

Addressing Humanitarian and Environmental Harm from Nuclear Weapons
Kirisimasi (Christmas and Malden Island) Veterans
Republic of Fiji

'The people of Fiji and the Pacific want nothing less than a complete prohibition of nuclear weapons ... and concrete steps to provide effective redress for those who suffer the effects of nuclear testing as this is both a moral and legal issue.'
– Fiji statement at the United Nations General Assembly, October 2017.

Executive Summary

Between 1957 and 1958, Fijian soldiers participated in the nine UK nuclear weapons tests at Malden and Kiritimati (Christmas) Islands, now part of the Republic of Kiribati. Test veterans, including Fijians, and civilian survivors claim their health (as well as their descendants') was adversely affected by exposure to ionizing radiation. Their concerns are supported by independent medical research. Though the UK government assured coverage of Fijian troops' service-related health problems during the tests, it has offered them no assistance or compensation. Instead, the Fiji government has stepped in to offer a one-off grant to veterans to support medical and welfare costs in 2015. The 2017 Treaty on the Prohibition of Nuclear Weapons obligates assistance to victims and remediation of contaminated environments, including those affected by the Christmas and Malden Islands nuclear tests.

Recommendations

Fiji and the international community should:

1. Sign and **RATIFY** the Treaty on the Prohibition of Nuclear Weapons.
2. Assess and **RESPOND** to the humanitarian needs of survivors, including the Fijian veterans.
3. Survey and **REMEDiate** contaminated environments at Kiritimati and Malden Islands.
4. **RESPECT**, protect and fulfill the human rights of nuclear test survivors.
5. **RETELL** the stories of the humanitarian and environmental impact of the tests.

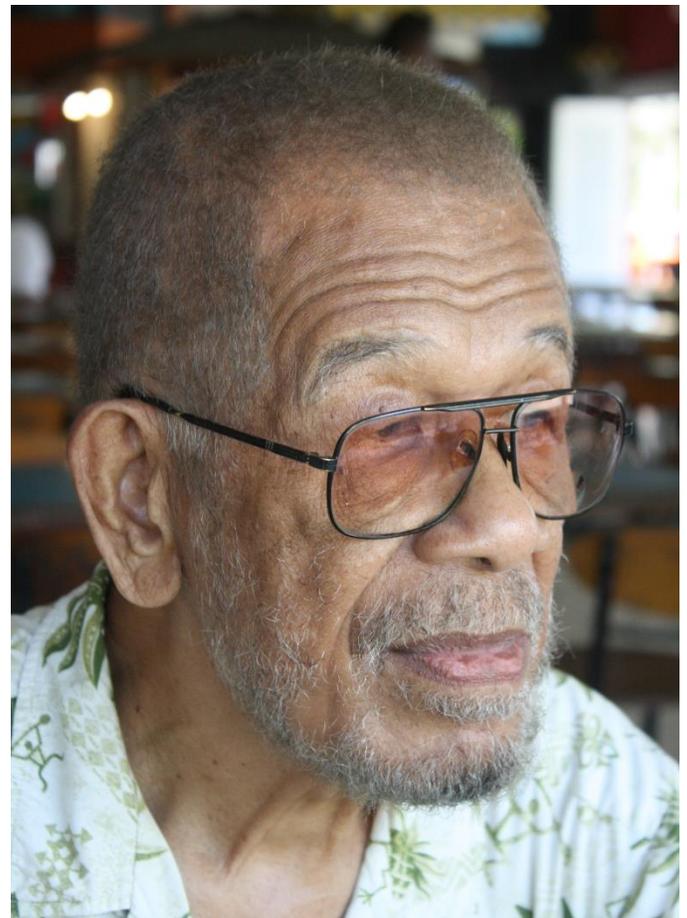


Figure 1: Paul Ah Poy, President of the Fiji Nuclear Veterans Association was posted to Christmas Island during the UK nuclear weapons testing program. Photo: Matthew Bolton.

Background on Nuclear Weapons Testing at Kiritimati and Malden Islands

From 1957 to 1958, almost 15,000 British, Fijian and New Zealand personnel, including 276 Fijian soldiers and sailors, participated in Operation Grapple at Christmas and Malden Islands, then part of the Gilbert and Ellice Islands Colony (GEIC), in the Central Pacific.¹ Military and scientific personnel were posted at military camps on Christmas Island (Kirisimasi in Fijian and Kiritimati in I-Kiribati), as well as on British and New Zealand naval ships.² Dignitaries also visited, including Ratu Sir Penaia Ganilau, a distinguished military officer who later served as Fiji's Deputy Prime Minister, Governor General, President and *Tui Cakau* (customary High Chief) visited Malden Island and witnessed the 1957 *Orange Herald* test.³

The first three tests, in 1957, were nuclear bombs air-dropped over Malden Island, 636 km from Christmas Island. However, to simplify logistics and under pressure to achieve a 1 megaton yield before the potential

negotiation of a ban on testing, the remaining six Grapple tests occurred above Christmas Island itself, including two attached from balloons tethered at the southeastern point of the island.

Further details on the UK and US nuclear weapons tests at Kiritimati and Malden Islands can be found in the Kiritimati report in this series.⁴

Humanitarian and Human Rights Impact

The UK Ministry of Defence maintains that 'Almost all the British servicemen involved in the UK nuclear tests received little or no additional radiation as a result of participation.'⁵ However, veterans and civilians who lived on Christmas Island during the tests maintain they were exposed to the negative health effects of the heat and ionizing radiation of the nuclear tests. This is supported by documentary evidence released from British official archives, as well as independent medical research.

According to an article published in the *International Review of the Red Cross*, 'radiation exposures for service personnel

Key Indicators of Humanitarian, Human Rights and Environmental Harm

Number of Nuclear Weapons Tests

- 276 Fijian troops were among the 15,000 personnel who participated in the UK nuclear weapons tests in and around Kiribati; Fijian dignitaries also visited.
- Fijian soldiers and sailors were often allocated more dangerous tasks, like dumping birds killed or blinded by the tests, and even radioactive waste, into the ocean
- Sixty years after the tests there are 32 surviving nuclear test veterans in Fiji, plus surviving spouses, children and grandchildren.
- Many military and civilian survivors of the Christmas and Malden tests have health problems consistent with exposure to radiation; descendants also report multi-generational health problems.
- The tests killed thousands of birds and fish. The environmental impact of the nuclear tests has not been adequately analyzed.

Fijian troops participated in 9 UK tests on Kiritimati and Malden Islands

Position on the Treaty on the Prohibition of Nuclear Weapons (TPNW)

Fiji is a signatory; it co-sponsored the 2016 UN General Assembly Resolution that opened the negotiations.

Official Development Assistance Recipient (OECD DAC Status)?

Fiji is eligible to receive development aid

¹ Note on spellings: When covering the colonial period, this report will use the English spellings of 'Gilbert', 'Christmas', 'Gilbertese' and 'London'; for the post-independence period, it will use the I-Kiribati transliterations 'Kiribati', 'Kiritimati', 'I-Kiribati' and 'Ronton' unless in direct quotation. Similarly, while colonial documents sometimes transliterate the Fijian city 'Nandi', the Fijian spelling 'Nadi' is used here. When specifically referring to the Fijian Christmas Island veterans, it will use the Fijian transliteration 'Kirisimasi.'

² For an account of veterans' experiences during the UK testing program, see: Becky Alexis-Martin. (2016) "It was a Blast!"—Camp Life on Christmas Island, 1956–1958. *Arcadia*. 19. <<http://www.environmentandsociety.org/arcadia/it-was-blast-camp-life-christmas-island-1956-1958>>.

³ Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 150-154.

⁴ Matthew Bolton. (2018) *Addressing Humanitarian and Environmental Harm from Nuclear Weapons: Kiritimati (Christmas) and Malden Islands, Republic of Kiribati*. New York, International Disarmament Institute.

⁵ UK Ministry of Defence. (June 2008) 'UK atmospheric nuclear weapons tests: UK programme.' Factsheet 5. p. 2. <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/82781/ntvfactsheet5.pdf>.



