

# HUMANITARIAN IMPACT OF NUCLEAR WEAPONS





# OSLO, JULY 2013

## **COVER ILLUSTRATION**

An allied correspondent stands in the rubble in front of a building that once was a movie theater in Hiroshima, Japan, a month after the first atomic bomb ever used in warfare was dropped by the U.S. on Aug. 6, 1945. Photo: Stanley Troutman/Associated Press.

## **REPORT BY**

Stein-Ivar Lothe Eide, Torbjørn Graff Hugo and Christian Holmboe Ruge.

With special thanks to Helle Winge Laursen, Paul D. Beaumont, Thomas Nash and John Borrie for comments on draft versions of this report.

## **ABOUT THE INTERNATIONAL LAW AND POLICY INSTITUTE**

The International Law and Policy Institute is an independent institute focusing on good governance, peace and conflict, and international law. Our approach to solving global challenges is based on the integration of law and social sciences, and on bridging the gap between academia and politics. We provide research, analysis, process support and training to clients ranging from private companies and institutions to governments and international organisations.

This report was commissioned and funded by the Norwegian Ministry of Foreign Affairs. For any corrections or clarifications, please contact [info@ilpi.org](mailto:info@ilpi.org).



*“The risk of a nuclear weapons detonation is arguably greater today than it was at the height of the Cold War.”*

## FOREWORD

The risk of a nuclear weapons detonation is arguably greater today than it was at the height of the Cold War. While there are fewer nuclear weapons today than during the Cold War, the number of states which possess them has increased. Since more actors are involved, there is greater potential for mishap or misunderstanding, and greater risk that a weapon could be detonated, either intentionally or accidentally. We also know that proliferation leads to further proliferation, with the result that even more states, non-state actors and networks may today be trying to acquire nuclear weapons.

Against this backdrop, it is legitimate for anyone living on our planet to ask: what would the consequences be for human beings, our societies and the environment should these weapons ever be used again? And just as importantly, could we cope with the consequences, and if so, how?

On 4–5 March 2013, Norway organised a conference in Oslo to explore these questions. The aim of the conference was to facilitate a facts-based and open discussion about nuclear weapons detonations, their humanitarian consequences, and our ability to offer sufficient and timely assistance to affected populations. 128 states, the ICRC, several UN humanitarian organisations, and a large number of civil society representatives participated in the discussions.

The conference was a reminder that nuclear weapons represent a profound humanitarian challenge for us all. They have the potential to affect all states, directly or indirectly. We are all stakeholders. At present, no state or international body would be able to adequately address the humanitarian emergency caused by a nuclear weapon detonation. Due to the characteristics of nuclear weapons, it may not even be possible to develop the capability to ad-

dress a humanitarian emergency of this kind.

With a view to disseminating the knowledge presented at the conference in Oslo, the Ministry of Foreign Affairs commissioned the International Law and Policy Institute (ILPI) to prepare this report. The report presents some of the humanitarian consequences that can be expected from any use of nuclear weapons, based on the conference’s findings, and explains why the world’s ability to assist those affected by a nuclear detonation is likely to be inadequate.

It is not only our moral duty to do our utmost to prevent a potential nuclear catastrophe. It is also clearly in our best interest. It is therefore my hope that the knowledge presented in this report will inspire further critical and constructive discussions on how the issue of nuclear weapons in international relations can be addressed.

Espen Barth Eide  
Oslo, July 2013



# INTRODUCTION

The detonation of a nuclear weapon would have serious immediate and longer-term consequences for people, society and the environment. While the full extent of these consequences depends on several factors, including the size, number, height and location of the explosion(s), it is possible to make some general predictions on the basis of past experience and accumulated knowledge. The main features of these weapons – their design, the physics and the engineering – are well known, as is their destructive potential.

