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Introduction

From May 20 to May 22, 1991, in the second year of the United Nations' proclaimed International Decade for Natural Disaster Reduction, a group of eminent experts in the field of disaster management and communications gathered in Tampere, Finland for an unusual conference. Their joint purpose was to produce a consensus on relevant needs and a plan of proposed action to improve international co-operation in communications and to enhance national communications capabilities in the disaster context. The genesis of the Tampere conference lay with Seppo Sisättö of the Aamulehti Group of Finland. His suggestion that the IIC hold the conference was the catalyst for the eventual gathering in Tampere.

The Tampere Conference, which took the form of a Round Table meeting, followed the UNDRO conference on Disaster Communications held in Geneva in January 1990, and Tampere provides a natural progression in the UNDRO process.

This publication reproduces the addresses presented at Tampere and most importantly, the Declaration which resulted from the discussions held over those three days in May.

The Tampere Declaration is the first step in a process intended to culminate in the adoption of an international Convention on Disaster Communications. Those present at Tampere recognised the need for such an international accord, and urge its early adoption.

The IIC, in organising the Tampere Conference, received generous assistance from many quarters. I would, however, particularly like to express my fulsome thanks to my companions in the "Geneva Planning Group": Wolfgang Wagner and Jiri Kraml of UNDRO, John Scott of the Center for Public Service Communications, Joseph Elotu of the ITU, Peter Walker of the League of Red Cross and Red Crescent Societies, Noel Pollock of UNHCR and representatives from WMO. Philippe Sands, Barrister and Director of the Centre for International Environmental Law played an unique and intellectually arduous role as drafter of the Declaration. Kala Rogers from the IIC Secretariat in London was the one indispensable link in the organization chain - her energy, attention to detail and willingness to assume daunting tasks ensured that two people were able to perform the tasks of many in organizing this conference.

I am greatly indebted to the Aamulehti Group (the conference hosts) and to the Annenberg Washington Program in Communications Policy Studies of Northwestern University for the financial support which enabled our Round Table concept to become a reality.

Finally, the success of the conference was in no small measure due to the presence in Tampere of three dominant figures in the communications and disaster relief fields: Dr. Pekka Tarjanne, Secretary-General of the ITU; M'Hamed Essaafi, Under-Secretary General of UNDRO, and Pär Stenbäck, Secretary-General of the League of Red Cross and Red Crescent Societies. Their constant, enthusiastic support and ultimately, their presence, ensured that the Tampere Conference achieved its ambitious aspirations.

Victoria Rubensohn
Conference Co-ordinator

Opening Words

Mauri Pekkarinen
Minister of the Interior

Mr. Chairman,
Ladies and Gentlemen!

On behalf of the Government of Finland I would like to extend to all of you, the eminent international experts in the field of disaster management and communications as well as to the other participants of this Conference on Disaster Communications a heartfelt welcome. It is also my great pleasure to welcome our foreign guests to Finland and to Tampere.

Personally I feel especially honoured to open this conference as the key issues of disaster management belong to the field of activities of my own ministry.

Mr Chairman,

The international community has again been called to provide assistance to alleviate the burden of countries hit by natural disasters. One of the most shocking examples of these recent emergencies is the devastating cyclone which hit Bangladesh three weeks ago. Man-made disasters are equally destructive. The Gulf situation highlights the multifaceted problems that man-made emergencies bring about.

The United Nations General Assembly Resolution of December 1989 that proclaimed the 1990's the International Decade for Natural Disaster Reduction, symbolizes the long-term cooperation within the UN family members in the development aiming to ameliorated preparedness and more cohesive coordination in the field of disaster prevention, mitigation and management.

Finland, together with the other Nordic countries, has always given her full support to the work of strengthening and improvement of the UN system as a whole. We have also made constructive contributions to the discussions and the decision-making process within the UN system in the field of disaster prevention and management.

Our country was also one of the co-sponsors of the IDNDR-Resolution. In order to fulfill the objectives of the Decade, Finland has launched several activities such as establishing a national committee in May 1990 and carrying out a study on Finnish resources available and applicable for natural disaster management. The first part of this study focusing on predisaster issues is now being finalized. It is worth mentioning that there are particularly two areas where Finnish technology can make an important contribution, i.e. forest fires and floods. I wish that Finnish know-how can be applied and made use of in future, especially by the developing countries in their efforts to build up disaster management capabilities.

We think that communications offer several possibilities to be used by emergency management systems. Before a disaster strikes it is possible to predict the approaching hazard, to alert the emergency authorities, to raise awareness among the public and to warn the people in a disaster stricken country. After a disaster has struck it is possible to collect information, to assess damages, to provide leaders of rescue activities means for cooperation of relief and assistance procedures, to transmit news and information to news agencies and representatives of the mass media about on-going efforts and rescue measures. Various means of communications also give impetus for fund raising campaigns in possible donor countries.

