

# POPULATION DISPLACEMENT

Displacement in the aftermath of nuclear weapon detonation events

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- One of the most significant and immediate consequences of a nuclear weapon detonation event in a populated area will be the mass displacement of people.
- These displaced people will urgently need shelter, uncontaminated food and water, adequate yet specialized healthcare, as well as protection from violence, abuse, and discrimination, both in the short term and, for many, in the longer-term too.
- Meeting these needs, while maintaining on-going humanitarian operations throughout the world, would pose a fundamental challenge for global humanitarian response, with potentially catastrophic consequences.

## Introduction

The detonation of even one nuclear weapon in a highly populated area such as a city is likely to cause human harm on a large scale. Beyond the instantaneous death and injury caused, one of the most significant and immediate costs and sources of lasting disruption from a nuclear weapon detonation will be, as a recent UNIDIR study described, ‘the displacement of people from their homes and communities, with all of its downstream consequences in terms of human misery and economic loss.’<sup>1</sup>

This paper explores the displacement dimension in more detail. It begins with some reflections on displacement patterns in the aftermath of a nuclear weapon detonation in a populated area. It then examines what displacement would mean in

practical terms for those affected (see Box 1). The paper ends on a note of caution: the international humanitarian community, composed of various United Nations entities and other international and national non-governmental organizations, is already overstretched trying to meet the needs of millions of people who have fled conflict and disaster throughout the world. A nuclear weapon detonation in a populated area would add significantly to the existing humanitarian caseload, with potentially catastrophic consequences for helping the victims, but also for assisting those people already in need of or already receiving displacement assistance in other contexts. Multiple detonations in populated areas would be even more overwhelming for displacement response.

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## Displacement patterns after a nuclear weapon detonation event

Displacement patterns in the aftermath of a nuclear weapon detonation event would bear some similarity to those seen in the context of armed conflict or natural and human-made disasters. But there would be some important differences too, not least that the detonation of a nuclear weapon in one or more populated areas could cause population displacement from areas far away from 'ground zero' due to radioactive contamination. The more widespread the displacement, the more challenging it becomes to provide humanitarian assistance and protection to those displaced.

In the immediate term, one would expect to see the spontaneous and, therefore, probably largely unplanned movement of people from the affected town or city into the surrounding countryside and to nearby towns and villages.<sup>3</sup> Disruptions to transport and road infrastructure in the aftermath of a nuclear weapon detonation event, for instance from debris, mean that even in societies in which many people have access to automobiles,

people may be reduced to moving on foot.<sup>4</sup> Given the spontaneity of the movement, people are likely to flee with few if any possessions. Some will seek safety with friends or relatives while others will find shelter in public or

### BOX 1

#### WHAT IS DISPLACEMENT?

Generally speaking, displacement is being forced or obliged to flee or leave one's home or place of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters.<sup>2</sup> It may occur within or across national borders. Displacement should not be understood solely in terms of the movement of people from one place to another but in terms of what happens to those people during and after flight. Understanding the humanitarian impact of a nuclear weapon detonation event entails understanding what displacement would mean for those affected.



Mentao refugee camp in Burkina Faso, where 30,000 people were reported to have been displaced by the combat in 2012. This was in addition to 345,000 Malians already displaced over the previous year (Photo: Pablo Tosco/Oxfam).

disused buildings. If adequate humanitarian assistance is not provided quickly by national or international actors, or is simply unavailable, those displaced would be compelled to move on as local resources become depleted.

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If the detonation takes place near an international border, it can be expected that people would seek safety and assistance in neighbouring states to the extent that they can. Neighbouring states may respond to this—or the occurrence of the nuclear weapon detonation event itself—by closing border crossings, as well as ports and airports, although the atmospheric effects of the detonation event could already have seriously disrupted air travel. Authorities in neighbouring states may have genuine concerns at the prospect of such an influx and the strain this would place on their own resources, in addition to public health and public order concerns.

The spread of radioactive fallout would be a significant factor influencing displacement patterns and any humanitarian response. Prevailing winds will carry radioactive fallout beyond the area immediately affected by the blast, which may necessitate or prompt the displacement of people from those areas including, possibly, in countries neighbouring the state in which the nuclear weapon detonation or detonations occurred. Windborne fallout will affect access to affected populations by humanitarian workers who would need to avoid contaminated areas while trying to reach people in need of assistance. It would require locating displacement sites outside contaminated areas and the regular monitoring of radiation levels.

Fears about the effects of radiation will also likely prompt displacement. As UNIDIR's study observed, '[f]ear of radiation should not be underestimated as a driver for people to take flight from their home locales, even if in reality the effects happen to be slight or non-existent there.'<sup>5</sup> The invisible nature of radiation and concern about its long-term impacts on the human body may prompt some people to leave their homes and seek safety elsewhere in the country, in neighbouring

countries or even further afield. That same sense of fear could also prompt the displacement of populations in neighbouring countries.