Drawing on presentations made at the Conference on the Humanitarian Impact of Nuclear Weapons, organised by the Government of Norway in Oslo from 4 – 5 March 2013, this booklet presents some of the consequences that the detonation of a nuclear weapon would have. The purpose of this publication is to summarise and disseminate the insights presented to the Conference in Oslo.<sup>1</sup>



A Soviet SS-20 IRBM, on display near the Great Patriotic War Museum, Kiev. Photo: David Holt (Creative Commons)



# ABOUT NUCLEAR WEAPONS

The detonation of a nuclear weapon releases enormous amounts of energy. Most of this energy comes in the form of blast (50%) and heat (35%). Together these effects cause immense physical destruction. In addition, the detonation of a nuclear weapon generates large amounts of radiation. This makes up the remaining 15% of the energy, with 5% as initial ionizing radiation, and 10% as residual nuclear radiation in what is often referred to as the fallout.<sup>2</sup>

*“Remember, the big thing is the blast and the heat”*  
— *Dr. Patricia Lewis, Research Director, Chatham House*

At all times, nearly 2000 warheads are kept on high alert, and capable of being launched within few minutes or hours.

## ESTIMATED NUCLEAR INVENTORIES



United States	8,000	India	80-100
Russia	10,000	Pakistan	90-110
United Kingdom	225	Israel	80
France	300	North Korea	Unclear
China	240		

Source: Stockholm International Peace Research Institute

## WORLD NUCLEAR FORCES

The exact number of nuclear weapons in existence is unknown. In January 2012 the Stockholm International Peace Research Institute (SIPRI) estimated the total number of nuclear weapons in the world to be around 19,000 warheads. Some 4,400 are operational, whereas the remainder are either in active or inactive storage, or are scheduled for dismantlement.<sup>3</sup>

## A HISTORY OF NEAR MISSES

With thousands of nuclear weapons on operational alert status, there is considerable scope for accidental detonation, unauthorised use or misinterpretations that could trigger nuclear retaliation. Indeed, there are numerous accounts of near misses in the past. The following examples are among the incidents most often cited:

- On October 28, 1962, the North American Air Defense Command (NORAD) was informed

that a nuclear-armed missile had been launched from Cuba, heading towards Tampa, Florida. The expected detonation did not take place, but only later was it revealed that “a test tape simulating an attack from Cuba” had confused the control room officers.<sup>4</sup>

- In 1983, the Soviet Union reportedly interpreted the NATO exercise Able Archer as a ruse of war, concealing preparations for a genuine nuclear first strike. In response, the Soviet Union pre-

pared their nuclear forces for retaliation.<sup>5</sup>

- On January 25, 1995, the launching of a rocket for research purposes from the island of Andøya, Norway, was interpreted by Russia as a possible nuclear attack. During the incident the Russian nuclear forces were put on high alert, and the Russian “nuclear briefcase” was activated, for the first time in history.<sup>6</sup>



# IMMEDIATE HUMANITARIAN CONSEQUENCES

The detonation of a nuclear weapon would have serious immediate humanitarian consequences. Depending on the size and location of the detonation, tens or even hundreds of thousands of people could be killed or seriously injured.<sup>7</sup>

## BLAST

The intense blast caused by the detonation of a nuclear weapon would flatten buildings and instantaneously kill people within a large area.<sup>8</sup> For any person within several kilometres from ground zero, severe risks would be associated with the shock wave, falling buildings, shattered glass and other potentially lethal flying objects. After the nuclear bombing of Hiroshima, displaced roof tiles were found as far as 8 km from ground zero.<sup>9</sup>

## HEAT AND FIRE

The fireball generated by the detonation of a nuclear weapon reaches several million degrees Celsius at the centre. No one at or around ground zero would survive this heat. Depending on the explosive yield of the warhead, the ensuing flash of heat radiation could cause

severe burns and flash blindness as far as 20 kilometres from ground zero.<sup>10</sup> Houses, forests and other flammable objects in a potentially much larger area are likely to catch fire, with the blast wave from the explosion feeding a deadly firestorm. A very large number of people would, as a consequence, be expected to require immediate treatment for serious burns.<sup>11</sup>

## RADIATION

Initial radiation would constitute approximately 5% of the energy released. Exposure to large external doses of x-rays, gamma rays and neutrons may be lethal, with death occurring within days or weeks. In the immediate term, radiation exposure causes suppression of the immune system and decreasing resistance to infection. It may also lead to the destruction of the bone marrow, and gastrointestinal, cardiovascular and central nervous system damage.<sup>12</sup>