Every country has her own emergency service organization built within her national starting point. In Finland it is based on two factors: the authorities and the voluntary organizations. Without their cooperation large rescue operations would not be possible. In this connection the role of the voluntary organizations should be emphasized as they provide us not only with personnel, but also with equipment.

In disaster work organizations operate rationally only when the communication systems are effective. The backbone in this work is a well-operating telecommunication system with all the newest technic. In this context I would particularly like to stress the immense development of satellite technology that has made it possible to reduce the satellite earth stations into portable "briefcase size", i.e. flightcase terminals. I have been told that these flightcase terminals are exhibited and will be demonstrated in practice during the conference.

By the side of the very sophisticated technical equipment, traditional radio technic is, however, often needed. In Finland, for instance, radio amateurs with their equipment are used to assist the authorities' communication networks. The amateur-built nets have in exercises proved not only reliable, but also flexible and easily movable. We have some examples in international rescue work where the only functioning communication system at the early minute of disaster has been the amateur radio.

Frictionless and coordinated cooperation is crucial for successful emergency operations and disaster management. When help is needed over borders, cooperation is certainly difficult if there are no rules agreed upon in advance. Should this be the case, the needs of those in distress ought to come first; whether or not, for instance, the communications equipment was in accordance with the stipulations of the area or country in question, should be weighed at a later stage.

I am convinced that this kind of a conference is of utmost importance to our common effort, which is to get together representatives of disaster-prone countries and donor countries. In this conference you will have an excellent opportunity to discuss and exchange experiences about adapting modern technological inventions to disaster situations, to find out new solutions to common problems in communications, to improve and enhance the usage of communications in favour of all parties concerned.

I do hope that this conference will also gain its main target so important for the future of the humanity, that is, a "Tampere Declaration" which later on, I hope, will lead to a specific international Convention on disaster communications.

I know that to prepare this Round Table Meeting has involved a lot of work but the most important part of the work is still left to be carried out here in Tampere. I therefore want to take this opportunity to thank all those who in various ways have contributed to realize this Conference on Disaster Communications now beginning.

I wish full success to your conference, hoping that a real consensus spirit will prevail during your coming deliberations. I have every confidence that with the experience and the valuable expertise of the participants, the pitfalls can be avoided to the benefit of the favourable development towards the common goal, an international Convention on Disaster Communications.

Keynote Speech

Pekka Tarjanne
Secretary-General
International Telecommunication Union

Your Excellencies,
Dear Friends,
Ladies and Gentlemen,

It is my great pleasure to be with all of you today and to be able to share some thoughts with you on disaster communications. The beautiful city of Tampere and the glamour of this Conference Hall, with modern communications facilities, provide a very pleasant setting for our meeting, somewhat a contradiction to the subject we shall be delving into. When I received an invitation to address this meeting, I did not hesitate to accept it because of the importance of the subject to the ITU and to me personally.

Disasters are a bleak subject to talk about. It is a subject that comes alive, grips us and draws our sympathy, when we see those distressing pictures of death and desperation on a large scale: it is also a subject that can quickly slip from our minds when it does not immediately affect us. But if some disasters do not affect us, all must concern us. They have, over the ages, with great regularity and we can be sure they will continue to occur even more frequently if we consider both man-made disasters and natural ones. Recent events in Bangladesh, Costa Rica and Georgia are but a few grim reminders of the random nature of these disasters and the certainty that others will occur.

I said that disasters must concern us. This is where disaster communications come into play. Technology was developed for the service of humanity and that technology has continuously been improved to better serve mankind. It is thus logical that the phenomenal advances in the communications industries in general and in telecommunications technology in particular must be directed towards the improvement of life and towards increasing the safety of life and property from the often calamitous effects of natural disasters and other hazards.

The ITU Special Mandate

Although the ITU's mandate on disasters has remained virtually the same over the last three decades, the scope of its operational activities has widened over the years since the introduction of the first commercial radio telegraph at the end of the 19th century. This mandate states that Union shall "...promote the adoption of measures for ensuring the safety of life through the cooperation of telecommunication services".

The 1906 Berlin Agreement, modified and embodied in the ITU legal instruments, requires that the international telecommunication services must give absolute priority to all telecommunica-

tions concerning safety of life at sea, on land, in the air or outer space. It also makes it obligatory for radio stations to accept with absolute priority distress calls and messages regardless of their origin and to reply in the same manner to such messages and to take the required action immediately. A majority of these activities may be emergencies which do not fall strictly under UNDRO's definition of disasters and in any case pre-suppose the existence and operability of such radio stations. Nevertheless, a variety of new activities have been introduced from time to time, whenever the technology has become available, especially those dealing with maritime mobile and maritime mobile-satellite services.