Figure 2: Fijian troops on Christmas Island during the UK nuclear weapons testing program. Photo courtesy of Mrs Loata Masi and Nic Maclellan. <https://www.radionz.co.nz/international/pacific-news/340397/author-challenges-british-denial-over-pacific-nuclear-legacy>

... were not systematically monitored, and personal protection was minimal.⁶

According to the Comprehensive Test Ban Treaty Organization (CTBTO), the 1.8 megaton Grapple X test on 8 November 1957 produced an unexpectedly severe shockwave that ‘demolished buildings, equipment and infrastructure.’⁷ Credible reports indicate that rain following the 2.8 megaton Grapple Y test, on 28 April 1958, dispersed fallout over the island and ships offshore.⁸

Some Christmas Island veterans claim the lack of precautionary measures was intended to use them as ‘guinea pigs’, to see the impact of radiation on people. They point to UK military memos that, in the words of

one RAF document, show the UK wanted to understand the ‘effects of nuclear explosions on personnel and equipment.’⁹ As early as February 1957, the Indo-Fijian newspaper *Jagriti* condemned Operation Grapple, saying, ‘Nations engaged in testing these bombs in the Pacific should realize the value of the lives of the people settled in this part of the world. They too are human beings, not “guinea pigs.”’¹⁰

During early UK tests military personnel were given protective suits and film badges to monitor their exposure to radiation. However, protective and monitoring measures declined over the course of the testing program. Contemporary film footage of the *Grapple X* test depicts

⁶ Tilman A. Ruff. (2015) ‘The humanitarian impact and implications of nuclear test explosions in the Pacific region.’ *International Review of the Red Cross*. 97(899). pp. 775-813.

⁷ CTBTO. (n.d.) ‘8 November 1957 – Grapple X.’ <<https://www.ctbto.org/specials/testing-times/8-november-1957-grapple-x>>. Also: CRTukker. (2008) ‘The First British Hydrogen Bomb.’ <https://www.youtube.com/watch?time_continue=81&v=UhnjkbDotYI>.

⁸ War Pensions and Armed Forces Compensation Chamber. (December 2016) *Decision: Ministry of Defence vs. Abdale et al.* paras. 194-201/pp. 57-59. <<http://www.llrc.org/campaigns/testvets/testvettranscripts//Determination.pdf>>; BBC. (2007) ‘Christmas Island H-bomb controversy.’ *BBC Inside Out*. <http://www.bbc.co.uk/insideout/content/articles/2007/11/01/east_christmas_island_bomb_s12_w8_feature.shtml>; Rob Edwards. (2006) ‘300 Islanders Accuse UK Government of Exposing Them to A-bomb Fallout.’ *Sunday Herald*. <http://www.robwards.com/2006/10/300_islanders_a.htm>.

⁹ In: Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. p. 109.

¹⁰ In: Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. p. 79.



Figure 3: Distinguished Fijian officer Ratu Sir Penaia Ganilau, later Fiji's Governor General, and Fiji Royal Naval Volunteer Reserve (FRNVR) Commander Stan Brown prepare for the second UK nuclear weapons test. Photo: Courtesy of Adi Sivo Ganilau and Nic Maclellan. <http://press-files.anu.edu.au/downloads/press/n2626/html/ch09.xhtml?referer=2626&page=16>

military personnel in only their uniforms.¹¹ Even those who wore film badges later discovered in lawsuits with the British government that the film was never processed. The British military did not monitor the health of the service personnel following their service in the testing program. This may have been intentional; one RAF memo raised concerns about collecting airmen's blood samples because if they 'later developed leukaemia, it might be difficult to refute the allegations that this is due to radiation received at Christmas Island.'¹²

A 2008 cross-party inquiry into Operation Grapple by Members of UK Parliament John Baron (Conservative, Billerica) and Dr. Ian Gibson (Labour, Norwich North) 'heard clear personal testimony that makes us question

whether adequate radiological safety standards were followed for the tests.' Baron said the inquiry 'saw little evidence that fallout and the dangers from ingested radioactive particles were taken seriously.... Servicemen were free to move around the island, drinking local water, eating local fruits, bathing in the lagoons and breathing in dust, all of which could have been contaminated. That is worrying, because ingested radioactive particles from fallout can remain in the body and continue to harm for many years.' The inquiry heard testimony from witnesses who 'described their experience of a heat wave of extraordinary intensity, leading in some cases to temporary blindness or a sensation of blood boiling within their

¹¹ CRTukker. (2008) 'The First British Hydrogen Bomb.' <https://www.youtube.com/watch?time_continue=81&v=UhnjbkDotYI>.

¹² In: Catherine Trundle. (2011) 'Searching for Culpability in the Archives: Commonwealth Nuclear Test Veterans' Claims for Compensation.' *History and Anthropology*. 22(4). pp. 497-512.

bodies. Others developed skin rashes and flu-like symptoms immediately after the detonations.¹³

Fijian soldiers and sailors were treated with even less regard than the British and New Zealand service personnel. They were 'often allocated dirty, difficult or dangerous tasks', subjected to a color bar, paid less than British soldiers and receiving limited R&R leave.¹⁴ The Fijian soldiers and sailors also participated in gathering and dumping dead, injured and blinded birds after the tests.¹⁵ Paul Ah Poy, President of the Fiji Nuclear Veterans Association, says that while posted to Christmas Island, he 'never saw any protective gear at all' and was 'never issued with a badge' to measure radiation.¹⁶ While other Fijian veterans, early on in Operation Grapple, received radiation badges, they appear not to have been processed and/or retained. In 2007, the UK Ministry of Defense confirmed that 'No radiation doses were recorded for any Fijian national.'¹⁷

The RAF flew 'sniffer' planes through the mushroom clouds of the UK tests to obtain samples; many of these crews received dangerous exposures to radiation. As they transited through Fiji on their way from Australia to Christmas Island, the crews were instructed not to inform the Nadi civil airport of the radiation risk: 'The fact that an engine may be 'hot' should be concealed from the Nandi authorities unless they ask.'¹⁸ Following his official visit to Malden Island, Ratu Penaia's feet were found to be 'very hot' with radioactive contamination and his legs began to swell. He died of leukaemia in 1993; two of his children report having fertility problems.¹⁹

The lower standard of protection applied to Fijian soldiers, airport workers and even a dignitary, was indicative of a racism that also pervaded the UK government's attitude toward the Gilbertese civilians living on the island. A 1956 UK military report preparing for the Christmas Island tests declared 'It is assumed that in the possible regions of fall-out at Grapple there may be scantily clad people in boats to whom the category of primitive peoples should apply.' This report established that the UK would apply a low standard of risk to this category: 'dosage...is about 15 times higher (for primitive peoples) than what would be

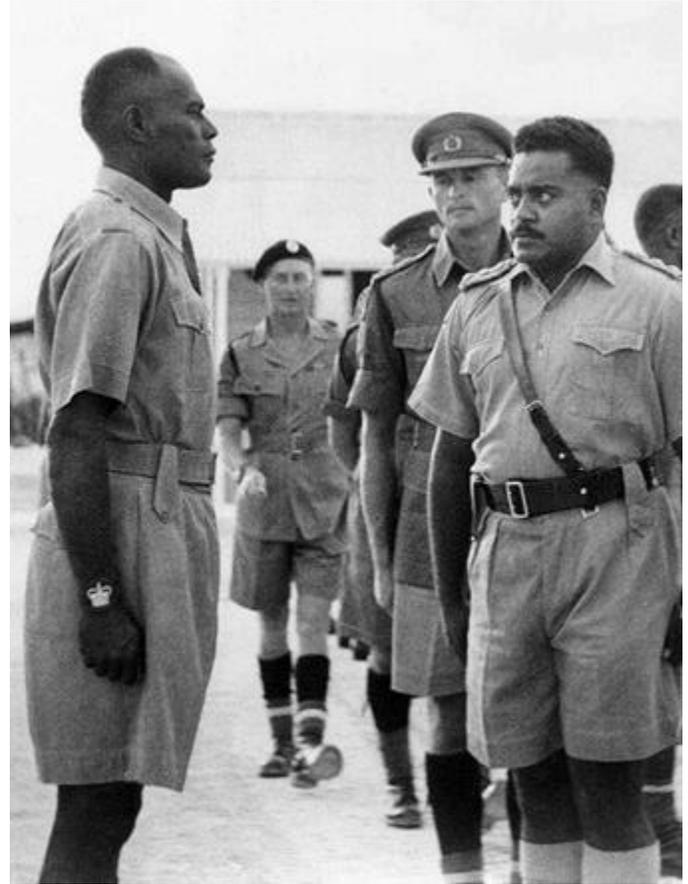


Figure 4: Captain Viliame 'Bill' Masi and British officers inspect Fijian troops on Christmas Island during the UK nuclear weapons testing program. Photo: Courtesy of Mrs Loata Masi and Nic Maclellan <http://press-files.anu.edu.au/downloads/press/n2626/html/ch18.x>

permitted by the International Commission on Radiological Protection' (ICRP). A week later, a Grapple planning meeting determined that 'only very slight health hazard to people would arise, and that only to primitive peoples.'²⁰

