

# Pacific ecologist

issue 22  
SUMMER 2013

## WHY IT'S VITAL TO RID THE WORLD OF NUCLEAR WEAPONS

*... and how YOU can help*

*Taking nuclear apocalypse off the menu*

*An Arctic fit for Santa: no nukes at the North Pole*

*Effects of nuclear weapons 'simply unthinkable'*

*Taming Godzilla: Nuclear deterrence in North-East Asia*

*Nuclear contamination of food continues  
from weapons testing in the Pacific*

*Iran & a Middle East zone free of all  
weapons of mass destruction*

*STOP investments in mass incineration*





'Shall we put an end to the human race; or shall mankind renounce war? We now know, especially since the Bikini test, that nuclear bombs can gradually spread destruction over a very much wider area than had been supposed. It is feared that if many H-bombs are used there will be universal death, sudden only for a minority, but for the majority a slow torture of disease and disintegration. We have to learn to think in a new way, to ask ourselves what steps can be taken to prevent a military contest which must be disastrous to all parties? ...There lies before us, if we choose, continual progress in happiness, knowledge, and wisdom. Shall we instead, choose death, because we cannot forget our quarrels? We appeal as human beings to human beings: Remember your humanity, and forget the rest.'

— from the Russell-Einstein Manifesto 1955 issued after the U.S exploded the Castle Bravo thermonuclear device on Bikini Atoll, 1/3/1954 (see p. 21)



## Choosing life & happiness

People demonstrate regularly at Vandenberg Airforce Base, California against nuclear intercontinental ballistic missile tests (see p. 7 and [VandenbergWitness.org](http://VandenbergWitness.org)).



## Ending the politics of death

Risks of a nuclear war are growing with increased missile testing worldwide and increased military spending to 'modernise' nuclear weapons. The myth that possession of nuclear weapons is a deterrent to global war has never been shown to be more false. Instead, there is now a nuclear arms race which threatens the whole of life with unthinkable terrible consequences (see p. 15). But peace is popular and polls understandably show that people worldwide don't want nuclear weapons (see p. 57). Politicians need to hear from people everywhere that possession of nuclear weapons by *any* country is a crime against life. We must demand an end to the politics of war and weapons of mass holocaust threatening death to all life on Earth.



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# Pacific Ecologist

ISSN 1175 6543

[www.pirm.org.nz](http://www.pirm.org.nz)

[www.pacificecologist.org](http://www.pacificecologist.org)

Journal of the Pacific Institute of Resource Management (PIRM) in association with *The Ecologist* (UK)

Co-Founder, *Pacific Ecologist* EDWARD GOLDSMITH  
[edwardgoldsmith.org](http://edwardgoldsmith.org)

Editor KAY WEIR

Editorial committee Noeline Gannaway, Cliff Mason, Dennis Small

Layout Matthew Bartlett

Printer K&M Print, Palmerston North

Photos Front cover: French thermonuclear explosion over Moruroa  
1971 AFP Getty Images and US missile launch US Defense Agency;  
Demonstrations: VandenbergWitness.org; Save JejuNow.org;  
Contents: Trident ballistic missile launched from US submarine,  
[navaltechnology.com](http://navaltechnology.com)

Cartoons Khalil Bendib, Bas van der Schot.

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## Subscription rates (1 year, 2 issues):

New Zealand	NZ\$50 (institution)	\$25 (individual)
South Pacific/Australia		A\$50 (institution)
A\$25 or NZ\$30 (individual)		
Rest of world	£25, US\$40	£12.50, US\$20
	or NZ\$60 (institution)	or NZ\$30 (individual)

Postage included for all subscriptions.

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# Stopping nuclear holocaust top of the agenda



One of the most powerful images of the 20th Century was the mushroom cloud of nuclear explosions. The nuclear age burst into human experience and consciousness with the atomic bombs that devastated Hiroshima and Nagasaki in 1945. For the next four decades we saw over 600 above-ground (atmospheric) nuclear 'test' explosions, some 1000 times more destructive than the Hiroshima/Nagasaki bombs. They were a stark reminder that humanity had for the first time in history devised a way to destroy civilization, the environment and possibly all life on the planet, and looked hell-bent on doing so.

As Einstein remarked: 'The splitting of the atom has changed everything, and thus we drift towards unparalleled catastrophe.'

So far we have been incredibly lucky that a nuclear catastrophe has not occurred, whether by accident, miscalculation or intent. Renowned U.S. scientist, Michio Kaku, coauthor of *To Win a Nuclear War: The Pentagon's Secret War Plans*, reports we have come close to a nuclear exchange, sometimes within minutes, on at least 15 occasions. We should not continue to rely on miracles, as John Hallam says (see p. 4).

The end of the Cold War has reduced tensions between the two largest possessors of nuclear weapons, but not led to a standing down of the nuclear forces of the U.S. and Russia. Global Zero leader Bruce Blair, former Minuteman ICBM launch control officer, has warned that the US and Russia keep thousands of nuclear weapons systems on high operational readiness, ready to be fired in minutes. Virtually every day their early warning systems have to instantly analyse events (rocket launches, unusual atmospheric conditions, airplane formations, even flocks of geese) before deciding whether or not to inform the President of a potential incoming attack. Under their 'launch on warning' procedures, the President then has less than five minutes to decide whether to launch a nuclear 'counter attack' before their nuclear weapons are hit.

The threat of a nuclear holocaust has increased in the 21<sup>st</sup> Century, with numbers of States possessing nuclear weapons growing to nine (China, France, India, Israel, North Korea, Pakistan, Russia, United Kingdom and the United States) and far greater capacity for non-State actors (terrorist organisations) to acquire or produce a nuclear explosive device. In a recent survey of 85 national security experts, U.S. Senator Richard Lugar found an average estimate of 29% for the 'probability of an attack involving a nuclear explosion occurring somewhere in the world in the next 10 years.' Former U.S. Secretary of Defense, William Perry has said that the odds of a nuclear attack within the next decade are roughly 50/50.

Recent computer modeling indicates that smoke from fires caused by detonating just a small number (50–100) of nuclear weapons regionally on cities or military targets would block out the sun, making the entire earth

**We warmly thank the Peace and Disarmament Education Trust  
for their financial support towards producing  
this issue of *Pacific Ecologist*.**

cold and dry for many years, causing agricultural collapse and starvation of more than one billion people. This is in addition to the many millions of people who would be incinerated or asphyxiated immediately after nuclear blasts (see 'Effects of using nuclear weapons', p. 15) Indirect effects of nuclear weapons would have devastating global consequences, say Alan Robock and others.

Arnold Schwarzenegger, former Governor of California, has noted: '*A nuclear disaster will not hit at the speed of a glacier melting. It will hit with a blast. It will not hit with the speed of the atmosphere warming but of a city burning. Clearly, the attention focused on nuclear weapons should be as prominent as that of global climate change.*' (See p. 35)

It's not just the potential catastrophe of a nuclear war or terrorist use of nuclear weapons against a city that should concern us. Production of nuclear weapons, from uranium mining to fuel fabrication to waste disposal and nuclear testing, creates severe, trans-generational impacts on human health and the environment. In East Kazakhstan, one in twenty children continues to be born with severe genetic deformities due to Soviet atmospheric nuclear tests conducted in the region from 1950–63 (see 'The Atom Project', p. 29).

From Kazakhstan, to Nevada, to the Sahara and Australia, to the Marshall Islands, Kiribati, and French Polynesia (traditionally called Tahiti Nui or Te Ao Maohi), nuclear weapons tests above and below ground over decades have devastated lives and brought environmental contamination which continues today over half a century later (see p. 21).

Nuclear powers, the UK, US and France, used pristine Pacific atolls, far from their own countries to hone weapons of mass destruction, as if these places and their people did not matter. Radioactive contamination of Marshall Islanders' food sources and its effects on their health, hidden under US military secrecy orders, is only now, over 50 years later, being recognized (see p. 21). Then there's the huge amount of radioactive pollution from 30 years of French nuclear tests on Moruroa, stored in the crumbling atoll. This nuclear legacy, Australian scientist Matthew England reported, can be released at any time through earthquake or storm-induced rockslide, and will have significant long-term consequences across the Pacific (see p. 27).

It's remarkable that spending on research, development and production of new nuclear weapons and their delivery systems is higher now than during the Cold War. The missile tests of North Korea and Iran are well publicised, even though their missiles are, as yet, unable to carry nuclear weapons. Less well known or publicised are the missile developments and tests of nuclear-weapon States. The U.S. regularly fires 'test'

missiles from Vandenburg Base in California to Kwajalein in the Pacific, which take 20 minutes to travel 4200 miles (see p. 7). In May 2012, Russia tested a new generation of inter-continental ballistic missile (ICBM) designed to penetrate the ballistic missile defences (BMDs) being developed by the US and NATO. The UK is planning to spend over £100 billion to replace its Trident nuclear submarines and their nuclear weapons delivery missiles. India and Pakistan are in a missile race, with both sides regularly improving and testing their missiles (see p. 12).

The recent nuclear test by North Korea is, of course, cause for concern. But the answer is not to increase threats against North Korea, or to threaten Iran through concern about its nuclear programme, but to establish nuclear-weapon-free zones that meet the security needs of all countries in their regions (see pp.49–61).

In a time of financial crises and unmet Millennium Development Goals, the US\$100 billion spent annually on nuclear weapons and their delivery systems is a theft of human and financial resources needed to provide food security, safe water, education, basic medicine, environmental protection and safe sustainable energy for current and future generations (see 'The climate–nuclear nexus', p. 35).

*Pacific Ecologist* produces this issue as a reminder of the extraordinary dangers of nuclear weapons and militarism, and a guide to actions you can take to protect our planet from such dangers. The only effective protection is the global abolition and elimination of nuclear weapons. There are numerous organisations and several global networks/campaigns working to bring this about, but they are up against a powerful, obstructive political system dedicated to death more than life. We, the people, are needed to voice our wish for life and push for the essential changes to rid the world of nuclear weapons.

There are positive plans being worked on such as a global treaty to abolish nuclear weapons (see p. 38), establishing regional nuclear-weapons-free zones in North-East Asia, the Middle East and the Arctic, to add to those already existing (see p. 53), and actions to end the obscene investments in nuclear weapons (see p. 41). With a large, lively and vocal people's movement we can succeed in bringing an end to the ever present threat of a mass holocaust such as the earth has never seen. We must end these weapons before they end life on earth as we know it. We hope this issue will inspire you to take action.

**ALYNWARE, Guest Co-editor, is the global co-ordinator of Parliamentarians for Nuclear Non-proliferation and Disarmament and winner of the 2009 Right Livelihood Award; and KAY WEIR, Editor *Pacific Ecologist*.**



# TAKING *NUCLEAR APOCALYPSE* OFF THE MENU

To prevent nuclear apocalypse by malfunction or error, it's high time the U.S. and Russia took their ready-to-launch, computerised nuclear weapons systems off high alert. **JOHN HALLAM** reports.

For over a decade the issue of the operating status of nuclear weapon systems, also known as 'operational readiness' or nuclear 'posture,' has been an arcane-sounding item on the global nuclear disarmament agenda. It is also about the end of the world. Since the 1990s, it has been a regular feature at Nuclear Non-Proliferation Treaty (NPT) review conferences. It was one of the 'thirteen points' of the Year 2000 NPT Review Conference' and prominent in the Final Declaration of the 2010 NPT Review Conference. It features in many UN resolutions, notably India's Reducing Nuclear Dangers, the NAM resolution, the Japan-Australia Renewed Determination resolution, and in the Chile-Malaysia-New Zealand-Nigeria-Switzerland resolution on Operational Readiness of Nuclear Weapons Systems.

So why is this arcane aspect of U.S. and Russian nuclear posture of apocalyptic importance?

The U.S. and Russia have, since the early 1960s, maintained their nuclear forces in a 'ready-to-launch' posture. Back then, this meant that once a decision had been taken to launch, the actual process might still take up to 24 hours. Colonel Valery Yarynich, *formerly of the Soviet Strategic Rocket Forces*, credits

this as a positive outcome of the Cuban Missile crisis.<sup>1</sup> Shorter launch times could have been catastrophic. Since the 1970s it has been technologically possible to launch missiles in a matter of minutes. Russian In-

tercontinental Ballistic Missile (ICBM) launch times can now be set to take place in seconds, according to Colonel Yarynich.<sup>2</sup>

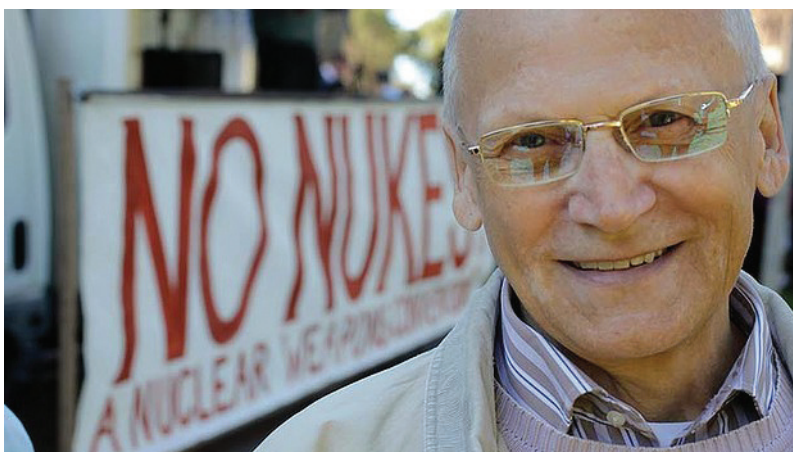
Since the 1960s computerization of the entire nuclear command and control system, and the emphasis by Cold War and post Cold War warriors on both sides, on the need to launch in seconds (if your early warning systems tell you the other fellow has launched), has led to the terrifying possibility of nuclear war by computer error. I believe it has created a situation in which deliberate nuclear war is hardly credible, but inadvertent nuclear war via malfunction and miscalculation is all too credible.

The large-scale destruction of cities, being the 'default' target of nuclear weapons, and the 150 million or so tonnes of black soot injected into the stratosphere as a consequence, would destroy civilization as we know it, and much of life on Earth.<sup>3</sup> This has come very close to happening on a number of occasions, some since the end of the Cold War. Considering some of these events may lead some to believe in miracles, or just that we have been most improbably lucky to still be here. Even if we do decide to believe in miracles, maybe we ought not to rely on such miracles being in infinite supply. Let's look at two examples, both from Russia. The U.S. has experienced equally terrifying near-misses, but data from 1985 onwards is now classified.

it has created a situation in which ... inadvertent nuclear war via malfunction and miscalculation is all too credible

**Colonel Valery Yarynich** visited Australia in August 2012 to warn about the dangers of nuclear war. A former officer in the Soviet missile forces in the Cold War, he became sharply aware of the horror of nuclear warfare. Sadly, Colonel Yarynich died in Moscow in December 2012. He is author of the book *C3: Nuclear Command, Control, Co-operation*.

QUENTIN JONES, SYDNEY MORNING HERALD



## Saving the world from nuclear conflagration

Half an hour after midnight, Moscow time, 26 September, 1983, Colonel Stanislav Petrov, a young, bright, rising designer of nuclear command and control systems, was starting his regular 'hands-on experience' monthly shift at the Serpukhov-15 early warning station near Moscow. He would not have normally been on duty at that particular time. He had swapped his shift with someone junior to him who likely would have 'gone by the book,' in which case, we would not be here to talk about it. Suddenly, lights flashed, sirens wailed, and a large map of the U.S. on the wall of the station lit up, showing that the US had launched from North Dakota. It was at the height of the Cold War, Reagan had just given the 'we've outlawed the Soviet Union, we start bombing in five minutes' quip on a radio show, the Kremlin was paranoid that the U.S. and NATO would mount a first strike, and KAL-007 had just been shot down over Kamchatka. Apocalypse was most definitely on the agenda.

Colonel Petrov had a big decision to make and some very short minutes to make it. He later said: *'I had a feeling in my gut that there was a mistake somewhere.'*<sup>4</sup> Contrary to the standing orders he'd helped to write, he did not take the steps that would have initiated a nuclear response of between 5000 and 15,000 warheads, and turned the US and its allies to dust 60 times over. Instead, Colonel Petrov reported a 'glitch' and sat down to wait the longest 20 minutes a human could wait. As he waited he felt his commander's chair to be 'on fire'. As the last seconds ticked out and nothing happened he felt his body turn to rubber. An unusual formation of vertical clouds directly over the US launch sites in North Dakota had looked to the then state-of-the-art Soviet satellite surveillance system, just like a series of US missile launches.

Another near nuclear catastrophe occurred in 1995 when the Norwegians decided to launch a weather research rocket to study the Aurora Borealis, using the first stage of an obsolete U.S. ICBM. The Norwegian Ministry of Science sent a letter to the Russian Ministry of Defence but evidently it did not reach the right people. Russian perimeter radar picked up the rocket, as it was trained to do, seconds after launch. It was identified as a US submarine-launched missile, which could either 'take out' the Kremlin and much of Moscow, or explode in space over European Russia, disabling all electric-



Colonel Stanislav Petrov, a young Soviet officer who saved the world from nuclear conflagration in 1983 by not following orders.

ity networks with an electromagnetic pulse.

The alarm this time went right to the top. Prime Minister Yeltsin and his aides opened the nuclear briefcase, and debated what to do. Someone suggested waiting an extra minute, and in that time the rocket plunged back into the Arctic Ocean as the Norwegian letter said it would. Everybody exhaled. This incident led to the negotiation of an agreement between the U.S. and Russia to establish a 'Joint Data Exchange Center' (JDEC), in which Russian officers could watch US radar screens, and US officers would watch Russian radar screens. The agreement is a wonderful idea which has been reaffirmed four times, most recently between Presidents Obama and Medvedev. Regrettably, JDEC itself has yet

to be established.

By 2012, the last time the Operational Readiness resolution, calling for US and Russian nuclear weapons to be taken off high alert, it was supported by 152 governments, and only three (US, France and the UK), voted against. Interestingly, of these three, France and the UK have already changed the 'notice to fire' from 'minutes' to 'days'.

One has to ask why, in 2013, over two decades since the end of the Cold War, do the US and Russia need to keep almost 1000 warheads *each* on the same high alert as they did in the 1980s, risking apocalypse by accident.

The reason usually given is that during a crisis, there might be a 're-alerting race.' But what kind of crisis between the U.S. and Russia could involve threats of mutual incineration over time-scales measured in minutes, or what might be the credible political or security context for such a crisis?

There are two powerful responses to this 're-alerting race' argument. One is that during a crisis of such significance, forces not routinely kept on high alert would be mobilised, eg. submarines would put to sea, mobile Topol-M's would rumble out onto the Taiga. These would send exactly the same signals to the other side as a 're-alerting race' would. There really is no difference, except that with missiles off high alert, fatal errors are much less likely. The 're-alerting race' argument really is a 'straw man.'

**Why, in 2013, over two decades since the end of the Cold War, do the US and Russia need to keep almost 1000 warheads, *each*, on the same high alert as they did in the 1980s, risking nuclear apocalypse by accident?**

Taking those vulnerable and de-stabilizing silo-based ICBMs off high alert, or as General Cartwright suggests getting rid of them completely, would be a giant leap toward nuclear zero that would take the apocalypse off the global menu

The other response is to war-game it, with missiles off alert. A real nuclear war, as Colonel Yarnich remarked, can take place only once. But we can do computer simulations as often as we like. This shows decisively, and with quantitative rigor, by means of a computer-generated '100 nuclear wars,' that even if one side remained de-alerted, and the other side launched a surprise attack completely 'out of the blue,' (a '*splendid first strike*'), that the response from the de-alerted side, even without re-alerting at all, and excluding any contribution from submarine launched missiles or mobile Topol-M's, will be utterly devastating to cities of the attacking side. Again we must ask where could such an event sequence credibly come from?

There is no deliberate way this could ever take place but taking nuclear weapons off alert would exclude the possibility of inadvertent apocalypses, and effectively would take nuclear apocalypse off the menu of nuclear briefcases. A number of retired military leaders on both sides have publically embraced such a move, countering the rearguard action being fought by conservative forces and some military leaders. For example, General Eugene Habiger, former commander in chief, United States Strategic Command, and General Cartwright, former commander of U.S. nuclear forces, and Bruce Blair, president of the World Security Institute; and in Russia, Generals Esin, Zolotarev, and Dvyorkin, favour taking U.S. and Russian land-based ICBMs off alert.

Taking those vulnerable and de-stabilizing silo-based ICBMs off high alert, or as General Cartwright

## NUCLEAR TERRORISM RISKS

Can terrorist cells unleash nuclear attacks? According to author John Hallam, only if they hack into either U.S. or Russian nuclear command and control networks.

*Russian C3I networks are 'isolated' from the net so it would be difficult if not impossible to hack them. U.S. networks are much more hackable. It may be possible for terrorists to obtain a single weapon, maybe a mini-nuke, or one or two of them, and for downtown Sydney, New York or Moscow, or Delhi or Islamabad or Beijing to disappear in a bright flash. But this is not strictly speaking a problem of nuclear posture, and... it's not the end of the world. Only the U.S. and Russia can (still) bring this about and this is a matter of nuclear posture.*

— John Hallam, People for Nuclear Disarmament, Australia

suggests getting rid of them completely, would be a giant leap toward taking apocalypse off the global menu.

JOHN HALLAM, founder of People for Nuclear Disarmament in Australia, born in the UK, has been a full-time activist since 1977, working on nuclear fuel-cycle issues 1977-99, then nuclear weapons with a major protest against French nuclear testing in 1995. He has worked on a declaration to the UN General Assembly, urging a resolution on lowering operational readiness of nuclear weapon systems, finally signed by 364 NGOs and parliamentarians, 44 Nobel laureates, and endorsed by the European Parliament. He continues to organise UN workshops on operational readiness of nuclear weapon systems.

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# US plans for global dominance

## EFFECTS ON THE ASIA-PACIFIC REGION

Tensions are rising as America expands its military bases and ballistic missile defence systems in the Asia-Pacific region in a policy to 'contain' China and Russia, reports **BRUCE K. GAGNON**. The war-games are destabilising the region, prompting an arms race, obstructing nuclear disarmament negotiations and will have severe ecological and human rights impacts in a region already damaged by war and nuclear weapons experiments. We must oppose this deadly confrontation which threatens the future of all life on Earth.

My work as co-ordinator of the Global Network Against Nuclear Power in Space, has made me aware that US foreign and military policy is increasingly geared to the Asia-Pacific region. The *Washington Post* reported in May 2000: 'The Pentagon is looking at Asia as the most likely arena for future military conflict, or at least competition.'<sup>1</sup> The US would double its military presence in the region to try to 'manage' China, the article said. More recently, US Secretary of State, Hillary Clinton announced in *America's Pacific Century*,<sup>2</sup> on November 2011 a 'pivot' of foreign and military policy into the Asia-Pacific and expansion of U.S. bases on Pacific Islands like Hawaii, Guam, Philippines, Okinawa, and South Korea. The results will be an expanding arms race and severe ecological impacts.

U.S. Defence Secretary Leon Panetta, on 4 June, 2012 at a regional security conference in Singapore, gave more details saying the US Navy will be deploying 60 percent of its fleet worldwide to the Pacific by 2020.<sup>3</sup> A new generation of 'stealth ships,' is the US Navy's hope to counter a rising China, reported Eric Talmadge for Associated Press.<sup>3</sup> With the first of the new ships set to be delivered in 2014, the stealth destroyer is being heavily promoted by the Pentagon, although the huge cost of the new ships is limiting the numbers to be built. 'With its stealth, incredibly capable sonar system, strike capability and lower manning requirements, this is our future,' said Admiral. Jonathan Greenert, chief of naval operations, in April 2012.<sup>3</sup> China has mocked the new destroyers saying it will take only a few fishing boats to blow them up.<sup>3</sup>

Unsurprisingly there is now talk of a new cold war in the Asia-Pacific region as the *Asia Times* noted in Sept 2012.<sup>4</sup> The U.S. 'pivot' policy is destabilising the Asia-Pacific region, Professor ZhengYongnian, National University of Singapore commented in the

same month. It forces China to start to move its focus from the economy to military strategy.<sup>5</sup>

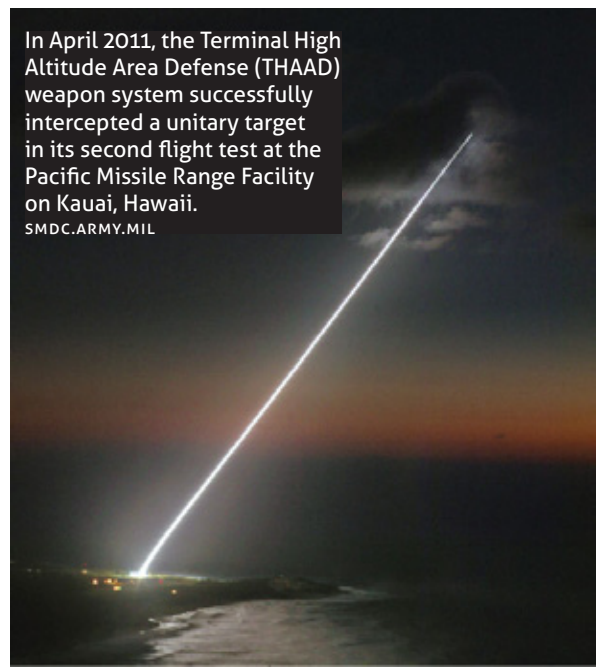
All this is a serious danger sign for the environment and people across the Pacific region. When the military comes to a particular place we know there's usually a price to pay.

