

Radioactivity and Rights: Clashes at Bikini Atoll

Cash can never compensate people for a half century of exile and the destruction of a lifestyle and culture

Ruth Levy Guyer, PhD

ATOMIC-BOMB TESTING BY

the United States more than half a century ago converted the Pacific island of Bikini from a tropical paradise to a radioactive wasteland. Today, Bikini and other islands in the Marshall Island chain remain hazardous for living organisms, and those who once lived on Bikini remain Pacific nomads, as do their children and grandchildren.

In March 2001, the Nuclear Claims Tribunal, having completed years of deliberations, made awards of \$563 million to the people of Bikini (J.M. Weisgall, JD, American attorney for the Bikini people, interview, March 11, 2001. The awards are spelled out in Nuclear Claims Tribunal document 23-04134, *In the Matter of the People of Bikini, et al., Claimants for Compensation*). That money, when appropriated by the United States, will go toward cleanup and repair of physical damage to the island, after which repatriation should be possible. But cash can never compensate people for a half century of exile and the destruction of a lifestyle and culture. It also cannot undo what radioactivity did to human health, to peace of mind, and to the earth

and sea. The fallout from the bomb tests has proved to be long-lasting, insidious, pervasive, and expensive, literally and figuratively, locally and globally.

THE PROMISE MADE AT BIKINI

The United States took control of Bikini and the rest of the Marshall Islands during World War II.¹ Immediately after the war, the United States selected Bikini Atoll as the ideal spot for continuing its bomb tests. The military governor of the Marshall Islands, Navy Commodore Ben Wyatt, approached the Bikini community—167 people—in February 1946, requesting that they leave the island so that Operation Crossroads could redirect atomic energy “for the good of mankind and to end all world wars.” He failed to mention a subtext of Operation Crossroads, a fierce competition between the Army Air Force—which had proved at Hiroshima and Nagasaki that it could drop bombs from airplanes—and the Navy, whose battleships might be anachronisms if bombs could simply blow them



A Bikinian girl with a coconut palm tree. The coconuts on Bikini are still radioactive. The coconut palm trees absorb cesium and other radioactive elements, which are concentrated in the fruit. (Photograph courtesy of Jack Niedenthal.)

out of the water.² After the meeting with Wyatt, the people of Bikini expected that their exile would be brief, coinciding with the time it would take for the United States to complete a few scheduled tests.

Did the United States ever really intend to repatriate the Bikinians? David Bradley, an Army physician who was one of the “Geiger men” charged with tracking radioactivity after each bomb test, wrote in his journal in June 1946—2 weeks before the start of the tests—that Bikini “has been pretty well ravaged in the preparations for these tests. Floating dry docks and broken-up landing craft line its beautiful sweep of sand . . . the Seabee detachments and the two recreation areas have pretty well disposed of the rest of the island . . . and,

even discounting the possibility of lingering radioactivity, it is doubtful if this island could support [the Bikinians] again for a generation.”⁴

“The promises [the Americans] made will always be remembered by our people. They told us . . . “Never mind if you are living on a sandbar or even adrift on a raft at sea. We will take care of you as if you are our very own children.” . . . We believed them, and in a way we were happy that they would be taking care of us. The world was a strange place for us then. We just couldn’t understand why they wanted our island, we just knew that we had to follow their requests.

—Dretin Jokdru, 1997³

BOMBING BIKINI

Some 42 000 American soldiers supplanted the small Bikini community, and target ships were packed into the lagoon—carriers, battleships, cruisers, destroyers, submarines, attack transports, landing ships, auxiliaries,² or, as Bradley wrote, “a sample of almost anything that floats.”⁴ The mix included captured German and Japanese battleships, supporting then-senator Scott Lucas’s claim that Operation Crossroads was a “grandiose display of atomic destruction”⁵ rather than a step toward peacetime development of atomic energy.

Able, the world’s fourth atomic bomb, was dropped at Bikini on July 1, 1946. Five ships sank; others were damaged. *Newsweek* described Able as

[a] burst of low-lying flame, from which shot brilliant white and red streamers. A second explosion, three times as large as the first and many times as bright as the sun, thrust a great ball of flame thousands of feet upward. . . . A great rose-colored cloud leaped from the lagoon. . . the familiar mushroom-like, light gray cloud a mile wide thrust its way through the cloud layer up to 50 000 feet, towering over the atoll like a

jinni out of a bottle. . . . Though the cloud would circle the earth this week before fully dissipating, it was now safely tucked away in the stratosphere at 50 000 feet, far above any rain storm that could bring it down.⁶