In addition to the immediate radiation, radioactive fallout is likely to affect a large area. In the case of a ground-burst detonation, debris

will be drawn into the fireball and spread in a cigar-shaped area down-wind. People living in or around this area may be exposed to deadly doses of radiation.<sup>13</sup>

## PSYCHO-SOCIAL IMPACT

The detonation of a nuclear weapon would have a profound psychological impact on those in and around affected areas. Survivors will have experienced a deeply traumatising event that could include the loss of loved ones, a prolonged period of uncertainty over the state of their own health, and profound feelings of abandonment.<sup>14</sup> One lasting legacy of the nuclear attack on Nagasaki was a heightened incidence rate of post-traumatic stress disorder (PTSD) and depression in areas close to ground zero.<sup>15</sup>

People exposed to nuclear radiation in Kazakhstan have exhibited similar symptoms, with some studies indicating that the suicide rate in areas near the Semipalatinsk nuclear test site is more than four times higher than the national average.<sup>16</sup>

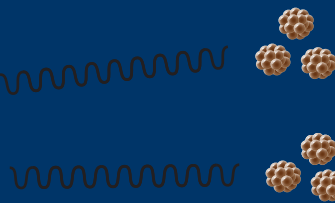
## THE CHRONOLOGY OF A NUCLEAR WEAPON DETONATION

**1**



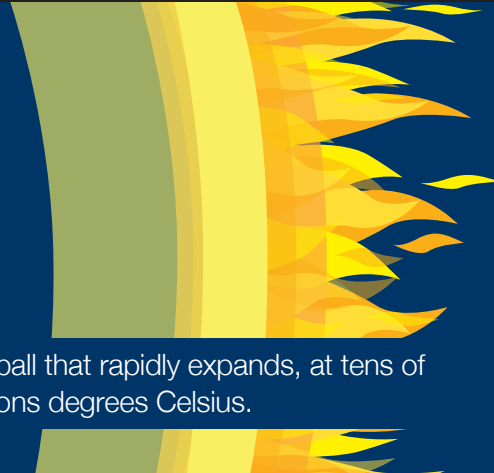
Immediate flash of light

**2**



Prompt radiation (neutrons and gammas)

**3**



Fireball that rapidly expands, at tens of millions degrees Celsius.

*“In our view, no informed political or legal position on these weapons can be adopted without a detailed grasp of the immediate consequences of these weapons on human beings and on medical and other infrastructure.”*

— Peter Maurer, President of the International Committee of the Red Cross

## DAMAGE TO THE INFRASTRUCTURE

Serious damage to critical infrastructure would further exacerbate the humanitarian consequences of a nuclear weapon detonation. An event of the magnitude caused by the detonation of a nuclear weapon would pose extraordinary challenges for any well-stocked, fully-operational health system. It is clear, however, that the detonation of a nuclear weapon could not be expected to leave hospitals, doctors, nurses and medical stockpiles untouched. Indeed, any scenario involving the detonation of a nuclear weapon over a city centre would likely result in the devastation of that city’s health services:

- Hospital buildings located in the city centre would suffer immense damage, and could be rendered completely unusable for the indefinite future.
- Medical personnel are just as likely as anyone else to be among the victims, and those not injured might not return to work due to risks associ-



**NAGASAKI**

Photo: Corbis (Scanpix)

On August 9, 1945 the United States dropped a nuclear bomb on the Japanese city of Nagasaki. This was the second and last time to date that a nuclear weapon has been detonated in war. It is estimated that approximately 75,000 people died from the immediate effects of the bomb.<sup>18</sup> In addition, long-lasting consequences have been observed among survivors and their offspring. Instances of microcephaly and a higher incidence rate of leukemia and cancer among atomic bomb survivors have all been linked to radiation.<sup>19</sup>

ated with radiation or because of disruption to transportation networks and other intervening infrastructure. Those medical institutions still functional would, as a consequence, likely be seriously understaffed.<sup>17</sup>

- Damage to roads, the electrical grid, communication networks

and supply chains, as well as contamination of water supplies, food and other necessary items would make it difficult to sustain any activity in affected areas, not least medical assistance to thousands or millions of injured people.