### Hawaii bases expanding

From 1947, **Hawaii** has been home to the U.S. Pacific Command (PACOM) and is the center of testing, training, and deployment of U.S. military hardware and personnel around the region.<sup>6</sup> On the island of Kauai, Hawaii sits the Navy's Pacific Missile Range Facility, the world's largest multi-dimensional testing and training missile range. It is the only range in the world where submarines, surface ships, aircraft and space vehicles

US Secretary of State, Hillary Clinton announced in *America's Pacific Century...* a 'pivot' of foreign and military policy into the Asia-Pacific and the expansion of U.S. bases on Pacific Islands

In April 2011, the Terminal High Altitude Area Defense (THAAD) weapon system successfully intercepted a unitary target in its second flight test at the Pacific Missile Range Facility on Kauai, Hawaii.  
SMDC.ARMY.MIL



can operate and be tracked simultaneously. There are over 1,100 square miles of instrumented underwater range and over 42,000 square miles of controlled airspace. Navy Aegis 'missile defense' (MD) systems are tested there. As a result of the new pivot US policy, Hawaii is to host nearly 3,000 more Marines, Osprey

warplanes, and more base expansions, Joseph Gerson reported in *Foreign Policy in Focus* in September 2012.<sup>7</sup>

Kyle Kajihiro, long-time Honolulu peace activist writes:

*Native Hawaiian scholar-activist Haunani Kay Trask once told me that whenever the U.S. goes to war, the military takes more Hawaiian land. This has held true for almost every war the U.S. has been in since the Spanish American War, including the post-9/11 war on terror and so-called Pacific 'pivot.' Currently, the US*

*military occupies 118 sites in Hawaii, encompassing 230,929 acres. The result has been widespread environmental contamination: 953 contaminated sites on 130 installations and former installations, everything from unexploded ordnance, dioxin and carcinogenic solvents to depleted uranium, lead and radioactive Cobalt-60 and Strontium-90.*

In *Transforming the Way the Department of Defense Looks at Energy*, a 2007 Pentagon report from the last years of the Bush administration, the military revealed its broader imperial goal. The study concluded: 'Current planning presents a situation in which the aggregate operational capability of the force may be unsustainable in the long term,' showing the Pentagon's favored strategy of global military engagement is incompatible with a world of declining oil. Implementing imperial ambitions requires that:

*our forces must expand geographically and be more mobile and expeditionary so they can be engaged in more theaters and be prepared for expedient deployment anywhere in the world.*

So, to ensure itself a 'reliable' source of oil in perpetuity, the Pentagon, the world's biggest polluter, says it must increase its efforts to maintain control of foreign supply sources.

Professor Noam Chomsky says US foreign policy is now all about controlling most of the world's declining resource supply as a 'lever of world domination.'<sup>8</sup> One way to keep Europe, China, India and other emerging markets dependent on Washington, and in sync with its policies, is to maintain control of the keys to the world's economic engine. The Pentagon's primary job today is clearly to serve as the resource extraction service for corporate globalization.

### US military bases spreading

As a result, in the 21st century we have already seen the US 'shock and awe' attack on oil-rich Iraq, a war in Afghanistan that increasingly involves Pakistan in order to secure pipeline routes for Caspian Sea oil and natural gas, and the reality of resource wars in Africa following the creation of Africa Command (AfriCom) in February 2007 by the Pentagon. The US and NATO attack on Libya, 9 which has the largest supply of oil on the African continent, is more evidence of this developing strategy. Former NATO commander, General James Jones, was appointed by President Obama as his first National Security Adviser. In March 2006 Gen. Jones told the Stars and Stripes newspaper: 'Our strategic goal is to expand ...to Eastern Europe and Africa.' Months later he told the media that NATO was developing a 'special plan' to safeguard oil and gas fields in Africa and was 'ready to ensure the security of oil-producing and transporting regions.'<sup>10</sup>

Who is the competitor of the US in Africa? The Pentagon maintains it is China.

Using NATO as a military tool, the US is now surrounding Russia 11 and has dragged NATO into the Afghanistan war. Many analysts believe the US intends to turn NATO into a global military alliance to be used even in the Asia-Pacific region.<sup>12</sup>

One place the US is eager to base missile defense (MD) systems is on **Jeju Island, South Korea.**<sup>13</sup> Just 80 miles south of the Korean peninsula, Jeju has been chosen for a Navy base to host US warships including

Gangjeong villagers protest against US base on Jeju Island, South Korea, surrounded by police. [SAVEJEJUNOW.ORG](http://SAVEJEJUNOW.ORG)





Aegis destroyers outfitted with MD. The 450-year-old Gangjeong village, 350 miles from the Chinese coast, in 2006 was declared an 'Absolute Preservation Area' by the South Korean government because of its many pristine environmental features, including endangered soft coral reefs and 114 Indo-Pacific bottlenose dolphins. Of 132 coral species in Korea, 92 species are found in Jeju, and 66 in the Gangjeong village area. But due to US pressure, this ecological designation has been washed away with dredging of the seabed, just off shore begun in order to allow big US warships to eventually come into port.

The Samsung Corporation is the lead contractor for the Jeju project and has begun blasting the sacred rocky coastline and will finally cover the abundant life among the rocks with cement for the docks. Over 600 villagers and supporters have been arrested in the current raging non-violent struggle to preserve nature which runs against US plans to control China and the region.<sup>14</sup>

#### Military satellites: space warfare

The entire US military empire is now tied together with space technology. <sup>15</sup> With military satellites in space the US can see virtually everything on Earth, can intercept all communications on the planet, and target virtually any place on Earth. The US Space Command has established space warfare ground stations around the world which help relay signals between military satellites and the 'war fighters.'

One such base is located in **Australia** at Pinegap. The Obama administration, soon after announcing its military 'pivot' into the Asia-Pacific region, also signed a deal with the Australian government to base up to 2,500 Marines in Darwin, on the northern coast.<sup>16</sup> Julie Marlow, Australian Anti-Bases Campaign Coalition reports:

*For years, up to 18,000 US military personnel have taken part in the bi-annual Talisman Sabre joint exercises, the major location being the environmentally precious Shoalwater Bay, part of the Great Barrier Reef World Heritage Area. These war games put at risk critically endangered rainforest communities, Ramsar listed wetlands and tidal mudflats, and important breeding and/or feeding habitat for many plant and animal species classified as endangered or vulnerable (Glossy Black Cockatoo; Humpback Whale; Dugongs, Green-sea Turtle and Leather-back Turtle). And now, with the new emphasis by the US on the Indo-Pacific, we and our environment are to expect much more: more joint exercises; more US aircraft visits; new US military*

*roles for our ports; more stockpiling of US equipment and weaponry; stronger co-operation with the US missile defence program; stronger intelligence and satellite relations.*

**New Zealand's** main contribution to the global American war-fighting machine for more than 20 years is the Waihopai electronic intelligence gathering base in the Waihopai Valley near Blenheim, says Murray Horton, co-ordinator of New Zealand's Anti-Bases campaign:<sup>17</sup>

*Basically it's a foreign spy base on NZ soil and directly involves the country in America's wars. Waihopai intercepts New Zealand and international civilian phone calls, forwarding material to major partners especially the US National Security Agency.*

The base is a regular target for protesters and activists who are trying to get the base closed down. The most recent protest was 18–20 Jan 2013.<sup>17</sup> In 2012, while NZ was celebrating the 25th anniversary of its nuclear-free law, NZ hosted its first visit from a US Defence Secretary for 30 years who offered to base US marines in the country.

Aegis destroyers deployed in the Asia-Pacific, ostensibly to protect against North Korean missile launches, gives the US greater ability to launch pre-emptive first-strike attacks on China. For several years now, the Space Command has been war-gaming such an attack on China, set in the year 2016. <sup>18</sup> Using space technologies currently under development during the computer exercise, the US hits China's relatively small retaliatory nuclear capability in the first-strike attack. The expansion of MD systems in Japan, Taiwan, South

**Aegis destroyers deployed in the Asia-Pacific, ostensibly to protect against North Korean missile launches, gives the US greater ability to launch pre-emptive first-strike attacks on China**

Tens of thousands demonstrate against US base on Okinawa 9/9/2012.

TARO HOSOKAWA



Korea, Australia, and on Navy 'platforms' near China cannot do anything but create more regional tension and instability.

China maintains correctly, that in deploying MD systems in Asia-Pacific, the US and its allies threaten hopes for nuclear disarmament. Major General Chen Zhou, Director at China's Academy of Military Science, warned on 24 August 2012 that developing U.S. Ballistic Missile Defence systems which

*break global strategic balance and stability, will obstruct the process of nuclear disarmament and non-proliferation, and may even trigger a new round of arms races.*<sup>19</sup>

### Missile pollution

Dennis Apel, Catholic activist from California says:

*The US has long been launching missiles from Vandenberg AFB, California into the Pacific. When Vandenberg launches an Intercontinental Ballistic Missile (ICBM), it travels 4,200 miles to the immensely beautiful lagoon of Kwajalein Atoll in the Marshall Islands. The trip, from launch to impact of the test's mock warhead, takes about 20 minutes and costs between \$50–100 million. In the process we pollute, as we have for 30 years, our Santa Barbara County coast with ammonium perchlorate, a highly toxic rocket fuel now found in America's lettuce, milk, and even in our mothers' breast milk. In the process, we also pollute the islands and lagoon of Kwajalein Atoll with Beryllium and Depleted Uranium. This is the home of people who have already suffered from radiation poisoning since our detonation of nuclear weapons on their lands from 1946 to 1958. Sixty-six years later, the islanders have not been properly cared for or compensated, if that were even possible.*

An agreement between the Marshallese Government and the US requires an Environmental Impact Report on missile testing effects on Kwajalein Atoll, its islands and lagoon. The last EIR, prepared by Lawrence

Livermore Laboratory and handed to the Marshallese by the U.S. Air Force, expired in 2010. It reported there was 'no significant impact' from dropping depleted uranium in the Kwajalein Lagoon for 25 years. Yet, on my trip to Kwajalein in February 2012, when I questioned the natives on the island of Ebeye, they told me the fish in Kwajalein Lagoon cannot be eaten and fishing has been banned 20 because of heavy-metal contamination. They also reported that the morning after every ICBM test launch from

Kwajalein Atoll, the entire population experiences flu-like symptoms.

Recently, the Pentagon, using a North Korean satellite launch as a pretext, created a scare in Japan by claiming the launch 'could be a disguised attack.' This psychological campaign was so successful that several towns in Okinawa requested that the US and Japan deploy Patriot (PAC-3) MD interceptors in their community. The reality is these systems will be aimed at China.

**Okinawa** has long been occupied by the US military, which has systematically destroyed the environment.<sup>21</sup> Masami Mel Kawamura, Citizens' Network for Biological Diversity in Okinawa, says:

*The US creates noise pollution, mountain fires, strips mountains of their greenery, contaminates our land and sea. But the US has no obligation to restore the damaged environment under Status of Forces Agreement. In addition, US and Japanese governments are forcibly pushing their plan to construct a massive US military base at Henoko/Oura Bay, and six new helipads (Osprey pad) at Takae, Yanbaru Forest. Both of them are the most biodiversity rich areas.*

To create more bases and ports of call for its military, the Obama administration is also negotiating with **Vietnam** to allow the US Navy to return to Cam Ranh Bay. Ironically, the US, 37 years after the devastating war, is promising to clean-up some of its Vietnam War Agent Orange contamination that still badly affects Vietnam.<sup>22</sup>

The Pentagon has also cut a deal to once again use the **Philippines** in its space-directed military 'containment' of China.<sup>23</sup> Corazon Fabros, with the Peoples Task Force for Bases Clean Up in the Philippines, writes:

*Twenty years after the U.S. bases were closed in the Philippines, the US has yet to account for its responsibility to clean up the toxic wastes they left behind. Thousands of residents near former U.S. facilities suffer the consequences of toxic contamination of the soil and water. High incidence of cancers in the former base communities especially among women and children continue to be a major scourge in the lives of people.*

**Guam** is yet another island where the US plans expansion of its polluting military machine.<sup>24</sup> University of Guam Professor Michael Lujan Bevacqua reports:

*Guam is known as the 'tip of America's spear' in the Pacific and this strategic importance has created a tragic and toxic legacy. Close to one-third of Guam's 212 square miles are US military bases and it is seeking to increase its holdings by several thousand more acres in the coming years. The island was used as a site for storing Agent Orange during the Vietnam War and ships that were used as part of the nuclear testing in the Marshall Islands were decontaminated while in port in Guam. Guam hosts 80 known toxic military dumpsites and 19 Superfund sites created as a result of military activities. Communities that live near these bases experience alarmingly high rates of cancer, in some cases 1000% the average in the United States.*

Missile defence and other military systems being used by the US and allies to surround Russia and China, are obstacles, preventing nuclear disarmament, and vital negotiations on preventing an arms race in outer space



Already in North-east Asia, the largest militaries in the world confront each other. The US, Russia, China, Japan, South Korea, and North Korea spend well over \$1 trillion a year on the military. We must back away from this deadly confrontation that is now underway or sooner or later there will be a tragic outcome. We can no longer live alongside endless war and massive expenditures for a new arms race in space. We cannot effectively deal with the coming ravages of climate change and at the same time put weapons into the heavens. We cannot provide health care to the people of our planet and build 'missile defense' systems. Missile defence and other military systems being used by the US and allies to surround Russia and China, are obstacles, preventing nuclear disarmament, and vital negotiations on preventing an arms race in outer space, (PAROS). We cannot have quality education systems and spend our national treasuries on expensive new generations of military satellites.

We are tired of the fighting, the killing, the environmental contamination, and the fear that flows from militarism. We do not want corporate globalization to become the 21st century version of feudalism. We have real problems today like global warming and growing global poverty and inequity. We cannot afford to stand by and watch the dismantling of international treaties and institutions like the United Nations



Demonstrations are regular events at Vandenberg Airforce Base, California where war-mongering, polluting intercontinental ballistic missiles are launched travelling 4200 miles in about 20 minutes to the beautiful lagoon of Kwajalein Atoll in the Marshall Islands.

VANDENBERGWITNESS.ORG

while the U.S. and NATO push an aggressive campaign to further militarize the world. Future generations remind us that we should oppose not just some technology systems, but that we stand against the policies of endless war and environmental degradation which threaten the future for all life on the planet.

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# India & Pakistan race to annihilation

Bitter rivalry abetted by the actions of global superpowers has locked India and Pakistan into a deadly nuclear arms race writes **TOM HUNDLEY** in this abridged article. This race is now an immediate threat to the entire world.

It is widely accepted in Pakistan that the United States has a not-so-secret plan to snatch Pakistan's nuclear arsenal. The US almost certainly does have a plan to prevent those weapons falling into the wrong hands in the event of a coup or total state collapse. But military experts agree that grabbing or disarming all of Pakistan's nukes would be nearly impossible. One senior Pakistani general told me that counter measures to meet the US threat have included building more warheads and spreading them over more locations. This of course, makes securing them against theft by home-grown terrorists far more complicated.

This fear was heightened in August 2012, when a group of militants attacked the Kamra air force base, believed to house nuclear weapons components. Local media suggested it was part of the American plot, but more disturbing than any conspiracy theory is the reality that this was the fourth attack on the base in five years. At least five other sensitive military installations have come under attack by militants since 2007. The danger of a loose Pakistani nuke may not be the worst nuclear threat emanating from South Asia, I realized, after interviewing experts in Pakistan, India, and the US in the summer of 2012. America's priority since the 9/11 attacks, has been preventing the world's most dangerous weapons falling into the hands of the world's most dangerous actors, whether al Qaeda terrorists or Iranian mullahs. Yet the gravest danger

may be the South Asian incarnation of a Cold War phenomenon: a nuclear arms race.

Pakistan is now believed to be making more plutonium than any other country from two Chinese-built reactors. Two more are scheduled to be operational by 2016. It already has an estimated 90 to 120 warheads, more than India, and is on course to overtake Britain as the world's No. 5 nuclear power. Pakistan could be in third place, behind Russia and the US, within a decade. In April 2012, Pakistan tested the Hatf IX, a short-range nuclear weapon aimed at deterring an invasion by India's conventional forces, with two disturbing implications. First, Pakistan now has the know-how to build nuclear warheads compact enough to fit on the tip of a small missile or inside a suitcase (handy for terrorists). Second, Pakistan has adopted a doctrine that does not preclude nuking its own territory in the event of an Indian incursion, a dubious first in the annals of deterrence theory.

India, meanwhile, has just tested its first long-range ballistic missile, the Agni-V, with a range of 3,100 miles. In April, the Indian Navy added a new Russian-made nuclear-powered submarine to its fleet and is building its own nuclear subs. India is determined to add submarine-launched ballistic missiles to its arsenal. This puts India on the verge of joining the elite nuclear 'triad' club, states able to survive a first strike by an adversary and deliver a retaliatory strike from the sea. India also claims to have successfully tested an anti-ballistic missile shield. This defensive measure invites an adversary to build many more warheads in the hope some will slip through the shield.

India denies it's engaged in an arms race and says its opponent is not Pakistan, but China, a nuclear-armed superpower and economic rival with which it shares a disputed border. China's own ambitions are geared at deterring the US and Russia, but it obligingly stirs the pot in South Asia,

the gravest danger may be the South Asian incarnation of a Cold War phenomenon: a nuclear arms race





providing Pakistan with plutonium reactors, violating its obligations as a member of the Nuclear Suppliers Group. Meanwhile, a deal negotiated by George W. Bush's administration in 2008 has given India access to nuclear fuel on the international market from which it was previously barred under the Nuclear Non-Proliferation Treaty. India's limited domestic supplies of uranium had forced it to choose between powering its reactors and building more nuclear weapons. Now it can do both.

With both sides armed to the teeth, it's hard to pinpoint where the real dangers lie. The nightmare scenario is that some of Pakistan's warheads or its fissile material falls into the hands of the Taliban or al Qaeda or, worse, that the whole country falls to the Taliban. Rolf Mowatt-Larsen, former CIA officer now at Harvard University's Belfer Center for Science and International Affairs, has warned of the 'lethal proximity between terrorists, extremists, and nuclear weapons insiders' in Pakistan.

To outsiders, Pakistan appears to be permanently teetering on the brink of collapse. Large swathes of the country are beyond central government control. But a weak state does not mean a weak society. Powerful kinship and tribal bonds make it highly unlikely that Pakistan would ever fall under control of an outfit like the Taliban. Its civilian leaders have been incompetent and corrupt but, even in the worst of times, the military has maintained a high standard of professionalism. Nothing matters more to the Pakistani military than keeping the nuclear arsenal out of the hands of India, the US, and home-grown extremists. Perhaps the most credible endorsement of Pakistan's nuclear security comes from its most steadfast enemy. The consensus among India's top generals and defence experts is that Pakistan's nukes are pretty secure.

Pakistan's nuclear security is the responsibility of the military's Strategic Plans Division which has an elaborate set of controls and screening procedures to keep track of all warheads and fissile material and to monitor any blips in its personnel's behaviour. The 15 or so sites where weapons are stored are the mostly heavily guarded in the country. The greater danger is theft of fissile material, which could be used to make a crude bomb. 'With 70 to 80 kilos of highly enriched uranium, it would be fairly easy to make one in the basement of a building in the city of your choice,' said Pervez Hoodbhoy, distinguished nuclear physicist at Islamabad's Quaid-i-Azam University. Currently, Pakistan has a stockpile of about 2.75 tons, some 30 bombs' worth, of highly enriched uranium. It does not tell Americans where it's stored.

The greater concern is the competition between the two South Asian states. In numbers and destruc-

tive capacity, the arms build-up in South Asia does not come close to what was going on in the Cold War. But in many ways, the arms race in South Asia is more dangerous. The US and the Soviet Union were rival superpowers jockeying for advantage on the global stage, but they were two countries that had never gone to war with each other, that had a vast physical and psychological separation, generally avoided direct provocations, and they eventually had mechanisms in place (like the famous Moscow-Washington hotline) to ensure little misunderstandings didn't grow into monstrous miscalculations. By contrast, the India-Pakistan rivalry comes with all the venom and vindictiveness of a messy divorce, which, of course it is. The two countries have fought three wars against each other since their breakup in 1947 with many skirmishes and close calls. They have a festering territorial dispute in Kashmir. The 1999 Kargil conflict, waged a year after both countries went overtly nuclear, may have come closer to the nuclear brink than even the 1962 Cuban missile crisis.

Pakistan lost all three of those wars. Its very large army is still only half the size of India's. Pakistan clings to its nukes to maintain at least the illusion of what its generals call 'bilateral balance.'

This conventional military asymmetry increases the danger of the nuclear arms race, feeding India's hubris and Pakistan's sense of failure. Here are two countries headed in opposite directions. India's \$1.7 trillion economy is eight times the size of Pakistan's and has grown at 8.2 percent annually over the last three years, compared to just 3.3 percent for Pakistan. India is in the forefront of the digital revolution; Pakistan struggles to provide citizens with more than a few hours of electricity daily. India, the world's largest democracy, is on the cusp of becoming a global power; Pakistan, with its on-off military dictatorships, is nearly a failed state. Behind the statistics is the differing mindset. India is brimming with confidence. Pakistan is hobbled by fear, paranoia, and a deep sense of inferiority. India's major cities, New Delhi and Mumbai, are modernizing global metropolises. Islamabad looks and feels like a city under siege where there could be a coup at any moment. This economic and cultural lopsidedness is strikingly reflected in the countries' nuclear competition.

The Indian military is remarkably submissive to civilian authority for reasons rooted in India's long struggle for independence. 'The military was seen as a force that served a colonial occupier,' said Ashley

**This conventional military asymmetry increases the danger of the nuclear arms race, feeding India's hubris and Pakistan's sense of failure**

Tellis, an India expert with the Carnegie Endowment. The nationalist leadership took extreme care to dis-empower it. From a nuclear standpoint, the result is a command-and-control system firmly in the hands of the civilian political leadership, a clearly stated 'no first use' policy, and a view that nukes are political weapons to project global power and prestige, not war-fighting tools.

In theory, Pakistan's nuclear trigger is also in civilian hands under the National Command Authority, headed by the prime minister. In reality, however, the military controls the process. Pakistan has never formally stated when and where it might use nukes, preferring to keep the Indians guessing. The delicate state of affairs is exacerbated by Pakistan's tactic of hiding behind its nuclear shield while allowing terrorist groups to launch proxy attacks against India. The 2001 attack on India's Parliament building and the 2008 Mumbai attack are the most egregious examples. Both were carried out by Lashkar-e-Taiba militants based

in Pakistan and linked to the ISI, Pakistan's controversial spy agency. Terrorism is the classic underdog tactic, but Pakistan is the world's first nuclear-armed underdog to successfully apply the tactic against a nuclear rival.

There are encouraging signs that Pakistan may be rethinking this tactic. Relentless suicide bombings and

attacks on police and military bases and a costly war to wrest control of the Swat Valley from the Taliban seem to have finally convinced the military that the Taliban and its ilk pose a far greater danger to Pakistan itself than to India. But India's military planners are still searching for an appropriate weapon to punish Pakistan in the event of 'another Mumbai'.

The problem for India is that even though it holds a huge advantage in conventional forces, their mobilization is ponderously slow as revealed after the 2001 attack on the Parliament building. The Indian Army took about three weeks to prepare a retaliatory strike, enough time for the US to step in and cool tempers on both sides. A potential nuclear crisis was averted, but in 2004 India announced a new capability to conduct lightning cross-border strikes. Dubbed 'Cold Start,' the idea was not to hold territory or threaten Pakistani's existence, but to deliver a punishing blow, falling short of provoking a nuclear response. Pakistan's reaction was to double down on developing the Hatf IX. Any incursion from India would be met with a nuclear response even if it meant Pakistan had to

nuke its own territory. This would instantly escalate the crisis beyond anyone's control.

The last nuclear weapon state to seriously consider using battlefield nuclear weapons was the US in the first decades of the Cold War. But by the early 1970s, US strategists no longer believed these weapons had any military utility, and by 1991 most were withdrawn. Pakistan, however, has embraced the idea and seems to have made India cautious. In the 2008 attack on Mumbai, Cold Start was not implemented. Indian officials seem now to be backing away from the idea, but Pakistan's military are obsessed with Cold Start. The arms race could make a loose nuke more likely. Pakistan can assure that its nuclear arsenal is secure as warheads and their delivery systems have been uncoupled and stored separately in heavily guarded facilities, making it difficult for groups to assemble launch protocols. But mobile battlefield nuclear weapons would be far more exposed.

The chance of a nuclear exchange triggered by miscalculation, miscommunication, or panic also increases with deployment of battlefield nukes. The command and control chain would be stretched with more authority delegated to field officers. There's obviously a reasonable chance they would be used. 'It lowers the threshold,' said Dr Hoodbhoy. 'The idea tactical nukes could be used against Indian tanks on Pakistan's territory creates the kind of atmosphere that greatly shortens the distance to apocalypse.'

Although both sides speak of the possibility of a limited nuclear war, they seem to understand it is fantasy. Once started, a nuclear exchange would be almost impossible to limit. The first launch would create hysteria; communication lines would break down, and events would rapidly cascade out of control. Densely populated cities could find themselves under nuclear attack, and an estimated 20 million people could die almost immediately. The resulting firestorms would put 5 million to 7 million metric tons of smoke into the upper atmosphere, according to climate scientists at Rutgers University and University of Colorado. Within weeks, skies around the world would be permanently overcast, and 'nuclear winter' could be with us for a decade. The Earth's temperature would drop, agriculture worldwide would collapse, and a billion or more humans could starve. This is the real nuclear threat now festering in South Asia, threatening all countries, not just India and Pakistan. Both sides acknowledge it, but neither seems able to slow their race to annihilation.

The above article is abridged (CM) for *Pacific Ecologist* from the article 'India Pakistan race to the end' by Tom Hundley, published 5 Sept 2012 by the Pulitzer Center. Before joining the Pulitzer Center, Tom Hundley was a newspaper journalist for 36 years, including nearly two decades as foreign correspondent for the *Chicago Tribune*. His work has won numerous journalism awards.

**'The idea that tactical nukes could be used against Indian tanks on Pakistan's territory creates the kind of atmosphere that greatly shortens the distance to apocalypse'**  
– Dr Hoodbhoy





## Effects of using nuclear weapons 'quite simply unthinkable'

We must strengthen our efforts to achieve nuclear disarmament, as the potential for nuclear war is increasing, reports Dr **GEORGE PREDDEY**, physicist/author of 'Future Contingencies. 4: Nuclear Disaster.' Military and political leaders should be challenged for ignoring decades of scientific research and turning their backs on the unthinkable consequences of even a regional nuclear war on the Earth and its people. The annihilatory effects of using nuclear weapons should be openly and publicly discussed instead of ignored. To survive, we must fundamentally change.

Eminent physicist Professor Albert Einstein warned in 1946:<sup>1</sup> 'We shall require a substantially new way of thinking if mankind is to survive.' Eminent New Zealand physicist Sir Paul Callaghan warned just prior to his untimely death in 2012:<sup>2</sup> 'Science is the compass on the voyage we must all make into the twenty-first century. That we should turn our backs on science is quite simply unthinkable.' Yet the 'quite simply unthinkable' has continued as a major risk for many decades. The Bulletin of Atomic Scientists Doomsday clock in 1991 was set at 17 minutes to midnight. Since then it has crept forward as the risk has increased, now standing at 5 minutes to midnight. Our political and military leaders have turned their backs on Einstein's 'substantially new way of thinking.' They are in collective denial of the risk to human civilisation posed by the global environmental consequences in the accidental or deliberate use of nuclear weapons.

