



In the Aftermath

Twenty years after the Chernobyl Nuclear Accident

Photos by Menno Meijer & Story by Hope Burwell

A child walks to school in Ustyanski in Chausy district. The town is situated in an area of 15 curies radiation, the maximum allowable in Belarus for human habitation. The town's apartment buildings have no running water, so water is brought in from community wells that are contaminated with e-coli bacteria and radionuclides. The school yard is dusty, and this contaminated dust is inhaled by the children when they play outdoors.



Dr. Grigori Ivanovich Kolendo, director of the Chausy Regional Hospital, visits Katarina in her small log home in the highly irradiated Krasnaya Polyana. The old people have returned to the area, despite the evacuation, to continue their lives and still farm the land despite official warnings not to plant or harvest crops and graze animals.

In the dark morning hours of April 26, 1986 an accident at the Chernobyl nuclear power plant in Pripyat, Ukraine lit the sky electric blue. Half a reactor core, 50 tons of nuclear materials, soared thirty thousand feet, right into the jet stream. The eruption was followed by ten days of struggle to snuff out a fire while untold amounts of radiation found its way downwind. According to the Ministry of Emergencies, by the time the disaster was “under control,” twenty-three percent of neighboring Belarus, northwest of Pripyat, was contaminated with Chernobyl’s fallout.

It isn’t a solid swath of land, nor neat concentric circles emanating from Ukraine. On maps, the contamination looks like rusty puddles and large tannin-stained lakes. The average level of cesium-137 contamination on the polluted territories, thirty-seven curies (Ci) per square kilometer (37Ci/km²). The International Atomic Energy Agency’s “safe for residency limit” is 5Ci/km². Eighty-eight per cent of contaminated Belarus is 111 to 370 times more contaminated than that. Two million people still live on that land.

I’d been told, vaguely, to try to avoid eating dairy products, fish, local produce, or “forest gifts.” I’d read that among the most disturbing surprises the radiological community had when they began to study the effects of Chernobyl’s pollution on Belarus was the discovery that grains and legumes absorb cesium-137 and accumulate it both much more quickly and in much greater quantities than was predicted.

But I was the guest of a school teacher and her truck driver husband, full-time workers earning less than \$80 a month between them, and paying \$2.50 a liter for uncontaminated drinking water for their six-year-old daughter.

“We did not know what you would like,” Irene Kulbakina apologized on my first night in Cherikov. “It is too simple.”

On the table was spread the largesse of the most humble people with whom I’ve ever shared food, a beautiful meal prepared in a kitchen with neither refrigerator nor sink. It was a small moment of truth. When they proudly spread that meal before me, I received a whole paper napkin

while Irene and her husband, Sasha, split one.

“It looks lovely,” I said, accepting a glass of garnet colored wine they handled like gold.

“My husband made it,” Irene explained. “His education was to be a chef. But there is no place to practice it now, and it would not pay enough. He enjoys it though, and he has spent the week preparing. Yesterday, all afternoon, he picked the mushrooms from the woods. Eat, please, eat.”

I reasoned, studying the colorful food Sasha had prepared, I’m not likely to breathe plutonium from this meal. Tomorrow maybe, as we walk down the packed-dirt roads of a village on the edge of an evacuated zone, but not here, tonight.

However, cesium-137 and strontium-90 were quite likely to be stewing in the rich brown mushrooms Sasha has collected from the woods. The Kulbakinas and their friends live, work and garden in a village where the level of cesium-137 is thirty-seven times above the IAEA safe-limit. I helped myself to small servings of several of the dishes, and my host’s face fell. “Can we get you something else?” Irene asked.

“No, no,” I said, “let me go slowly so I can taste everything. Tell me what I’m eating.”

Measuring external exposure to radiation is a fairly straightforward exercise, if one has the equipment with which to do it. Computing internal exposure is much more complicated. The IAEA, which still insists that

only 32 people have died as a direct result of Chernobyl, doesn’t measure internal contamination levels in their judgments of safety, nor in their counting of Chernobyl-influenced deaths. Yet, scientists do not dispute that once ingested, long-lived radionuclides, and many of the chemical progeny produced as they decay, remain in the body, irradiating tissues they’ve nestled into.

Some radionuclides find their way from soil to plant to herbivore and carnivore. They accumulate in particular organs. Thousands of Belarusian autopsies indicate that cesium, which moves quickly from air to legumes to



above: An anesthetist waits for a patient to wake from an appendectomy in the Chausy Hospital. With the exception of the surgery lamp, the only other light source is the window, as the hospital is running on emergency power only due to financial restraints. A sign on top of the hospital from the Soviet era proclaimed, ‘The health of the people is the wealth of the nation.’ The sign was removed.

left: A surgeon finishes scrubbing prior to performing an appendectomy in the hospital in Chausy.