## THE REALITY OF DISPLACEMENT

In considering the displacement impacts of nuclear weapons use, the humanitarian community can learn from experiences spanning a broad range of causes and contexts that becoming displaced is about much more than losing the roof over one's head. Whether in Afghanistan, the Central African Republic, Colombia, the Democratic Republic of Congo, Haiti, the Philippines, Somalia, Sudan, Ukraine, Yemen or elsewhere, displacement means being separated and losing your connection to your family and community. Educational opportunities are lost, along with sources of income forcing dependency on others—be it extended family members, host communities, the authorities or humanitarian organizations—for the essentials of life. For many people, displacement means a significantly increased risk of disease, discrimination, abuse and violence. These are some of the factors that make the displaced among the most vulnerable people in the world.<sup>6</sup>

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## WOMEN

Women often face particular risks of discrimination and violence in situations of displacement—and the aftermath of a nuclear weapon detonation event would not necessarily be different. Women's exacerbated vulnerability can for example be a result of unequal citizenship rights, gender-biased application of asylum laws and obstacles to registering and accessing identity documents.<sup>7</sup> Medical service delivery, including reproductive health services, often become unavailable and many displaced women lose access to family planning services, potentially exposing them to unwanted pregnancy in perilous conditions. Communal structures and justice systems might break down



and be unable to secure women's rights. The risk of gender-based violence, including sexual violence is higher for women. In addition to these general observations of how women face particular challenges and risk in situations of displacement, nuclear weapons might impact evacuated and displaced women differently than men due to gender roles, for example the psychological impact related to stress about the effects of radiation, and impact on particular cultural and indigenous rights (see the fifth paper in this series<sup>8</sup>).

## SHELTER

In terms of immediate needs, access to adequate shelter will be a critical determinant for the survival of the displaced. Shelter provides security, personal safety and protection from the climate (including fallout effects) and promotes resistance to ill health and disease. It contributes to human dignity, to sustaining family and community life (to the extent that these still exist) and enables the displaced to begin to recover from the impact of the detonation event. Meanwhile, there is more to shelter than the provision of a physical structure. It also requires the provision of basic household items that allow the displaced to prepare, cook and eat food; as well as clothing and bedding; and means of heating and ventilation.

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Just to get to shelter, people displaced from their homes by a nuclear weapon detonation event may have to traverse hazardous areas, for instance due to radioactive fallout. As in situations of armed conflict and disasters, those fleeing a nuclear weapon detonation event may find shelter in the homes of friends and relatives, in emergency shelters or camps established by the national authorities or humanitarian organizations. For some, shelter may be found in disused or public buildings such as schools. Not being designed for this purpose, these places may lack the sanitation facilities necessary to prevent the spread of disease. The occupation of schools and the strain that displaced populations place on local resources, not to mention a possible but ill-founded fear that their exposure to radiation has made them contagious in some way, could cause tensions with host communities.<sup>9</sup> Such conditions sometimes lead to vio-

lence and force the displaced to seek shelter again, undermining their access to basic assistance and other coping mechanisms.

## FOOD, WATER AND NUTRITION

In addition to shelter, displaced people will need immediate access to food and potable water that is, over the course of time, part of an adequately nutritious diet. In many conflict and disaster situations, in parts of Africa and Asia for example, the people affected are often already chronically undernourished when the situation erupts. While this might not be the case in a nuclear weapon detonation in a populated area, experience demonstrates that various factors can negatively impact the nutritional status of the displaced, including inadequate food intake, poor water, hygiene and sanitation, and insufficient access to healthcare, all of which are frequently problems in displacement situations irrespective of the cause and location. A further complication in the event of a nuclear weapon detonation would be ensuring the provision of food and water that is not contaminated by radioactive fallout. For example, ingesting foods such as milk and other dairy products and meat contaminated with Iodine-131 from fallout can cause thyroid problems (see the second paper in this series<sup>10</sup>).<sup>11</sup>

## HEALTHCARE FOR THE DISPLACED

Armed conflict and disasters always have significant impacts on the health and well-being of the displaced, and survivors of a nuclear weapon detonation would encounter many of these same problems. These impacts may be direct, such as death and injury from the blast, heat, flash and prompt radiation generated by a nuclear explosion, and from being flung about or trapped in collapsed buildings. Health impacts may also be indirect, such as increased rates of infectious diseases or malnutrition related to factors such as inadequate quantity and quality of food and water, breakdowns in sanitation, and disruption of, or reduced access to, health services in the aftermath of the event. As noted, the deterioration in living conditions such as overcrowding and inadequate shelter can also pose health threats for the displaced.