*Future Contingencies. 4: Nuclear Disaster*,<sup>3</sup> published in New Zealand by the Commission for the Future in 1982, was the last of four reports on future contingencies this country might conceivably face. It reported on a peer-reviewed, science-based, multidisciplinary study of the effects on New Zealand if

nuclear weapons were ever used. The response of the Muldoon government, committed to the ANZUS alliance at the time, was to disestablish the Commission and to attempt to suppress publication of the report, though in this at least it failed. As study group convenor I moved on from temporary unemployment to Assistant Director (Research and Planning) in the Ministry of Civil Defence. In 1985, aware that the CFF report did not include major subsequent research findings, I published *Nuclear Disaster: a new way of thinking down under*.<sup>4</sup> Einstein's 1946 warning features on the book's cover. Its launch by civil defence Minister Peter Tapsell was in marked contrast to the Muldoon government's hostile response to the CFF report.

This nuclear disarmament issue of *Pacific Ecologist* is timely, as 2012 was the 25th anniversary of New Zealand's nuclear-free legislation and the 50th anniversary of the Cuban missile crisis. The relevant content of my 1985 book required only minimal amendment

**With the Doomsday Clock now closer to midnight than at any time since the Cold War ended, we should renew efforts toward nuclear disarmament**

to write this article. Contemporary peer-reviewed science has confirmed what was already known in 1985.

Three paths to nuclear disaster have been identified:<sup>5</sup>

- Nuclear war between the super-powers through system malfunctions or political miscalculation. Recorded discussions between President Kennedy and his political and military advisers during the Cuban missile crisis show that Kennedy considered the probability of nuclear war might have been as high as 50%, and that at the time a 'doomsday plan' for the survival of the government was activated.<sup>6</sup>
- Nuclear war by proliferation of weapons among regional powers like Israel/Iran and India/ Pakistan. India has plans for a blitzkrieg invasion of Pakistan assuming the latter is bluffing in its professed willingness to use tactical nuclear weapons in its defence.<sup>7</sup>
- Nuclear terrorism: Al-Qaeda and other militant groups are desperately seeking fissile material or assembled warheads. To this end, there have been nine unsuccessful attacks by extremist groups on Pakistan's nuclear weapons infrastructure.<sup>8</sup>

With the Doomsday Clock now closer to midnight than at any time since the Cold War ended, we should renew efforts toward nuclear disarmament. The box on the adjacent page summarises basic technical information. The reader is reminded of the inevitable consequences of both global and regional conflagrations in the following paragraphs.

### Effects of nuclear weapons

The *blast* from a nuclear explosion is a sudden change in air pressure ('overpressure') and associated very strong winds. Its effects diminish with increasing distance from 'ground zero,' a point on the ground immediately below the explosion. For a 1Mt 'airburst' at a height of 2.4km, the effects of blast would be:

- *1km from ground zero* over-pressure of 1.4 atmospheres and peak winds of 750km/h, completely obliterating all buildings;
- *5km from ground zero*, over-pressure of 0.7 atmospheres and peak winds of 450km/h, levelling most buildings;
- *10km from ground zero*, over-pressure of 0.35 atmospheres and peak winds of 150km/h, seriously damaging many buildings and killing people caught in the open;

- *20km from ground zero*, flying glass and debris remain hazardous.

The *lethal area* is the circular area within which the number of survivors is the same as the number of fatalities outside it. Total fatalities can be crudely estimated by assuming everyone inside the lethal area is killed and everyone outside it survives. The lethal area based on blast alone for the 1Mt explosion described above is about 105km<sup>2</sup>, equivalent to a circle 11 km across.

A *thermal flash* is generated by the incandescent fireball created at the instant of detonation. It is capable of starting fires and causing skin burns and blindness at considerable distances from ground zero. The 1Mt explosion described above would inflict first-degree skin burns, equivalent to instantaneous severe sunburn, out to a distance of 16km from ground zero. Fatal third-degree burns destroying the skin completely would be inflicted out to a distance of 11km.

Flammable and combustible materials would ignite out to a distance of 11km. The resulting fires would coalesce into a 'firestorm' totally consuming a large area, and would continue to expand while

there was material remaining to fuel it. Within a firestorm, people in shelters strong enough to withstand blast would either be asphyxiated by lack of oxygen, or cremated by air temperatures exceeding 1000°C. For the 1Mt explosion described above, the lethal area for thermal flash alone is about 350km<sup>2</sup>, equivalent to a circle 21 km across, or three times the area affected by blast.

*Initial nuclear radiation* is generated by the processes of fission and fusion at the instant of detonation. The effects of this highly-penetrating radiation, mainly neutrons and gamma rays, depend on the 'radiation dose.' The unit for dose is the Gray (Gy). A dose of 6Gy would be fatal for most people. Half of a population exposed to 4Gy would die, whereas 3Gy would cause 10% fatalities. Lesser doses would cause radiation sickness (nausea) and increase other disease risks, including subsequent cancers.

For larger fusion weapons, the lethal area for the initial nuclear radiation is smaller than the lethal areas for blast and thermal flash, for the 1Mt bomb described above, about 22km<sup>2</sup> compared with 105km<sup>2</sup> and 350km<sup>2</sup> respectively. For smaller fission weapons, initial nuclear radiation has a comparable lethal area. For a 10kt fission weapon the lethal areas for blast, thermal flash, and initial nuclear radiation are 5km<sup>2</sup>, 11km<sup>2</sup>, and 6km<sup>2</sup> respectively. Initial nuclear radiation

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caused significant death and injury at Hiroshima and Nagasaki.

A crude 1kt terrorist weapon would produce lethal initial nuclear radiation out to 800m from ground zero, although its lethal blast effect would extend only to 450m. In an enhanced radiation weapon or 'neutron bomb,' the initial nuclear radiation is increased 100-fold. However, its lethal area is 25 times the lethal area for blast and thermal flash, killing people more effectively while minimising damage to property.

The 1Mt explosion described above, if above a large city, would cause many millions of immediate fatalities from blast, thermal flash, and initial nuclear radiation equivalent to the entire population living within a circle 21km across. The 16kt explosion above the city of Hiroshima caused 70,000 immediate fatalities amongst its population of 340,000 in 1945, and a further 130,000 delayed fatalities by 1950 through injury and radiation-induced disease.<sup>9</sup>

*Residual nuclear radiation or fallout* is the radioactive debris from a nuclear explosion that eventually falls onto the ground. In an 'airburst' the height of detonation is sufficient to ensure the fireball doesn't touch the ground. Fission products are initially vaporised, rise to great heights in the atmosphere, condense, and fall back to the ground globally over months or years as 'global fallout.' For a 'ground-burst,' detonation is either at ground level or is low enough for the fireball to touch the ground. The crater thus formed causes huge quantities of earth and debris to rise with the fireball. About one-half of this intensely radioactive material is deposited promptly as 'local fallout' in a plume extending downwind from ground zero.

For a 1Mt ground-burst in a steady wind of 24km/hr, the effects of fallout would be:

- *100km downwind*, local fallout begins four hours after detonation inflicting an accumulated radiation dose of 8Gy and 100% fatalities among those exposed to it;
- *200km downwind* the accumulated radiation dose is 3Gy inflicting severe radiation sickness and 10% fatalities;
- *800km downwind*, the accumulated dose is 0.1Gy or 100 times the average annual dose from natural background radioactivity;
- the fallout plume contaminates an area of 2,300 km<sup>2</sup>, inflicting an accumulated radiation dose of 4.5Gy and 50% fatalities among those within that area. Coverage depends on wind speed and direction at the time.

**Weapons with yields of 1Mt, 60 times more powerful than the Hiroshima bomb, are standard components today of the nuclear powers' arsenals**

The radiation dose from global fallout is very much smaller than the radiation dose from local fallout. Its effects, although not unimportant, are relatively minor compared with the blast effects, thermal flash, initial nuclear radiation, and local fallout.

*Electromagnetic Pulse (EMP)* is an intense electromagnetic pulse generated by a nuclear explosion. Although EMP is not directly hazardous, modern communications and power distribution

networks are extremely vulnerable to it. Its effects are predicted to include meltdown accidents at nuclear power stations and continental-scale power and communications blackouts.

The global environmental consequences in the use of nuclear weapons were significantly under-estimated in the 1982 CFF report, but were reviewed and updated in my 1985 book.<sup>10</sup> They have been recently summarised by Dr Steven Starr,<sup>11</sup> Physicians for Social Responsibility, as follows:

- the use of a small fraction of operational nuclear arsenals detonated within large cities would ignite immense firestorms and generate enough smoke to cause catastrophic global climate change<sup>12</sup> and destruction of the Earth's protective ozone layer<sup>13</sup>
- the use of thousands of strategic nuclear weapons would leave the Earth essentially uninhabitable.<sup>14</sup>

### 10 years nuclear winter

The darkness and global cooling effects from the use of nuclear weapons were first described in 1983 by the term 'nuclear winter'.<sup>15</sup> Initially thought to persist for a year, more recent peer-reviewed scientific studies show that the effects persist for ten years.<sup>16</sup> This increased longevity allows lesser quantities of smoke to have a greater impact on both global climate and atmospheric ozone levels.

Even a limited regional nuclear war<sup>17</sup> would significantly reduce global surface temperatures, reduce rainfall, increase UV levels at the Earth's surface, and have devastating global consequences through its impacts on agriculture.<sup>18</sup> Scientific studies predicted that such use of nuclear weapons would kill 20 million people in the regional war zone (one-half of the fatalities caused by World War II). Global famine is a predicted outcome of this level of nuclear conflict; an estimated one billion people would die because of the induced changes in climate in subsequent years.<sup>19</sup> Smoke from a limited regional nuclear war would also cause ozone depletion persisting for a decade of 25-45% in mid latitudes and 50-70% at high latitudes.<sup>20</sup>

## CHEMICAL AND NUCLEAR EXPLOSIONS

Explosions of any sort result from a very rapid release of energy in a tiny space. With conventional, non-nuclear explosives, such as trinitrotoluene (TNT), the energy released is chemical. The largest conventional bomb dropped in World War II contained about 10 tonnes of TNT and could demolish an entire city block.

Nuclear warheads can be thousands or millions of times more powerful than the 'blockbusters' of World War II. Their explosive 'yield' is rated as the equivalent weight of TNT required for the same effect. Thus a 1kt (kilotonne) warhead is equivalent to one thousand tonnes of TNT; a 1Mt (megatonne) warhead to one million tonnes of TNT. The bomb that destroyed Hiroshima had a yield of 16kt, equivalent to 1,600 blockbusters. Weapons with yields of 1Mt, 60 times more powerful than the Hiroshima bomb, are standard components today of the nuclear powers' arsenals.

Chemical and nuclear weapons differ by more than their huge disparity in yield. Because nuclear explosions create much higher temperatures, more of the energy is released as heat and light (thermal flash). In a nuclear explosion, energy is released as blast (~50%), thermal flash (~35%), initial nuclear radiation (~5%), residual nuclear radiation or fallout (~10%), and electromagnetic pulse (~5%). The effects of blast are

reduced and of thermal flash are increased for explosions at greater heights.

Nuclear energy is released by two physical processes: 'fission' (splitting) of certain 'fissile' heavy elements (uranium-235, plutonium-239) and 'fusion' (joining together) of certain light elements (hydrogen-2 or deuterium, hydrogen-3 or tritium, lithium-6). Uranium-235 represents about 0.7% of naturally occurring uranium and can be separated for use in fission bombs. Plutonium-239 can also be used in fission bombs and is produced in nuclear power reactors from natural uranium.

The 'critical mass' of uranium-235 or plutonium-239 required for explosive fission is about 5kg. In a fission bomb, a critical mass of fissile material is assembled from sub-critical masses by chemical explosives. Deployed tactical nuclear warheads with typical yields in the kilotonne range are small enough to be fired from 155mm calibre howitzers. Much more powerful 'fusion' warheads have typical yields in the megatonne range. High temperatures needed to initiate fusion are generated by fission-triggering devices. Countries capable of manufacturing fission weapons have generally developed fusion weapons within a few years.

Strategic nuclear weapons in the arsenals of the United States and Russia have a combined yield 500 times greater than that of low-yield weapons used in the limited regional war described above. Many of these strategic weapons are kept on high-alert status. Peer-reviewed scientific studies predict that the use of 4400 strategic nuclear weapons on large cities would cause 770 million prompt fatalities and produce up to 180 million tons of thick, black smoke.<sup>21</sup> Ten days after detonation, a dense global stratospheric smoke layer would block 70% and 35% of sunlight in the Northern and Southern Hemispheres respectively from reaching the Earth's surface.<sup>22</sup>

This global darkening would rapidly cool most of the Northern Hemisphere by 20–30°C. Daily minimum temperatures would fall below freezing for several years in the largest agricultural areas of the Northern Hemisphere. Average global surface temperatures

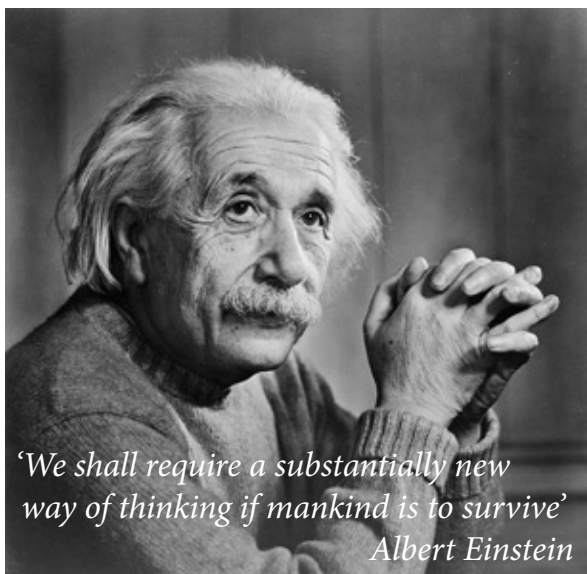
would become colder than those experienced 18,000 years ago at the height of the last Ice Age.<sup>23</sup>

Cooling of the Earth's surface would weaken the global hydrological cycle. The Northern Hemisphere summer monsoon is predicted to collapse, and average global rainfall to decrease by 45%.<sup>24</sup> The cumulative effects of climate change and ozone destruction would eliminate growing seasons for more than a decade. Catastrophic climatic effects would persist for many years in regions far removed from the targeted areas and the countries involved in the conflict. Under such conditions, peer-reviewed science predicts that most human and large animal populations worldwide would die of starvation.<sup>25</sup>

Many peer-reviewed scientific studies summarised in this article make it abundantly clear that the environmental consequences of even a limited regional nuclear war would kill hundreds of millions of people

the use of a small fraction of operational nuclear arsenals detonated within large cities would ignite immense firestorms and generate enough smoke to cause catastrophic global climate change and destruction of the Earth's protective ozone layer





Political and military leaders should be challenged for turning their backs on science and the quite simply unthinkable consequences of an all-too-possible nuclear holocaust

far from the war zone. A nuclear winter initiated by use of strategic nuclear arsenals of the superpowers would threaten human survival.

No nuclear weapons state has ever officially evaluated the effects of the use of its nuclear arsenal on the Earth and its inhabitants. It is critical for such evaluations to be conducted openly and to be publicly discussed. Nuclear weapons kept in readiness for virtually instant use under current 'launch on warning strategies' are an existential threat to human civilization.<sup>26</sup> This cannot be justified by any political or national goal. There can be no victor in a nuclear war.

Sir Paul Callaghan was passionate that we should not turn our backs on science. He would surely affirm that New Zealand support peer-reviewed science and renounce all involvement with nuclear weapons in this country's defence and international relations. Political and military leaders should be challenged for turning their backs on science and the quite simply unthinkable consequences of an all-too-possible nuclear holocaust. To survive, we must heed Einstein's warning and change our thinking fundamentally.

**Dr George Preddey is a former upper atmospheric physicist (Dept of Scientific and Industrial Research), futurist (Council for the Future), disaster manager (Ministry of Civil Defence), chief adviser (MoE) and education consultant, and was among the first scientists to warn the New Zealand public about ozone depletion (1974), global warming (1981), and nuclear war (1982). He is author of the 1985 book, *Nuclear Disaster: a new way of thinking down under*.**

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## KAZAKHSTAN'S DISARMAMENT PLANS

27/8/2012/ASTANA, KAZAKHSTAN, GREEN CROSS INTERNATIONAL – 'Kazakhstan's leadership on nuclear issues is cause for optimism for the entire world,' said Dr. Alexander Likhotal, President of Green Cross International. Great potential exists for the world to rid itself of nuclear arms and related threats, but it can happen only if world leaders and nuclear powers come to grips with reality. There will be either security for all or no security at all, according to GCI. Dr. Alexander Likhotal, said the persistent nuclear threat with over 20,000 nuclear weapons worldwide, is exacerbated by increased conventional military build-ups. *'Today, the goal of a nuclear-weapons-free world has even greater urgency. Nuclear deterrence is useless in responding to 21st century threats, like proliferating weapons of mass destruction, international terrorism, ethnic and religious conflicts, climate change, extreme weather events, water scarcity, and related threats to global security.'* Dr. Paul Walker, Director of the Green Cross Environmental Security and Sustainability Programme, said: *'Kazakhstan's initiative to establish a Central Asian Nuclear Weapons-Free Zone, a ratified Comprehensive Nuclear Test Ban Treaty, and a 'nuclear weapons-free world' are all most welcome steps today.'*

## GANDHI DISARMAMENT PLAN

17/07/2012, NBS NEWS – India is poised to push for universal nuclear disarmament. A panel, headed by Congress MP Mani Shankar Aiyar, presented its report to Prime Minister Manmohan Singh to promote the 1988 Rajiv Gandhi action plan for a world free of atomic weapons. Aiyar, former aide to then prime minister Rajiv Gandhi, said that even after a lapse of 23 years, the Rajiv Gandhi action plan has relevance. In October 2011, Manmohan Singh set up an informal group to explore ways to promote the ideas in the action plan presented by Rajiv Gandhi at the Third Special Session on Disarmament of the UN General Assembly in June 1998. The 284-page report outlines a seven-point road-

map, including India's commitment to eliminating its own arsenal as part of a universal, non-discriminatory, verifiable global process to set the stage for a world without nuclear weapons in a specified time frame. The report makes 14 recommendations with India taking a leadership role on disarmament issues in global fora, including the UN, the Non-Aligned Movement and the Conference on Disarmament, with a view to launching multilateral negotiations to eliminate nuclear weapons.

## INDIA TEST-FIRES BALLISTIC MISSILE

12/12/2012 BALASORE (ODISHA), PRESS TRUST OF INDIA: Sharpening its missile prowess, India on Wednesday successfully test-fired its indigenously developed nuclear capable Agni-I ballistic missile with a strike range of 700 km from a test range off Odisha coast. The surface-to-surface missile was test-fired from a mobile launcher of the Integrated Test Range (ITR) at Wheeler Island, about 100 km from Balasore in Odisha, Defence sources said. ITR Director MVKV Prasad said, 'It was a practice trial conducted by the Strategic Force Command of the Indian Army.'

## MISSILES NO GOOD FOR PEACE

24/08/2012, NATIONAL DEFENSE POLICY, PLA, CHINA DIRECTOR, MAJOR GENERAL CHEN ZHOU – The US has insisted on developing a national missile defense system and seceded from the ABM Treaty. The international community, including China and Russia, declared their opposition to Missile Defense Programs, and the UN General Assembly adopted resolutions on anti-missile issues several times to stop them. Developing Missile Defense Programs, which break global strategic balance and stability, will worsen the global security situation. From the Star Wars System to National Missile Defense Programs (NMD) and Theater Missile Defense Programs, and from Missile Defense Programs to East-European Missile Defense Programs and European Missile Defense Programs, the US has been using missile defense sys-

tems as measures to break the global strategic balance. It says the purpose of establishing missile defense systems currently in Europe, Asia and the Middle East is to deal with threats from Iran and North Korea. But there are only limited countries with technological capability for intercontinental ballistic missiles... The history of missile defense issues has proved that neither confrontation nor arms races can solve the problems, and the way out would eventually be through dialogue and co-operation. We should strike at the roots of the problems and solve proliferation problems peacefully through dialogue and negotiations. China insists on the idea of overall security, co-operative security and common security, and maintains its commitment to the new security concepts of mutual trust, mutual benefit, equality and coordination.

## U.S. NUKE WEAPONS ON TRIAL

08/10/2012, SANTA BARBARA, CALIFORNIA US, NUCLEAR AGE PEACE FOUNDATION – On Tuesday, October 16, 2012, a public forum in Santa Barbara will feature 15 people who committed acts of civil resistance before the launch of a Minuteman III Intercontinental Ballistic Missile (ICBM) on February 2012. The group will stand trial on trespass charges in federal court on October 17. Members of the 'Vandenberg 15' include: Daniel Ellsberg, a U.S. nuclear weapons strategist who released the Pentagon Papers to the press in 1971. The Vandenberg 15 and dozens of others were protesting the Feb 25 launch of a Minuteman III ICBM from Vandenberg to the Kwajalein Atoll in the Marshall Islands. The US keeps 450 Minuteman III missiles on high-alert status, ready to be fired on order. The missiles are armed with thermonuclear warheads and can reach nearly any place on Earth in 30 minutes or less. Once fired, the missiles cannot be re-directed or recalled. As a land-based missile, the Minuteman III is easily targeted and, in a time of crisis, there would be pressure to 'use them or lose them.' These missiles make launching on a false warning and accidental nuclear war far more likely.



# *Nuclear contamination of food in the Pacific* Lifting the veil of secrecy

Fallout from atmospheric testing of nuclear weapons by the United States in the 1950s caused immediate injury and left a legacy of environmental contamination around the Marshall Islands test site. Radioactive contamination of the food chain and resulting health risks to the islands' residents were concealed, writes **DR NANCY POLLOCK**. As the true picture has emerged, recompense of the affected islanders has become paramount.

On 1st March 1954, the US detonated an experimental hydrogen bomb over Bikini Atoll. At 15 megatons, 'Castle Bravo,' was unexpectedly the largest<sup>1</sup> of 67 tests of nuclear and thermonuclear devices conducted at the Bikini and Enewetak atolls in the northern Marshall Islands between 1946 and 1958. This series followed the US detonation of atomic bombs over Hiroshima and Nagasaki in August 1945. The Marshall Islands, under US control as a UN Trust Territory, were used as a testing ground for strategic weapons during the Cold War. Military security effectively imposed a cloud of secrecy over the whole area, including the potential contamination of food sources from radioactive fallout.<sup>2</sup>

The people of Rongelap atoll in the northern Marshall Islands, about 130 kilometres east of the 'Castle Bravo' blast, were covered in a cloud of powdery ash laden with radioactive by-products carried by the wind. The crew of the Japanese fishing boat 'Lucky Dragon #5,' working off Bikini was also covered in radioactive ash. Both groups suffered extensive burns, hair loss and vomiting. After three days the islanders were removed to the US military base on Kwajalein. The Japanese fishermen headed back to their home port before being treated. They were to suffer extensive health problems lasting to present times. Neither group knew of 'radiation sickness' nor were they told of the connection between the ash and their illnesses.

Their radiation sickness was a direct outcome of

the new nuclear technology. Survivors of the Hiroshima nuclear attack ('hibakusha') had reported a range of symptoms with delayed onset.<sup>3</sup> Medical researchers at the US facility established

Military security effectively imposed a cloud of secrecy over the whole area, including the potential contamination of food sources from fallout

Castle Bravo, detonated 1 March 1954 by the US on Bikini Atoll, Marshall Islands, had a yield of 15 megatons, instead of the expected 4 to 6 megatons.

US NATIONAL NUCLEAR SECURITY  
ADMINISTRATION NEVADA, PHOTO  
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US navy doctor examines a Rongelap child April 1954, weeks after the huge Castle Bravo blast.  
AFP PHOTO

on the hill above Hiroshima while Japan was under US military control examined vital signs of hibakusha and compared them with a group of Japanese from the area outside Hiroshima.<sup>4</sup> Case records were suppressed and treatment was left to Japanese doctors who were forbidden, on US orders, to reveal any negative effects of the bombing. The possible radioactive contamination of local food supplies was not linked to radiation sickness or seriously considered as a health risk.

Understanding radiation sickness after the Hiroshima explosion was complicated by a lack of prior experience, and a strong desire by US officials to cover-up any negative effects beyond the bomb's explosive force.<sup>5</sup> US military silence surrounding the Bikini fallout also suppressed, and delayed for 50 years, any understanding of the connection between the serious health problems experienced by Hiroshima survivors, Japanese fishermen on board the Lucky Dragon #5, and the residents of Rongelap atoll. Their initial injuries such as burns and vomiting, and other health effects were considered by US military medical advisors to be short term, and thus expected to disappear once the exposed people were removed from the contaminated surroundings.<sup>6</sup> US officials initially denied connections between illness and fallout in order to cover-up US responsibilities and later to reduce compensation claims. Links between health problems and ingested contaminated foods emerged many years later.

Awareness of the long-term effects on human bodies of exposure to radiation was not widely known by US officials until near the end of the nuclear testing programme in the northern Pacific in 1958. Reports by US Atomic Energy Commission (AEC) researchers contracted between 1946 and 1961 to monitor radiation levels in marine and terrestrial life in the northern central Pacific were not collated, nor linked to human exposure to radiation. None of the findings explicitly acknowledged human exposure through the food chain.<sup>7</sup>

However Neal Hines, radiobiologist who reviewed the effects of nuclear testing in the region between 1946 and 1961, did warn in July 1956 that 'Rongelap's radioactivity still was at levels at which permanent residence would have been of doubtful wisdom.'<sup>8</sup> Yet AEC and military officials prepared Rongelap for (the

first) repatriation, carried out in June 1957. Research continued, including annual medical monitoring by the Brookhaven National Laboratory (BNL). Brookhaven's medical surveys on Rongelap followed a similar format to that established outside Hiroshima, comparing those exposed to fallout on Rongelap on 1 March 1954 with other unexposed Rongelap people who were returned to their home atoll in 1957. The medical team used 'a whole-body gamma scintillation spectrometer to measure gamma ray activity from any internally deposited fission products and neutron-induced activities' in 227 Rongelap people.<sup>9</sup> BNL medical teams visited Rongelap annually for the next 30 years and reported after each visit that the Rongelap people were 'healthy'.<sup>10</sup> Radioactive toxicity of the plant foods which the Rongelap people had been ingesting daily was apparently not considered connected to the whole body gamma scintillation or urinalysis results, or signs of radiation sickness. They found no differences between exposed and unexposed populations, suggesting that all residents were exposed to a common, environmental source of toxic radioactive substances.

