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starvation in atom war

By Richard Beeston
in Washington

AS many as 2.5 billion people could die of starvation as a result of nuclear war, and non-combatant nations would not be spared, according to a scientific study just released.

"Most of the world's people would be placed in jeopardy of starvation," the two-year study by 300 scientists from around the world concluded.

The report, prepared by the Scientific Committee on Problems of the Environment (SCOPE), confirmed earlier studies concluding that a nuclear war between the Superpowers would throw up to 100 million tonnes of soot into the atmosphere.

The soot would cut off light and heat and produce a "nuclear winter" resulting in catastrophic crop failures, the study said.

Many people would die from starvation as well as from the effects of blast and radiation.

'Image of Ethiopia'

"More people could die in India from a nuclear war that involved only the United States and the Soviet Union than in those two countries combined," Prof Mark Harwell, of Cornell University, a co-author of the study, told reporters.

Starvation could cause the deaths of more people in Africa than would die in Europe, he said. Referring to the mass famine which hit much of northern Africa in 1984, he added: "We are left with the image of Ethiopia . . . as being more representative of what the world would look like (after a nuclear war) than the image of Hiroshima."

Hiroshima, Japan, was devastated by an American-made nuclear bomb in August, 1945.

Nuclear winter would be likely to end seasonal monsoons in India, and rains throughout the tropics, for some time, leading to crop failure. Most of India's population could die, the study said.

China would also be hard-hit, even if struck by no nuclear bomb, because it had less than one year's supply of food set aside. Survivors in the Soviet Union, which also has less than a year's supply, would be similarly afflicted.

Grain exports

Problems for the developing world would be greatly exacerbated because exports from major grain producers, such as the United States and Canada, would cease. Loss of imports alone could result in starvation for more than half the population of Japan, the study said.

Not all scientists agree that nuclear winter would result from atomic war. Edward Teller, the man most responsible for the development of the American hydrogen bomb, says that studies

so far have been inconclusive

The Scope report rejects a conclusion of some earlier studies that forest fires caused by nuclear explosions would be a major cause of a nuclear winter.

Explosions in urban areas, forcing soot into the stratosphere, would be the main cause of the winter effect, it said.

Sir Frederick Warner, the British chairman of the Scope study team, said that the prospect of nuclear winter might deter a nation from starting an atomic war. A nuclear winter started by an attacking nation could boomerang and "hit (it) a nasty crack below the belt" he said.

Nuclear winter

Mechanics of SCOPE report

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Washington

THE Scientific Committee on Problems of the Environment (SCOPE) pulled no punches in presenting the principal conclusions of its report on environmental consequences of nuclear war in Washington last week.

The report, not yet formally published, is the product of a study launched in June 1982. The work has been carried out by a series of workshops, involving more than 300 physical scientists and biologists, and organized by a steering committee directed by Sir Frederick Warner and based at the University of Essex.

Mark Harwell of Cornell University, a principal author of the section of the report dealing with biological effects, said the key conclusion was that the indirect effects of a plausible nuclear war, principally starvation due to crop failures, might kill up to 4,000 million people, besides the several hundred millions who might die from direct effects. He invoked mass starvation in Ethiopia and the Sudan as more appropriate images of the aftermath of nuclear war than Hiroshima and Nagasaki, and estimated that more might die in a non-combatant nation such as India than in the Soviet Union and the United States put together.

Although the SCOPE report does not address policy questions, the SCOPE steering committee makes no secret of its wish that policy lessons be drawn from it. Sir Frederick Warner said that "anybody who thinks they can read this and not draw policy conclusions is making a big mistake".

Through SCOPE's parent body, the International Council of Scientific Unions (ICSU), efforts are being made to ensure that the striking conclusions from the new study are conveyed to the highest levels of government. The Prime Minister of India, Rajiv Gandhi, is already known to have a

special interest in the subject, and the report has been directed as well to officials in the governments of Australia, the United States, the Soviet Union and Britain.

The US Secretary of Defense, Caspar Weinberger, has said little on the subject of "nuclear winter", the usual name for large-scale cooling effects following a nuclear war. But an internal State Department memorandum to Secretary of State George Schultz dated 16 August 1984 says that "the implications for US policy of the nuclear winter theory as it is being argued by Turco, Toon, Ackerman, Pollack and Sagan (in *Science* 222, 1283; 1983) could be profound if the administration-sponsored studies agree with Turco *et al.*'s conclusions and/or if, by default, congressional and public attitudes are moulded by those results".

The US National Academy of Sciences study on the subject, published at the end of 1984, supported the "clear possibility" that the climatic consequences of a nuclear war might include a severe cooling of the kind described.

For last week's launching, SCOPE took the unusual step of hiring a public relations organization, the Center for the Consequences of Nuclear War, to publicize the report to the Washington press. The report will be formally published later this year, and a final version is nearing completion with support from private US foundations. ICSU has established a group to look at the conclusions and decide what research should be done next.

Some of the report's authors urged the audience at a scientific presentation of the results last week to use the report to oppose the use of nuclear weapons. And a Japanese SCOPE delegate, Yasuo Shimazu of Nagoya University, circulated an impassioned plea to delegates urging them to take active steps to prevent nuclear war from starting.

Tim Beardsley