Independent medical generally backs the claims of survivors that exposure to the nuclear tests could have negative health implications. The UK's National Radiological Protection Board (NRPB) found elevated levels of leukemia among 22,000 veterans of the Christmas

¹³ John Baron. (2008) 'British Nuclear Test Veterans.' <<https://publications.parliament.uk/pa/cm200708/cmhansrd/cm081022/debtext/81022-0021.htm>>.

¹⁴ Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. pp. 228, 260.

¹⁵ Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 139.

¹⁶ Paul Ah Poy. (6 January 2018) Personal interview with Matthew Bolton, Suva, Fiji.

¹⁷ In: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 134.

¹⁸ RAF Air Commodore W.P. Sutcliffe, in: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 173.

¹⁹ Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 150-154.

²⁰ Nic Maclellan. (2005) 'The Nuclear Age in the Pacific Islands.' *The Contemporary Pacific*. 17(2). pp. 113-114, 363.

Island and Australian tests.²¹ These results were supported by Neal Pearce of the Wellington School of Medicine in 1990 and 1996 who found that New Zealand test veterans had an increased risk of leukaemia.²² However, the NRPB and Pearce studies have been heavily criticized by test veterans and medical researchers for their methodology and for underestimating the health impact of the tests.²³

By contrast, a 1999 survey of 2,500 men who participated in UK nuclear tests (2,200 UK, 238 New Zealand and 62 Fijian) by Sue Rabbit Roff found that two-thirds of respondents who had died had cancers. Data on the 5,000 children and grandchildren of 1,000 such veterans found elevated rates of health problems consistent with multigenerational effects of radiation exposure, including a rate of spina bifida at five times the UK average.²⁴ The NRPB disputed Roff's and results, claiming there is 'no detectable effect on the participants' expectation of life, nor on their risk of developing cancer or other fatal diseases.'²⁵ Similarly, the judges in the *Abdale* case described Roff's 'methodology used (survey questionnaire) was less than ideal as there is a potential source of bias....'²⁶

However, the most methodologically-rigorous study to date, led by Professor Al Rowland at Massey University's Institute of Molecular Biosciences, found elevated levels of genetic damage in cell samples taken from New Zealand Christmas Island test veterans compared with the control group. The researchers concluded that the damage was 'caused by exposure to harmful radiation, probably through ingestion of ionizing particles during... Operation Grapple.'²⁷ Since the publication of Rowland's landmark work, other studies have demonstrated further health

impacts on British test veterans, including serious illness and reproductive difficulties.²⁸

Reviewing the evidence and literature on harm from testing in the Pacific, Dr. Tilman Ruff in the *International Review of the Red Cross*, concluded that 'Any and all levels of ionizing radiation exposure, including doses too low to cause any short-term effects or symptoms, are associated with increased risks of long-term genetic damage, chronic disease and increases in almost all types of cancer, proportional to the dose.'²⁹

Moreover, research for a doctoral dissertation at Massey University found that New Zealand test veterans suffered 'psychological fallout', exhibiting 'more depressive symptoms' than a control group. The study suggested anxiety about the ongoing and potential health implications of their exposure to the tests caused a form of 'chronic anxiety.'³⁰ Fijian veterans speaking to Nic Maclellan reported that the fear and stress of experiencing the tests caused psychological distress.³¹

When requesting Fijian troops participate in Operation Grapple, the UK government indemnified the colonial-era 'Government of Fiji against claims for pensions to which the men of the Fijian Military Forces or their dependents may become entitled to as a result of death or injury sustained by them during their service on the Nuclear Weapons Testing Base at Christmas Island....'³² However, to date, the UK government has refused to provide pensions, cover health costs or provide compensation to the Fijian Kirisimasi veterans. Now that Fiji is independent, the UK is not legally-bound to honor commitments made to the colonial administration.

²¹ S.C. Darby, et al. (1988) 'A summary of mortality and incidence of cancer in men from the United Kingdom who participated in the United Kingdom's atmospheric nuclear weapon tests and experimental programmes.' *British Medical Journal*. 296. pp. 332-338.

²² Neal Pearce et al. (1990) *Mortality and Cancer Incidence in New Zealand Participants in United Kingdom Nuclear Weapons Tests in the Pacific*. Wellington, Wellington School of Medicine; Neal Pearce. (1996) *Mortality and Cancer Incidence in New Zealand Participants in United Kingdom Nuclear Weapons Tests in the Pacific: Supplemental Report*. Wellington, Wellington School of Medicine.

²³ Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. pp. 295-296.

²⁴ Sue Rabbitt Roff. (1999) 'Mortality and morbidity of members of the British Nuclear Tests Veterans Association and the New Zealand Nuclear Tests Veterans Association and their families.' *Medicine, conflict and survival*. 15(Suppl. 1). pp. i-ix, 1-51.

²⁵ In: Lorna Arnold. (2001) *Britain and the H-Bomb*. London, Palgrave Macmillan. p. 243.

²⁶ War Pensions and Armed Forces Compensation Chamber. (December 2016) *Decision: Ministry of Defence vs. Abdale et al.* p. 70. <<http://www.llrc.org/campaigns/testvets/testvettranscripts/Determination.pdf>>.

²⁷ M.A. Wahab et al. (2008) 'Elevated chromosome translocation frequencies in New Zealand test veterans.' *Cytogenetic and Genome Research*. 12(2). pp. 79-87. For extended discussion of this study, see: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. pp. 291-301.

²⁸ Rebecca Miles, et al. (2011) British Nuclear Test Veterans Health Needs Audit Commissioned by the UK Ministry of Defence. Miles and Green Associates; Christopher Busby and Mireille Escande de Messieres. (2014) 'Miscarriages and Congenital Conditions in Offspring of Veterans of the British Nuclear Atmospheric Test Programme.' *Epidemiology*. 4(4). doi:10.4172/2161-1165.1000172.

²⁹ Tilman A. Ruff. (2015) 'The humanitarian impact and implications of nuclear test explosions in the Pacific region.' *International Review of the Red Cross*. 97(899). pp. 775-813.

³⁰ Rebekah Leigh Johnson. (2009) "'Psychological Fallout': The Effects of Nuclear Radiation Exposure.' Doctor of Clinical Psychology thesis, Massey University. <https://mro.massey.ac.nz/bitstream/handle/10179/1425/02_whole.pdf>.

³¹ e.g. Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. pp. 133, 229.

³² Ministry of Supply memo, quoted in: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 105.



Figure 5: The islets in the Kiritimati lagoon provide vital nesting grounds for the island’s 16 million birds. During Operation Grapple, many Fijian troops were tasked with gathering birds killed, blinded and injured by the nuclear weapons tests and dumping them in the ocean. Photo: Matthew Bolton.