But Rongelap people experienced increasing health problems, such as nodules on the thyroid, and stillbirths. By 1972 when Rongelap mayor John Anjain's son died of leukemia in a Bethesda, Maryland hospital, the community expressed their dissatisfaction at the visits that gave them no information about their health, despite increased suffering. They denied the

**From 1957 through to 1985 Rongelap people had unknowingly been daily consuming local foods contaminated by radioactive fallout from the 'Bravo' test**



Brookhaven team access to their island. As their sicknesses continued unabated, they decided to remove themselves to another atoll in 1985, with the help of the Greenpeace ship, 'Rainbow Warrior,' to draw attention to their plight. Rongelap Senator Jetan Anjain related their concerns in a letter to the US Committee on Interior and Insular Affairs in 1989:

*The Rongelap people today live in exile at Mejato, Kwajalein atoll... We evacuated Rongelap atoll in 1985 because we believed it to be contaminated and unsafe. The Department of Energy doctors repeatedly told us we were fine, but one-by-one over the years, more than 20 members of the Rongelap community were transported to Cleveland, Ohio for thyroid operations. We feared for the children. The Rongelap people wish to return home. However, we will only return home if Rongelap Atoll is determined to be safe. ... Rongelap respectfully asks for humanitarian assistance. ... Radiation invaded our lives 35 years ago. It continues to impose its cruelty upon the Rongelap people.<sup>11</sup>*

From 1957 through to 1985 Rongelap people had unknowingly been daily consuming local foods contaminated by radioactive fallout from the 'Castle Bravo' test. Breadfruit and coconuts, and perhaps the fish, were all contaminated by radioactive substances taken up through the soil and environment. Cesium-137 accounted for more than 90% of the estimated dose, while Strontium-90, Iodine-131 and small amounts of Plutonium-239 and Plutonium-240 contributed minor amounts to both background and ingested radiation.<sup>12</sup> These elements need to be reduced if not eliminated before Rongelap's people can safely return to their atoll.

Cesium-137 is widely recognised as the most harmful radioisotope in nuclear fallout with a half-life of 33 years.<sup>13</sup> It is readily absorbed by plants and animals and takes several months to clear the body once consumption of contaminated material ceases.<sup>14</sup> Strontium-90 with a half life of 50 years is deposited in bone marrow, the most radio-sensitive body tissue; it can cause bone cancer and leukemia and has been associated with stunted growth in children. Iodine-131 has a half-life of only 8 days but is an especially significant toxic substance from nuclear fall-out because it is selectively deposited in the thyroid gland. Children are particularly vulnerable. Some Marshallese children received doses that led them to develop thyroid abnormalities within 10 years of exposure, including hypothyroidism and malignancies.<sup>15</sup> Nodules on the thyroid gland have been the most widely occurring 'radiation sickness' for Rongelap people.

Food contamination by radioisotopes has been under-recognised as a serious and persistent risk to health from nuclear fallout. For 28 years Rongelap people had to rely on local food sources that they

did not know were contaminated. Their only supplementation came from imported rice sold to them by trade ships on irregular visits. No other population has been exposed to both background and ingested radiation for such a long period of time.

Information released under a US declassification order in the 1990s revealed the degree to which the Marshall Islands people had been experimental subjects on the effects of radioactive substances on human populations. Access to reports for the AEC Radiological Safety Committee on the longer-term effects had been restricted by the US Defence Nuclear Agency. US Department of Defence and AEC archives contain many records that had been suppressed. When the information became available researchers were able to build a picture of the Rongelap people's suffering, told in their own words. That information contributed significantly to the Rongelap claim before the Nuclear Claims Tribunal in 2002.<sup>16</sup>

With declassification some information held by investigating medical agencies became available.<sup>17</sup> Lawrence Livermore Laboratory revealed high levels of Cs-137 taken up by breadfruit and coconut crabs and lesser levels in coconuts. Although an important part of the islanders' diet, fish was not tested.<sup>18</sup> In the journal 'Health Physics' 1997, Cronkite et al.<sup>19</sup> gave a retrospective explanation of BNL medical records indicating that short-term effects were expected to be of little consequence; most of the exposed [in 1954] apparently recovered after 6 months.

Longer-term effects had emerged ten or more years after exposure. No differences were found between the exposed and unexposed populations. BNL urinalyses had revealed that Rongelap subjects had accumulated Strontium-90 and Iodine-131 in their systems. But no dietary intake of radioactivity via particular foods was apparently recorded; Cronkite adds that from 1978: 'the [BNL] medical team was no longer responsible for measurements of radioactivity in foodstuffs or body burdens.'<sup>20</sup> Neither laboratory gives an explanation for failing to identify or report links between radiation sicknesses and consumption of radioactive contaminated foods.

New information on these oversights gained public attention during the 1990s, leading up to the Nuclear Claims Tribunal hearings, beginning in 2000. The four northern atolls made separate claims for direct effects of nuclear fallout on their islands. Rongelap peoples' claims before the Tribunal<sup>21</sup> sought restitu-

**Neither laboratory gives an explanation for failing to identify or report links between radiation sicknesses and consumption of radioactive contaminated foods**



tion for damage to their health, as well as damage to their atoll environment.<sup>22</sup> Rongelap women asked the Tribunal for compensation for the many stillbirths, deformed fetuses and disturbed reproductive cycles they had suffered, but were initially denied as US officials could find no connection between contaminants and these reproductive disorders, and the women could not produce conclusive evidence. Ingested radioactive substances now linked to the many sicknesses they were suffering formed part of their claim for compensation. They also wanted assurances that their atoll would be cleaned of radiation so their radiation sicknesses would not continue. The Nuclear Claims Tribunal accepted responsibility for a selected list of medical conditions when awarding personal injury claims in 2001. Only some of those claims have been paid out; some claimants have died before receiving their payments. The allocated fund is now exhausted, yet health problems continue to afflict Rongelap people.

Earlier repeated requests by Rongelap leaders to the US government for their atoll to be cleaned of radioactivity had met with delays that led them to remove themselves to a neighbouring atoll in 1985. A U.S. Committee on Radiological Safety in the Marshall Islands, a subgroup of the International Committee on Radiological Protection (ICRP), addressed the topic of 'radiological assessments for the resettlement of Rongelap' based on a 1992 Memorandum Of Understanding with the US. This memorandum stated: 'Resettlement will only occur if no person will receive a calculated annual whole body radiation dose equivalent of more than 100mrem above background.'<sup>23</sup> To achieve this target, any clean-up programme needed data on the contaminants ingested (inhaled and eaten) as well as the levels of background radiation across the atoll. The ICRP Committee recommended replacement of contaminated surface soil with clean crushed coral fill to reduce background radiation and the spreading of large amounts of potassium fertilizer to counter the uptake of Cs-137 by breadfruit and coconut trees.<sup>24</sup> The Committee was critical of earlier data on radioactivity in the diet compiled by Brookhaven and Lawrence Livermore Laboratories, but not made available.<sup>25</sup> Whatever form of clean-up was to be put in place, the Committee advised that returning Rongelap residents should obtain only 25 percent of their annual food supply from local foods, with the balance to be come from imported foods.

At the Nuclear Claims hearings in 2002 a range of possible rehabilitation processes was considered, adding to the peoples' continued unease about the uncertainties surrounding how and when the clean-up programme would proceed. Theoretical

physicists and agriculturalists suggested alternatives but needed more data on the contaminants, safety levels, and associated health problems. The Rongelap claim became a bewildering debate between health physicists, agriculturalists, lawyers, and Marshallese representatives, expressed in a technical language of rems and radioisotopes. Humanitarian concerns were obscured.

In 2004, Robert Alvarez strongly criticised the plan for repatriating Rongelap people to their atoll. As Deputy Assistant Secretary for National Security and Environmental Policy, he suggested that the Departments of Energy and Interior had quietly resisted complying with the 1992 Agreement. He stated categorically:

*Until the US government can assure... doses below 100-mil-lirem..., efforts to force the Rongelap people back to their home are unjustified and unfairly place the burden of protection on the Rongelap people.*<sup>26</sup>

Rongelap people have yet to reoccupy their atoll. The Tribunal's recommendations have yet to be implemented, posing several concerns. Restricting clean-up to the main island because of costs leaves 60 other islets still contaminated; normal usage for supplementary foods and recreation poses many hazards. Also, effects of the recommended heavy doses of potassium on the growth, taste and acceptability of replanted breadfruit and coconuts is unknown. Projected dose rates from radiation that persist in the new environment have been calculated with little understanding of life on a northern atoll.<sup>27</sup> New plantings of breadfruit and coconut will take from 6 to 10 years before they produce mature fruits ready for eating, so the returnees will have to live on imported food until then; the recommended 25%/75% split in the annual dietary intake between local and imported foods cannot commence for some years after repatriation. Already there are concerns about high levels of diabetes in the expatriate Rongelap community that are likely to continue if they have to live entirely on an imported diet. Rongelap people are understandably wary of outsiders' plans for life on their island.

The Rongelap community was scheduled, under US order, to return to their own atoll by October 2011. But rehabilitation is not yet completed, so the return date has been postponed to July 2013. Almost 60 years have elapsed since fallout from the US thermonuclear bomb test on Bikini on March 1 1954, so decontamination of radioactive substances is a matter of urgency. How many of the community will return is unknown, but given the high level of distrust of previous considerations of their illnesses and the radioactive environment on their atoll, only a proportion of the community is likely to take up a long awaited opportunity.

We must conclude that ingestion of contaminated local foods and exposure to background radiation has had disturbing, long-lasting medical and social effects on exposed peoples. It has contributed to ill health and dislocation from their islands over a period of more than 50 years. Understanding the Marshallese concerns about effects of radioactive contamination of their food sources and their environment can contribute to considerations worldwide about radioactive pollution from nuclear explosions.

### Postscript

A United Nations Human Rights Council Report released its findings on 12 Sept. 2012 on the impact on human rights of the nuclear weapons tests conducted by the USA in the Marshall Islands between 1946 and 1958. It recommends that steps should be taken

*to undertake action to protect the right to life, health and environment of all [Marshallese] affected victims and their families.*

The Special Rapporteur, Calen Georgescu, recommended that a comprehensive independent radiological survey of the entire (Marshall Islands) territory be undertaken. He also established that the US has an obligation to encourage a final and just resolution for the Marshallese people, including full payment of compensation sums awarded



Rongelap's people cannot safely return to their atoll before the soil has been decontaminated. Lawrence Livermore National Laboratory has a small garden on Rongelap to assess uptake of radionuclides in crops.

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by the Nuclear Claims Tribunal hearings. He stated: 'The continued risks of further such events needs to be addressed urgently in order to replace a legacy of distrust.'<sup>28</sup>

Dr Nancy J. Pollock, Depts. Of Anthropology and Development Studies (retired) Victoria University of Wellington, New Zealand. Dr Pollock has studied and published papers on food security and health issues in Pacific communities over the past 45 years. She has contributed a chapter to a new book to be published in 2013, *Food & War in 20<sup>th</sup> Century East Asia* by Katarzyna J. Cwierka. This article is an abridgement for Pacific Ecologist (CM) of Dr Pollock's chapter in this book.

Almost 60 years have elapsed since fallout from the US thermonuclear bomb test on Bikini on March 1 1954, so decontamination of radioactive substances is a matter of urgency

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# Bikini Atoll World Heritage site



Bikini women leave their island carrying their possessions, 1946.

*'For the good of mankind and to end all world wars'*

Commodore Ben H. Wyatt, military governor of the  
Marshall Islands, March 1946

31/7/2010, YOKWE.NET JACK NIEDENTHAL, BIKINI ATOLL LIAISON – The World Heritage Committee, at its 34th session in Brazil, inscribed Bikini Atoll Nuclear Test Site on the World Heritage List. The atoll was included on the list for the role atomic weapons tests at Bikini played in shaping global culture in the second half of the 20th Century. Bikini Atoll is distinctly 20th Century heritage, testimony to the dawn of the nuclear age, the start of the Cold War and the era of nuclear colonialism. Nuclear tests at Bikini Atoll shaped not only the history of the people of Bikini and the Marshall Islands, but had a crucial impact on the entire world. Events at Bikini gave rise to powerful symbols that characterise the second half of the 20th century, images so familiar to us, the Bikini swimming costume, Godzilla, the embodiment of radioactive energy, and of course, the mushroom cloud. Bikini was the site of atomic weapons testing, before the Cold War.

Between 1946 and 1954, sixty-seven nuclear tests were carried out in the Marshall Islands, 23 of them in Bikini and representing 7000 times the force of the Hiroshima bomb. The people of Bikini were removed from their island in March 1946 prior to the start of the first tests, on the understanding their sacrifice was 'for the good of mankind and to end all world wars.' Mayor of Bikini Atoll, Alson Kelen, who travelled to Brasilia in 2010 to present at the World Heritage Committee said: 'We left reluctantly and with great

sadness as our beautiful island became the location of the greatest destruction humankind is capable of, and we lost our way of life.' 'Bikini Atoll stands as a monument and memorial to the dawn of the nuclear age,' said Nicole Baker, an Australian who worked on developing this nomination with the Marshall Islands government over five years. *'At first glance Bikini looks like the quintessential tropical paradise, an image beloved by our modern culture as a place of peace and simplicity. However, when we look closer, we see the scars of the craters and the bunkers and equipment. Now you can see nature recovering, the vegetation is coming back, the birds are coming back.'*

Jack Niedenthal, spokesperson for the people of Bikini, says it's now safe to walk on the islands and to stay there for extended periods. 'People can go and stay there for as long as they want, there's no problem with gamma radiation. The reason people aren't living there now is that there's still cesium-137 in the soil, and this gets into the food crops, so people can't eat food grown on land.' Bikini Atoll is the first World Heritage site for the Marshall Islands. In the nomination document, Senator for the People of Bikini, the Hon. Tomaki Juda writes: *'As a World Heritage Site, Bikini Atoll will remind all of us around the world of the need for global peace and the elimination of weapons of mass destruction. Bikini Atoll may then actually fulfill the promise for which we reluctantly left our homeland, more than 64 years ago, 'for the good of mankind and to end all wars.'*

For more information see the 292 page Nomination Document with photos, maps: *Bikini Atoll: Nomination by the Republic of the Marshall Islands for Inscription on the World Heritage List 2010*, published January 2009.



# France: No honour, no mercy over Moruroa testing

France has yet to compensate the people of French Polynesia for grievous, long-lasting damage to health and the environment from 30 years of nuclear testing on previously pristine coral atolls. KAY WEIR reports.

Thirty years was a very long time to bombard the small coral atolls, Moruroa and Fangataufa with nearly 200 experimental nuclear weapons of mass destruction. Some were thermonuclear bombs, far more forceful than the bomb which destroyed Hiroshima.<sup>1</sup> It wasn't long before Fangataufa could no longer be used being so badly damaged by the assaults. This was done by France between 1966-1996 in the name of national security. It was done of course far away from mainland France, in Te Ao Maohi /French Polynesia in the South Pacific, where people lived scattered over 130 islands. The 3 decades-long nuclear bombardment ruptured Polynesian security, turning both atolls, but particularly the larger atoll, Moruroa, known for its beauty and plentiful fish,<sup>2</sup> into frightening storage dumps for some of the most dangerous, long-lived radioactive pollutants known to exist.

The nuclear testing also ruined the health of many thousands of Polynesian people.<sup>1</sup> Thousands were offered jobs on the atolls to construct the facilities needed for the tests. Today the consequences also threaten to contaminate the South Pacific Ocean.<sup>3,4</sup>

Now in 2013, seventeen years after the nuclear tests ended, France has yet to properly recognise or compensate for the harm it has caused to the people and environment of Te Ao Maohi. Before the testing started, French authorities tried to assuage Polynesian concerns, as noted in the book, *Moruroa: Testimonies – Witnesses of French nuclear testing in the South Pacific*.<sup>1</sup> Authorities assured that the tests were 'harmless and no radioactive particle would reach an inhabited island.' In 1963 before the tests began, French authorities suddenly stopped publishing French Polynesian health statistics.<sup>1</sup> This increased people's concerns and their protests which were ignored by France.

After the tests began officials insisted that radioactivity levels on Moruroa were one third that of Paris, though the army had to fly in 6000 litres of mineral water daily as workers refused to drink water from the desalination plant. At the same time rather contrarily, Moruroa workers were advised not to swim or eat fish from the lagoon.<sup>1</sup>

One person who worked on Moruroa for 11 years from 1964 was Oscar Temaru, now President of French Polynesia, then a customs officer sent to check planes and boats. He recounts in *Testimonies*,<sup>1</sup> how after a big test the leaves of the coconut trees turned yellow as if they had died. Suddenly signs were put up warning against eating coconuts. '*Some people were so sick they had to be taken off the atoll and later people heard some had died. This was about 1969 or 1970.*' When he became aware of the dangers of nuclear weapons and saw the atoll was being destroyed he wrote a letter to the Moruroa head of military operations saying that because of health risks, customs officers refused to be sent to Moruroa again, which fortunately for them was agreed. Others were not so lucky.

The organisation Moruroa e Tatou (MET, Moruroa and Us) was set up in Tahiti in 2001 to help get compensation for those suffering illnesses from the 30 years of tests. Illness and old age have claimed the lives of many Tahitians exposed to atomic radiation. MET is working to preserve the testimonies of the remaining witnesses. Roland Oldham, President of MET in *The Guardian Weekly* in January 2006, said they were getting 600 cases of cancer a year, and over 250 deaths because of the tests. Some cancers take 20–30 years to develop.

In 2009 after decades of denying any responsibility for health problems from its nuclear testing programmes, France passed a bill to establish an experts' panel to assess individual compensation claims for its tests in Algeria and French Polynesia. But Mr Oldham said the panel is not independent as the committee is nominated and controlled by the Ministry of Defence, who carried out the nuclear tests in the first place. There is no victims' representative on the experts' panel. Oldham says the \$13.5million France has set aside for the settlements is a bad joke, compared to the amount spent on defence. He says there needs to be a health structure to help the victims and environmental impacts should not be ignored. MET has also spent years appealing for access to French military and medical records about the

nuclear tests. In a 2 July 2009 panel discussion with Meredith Griffith in *The World Today*, Oldham spoke of the very high rates of cancers in French Polynesia and problems in getting compensation because the French health system had not collected the data on Polynesian cancer statistics. In 2009, Radio NZ International reported that eight people who took their cases to French Polynesia's industrial relations tribunal were unsuccessful. John Doom of MET said the three surviving workers have leukaemia, and they and five widows will continue to seek redress.

On 27 December 2012, Radio New Zealand International reported that MET was dismayed that Paris had rejected almost all compensation claims from its suffering members so far. Roland Oldham said new socialist President Hollande had promised to make the compensation laws less restrictive and called on the government to take on its responsibilities.

France is known internationally for its ideals of equality and fraternity, yet still refuses to pay compensation to thousands of people and families whose health and lives have been ruined as a consequence of its testing in Polynesia. The lack of information on health and cancer statistics because France stopped collecting Polynesian health statistics shortly before the testing began undercuts the normal basis for compensation claims. The situation is similar to the lack of response and support the Marshall Islanders experienced with their health problems, (see previous article) from US nuclear testing. Behind both situations is the culture of military secrecy and protection of the interests of France and the US, not to recognise the damage they caused and not to pay compensation. So much for the democratic ideals which both countries like to preach to the world.

In August 2012, a leaked 2010 report raised new fears that Moruroa atoll was in danger of collapse. MET president told Radio Australia's Pacific Beat programme that radioactive material could be released into the Pacific Ocean if the atoll were to collapse. French nuclear safety official, Marcel Jurien de la Graviere, suggested that people on nearby Tureia Atoll, 100 km from Moruroa could be exposed to radiation 300 times the level in France. If the atoll collapses there could be international ramifications. Roland Oldham said there are about 150 holes on the atoll containing very dangerous levels of radioactivity. If the atoll were to collapse it could also trigger a 15 meter-high tsunami. MET wants independent experts to be al-

lowed to conduct a study to provide more information about the danger of the atoll collapsing. Mr. Oldham said the report doesn't properly address the serious threat posed by the buried radioactive material. An Australian 2003 science study,<sup>3</sup> referred to in *Pacific Ecologist* issue 20, backs up Mr Oldham's conclusions on international ramifications. This reported that ocean currents could release material from Moruroa by an earthquake or rock slide, with very high levels of radioactivity reaching across the Pacific to Australia, New Zealand and South America. Moruroa is in reality a security issue for the whole world.

In January 2012, France passed a bill to return the two atolls to French Polynesia by 2014. This appears to be a good step, particularly if it means there could be independent monitoring of the fractured badly damaged atolls. But France is still to continue environmental monitoring of radiation. It was reported by ENS on 19/1/2012 that The Ministry of Defense is to provide the information necessary for a new commission to carry out its task, except for military secrets protected by law. At least once a year, France's Institute of Radiation Protection and nuclear safety is to produce a public report within 12 months after a fact finding mission to measure and analyse radiation on the two atolls. Surely this should have been happening since 1966 when the tests first began?

In December 2012 Radio NZ international reported that French Polynesian leaders had talked with the International Seabed authority in a bid to get seabed deposits recognised as belonging to the indigenous Maohi people. President Oscar Temaru said it was an essential step to reinscribe French Polynesia on the UN list of territories to be decolonised. France is strongly opposed to decolonisation of French Polynesia. President Temaru has the backing of the Melanesian Spearhead Group and the Non-Aligned movement. Sadly, Australia and New Zealand have sided with Paris and opposed the decolonisation. It's disturbing that NZ a nuclear-free country should side with Paris over this most legitimate claim for independence. Those interested in solidarity and justice for the long suffering people of Te Ao Maohi can write to members of Parliament and mayors, in favour of decolonisation and the independence of French Polynesia. President Oscar Temaru has stoically worked for this for 35 years, hoping for the freedom, safety and cultural revival of the Maohi people.

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# Get active! What you can do to help abolish nuclear weapons

**Sign the global online petition.** Let the world's leaders know you demand a **nuclear-weapons-free world!** Put yourself on the map and see who else has signed and from where. Go to [www.theatomproject.org/en/act-now](http://www.theatomproject.org/en/act-now)

**Engage your legislator.** Invite your legislator to join Parliamentarians for Nuclear Nonproliferation and Disarmament and engage in various parliamentary actions to establish nuclear-weapon-free zones, phase-out nuclear deterrence, support the UN Secretary-General's nuclear disarmament plan and take national measures to prohibit nuclear weapons. Go to [www.pnnd.org](http://www.pnnd.org)

**Motivate your mayor.** Encourage your mayor to join Mayors for Peace and to engage in their 2020 Vision campaign to achieve a global treaty to abolish nuclear weapons by 2020. Go to [www.2020visioncampaign.org](http://www.2020visioncampaign.org)



**Don't bank on the bomb!** Does your bank invest in nuclear weapons corporations? If so, change to a different bank and let the banks know why. To find out which banks invest in nuclear weapons, go to [www.dontbankonthebomb.com](http://www.dontbankonthebomb.com)

**Stay informed.** Sign-up for the Abolition 2000 E-news, an electronic newsletter every 4-6 weeks which reports on progress, initiatives and actions for a global treaty to abolish nuclear weapons. Go to [www.abolition2000.org](http://www.abolition2000.org) or contact [nukes@ikvpaxchristi.nl](mailto:nukes@ikvpaxchristi.nl)

## Key organisations

**Abolition 2000 – Global Network to Eliminate Nuclear Weapons.** Over 2000 organisations from around the world have joined the Abolition 2000 campaign for a global treaty to abolish nuclear weapons. **Join a group in your city or country!** You can also join one of the international working groups on sub-issues including international humanitarian law, de-alerting (taking nuclear forces off hair-trigger alert), nuclear doctrines (opposing nuclear deterrence), depleted uranium weapons, sustainable energy (phasing out nuclear energy), establishment of nuclear-weapon-free zones, economic aspects, and ballistic missiles/space militarisation. Go to [www.abolition2000.org](http://www.abolition2000.org) or contact [nukes@ikvpaxchristi.nl](mailto:nukes@ikvpaxchristi.nl)

**The ATOM Project.** The ATOM project highlights the health and environmental consequences of nuclear tests as an imperative for nuclear abolition. Led by Karipek Kuyukov, a second-generation victim of Soviet nuclear tests in Kazakhstan (he was born with no arms due to his parents being irradiated), the ATOM Project has produced powerful videos and exhibitions on the impact of nuclear tests, and the leadership of Kazakhstan for a nuclear weapons-free-world. On independence from the Soviet Union, Kazakhstan closed the Soviet nuclear testing facility, destroyed all 1700 nuclear weapons on their soil and commenced negotiations for a Central Asian Nuclear-Weapon-Free Zone. More recently they have initiated the United Nations International Day Against Nuclear Tests and proposed a Universal Declaration for a Nuclear Weapons Free World. Go to [www.theatomproject.org/en](http://www.theatomproject.org/en)

**Basel Peace Office: Advancing international peace and security through nuclear abolition.** Five international and two Swiss organisations have come together in this new initiative – hosted by the City of Basel (a member of Mayors for Peace) and the University of Basel – to advance key initiatives for a nuclear-weapons-free world based on peace and cooperative security. Initiatives include the Climate-Nuclear Nexus, Nuclear Abolition Forum (academic dialogue on how to achieve a nuclear-weapons-free world), Sports and Peace, the Framework Forum (bringing governments together to build the legal,





**'I myself have no arms to hug you, but a heart as big as the open space of Kazakhstan ready to embrace the world for peace and nuclear disarmament.'**  
 — KARIPBEK KUYUKOV, HONORARY ATOM PROJECT AMBASSADOR AT THE PROJECT'S LAUNCH IN KAZAKHSTAN 29 AUGUST 2012

political and institutional framework for a nuclear-weapons-free world), Engaging legislators (mayors and parliamentarians), establishing Nuclear-Weapon-Free Zones and promoting the humanitarian consequences of nuclear weapons and the relevance of international law. Go to [www.baselpeaceoffice.org](http://www.baselpeaceoffice.org)

**International Physicians for the Prevention of Nuclear War.** Open to any medical professional to join – including doctors, medical students and other health workers. Won the Nobel Peace Prize in 1985 for its work publicizing the medical effects of any use of nuclear weapons. Go to [www.ippnw.org](http://www.ippnw.org) or contact [ippnwbos@ippnw.org](mailto:ippnwbos@ippnw.org)

**Nuclear Abolition Forum.** Is nuclear abolition feasible or an idealistic pipe dream? What would be required to achieve and sustain a nuclear-weapons-free world? How could we achieve security without nuclear weapons? How can we build the political commitment and momentum to reach this goal? The Nuclear Abolition Forum is a periodical and

website to facilitate dialogue between academics, governments, disarmament experts and NGOs on key issues regarding the prohibition and elimination of nuclear weapons – and from a wide variety of perspectives. Go to [www.abolitionforum.org](http://www.abolitionforum.org) or contact [alyn@lcn.org](mailto:alyn@lcn.org)

**Parliamentarians for Nuclear Nonproliferation and Disarmament.** Parliamentarians play key roles in national policies and international progress for nuclear disarmament. They are the bridges between civil society and governments. They develop policy, ensure government accountability, decide on budgets, adopt legislation and work collaboratively with parliamentarians in other countries to encourage multilateral action. **Parliamentarians for Nuclear Nonproliferation and Disarmament (PNND)** is an open, cross-party global network of leading parliamentarians. Specifically recognized by UN Secretary-General Ban Ki-moon, in a letter he sent to all parliaments, PNND is your organisation to get your parliamentarians active on nuclear abolition. Go to [www.pnnd.org](http://www.pnnd.org) or contact [chris@pnnd.org](mailto:chris@pnnd.org)

**Pugwash Conferences on Science and World Affairs.** The establishment of Pugwash was inspired by a 1955 manifesto by Albert Einstein and Bertrand Russell – an appeal from scientists to governments and people to reach beyond their national identity and interests and develop a common sense of humanity – or else be destroyed by nuclear weapons. Since 1957 Pugwash has been bringing scientists from around the world and across the political spectrum to explore ways to create common security and achieve nuclear disarmament. Pugwash was awarded the Nobel Peace Prize in 1995. Go to [www.pugwash.org](http://www.pugwash.org) or contact [sandra@pugwash.org](mailto:sandra@pugwash.org)

**World Future Council.** Highlights best policies and links between key global issues including energy, environment, development, food security, economies, peace and disarmament. Organises the prestigious Future Policy Award (in 2013 this will be for disarmament) and the Disarmament for Development Tank of Bread project (a hit at Rio+20). Highlights the Climate-Nuclear Nexus, the links between climate change and nuclear weapons. Go to [www.worldfuturecouncil.org](http://www.worldfuturecouncil.org) or contact [rob.vanriet@worldfuturecouncil.org](mailto:rob.vanriet@worldfuturecouncil.org)

# The United Nations and nuclear disarmament



Nuclear disarmament is central to the work of the United Nations and was the aim of its first resolution adopted in 1946, reports **ANGELA KANE**, High Representative for Disarmament Affairs.