4

Thermal pulse that causes instantaneous fires



5

Pressure wave that increases the fires and causes considerable blast damage



6

Fall-out (Iodine 131, Strontium 90 and Cesium 137)

# LONG-TERM HUMANITARIAN CONSEQUENCES

The full social and economic impact of a nuclear weapon detonation is difficult to gauge, as many different scenarios are conceivable. There is, moreover, a limit to the extent to which historical experience is instructive for understanding the full, global consequences of a nuclear weapon detonation today. Our contemporary world is far more integrated and interdependent than it was in 1945, or even during the Cold War.

## THREAT TO FOOD SAFETY

The detonation of a nuclear weapon would jeopardise local and global food safety. Radioactive fallout could make large areas unsuitable for food production for a very long time. Depending on the explosive yield of the warhead,

the location of the explosion and other conditions specific to the incident, radioactive fallout might affect several countries, or even whole regions.<sup>20</sup> For any country or region that experiences the detonation of a nuclear weapon, an immediate, and possibly lasting, need for greater food imports is therefore a likely outcome. This could increase national, regional and even global food prices. For the poor and those already suffering from chronic malnutrition this could have very serious consequences, since these people are closest to the breadline, and are highly vulnerable to increases in food prices.<sup>21</sup>

## DISPLACEMENT

Those living in an area struck by a nuclear weapon would face the

risk of radiation, as well as significant infrastructural damage. This would likely lead to the immediate abandonment of the affected area, with survivors migrating to safer places.<sup>22</sup> In the longer term, lingering questions over radiation risk and a lack of infrastructure could persist and inhibit the return of former inhabitants, who may instead become permanently displaced.

## ECONOMIC DISRUPTION

The detonation of a nuclear weapon could destroy productive capacities, as well as the infrastructure and communication networks that enable modern commerce. The resumption of economic activity in the affected areas would be a slow and expensive endeavour. By comparison, almost thirty years after the accident at the Chernobyl nuclear plant, the affected areas still experience higher levels of poverty than neighbouring regions in Ukraine, Russia and Belarus.<sup>23</sup>

At a time when global markets are deeply integrated, any event that disrupts economic activity in one country could also have global ramifications. The events of September 11 2001, for example, sent reverberations throughout international markets, causing the London Stock Exchange to fall by 5.7%, its biggest drop in a single day since 1987.<sup>24</sup> The destruction, disruptions and fear resulting from the detonation of a nuclear weapon in any large city would cause similar, though probably much more severe, financial chaos.



Until 1989 the Soviet Union detonated 456 nuclear bombs at the Semipalatinsk test site in Kazakhstan. These tests resulted in thousands of victims. The man in the photo, Berik (27), was born blind and disfigured after the mother (right) was exposed to large doses of radiation. Photo: John Van Hasselt (Corbis/Scanpix)



*“The contamination created by radiation will impact not only those living now, but also future generations. There are no technologies capable of effectively cleaning up radiation”*

*— Dr. Kumi Naidoo, International Executive Director, Greenpeace*



## SEMIPALATINSK



Bunkers that housed measuring devices and instruments near Ground Zero at the Semipalatinsk Test Site in Kazakhstan. Even today, more than 20 years after the last test was conducted, vast areas remain uninhabitable and unsuitable for productive use. Photo: John Van (Scanpix)

From 1949 until 1989 the Soviet Union tested at least 456 nuclear weapons at the Semipalatinsk test site in Eastern Kazakhstan. At least 120 of these were detonated in the atmosphere, prior to the adoption in 1963 of the Partial Test Ban Treaty, which prohibited such tests.<sup>27</sup> More than 20 years after the Semipalatinsk test site was closed vast areas remain unsuitable for habitation

or productive use. According to Kazakh authorities, some 1.5 million people have been negatively affected by the nuclear weapons testing. Of these, 194,000 are officially registered as victims – with the majority being children and grandchildren of the people originally exposed to radioactive fallout.<sup>28</sup> Many victims suffer from birth defects, and some studies have shown that the cancer rate

in Eastern Kazakhstan is 25-30% higher than anywhere else in the country.<sup>29</sup>

Social and economic hardship is another legacy of nuclear weapons in Kazakhstan. According to the UNDP it affects the majority of people living in contaminated areas.<sup>30</sup> Economic growth is hampered by scarce investment and lack of infrastructure.