Specialized Usage Of Telecommunications

It is my firm conviction that telecommunications of all sorts, public or private, including mass media communications can play a vital role on disasters at various levels, mainly prevention, early warning and relief.

There are certainly a number of natural phenomena leading to disasters which cannot be prevented such as volcanic eruptions, earthquakes, typhoons, etc. But these earthquakes and typhoons are not disasters in themselves; they do not have to destroy property or kill people. Certain specifically foreseen design and construction techniques can now prevent the collapse of structures and unnecessary loss of life. However, there are other disasters which could be potentially more calamitous to humanity which can be prevented such as the destruction of tropical rain forests, CFC emissions, desertification, famine, locust infestations, etc., which can be prevented or reduced by deliberate human effort. And here, specialized use of telecommunications in remote sensing, telemetry and teledetection can help man in early defection and warning so that appropriate counter measures are taken in good time. Remote sensing and other space-based observatories can now quite accurately tell us what resources we have and how fast we are using them.

Turning now to disaster relief work and disaster management, including logistics support for such work, this is probably an area with the most intensive activities. The disaster having occurred, what can the world community do to give immediate help to those affected? There are of course a number of parallel priority activities but most importantly, someone has to reach the disaster scene, assess preliminary requirements and convey these requirements speedily to the aid agencies. It is here that telecommunications assume a paramount role. The international community has to know on a timely basis the type and quantity of assistance required: rescue equipment, food, medicines, shelter, etc. It is thus axiomatic that the telecommunication equipment should reach the site or nearby as quickly as possible, to facilitate the conveyance of vital information or assistance requirements and other logistics.

I cannot overemphasize the importance of telecommunications and media coverage for disaster work. Yet, while many of us in developed countries take the existence and pervasiness of telecommunications for granted, there are many countries in the developing world and even many remote regions in the developed world where no telecommunications of any sort exist. And even in cities of highly developed countries, sadly to say, disasters usually disrupt telecommunications as well as other services.

The ITU has therefore adopted on objective that by the early part of the 21st century nearly the whole of mankind should be within easy reach of a telephone and services that accompany it. It is a noble goal and if those telephones function at the right time, they will help save lives, property and harvest. They can also be used to give an early warning about a bush fire, locust invasion, an onsetting drought, an impending hurricane, etc.

Specialized applications of telecommunication for meteorological purposes are of utmost importance especially to those communities which are prone to harsh climatic conditions. It is amazing how we can now follow typhoons or hurricanes as they whirl menacingly towards human settlements. But it is ironical that too often it is those who are far removed from the path of such hazards who have the abundance and precision of information about those hazards, whereas those directly affected may only have sketchy information about them.

International Cooperation

The concern of the international community over natural and other disasters such as technological and man-made disasters has been gathering momentum over the years, culminating in the United Nations General Assembly Resolution No. 44/236 proclaiming the 1990s the International Decade for Disaster Reduction (IDNDR). UNDRO, which has the overall mandate for disaster relief, mobilization and coordination, will play a pivotal role in the implementation of the IDNDR and in this respect took the initiative to convene an international Conference on Disaster Communications in March 1990 in which the ITU actively participated. The ITU, together with a number of other Organizations and the Ad Hoc Group of Experts appointed by the UN Secretary-General, participated actively in the preparatory work for the IDNDR. I believe that Mr. Essaafi, Under Secretary-General, will brief us about the implementation so far of the IDNDR. The ITU involvement in the IDNDR is generated on a single project of quite a wide range of activities including the provision of telecommunications equipment for disaster purposes and the working out of modalities to facilitate easy cross-border transfer of such equipment. The latter activity is paramount and is indeed one of the main items for in-depth discussion at this Conference, leading hopefully to a Tampere Declaration and subsequently to perhaps a Convention. This project, which has UNDRO's backing, will be presented to the Scientific and Technical Committee of the IDNDR through the IDNDR newly created Secretariat.

The ITU has recently been in touch with INMARSAT and UNDRO regarding future cooperation on disaster work and I hope that this cooperation will continue to grow, especially with the results of this Round Table. Cooperation with other bodies has involved allocation of frequencies and GSO slot when necessary for meteorological, aeronautical, maritime, land mobile, satellite news gathering, amateur radio and search and rescue purposes, etc.

During the coming decade, the Global Maritime Distress and Safety System (GMDSS) will be brought into use. This new system, developed by IMO in collaboration with the ITU and other bodies, will provide a new degree of safety to seafarers.

