

The Wider Impact: The Long Term Effects on Health, Environment and Development

Transcript from Dr. Ira Helfand's presentation at the international Conference on the Humanitarian Impact of Nuclear Weapons

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Nozipho Mxakato-Diseko: Our last speaker for this session is Dr. Ira Helfand, the co-president of the International Physicians for the Prevention of Nuclear War. Who will deliver a presentation on behalf of the International Campaign to Abolish Nuclear Weapons. Dr. Helfand has published several studies on the medical consequences of nuclear war, and has lectured widely on the topic. He is the author of *Nuclear Famine: One Billion People at Risk*. He's presentation is entitled: "The wider impact – the long term effects on health, environment and development."

Nozipho Mxakato-Diseko: Dr. Helfand, the floor is yours.

Ira Helfand: Thank you. It's very late in the day. I'm sure that you're all very tired, and a number of the things I had planned to talk about have already been covered by other speakers. So with your permission, I'm going to skip over a couple of those topics and focus on the point that is most central to my presentation, which is discussion of nuclear famine.

We've heard some eloquent presentations today about the consequences of a single nuclear weapons explosion. If there are multiple explosions, not only are those terrible effects multiplied, but whole new effects are created. Specifically, there is a disturbance in climate which we are just now beginning to learn about.

About 6 years ago, Dr. Alan Robock who is here with us today, and his colleagues conducted a landmark study that examined the effects of a limited nuclear war. That shows us that scenario of a conflict between India and Pakistan in which approximately 100 Hiroshima-sized weapons were used. In their scenario, about 20 million people were killed in the great cities of South Asia, and vast areas were contaminated with radioactive material.

But as catastrophic as these consequences were, the global effect on climate were even worse, because the huge fires that were started by these nuclear weapons burned most of these great cities and lofted about five million tons of soot into the upper atmosphere, where they blocked out the sunlight, dropping temperatures across the planet an average of about 1.3 degrees Centigrade.

1.3 degrees may not sound like a great deal, but the significance of this change can be understood better, if you look at in the context of all the warming that's taken place in the last 130 years, contributing to the global warming phenomenon that so demands our attention. This graph shows with the blue line, all the temperature increase since 1880. And the red line on the right side of the slide shows the abrupt drop in temperature that would follow in a matter of days after this limited war in South Asia. As a result of this change in temperature, there would be a shortening of the growing season. This is a little bit difficult to look at, but the blue areas in the upper North America, in Eurasia, also in Latin America, Southern Africa and Australia, shows shortenings of the growing season of 10 to 20 days. In addition, there'd be severe disruption of precipitation around the world; overall decrease of fewer areas getting rainfall. Again the brown areas showed decreased areas of precipitation. And in the large grain growing areas of North America, of Europe, of Central Asia, of the Middle East, of South Asia, of Central Africa, of Latin America; there's substantial and significant declines of precipitation. As a result of this disruption of climate, there'll be a significant decrease in world food production.

Subsequent studies just done over the last two years have shown that in the United States, the world's largest producer of corn, the corn crop would fall about 12% on average over decade. In the worst year, five years after the war in South Asia, production would be down by about 20%. In the case of Chinese rice production, the case would be even worse. The average decline is about 15%, in the years right after the war, the decline is as much as 20-30%, and in some provinces, it's even worse than that. This graph shows rice production in Heilongjiang Province in northeast China, home to 36 million people. In the first year after this war in South Asia, the rice crop in Heilongjiang fails completely; there's no rice produced.

More recent studies which have not yet been published, have looked at the impact on winter wheat – the second largest crop in China – and have estimated the situation there would be far worse; production would decline by about 60%.

The world is not prepared to deal with a decline in food production of this magnitude. Right now, the world's food reserves amount to about 68 days of food consumption, which is well below the historical norm of 100 to 120 days, and not enough food to protect us in the event of this kind of shortfall.

In addition, there are already, at baseline, 100 and – excuse me – 800 million people in the world who are malnourished. They're getting about 1800 calories a day, which is just enough to keep an average-sized adult alive, to maintain his or her body mass, and to allow him or her to do a little bit of physical work, to grow food, or to gather food.

