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UNITED NATIONS EDUCATIONAL,
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Address by
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(UNESCO)

at the opening ceremony of the celebration of the
World Science Day for Peace and Development

UNESCO, 12 November 2002

Mr Director-General of ISESCO,
Professor Swaminathan,
Excellencies,
Ladies and Gentlemen,

It gives me great pleasure to welcome you to this, the first celebration of the World Science Day for Peace and Development. I would like to express my special thanks to all other partners who have chosen to mark the event around the world - National Commissions for UNESCO, scientific governmental institutions, research institutions, science centres, scientific associations, universities, schools, and youth. These partners have contributed, through a variety of actions and initiatives, to spreading the World Science Day message far and wide. That message is clear: international organizations, the global scientific community, the media, and educational institutions have both the professional and moral responsibility to contribute, through science, to the creation and strengthening of peaceful and sustainable societies.

The decision to proclaim 10 November each year as World Science Day for Peace and Development was made by the General Conference of UNESCO at its 31st session one year ago. This decision is traceable to the deliberations and recommendations of the World Conference on Science (Budapest, 1999), where the need for a new compact between science and society was given clear recognition. It was felt at the Budapest Conference that the organization of a World Science Day would be an opportunity to reaffirm each year the commitment to attaining the goals proclaimed in the *Declaration on Science and the Use of Scientific Knowledge* and to follow-up the recommendations of the *Science Agenda: Framework for Action.*

The idea of establishing a World Science Day rests on the need to remind all of us what science is for, namely, peace and development. This annual occasion will now be a regular opportunity to reflect on how science can best serve this purpose. The social responsibilities and ethical dimensions of science deserve renewed attention in an age of dramatic changes in our scientific knowledge and its applications. It is, after all, an era of momentous scientific discoveries that are altering our understanding of the universe and, indeed, of life itself.

Today is an occasion for celebrating science as a tremendous human achievement, one which has brought countless benefits to humankind. Science, for example, has helped to liberate human beings from mindless superstition, to combat diseases, and to contribute to the development of technology needed to sustain our increasingly complex societies.

We live in an age, however, when many fear that our capacity to create scientific knowledge is outrunning our ability to control its uses and effects. Moreover, despite advances in science, many global problems persist. There is mounting evidence to show that failure to eliminate hunger will undermine efforts to reach the Millennium Development Goals by 2015. It is estimated that at least 1.2 billion people around the world live on one US dollar a day or less. More than a billion people do not have access to safe drinking water and 840 million people around the world are undernourished. Our hopes of achieving universal primary education of good quality, for example, will not be fulfilled if millions of children go hungry and, as a result, suffer from diminished learning capacity or are forced to work instead of attending school.

Such deep-seated global problems reveal that peace and development are inseparable; each is a pre-condition of the other. The mutual reinforcement of peace and development was recognized in two key conferences this year: at the UN International Conference on Financing for Development, held in Monterrey in March 2002, and at the World Summit on Sustainable Development in Johannesburg, South Africa, in August/September 2002. Both meetings recognized that the international community cannot afford to approach the twin issues of peace and development in a disjointed manner.

Conflicts are rooted in the sense of frustration, injustice and despair which pervades large parts of society and is fuelled by poverty, inequality and discrimination. By addressing the internal causes that make society a fertile terrain for conflict, sustainable development is a building block of peace. Of the 118 conflicts world-wide in the 1990s, 100 were caused primarily or exclusively by internal factors and the vast majority of them occurred in the developing world, mainly in the least developed countries. More than 80 per cent of these armed conflicts took place in countries in the bottom half of the UN Human Development Index in 1999. And more than half of the countries where undernourishment is most prevalent experienced conflicts. In the words of Prof. Swaminathan, who is one of our distinguished guests today, “Hunger anywhere threatens peace everywhere”. Violent conflicts pose a fundamental barrier to development by destroying the physical, human and social capital that developing countries need in order to pull themselves out of poverty.

Let me recall what Mr Kofi Annan, Secretary-General of the United Nations, said in delivering the Nobel Lecture in Oslo, Norway, in 2001: “Peace must be sought, above all, because it is the condition for every member of the human family to live a life of dignity and security.” In light of these remarks, it is clear that, by providing solutions to problems relating to human needs, science contributes to this search for peace and development.

On this Day, we must reaffirm our commitment to sharing scientific knowledge and to creating a new solidarity between and within countries. It has been established that 95% of new science in the world is created in the countries comprising only one-fifth of the world's population; the remaining four-fifths contribute only 5% of new science. This unbalanced distribution of scientific activity generates serious problems not only for the scientific community in the developing countries but also for the development of these countries. This state of affairs further increases the disparity between the advanced and the developing countries, creating social and economic problems at national and international level.