*The doctrine of nuclear deterrence has proven to be contagious. This has made non-proliferation more difficult, which in turn raises new risks that nuclear weapons will be used.*

UN Secretary-General Ban Ki-moon, 24 October 2008

On receiving the Nobel Peace Prize in 1959 for his disarmament work, Philip Noel-Baker said: ‘*Disarmament is not a policy by itself; it is part of the general policy of the UN. But it is a vital part of that policy; without it, the UN institutions can never function as they should.*’ Four years earlier, then-Secretary-General Dag Hammarskjöld referred to nuclear disarmament efforts as a ‘hardy perennial’ at the United Nations.<sup>2</sup> Even the UN’s first UN Secretary-General, Trygve Lie, not known for his views on disarmament, included it in his ‘Twenty-Year Programme for Achieving Peace Through the United Nations.’ He perceptively argued:

*Negotiation on this problem should not be deferred until the other great political problems are solved, but should go hand-in-hand with any effort to reach political settlements.*<sup>3</sup>

Earlier still, on 24 January 1946, the General Assembly adopted its first resolution. Its goal? The elimination of all ‘atomic weapons’ and other weapons ‘adaptable to mass destruction,’ now widely abbreviated as WMD.<sup>4</sup>

If an international organization could have what resembles DNA, the UN’s ‘triple helix’ would arguably consist of disarmament, the ‘regulation of armaments’ (often called ‘arms control’), and its basic Charter-based norms for the peaceful settlement of disputes and against the threat or use of force. These have evolved into very much more than just goals of the organization. They have become part of the UN’s identity, helping define its institutional *raison d’être*.

The reasons why disarmament has been and remains a high priority at the UN are a complex blend of realities, ideals and self-interests. The key reality is that, despite a low level of media and public attention, the continued existence of 19,000 nuclear weapons combined with nuclear-use doctrines and

an operational readiness to fire such weapons at a moment’s notice, creates a very real risk of a nuclear catastrophe by accident, miscalculation or intent. Such a catastrophe would dwarf the Hiroshima, Nagasaki, Chernobyl and Fukushima events. Thus, all our Member States, support the goal of global nuclear disarmament. Disagreements have always been over the means to achieve it, not the goal itself. It has also been supported by each UN Secretary-General and none more actively than by Secretary-General Ban Ki-moon.

Much of this support is probably a legacy of the global repugnance for the catastrophic humanitarian effects of the atomic bombings at Hiroshima and Nagasaki, when the theoretical effects of these weapons were so tragically confirmed on the ground. The bombings were inconsistent with centuries of norms of international humanitarian law, notably those proscribing indiscriminate use of weapons on civilian populations. There is no doubt a moral and legal underpinning for much of this support for disarmament at the United Nations.

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## Elimination the only guarantee

Nuclear disarmament also has a practical side. It has been recognized by the vast majority of Member States as the most effective way to prevent another use of such weapons. As anyone who has worked in a global inter-governmental organization knows, getting a consensus on virtually anything really important can be quite difficult. Yet at the five-year Review Conferences of the States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) held in 2000 and 2010, the Parties were able to agree on language saying the total elimination of such weapons offers ‘the only absolute

guarantee against the use or threat of use of nuclear weapons.<sup>5</sup> This is a watershed agreement considering that the major nuclear weapons countries and 185 other States have joined that treaty (every country in the world except India, Israel and Pakistan) and only one country has ever withdrawn (North Korea).

Despite this consensus, critics continue to label disarmament as utopian and unrealistic. They dwell on the difficult challenges: political, technological, institutional, psychological, to achieving global nuclear disarmament, while ignoring the horrific risks and dangers associated with alternatives to disarmament, including reliance on balances of power, deterrence based on threats of mass annihilation, hair-trigger nuclear postures, launch-on-warning doctrines, endless increases in military expenditures, the quixotic pursuit of 'military superiority,' exclusive reliance on 'non-proliferation' as a recipe for preventing use, and other such nostrums. Secretary-General Ban Ki-moon commented on the 'utopian' cliché in 2012, when accepting the Seoul Peace Prize, saying: 'Some say nuclear disarmament is utopian ... I say the illusion is that nuclear weapons provide security.'<sup>6</sup>

There is a lot of truth in Noel-Baker's claim that disarmament relates quite closely to the prospects for the overall work of the United Nations. We too easily assume today that the non-occurrence of nuclear war

**We too easily assume today that the non-occurrence of nuclear war is a permanent condition, to be taken for granted**

is a permanent condition, to be taken for granted. Such complacency is a recipe for disaster. Numerous times leaders of nuclear-armed States have teetered on the brink of the nuclear precipice. In fact, the rationale behind nuclear weapons, that the threat of their use deters an adversary from attacking, requires a readiness and willingness to use

the weapons to be effective.

Globally or regionally, any such event would have catastrophic consequences. International Physicians for the Prevention of Nuclear War (IPPNW), winner of the 1985 Nobel Peace Prize, and climate scientists have concluded that even a regional nuclear war would produce global effects they have summarized as 'nuclear famine.'<sup>7</sup> According to Dr. Ira Helfand of IPPNW, a major strategic nuclear war would produce 'a civilization-ending disaster.'<sup>8</sup> The catastrophic humanitarian and environmental effects of such weapons is the focus of a major international conference being held in Oslo in March 2013, which will be preceded by a Civil Society Humanitarian Summit.<sup>9</sup>

Noel-Baker was right: it does not take a giant leap to recognize how a 'civilization-ending disaster' would affect the work of the UN. So what about the UN's disarmament work? Some would argue that the UN



*Nuclear disarmament and non-proliferation are not utopian ideals. They are critical to global peace and security. We have a legal and moral obligation to rid our world of nuclear tests and nuclear weapons. When we put an end to nuclear tests, we get closer to eliminating all nuclear weapons. A world free of nuclear weapons will be safer and more prosperous. — UNITED NATIONS SECRETARY-GENERAL BAN KI-MOON VIENNA, AUSTRIA 17 FEBRUARY 2012*

has had little or no impact on nuclear disarmament. Sixty-seven years after the unanimous resolution calling for the elimination of nuclear weapons and other weapons of mass destruction, it is still unfinished business. On the other hand, the facts that nuclear weapons have not been used in wartime since 1945, that whole regions have banned nuclear weapons by establishing nuclear-weapon-free zones, that nuclear testing has been prohibited by international treaty, and that the nuclear weapon States are now reducing stockpiles rather than increasing them, points to some success.

Of course the UN is not a world government. Most vital decisions on nuclear weapons are the exclusive responsibility of our Member States. Thus the UN can facilitate but not dictate disarmament agreements. Many States possessing nuclear weapons argue they



can only get rid of them when certain preconditions have been satisfied. Some of these, for example, 'world peace,' an end to all regional disputes, solution of all proliferation threats, and an end to the danger of nuclear terrorism, are not simply difficult to achieve, but are a convenient rationale to postpone indefinitely the fulfillment of nuclear disarmament commitments.

The alternative to these preconditions is a list of criteria that have long been supported at the United Nations as basic standards for any responsible nuclear disarmament agreement. These include: verification; transparency; irreversibility; universality; and legal bindingness.

It is hard to imagine a world without nuclear weapons that is not verified. It is not a goal that will ever be achieved based exclusively on trust and good faith alone. States can hardly be expected to give up nuclear weapons unless they have high confidence that no other State is retaining such weapons, and this requires verification. Disarmament also requires transparency: States must declare what they have in terms of bombs, missile warheads, fissile material and delivery systems. Critics of disarmament habitually warn of 'break-out scenarios' in a nuclear-weapon-free world, i.e. the possibility that a State might hide or produce a nuclear weapon or weapons, 'break-out' from the treaty and then be able to dictate terms to other States which no longer have a nuclear deterrent in response. Effective transparency and verification rule out those contingencies, certainly better than another alternative.

Irreversibility also addresses the 'break-out' issue, because if weapons-usable fissile material is fully controlled, as it must be in any reliable global nuclear disarmament regime, then break-out becomes not just unlikely, but impossible. When it comes to the possible use of nuclear weapons, which is a better standard to pursue: one that simply limits the 'risk of use' or one that effectively eliminates that risk?

Of course, global nuclear disarmament must be global. A nuclear disarmament treaty involving merely a coalition of friendly states would not satisfy the standard of universality, this would have as much value as a pact signed by law-abiding citizens not to rob banks. Nor would States likely find acceptable a disarmament arrangement that is based on toasts, press releases, or mere political commitments that could change at a moment's notice, hence the standard of legal bindingness. The universality of treaties is not always achieved in one step. It is usually pursued as a process as has occurred with the gradual expan-

sion of membership of the Non-Proliferation Treaty. The start of multilateral treaty negotiations creates political momentum that brings some reluctant States on board, and the conclusion of such a treaty creates a norm that creates further pressure for all States to join.

### Nuclear disarmament proposal

On 24 October 2008, Secretary-General Ban Ki-moon launched a five-point nuclear disarmament proposal that has been supported across the globe.<sup>10</sup> It called for work on a nuclear weapons convention or a framework of mutually reinforcing instruments with the same goal. It urged the Security Council to consider, including at summit level, issues related to maintaining international peace and security in a world without nuclear weapons. It highlighted the importance of the 'rule of law,' which includes bringing the Comprehensive Nuclear-Test-Ban Treaty into force, negotiating a fissile material treaty, ratification of all the Protocols of treaties establishing regional nuclear-weapon-free zones, and creating a Middle East WMD-free zone.

The Secretary's General's proposal stressed the importance of transparency and urged the nuclear powers to provide information on their nuclear disarmament activities to the UN, which could serve as a central repository for such information. In response to a request by the States Parties attending the 2010 NPT Review Conference, the UN Office for Disarmament Affairs (UNODA) has established a page on its website for this repository, but it remains empty.<sup>11</sup> He also recognized that nuclear disarmament is not an end in itself; it should be combined with complementary measures, including eliminating other WMD and reduction and regulation of conventional armaments.

The proposal for a nuclear weapons convention has been endorsed by such diverse and distinguished groups as the Inter-Parliamentary Union,<sup>12</sup> the International Committee of the Red Cross and Red Crescent Movement,<sup>13</sup> the US Conference of Mayors,<sup>14</sup> and Mayors for Peace, with representatives of over 5,400 cities in 155 countries.<sup>15</sup> It has also been endorsed by resolutions adopted by several national parliaments and the European Parliament.<sup>16</sup> A detailed study by the International Campaign to Abolish Nuclear Weapons (ICAN) has identified 146 UN Member States that support the goal of concluding a nuclear weapons convention, with 22 additional States listed as 'on the fence' and only 26 that do not support it.<sup>17</sup>

In all discussions about nuclear disarmament, at some point the issue of 'political will' arises. Patricia

**The Secretary's General's proposal stressed the importance of transparency and urged the nuclear powers to provide information on their nuclear disarmament activities to the UN**

Lewis, former director of the UN Institute for Disarmament Research, once defined it as 'the sustained determination to advance a public interest, even in the face of strong resistance.'<sup>18</sup> Many activities are underway at the UN to strengthen political will to achieve nuclear disarmament. UNODA places great emphasis on the importance of education and we have an extensive website devoted to this purpose.<sup>19</sup>

We are doing a lot to promote public understanding of disarmament issues. We publish the annual *United Nations Disarmament Yearbook*, a comprehensive account of the activities underway in the key arenas that comprise the UN disarmament machinery, including the General Assembly's First Committee, the UN Disarmament Commission, and the Conference on Disarmament.<sup>20</sup> We have a Disarmament Fellows programme that has trained over 800 government officials largely from developing countries.<sup>21</sup> We have been privileged for many years to have young interns, now in the hundreds, who have worked with us and are learning about disarmament.

We attach great importance to advocacy through our public speaking, especially by the Secretary-

General, myself, and members of my staff. This is all part of our active engagement with diverse groups in civil society. Besides assisting the Secretary-General, UNODA also works closely with the Permanent Missions to the United Nations to help them advance their own disarmament initiatives. We often meet with new diplomats from these missions and give them briefings on the UN's disarmament work.

All together, I view these activities in their own way as strengthening political will to achieve disarmament. The combination of strong, persistent advocacy from civil society, diplomatic initiatives by coalitions of Member States, statesmanship by the Secretary-General and national leaders at the highest levels, has the potential to produce real progress. But this effort must take place on all these levels and be sustained over many years. We who work at the UN are determined to do our share of this work as best we can and we will not rest until the job is done.

**Angela Kane is the High Representative for Disarmament Affairs at the United Nations. She has had a long, distinguished career at the UN, including positions of Director in the Department of Political Affairs and Director in the Department of Public Information and special assignments to the Democratic Republic of the Congo, and postings in Indonesia and Thailand.**

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# The climate–nuclear nexus

**ALYN WARE** and **ROB VAN RIET** report on the Climate-Nuclear Nexus project and identify the links between these two great threats to human survival. Working on the two issues together will have many benefits and help develop the co-operative strategies necessary to address both climate change and nuclear disarmament.

*A nuclear disaster will not hit at the speed of a glacier melting. It will hit with a blast. It will not hit with the speed of the atmosphere warming but of a city burning. Clearly, the attention focused on nuclear weapons should be as prominent as that of global climate change.*



Arnold Schwarzenegger, Governor of California 2007<sup>1</sup>

*The threats to our planet – of climate change, poverty and war – can only be overcome by nations and the global community working in cooperation – something not possible while nations maintain large and expensive militaries and threaten to destroy each other.*

Co-Presidents, Parliamentarians for Nuclear Non-proliferation and Disarmament, 2008<sup>2</sup>

In the 1980s nuclear weapons were one of the key issue occupying media, public and political attention. Those of us who were also warning about threats to human survival from climate change were ignored. A huge blanket of complacency smothered the climate-change issue. Today, the situation is the reverse. Climate change is in the front seat of the global political vehicle and nuclear weapons are hidden away, forgotten under the carpet in the boot.

The carpet of complacency over nuclear weapons is hard to fathom. There are more nuclear-armed States now than in the 1980s. The possibility of non-State actors (terrorists) acquiring a nuclear explosive device (or manufacturing a crude one) is greater than ever before. There are both hot and simmering conflicts between nuclear-armed States and potential nuclear States, particularly in the Middle East and North-East Asia. Nuclear stockpiles remain sufficient to destroy the world many times over. Thousands of nuclear weapons are still on high alert, ready to be fired within minutes. Use of even a small fraction of nuclear weapons would create catastrophic climatic consequences that would dwarf those produced by carbon emissions.

The Climate-Nuclear Nexus, a project of the World Future Council and the Basel Peace Office, reminds us that the threats of climate change and nuclear weapons are the two greatest threats to hu-

man survival, and deserve the highest attention and action by public, media and policy-makers. But there are additional links between these two issues, some of which compound the threats to humanity; others provide opportunities to resolve both threats jointly. The climate-nuclear nexus manifests itself in the following key ways:

- Climate change-induced weather events can impact on nuclear security and safety
- Nuclear war would create catastrophic climatic and environmental consequences
- Conflicts due to climate change could trigger the use of nuclear weapons
- The funding currently devoted to nuclear weapons is sorely needed to combat climate change
- The nuclear deterrence stand-off prevents the global co-operation required to address climate change

## Climate impacts on nuclear security

The nuclear disaster in Fukushima in March 2011 has drawn attention to the possible effects of extreme weather events, environmental degradation and seismic activity on the security and safety of nuclear energy plants. Although the tsunami was caused by an earthquake, not by climate change, the impact of the tsunami on nuclear reactors provides a timely warning of the potential for rising seas and storms to impact on nuclear reactors around the world, many of which are situated on low-lying land close to the ocean.

In the UK, leading geologist Prof. Rob Duck of Dundee University has warned that if climate change continues it may lead to the erosion of Britain's coast. This in turn will have critical implications for the safety of Britain's nuclear power stations, all but one of which lie on the coast.<sup>3</sup>

But it's not just coastal nuclear reactors we need to be concerned about. Many reactors are situated next to rivers in order to utilize the large amounts of water required for cooling. The 2010 and 2012 floods in Pakistan, which have been attributed to a combination of climate change and other environmental degradation,

**Climate change-induced weather events can impact on nuclear security and safety**



heightened anxieties about the safety and security of Pakistan's nuclear power plants as well as nuclear weapons sites and military installations.<sup>4</sup> So far, nuclear sites in this extreme weather-prone country have remained safe, yet there's concern about possible damage from future environmental disasters.

**International destabilization resulting from climate change could provoke conflicts, which could foster nuclear proliferation to non-State actors**

Climate change has other potential impacts on nuclear safety. The wildfires that spread through Russia in the summer of 2010, possibly an effect of climate-change, posed a severe nuclear risk to Russia when they came close to engulfing key sites containing dangerous materials from nuclear weapons programs. There was also widespread concern that radionuclides from land contaminated by the 1986 Chernobyl nuclear disaster could be released and/or rise into the air together with combustion particles, resulting in a new pollution zone.<sup>5</sup>

#### Nuclear war's eco consequences

Recent research<sup>6</sup> has revealed that even a limited regional nuclear exchange would eject so much debris into the atmosphere that it could cool down the planet to temperatures not felt since the ice ages, and significantly disrupt the global climate for years to come. This would have disastrous implications for agriculture, and threaten the food supply for most of the planet. In 2012, thirty-four governments led by Switzerland, released a joint statement at the United Nations on the humanitarian consequences of nuclear weapons which claimed

that even a 'limited nuclear exchange,' a contradiction in terms, would cause a global climate change with such a serious and long-lasting impact on the environment and food production that it could cause a global famine affecting over a billion people.<sup>7</sup>

The UN Security Council and the European Commission<sup>8</sup> have warned that climate change is a threat multiplier which exacerbates existing tensions and instability, and that climate change over-burdens states and regions, already fragile and conflict prone. Nuclear weapons are particularly worrying in this volatile equation.<sup>9</sup> International destabilization resulting from climate change could provoke conflicts, which, in turn, could foster nuclear proliferation to non-State actors,<sup>10</sup> enhance the chance of a nuclear weapon being used, create more fertile breeding grounds for terrorism, including the nuclear kind, and could feed ambitions of some states to acquire nuclear arms.

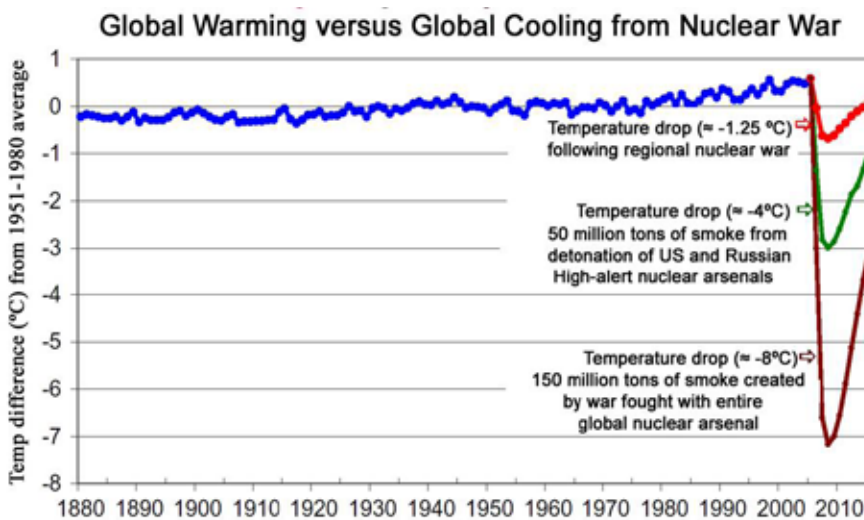
#### Redirecting nuclear budgets

Replacing fossil fuels with renewable energies requires investments in renewable energy research and development and in suitable infrastructure. Just 20-30% of the \$100 billion global nuclear-weapons-budget would be sufficient to support renewable energy investment needs. UN Secretary-General Ban Ki-moon emphasized this point in his speech on UN Day 2008 when he released his Five-Point Plan for Nuclear Disarmament.<sup>11</sup>

In 2010, the Bangladesh Parliament adopted a resolution on nuclear disarmament stating:

*the \$100 billion spent annually on nuclear weapons should be channeled instead towards meeting the UN Millennium Development Goals as well as the urgent climate change adaption funding needs of the most vulnerable countries.<sup>12</sup>*

Global co-operation is vital in order to implement core measures to address climate change. This includes developing universal emission standards and goals, ensuring the use of appropriate renewable energy technologies, maximising the effectiveness and sharing of research, and ensuring effective grid development and 'energy sharing' to minimize energy wastage. Global co-operation is difficult, if not impossible, when countries continue to threaten each other with massive retaliation by nuclear weapons, which is the current core security framework of countries possessing nuclear weapons and those countries under extended nuclear deterrence doctrines.<sup>13</sup>



Global average surface air temperature changes for small, moderate, and large nuclear wars in the context of the change in climate of the past 125 years. Predicted temperature drops from the three nuclear conflicts are shown as three separate V-shaped curves, each progressively deeper (Source: S Starr, Catastrophic Climatic Consequences of Nuclear Conflict, INESAP Information Bulletin (28) April, 2008.)

## Mutually reinforcing solutions

Both the climate change and nuclear threat issues require and stimulate regional and global co-operation. As countries come together in regions to establish regional nuclear-weapon-free zones, and internationally to build the framework for a nuclear-weapons-free world, they are developing relationships and co-operative security mechanisms that are useful in strategies required to address environmental issues including climate change.

One example is the Comprehensive Nuclear Test Ban Treaty Organisation, which has established a global network of seismic and radionuclide monitoring stations to verify the treaty. This system is now providing core real-time seismic data to the *Global Tsunami Early Warning System* which enables evaluation and warnings of potential tsunamis within minutes of an earthquake. The CTBTO system is also able to monitor radionuclide-spread patterns following nuclear accidents and provide data to assist in protective action, as it did following the Fukushima accident.<sup>14</sup>

As co-operative security mechanisms for a nuclear-weapons-free world are being built and implemented, they will reduce the role of militaries in national and regional security. This will bring tangible benefits for climate change and other environmental issues, on top of the potential to divert military financial and personnel resources towards combating climate change (see *above*). The world's militaries are the single larg-

est contributor to climate change through excessive fossil fuels consumed by the military forces in planes, ships and other vehicles.<sup>15</sup> Weapons production and military conflicts are also excessively damaging to the environment in other ways.<sup>16</sup> Reducing military activity will reduce carbon footprints and other environmental degradation.

A primary role of Western militaries has been to protect oil sources, a role which has stimulated numerous wars. As climate-change solutions shift energy consumption from fossil fuels to renewable energies, this role for militaries will reduce and could eventually die out altogether, if climate-change solutions are successful.<sup>17</sup> There are mutually reinforcing benefits to working jointly and simultaneously on climate change and nuclear weapons issues. Greater collaboration between the environmental and anti-nuclear movements would enhance the success of both movements.

For more information see: Climate-Nuclear Nexus: [www.baselpeaceoffice.org/article/climate-nuclear-nexus](http://www.baselpeaceoffice.org/article/climate-nuclear-nexus) and [www.worldfuturecouncil.org/5210.html](http://www.worldfuturecouncil.org/5210.html)

**As co-operative security mechanisms for a nuclear-weapons-free world are being built and implemented, they will reduce the role of militaries in national and regional security**

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# A treaty to ban nuclear weapons

## A RED CROSS PERSPECTIVE

The indiscriminate, large-scale effects on public health and the environment of nuclear weapons are so great that they are considered by the International Committee of the Red Cross, the Red Cross Movement and the International Court of Justice to be incompatible with international humanitarian law. **STUART PETERS** reports on the campaign for a binding treaty to ban nuclear weapons.

Nuclear weapons are a grave threat to the environment, public health and the survival of humanity. They are the most dangerous weapons on earth, with unrivalled capacity to bring destruction and suffering to the human population. Both the International Court of Justice (ICJ) and the International Committee of the Red Cross (ICRC) have suggested that any use of a nuclear weapon would be incompatible with fundamental principles of international humanitarian law.<sup>1</sup> The International Red Cross and Red Crescent Movement are now calling on the international community to end the spectre of nuclear war.

