

fertilizer. If successful, such a complex would offer the potential for a major new step in the "green revolution" that has already had such beneficial effects in the Indian subcontinent. Its success could open an important new chapter in the story of man's fight against hunger and malnutrition.

The application of nuclear energy to the large-scale de-salting of sea-water is another, and a more difficult, question. The need undoubtedly exists, and this could be the idea that will start new "green revolutions" in the deserts of the world. But just as nuclear energy is not always the most economical means of generating electricity, so we must be careful not to mislead peoples and governments into believing that the dream of de-salting sea-water is just about to become a reality.

In the course of the next few days, you will devote much of your time to the large-scale use of atomic energy for the production of electricity and for the de-salting of sea-water. You will also consider the numerous applications of isotopes and radiation -- in research, in industry, in agriculture and in medicine. There have been remarkable achievements, particularly with the new nuclear techniques for the diagnosis and treatment of cancer and of some of the other diseases that afflict mankind. You will seek to evaluate what contributions these can make to the improvement of life in the developing countries.

Isotopes and radiation are tools -- their use is not an end in itself. We must, as I have said, identify what our aims are and then see whether atomic energy provides the best tool for achieving them. For example, the developing countries have a great need to find better ways of preventing the wastage of food in storage. Pests and various forms of decay destroy a large fraction of what is produced. Irradiation may help to conserve this food, but until this has been demonstrated and its economic feasibility established, better-known techniques -- dehydration, canning or refrigeration -- are still probably more appropriate in most situations.

Another problem is the provision of sterile medical supplies, often under adverse conditions remote from the facilities of modern hospitals. One technique is now well established: it involves first sealing medical supplies in hermetic packages and then irradiating them to ensure complete sterility. The supplies are safe from any infection until the moment when the packages are opened -- and, of course, this can be at the moment they are needed for use. I believe this technique is ready for immediate adoption in developing countries. It is best if the choices can be made in the developing countries themselves -- by their own scientists and economists, their own *entrepreneurs*. To do this, they must have their own centres of excellence, where innovators are encouraged and where proper evaluations can be made in relation to local needs and local priorities.

We have come to Geneva to discuss the silver lining of the nuclear cloud -- a happy circumstance that does not permit us to disregard the cloud itself. The achievements and possibilities of the peaceful uses of atomic energy on which I have touched this afternoon justify a sense of pride and hope. Nevertheless, we are discussing a force that, if misused, has a destructive capacity difficult for any of us, scientist or layman, to comprehend fully.