Twenty-four days later, the bomb Baker decimated that sense of ease. Baker had triggered a “staggering” effect:

[T]he ships looked like so many boats in a bathtub, a dome of water half a mile across was belched up by the lagoon . . . a boiling, striated column of water . . . shot up into the sky. . . . Above it for another half mile rose the familiar mushroom cloud. Huge ship fragments rose with the column and were lost to view . . . [one ship] could be seen leaping in the air. . . . As the column containing five to ten million tons of water began to disintegrate, we saw the most horrifying sight of all. A bank of radioactive cloud and steam . . . crept over the target ships . . . two days after the blast, the area was still heavily contaminated.⁷

In fact, for weeks the Geiger men detected radioactive fallout everywhere. Wrote Bradley: “decks you can’t stay on for more than a few minutes but which seem like other decks; air you can’t breathe without gas masks but which smells like all other air; water you can’t swim in, and good tuna and jacks you can’t eat. It’s a fouled-up world.”⁴

By mid-August, when scrubbing, hosing, and sandblasting proved futile against the ubiquitous radioactivity, the United States decided to scrap Operation Crossroads, sink the hopelessly contaminated ships to the Pacific’s floor—this they did at the Marshall Islands, off the West Coast of the United States, and near Hawaii⁵—and abandon Bikini. Radioactivity is “a poison weapon,” said Crossroads’ Admiral Blandy. *Time* magazine said

Blandy “could have gone farther. The atomic age will be an age of poison. Even the peaceful use of atomic power will generate deadly rays and radioactive particles.”⁸

THE BIG ONE

Bomb tests later resumed at Bikini, and between 1946 and 1958 the United States conducted 67 tests there and at Enewetak Atoll.⁹ A disaster orders of magnitude greater than Baker, dubbed the “worst single incident of fallout exposures in all the U.S. atmospheric testing program,”² took place in 1954. The bomb Bravo vaporized 2 islands of Bikini Atoll and part of Nam, the island at which it was detonated. (Today Nam remains so contaminated that during the mid-1990s, the Bikini Council entertained—but eventually rejected—lucrative proposals to make it a permanent US nuclear dump.^{1,10})

Bravo dropped significant fallout on people fishing and living downwind.² Many experienced immediate radiation sickness; others developed serious, long-lasting, and ultimately fatal illnesses months and years after the blast.¹¹ Four atolls—Bikini, Enewetak, Utirik, and Rongelap—were soaked in Bravo’s snowlike fallout. Although the military had learned many hours before the blast that the winds were heading toward inhabited islands, they chose not to evacuate the residents or delay the test.²

The United States stopped atmospheric testing in 1958 and signed a test ban treaty with the Soviet Union in 1963. But that did not stop the radioactivity already unleashed from continuing to cause harm. “It is all very nice . . . by a stroke of the pen [to] absolve our radiologic sins,” wrote

the head of Los Alamos's Health Division in a memorandum, "but somehow I do not believe that overexposures are washed away by edict."¹²

FALLOUT IN THE ENVIRONMENT

Radioactivity entered the atmosphere, the water, and the soil and worked its way up both terrestrial and oceanic food chains. Atmospheric circulation carried the contaminants around the globe. Within a week of the Bravo disaster, a doctor in Memphis, Tenn, detected high levels of radioactivity in cattle thyroids.¹³

That such global distribution was possible had been foreseen by Bradley, who speculated that radiation from Bikini might "influence the lives of people living in the Tibetan plateau. . . . We can't predict to what degree the balance of nature will be thrown off by atomic bombs [or] what the long-range effects on our lives would be. . . . But at least at this time we do know that Bikini is not some faraway little atoll pinpointed on an out-of-the-way chart."⁴

At Bikini Atoll, the soil and water contained radioactive isotopes of cesium, cobalt, strontium, americium, and plutonium after Bravo.⁵ The radioactivity in the lagoon and sea eventually disappeared through slow and steady dilution in the ocean. The radioactivity on the islands stayed on the islands.