However, the colonial-era policies ‘have a clear moral force, showing that the British authorities understood that they had an ongoing responsibility to address any injury or illness to the Fijian military personnel...as well as to their families, widows and orphans.’³³

Indeed, veteran and civilian survivors of the British tests have faced systematic denial and secrecy from the UK government. Seeking compensation but also more transparency, military and civilian survivors – including Fijian Kirisimasi veterans – have sued the UK government in both British courts and the European Court of Human Rights.³⁴ So far, British and European judges have decided against survivors, expecting a high burden of proof that

specific illnesses were caused by the testing and not by other factors like genetics, smoking or exposure to other carcinogens.³⁵ While they were ultimately unsuccessful, the court cases did result in limited release of official documentation. Journalist Nic Maclellan also succeeded in obtaining further documentation from official archives. However, the UK government has still refused to open its complete Operation Grapple archive to full public examination.

Suppression of information by the UK has contributed to survivors’ distress. Given the strong tradition of loyalty to the British Crown among Fijian veterans of the colonial military, the ‘sense of betrayal’ is ‘palpable.’³⁶ ‘I can say that

³³ Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. p. 226.

³⁴ See: UK High Court. (1988) *Pearve vs. Secretary of State for Defence*. AC755; European Court of Human Rights. (1998) *L.C.B. vs. the United Kingdom*. Reports of Judgements and Decisions 1998-III; European Court of Human Rights. (1998) *McGinley vs. the United Kingdom*. Reports of Judgements and Decisions 1998-III; UK Court of Appeal (Civil Division). (2010) *Ministry of Defence versus AB and Others*. EWCA Civ 1317, Case No. B3/2009/2205; War Pensions and Armed Forces Compensation Chamber. (December 2016) *Decision: Ministry of Defence vs. Abdale et al.* <<http://www.llrc.org/campaigns/testvets/testvettranscripts//Determination.pdf>>.

³⁵ For a review of the cases, see: Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. pp. 311-322.

³⁶ Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. p. 5.

Britain murdered us,' said former Able Seaman Pita Rokaratu, a Kirisimasi veteran who died in 2012. 'All the illnesses are affecting my children and grandchildren. Britain should do something to thank us. It has achieved its aims. It now has a great deal of power. It has an obligation to those who risked or gave their lives. ... Colonial days are over now. ... We Fijians are always embarrassed about claiming for compensation. However, since we are now living in a time of new attitudes, it is right to claim for compensation.'³⁷ Tekoti Rotan, another Kirisimasi veteran, said, 'We feel sorry, because we looked up to the British as our father, we believed in them and we hope that they will be honest with us and look after us....'³⁸

Paul Ah Poy stated, 'We want recognition and a proper pension' from the UK government. He served the Queen, he said, now 'I expect her and her great people to help. Children are dying, soldiers and sailors can't have children. We don't know what's wrong with them.' Many Fijian test veterans are upset that the British government failed to conduct for them the appropriate customary practices – *Qusi ni Loaloa* ('wiping off the black paint') – that ritually end and express appreciation for a soldier's service.³⁹ In removing war paint from the soldier, said Paul Ah Poy, the ceremony would ritually 'remove all the ill feeling that that goes along with what we are suffering from.'⁴⁰

Fijian test veterans express a desire for the testimony of their suffering to be heard and remembered. Paul Ah Poy said, 'I would like to tell those outside of Fiji that eventually one day we will succeed but we need everybody's help. Keep the issue alive – we will tell our children, you must tell your children. We want the children of the world to hold hands on this issue, no barriers.'⁴¹

In April 2018, the 60th anniversary of Grapple Y, the heads of the New Zealand and Fiji test veterans associations wrote an open letter to the Commonwealth

Heads of Government Meeting (CHOGM) in London, calling on the British government to 'provide compensation, medical support and environmental remediation to all people affected by Operation Grapple....'⁴²

Environmental Impact

Kiritimati and Malden Islands are sites of great biodiversity. Kiritimati is the largest coral atoll on earth and has a large lagoon and reefs that are home to '83 species of coral, 235 species of fish, two marine reptiles and marine mammals.' It is known worldwide by sports fishing enthusiasts for its abundance of bonefish, which spawn in the area. Kiritimati hosts an 'estimated bird population of 6 million made up of 18 species of sea birds, two land bird species and 18 species of migratory birds.'⁴³

There is extensive evidence that the tests killed and maimed wildlife and damaged vegetation at the time.⁴⁴ According to Maclellan, the tests on Malden Island left 'significant hotspots of fallout.'⁴⁵ An official report by US military observers of the 1957 *Grapple X* test records visiting the southeastern point of Christmas Island after the explosion: 'timber and debris thrown up onto the beach were burning with a great deal of flame. ... [B]irds were observed to have their feathers burnt off, to the extent that they could not fly. Dead fish were reported to have washed ashore.'⁴⁶ Contemporary film footage of the *Grapple X* test depicts scorching of vegetation.⁴⁷ Fijian veteran Anare Bakale also remembers visiting the southeastern point two weeks after a test: 'The whole place look dry and black. Dead fish were floating in the sea. It was so horrifying. ... The plants were ... withered as if they had been watered with boiling water. Nothing was left. Everything from the stem to the leaves disappeared. Only the sand was left.'⁴⁸

³⁷ In: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 312.

³⁸ In: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 336..

³⁹ Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 156.

⁴⁰ Paul Ah Poy. (6 January 2018) Personal interview with Matthew Bolton, Suva, Fiji.

⁴¹ Paul Ah Poy. (6 January 2018) Personal interview with Matthew Bolton, Suva, Fiji.

⁴² Roy Sefton & Paul Ah Poy. (12 April 2018) 'Support for Nuclear Veterans in the Pacific.' *Island Sun*. <<http://theislandsun.com.sb/support-for-nuclear-veterans-in-the-pacific/>>.

⁴³ Office of Te Beretitenti. (2012) '20. Kiritimati.' p. 2. <http://www.climate.gov.ki/wp-content/uploads/2013/01/20_KIRITIMATI-revised-2012.pdf>; Further documentation of Kiritimati's biodiversity is available from: (2015) 'Kiritimati: the world's largest atoll.' <http://www.travel-tour-guide.com/kiribati/02_kiritimati.htm>.

⁴⁴ e.g. Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 132.

⁴⁵ Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. pp. 150-151.

⁴⁶ J.W. White & G.S. Patrick. (1957) Report of United States Observers of a Nuclear Test. AEC 66/13. Washington DC, Atomic Energy Commission. Quoted in: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 214.

⁴⁷ CRTukker. (2008) 'The First British Hydrogen Bomb.' <https://www.youtube.com/watch?time_continue=81&v=UhnjkdDotYI>.

⁴⁸ In: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 214.

Paul Ah Poy recalls his boat being loaded with 60 44-gallon barrels and being told to sail offshore and dump them. While on the journey he sat on one of the barrels, a Marine Sergeant pushed him off and told him they were full of radioactive waste. He says they got about 'four miles west of Port London', past the reef, where he estimated they were in international waters because 'the leaves of the coconut trees began to look like the leaves on a banana tree' (i.e. one could no longer see the individual fronds). He said they then dumped the barrels in the sea.⁴⁹

Interviews with the journalist Nic Maclellan suggest that Fijian troops were more likely to supplement their diet on Christmas Island with fish and land crabs – despite warnings at the time – due to their lower pay and cultural practices. Many Fijian veterans worry that they may have ingested harmful radioactive contamination.⁵⁰

Beyond the potential radioactive contamination, the military presence on Christmas Island left other toxic legacies. The British military regularly sprayed the island (including Fijian service personnel) with DDT from airplanes.⁵¹ According to Paul Ah Poy, 'When they spray the island, I mean everything on the island: truck, man, women, children. I got sprayed by DDT five days a week.'⁵²

The UK Ministry of Defence claims that environmental monitoring was adequate during the time of the British tests, confirming 'that levels of radioactivity on land and sea were negligible and not a danger.' The monitoring effort included 'pumped air, sticky paper, rainwater collectors and fish sampling' of an area within 2,500 km from Christmas Island. The 2016 Decision of the UK *Ministry of Defence vs. Abdale et al* case in the UK War Pensions and Armed Forces Compensation Chamber, backed the Ministry of Defense's claims. Nevertheless, it acknowledged that sticky tray samples taken during the *Grapple Y* and *Z* found high contamination readings tests

at the Decca Master Site, Vaskess Bay, two sites 'on the uninhabited southern coast of the island' and at the Main Camp (now the site of the Captain Cook Hotel).⁵³