## ENVIRONMENTAL DAMAGE

The detonation of a nuclear weapon would result in widespread radioactive contamination, which in turn could render many sources of food and water useless. Although the extent of the contamination would depend on a number of topographic and meteorologi-

cal conditions, it is clear that any clean-up process would be very expensive, and possibly not even feasible.<sup>25</sup>

The soot generated by a nuclear weapon detonation could moreover have dangerous implications for global climate. Research has shown that in scenarios where sev-

eral nuclear weapons are involved, a sufficient amount of soot could be lifted up into the atmosphere to cause large reductions in surface temperatures. This could have devastating consequences for global production of staple crops such as rice and maize, on which millions of people depend.<sup>26</sup>

# PREPAREDNESS AND RESPONSE

The International Committee of the Red Cross (ICRC) has concluded that “effective means of assisting a substantial portion of survivors of a nuclear detonation, while adequately protecting those delivering assistance, is not currently available at national level and not feasible at international level.”<sup>31</sup> This reflects the view that unique challenges would arise from the detonation of a nuclear weapon.

## OVERWHELMING NEEDS

The sheer magnitude of the destruction and the number of victims represent the biggest challenges confronting those expected to provide humanitar-

ian assistance in the event of a nuclear weapon detonation. Providing adequate, timely and appropriate assistance to hundreds of thousands or even millions of people would require enormous amounts of manpower, material resources and logistic capacity.

The ICRC considers that no organisation on its own possesses sufficient resources to ensure an effective response to such a humanitarian crisis, and that it would necessitate cooperation among multiple actors. Such cooperation is presently complicated by the lack of a common understanding of what would be needed to address the humani-

tarian consequences of a nuclear weapon detonation.<sup>32</sup>

## EXTREME LOGISTIC CHALLENGES

In order to provide relevant assistance, humanitarian organisations would have to be present on the ground immediately after the detonation of a nuclear weapon. Dangerous radiation may however preclude this, as these organisations would have to balance the requirements of their humanitarian mission against the risks they are exposing their own personnel to.

The deployment of external resources would also require dependable transport and other logistic capacities. Whether this would be forthcoming in the event of a nuclear weapon detonation is an open question. Another question is whether states

*“Probably the first decision by humanitarian organisations following a nuclear weapon detonation would be evacuation”*

— *António Guterres, UN High Commissioner for Refugees*



US Navy personnel decontaminate an initial entry team from the Fire and Emergency Services during a full-scale exercise on Naval Air Station Whidbey Island. Photo: Tucker M. Yates (US Navy)



would allow passage for military assets intended for assistance purposes.<sup>33</sup>

### **LIMITED REMAINING NATIONAL CAPACITY**

Existing international humanitarian assistance capacities are geared towards assisting national authorities.<sup>34</sup> The adequacy and appropriateness of assistance given to survivors of a nuclear weapon detonation would largely depend on the extent to which national authorities are able to respond.

Depending on the circumstances, the detonation of a nuclear weapon could severely undermine the ability of national authorities to operate. Critical staff might be dead, injured or otherwise incapacitated due to the detonation. Additionally, infrastructure required for communi-

*“If we cannot respond effectively – and our assessment to date is that we cannot – then it underlines our common responsibility to do everything we can to prevent the use of these weapons.”*

*— Rashid Khalikov, Director, UN Office for the Coordination of Humanitarian Affairs (OCHA) in Geneva*

cation and coordination could be destroyed, and the emergence of fear about radiation or further nuclear weapon detonations could lead to absenteeism. In any such case, those parts of national authorities still operating are likely to be overwhelmed by the urgent needs of their populations.