Moreover, a significant proportion of the displaced would likely have suffered burns or been exposed to radiation requiring specialist medical attention that may not be available in areas of displacement. For example, people suffering from acute radiation syndrome (ARS) may require blood transfusions,



A Red Cross volunteer comforts a survivor from hurricane Katrina in the Houston Astrodome in September 2005. Approximately 18,000 people were housed temporarily in this Red Cross shelter at the Astrodome and Reliant Center (Photo: Andrea Booher/United States Federal Emergency Management Agency).

antibiotics and the use of blood stimulating agents or even bone marrow transplants in specialized medical units.<sup>12</sup>

Even if treated, ARS sufferers among the displaced would need constant monitoring as they could easily fall sick again. As numerous studies have observed, these types of medical diagnosis and treatment are resource intensive.<sup>13</sup> Such capabilities may not be available in areas of displacement, and almost certainly not at the scale required to respond adequately relative to the number of victims.<sup>14</sup> In addition, a high degree of psychological trauma would also be expected among the displaced, which would also require specialist support.

## PROTECTING THE DISPLACED

In addition to meeting such assistance needs, displacement situations typically give rise to problems of discrimination, exploitation, abuse and violence from which displaced people must be protected. For example, unaccompanied and orphaned children will need to be identified, col-

lected and cared for and, in the case of the former, reunited with their families. Older persons, persons with disabilities, and households with only one parent or guardian may all face discrimination or otherwise have difficulty accessing assistance, including shelter, food and water, as well as healthcare. As already noted, displacement situations often give rise to high rates of sexual and gender-based violence, particularly but not only in overcrowded camps and shelters, as well as different forms of sexual exploitation and abuse such as trading sex for food and other non-monetary assistance.

## MEETING THE LONG-TERM NEEDS

Experience with other forms of disaster shows that displaced people continue to require these various forms of assistance and support for the duration of their displacement which, in the event of a nuclear weapon detonation, could be prolonged. In the aftermath of nuclear weapon detonation events, 'rebuilding of communities—if it is possible due to the extent of the immediate devastation and residual radioactivity—will be a lengthy process,

which means there will be need for provision of services such as education and temporary health infrastructure.<sup>15</sup>

Moreover, many displaced people may be unwilling to return due to such factors as trauma, fear of residual radiation and the absence of income-generating opportunities in areas of origin, and will continue to need some form of assistance pending their resettlement elsewhere. Eighteen years on from the Chernobyl nuclear accident in April 1986, 'the Chernobyl-affected areas continue to face numerous socioeconomic challenges, such as the lack of economic opportunities and stigma associated with Chernobyl.

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Young people and skilled workers tend to move away, investors shun the region, and joblessness

is high.<sup>16</sup> As UNIDIR noted, in some cases 'it will be more feasible to relocate communities or their remnants than to attempt reconstruction in their original location. Thus, the consequences of a nuclear weapon detonation event may raise [internal] migration issues as well as challenges of dealing with temporary displacement.'<sup>17</sup>

## SAFETY OF HUMANITARIAN STAFF

Meeting these various needs, particularly in the immediate term, presupposes some degree of national or international humanitarian response, raising the issue of ensuring the safety of humanitarian workers, in particular from the effects of radioactive fallout. In United Nations humanitarian agencies, their personnel are not necessarily precluded from working in an environment affected by a nuclear weapon detonation event.<sup>18</sup> However, as the UNIDIR study found, there is limited, if any, understanding among those agencies of the level of training and equipment necessary to work in such environments. Nor is there any protocol in place for making decisions about these questions.<sup>19</sup>

## Ensuring continuity of life-saving humanitarian operations elsewhere

At the end of 2013, more than 51 million people were displaced as a result of conflict and persecution.<sup>20</sup> A further 22 million people were displaced in 2013 by natural disasters.<sup>21</sup> Referring only to those displaced by conflict, the United Nations High Commissioner for Refugees, Antonio Guterres, recently stated that the international humanitarian community 'has scrambled to respond'. But with every new crisis, 'we get closer to the limits of how much we can do, and we are clearly no longer able to do enough. At the same time, drawn-out emergencies [...] and the many more "forgotten" conflicts all over the world, continue to require significant attention and resources. But we all know they are not getting sufficient amounts of either.'<sup>22</sup>

A single nuclear weapon detonation in a populated area would probably add significantly to the existing caseload of displaced people receiving assistance and protection from humanitarian organizations. Multiple detonations, as in a nuclear conflict, would overwhelm it entirely, and immediately. The consequences of this for global humanitarian response, and for all those people already receiving and in need of life-saving protection and assistance, are likely to be catastrophic, something that experts from the International Committee of the Red Cross have recognized in their own efforts to understand the challenges of nuclear weapon detonation events.<sup>23</sup>

## Conclusion: prevention is key

Providing the necessary assistance and protection to people displaced by a nuclear weapon detonation in a populated area, whether delivered by

national or international humanitarian actors, would be a monumental task even if capabilities and well-rehearsed plans for such response ex-



isted. In the international context, however, it was recently found that the ‘current level of awareness within the humanitarian system is generally low about the specificities of nuclear weapon detonation events or its ability to respond to them.’<sup>24</sup> This

underlines the importance of preventing such a situation from arising in the first place, preferably through effective measures to ensure that nuclear weapons can never be detonated in populated areas.