Moreover, the Appellants in the *Abdale* case have challenged the International Commission on Radiological Protection (ICRP) model used by the UK Ministry of Defence to determine acceptable risk levels of radiation exposure, summoning expert witnesses from academia and civil society who argued that the ICRP model inadequately accounted for long-term exposure to low-levels of radiation, particularly when ingested or inhaled.⁵⁴ In their Decision, the Judges were unconvinced by this evidence, suggesting that the Appellants' expert witnesses were biased by association with civil society initiatives questioning the ICRP model.⁵⁵ The Decision is under appeal.⁵⁶

However, the court cases have focused on the potential harm to people who were on Christmas Island during the UK nuclear tests. Today, Fiji must contribute to regional efforts to address the potential ongoing humanitarian and environmental impact to both Kiritimati and Malden Island. The level of proof required in a civil court case should not serve as the standard for determining whether Pacific governments should take mitigating and remediating measures to protect the public from risk. Rather, Pacific island governments and regional institutions (like the Pacific Islands Forum, Secretariat of the Pacific Regional Environment Programme and University of the South Pacific) should champion a precautionary approach to the potential health and environmental risks at Kiritimati and Malden Island. In doing so, it will be important to examine emerging scientific research offering non-linear models of radiation effects as alternatives to the ICRP model.⁵⁷

⁴⁹ Paul Ah Poy. (6 January 2018) Personal interview with Matthew Bolton, Suva, Fiji; Also: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 140. In Maclellan, Ah Poy says they dumped the drums 'five miles west of the island.'

⁵⁰ e.g. Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. pp. 133, 139, 225.

⁵¹ The DDT spraying is documented in: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 138; Defense Nuclear Agency. (1983) *Operation Dominic I 1962: United States Atmospheric Nuclear Weapons Tests: Nuclear Test Personnel Review*. Washington DC, DoD. p. 35.

⁵² Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 138.

⁵³ War Pensions and Armed Forces Compensation Chamber. (December 2016) *Decision: Ministry of Defence vs. Abdale et al*. paras. 194-217/pp. 61-63. <<http://www.llrc.org/campaigns/testvets/testvettranscripts/Determination.pdf>>.

⁵⁴ A good review of the evidence on low-level radiation exposure is available in: Tilman Ruff. (2013) 'A Public Health Perspective on the Fukushima Nuclear Disaster.' *Asian Perspective*. 37. pp. 523-549.

⁵⁵ War Pensions and Armed Forces Compensation Chamber. (December 2016) *Decision: Ministry of Defence vs. Abdale et al*. paras. 226-235/pp. 66-75.

⁵⁶ Low Level Radiation Campaign. (n.d.) 'Test Veterans appeal against bad decision.' <http://www.llrc.org/campaigns/testvets/testvettoplevel.htm>

⁵⁷ e.g. Becky Alexis-Martin. (2016) *RADPOP: A New Modelling Framework for Radiation Protection*. University of Southampton PhD Thesis. <https://eprints.soton.ac.uk/412256/1/Becky_Alexis_Martin_PhD_Thesis_final.pdf>; UNSCEAR. (2017) 'Annex B: Epidemiological Studies of Cancer Risk due to Low-Dose-Rate Radiation from Environmental Sources.' 2017 Report to the UN General Assembly. <http://www.unscear.org/docs/publications/2017/UNSCEAR_2017_Annex-B.pdf>.



Figure 6: Josaia Voreqe Bainimarama, Prime Minister of Fiji, signs the Treaty on the Prohibition of Nuclear Weapons, 20 September 2017. Photo: Darren Ornitz/ICAN.

Victim Assistance and Environmental Remediation Obligations in the TPNW and Other International Norms

The Treaty on the Prohibition of Nuclear Weapons (TPNW), adopted at the UN in 2017, frames nuclear weapons as an affront to humanity and acknowledges the humanitarian and environmental harm of use and testing, including the disproportionate impact on women and girls and indigenous peoples. The International Campaign to Abolish Nuclear Weapons (ICAN) received the 2017 Nobel Peace Prize for its advocacy to achieve the treaty. Fiji signed the TPNW on 20 September 2017, but is yet to ratify. Kiribati and New Zealand are both signatories; the UK boycotted the treaty negotiations.

In addition to banning nuclear weapons, the TPNW obliges states that join it to address the harm inflicted on people and the environment from nuclear weapons use and testing. Article 6(1) requires affected states parties to

assist victims ‘in accordance with applicable international humanitarian and human rights law’, adequately providing ‘age-and gender-sensitive assistance, without discrimination, including medical care, rehabilitation and psychological support’ to survivors and to ‘provide for their social and economic inclusion.’ Article 6(2) requires affected states parties to take ‘necessary and appropriate measures towards the environmental remediation of areas contaminated by nuclear weapons use or testing.

The Treaty also encourages the international community to retell the stories of those who have suffered the humanitarian, human rights and environmental impact of nuclear weapons use and testing. The TPNW’s preamble emphasizes ‘the importance of peace and disarmament education ... and of raising awareness of the risks and consequences of nuclear weapons for current and future generations.’ The Treaty particularly recognizes the contributions of ‘the *hibakusha*’ (victims of nuclear weapons) as voices of ‘public conscience.’ It expresses a commitment ‘the dissemination of the principles and

norms' of the TPNW, which in Article 12 obligates states to universalizing the Treaty.

Joining the TPNW entitles affected states to international cooperation and assistance so that they can meet their obligations to help victims and remediate the environment. To ensure that an undue burden is not placed on affected states, Article 7 obliges states parties in a position to do so to provide 'technical, material and financial assistance to States Parties affected by nuclear-weapons use or testing' (Article 7(3)). Given the range of types of assistance, all states parties should be able to assist in some way. Such assistance, according to Article 7(5), can be provided through the UN system, 'international, regional or national' institutions, bilateral assistance, NGOs or the Red Cross and Red Crescent Movement.

Article 7(6) explicitly requires states parties that have 'used or tested nuclear weapons or any other nuclear explosive devices' to contribute to 'adequate assistance to affected States Parties, for the purpose of victim assistance and environmental remediation.'

The TPNW builds upon other crucial legal instruments on nuclear weapons. Fiji is a party to the Treaty of Rarotonga, which established the South Pacific Nuclear Free Zone. The Treaty's preamble expresses a determination to 'ensure... that the bounty and beauty of the land and sea in their region shall remain the heritage of their peoples and their descendants in perpetuity to be enjoyed by all in peace' and 'to keep the region free of environmental pollution by radioactive wastes and other radioactive matter.' Fiji is also party to the 1996 Comprehensive Test Ban Treaty (CTBT), which established a global ban on nuclear weapons testing. Fiji hosts CTBTO radionuclide and seismic monitoring stations.⁵⁸ The UK, Kiribati and New Zealand are also states parties. The CTBT will not enter into force until all states with nuclear technological capacity sign and ratify it. Nevertheless, it has established a global norm against nuclear weapons testing, strengthened by the TPNW.

Finally, Kirisimasi veterans are, of course, protected by international human rights norms, including the right to health, the right to a safe, clean, healthy and sustainable

environment and the rights of indigenous peoples. The relevance of such rights to those affected by nuclear testing has been highlighted by the UN Special Rapporteur's 2012 report on the Marshall Islands⁵⁹ and the recurring UN General Assembly resolutions on addressing the human and environmental harms to the Semipalatinsk region of Kazakhstan (e.g. A/RES/72/213).

Existing Capacities for Addressing Harm from the Nuclear Weapons Tests

The Fiji Nuclear Veterans Association was established in 1999 by 300 Kirisimasi veterans and family members and is registered as a Fijian NGO. It maintains records on all the Kirisimasi veterans, spouses and descendants.⁶⁰ Leaders of the Association have travelled widely around the world to raise awareness of the legacies of the UK nuclear weapons testing program.