Besides this, there's an additional 300 million people in the world today, who live in countries where the nutrition is pretty good, but in countries which are highly dependent on food imports. Most of the countries in North Africa, in the Middle East, and many of the industrial countries in East Asia.

In the event of a nuclear war in South Asia, and the subsequent decline in food production in the magnitude which we now believe will take place... ...there will be a significant drop in international food commerce and these people too will be at risk.....over 1.2 billion people.

The World Food Project and the Red Cross, and all of us will do our part, will all try to help. But the fact is, the food just won't be there. And it is probable, that up to 1 billion people could die from starvation.

Now it's not just a war in South Asia that can produce this nuclear famine. Each Trident submarine in the US fleet carries 96 warheads, each of which is 10 to 30 times larger than the bombs used in the South Asia scenario. That means each one of these submarines could cause nuclear famine many times over. And the United States has fourteen of them, and that's only a third of the US arsenal. And the Russian arsenal has the same grotesque level of overkill capacity.

We are told by the P5 that we don't need to worry about this. That nuclear war between states simply won't happen. There is no rational reason to accept this assurance. The United States and Russia between them have nearly 4,000 warheads, mounted on missiles, on high-alert, that can be fired in fifteen minutes or less, and destroy the world 30 minutes later. This is not normal behavior. This is not the way countries which are securely at peace with each other treat each other. And as long as these arsenals are maintained and deployed, there's the very real possibility that they will be used. If not by design, then by accident and Patricia Lewis this morning spoke to us of many occasions over the course of the Cold War, when good luck and good luck alone came between us and an accidental nuclear war.

So it's important for us to consider the effects of these weapons used as well. In 2002, the US branch of the International Physicians for the Prevention of Nuclear War published a study that looked at what would happen if under post-Cold War conditions, if the US and Russia stumbled into war with each other. We found that if only 300 of the warheads in the Russian arsenal detonated over cities in the United States, something between 75 and 100 million people would die within a half and hour. And the US retaliatory attack on Russia would claim the same number of victims. But in addition to that, the entire economic infrastructures of both countries would be destroyed – the communication system, the transportation system, the public health system, the banking system, the food distribution system, all the things a modern societies requires to maintain its population – they'd all be gone. And it is probably, that

the vast majority of the people in the United States and Russia would die over the coming months from starvation, from exposure, from epidemic disease, and from radiation poisoning. And if NATO were drawn into the conflict, the same destruction would take place in Europe as well. But again, as unimaginable as these direct effects are, they're not the worst part of the story. That again, is the climate disruption.

A war in South Asia puts about 5 million tons of debris into the atmosphere. A war between the United States and Russia, using only those weapons still left in 2018 when new START is completely instituted, that war, puts 150 million tons of debris into the upper atmosphere, and that drops global temperatures not 1.3 degrees, but 8 degrees Centigrade. In the interior regions of North America and Eurasia, the temperature drop is 20 to 30 degrees Centigrade. We have not seen temperatures on this planet that cold in 18,000 years, since the coldest moment of the last Ice Age.

In the temperate zones of North America there would not be – excuse me – of the Northern Hemisphere, there would not be a single day free of frost for two years. That means that all agriculture, all food production would stop; ecosystems would collapse, the vast majority of the human race would starve to death. And it is possible that our species could become extinct.

This is not the future that must be. But we delude ourselves if we do not understand that this is the future that very well may be if we do not eliminate these weapons.

Look, I'm not a diplomat. I'm a practicing physician. I spend most of my time in an emergency room talking to patients. And so if you'll permit me, let me talk to you for just a few moments as though you were my patients.

You have before you an extraordinary responsibility. When you walk out of the room this evening, your brains are going to begin to erase all the horrible things that you've heard today. It's very understandable. This is difficult material and it's very painful to think about it. But you mustn't do that. Hold onto this information, take it home to your governments and use it to make them act.

As I said, there's a great responsibility on you, and if that is a very difficult burden, I think it's also a very precious gift. Very few people in all of human history have had as great an opportunity as you do to avert harm and to do good for humanity.

Please, act wisely. Act with courage. Act with determination. And make sure that this terrible burden is lifted from humanity. This is going to be very difficult work, but I have every confidence that you can do this. And I thank you in advance for doing so.

Thank you.