## Endnotes

- 1 J. Borrie and T. Caughley, *An Illusion of Safety: Challenges of Nuclear Weapon Detonations for United Nations Humanitarian Coordination and Response*, UNIDIR, 2014, p. 32.
- 2 Drawing on the description of ‘internally displaced persons’ in the United Nations Guiding Principles on Internal Displacement, contained in the Report of the Representative of the Secretary-General, Mr. Francis M. Deng, submitted pursuant to Commission resolution 1997/39, Guiding Principles on Internal Displacement, document E/CN.4/1998/53/Add.2, 1998.
- 3 For instance, see I. Redlener, D.M. Abramson and D. Culp, ‘Day 30: The impact of mass evacuations on host communities following nuclear terrorism’, *Institute of Medicine of the National Academies*, 2013: <http://www.iom.edu/~media/Files/Activity%20Files/PublicHealth/MedPrep/2013-JAN-23/Impact%20of%20Mass%20Evacuations%20on%20Host%20Communities%20Following%20Nuclear%20Terrorism.pdf#!>.
- 4 Borrie and Caughley, p. 36.
- 5 Ibid, p. 44.
- 6 OCHA, *Internal Displacement—Being an IDP*: <http://www.unocha.org/what-we-do/advocacy/thematic-campaigns/internal-displacement/being-an-idp>.
- 7 United Nations Security Council Resolution S/RES/2122, 18 October 2013, preamble paragraph 6.
- 8 A.G. Dimmen, ‘Gendered impacts: the humanitarian impacts of nuclear weapons from a gender perspective’, ILPI-UNIDIR Paper no. 5, December 2014.
- 9 For instance, see I. Redlener et al, 2013.
- 10 J. Borrie, ‘A harmful legacy: the lingering humanitarian impacts of nuclear weapons testing’, ILPI-UNIDIR Paper no. 2, December 2014.
- 11 See, for instance, S.L. Simon, A. Bouville and C.E. Land, ‘Fallout from nuclear weapons tests and cancer risks’, *American Scientist*, no. 94, 2006, pp. 48-57, p. 49: [www.cancer.gov/cancertopics/causes/i13l/Fallout-PDF](http://www.cancer.gov/cancertopics/causes/i13l/Fallout-PDF).
- 12 Borrie and Caughley, p. 24, Box 2.
- 13 See, for instance, R. Casagrande et al., ‘Using the model of resource and time-based triage (MORTT) to guide scarce resource allocation in the aftermath of a nuclear detonation, *Disaster Medicine and Public Health Preparedness*, vol. 5 supplement 1, 2011; Center for Disease Control and Prevention, *Acute Radiation Syndrome (ARS): A Fact Sheet for the Public*, [www.bt.cdc.gov/radiation/ars.asp](http://www.bt.cdc.gov/radiation/ars.asp); and I. Helfand et al., *The US and Nuclear Terrorism: Still Dangerously Unprepared*, Physicians for Social Responsibility, 2006, p. 23.
- 14 M. Meit, I. Redlener, T.W. Briggs, M. Kwanisai, D. Culp and D.M. Abramson, ‘Rural and suburban population surge following detonation of an improvised nuclear device: a new model to estimate impact’, *Disaster Medicine and Public Health Preparedness*, no. 5, 2011, S143–S150, S148.
- 15 Borrie and Caughley, p. 32.
- 16 United Nations Secretary-General, *Report on optimizing the international effort to study, mitigate and minimize the consequences of the Chernobyl disaster*, document A/68/498, 2013, paragraph 4.
- 17 Borrie and Caughley, p. 77
- 18 Ibid, p.59, Box 8.
- 19 Ibid, p. 73.
- 20 Figures contained in the opening remarks of Antonio Guterres at the 65th session of the Executive Committee of the High Commissioner’s Programme in Geneva, 30 September 2014: <http://www.unhcr.org/542a6e6e9.html>.
- 21 Internal Displacement Monitoring Centre, *Global Estimates 2014: People Displaced by Disasters*, September 2014.
- 22 Guterres.
- 23 See D. Loye and R. M. Coupland, ‘Who will assist the victims of use of radiological, biological or chemical weapons—and how?’, *International Review of the Red Cross*, vol. 89, no. 866, 2007, pp.329-44.
- 24 Borrie and Caughley, p. 77.

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