After decades of advocacy by the Kirisimasi veterans, in 2015 the Fijian government has provided one-off payments of about US\$5,000 for each veteran (or their surviving family). Fiji Nuclear Veterans Association assisted the government in the distribution of these funds. The Fiji government states that the payment is to assist Kirisimasi veterans with the medical costs they have borne. It is not compensation, which Fiji asserts is the responsibility of the UK government.⁶¹ Kirisimasi veterans also receive a US\$50 a month pension from the Fiji government and help with medical bills through the Fiji military's After-care program.⁶² However, Paul Ah Poy says that many veterans living in Fiji's 'outer islands' have difficulty accessing government clinics.⁶³

Speaking at the ceremony announcing the grant of compensation, Fiji's Prime Minister Josaia Voreqe Bainimarama said, 'Fiji is not prepared to wait for Britain to do the right thing. ... We need to erase this blight on our history. We need to lift the burden on our collective conscience. ... [T]hese men have been denied justice long enough. ... We salute you for following your orders at the time, the orders of a colonial power pursuing its own agenda in the world. You are living testament to our determination to never again allow our pristine Pacific environment to be violated by outside powers in such a

⁵⁸ CTBTO. (n.d.) 'Fiji.' <<https://www.ctbto.org/the-treaty/country-profiles/?country=60&cHash=9ef354b72af12a606b16e49c5e90b8d0>>.

⁵⁹ Calin Georgescu. (2012) *Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes*, Calin Georgescu. A/HRC/21/48/Add.1. Geneva, United Nations Human Rights Council. <<https://documents-dds-ny.un.org/doc/UNDOC/GEN/G12/163/76/PDF/G1216376.pdf?OpenElement>>.

⁶⁰ Paul Ah Poy. (6 January 2018) Personal interview with Matthew Bolton, Suva, Fiji.

⁶¹ Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 335.

⁶² Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. pp. 323-338.

⁶³ Paul Ah Poy. (6 January 2018) Personal interview with Matthew Bolton, Suva, Fiji.



Figure 7: Fijian activist and intellectual, Vanessa Griffin of femLINKPacific and the International Campaign to Abolish Nuclear Weapons (ICAN), on a side event panel on gender and nuclear disarmament during the 2017 negotiations of the Treaty on the Prohibition of Nuclear Weapons at the UN. Photo: Ari Beser/ICAN.

destructive and terrible manner.⁶⁴ Kirisimasi veteran Jone Velivai said, 'I have waited for more than 60 years for this day. I am thankful that I could live to witness this.'⁶⁵

Nuclear veterans in the UK and New Zealand have also engaged in a long struggle also pushed for information recognition, compensation and support, with varying results. The government of New Zealand has funded independent medical research on the effects of radiation, recognized the Christmas Island and other nuclear veterans with a special service medal, as well as health, war pension and other benefits.⁶⁶ However, the New Zealand benefits are not offered to Fijian veterans. The British government still refuses to offer compensation to the overwhelming majority of personnel – military or civilian, British or non-British – who was negatively affected by its

nuclear weapons tests in Christmas and Malden Islands. Following a campaign by the British Nuclear Test Veterans' Association (BNTVA), in April 2016 the UK government provided £25 million to the Aged Veterans Fund, some of which will finance a new Nuclear Community Charity Fund (NCCF), supporting research, care, education and memorialization efforts for British nuclear test veterans and their descendants.⁶⁷ However, the benefits of the NCCF are not available to Fijian veterans.⁶⁸

There is a long history of civil society activism on nuclear issues in the Pacific region. As early as 1957, a *Fiji Times* editorial called attention to 'how many people will die' because of nuclear weapons tests, condemning them as 'irresponsible folly.'⁶⁹ From the mid-1970s, the Nuclear Free and Independent Pacific (NFIP) movement energized

⁶⁴ Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 324.

⁶⁵ In: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 335.

⁶⁶ New Zealand Veterans' Affairs. (2017) 'Support for veterans & families (nuclear deployments)'. <<http://www.veteransaffairs.mil.nz/support/specific-deployments/nuclear/>>; New Zealand Veterans' Affairs. (2017) 'Research on New Zealand's nuclear veterans.'

<<http://www.veteransaffairs.mil.nz/support/specific-deployments/nuclear/nuclear-veteran-research/>>; Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. pp. 218-219.

⁶⁷ NCCF. (2017) 'The Nuclear Community Charity Fund.' <<http://thencf.org/>>.

⁶⁸ LLRC. (2016) 'Justice for British Nuclear Test Veterans Low Level Radiation Campaign leads in Royal Courts of Justice Cash needed to fight Ministry of Defence in pivotal legal case.' <<http://www.llrc.org/campaigns/testvets/2016/testvetsjune2016.htm>>.

⁶⁹ In: Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 80.



Figure 8: The Nuclear Free and Independent Pacific movement has had broad and durable support in the Pacific region from across civil society, churches, trade unions and academia, and played a major role in the effort to establish a South Pacific Nuclear Free Zone. Photo: Nic Maclellan.

people from around the region in calling for the dual goals of denuclearization and decolonization. The NFIP's Pacific Concerns Resource Centre in Suva published the first collection of testimonies of Fijian Kirisimasi veterans in 1999.⁷⁰ The PCRC also supported the participation of Kirisimasi veterans in global meetings on the rights of survivors of nuclear weapons use and testing. Research for the book later developed into Nic Maclellan's definitive history of the UK nuclear weapons tests at Kiritimati and Malden Islands, *Grappling with the Bomb*.⁷¹ Maclellan is also collaborating with the filmmaker Torika Bolatagici to produce an hour-long documentary on the Kirisimasi veterans.⁷²

The NFIP in part grew out activism on the campus of the University of South Pacific (USP) in Suva, Fiji. USP research has also contributed to understanding of the humanitarian, human rights and environmental impact of nuclear weapons on the region.⁷³ For example, a 1978 USP study raised 'concern about risk and radiological hazard on Christmas Island.'⁷⁴ Fijian trade unions also played a major role in the NFIP.⁷⁵

Vanessa Griffen, a Fijian activist and intellectual who has long been a supporter of the NFIP addressed the TPNW negotiations on behalf of ICAN on 6 July 2017. On 'the islands of the Pacific, my home, nuclear weapons were tested on atolls and above the seas, destroying homelands, removing people forever from their lands,' she told the

⁷⁰ Tubanavau-Salaluba, Losean, et al. (Eds). (1999) *Kirisimasi: Na sotia kei na leve ni mataivalu e wai ni viti e na vakatovotovo iyaragi nei peritania mai Kirisimasi*. Suva, Pacific Concerns Resource Centre.

⁷¹ Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press.

⁷² Toriki Bolatagici. (2018) 'Kirisimasi Film Project.' <<http://www.bolatagici.com/kirisimasi/>>.

⁷³ e.g. Vijay Naidu. (1988) 'The Fiji Anti-Nuclear Movement: Problems and Prospects.' In: Ranginui Walker & William Sutherland (Eds.). *The Pacific: Peace, Security and the Nuclear Issue*. United Nations University Press. pp. 185-195; Teresia K. Teaiwa. (1994) 'bikinis and other s/pacific n/oceans.' *The Contemporary Pacific*. 6(1). pp. 87-109; Claire Slatter & Yvonne Underhill-Sem. (2009) 'Reclaiming Pacific Island Regionalism.' In: Bina D'Costa & Katrina Lee-Koo (Eds). *Gender and Global Politics in the Asia-Pacific*. New York, Palgrave Macmillan. pp. 195-210; Barbara Rose Johnston & Brooke Takala Abraham. (2016) 'Environmental Disaster and Resilience: The Marshall Islands.' *Cultural Survival*. <<https://www.culturalsurvival.org/publications/cultural-survival-quarterly/environmental-disaster-and-resilience-marshall-islands>>.

⁷⁴ D. Medford. (1978) *Illustrative Calculations on the Radiological Surveillance of Christmas Island*. Suva, University of the South Pacific, Center for Applied Studies in Development.