Gender is an integral dimension of this disparity. Through the denial of opportunities to girls and women to study and to pursue scientific careers, so much human talent, creativity and potential is wasted. Today, there is growing acknowledgement of the centrality of women in the development process, and this must involve an increased role of women in science and in the contribution of science to development. Without women having a large say in the progress of science, inequalities will continue to grow.

Ladies and Gentlemen,

For all these reasons, the celebration of World Science Day is a way to reaffirm the role of UNESCO, which is to contribute to peace and security by "promoting collaboration among the nations through education, science and culture...". When the founders of UNESCO decided to broaden its mandate by including science and by making that clearly apparent in its Constitution and in its name, they were guided by the basic consideration that science is a means to promote and ensure peace and the common welfare of humankind.

But how does UNESCO translate these precepts into actual practice? Let me offer some examples for purposes of illustration.

As you may be aware, 'water resources and their associated ecosystems' is the principal priority for the natural sciences in UNESCO's current biennium and this will continue in the next biennium. UNESCO believes that water security will be one of the key issues of the 21st century. In its actions to strengthen the knowledge base regarding freshwater, to improve freshwater management capacities and to promote sound policy-making in this area, UNESCO recognizes that water security is not only a vital dimension of sustainable development but also a matter of war and peace. One example of our action is the recently-announced Aral Sea Basin Initiative which, under the

auspices of the World Water Assessment Programme, will investigate ways to improve the cooperative management of the basin's freshwater resources.

Let me now look briefly at another area of scientific endeavour which illustrates the complex character of science's relations with society and human development. The advances made in recent years in the science of genetics and in biotechnology promise many benefits for both humanity as a whole and for the individual. However, these advances raise extremely complex issues regarding the status and integrity of the human being. They may also lead to excesses of all kinds - eugenics is a striking example. And they are giving rise to major new ethical issues which are of deep concern to both science and society.

The mapping of the human genome, the increasing ability to screen for genetic disorders and diseases, new reproductive technologies, and new techniques for genetic manipulation may well be the basis of a eugenics civilization. For the first time in history, we might be able to rearrange the genetic make-up of the human species and change the future course of our biological evolution.

In view of the advances of science and growing awareness of the potential risks they bring, the rights and duties of scientists and researchers take on renewed relevance. Moreover, the grounding of scientific practices on strong ethical foundations is becoming more and more important for building a sustainable future. Over many years, UNESCO has contributed substantially to the development of the ethical dimension in regard to scientific activities. The creation of the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) is one of the main manifestations of UNESCO's commitment to revitalizing ethical thinking and debate in key areas of science.

Another example for consideration is the International Centre for Synchroton Light for Experimental Science and Applications in the Middle East, better known as the SESAME project, a venture that UNESCO has fostered and supported. Although much remains to be done, this project embodies the hope and determination of all involved that scientific cooperation can not only advance the cause of science among different countries but, in so doing, can also promote peace and interdependent development in a troubled region. In addition, as with science in general, the SESAME project expresses one of the key principles on which UNESCO's actions are built, namely, the free flow of information and knowledge. Science thrives on the sharing of new discoveries and scientific advances. UNESCO sees in this diffusion of knowledge an opportunity to nurture relations of cooperation that are conducive to peace and better mutual understanding.

The examples I have referred to so far have been specifically 'scientific' in character but there are other aspects of UNESCO's action that are highly relevant to the promotion of science's purposes. Tomorrow, for instance, sees the opening of the World Forum of UNESCO Chairs, bringing together hundreds of participants from around the world to reflect on ways to carry forward the work of the UNITWIN/UNESCO Chairs Programme. Through the networking and cooperation built into this Programme, many scientists in universities and research institutes in developed and developing countries are, directly or indirectly, promoting science's role in advancing the cause of peace and development.

Another example is the Global Higher Education for Sustainability Partnership that UNESCO has launched with the International Association of Universities (IAU) and the major regional and international associations of higher education. By the way, several UNESCO Chairs have been established in various parts of the world to address the key questions of sustainable development.

Ladies and Gentlemen,

Before closing my remarks, I would like to emphasize the responsibility we have toward the new generation of scientists. Since young researchers are at the forefront of the future development of science, we have to give them every opportunity to participate in the scientific endeavour. Without our next generation of research scientists, we endanger our efforts to maintain, increase and diffuse scientific knowledge in the future.

The formative shaping of the outlook and values of young scientists is of utmost importance. On the occasion of World Science Day, I would like to recall the words of Albert Einstein, speaking in 1931 to an audience at CalTech: "Concern for man himself and his fate must always form the chief interest for all technical endeavour ... in order that the creations of our minds shall be a blessing and not a curse for mankind. Never forget this in the midst of your diagrams and equations."

I am aware that peace and development, the goals of science, cannot be achieved in a day, nor can they be secured by science alone. However, if a process of reflection and action can be stimulated by a celebration such as this, World Science Day will be achieving its purpose.

Thank you.