In November 2011, the Council of Delegates of the International Red Cross and Red Crescent Movement

**In November 2011, the Council of Delegates of the International Red Cross and Red Crescent Movement adopted a milestone resolution appealing to states to pursue with urgency negotiations to prohibit and eliminate nuclear weapons through a binding international agreement**

adopted a milestone resolution appealing to states to pursue with urgency and determination negotiations to prohibit and eliminate nuclear weapons through a binding international agreement. The Council, comprising representatives of 187 National Societies and the ICRC and International Federation of Red Cross and Red Crescent Societies emphasised the incalculable human suffering associated with the use of nuclear weapons and their incompatibility with international law. To support the resolution, New Zealand Red Cross has launched a campaign to 'make nuclear weapons the target' and increase public awareness of the dangers of nuclear weapons. We are asking the

New Zealand Government take a leadership role to help facilitate a binding international treaty to prohibit the use of such weapons.

If awareness about nuclear weapons has receded in the public consciousness over the past two decades, in fact the threat they pose is as great now as at any point since the end of the Second World War. Despite the obvious dangers of nuclear proliferation, there are an estimated 19,000 nuclear warheads in the world in 2012, of which approximately 4,400 are active.<sup>2</sup> Modern nuclear weapons are many times more powerful than those used in Hiroshima and Nagasaki. While the 'Fat Man' bomb used in Nagasaki had the equivalent explosive yield of about 20-22 kilotonnes of TNT, a typical U.S. thermonuclear weapon today would explode with a yield of 300 kilotonnes of TNT.<sup>3</sup> The B83, currently the most powerful nuclear bomb in the United States' current arsenal,<sup>4</sup> has the explosive yield of around 50-60 'Fat Man' bombs.

This increased threat is compounded by an increase in nuclear arms in growing numbers of states and the growing role of non-state actors. As well as the five states designated by the Non-Proliferation Treaty, (the United States, Russia, the United Kingdom, France, and China), it is highly likely that several states not party to the NPT have acquired nuclear capability. Both India and Israel are thought to have long-range nuclear missile capability,<sup>5</sup> and the nuclear status of their regional rivals Pakistan and Iran is unclear. The deterrent effect of mutually assured destruction becomes much more difficult to manage as the number of nuclear states grows, and the chance of a nuclear device falling into the hands of a non-state actor becomes more likely.

In 1996 the ICJ reported that 'the threat or use of nuclear weapons would generally be contrary to



the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law,' but declined to decide whether there are hypothetical situations in which their use would be legal.<sup>6</sup> This position was supported by the International Red Cross and Red Crescent Movement in 2011, when the Council of Delegates '[found] it difficult to envisage how any use of nuclear weapons could be compatible with the rules of international humanitarian law, in particular the rules of distinction, precaution and proportionality.'<sup>7</sup>

International humanitarian law is the law of armed conflict, and regulates and defines acceptable conduct in that context. While there is no comprehensive or universal ban on nuclear weapons in either customary or conventional international law, the very nature of nuclear weapons means any use would violate essential principles of international humanitarian law: the principles of distinction and proportionality, and the prohibition on causing superfluous injury or unnecessary suffering. These principles are customary in nature; they are *prima facie* binding on all states, not just those that are party to a particular treaty.

The principle of distinction demands that parties to a conflict must at all times distinguish between combatants and civilians, and direct attacks only against combatants. It was first articulated in an instrument of international law in the St Petersburg Declaration,<sup>8</sup> and has since been codified in articles 48, 51(1), and 51(2) of Additional Protocol I.<sup>9</sup> The ICJ has stated that the principle of distinction is one of the 'cardinal principles' of international humanitarian law and one of the 'intransgressible principles of international customary law.'<sup>10</sup> The Court further stated that 'states must never make civilians the object of attack and must consequently never use weapons that are incapable of distinguishing between civilian and military targets,'<sup>11</sup> equating the use of indiscriminate weapons with a direct attack on civilians.

It is impossible to practice the principle of distinction, or containment nuclear weapons, they are inherently indiscriminate. Their power means the immediate effects of blast damage and radiation are impossible to contain geographically,

while radiation poisoning and genetic damage may affect the health of generations to come. Nuclear weapons also pose a unique threat to the world's climate. A 2007 study found that a nuclear war involving a 'moderate' number of the current global stockpile of nuclear weapons would produce catastrophic climatic consequences, and seriously threaten food production worldwide for several years.<sup>12</sup> The principle of distinction becomes irrelevant when the effects of nuclear weapons are global in nature.

The principle of proportionality, as codified in article 51(5)(b) of Additional Protocol 1, states that it is prohibited to launch 'an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.' It is also codified in article 51(5)(b) of API, and repeated in article 57.<sup>13</sup> The principle is also reflected in the Statute of the International Criminal Court,<sup>14</sup> and was recognised as customary in nature by the ICJ.<sup>15</sup>

The circumstances in which the incidental effects of a nuclear weapon on a civilian population are justified by the military advantage gained are clearly limited. In the ICJ opinion on nuclear weapons, one judge speculated that the advantage gained would need to be 'related to the very survival of a State... and that no other method of eliminating this military target be available.'<sup>16</sup> Another talked of a hypothetical army camped in a desert, far away from the nearest village.

there is no adequate humanitarian response possible after use of a nuclear weapon, the only real solution is prevention

Difficulties in growing food worldwide are predicted in a planet torn apart by nuclear weapons blasts, in just a regional war. It's unclear how many would survive in a suddenly dry, cold world with smoke from nuclear fires blocking out the sun for up to a decade. And would any food grown be toxic? Nuclear weapons must be banned!



RITU RAJ KONWAR, THE HINDU

These hypothetical situations are unrealistic and irrelevant. It is unlikely a military location exists on earth isolated enough to limit the effects of a nuclear detonation to military personnel. More importantly, the indiscriminate nature of nuclear weapons and the long-term climatic effects preclude a nuclear attack from meeting the criteria of proportionality.

A prohibition on means and methods of warfare that cause superfluous injury or unnecessary suffering is set out in many treaties, and (like the principle of distinction) has been reaffirmed as a 'cardinal principle' of customary international law by the ICJ.<sup>17</sup> This principle can be interpreted in two ways, neither of which has been confirmed doctrinally. A particular approach would require that each particular use of the weapon is subject to an analysis of whether it will cause superfluous injury or unnecessary suffering. This is obviously unfeasible, and the likely result would be that no weapons would ever be deemed illegal. In practice, a general approach has been taken and weapons banned on the basis of their normal or intended purpose. If the effects of the initial nuclear blast are taken into account, the immediate damage and thermal radiation is likely enough to contravene

the prohibition on superfluous injury. When the ongoing suffering associated with radiation poisoning and the potentially global climatic change is accounted for, it is difficult to imagine a weapon better suited to causing superfluous injury and unnecessary suffering.

The potential effect of nuclear weapons is devastating damage to human populations locally, regionally, and globally. They are never proportionate effects, being fundamentally indiscriminate, and cause incredible injury and suffering. The ICRC has also emphasised that there is no adequate humanitarian response possible after the use of a nuclear weapon; the only real solution is prevention. Given there seems to be no circumstance in which their use would be legal under international humanitarian law, it is critical that a multilateral treaty is pursued to ban nuclear weapons outright. They have no legitimate use and each one of the 19,000 in circulation is a humanitarian crisis waiting to happen. To learn more about the New Zealand Red Cross campaign to 'make nuclear weapons the target,' visit [targetnuclearweapons.co.nz](http://targetnuclearweapons.co.nz).

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# STOP investments in mass incineration & famine

Despite the global economic crisis and budget cuts, nine nations continue to make plans to squander hundreds of billions of dollars to 'modernize' nuclear warheads and missiles and the vehicles which deliver these weapons of mass incineration. **TIM WRIGHT** reports on the urgency for a global campaign to divert investments away from maintaining and producing nuclear weapon and to build momentum for a universal ban on manufacturing nuclear weapons.

Though the Cold War ended more than two decades ago, the nuclear arms race continues unabated. Every day nine nations together squander close to US\$300 million to produce and modernise nuclear warheads and the missiles, submarines and bomber planes that deliver them.<sup>1</sup> Much of this work is intended to make old nuclear weapons more 'usable,' a horrifying concept considering that any use of nuclear weapons would cause 'catastrophic' humanitarian harm, as the nuclear powers have themselves acknowledged.<sup>2</sup>

In the cases of India and Pakistan, 'improvements' being made to their nuclear arsenals are quantitative. These neighbouring foes are engaged in a perpetual game of one-upmanship, effectively holding their own citizens and countless millions beyond their borders to ransom. A regional nuclear war in South Asia, involving less than 0.5% of the world's nuclear

arsenal, would cause tens of millions of immediate deaths, as well as global climatic disruption and widespread agricultural collapse, with well over a billion people at risk of famine, according to the 2012 report by International Physicians for the Prevention of Nuclear War.<sup>3</sup> Epidemic disease and conflict caused by such a famine would put hundreds of millions more at risk. This report calls for further studies to confirm the predicted declines in food production following a regional nuclear war and the need to move speedily to a convention to ban these weapons.

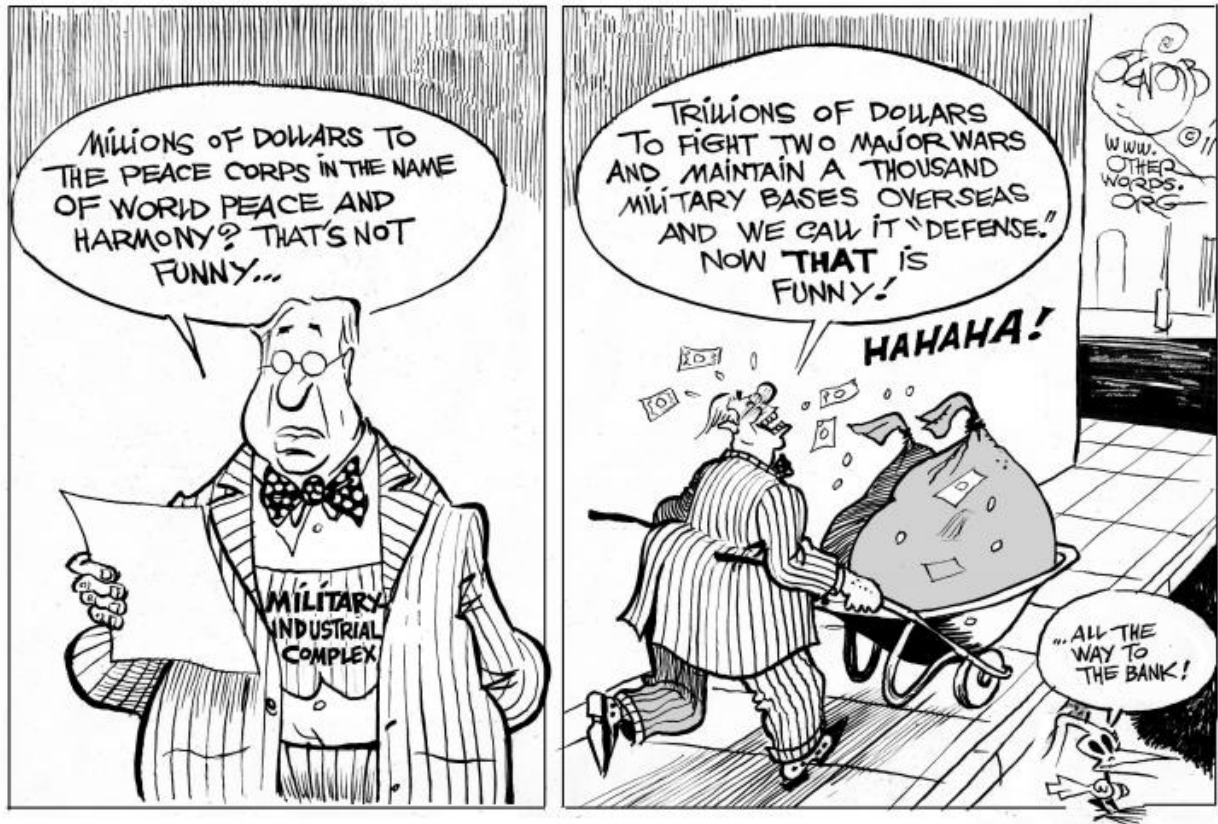
In the other nuclear-armed nations, the improvements to arsenals are mostly qualitative: while the number of warheads in the stockpiles remains unchanged, their 'usability,' longevity and destructive potential are greatly enhanced. The United States leads the world in modernizing nuclear weapons. It is

poised to embark on a massive overhaul of its entire arsenal, the largest to date, at a cost of at least US\$352 billion over the next decade.<sup>4</sup> Current spending on its nuclear weapons program is already more than that of all other nuclear-armed nations combined, and twice

Much of this work is intended to make old nuclear weapons more 'usable,' a horrifying concept considering that any use of nuclear weapons would cause catastrophic humanitarian harm, as the nuclear powers have themselves acknowledged







A major report, *Don't Bank on the Bomb: A Global Report on the Financing of Nuclear Weapons Producers*, identifies 20 companies that are heavily involved in nuclear weapons production and more than 300 financial institutions in 30 countries that invest in these companies

as much as its contribution to overseas development aid.<sup>5</sup>

Russia is responding in kind to America's modernisation by upgrading and extending the service life of its nuclear-armed heavy bombers and developing a new fleet of nuclear-armed submarines. France is spending billions of euros to equip its newly deployed Triomphant-class submarines with new M51 ballistic nuclear missiles. And the British government, despite across-the-board budget cuts, appears intent on investing over £100 billion in a new fleet of

nuclear-armed submarines with improved warheads and missiles.<sup>6</sup>

In at least four nuclear-armed nations, the United States, Britain, France and India, corporate actors are heavily involved in producing and modernizing nuclear weapons. They receive contracts from governments to design and construct new warheads and delivery vehicles. It is a lucrative, multi-billion-dollar business. In most cases, the companies involved in this work are listed on public stock exchanges and

have large numbers of institutional and individual investors.

This is not in any way a legitimate enterprise. The catastrophic humanitarian and environmental effects of nuclear weapons, and their incompatibility with fundamental principles of international law, are well understood. No reputable bank, insurance company, investment manager or superannuation fund should invest in any company involved in nuclear weapons production. By denying credit to these companies and disposing of shares held in them, financial institutions can send a powerful message to the company directors that their work in this field will not be tolerated.

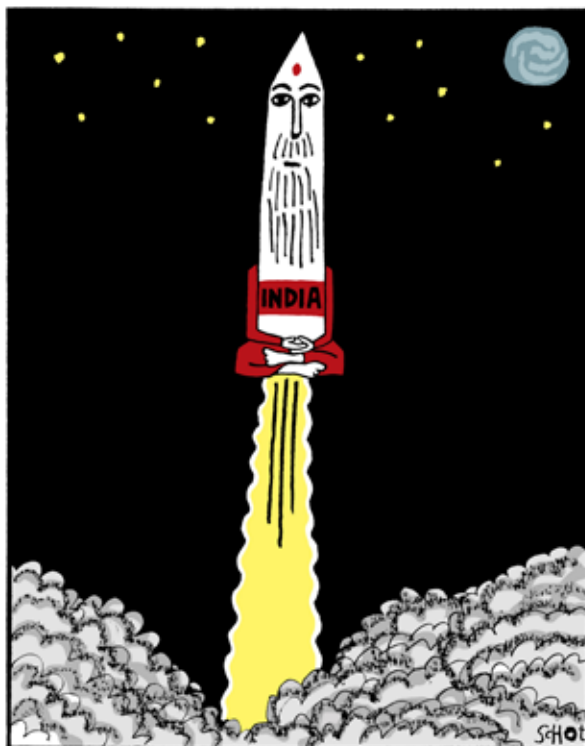
In March 2012, the International Campaign to Abolish Nuclear Weapons published a major report, *Don't Bank on the Bomb: A Global Report on the Financing of Nuclear Weapons Producers*, identifying 20 companies that are heavily involved in nuclear weapons production and more than 300 financial institutions in 30 countries that invest in these companies.<sup>1</sup> We are calling on individuals and organisations to pressure their banks, governments and pension funds to end their support for the nuclear weapons industry by diverting investments from deadly nuclear projects to life-supporting, ethical activities. Hiroshima survivor and ICAN campaigner Setsuko Thurlow wrote in the report: Anyone with a bank account or pension fund has the power to choose to invest his or her

money ethically, in a way that does not contribute to this earth-endangering enterprise. We must each speak out and take action. If we allow this industry to continue unimpeded, we are in a sense accepting that nuclear weapons will one day be used again. Any such use would have catastrophic consequences. I urge concerned citizens everywhere to do everything in their power to prevent such a disaster.<sup>8</sup>

Half of the 20 nuclear weapons companies listed in the report are based in the United States: Alliant Techsystems, Babcock & Wilcox, Bechtel (a private company), Boeing, GenCorp, General Dynamics, Honeywell International, Jacobs Engineering, Lockheed Martin and Northrop Grumman. Some are in charge of major nuclear weapons facilities, including the Pantex plant of the National Nuclear Security Administration and the Los Alamos and Lawrence Livermore national laboratories. Others carry out 'life-extension' work on D5 and Minuteman III intercontinental ballistic missiles.

In the United Kingdom, Jacobs Engineering, Lockheed Martin and Serco Group each own a one-third share in the consortium that runs the Atomic Weapons Establishment, where British nuclear warheads are designed and manufactured. BAE Systems, Babcock International and Rolls-Royce are part of a joint venture to develop a new class of nuclear-armed submarine for Britain. In continental Europe, EADS (Netherlands), Finmeccanica (Italy), Safran (France) and Thales (France) produce French nuclear missiles. In India, Larsen & Toubro is involved in designing and constructing nuclear-armed submarines.<sup>9</sup>

These companies rely on the support of their shareholders and creditors. While it is unlikely that divestment by a single financial institution would create sufficient pressure on a company to compel it



to end its involvement in nuclear weapons work, divestment by multiple institutions based on the same ethical objective could have a significant impact on the company's strategic direction. If institutions sold their shares en masse, redirecting their funds towards less risky investment options, the directors of those companies might decide to reduce their reliance on nuclear weapons contracts and expand into other areas. In recent years, many financial institutions globally have taken steps to divest from companies that manufacture another type of inhumane weapons: cluster

munitions, pernicious devices that kill and maim mostly civilians.<sup>10</sup> They are prohibited under the Convention on Cluster Munitions, which entered into legal force in 2010. While the treaty does not expressly forbid investments in cluster-bomb makers, a large number of financial institutions have nonetheless felt a responsibility, and in some cases were compelled by their governments, to make sure they are not providing indirect support to the cluster-bomb industry.

**'Banks and other financial institutions should be called upon to do the right thing and assist, rather than impede, efforts to eliminate the threat of radioactive incineration by divesting from the immoral nuclear arms industry'**  
Desmond Tutu, Nobel Peace prize winner

The same should happen with nuclear weapons. They are the most destructive, inhumane and indiscriminate instruments of mass murder ever created. Through their ordinary use, they cause catastrophic, long-term harm to people, our

societies and shatter the earth's interconnected ecosystems on which all life depends. Nuclear weapons violate the laws of war, which forbid use of weapons with uncontrollable effects, and their very existence is a constant threat to people everywhere. Also, nations have a legal obligation to negotiate in good faith for the complete elimination of their nuclear arms.<sup>11</sup>

Divestment is not only an ethical imperative, it also makes good business sense. By investing in nuclear weapons companies are potentially harming their public image, particularly in nuclear-free states like

Aotearoa New Zealand where public opinion is overwhelmingly against nuclear weapons. If institutions refuse to divest, they risk being the target of consumer boycotts. Moreover, the nuclear weapons industry is inherently risky, carrying a real danger of major accidents involving radioactive contamination.

By ending their support for this industry, financial institutions can contribute positively to a nuclear-weapon-free world, making their employees proud and giving them a competitive edge over companies that choose not to divest. As Nobel Peace Prize-winning anti-apartheid leader Desmond Tutu wrote in the foreword to *Don't Bank on the Bomb*:

*Banks and other financial institutions should be called upon to do the right thing and assist, rather than impede, efforts to eliminate the threat of radioactive incineration by divesting from the immoral nuclear arms industry.*<sup>12</sup>

Government-owned funds must also 'do the right thing' and divest from nuclear weapons. In 2005 the Norwegian government excluded seven international companies from its petroleum fund on the grounds that they 'develop and produce key components for nuclear weapons.'<sup>13</sup> This is the largest instance to date of nuclear weapons divestment by a government. Gro Nystuen, chair of the ethics committee that oversees the fund's investments, reflected in 2011:

*[I]t seems clear that the publicity generated by a decision to disinvest on ethical grounds does have an impact ... [the fund's] criteria and concrete exclusions hopefully contribute to an increased awareness concerning these issues among investors, both private and public.*<sup>14</sup>

The New Zealand government superannuation fund has divested from two companies because of their involvement in nuclear weapons testing: Lockheed Martin and Honeywell International. In 2008 it issued a report explaining its decision:

*Successive governments have taken a strong stance on eliminating nuclear testing. In addition, testing (simulated or real) is crucial to the development of a nuclear explosive device. We concluded that we would exclude such companies from the fund's investment universe and divest from any current holdings.*<sup>15</sup>

However, the fund continues to invest in Larsen & Toubro, Serco, Safran, Finmeccanica, Boeing and BAE Systems,<sup>16</sup> all of which are involved in nuclear weapons work. A broader exclusion policy should be adopted.

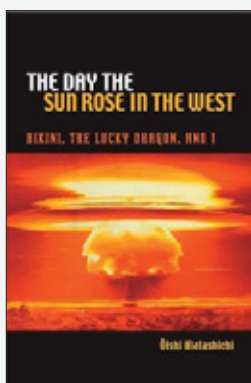
Governments have a responsibility to their citizens, and financial institutions a responsibility to their customers to ensure they are not in any way aiding the development of nuclear weapons or impeding nuclear disarmament. A co-ordinated global campaign for nuclear weapons divestment is urgently needed: to halt modernisation programs, to strengthen the international will against nuclear weapons, and to build momentum towards negotiating a universal ban. This is a humanitarian and environmental imperative. We must not await another Hiroshima or Nagasaki before acting.

**Tim Wright** is Australian director of the International Campaign to Abolish Nuclear Weapons, ICAN. He co-authored the report *Don't Bank on the Bomb* (March 2012) and authored the booklet *Catastrophic Humanitarian Harm* (August 2012).

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- 14 Gro Nystuen, 'The Implications of the Ethical Guidelines for the Norwegian Petroleum Fund for the Application of International Humanitarian Law to Nuclear Weapons', in *Nuclear Abolition Forum*, issue 1, 2011, p 21.
- 15 Investment in Companies Associated with Nuclear Weapons, New Zealand Superannuation Fund, 12 December 2008, p 6
- 16 Green Party of Aotearoa New Zealand, 'Super Fund Complacent on Ethical Investment', press release, 12 August 2012.





## The day the sun rose in the west: Bikini, the lucky dragon and I

By Oishi Mataschichi

*University of Hawaii Press (2011): 184pp*

Oishi Mataschichi was a Japanese fisherman aboard the Lucky Dragon 5 on March 1, 1954, when they were enveloped by nuclear ash fallout from the US hydrogen bomb test on Bikini. When the boat reached their home port of Yaizu, Japan, two weeks later they learned that their burns, hair loss, vomiting and other ailments were the result of exposure to radioactive materials from the US bomb testing programme in the Marshall Islands in the mid-Pacific. They had inhaled and ingested ash for two weeks and lived aboard their fishing boat coated with ash carried back to port. Their reports relayed by Japanese officials to Washington reached the media thereby attracting attention to a US military secret. The author's first-hand account (translated into English by Richard Minear), record the suffering he and his 23 fellow fishermen inadvertently experienced. Analysis of the ash through Geiger counter readings, revealed to Japanese scientists details of the materials used in making the bomb. This expertise came from assessments of the nuclear bombs dropped by the US on Hiroshima and Nagasaki, August 1945, nine years earlier to end World War II. As well as assessing the men's radiation sickness, the scientists also found high levels of radioactivity in the tuna fish caught by the Lucky Dragon 5 and catches from other Japanese boats fishing across the Pacific at the same time.

The men's radiation sickness continued many years after their initial burns had healed. One fisherman died six months later of leukemia, and the others were in and out of hospital with various cancers, sterility and related health problems for the rest of their lives. They could not hold down jobs, families suffered, all leading to small compensation payments from the Japanese government. The men were told their sickness was due to blood transfusions received immediately after their return in 1954, not to radiation sickness, so the US would not give them compensation. A second theme of this account is the refusal by both Japanese and US officials to acknowledge these men's plight as due to radiation exposure from the Bikini explosion. The US claimed the boat was fishing illegally around Bikini, perhaps spying, while the Japanese government wanted to avoid confrontation with the US who were donating a nuclear power plant to solve Japan's great need for an alternative energy source.

The author also highlights the suppression of information regarding these US hydrogen and thermonuclear bomb tests, information that would have been useful for worldwide assessment of the harmful effects of radioactive fallout on human bodies and on the environment. While survivors such as the Lucky Dragon fishermen (and the Rongelap people of the Marshall Islands) together with the hibakusha (survivors of the Hiroshima bomb fallout) were subject to numerous ongoing health checks, they were not given any information about their sicknesses, nor were they treated by the researchers. While both American and Japanese authorities recorded the effects of nuclear fallout on these human sufferers annually at specialist research centres, that information was kept secret, until the US declassified some documents in 1990 thereby revealing important data to those who can access this archival material.

Oishi Mataschichi's account is an eye-opener for those concerned about the place of nuclear fission and fusion products in today's world. Such technological advancement whether military or civil, has been developed with high consequences for human

health and the environment. We read here how control of information for politico-economic or military purposes has retarded wider understanding of the dangerous effects of nuclear radiation on the world.