⁷⁵ Jean-Marc Regnault. (2005) 'The Nuclear Issue in the South Pacific: Labor Parties, Trade Union Movements, and Pacific Island Churches in International Relations.' *The Contemporary Pacific*. 17(2). pp. 339-357.

conference. 'We hope that all states parties will fully embrace the spirit of this treaty and assist in clear the poisoned lands and lagoons and address the health needs of the many victims of nuclear testing that still suffer from cancers, intergenerational effects and the health care burdens.'⁷⁶ femLINKPacific, a civil society network based in Fiji, is an ICAN partner organization.

The Pacific Conference of Churches (PCC), a major backer of the NFIP, as well as the regional office of its global partner, the World Council of Churches (WCC) are both based in Suva. WCC is also an ICAN partner organization and delivered a statement to the TPNW negotiations 15 June 2017, calling for 'accompaniment of affected people and care for Creation that has been abused by nuclear weapons production, use and testing.' The statement quoted a 2014 WCC policy document that asserted that 'To use the energy of the atom in ways that threaten and destroy life is a sinful misuse of God's creation. We are called to live in ways that protect life instead of putting it at risk We must listen to all who suffer nuclear harm.' WCC highlighted that 'Indigenous peoples have been particularly subject to the devastating humanitarian impact of nuclear weapons production and testing.'⁷⁷

The Pacific Regional Office of the International Committee for the Red Cross (ICRC) is in Suva. The ICRC supported the TPNW negotiations, requesting states to 'consider how best to ensure that the needs of the victims of nuclear weapon detonations are recognized and advanced and to consider the most suitable approach to facilitate assistance and cooperation for the implementation of the treaty's obligations.'⁷⁸

Local, national and regional civil society efforts are part of broader global campaigns addressing the harm caused by nuclear weapons. The Nobel Peace Prize-winning ICAN has an extensive network of partner organizations in the Pacific region, building on the NFIP movement. Besides Fiji, civil society activists from the Marshall Islands, French Polynesia, New Zealand and Australia addressed the negotiations or were featured in side event panels. Ensuring robust implementation of the victim assistance

and environmental remediation provisions is a priority for ICAN, working alongside its partners in the 'Positive Obligations Group': Article 36, Elimondik, Mines Action Canada, the Harvard Law School International Human Rights Clinic and Pace University's International Disarmament Institute. The Group's work, including this report, has been supported by Friedrich Ebert Stiftung's New York Office.

The government of Fiji is a supporter of the TPNW. It spoke four times on the floor of the negotiations, asserting that 'Fiji speaks with first-hand experience of the destruction and long lasting effects that nuclear weapons have had on our people without victim assistance.' Fiji decried the 'environmental degradation' caused by the 'forced' nuclear weapons testing in the Pacific. It endorsed 'the recognition of the rights of victims of the use and testing of nuclear weapons and a commitment to provide assistance to victims and environmental redress for Pacific islanders who have lost much as a result of nuclear testing.'⁷⁹

Fiji voted in favor of the Treaty's adoption in July 2017 and its Prime Minister, Josaia Voreqe Bainimarama, signed the TPNW on the first day it opened for signature on 20 September 2017 (see Figure 6). The government now needs to ratify the treaty and pass legislation to enable implementation, particularly of its victim assistance and environmental remediation provisions.

At the 72nd Session of the UN General Assembly First Committee (Disarmament and International Security), Fiji reiterated its support for the treaty, paying 'special tribute to the lives of innocent victims, families and individuals who have suffered as a result of nuclear testing' and acknowledging the 'long lasting environmental impacts.' It condemned the 'silence' of the 'offending states' which conducted the nuclear tests as 'deafening', showing 'utter disregard for humanity.' Fiji framed its support for the TPNW as 'playing its part' in contributing to 'a world free of nuclear weapons.'⁸⁰

Fiji's Ministry of Foreign Affairs leads the country's policy on the TPNW. Policy on test veterans is addressed by the

⁷⁶ Vanessa Griffen. (6 July 2017) 'Vanessa Griffen.' <<https://vimeo.com/224540494>>.

⁷⁷ Emily Wely. (16 June 2017) 'Strengthening the Preamble's Humanitarian, Human Rights, Environmental and Sustainable Development Foundations for Positive Obligations.' <http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/nuclear-weapon-ban/statements/16June_WCC.pdf>.

⁷⁸ Lou Maresca. (29 March 2017) 'Topic 2: Core prohibitions: Statement of the International Committee of the Red Cross.' <http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/nuclear-weapon-ban/statements/29March_ICRC-T2.pdf>.

⁷⁹ Fiji. (31 March 2017) 'Fiji Statement at the United Nations conference to negotiate a legally-binding instrument to prohibit nuclear weapons, leading towards their total elimination.' <<http://statements.unmeetings.org/media2/14683464/fiji.pdf>>.

⁸⁰ Fiji. (10 October 2017) 'Fiji Statement in the First Committee General Debate on Disarmament Measures and International Security.' <http://reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com17/statements/10Oct_Fiji.pdf>.

Office of the Prime Minister and Ministry of Defence. Fijian veteran's healthcare is provided by the Fiji Servicemen's After-care Fund.

Fiji plays a major role in Pacific regional diplomacy. It hosts in Suva the Secretariat of the Pacific Islands Forum, the regional diplomatic arena that was actually established to enable Pacific countries to discuss issues of nuclear weapons testing and decolonization without interference from France, the UK and USA. Fiji is also a member of the Pacific Islands Development Forum, Pacific Regional Environment Programme and the Melanesian Spearhead Group.

Recommended Action

Given the ongoing humanitarian, human rights and environmental concerns resulting from the UK and US nuclear tests at Kiritimati and Malden Islands, the international community should:

- 1) *Sign and **RATIFY** the Treaty on the Prohibition of Nuclear Weapons and other relevant international instruments:*
 - a. Fiji, Kiribati, and New Zealand should ratify the Treaty on the Prohibition of Nuclear Weapons (TPNW).
 - b. Civil society, faith institutions and parliamentarians in the UK should pressure their governments to bring their nuclear disarmament policy into closer alignment with the norms in the TPNW.
 - c. Regional institutions such as the Pacific Island Forum and the University of the South Pacific should promote and facilitate regional accession to the TPNW, such as through the development of model ratification legislation.
 - 2) *Assess and **RESPOND** to the multigenerational humanitarian needs of survivors, especially at Kiritimati:*
 - a. Fiji, Kiribati, New Zealand, the UK and USA should comprehensively assess, monitor and respond to the multigenerational humanitarian needs of survivors, without discrimination.
 - b. Conduct a multi-country independent study into the children and grandchildren of Christmas and Malden Island veterans and survivors, to investigate potential inter-generational health effects.
 - c. Victim assistance should include, but not be limited to: healthcare provision, psycho-social support, socio-economic inclusion, support for victim's advocacy associations, risk education.
 - 3) *Survey and **REMEDiate** contaminated environments at Kiritimati and Malden Islands:*
 - a. Fiji should support the comprehensive, independent and credible survey of the environmental impact of nuclear testing at Kiritimati and Malden Islands.
 - b. Surveys of radiological conditions should be conducted perhaps under multilateral and/or academic auspices, but not by institutions that are committed to the promotion of nuclear technology. The University of the South Pacific particularly could aid in developing models of grassroots citizen radiation monitoring, which have had some success in areas of Iraq affected by depleted uranium and in Fukushima, Japan.⁸¹
 - c. Governments, multilateral organizations, religious organizations, civil society and academic institutions should provide international cooperation and assistance to help Kiribati survey and remediate contaminated environments.
 - d. Regional institutions such as the Pacific Island Forum, Pacific Islands Development Forum and Pacific Regional Environment Programme should promote regional approaches to assessing and remediating environments affected by nuclear testing and communicating radiation risk education.
- d. Assistance should especially targeted to underserved communities like Fijian test veterans and their families.
 - e. Governments, multilateral organizations, the Red Cross and Red Crescent Movement, religious organizations, civil society and academic institutions should provide international cooperation and assistance to help affected states – particularly Fiji and Kiribati – provide victim assistance.
 - f. Regional institutions such as the Pacific Island Forum and Pacific Islands Development Forum should promote regional approaches to assisting victims of nuclear testing.
 - g. The governments of the UK and New Zealand – which participated in the tests – should acknowledge their especial responsibility to support victim assistance in Fiji and Kiribati.