"To all Marshallese, land is gold. If you were an owner of land, you would be held up as a very important figure in our society. Without land you would be viewed as a person of no consequence. . . . But land here on Bikini is now poison land."
—Jukwa Jakeo, 1987¹⁴

FALLOUT ON PEOPLE

Detonation of any atomic bomb can produce immediate physiological effects—death, burns, hair loss, skin lesions and depigmentation, vomiting, diarrhea—that are readily documented; illnesses that show up years later are sometimes harder to link to radiation exposures. "I cannot hold up a child and mix it with low level radiation to produce leukemia," chemist Chris Busby has commented.¹⁵ But for the individual experiencing radiation's destructive effects, causality and statistics are irrelevant. Radiation acts silently and idiosyncratically. And although damage can take time, "one single particle of [radioactive material] lodged in a lymph node can devastate the entire immune system."¹⁶

Blood cells in Bravo's "downwinders" vanished within days of the blast, and the counts remained depressed for years. Thyroid diseases—hypothyroidism, malignant and benign tumors and nodules—began appearing in 1963. A decade later, these conditions and their sequelae affected many Marshall Islanders, with incidence decreasing with increasing distance from the blast site. High numbers of miscarriages and stillbirths were noted in some women who had been exposed to the fallout.¹⁷ Jack Niedenthal, who has lived in the Marshall Islands for 20 years and is a member of the Bikini community, says simply, "There

is a lot of cancer" (telephone interview, March 9, 2000).

The radioactivity destroyed not just the physical health of many Marshall Islanders but also their equanimity. "What radiation does psychologically," comments Niedenthal, "tends to supersede the fear and the reality of cancer. You can't really see it or touch it, but it produces a heightened sense of danger" (telephone interview, March 9, 2000).

The United States had zealously dropped the bombs that contaminated Bikini and the other islands; its zeal for cleanup and follow-up was less. A report describing the medical conditions of downwinders concludes: "No one organization in the U.S. had the responsibility, the authority, and the capability to do what the U.S. was mandated to do by the Trusteeship and was morally obligated to do. As time went on, no one organization seemed to wish to see that the U.S. lived up to [its] obligations."^{17(p181)}

"[B]ack then we would get upset with each other for believing in the Americans and in the promises that they made. . . . We would shout at each other that the promises weren't true, because surely this wasn't 'the best of their ability'—as they had promised—being shown towards us. After all, it was certainly clear that they had forgotten about us. Even as the problems began to mount, it was still extremely hard to let go of the belief that the Americans would someday come through."

—Lore Kessibuki, 1987–1991¹⁴

EXILE

The Bikini people suffered greatly not just after the bombs were dropped but from the moment they were taken away from Bikini. Their replacement "home" was Rongerik, an island steeped in mythology of "an evil spirit, a devil woman, and fish that were poisonous," says Niedenthal (telephone interview, March 9,

2000), and it was thus a disastrous choice from the start. Compounding Rongerik's threatening mystique were homesickness and inadequate food. Within months of the move, people were starving to death. Only when Harold Ickes (a former secretary of the interior who had become a newspaper columnist) wrote about the plight of the community and the Navy's "arrogant injustice to a native people" did the United States respond.²



A Bikinian boy holding a coconut crab, a great delicacy. On Bikini Island the crabs are radioactive, because their diet is rich in the shells of radioactive coconuts that have fallen to the ground. (Photograph courtesy of Jack Niedenthal.)

“Our job [on Rongerik] was to go fishing . . . It was horrible. We'd get a few fish, then the entire community would have to share this meager amount. . . . The fish were not fit to eat there. They were poisonous because of what they ate on the reef. We got sick from them, like when your arms and legs fall asleep and you can't feel anything. We'd get up in the morning to go to our canoes and fall over because we were so ill. . . . Then we started asking these men from America [to] bring us food. . . . We were dying, but they didn't listen to us.”

—Dretin Jokdru, 1997³

The Bikinians were taken briefly to Kwajalein, where the United States had its military base. Then they were settled at Kili, a solitary island that, lacking a sheltering lagoon, ensured their dissociation from lives based on fishing and sailing.¹⁸

“The first foreigners to come to this part of the world were the Germans, and then, afterwards, the Japanese came. During these times Kili was used as a prison island for people who misbehaved. . . . Then came the Americans. . . . We feel that Kili is like a prison, because we can't sail to another island or even take a long refreshing walk when life closes in on us. Many times even the ships refused to stop and unload supplies for the island. . . .

The Americans . . . forgot about their responsibilities to us, and again we found ourselves starving. We were full of worry and near death. Their promises were once again not ringing true.”

—Lore Kessibuki, 1987–1991¹⁴

REPATRIATION AND RE-EXILE

In 1972, more than 100 people moved back to Bikini, because the United States declared the island radiologically safe. Then, in 1978, laboratory tests indicated that the returnees' body burdens of cesium and strontium were unacceptably high, and the people were again taken off the island. They have yet to return.

