housing units to be built within the disaster-affected municipalities were 66 per cent complete with most of the remainder (97

per cent or 28,000 units) scheduled for completion by March 2018.<sup>105</sup> The provision of public housing is particularly important for low-income households who are struggling to recover from the disaster and who will be most impacted by these delays. In addition, some 130,000 disaster-affected households from areas other than the Fukushima evacuation zones have received government grants to support the rebuilding of their homes.<sup>106</sup>

In some of the tsunami-hit municipalities, local governments have restricted the reconstruction of residences in designated “Disaster-vulnerable areas”, and made plans to relocate vulnerable coastal communities to higher ground or further inland. This includes complex land clearing and adjustment and the construction of new housing complexes.<sup>107</sup> Relocation schemes have suffered from numerous complications and rising costs. In addition to technical issues and land scarcity,<sup>108</sup> municipalities have also faced difficulties building consensus on the plans in the communities concerned. Some residents, such as those who had previously worked in the fisheries industry, were unwilling to resettle away from the coast, while others felt too traumatized to remain in their former home areas.<sup>109</sup> Support to individual options for adults with valid reasons for wanting different solutions to their family or community were lacking<sup>110</sup> and contrary to objectives to preserve social cohesion, many such schemes ended up leaving the local population divided. As of August 2016, planned relocation schemes including the planned provision of 20,000 homes were only about 50 per cent complete.<sup>111</sup>

Some households who initially opted to relocate have changed their minds as the timeframe for the process lengthened and costs increased.<sup>112</sup> While some have been staying in temporary rental accommodation provided by the government, others able to afford it, especially younger families, looked to rebuild their lives elsewhere, drawn to the convenience and opportunities in urban areas and leaving a higher proportion of older people and low-income families behind.<sup>113</sup> These issues raise a question as to whether relocation to these new sites will provide the basis for sustainable communities to develop. Meanwhile, according to government estimates, about 69 per cent will be completed by March 2017, 91 per cent (18,000 home units) by March 2018, with full completion foreseen by March 2019.<sup>114</sup>

In Fukushima, government plans are for all evacuation orders to be lifted by March 2017, except for “difficult-to-return” zones where radiation levels remain high. This will remove the official impediment to return for around 46,000 evacuees. The “difficult-to-return” zones cover 337 square kilometres and were home to about 24,000 residents before the disaster. For those displaced residents, the timeframes or future of these areas remains unclear. An official decision on whether evacuees can reasonably expect to be able to return was issued in August 2016 but continues to provide less than certain answers, saying that in approximately five years, depending

on radiation levels in the different municipalities, evacuation orders may be lifted.<sup>115</sup>

Long completion timeframes are still foreseeable for many evacuees requiring different settlement options including collective relocations, large-scale public housing construction, and the decontamination of evacuation zones. For the latter, relatively little has been done to provide evacuees with medium to long-term housing options for the still uncertain interim period while protecting their option to eventually return should that become possible and desired. Only a small proportion of the temporary housing units provided to evacuees have included better quality transitional housing, which might help to bridge and mitigate the effects of delays and uncertainty while enabling people to focus on rebuilding their lives where they are. It has been suggested that such structures, made using local builders and wooden structures, could also be relocated or adapted for permanent use elsewhere.<sup>116</sup>

*Long completion timeframes are still foreseeable for many evacuees requiring different settlement options including collective relocations, large-scale public housing construction, and the decontamination of evacuation zones*

## Conclusion

Japan’s experience provides a strong example of prolonged and protracted displacement in post-disaster contexts. It shows how the obstacles and delays to durable solutions can be great, even where national capacity and resources are relatively very high. Almost six years on, the prolonged uncertainty and slow progress for people still displaced across multiple prefectures has had profound and debilitating socio-economic and psychological consequences. This case highlights lessons that are likely to have relevance across diverse disaster contexts worldwide, including the importance of:

- clear, comparable and accessible displacement data and analysis to inform local to national policy and responses within, between and beyond the disaster-affected areas over time;
- “soft” protection and support measures that boost mental, physical and socio-economic resilience during displacement in complement to “hard” investments in infrastructure reconstruction and environmental remediation;
- early prioritisation of the particular needs of vulnerable people, including older persons; and
- ensuring that displaced people themselves are closely engaged from the beginning in identifying and developing solutions to their displacement.

Each year that evacuees remain unable to put their displacement behind them and fully invest in establishing new lives represents a serious loss to themselves, their families and to the wider community or society from which they are effec-

*Timeframes set for reconstruction projects have tended to be unrealistic, leading to evacuees’ hopes being repeatedly let down by delays*

tively marginalised. Meanwhile, the political fallout from this disaster across government, regulatory bodies, energy sector corporations, and the Japanese public continues to shake the country, as attention to the on-going displacement situation and the overriding responsibility of government to prioritise public safety over other interests is called by evacuees themselves, the public media, NGOs, independent researchers and local authorities.

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Cover photo: Residents of the Minamiyanome temporary housing compound are mainly older people and people with disabilities who were displaced from their homes because of radiation or because their houses had been destroyed. Photo: IFRC / Hler Gudjonsson, February 2016

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