Vika, 8, sits in her room in the cancer hospital for children in Minsk with bone cancer. Children from all over the republic come to this hospital to confirm their diagnosis and to receive treatment. The hospital is 50 per cent funded by an NGO from Austria.

‘These children,’
she explained,
‘are certain to have illness.’



Doctors seek alternative ways to cure children of various ailments in the desperately impoverished and contaminated country of Belarus. This young boy is receiving acupuncture at the children’s hospital in Minsk.

mammary glands to milk, settles in heart and optical muscles, speeding their degeneration. Strontium-90 likes teeth and snuggles into bone marrow, irradiating the stem cells responsible for our blood and immune systems. Given Cherikov’s initial contamination levels, it’ll be 2136 before it is safe to be outdoors here – if it’s the cesium you’re worried about. If it’s the strontium that scares you, it’ll be 2154 before eating, drinking and breathing are not risky propositions.

Winning at the irony of a cold meal made of radioactively hot food, I ate, as the Kulbakinas described the food they had prepared. Sasha’s deep brown forest gifts tasted only of the autumn forest floor.

In the most contaminated of Belarus’ territories, what the Ministry of Emergencies calls ‘The Zones of Alienation,’ the only legal activities are scientific research or jobs linked to radiation control, like soaking down dry prairies so that fires don’t re-release plutonium into the air. Ten minutes from Cherikov, a 1,000 square mile “alienation zone” is posted with large white billboards warning the trespasser, in Russian, that they will be fined ten months’ salary if caught inside. The zone isn’t fenced. The armed guards at an intersection leading into it merely nod and let our rickety van of humanitarian sightseers pass.

Under a clump of trees on the horizon, houses hunker behind wooden fences. When we reach them, I see a man, his chapped hands ungloved, his feet wrapped in pig hide tied below his knees, standing beside an ancient wooden wagon to which he has harnessed a lean Holstein milk cow.

“Samosely?” I ask Mikhail, using the term for the old people who have returned without permission to their confiscated homes.

“Refusniks,” he replies. “The old women said, ‘We survived starvation and Hitler and starvation and Stalin, and now you tell us something invisible will kill us? We will die here.’”

The next day, on a sidewalk in Cherikov, I watched a crying woman plead with the director of the local kindergarten. The woman wanted the non-existent orphanage opened, NOW. Fourteen parentless children had been waiting for months. She’d just discovered five more, siblings in a barn on the edge of town, feeding themselves on stolen eggs and radioactive apples.

We are led on a tour of the local kindergarten. The first room we enter is surrounded on three sides by tables low enough for three-year-olds. Before each tiny chair sits a ventilator or nebulizer. Photographs and diagrams



top: Old women sell sunflower seeds in Chausy’s small, outdoor market.

middle: A family awaits the arrival of the groom before a three-day wedding celebration begins in Zhodina.

bottom: Misha, a young social orphan from Chausy, Belarus, sits on a dock in Brockville, Ontario, Canada with a member of his Canadian host family. With family still living in Belarus, it is not possible for Misha to be adopted. He is to live in an under-funded orphanage until he is 17 when he will be released into the world without money or a job. 17 per cent of orphans commit suicide in Belarus, and 35 per cent end up in jail, having to resort to theft in order to survive.



Children are often forced to live with severe birth defects and brittle bones. The region's health care is marginal at best, and hospitals are overflowing with sick children and the elderly. Birth defects and the death rates are on the rise in the contaminated region.

on the walls show children how to place the plastic tubes in their mouths; toddlers using machines to ease their breathing.

"Allergies," the school's doctor explained. "The children now have all kinds of allergies. Each year more. Most have asthma. Acute asthma, so, the ventilators."

"We could use more," Svetlana says shyly. Twelve is not enough to serve her thirty-seven charges, far fewer children than she once cared for. And soon, with the help of German humanitarians, she'd be turning her school into an orphanage, "These children," she explained, "are certain to have illness."

Nutritional deficiencies are rampant in Belarus where the economy collapsed three years after Chernobyl. Hunger exacerbates the deleterious effects of constant exposure to radiation. So does being continually chilled through a six-month winter because the state can't provide enough fuel to heat apartment complex boilers.

These are the sorts of complications that cannot be accounted for in medical research, which make it easy for skeptics to call into question any report emanating from the study of post-Chernobyl Belarusian health. But examining post-Chernobyl demographics provides a bigger picture. It shows definite trends that are harder to dismiss.