*Reviewed by Dr Nancy Pollock*

## Slaying the nuclear dragon: Disarmament Dynamics in the Twenty-First Century

Editors, Tanya Ogilvie-White & David Santoro

*University of Georgia Press. 2012, 338 pp*

For the average person, nuclear disarmament is a forbidding esoteric subject. The horrendous power of nuclear weapons readily grips the popular imagination, but the question of how or whether humankind might actually rid itself of such malign power is a profoundly more complex matter. Recently a combination of factors has brought the idea of eliminating nuclear weapons more sharply into focus, spurred particularly by US President Obama's eloquent April 2009 speech in Prague where he called for, and committed America to a world free from nuclear weapons. He added a dose of reality observing it to be a goal unlikely to be achieved in his own lifetime. This readable book offers a stocktake of policies and attitudes towards nuclear disarmament in the present world. It is an academic volume but if anyone wants only one book to update on the subject, then this intelligent, easily digestible volume should be it. For the specialist too, it provides access to clear, reasoned thinking in a series of well focussed, concise chapters by different authors who analyse the security, psychological and political dynamics of the nuclear disarmament goal. The editors, Tanya Ogilvie White (Canterbury University, NZ) and David Santoro (Pacific Forum, CSIS, US) both established international disarmament scholars, synthesise and contribute directly to the volume, and conclude with tentative proposals to surmount substantial ongoing obstacles to progress with such disarmament.

The book's methodology helps lend clarity to an extensive subject by dividing the international community of states into nine separate categories according to their policies, attitudes and aspirations on nuclear weapons and disarmament: optimistic states, pessimistic states, nuclear threshold states, rollback states, hold-out states, defiant states, silent proliferators, nuclear energy aspirants and non-nuclear states and coalitions. Some placement of individual states in these categories, is arbitrary and the book picks its way carefully between the glass half-full (optimism) and glass half-empty (pessimism) in discussing the real prospects for total nuclear disarmament. It singles out two optimistic states, the US and Britain, as the only ones to possess the motivation and will to lead the disarmament process. This produces sometimes a rather too charitable tendency to accept at face value Anglo-American official pronouncements; and somewhat less charity when interpreting others like China (defined as a pessimistic state) over, for example, guarantees about 'no-first-use' of nuclear weapons where China has given unqualified assurances, while Anglo Saxon assurances remain equivocal.

Much attention is devoted to the extreme dangers from the spread (proliferation) of nuclear weapons into new (unreliable) hands. The vital need to frame the context which drives potential proliferators is reflected in an admirable contribution by Ogilvie White about the 'defiant states' of Iran and North Korea. She strives to present both sides of the picture with one explanation for ongoing high tensions in the Pacific region being the fact that North Korea has itself been confronted over several decades by a heavily armed nuclear superpower. Striking just such a balance when making the disarmament case is important as the bottom-line of prodigious US-led efforts to halt proliferation by others can appear simply as a destabilising reassertion of a lifetime monopoly of nuclear-weapons-owning by the US and its closest allies; France, for example, flatly rejects the objective of total nuclear disarmament. The broader conclusion is as the book asserts, that

total nuclear disarmament requires fundamental transformation in the international management of the world's peace and security. The disarming title of this book, *Slaying the Nuclear Dragon* is drawn from a quotation by a notable arch priest of nuclear deterrence, the late Sir Michael Quinlan, who observed that 'the nuclear dragon may be sleeping, but it is certainly not dead...' This book is a worthy effort aimed at suggesting how the dragon's eyes can be kept shut, but without illusion about how hard it is going to be make this a permanent condition.

*Reviewed by Terence O'Brien,  
former NZ Diplomat & senior fellow,  
Centre for Strategic Studies, NZ*

## Security Without Nuclear Deterrence

**Commander Robert Green,  
Royal Navy (retired)**

*Astron Media, Auckland, 2010,  
272pp*

Nuclear deterrence has been a fundamental element of international relations since the Soviet Union's development of nuclear weapons in 1949 ended the United States' monopoly on the technology and started the Cold War. In this book, Commander Green brings the informed view of a military professional with operational and intelligence experience to a comprehensive examination of the deterrence doctrine. His findings are unequivocal: nuclear deterrence has not only failed to prevent wars and contain the proliferation of states with nuclear weapons but also has led the most powerful and influential nations to immoral and illegal activity under the influence of its pernicious dogma.

An outline of Green's personal journey from nuclear warrior to leading anti-nuclear activist is followed by a succinct but detailed history of the deterrence doctrine and its political consequences. Even for those who have lived through the times this story remains shocking. That we have avoided nuclear war is a miracle. Most disturbing is that the idea that a nation can ensure its security by holding and threatening to use nuclear weapons has persisted even as the technology

to deliver or defend against nuclear warheads has advanced and as the political context has changed. Even momentous events such as the collapse of the Soviet Union have not materially affected the concept or even the practical aspects of deterrence. The major nuclear armed states have borne the increasing burden of complications and contradictions by steadfast denial. The examination of deterrence as it has played out in 'the real world' and how it has influenced the proliferation of countries possessing the technology, overtly or otherwise, occupies the middle portion of the book. The role of established nuclear states in proliferation, such as the assistance given to Israel by France, is detailed. India and Pakistan are an example of escalation and intermittent crisis driven by competition for nuclear status. It is engrossing reading, with the chilling conclusion that the danger of nuclear war has never been greater than it is today.

The closing chapters consider in depth the moral and legal aspects of nuclear deterrence. Green was involved in giving evidence before the International Court of Justice that in 1996 delivered its Advisory Opinion generally confirming that nuclear deterrence is illegal. That this Opinion has been denigrated by the major Western nuclear states clinches Green's argument that the dogma of deterrence corrupts national morals. The US condemnation of weapons of mass destruction while defending its own possession of the most destructive and indiscriminate weapons of all, and India's abandonment of its Gandhian founding principles offer striking examples. Despite this, the author concludes with optimism that the fact that possession of nuclear weapons decreases national and international security will be acknowledged and political will to disarm can be found. Plausible pathways for reducing the nuclear threat and entering a new paradigm of mutually enhanced security are offered together with the hope these will lead to international co-operation in addressing critical global issues such as climate change. At this time when public awareness of the threat of nuclear weapons and

interest in disarmament are at a low ebb, this book, its detailed arguments supported by extensive quotations from an immense variety of sources, is essential reading.

*Reviewed by Dr Cliff Mason*

## Nuclear Weapons, a French Fib: Reflections on nuclear disarmament

by Paul Quilès

*English translation, Editions Mayer, Paris, May 2012, refs; (available at: [www.pnndbook.com](http://www.pnndbook.com) Nuclear Weapons, a french lie)*

And still they come! A growing line of former movers and shakers in nuclear weaponry and cheer-leaders for nuclear deterrence doctrines, who once out of office then repudiate them. Add to the list former French Defence Minister Paul Quilès, who, like Robert Macnamara, Henry Kissinger, George Schultz, Malcolm Fraser now in the twilight of their careers, worry about their future standing in history and reputation among grandchildren. But, where were they in repudiating nuclear weaponry when it might have made a tangible difference? Still, better late than never. Quilès, was Minister of Defence in the French government between 1985 and 1996, arguably one of the worst periods in New Zealand's relations with France. He is now mayor of a French principality where he has joined the Global Mayors for Peace Campaign. He deserves commendation, a voice of some standing in a country where sensible public discussion of comprehensive nuclear disarmament stays woefully lacking. His contribution comprises a translated interview which, with accompanying Appendices including Global Zero's timetable for complete nuclear disarmament, is a brief but cogent statement outlining prescriptive principle and policy for comprehensive nuclear disarmament. The task in France is huge: its national psyche has an ingrained sense that the Force de Frappe is an entitlement adding lustre to the country's global prestige as a major power. This view, the book argues, is now devalued and discredited, an existing doctrine of 'strict sufficiency'

at best obscure, at worst disingenuous. Bereft of critical examination go core assumptions of this doctrine as in the still relevant 2008 White Paper on Defence, namely: 'nuclear dissuasion provides the ultimate guarantee of our national independence ... preserved in the case of State aggression against our vital interests whatever the source of this threat.'

So what does Quilès suggest? First, France needs to disabuse itself of a pernicious and dangerous inheritance from the past. A far greater degree of public involvement is required, he says to challenge nuclear policy that is costly under austerity. France, he adds, is hindering multilateral initiatives to withdraw tactical nuclear weapons from Europe, claiming most NATO members now accept it as necessary. Secondly, he recommends support for a fissile cut-off treaty; ratification of the Comprehensive Test Ban Treaty; nuclear weapons stockpile transparency and reductions; commitments by nuclear weapons states not to use or threaten to use them against non-nuclear weapons states; a nuclear-weapons-free zone in the Middle East; endorsement of the Nuclear Non-Proliferation Treaty including active prosecution of its Article 6 provisions requiring states with nuclear weapons to disarm. A third factor Quilès identifies deserves particular note. He sees the French public currently disempowered, anaesthetized on the issues, the vital nature of what is at stake no longer being clear. A so called national 'consensus,' supporting continued possession of nuclear weapons is dominated by a small group of civil and military experts. Kept deliberately vague and rarely discussed in France are the terrifying consequences of actual use of nuclear weapons. Denials, approximations, slogans, authoritarian arguments, Quilès concludes, explain the book's title: a total 'French fib.' Wider prospects for nuclear disarmament measures in this brief study remain elusive. Unless improved it's likely French torpor on the necessity and modalities of effective, comprehensive nuclear disarmament will persist.

*Reviewed by Dr Roderic Alley*

## A Thorn In Their Side: The Hilda Murrell Murder

by Robert Green and Kate Dewes

*Rata Books, 2011, 209 pp, with index*

What we can call the National Nuclear Security State (NNSS) is the potentially deadly regime ruling our daily lives in the overarching background of the world scene. Those of us alive during the Cold War could have all been blasted to hell, or eventually come to a miserable end. The chilling fact is the war machines were primed ready to activate this very event. They still are according to the latest geopolitical targeting schedules. The sort of Orwellian mentality prevalent in the foreign policy conduct of the NNSS can easily translate into managing related domestic security matters. The notorious murder of the elderly (78-years-old) rose expert Hilda Murrell in 1984 is still sending out shock waves of concern throughout the Anglo-American axis today for those alert to its implications. It is a case reeking with the sinister smell of the NNSS and the 'creeping neo-fascism' that go with it.

*A Thorn in their Side* by Hilda's nephew Robert Green (his wife Kate Dewes, is a leading New Zealand international peace/anti-nuclear campaigner), points the finger squarely at the role of the British NNSS and its MI5/MI6 secret security services in Hilda's murder. Nothing of course is absolutely confirmed as to those responsible for this heinous crime but Green makes a very damning case against the Thatcher government of the time and its state officialdom. To quote Green's key conclusion: 'After almost 28 years pursuing the truth about my aunt's murder, I hope I have explained why I suspect she was a victim of a major, carefully planned operation to abduct her for questioning under torture about what she knew about the Falklands War and nuclear industry that would embarrass the Thatcher government.' (p195). It seems Hilda was not only under surveillance and harassment because of her anti-nuclear activities but was suspected



of possessing revealing information about the 1982 Falklands/Malvinas War that had been passed on to her by her nephew, Commander Robert Green, a former Naval Intelligence Officer.

Green had not passed any such information to his aunt. But the political climate was highly charged with paranoia by the Thatcherite government, facing some very embarrassing bureaucratic leaks related to the 1982 war. Over the years, evidence emerged indicating that the British government unnecessarily provoked a war with Argentina for political reasons. There were of course other options. The war involved the controversial sinking of the Argentine cruiser, the General Belgrano with loss of 321 lives. Owing to poor prior preparation, the war could also have easily turned into quite a disaster for the British. Cold War issues and concerns were on the boil as well. In her bid to retain power, PM Margaret Thatcher and her government had a lot to hide and worry about. Consequently, the British NNSS unleashed a toxic campaign against its more radical citizen critics in the peace and anti-nuclear movements. The book is meticulous in its systematic and fascinating documentation of the unravelling of Hilda's case due to the author's own painstaking detective work. It also documents a number of similar cases, including the suspicious death in 2003 of scientist/weapons inspector Dr David Kelly, after he criticised the justification for the war on Iraq. A very disturbing aspect in the book is the apparent privatization of security 'dirty work' to criminal elements. Historically, the Anglo-American axis has long employed 'death squad' strategy and tactics in Third World countries, from the Indonesian 1965-70 genocide to El Salvador in the Reagan/Thatcher era. This practice continues today with Predator drone strikes on Pakistan and elsewhere and other murderous interventions. Thatcher, a great admirer of Chile's corrupt, brutal dictator, Augusto Pinochet, may have got some deadly inspiration for domestic purposes. The British NNSS certainly used death squads against the IRA. 'A Thorn in their Side' is a most important testament and a grim warning of the

dangers within the West of the increasingly repressive NNSS in very parlous economic times. The so-called 'War on Terror' has internal applications too.

*Reviewed by Dennis Small*



## Nuclear Savage: The Islands of Secret Project

### 4.1

Director Adam Jonas Horowitz,  
2012

*Primordial Soup Company –  
primordialsp@earthlink.net*

*Nuclear Savage: The Islands of Secret Project 4.1*, a film by former Greenpeace activist Adam Horowitz, uses recently declassified government film footage of the hydrogen bombs the US dropped in the South Pacific and recent interviews with survivors to tell this nightmarish nuclear tale. In old black-and-white footage, we see excited white, U.S. military men speaking somberly into the camera about the glories of the hydrogen bomb, describing how well 'the savages,' his term for the people of the Marshall Islands, were responding to our nuclear bomb explosions. The combination of militarism, U.S. imperialism, nuclear weapons, environmental destruction, sheer racism and total disregard for these gentle, impoverished people is shocking, to say the least. Of course, the real savages are the Americans who built and dropped these bombs and who maintain our nuclear weapons industry today. Sixty-seven U.S. hydrogen bombs were exploded in the 1950s in the Marshall Islands. The equivalent of more than 7,000 Hiroshima bombs, they vaporized several small islands, poisoned the land and sea, destroyed

natural life and caused immeasurable suffering to thousands of people across generations, bringing thyroid cancer, genetic defects, miscarriages and other illnesses.

Not only did we expose many thousands to ghastly, often lethal levels of radiation with 67 nuclear blasts, with glaring evidence that at least some of the exposure was intentional, done to study radiation's effects on human guinea pigs; not only did we wreck the Marshall Islanders' way of life and pristine paradise, creating a nation of internal refugees confined to a Western-style slum on the island of Ebeye; not only did we cower, as a nation, from any real responsibility for what our fallout did to these people, settling our genocidal debt to them with \$150 million 'for all claims, past, present and future.' In our dealings with them as nuclear conquistadors, we displayed a racism so profound, so cold-blooded, its exposure must forever shatter the myth of American exceptionalism. And we're still doing it. The tiny, impoverished Republic of the Marshall Islands recently signed a 75-year lease agreement with the US, guaranteeing the Ronald Reagan Ballistic Missile Defense Test Site on Kwajalein Atoll, where Star Wars testing is still being conducted (for unfathomable billions of dollars), will be operational at least through 2086. Of course, the US should dismantle its nuclear weapons and bombs, close Los Alamos, get rid of nuclear power, make massive reparation to the Marshallese, end the insane Star Wars program and ongoing Vandenberg nuclear tests, and clean up the world from our radioactive waste. This film tells the truth about our nuclear savagery, and calls us to repent of our nuclear violence and do what we can for the Marshallese, the environment, disarmament, human rights and justice, that one day we might have a world without hydrogen bombs and war.

*Abridged review by Fr John Dear S.J.  
from National Catholic Reporter, USA*

# TAMING GODZILLA

## Nuclear deterrence in North-East Asia

Nuclear weapons are a monstrous threat to the security of all countries in North-East Asia and prevent global collaboration on other urgent security issues. **ALYN WARE, HIROMICHI UMEBAYASHI, and KIHU YI** explore the tortured history of nuclear deterrence and the plans to phase it out with nuclear disarmament. Regional security is better addressed by co-operation, with mutually beneficial partnerships enhancing the security of all countries.

Godzilla, a giant monster mutated by nuclear radiation, first appears in a 1954 Japanese science fiction movie of the same name, ravaging Japan in a symbolic warning about the risks of nuclear weapons. Since then, Godzilla has appeared in more than 28 films as well as many video games, novels, comic books, and a television series. Like Godzilla, nuclear weapons continue to manifest themselves in various ways threatening the security of people and countries in the North-East Asian region.

In the West, the most publicized threat is that from North Korea, their withdrawal from the Nuclear Non-Proliferation Treaty in 2003, their nuclear test detonations in 2006, 2009 and 2013, and the testing of ballistic missiles which could possibly carry nuclear weapons, the most recent in December 2012 successfully launched a space satellite. Western media, in particular, highlight the totalitarian nature of the North Korean regime, their occasional military skirmishes with South Korea, frequent vitriolic official statements against the U.S. (and what North Korea calls the 'U.S. puppet governments of South Korea and Japan') and evidence of collaboration in the nuclear black-market

network of A.Q. Khan,<sup>1</sup> as evidence of the threat from the North. Nicholas D. Kristof of the New York Times says: 'the greatest atomic peril since the Cuban Missile Crisis looms just beyond the horizon as the situation worsens in North Korea.'<sup>2</sup>

On the other hand, North Korea's nuclear deterrence policy can be seen as a logical response to threats they perceive from the United States, Japan and South Korea. North Korea's repeated requests for a peace treaty to officially end the 1950–53 Korean War have been rejected.<sup>3</sup> The U.S., Japan and South Korea refuse to rule out the option of a first-use of nuclear weapons against North Korea. Various US administrations have called North Korea a 'rogue' state and discussed 'regime change'.<sup>4</sup> And joint military exercises off the coast of North Korea (such as 'Team Spirit' and 'Resolve' exercises) are perceived by North Korea as 'war games aimed at northward invasion'.<sup>5</sup>

**North Korea's nuclear deterrence policy can be seen as a logical response to threats they perceive from the United States, Japan and South Korea**



Left: Alyn Ware at the Nobel peace summit in Rome.  
Right: Hiro Umebayashi, at left and Kiho Yi, next to him, at the NE Asia Security Meeting in Tokyo on 11/11/2011. Dr Umebayashi presented the draft NE Asia Nuclear-Weapons-Free Zone Treaty to the meeting.

In fact, the decision by North Korea to withdraw from the Non-Proliferation Treaty (NPT) and acquire a nuclear deterrent capacity was made after the US-led invasion of Iraq. North Korea argued that it was the elimination of Iraq's weapons of mass destruction that removed their deterrent, thus enabling a U.S. invasion. North Korea announced they therefore needed to develop their own nuclear deterrent to prevent a similar U.S. invasion of North Korea.<sup>6</sup> In this political context, there is a very low possibility of reversing the nuclearisation of North Korea without addressing their security concerns, whether

perceived or real. In particular, North Korea has been calling for a peace treaty to end the uneasy armistice, and for guarantees of non-aggression against them.

The Korean peninsula is not the only flashpoint in North-East Asia that could trigger a nuclear confrontation. China and the United States, both nuclear-armed States, continue to face-off over the status of Taiwan, with China claiming it as part of China and the U.S. providing military and political support to Taiwan.<sup>7</sup> Also, competing claims between China and neighbouring countries, including U.S. allies Japan, South Korea and the Philippines, over small islands

in the South and East China Sea are becoming more intense with increasing ambitions by States to exploit seabed resources within the exclusive economic zones of these islands.<sup>8</sup> A military conflict over these islands could escalate into a nuclear crisis.

The variety of nuclear threats in the region, and the interlinking of nuclear doctrines with security issues and perceptions, points to the need for a regional approach that

enhances security guarantees on the non-use of force and lowers the role of nuclear weapons by all nuclear-possessing States and their allies. The alternative approach, focusing on the nuclear capabilities of only one country, such as the original Six Party process, which aimed to reverse the North Korean nuclear program, has been shown to be unrealistic.<sup>9</sup>

#### Draft nuclear weapons-free treaty

The Research Centre for Nuclear Weapons Abolition based in Nagasaki University has put forward a comprehensive strategy to address nuclear weapons threats in the North-East Asian region. The plan focuses primarily on establishing a North-East Asian Nuclear-Weapon-Free Zone. A draft treaty was released in 2008 by Katsuya Okada, at the time, Chair of the Democratic Party of Japan's Parliamentary Disarmament Group, later he became Japan's Foreign Minister. It has been the subject of a number of academic and parliamentary meetings in Japan and South Korea.

Based on a 3+3 formula,<sup>10</sup> the draft treaty proposes that North Korea give up its nuclear weapons and be subject to verification, but not unilaterally. Under the treaty, the other five nations, South Korea, Japan, Russia, China and United States, would also have to lower the role of nuclear weapons in their security doctrines. Specifically:

- Japan and South Korea would commit to not allowing nuclear weapons on their territories and to not threatening North Korea with nuclear weapons being used by the U.S. in their 'defense'.
- U.S., China and Russia would commit to not deploying nuclear weapons on the territories of Japan, South Korea or North Korea;
- U.S., China and Russia would commit to not using or threatening to use nuclear weapons against Japan, South Korea or North Korea.

The proposal provides a win/win/win/win approach which enhances the security of all States in the region. North Korea would receive binding guarantees, particularly by the United States, that nuclear weapons will not be used against them. Japan and South Korea would receive binding guarantees, particularly by China and Russia, that nuclear weapons will not be used against them. The proposal provides the most realistic approach to persuading North Korea to give up its nuclear weapons capability. Tensions between China, Russia and the US would be reduced through lowering the role of nuclear weapons in their doctrines. And regional tensions regarding the territorial disputes over the islands in the South and East China Seas, would be reduced as the possible threat from nuclear weapons in these disputes is taken off the table.<sup>11</sup>

The proposal draws from other nuclear-weapon-free zones established in Antarctica, Latin America and the Caribbean, South Pacific, South East Asia, Africa and Central Asia. However, it is also uniquely designed to address the specific security environment in North East Asia. Already it has received considerable political and civil society support. Ninety-three parliamentarians from Japan and South Korea have endorsed a Joint Statement by Parliamentarians of Japan and the Republic of Korea on Denuclearization of Northeast Asia which supports the establishment of a North-East Asian Nuclear Weapons-Free Zone. Endorsers include former foreign ministers and other high-level parliamentarians from both government and opposition parties.<sup>12</sup> In Japan, mayors and other heads of over 400 local authorities have supported a statement to create a nuclear-weapon-free zone in North-East Asia.<sup>13</sup>

A number of issues are unresolved in the proposal, including whether such an agreement would need to proscribe the role of nuclear weapons completely in Japanese and South Korean security policies, or whether a reduced form of extended nuclear deterrence would be permitted.

The draft treaty circulated by Okada proposes that: 'Each Intra-zonal State shall undertake to eliminate

the decision by North Korea to withdraw from the Non-Proliferation Treaty, (NPT) and acquire a nuclear deterrent capacity was made after the US-led invasion of Iraq



all dependence whatsoever on any nuclear weapon or any other nuclear explosive device in all aspects of its security policy.' Some analysts argue that this is an unrealistic approach as Japan and South Korea rely on extended nuclear deterrence for their security, particularly relating to security threats from nuclear armed China and Russia. These analysts argue that neither Japan nor South Korea would be prepared to join a treaty which eliminated extended nuclear deterrence entirely.<sup>14</sup>

However this argument is questionable. The proposed draft treaty stipulates it would only enter into force when the 3-named nuclear weapon States (China, Russia and the US) have ratified the treaty protocols under which they guarantee not to threaten or use nuclear weapons against any of the three zonal parties (Japan, South Korea and the DPRK). Thus, under the 3+3 NWFZ treaty, Japan and South Korea would no longer 'require' extended nuclear deterrence from the US to deter China and Russia.

### Success in shifting policy

Australia's membership in the South Pacific Nuclear-Free-Zone Treaty (SPNWFZ) despite its nuclear alliance with the United States shows how flexibility in negotiations can bring success and normative shifts in policy, without having to directly confront the nuclear weapons States. Australia could not agree to prohibit nuclear deterrence in the SPNWFZ Treaty. Officially, Australia continues to embrace an extended nuclear deterrence relationship with the US.<sup>15</sup> However, both China and Russia perceived Australia's joining the SPNWFZ Treaty as an indication of a lowering of the role of extended nuclear deterrence by the US in the region, so they ratified the treaty, committing not to threaten or use nuclear weapons against the States parties to the zone.

Some analysts argue that, despite current Japanese and Korean policy embracing nuclear deterrence, there is a very real chance this could be phased out or abandoned in the near future with sound diplomacy or political leadership. Jeffrey Lewis, for example, argues that the Japan-US extended nuclear deterrence is a smoke-screen, with no political or military commitment from the US to utilize their nuclear forces in response to military threats to their North-East Asian allies. Rather than risking a nuclear escalation, the US in reality, relies on conventional forces for extended deterrence.<sup>16</sup>

Peter Hayes argues that Japanese and South Korean policy makers are beginning to understand that extended nuclear deterrence has been counter-productive in efforts to prevent North Korea from acquiring nuclear weapons, and that an alternative

strategy based fully on non-nuclear military power might be more effective. Hayes goes further, arguing that North Korea's nuclear policy is not primarily a response to extended nuclear deterrence, but more in relation to a perceived direct threat of nuclear attack from the United States. Thus, North Korea's willingness to join a North-East Asian NWFZ will rely on negative security assurances from the US and also on progress towards global nuclear abolition.<sup>17</sup>

In 2008, UN Secretary-General Ban Ki-moon released a Five-Point Plan for nuclear disarmament. This envisions achieving a nuclear-weapons-free world through a global nuclear abolition treaty to be negotiated concurrently with interim measures including establishing additional nuclear-weapons-free zones. The UN Secretary General's proposal has been supported worldwide, including in a unanimous resolution of the Inter-Parliamentary Union, representing 160 national parliaments and 10 regional parliaments. Continued adherence to nuclear deterrence, including extended nuclear deterrence, is the primary barrier to achieving this vision.

In 2009 a number of leading parliamentarians from countries under extended nuclear deterrence released a paper calling for it to be phased out. They argued firstly that the key security issues in the 21st Century are non-military threats which require international collaborative and non-military responses. These security threats include climate change, poverty, the spread of diseases, resource depletion and financial crises. The provocative approach of nuclear deterrence prevents rather than assists the global collaboration required to meet these security issues. Secondly, the military threats that continue to exist can be better met by non-nuclear means. Nuclear weapons have no role in civil wars, nor can nuclear weapons deter terrorists. International aggression is better prevented and responded to by collective action under United Nations authorization than by the threat or use of nuclear weapons. And the threat of a nuclear attack by a rogue state is also best addressed by either UN collective response, or if necessary by conventional military force.

Thirdly, regional security is better met by security mechanisms and mutually-beneficial economic and trade relationships rather than nuclear deterrence. International security mechanisms include the United Nations Security Council, International Court of Justice, International Criminal Court and various arms control and disarmament treaties. Regional security mechanisms in Europe include the European Union,

**the draft treaty proposes that North Korea give up its nuclear weapons and be subject to verification, but not unilaterally**



Taming Godzilla? Godzilla was a fictional monster created by Japanese film makers after the bombing of Hiroshima and Nagasaki.