### **EXTRAORDINARY CIRCUMSTANCES**

Emergency planning for an event involving the detonation of a nuclear weapon is further complicated by the possibility that it may take place in the context

of an on-going armed conflict. Those expected to provide humanitarian assistance under such circumstances would have to consider the possibility of further nuclear weapon strikes, or other acts of war.<sup>35</sup>

### **CONTINGENCY PLANS AT NATIONAL LEVEL**

Most countries have some contingency plans in place for dealing with nuclear and radiological incidents. Such events may include accidents at domestic or foreign nuclear facilities, as well as contingencies involving mobile sources (e.g. nuclear submarines), or release of radiation into the air or the maritime environment. Countermeasures typically include evacuation, decontamination and sheltering of affected populations, as well as early medical response and steps to secure contaminated areas.<sup>36</sup>

Such countermeasures are, however, likely to fall short of actual humanitarian needs in the event of a nuclear weapon detonation.

First of all, human, financial and material resources allocated for emergency preparedness purposes are, in most countries, limited. Few, if any, countries have capacities in place that could adequately address the humanitarian consequences of a nuclear weapon detonation in a populated area.

This lack of resources is com-

pounded by the fact that the location of a nuclear weapon detonation is not easily predictable. Unlike a nuclear power plant, a nuclear warhead is mobile. The list of possible targets or sites where an accident could take place is almost unlimited. This makes it hard to plan properly for emergency response. It could ultimately be futile and also prohibitively expensive to invest in pre-designed evacuation routes, sites for decontamination and shelters for every person that could potentially be affected.<sup>37</sup>



# REFERENCES

1. Further information about the Conference on the Humanitarian Impact of Nuclear Weapons, including expert presentations and statements by States and other stakeholders, can be found at [www.humimpact2013.no](http://www.humimpact2013.no).
2. Patricia Lewis, Nuclear Weapons: How they work and what they do (to you), Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, 4 March 2013.
3. All figures are approximate. SIPRI, World Nuclear Forces, January 2012.
4. Scott D. Sagan, The Perils of Proliferation: Organization Theory, Deterrence Theory, and the Spread of Nuclear Weapons, *International Security*, Vol. 18, No. 4, 1994, p. 96.
5. Robert Beckhusen, New Documents Reveal How a 1980s Nuclear War Scare Became a Full-Blown Crisis, *Wired*, May 16, 2013.
6. David Hoffman, Shattered Shield: Cold-War Doctrines Refuse to Die, *Washington Post*, March 15, 1995, p. A01.
7. Elin Enger and Thomas Vik estimate that within the first 24 hours, more than 100,000 people would be killed or injured should a 20 kiloton warhead be detonated in Oslo, Norway. Scenario of a Nuclear Detonation, Presentation prepared by the Norwegian Defense Research Establishment (FFI) and Norwegian People's Aid (NPA), March 4 2013.
8. Maya Brehm et. al., Banning Nuclear Weapons, Article 36, February, 2013, p. 5.
9. Yale Law School, The Avalon Project, available at: [http://avalon.law.yale.edu/20th\\_century/mp14.asp](http://avalon.law.yale.edu/20th_century/mp14.asp)
10. Scenario with a one megaton warhead detonated 2000 meter above ground. Elin Enger and Thomas Vik, Scenario of a Nuclear Detonation, Presentation prepared by the Norwegian Defense Research Establishment (FFI) and Norwegian People's Aid (NPA), March 4 2013.
11. Andy Haines, Nuclear Weapons: Catastrophic Impacts on Health, Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, March 4, 2013.
12. Ibid.
13. Elin Enger and Thomas Vik, 2013.
14. Neil Buhne, Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, March 4, 2013.
15. Sumihisa Honda "Psychological Damage Study for Survivors after a half century (1995) by WHO General Health Questionnaire", cited by Masao Tomonaga, The lifelong Health Effects of Atomic Bombs by Immediate DNA damage, Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, 4 March 2013.
16. Research cited in Jillian Keenan, Kazakhstan's Painful Nuclear Past Looms Large Over Its Energy Future, *The Atlantic*, May 13, 2013.
17. The nuclear bomb that was dropped on Hiroshima on August 9, 1945 killed or injured more than 80% of the city's medical personnel. Figures presented by Andy Haines, at the Conference on the Humanitarian Impact of Nuclear Weapons, March 4, 2013.
18. Masao Tomonaga, 2013.
19. Ibid.
20. The accident at the Chernobyl nuclear power plant in April 1986 caused widespread radioactive contamination in large areas of Ukraine, Belarus, the Russian Federation, as well as parts of Western Europe. Chernobyl Forum, *Chernobyl's Legacy: Health, Environmental and Socio-economic Impacts*, 2006.
21. Neil Buhne, Social and Economic Impacts: Structural