According to Minsk's United Nations Development Program (UNDP), life expectancy in Belarus in the 1960s was almost level with that in



A boy in Chausy, Belarus screams in pain. He suffers from a disease that causes extremely brittle bones. His mother must handle him with great care to avoid snapping his bones, which will break when the slightest amount of pressure is applied. There is no help for him at the under-funded hospital.

Two women gather hay on a small plot of land on a collective farm in the Chausy district. The woman on the right was granted this plot to feed her cow. In return, she must provide the collective farm with some of her cow's milk. This area has radiation readings of 5 to 10 curies, which turns up in the cow's milk.



Family members gather in Zhodina to celebrate their mother's birthday. Parties last all day, with a steady stream of food and drink lasting well into the night.

Western Europe. By 1999, (thirteen years after Chernobyl,) it had fallen 12-14 years for men and 7-9 years for women. A baby boy born in rural Belarus today can expect to live 59 years.

But they may be very hard years. Nearly half of Belarus' teenagers have serious health problems. Forty-five to forty-seven per cent of all kids graduating from high school have physical disorders like gastrointestinal anomalies, weakened hearts and cataracts; Forty per cent of them have chronic "blood disorders," or malfunctioning thyroids. The number of handicapped adolescents tripled in the last decade.

People are coming into their reproductive years already ill. They make the grim forecast for a country trying to survive an ecological catastrophe even darker. Despite a rise in the number of Belarusian women twenty-six and under, the last decade has seen no national increase in births. For the first time in history, the decline in births occurred in both rural and urban populations. Between



A child is given vapour treatment for a respiratory ailment in Chausy's hospital. The waiting room is packed with mothers and children on this typical weekday. Respiratory illnesses are a common ailment among the children in regions contaminated by Chernobyl fallout.



A farm worker covers potatoes in a field with straw for winter storage in the Gamel region of Belarus near Mazyr. Potatoes, the staple of the Belarusian diet, gather radionuclides as they grow, which are passed on to those who consume them.



A woman pauses while tending to her goats to search for food in a dumpster behind a bar in the newer Miroshnichenko district of Minsk. Since the collapse of the Soviet Union, poverty is visible in the streets. Beggars are a common sight in the urban core.

'We survived starvation and Hitler and starvation and Stalin, and now you tell us something invisible will kill us? We will die here.'

1989 and 1999, the number of children under age five in Belarus dropped a breath-taking forty-two per cent. Not only are birth rates decreasing, but every year since 1993, Belarus has experienced more deaths than births. Over the next hundred years, they predict, the total population of Belarus will fall to one-tenth of today's 10,000,000 people.

Driving in a humanitarian aid convoy from Den Kindern von Tschernobyl, I pull over on the side of a snow-covered road. They are strange spectacles, these communities created for uprooted traditional people on land denuded of trees. The houses are made of "clean" imported brick, often white, trimmed in bright blue. They are surrounded by radioactive old wooden fences though, confining what livestock has not been eaten.

Waiting for word to make its way down the convoy explaining why we're here, I get down from the high cab to stretch my legs and watch a man pumping water at a newly mechanized village well. In the time it takes him to fill the bucket, one of the masons building the house across the road gathers his courage, leaves his job site and approaches me. Like all Belarusians, first he makes deep eye contact. Then, he mimes his hunger: Raw, chapped fingers in open mouth, hand on stomach. When he sees that I understand, he looks across the road at two

companions studying me, their ungloved hands holding trowels motionless in the snow-filled December air.

I have to get back in the truck to get my backpack, and I don't want him to go away, so I take him by the shoulders and kiss his rough cheek. I'm thirty-six non-stop hours from my home in Germany. Soon, driving across winter-barren Poland in the coming snow storm, I will wish that I had snacks to keep me awake. But I've had ten days of moments like this. I unload the contents of my backpack on him: Apples and oranges that make him stare at his hands, sesame-honey bars tucked into his high coat pockets, and cashews in the low ones. I balance a wedge of cheese atop the fruit. The cheese makes him cry. Then, he kneels in the slush, and kisses my hiking boot.

Recently, a letter came from Irene Kulbakina. "We have been informed that now we live on a clean territory," she wrote. "Can you imagine such a thing? We are not paid for radiation any more. All government aid stops."

The radiation counter that stood in the middle of Cherikov, like some nightmare version of a time and temperature clock, disappeared the day after the announcement. How is it that the radionuclides, buried in the bones and muscles of citizens and irradiating the food that Irene and Sasha feed their children, could be so easily removed? ■



A woman walks past a church bombed out in World War II on her way to work in the Chausy District. Although religion is no longer illegal in post-Soviet Belarus, there is little money to repair old churches, or to build new ones.

Menno Meijer

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