## regional security is better met by security mechanisms and mutually-beneficial economic and trade relationships rather than nuclear deterrence

Organisation for Security and Cooperation in Europe, Conventional Forces in Europe Treaty, and the NATO partnership program.

These arguments should move political leaders in North-East Asia to begin negotiations on a North-East Asian NWFZ and increase their support for global nuclear aboli-

tion. This would prevent the nuclear Godzilla from rearing its ugly head again in the region, or anywhere in the world. However, political leaders are too often welded to out-dated security frameworks, militaristic ideology, and the political interests of the nuclear weapons industry. An additional push by civil society will probably be needed in order to get the ball rolling and finally condemn the nuclear Godzilla to the waste-bin of the past.

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# An Arctic fit for Santa

## Adding the Arctic to the nuclear-weapons-free world



**MATT ROBSON** reflects on the huge costs of global military expenditure, 10 times more is spent on destroying humanity than is spent on humanity's survival. He reviews the progress being made in establishing regional nuclear-weapons-free zones (NWFZs), and the urgent need for the Arctic to be free of nuclear weapons as an ecologically vital and vulnerable region of the Earth.

### The price of 'defence'

We live in a world of contrasts. Billions of our fellow citizens live without adequate, shelter, food or clothing. Almost half the world's population (3.15 billion people) in 2005 have to try and live on less than US\$ 2.50 per day.<sup>1</sup> They lack adequate health care, if they get it at all, and little quality education. The great majority in this situation live in the so-called developing world. But a sizeable number who go without live in the richest countries.

The wealth of the world's richest seven individuals is greater than the GDP (Gross Domestic Product) of the 41 Heavily Indebted Poor Countries (567 million people).<sup>2</sup> Yet those whom Bob Dylan called the Masters of War have determined that, rather than meeting

the basic needs of humanity and preventing the global disaster that is global warming, military spending will take priority, and this spending will increase. The internationally respected Stockholm International Peace Research Institute (SIPRI) reported in April 2012 that world military expenditure in 2011 totalled US\$1.74 trillion, \$249 for each person on the planet.<sup>3</sup> Of that sum SIPRI found that the USA, which increased its military spending by 81 percent since 2001, now spends 43 percent of the global total. This is six times that of China, against which the USA pursues a policy of containment.

A recent Brookings Institution Report found that the world's 9 nuclear powers (including North Korea) spent US\$100 billion in 2011,<sup>4</sup> 6 percent of all total





**Table 1. Regions that are now Nuclear Weapons Free Zones.**

SOURCE: wikipedia.org/wiki/nuclear-weapon-free\_zone

Treaty	Region	Land km <sup>2</sup>	States	Date in force
Antarctic	Antarctica	14,000,000		1961-06-23
Space	Outer Space			1967-10-10
Tlatelolco	Latin America Caribbean	21,069,501	33	1969-04-25
Seabed	Seabed			1972-05-18
Rarotonga	South Pacific	9,008,458	13	1986-12-11
Bangkok	ASEAN	4,465,501	10	1997-03-28
MNWFS	Mongolia	1,564,116	1	2000-02-28
Semei	Central Asia	4,003,451	5	2009-03-21
Pelindaba	Africa	30,221,532	53	2009-07-15
<i>All NWFZs combined</i>		<i>84,000,000</i>	<i>115</i>	<i>39% world pop</i>
Nuclear weapons states		41,400,000	9	47% world pop
Neither NWS nor NWFZ		24,000,000	68	14% world pop

military spending. In stark contrast, spending on the survival of humanity rather than the destruction of humanity is less than a tenth of military spending. OECD figures for 2011 show that total official development aid amounted to US\$133.5 billion,<sup>5</sup> just 0.31 percent of Gross National Income. And for that other human-made disaster, global warming, the International Energy Agency has estimated that to halve global CO<sub>2</sub> emissions by 2050, US\$45 trillion must be invested.<sup>6</sup> This is a large sum, but only two thirds the budgets of death for nuclear and conventional weapons.

This obscene spending on armaments has of course been a bonanza for the merchants of death. Sixty three of the hundred top weapons firms are in the USA and Western Europe, and in 2006 their sales were \$292.3 billion. In the worldwide economic recession there are no reports of arms merchants having any financial problems. There is always a new war, and new and old dictators to sell armament to. Joseph Stiglitz and Linda Biomes report that the USA spent three trillion dollars on the war against Iraq.<sup>7</sup> They also considered how this enormous sum could have been used beneficially in the USA and the wider world:

*A trillion dollars could have built 8 million additional housing units, could have hired some 15 million additional public school teachers for one year; could have paid for 120 million children to attend a year of head start; or insured 530 million children for health care for one year; or provided 43 million students with four-year scholarships at public universities. Now multiply those numbers by three.*

**Nuclear-Weapon-Free Zones are a vital tool to develop the voice of the majority of people as a powerful political force**

They go on to calculate the effect if the money for the war, or even a fraction of it, had been devoted to development goals for the poorest countries:

*For sums less than the direct expenditures on the war, we could have fulfilled our commitment to provide 0.7 percent of our gross domestic product to help developing countries, money that could have made an enormous difference to the well-being of billions today living in poverty... Two trillion dollars would enable us to meet our commitments to the poorest countries for the next third of a century.*

How do we turn this imbalance of expenditure to human and ecological needs? If a referendum was held of the world's peoples on whether military expenditure should be greatly decreased and whether nuclear weapons should be abolished and the funds redirected to the

goals set-out by Stiglitz and Biomes, I would bet on a thumping majority voting yes. Nuclear-Weapon-Free Zones are a vital tool to develop the voice of the majority of people as a powerful political force.

### Progress: Nuclear-Weapons-Free Zones

Today 115 states with almost 40% of the world's population (Table 1) have committed themselves to rid not only their own territories of nuclear weapons but also to being part of the overwhelming number of countries committed to total abolition.

The Antarctic region was made a Nuclear-Weapon-Free Zone (NWFZ) in 1959 as part of the Antarctic Treaty, which came into force in 1961. Since then NWFZs have spread to encompass outer space, the sea bed and most of the Southern Hemisphere. In the last decade the trend has increased in the Northern Hemisphere with NWFZs established in Central Asia and Mongolia, with others proposed for North East Asia, Central Europe, and the Middle East.<sup>8</sup>

With climate change opening up the Arctic region,<sup>9</sup> bringing with it the possibility of increased resource competition, territorial disputes and militarization,<sup>10</sup> now is the time to establish an Arctic NWFZ similar to the one covering Antarctica, thus freeing both the

North and South poles from nuclear weapons and helping to build a more co-operative security environment in the North. The Arctic, like the Antarctic, is crucial to the ecological balance of the whole planet. It is unimaginable now that humanity would accept nuclear

weapons or any military activity in this precious environment.

It is more than time that Antarctica is balanced by its polar opposite at the Arctic. The Arctic must be declared a Nuclear-Weapons-Free Zone for the sake of humanity, and the world's ecosystems. The Antarctic Treaty, and over 50 years of adherence to its provisions, has set a precedent. Geographic and political differences, particularly states with direct economic and military interests surrounding the Arctic, make for a difficult negotiating process. Even so, with public pressure building for a safer environment, the example of Antarctica has an important role to play in achieving a nuclear weapons-free Arctic.

### Challenges to NWFZ Arctic

Global warming has warmed the hearts of energy and mineral extraction companies and the military planners of the Arctic powers. *The Financial Times* reported, 5 September 2012:

*The potential riches in the Arctic are a powerful lure for oil companies with the resources to explore it. According to a 2008 study by the US Geological Survey, the area within the Arctic Circle may hold 90bn barrels of oil and 1,669tn cubic feet of natural gas, respectively 13 percent and 30 percent of*

*the world's estimated undiscovered reserves. Those reserves are being exposed by the retreat of Arctic sea ice. The global warming that, according to most scientists, is caused by burning fossil fuels is making it easier to extract more of those fuels. Arctic sea ice in August hits its lowest extent since records began 33 years ago.*

Access to these riches or potential riches has led to increased military activity in the fragile environment, in particular by Canada, Russia and the United States. This military activity includes use of nuclear-armed and powered submarines and nuclear capable bomber fleets. When Russia planted a flag on the seabed of the Arctic in 2007 it led the Canadian Defence Minister to state: 'This isn't the 15th century. You can't go around and just plant flags and say: "We're claiming this territory".' The Canadian response was to announce construction of two new military installations and eight patrol ships to protect its part of the Northwest Passage sea route.<sup>11</sup>

The military jostling of nuclear powers continues unabated. The preparation for the resource grab continues with same frenetic energy. The indigenous peoples of the Arctic territories – Kazakhs, Sami,

**The Arctic, like the Antarctic, is crucial to the ecological balance of the whole planet**

Three polar bears approach the Los Angeles fast attack submarine, *USS Honolulu* (SSN 718), before 12 October 2003, when surfaced 280 miles from the North Pole. The bears investigated the boat for almost two hours before leaving.

CHIEF YEOMAN ALPHONSO BRAGGS, US-NAVY



## Through united action on a global scale we can highlight the fragility of the Arctic, the disaster that is global warming and the need to give the Arctic the type of protection already secured for the Antarctic

Vespa's, Karelians, Aluet, Nentses and Komi – are largely ignored, as were the indigenous peoples of all the other regions where the nuclear powers tested and stationed their nuclear weapons and military facilities.

As Alyn Ware, global co-ordinator of the Parliamentary Network for Nuclear Non-proliferation and Disarmament has pointed out:<sup>12</sup>

*There are also a range of environmental issues that could create tensions and conflict in the region. These include threats of environmental contamination from decommissioned Russian nuclear submarines scuttled in the area (with their nuclear reactors on board), threats to the homes and hunting grounds of indigenous Arctic peoples from climate change, and the possibility of oil slicks from shipping accidents if the Northwest Passage opens up. The US and Russia currently deploy nuclear weapons on strategic submarines that transit the Arctic waters. In addition, Russia maintains strategic naval bases in the region.*

### NWFZ a Unifying Connector?

All is not bleak for an Arctic NWFZ. Already a seabed treaty forbids stationing nuclear weapons on the Arctic Ocean floor. The majority of Arctic states are nuclear-weapons free. The majority of states are trying to work co-operatively and have a number of agreements for environmental protection in place. But as an international lawyer Donald Rothwell has pointed out:<sup>13</sup>

*The current Arctic environmental protection regime is based around a collection of customary international law, fragmented multilateral and bilateral legal instruments dealing with some Arctic issues, and global international instruments that have an impact in the Arctic. Currently there is no unifying connector for these various components of international law which have specific and general application in the Arctic. Unlike Antarctica, there is no regional infrastructure based on international law to facilitate or promote cooperation and the development of new international law.*

The security concerns of Arctic states can be dealt with in the international forums that already exist such as the Law of the Sea Tribunal, The International Court of Justice and the Arctic Forum. Although these forums are set up to deal with legal and environmental issues rather than security issues, negotiations for an Arctic NWFZ, as occurred with the Antarctic, could cover the security concerns of all nations. Establishing an Arctic NWFZ would be an important step to getting that 'unifying connector.' It would also build confidence which could assist in promoting peace and security in the region.

Our job is to work towards getting that unifying connector and to developing this new international law. NWFZ's were created by the energy of peoples in many countries. This article is not the place to set out what the building steps are to creating such zones. But clearly in every country, every region and through international actions and forums the tools are there to create a climate of public opinion that becomes so overwhelming that an Arctic free of nuclear weapons and subject to the strongest possible environmental safeguards will be impossible to deny. After all, three quarters of all nations support UN Secretary-General Ban Ki-Moon's proposal for a treaty to outlaw and eliminate nuclear weapons, according to a study released in January 2012 by the International Campaign to Abolish Nuclear Weapons.<sup>14</sup> Nations supporting the ban on nuclear weapons make up around 81% of the world's population. Through united action on a global scale we can highlight the fragility of the Arctic, the disaster that is global warming and the need to give the Arctic the type of protection already secured for the Antarctic.

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# Iran and a Middle-East zone free of all weapons of mass destruction

A Middle East Nuclear-Weapons-Free Zone, proposed in 1974 by Iran, was widely endorsed. **RUTH WANGERIN** and **SHAHRIAR KHATERI** explain why the proposal was extended in 1990 by Egypt to include chemical and biological weapons. A key meeting in December 2012 to discuss establishing a Middle-East zone free of all weapons of mass destruction was postponed indefinitely by certain interests. Yet this zone could end the instability and conflict in the Middle-East region. Civil society's help is needed to build a worldwide consensus that nuclear weapons and all weapons of mass destruction are totally unacceptable.

War is more than an abstract concept to people in the Middle East. Millions have lived through armed conflict, and many children in the Middle East have never known peace. The region's people have been exposed to terrifying weaponry from 'nerve gas' in Iran to 'shock and awe' bombardment in Iraq. Understandably, the desire to be free of such weapons is strong among the people of the region.

Weapons that terrorize civilians needn't exist in the Middle East. Nuclear Weapons-Free Zones (NWFZs) occupy a majority of the earth's surface including most of the Southern Hemisphere.<sup>1,2</sup> A Middle East NWFZ proposed in 1974 by Iran and supported by Egypt has been widely endorsed. But a meeting set for December 2012 to discuss establishing a Middle-East zone free of all weapons of mass destruction (MEWMDFZ) has been indefinitely postponed due to disagreements on process and agenda.

## Political will lacking

There is a deficit of political will when it comes to disarmament and settling outstanding conflicts in the Middle East. Some parties' agendas: Israeli settlements, international arms sales,<sup>3</sup> regime change, are furthered by continued conflict and instability. The status quo is good business for armaments manufacturers in the US, UK,<sup>4</sup> Russia, Australia, and others. In 2011, officially in response to 'tensions with Iran,' the U.S. sold almost \$39.2 billion of 'expensive warplanes and complex missile defense systems' to Saudi Arabia, the United Arab Emirates (UAE), and Oman.<sup>5</sup>

Political will is also weak on universal nuclear disarmament, a requirement of the Treaty on Non-Proliferation of Nuclear Weapons (NPT) of 1970.<sup>6</sup> Some states have been unwilling to give up the 'deterrent' power of nuclear weapons. Perhaps in response, some other states are unwilling to give up the deterrent

Some parties' agendas: Israeli settlements, international arms sales, regime change, are furthered by continued conflict and instability... [it's] good business for armaments manufacturers

power of chemical and biological weapons, 'the poor man's atomic bomb.' Without a change of direction, states in the region could draw each other into the strategy of Mutual Assured Destruction (MAD) long followed by the US and USSR.

The Middle East is a microcosm of the world in its uneven pattern of nuclear armaments. Israel, the only nuclear-armed state in the region, retains an arsenal of 80-200 nuclear warheads<sup>7</sup> while following a policy of 'opacity' (neither confirming nor denying possession of nuclear weapons) since the late 1960s.<sup>8</sup> The US has guaranteed Israel's security, in part by defending it from challenges to its

**Israel's leaders have another choice if they don't want Iran, or Egypt, Turkey, or Saudi Arabia to strive for nuclear weapons. They could support the Middle East Weapons of Mass Destruction Free-Zone proposal**

possession of nuclear weapons, which Israel claims are a deterrent.<sup>9</sup> This deterrent comes at great cost to Israel and the region. Syria has justified its chemical weapons as a deterrent to Israel, and Egypt is thought to remain outside the Chemical Weapons Convention for the same reason. Having been threatened regularly since its 1979 revolution, attacked with chemical weapons, and placed under 'crippling sanctions,'<sup>10</sup> Iran could also claim to need its own deterrent.

Israel is determined to keep its local monopoly on nuclear weapons, regardless of the unsustainability of such an imbalance. Yet Israel's leaders have another choice if they don't want Iran (or Egypt, Turkey, or Saudi Arabia) to strive for nuclear weapons. They could support the MEWMDFZ proposal. With a mutual security agreement in place, no country in the region would be tempted to pursue any kind of WMD. Israel could demand enforceable security assurances from its neighbors, the USA, the UK, and Russia, in exchange for giving up its nuclear weapons and its position as a regional 'superpower.'

### Security for who?

Governments all over the world have reserved the right to manufacture and use the most heinous weapons ever invented in the name of 'security.' Most people think of security as *human security*, the safety and welfare of human beings.<sup>11</sup> Treaties however deal with *state security*; the territorial integrity of a state, often interpreted as 'strategic security' or military position relative to other states. Less often acknowledged but on the agenda of many negotiators is the security of *vested interests*: corporate investments or domestic political power. Human security may be endangered by enhancing these other forms of security.

The Middle East has never experienced nuclear warfare, but it has experienced something similar on a smaller scale; chemical warfare. Nuclear, chemical, and biological/toxin weapons all harm combatants and civilians indiscriminately, causing unnecessary suffering, and damage the natural environment. Their use is contrary to International Humanitarian Law,<sup>12</sup> so adding chemical and biological weapons to the proposal for a nuclear-weapons-free zone is important.

More than a million people died on both sides during the Iran-Iraq war, the longest conventional war of the 20th Century (1980-88).<sup>13</sup> Iraq used huge quantities of chemical weapons, the first wide-scale use of such weapons since World War I, and the first use in warfare of 'nerve gas.' Long after the war, Iran is still dealing with damage to the environment and chronic health effects in those injured by the chemicals. The international community was unable to stop the use of chemical weapons in the Iran-Iraq war, just as it has been unable to hold nuclear weapons states to their obligations under the NPT.

Reasons for this ineffectiveness are informative. Iran made formal complaints to the United Nations, and seven UN investigative missions from March 1984<sup>14</sup> confirmed that Iraq was using banned weapons. But the UN Security Council took no effective action. According to investigator Joost Hilterman, powerful forces inside the region (e.g., the Persian Gulf monarchies) and internationally (e.g., the USA) did not want the Islamic Republic of Iran to succeed.<sup>15</sup> Iraq held it would lose the war unless it was able to repel Iranian offensives with chemical weapons; a 'force multiplier' to compensate for its lower troop numbers. The same logic may explain Israel's determination to cling to its nuclear arsenal. Egypt's population is over 10 times greater.

After the war, the U.S. and Iran both enthusiastically supported implementation of one of the strongest disarmament treaties ever negotiated: the Chemical Weapons Convention (1997), which bans altogether the manufacture and possession of chemical warfare agents, sets strict timelines for disposal of stockpiles of chemical weapons and regulates the chemical industry to keep track of any substances that could be used in manufacturing these weapons. Only eight countries have yet to ratify this treaty. Unfortunately, five of them (Egypt, Israel, Somalia, South Sudan, and Syria) are in the Middle East.

### The MEWMDFZ proposal

In 1990, Egypt extended the original 1974 proposal for a NWFZ in the Middle East to cover chemical and biological weapons, a change endorsed by United



Long after the 1980–88 war, Iran is still dealing with damage to the environment and chronic health effects in those injured by Iraq's use of chemical weapons, including nerve gas.

S. KHATERI

Nations Security Council (UNSC) Resolution 687. Almost 20 years later, the 2010 Nuclear Non-proliferation Treaty Review Conference breathed new life into the proposal with 189 member countries calling for a conference in 2012 to establish the MEWMDFZ.<sup>16</sup> The countries to be invited included all the members of the League of Arab States as well as Israel and Iran. The International Atomic Energy Agency (IAEA) called upon all states in the Middle East to take certain confidence-building measures: acceding to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), applying IAEA safeguards and cooperating fully with the Agency.

Within the region, at least three serious obstacles stand in the way of the MEWMDFZ: Israel's policy of 'nuclear opacity,' the unwillingness of some countries to recognize Israel (and of Israel to recognize Palestine), and the absence of peace treaties between some states/peoples. Although Israel's official policy favors the MEWMDFZ, agreeing to the IAEA 'confidence-building measures' or other steps on the road to disarmament presents a dilemma. Once Israel gives up its policy of 'opacity' and announces it has nuclear weapons, unless it also agrees to immediately disarm, it is in effect asking that other states in the region officially accept its nuclear monopoly as legitimate. In this situation, other states in the region might develop nuclear weapons to 'match' Israel. It is calculated that a regional war with fifty 15-kiloton nuclear warheads would cause 7 million immediate deaths in Egypt, almost as many in Iran and between 2.5 and 3 million in Israel.<sup>17</sup>

### Building confidence

Obstacles to the MEWMDFZ also involve states outside the region. Nuclear weapons exist in nearby countries: Turkey, Pakistan, India, and Russia. The U.S. has military bases and naval vessels in the region and could potentially launch nuclear (or conventional) attacks from the Indian Ocean island of Diego Garcia. A viable MEWMDFZ would require 'negative security guarantees,' requiring that these countries and other nuclear weapons states commit to not attacking any country in the WMD-free zone with nuclear or conventional weapons.<sup>18</sup>

Small confidence-building steps have been suggested to circumvent these obstacles. States could establish better regional communication and co-operation over issues that affect them all, such as infectious

disease control. They could agree to simultaneously ratify the Comprehensive Nuclear Test Ban Treaty (CTBT). Ratification of the CTBT by the U.S. would also move the process forward.<sup>19</sup>

In November 2012, a month before the MEWMDFZ conference was to take place in Helsinki, rumors were circulating about a possible postponement. The Arab League continued to insist on urgency and Iran said it would attend, but question marks remained over Syria and Israel's participation. Later that month, the Secretary General of the United Nations and the three convening countries: Russia, the United Kingdom, and the United States, issued separate announcements saying the conference had been postponed; all but the US specified the conference must be held in 2013. The U.S. statement expressed support for a conference at some future date but said 'all parties' would have to agree on a 'process and agenda' that would operate by 'consensus' and cover 'the legitimate security interests of all states in the region.'<sup>20</sup> These requirements effectively give any one state a veto.

**a regional war with fifty 15-kiloton nuclear warheads would cause 7 million immediate deaths in Egypt, almost as many in Iran and between 2.5 and 3 million in Israel**

### Civil society's importance

Efforts to achieve the MEWMDFZ are part of a global approach to free the world of nuclear weapons and other WMD. The 2010 NPT Review Conference decision triggered a very dynamic civil society discussion in the Middle East and worldwide.<sup>21</sup> With the indefinite postponement of the Helsinki conference,



## civil society can create a setting for government collaboration and make depicting another people as 'the enemy' illegitimate as an excuse for war

civil society will have to take the lead if a Middle East WMD-free zone is to become reality.<sup>22</sup>

While it is relatively easy for governments to acquire WMDs, and difficult for them to create binding disarmament treaties among themselves, civil society can create a setting for government collaboration and make depicting another people as 'the enemy' illegitimate as an excuse for war. It can also build a worldwide consensus that nuclear weapons and all WMD are taboo. The existing international civil society campaign to 'delegitimize' nuclear weapons and challenge the assertion that they are a 'deterrent' helps reduce any allure nuclear weapons may have as a status symbol.

At least 17 million international migrants, including many women working as domestic labourers, live in the Persian Gulf states and Israel, making nuclear disarmament in the Middle East of wider concern.<sup>23</sup> Civil society groups interested in the welfare of these migrant workers could be called on to participate in dialogues about the MEWMDFZ and even to request observer status at the proposed Helsinki conference.<sup>24</sup>

### Peace is popular

Wherever the question has been asked in public opinion polls, total nuclear disarmament has been endorsed by the majority.<sup>25</sup> Among places that have been polled are Russia (57% in 1999<sup>26</sup>), the United States (77% in 1997<sup>27</sup>, 62% in 2010<sup>28</sup>), and most of the Middle East. In Israel (2011), 64% supported a MEWMDFZ.<sup>29</sup> In a survey of 12 Arab countries (2011), support for a NWFZ in the Middle East was between 50% and 68% in 10 out of the 12 surveyed countries, and 41% and 47% in the other two.<sup>30</sup> Though no recent poll results are available from Iran, there is reason to expect the Iranian public to favor peace, given their experience in the Iran-Iraq war. A typical view is that nuclear power plants are needed for economic development but have nothing to do with nuclear weapons, which are 'so 20th century,' in the words of Iran's president.<sup>31</sup> The highest religious and political authority in Iran, Ayatollah Ali Khamenei, has declared unconditionally that pursuit and possession of nuclear weapons is incompatible with Islam. As recently as August 2012, at the 16th Summit of the Non-Aligned Movement, he reaffirmed this position:

*Iran considers the use of nuclear, chemical and similar weapons as a great and unforgivable sin. We proposed the idea of 'Middle East free of nuclear weapons' and we are committed to it.*<sup>32</sup>

Russia and the UK, international co-conveners of the Helsinki conference, seem eager to continue the MEWMDFZ process despite the conditions set by the U.S. and Israel. Non-governmental organizations with participants from around the world met at a conference in Helsinki in December 2012 to talk about the zone and urged civil society everywhere to hold the co-conveners accountable for the delay.<sup>33</sup>

Much of the groundwork for the MEWMDFZ has been laid. The existing Nuclear Weapons-Free Zones are models where states give up 'deterrence' in return for collective security through regional treaties. Several states in these zones had nuclear weapons or the capability for their development. The IAEA, the Chemical Weapons Convention, and existing NWFZs have developed successful methods for inspection and verification. There is experience with disarmament treaties in the region (e.g., the Arab states of North Africa are part of the African NWFZ; Iran is active in the Organization for the Prohibition of Chemical Weapons).

Perhaps most importantly, people in the region are talking to each other. In November 2012, a group of 37 participants from Israel, Iran, Egypt, Palestine, Leba-



Tehran Peace Museum.

non, Jordan, Bahrain, Yemen, Turkey, and others met in Greece for a two-day 'Athens Dialogue' to discuss the MEWMDZF.<sup>34</sup>

In Iran, the Tehran Peace Museum,<sup>35</sup> affiliated with the International Network of Museums for Peace, reopened in June 2011 in a central city park with Mr Koichiro Maeda, Director of the Hiroshima Peace Memorial Museum, as a special guest. The museum currently averages 1,000 visitors monthly and sponsors interactive peace education activities. One entry in the Museum's guest book was written by Tehran's

mayor, M. Bagher Qalibaf, who, like the Mayor of Hiroshima, is a member of the international organization Mayors for Peace:

*When we take each other's hand in spite of our differences, then we are brothers.... We have many options and it is up to us whether we plant love or violence.... Let's hope that we all choose no other option but love.*

'We have many options and it is up to us whether we plant love or violence.... Let's hope that we all choose no other option but love.' – Tehran's mayor, M. Bagher Qalibaf

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