⁸¹ e.g. Safecast. (n.d.) 'About Safecast.' <<https://blog.safecast.org/about/>>.

- e. The governments of the UK, USA and New Zealand – which participated in the tests – should acknowledge their especial responsibility to support environmental remediation in Kiribati.
- 4) **RESPECT**, *protect and fulfill the human rights of nuclear test survivors*:
- a. Fiji, Kiribati, New Zealand and UK should implement ‘effective remedies’ of the harm to the human rights of victim of the nuclear tests, through measures including, but not limited to, investigation, opening of archives, provision of information, acknowledgement, apology, memorialization, commemoration, paying tribute to victims, assistance to victims, guarantee of non-repetition and reparation.⁸² Especial attention should be paid to the relevance of the rights of indigenous people, including indigenous practices of remedy such as Qusi ni Loaloa.⁸³ Care should be taken to ensure non-discrimination in access to victim assistance.
 - b. States should question Fiji, the UK, New Zealand, and Kiribati on their measures to guarantee the human rights of nuclear test victims during Universal Periodic Reviews in the UN Human Rights Council.
 - c. Governments, multilateral organizations, the Red Cross and Red Crescent Movement, academic institutions, religious organizations and civil society should provide international cooperation and assistance to help guarantee the human rights of nuclear test survivors. This should include support for the human rights advocacy of survivor and test veteran associations, as well as nuclear disarmament networks like ICAN.
 - d. Regional institutions such as the Pacific Island Forum and Pacific Islands Development Forum should promote regional approaches to guaranteeing the rights of victims of nuclear testing.
- e. The governments of the UK and New Zealand – which participated in the tests – should acknowledge their especial responsibility to remedy the human rights harm caused by nuclear testing in Kiribati.
- 5) **RETELL** *the stories of the humanitarian and environmental impact of the tests*:
- a. Fiji, Kiribati, New Zealand, and the UK should open independent official inquiries to investigate the humanitarian, human rights and environmental harm caused by nuclear weapons testing in Kiribati. They should declassify and make publically available archives and official documentation related to the testing programs.
 - b. Fiji, Kiribati, New Zealand, and UK should support mechanisms of radiation risk education, particularly in affected communities.
 - c. Academia, journalists, civil society and survivors’ associations should record and disseminate the testimony of victims of nuclear weapons testing in Kiribati. They should facilitate the participation of survivors, particularly from Fiji and Kiribati, in global nuclear disarmament policymaking.
 - d. Governments, multilateral organizations, the Red Cross and Red Crescent Movement, academic institutions, news media, religious organizations and civil society should provide international cooperation and assistance for disarmament education and radiation risk education, particularly to amplify survivors’ voices.
 - e. Regional institutions such as the Pacific Island Forum and Pacific Islands Development Forum should promote regional approaches to disarmament education and radiation risk education.
 - f. The governments of the UK and New Zealand – which participated in the tests – should acknowledge their especial responsibility to amplify the voices of survivors of nuclear testing in Kiribati.

⁸² For a summary of international norms on ‘effective remedy’, see: UN General Assembly. (2005) ‘Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law.’ A/RES/60/147. <http://legal.un.org/avl/pdf/ha/ga/ga_60-147/ga_60-147_ph_e.pdf>.

⁸³ See: United Nations. (2008) ‘United Nations Declaration on the Rights of Indigenous Peoples.’ <http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf>.

Further Reading

BBC. (2007) 'Christmas Island H-bomb controversy.' *BBC Inside Out*.
<http://www.bbc.co.uk/insideout/content/articles/2007/11/01/east_christmas_island_bomb_s12_w8_feature.shtml>.

BBC. (2017) *Britain's Nuclear Bomb: The Inside Story*.
<<http://www.bbc.co.uk/programmes/b08nz0xh>>.

Bolton, Matthew. (January 2018) *Humanitarian and Environmental Action to Address Nuclear Harm: The Treaty for the Prohibition of Nuclear Weapons as a Normative Framework for Assisting Victims of Nuclear Weapons Use and Testing and Remediating Contaminated Environments*. New York, International Disarmament Institute.
<<https://disarmament.blogs.pace.edu/files/2018/01/Humanitarian-Action-to-Address-Nuclear-Harm-6-1eili3g.pdf>>.

Bolton, Matthew. (Forthcoming) *Addressing Humanitarian and Environmental Harm from Nuclear Weapons: Kiritimati (Christmas Island) and Malden Islands, Republic of Kiribati*. New York, International Disarmament Institute.

CTBTO. (n.d.) '8 November 1957 – Grapple X.'
<<https://www.ctbto.org/specials/testing-times/8-november-1957-grapple-x>>.

Firth, Stewart. (1987) *Nuclear Playground*. Sydney, Allen and Unwin.

International Human Rights Clinic, Harvard Law School. (April 2018) 'Environmental Remediation under the Treaty on the Prohibition of Nuclear Weapons.'
<<http://hrp.law.harvard.edu/wp-content/uploads/2018/04/Environmental-Remediation-short-4-8-18-final.pdf>>.

International Human Rights Clinic, Harvard Law School. (April 2018) 'Victim Assistance under the Treaty on the Prohibition of Nuclear Weapons.'
<<http://hrp.law.harvard.edu/wp-content/uploads/2018/04/Victim-assistance-short-4-8-18-final.pdf>>.

Jacobs, Robert. (2014) 'The Radiation That Makes People Invisible: A Global Hibakusha Perspective.' *The Asia-Pacific Journal*. 12(31). pp. 1-11.

MacLellan, Nic. (2014) *Banning Nuclear Weapons: A Pacific Islands Perspective*. ICAN Australia.
<[http://www.icanw.org/wp-](http://www.icanw.org/wp-content/uploads/2014/01/ICAN-PacificReport-FINAL-email.pdf)

[content/uploads/2014/01/ICAN-PacificReport-FINAL-email.pdf](http://www.icanw.org/wp-content/uploads/2014/01/ICAN-PacificReport-FINAL-email.pdf)>.

MacLellan, Nic. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press.

Ruff, Tilman A. (2015) 'The humanitarian impact and implications of nuclear test explosions in the Pacific region.' *International Review of the Red Cross*. 97(899). pp. 775-813.

Trundle, Catherine. (2011) 'Searching for Culpability in the Archives: Commonwealth Nuclear Test Veterans' Claims for Compensation.' *History and Anthropology*. 22(4). pp. 497-512.

Tubanavau-Salaluba, Losean, et al. (Eds). (1999) *Kirisimasi: Na sotia kei na lewe ni mataivalu e wai ni viti e na vakatovotovo iyaragi nei peritania mai Kirisimasi*. Suva, Pacific Concerns Resource Centre.

Points of Contact

International Campaign to Abolish Nuclear Weapons (ICAN).
Web: <http://www.icanw.org/>; Email: info@icanw.org;
Phone: +41 22 788 20 63; Twitter: @nuclearban

Fiji Nuclear Veterans Association: Email:
paulahpoy@yahoo.com

femLINKPacific: Web: <http://www.femlinkpacific.org.fj>;
Phone: +679 3318160

Pacific Conference of Churches: Web:
<https://pacificconferenceofchurches.org/>; Email: ; Phone:
+679 3311277

International Disarmament Institute, Pace University: Web:
<http://www.pace.edu/dyson/disarmament>; Email:
disarmament@pace.edu; Phone: +1 212 346 1828; Twitter:
@disarminstitute

Publication Details

Author: Dr. Matthew Bolton

Series Editor: Dr. Matthew Bolton, Director of International Disarmament Institute, Pace University, New York, New York, USA.

Reviewed by ICAN Positive Obligations Group.

Thanks to Paul Ah Poy, Nic MacLellan and Sydney Tisch.
May 2018. Version 3.0.