- Restoration of Lives and Livelihoods in and around Affected Areas, Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, March 4, 2013.
22. Valerie Amos, Opening Address at the International Conference on the Humanitarian Impact of Nuclear Weapons, March 4, 2013. Delivered by Rashid Khalikov.
  23. Neil Buhne, 2013.
  24. BBC News, Market turmoil after US attacks, September 11, 2001.
  25. Ira Helfand, The Wider Impact: Long-term Effects on Health, Environment and Development, Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, March 4, 2013.
  26. Özdoğan, M., A. Robock and C. J. Kucharik. Impacts of a nuclear war in South Asia on soybean and maize production in the Midwest United States, *Climatic Change* Vol. 116, 2013, p. 373-387; Xia, L. and A. Robock, Impacts of a nuclear war in South Asia on Rice Production in Mainland China, *Climatic Change*, Vol 116, 2013, p. 357-372;
  27. Kanat Saudabayev, Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, March 4, 2013.
  28. Ibid.
  29. Neil Buhne, 2013.
  30. Ibid.
  31. Peter Maurer, Opening statement at Conference on Humanitarian Impact of Nuclear Weapons, March 4, 2013.
  32. Gregor Malich, Challenges in Responding to the Use of Nuclear Weapons, Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, March 5, 2013.
  33. Ibid.
  34. Rashid Khalikov, Humanitarian Preparedness and Reponse, Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, March 5, 2013.
  35. Ibid.
  36. Ole Harbitz, Emergency Preparedness and Response in the Event of a Nuclear Detonation – The Case of Norway, Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, March 5, 2013.
  37. Adriana Baciu, Emergency Preparedness and Response in the Event of a Nuclear Detonation – The Case of Romania, Presentation at the Conference on the Humanitarian Impact of Nuclear Weapons, March 5, 2013.



*“The key message is that we will never be prepared.  
The solution is prevention.”  
— Antonio Guterres, UNHCR*



**Humanitarian Impact of Nuclear Weapons**  
**Chair's summary**  
**Oslo, 4-5 March 2013**

The Conference on the Humanitarian Impact of Nuclear Weapons in Oslo 4–5 March 2013 has heard presentations from a wide range of experts on the various effects of nuclear weapon detonations. Presentations have covered preparedness and first-line response as well as the medium- and long-term humanitarian, developmental and environmental effects.

The objective has been to present a facts-based understanding of the humanitarian impacts of nuclear weapon detonations and to facilitate an informed discussion of these effects with stakeholders from states, the United Nations, other international organisations and civil society.

Delegations representing 127 states, the United Nations, the International Committee of the Red Cross, the Red Cross and Red Crescent movement and civil society participated in the conference. It is the chair's view that this broad participation reflects the increasing global concern regarding the effects of nuclear weapons detonations, as well as the recognition that this is an issue of fundamental significance to us all.

Some key points can be discerned from the presentations and the discussions:

- It is unlikely that any state or international body could address the immediate humanitarian emergency caused by a nuclear weapon detonation in an adequate manner and provide sufficient assistance to those affected. Moreover, it might not be possible to establish such capacities, even if it were attempted.
- The historical experience from the use and testing of nuclear weapons has demonstrated their devastating immediate and long-term effects. While political circumstances have changed, the destructive potential of nuclear weapons remains.
- The effects of a nuclear weapon detonation, irrespective of cause, will not be constrained by national borders, and will affect states and people in significant ways, regionally as well as globally.

This conference aimed at presenting key aspects of the humanitarian consequences of a nuclear weapon detonation. During the discussions a number of states expressed an interest in further exploring this important issue in ways that ensure global participation. States expressed their interest in continuing the discussions, and to broaden the discourse on the humanitarian impact of nuclear weapons. The chair welcomes the offer from Mexico to host a follow-up meeting to this conference. The chair also welcomes the intention expressed by other states to organise events on this subject.