Of the original 167 residents, 70 are still alive, and the population has expanded to 2800. Most now live in Kili and Majuro (the capital of the Marshall Islands); some live in the United States.¹⁹ Many, but not all, are determinedly working again toward repatriation. Because the United States has so many times been dismissive of the needs of the Bikini community and has misled it, trust is not high. “At this point,” notes Niedenthal, “if Moses came off the mountain and said it was safe to go back to Bikini, some still wouldn't go” (telephone interview, March 9, 2000).

REMEDIATION

Those who are planning for a permanent return to Bikini are

developing a soil remediation strategy that will include a patchwork “scrape” of several inches of topsoil from sections of the island coupled with widespread and repeated application of potassium fertilizer. Potassium competes with cesium for uptake into plants, and it was the cesium in coconuts and other foods that contributed most to the high body burdens of the 1970s.

The International Atomic Energy Agency, which has been working with the Bikini community since 1995, is recommending that people who move back to Bikini import a certain percentage of their food.²⁰ About 30 scientists and builders already live on the island, and divers have begun visiting Bikini to explore the extraordinary lagoon, sunken ships, fish, and corals.²¹ These people are cautioned to eat no more than one coconut a day. And although most fish are safe to eat, the coconut crabs remain “hot,” because they eat the coconuts.

RIGHTS VIOLATIONS

The fundamental human right of the Bikini people to live in a safe environment and in their own land—a land their forebears may have settled 2000 years ago^{1,2}—was trumped by shows of military might at Bikini during the Cold War. Both at that time and in the intervening years, other rights of these people—the right to protection from harm, the right to have their autonomy respected, the right to be told the truth, the right to just treatment—also have regularly been ignored.

In addition, 42 000 American soldiers were put at risk during the tests, yet the military maintained scant records of their exposures and did not follow them for medical sequelae.¹⁷ In a 1995 report on human radiation experiments, an advisory committee convened by President Clinton concluded that “when the nation exposes servicemen and women to hazardous substances, there is an obligation to keep appropriate records of both the exposures and the long-term medical outcome.”¹²

Finally, throughout the world, people, flora, and fauna encountered radioactivity from the Bikini bombs through global atmospheric and oceanic transport.

“In the 1970s] I worked on Eneu and Bikini planting crops, pulling weeds and in general, refurbishing the islands. I felt so happy, peaceful and proud and why not? It was our land, our islands, and we were content to be working and living there. We felt that we belonged on Bikini. . . . We were told . . . that it was safe to eat anything that we wanted, so we did. We had many kinds of foods, bananas and things like that. . . . Finally, the Americans and their scientists came back . . . saying that we had to leave Bikini. They said we had ingested too much poison and that it wasn't safe to live on Bikini anymore. . . . [W]e hated departing from the islands where we had come to know peace and quiet for the first time in many years.”

—Pero Joel, 1989¹⁴

BIKINI'S MESSAGES

At the time of the tests, people knew some things about radiation's effects, food chains and ecosystems, and global circulation. Human rights and their violations were topics that, because of the war, were receiving increasing attention. Environmental racism and environmental justice were concepts that had yet to be formulated. Today we understand much about these subjects, their relations to one another, and how they collided at Bikini.

“Natural experiments” with radioactivity are continuing, although on a smaller scale. These have come in the form of accidents and releases at nuclear power plants—Chernobyl, Three Mile Island, Hanford—and through encounters with radioactive elements in state-of-the-art weapons used in the Persian Gulf, in Kosovo, and on Vieques, where soldiers practice warfare and where the moniker “Cancer Island” recently replaced “Enchanted Island.”²²

The half-lives of many radioactive elements are long. The half-life of human vigilance is sometimes short, especially when the object of the vigilance is invisible, tasteless, odorless, and colorless.

But if mistakes made at Bikini are not to be repeated, human memory and vigilance must be lengthened and strengthened. Remediation of the ravages wrought by radiation is difficult, expensive, and time-consuming—and in some cases, impossible. ■

“Bikini is like a relative to us—like a father or a mother or a sister or a brother, perhaps most like a child conceived from our own flesh and blood. And then, to us, that child was gone . . . buried and dead.”

—Lore Kessibuki, 1991¹⁴

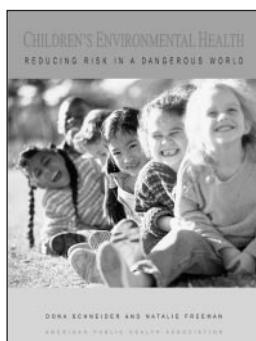
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Children's Environmental Health

by Dona Schneider and Natalie Freeman

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