I should also mention the work of the League of the Red Cross and Red Crescent Societies, the ICRC, the UNHCR and NGO's in helping to provide telecommunication facilities especially at country level.

Current Technology

The rate of technological advance is rendering what seemed
science fiction of the yesteryears the reality of today. The tendency is a merger of telecommunications with computer technologies on the one hand and with electronic media on the other, all being transportable in an ISDN environment. Technological convergence means that more and more organizations are beginning to have much in common, as evidenced by the wide range of organizations meeting here today. The quantity of information that can now be transmitted through a network has grown enormously, whereas the size of the equipment is decreasing considerably.

One result is that satellite earth stations have today been reduced to suitcase or even briefcase size. INMARSAT, and other satellite organizations, will tell us more about these stations. Such equipment, coupled with the ease with which it can be deployed, make it invaluable to disaster communications' needs.

Other services such as cellular radio and universal personal communications (the fetherless phones and other services), satellite news gathering and amateur radio will tend to facilitate our efforts in disaster work in the future. Satellite techniques will offer greater opportunities and we will continue to use space as a platform for serving and observing our planet Earth, be it for public telecommunications, entertainment, meteorology, remote sensing or search and rescue as well as disaster work.

The Future: A Framework Convention?

While recognizing UNDRO's mandate and its leading role in coordinating disaster activities, most of us within our own legal instruments, have mandates dealing to some extent with disaster communications. Yet, it is quite certain that no single organization has a sufficiently broad mandate which covers all aspects of disaster communications. Past experience has shown that there was often haphazard response to urgent telecommunications needs, sometimes leading to long delays in establishing an internationally usable link or a conglomeration of incompatible equipment. It is therefore imperative, given the technology available today, that we should put our heads together to work towards a comprehensive international legal instrument on more efficient disaster management through timely use of communications systems. The Tampere Declaration which, I hope, we shall adopt at the end of our Conference should be a first step towards the establishment of such an international accord.

Such an agreement should principally be aimed at facilitating prompt establishment of a telecommunication link for disaster management through, inter alia, simplification of transborder movement of equipment, persons and goods and a definition and allocation of responsibilities to states, administrations, international and national organizations, within the

mandates of these bodies. The agreement should of course be broad enough in scope to cater for other important areas of disaster prevention and early warning.

Conclusion

It is evident that the technology now exists to enable the international community to carry out more effective preventive, early warning and relief work on all sorts of disasters and emergencies. We should therefore spare no effort to work out a Convention that will facilitate this.

But our disaster-ravaged world cannot wait too long for this Convention and prior to such an agreement we should seek to better coordinate our present activities to bring about increased efficiency and synergy in our individual inputs. The IDNDR provides a basis for this.

I thank you very much for your kind attention and I wish you a productive Conference.

Introduction to the Conference

Victoria Rubensohn
Conference Co-ordinator
IIC

Mr. Chairman, Your Excellencies, Ladies and Gentlemen

In some ways I suppose I am the stranger among you, although, as I signed your invitations, my name may be familiar. A stranger because the area of disaster communications has been neither my traditional field of activity nor that of the IIC. However, a unique conference like this, on the subject of Disaster Communications is not an unusual place to find the IIC, as part of its historic brief, now over 27 years old, is to study the economic, political and particularly social implications of technological development in the broad communications field.

My role here today is brief, and more practical than philosophical. It is to explain how we got here and what we intend. So I will explain the IIC's decision to become involved in this conference very simply, though with no intention to diminish the role in that process played by other parties, especially the Aamulehti Group, the Annenberg Washington Program in Communications Policy Studies of Northwestern University and what I have euphemistically termed the "Geneva Group" - that is, the representatives of UNDRO, ITU, the League of Red Cross and Red Crescent Societies, UNHCR and WMO, who formed our planning group. The father of this conference was Seppo Sisatto, Vice-President of the Aamulehti Group, who originally made the suggestion to me that we should hold such a conference. On that day, a year ago, he kindled an interest and commitment which has brought us all to Tampere today.

That commitment, which formed the core of our approach to this conference, was to bring a wide-ranging group to Tampere, not just to talk, admire the Northern Lights and disappear, but to actually move some significant distance along the road to the adoption, first, of a Declaration of established needs in the disaster communications field, and ultimately via the normal process, to the adoption of an appropriate Convention.

It was in pursuit of this goal that I undertook on behalf of the IIC to hold the Tampere Conference - but we could never have been here today without the generous and substantial support of Aamulehti and of the Annenberg Program. Aamulehti's role is clearly visible around you - especially your presence in this magnificent Tampere Hall. For every visible sign of Aamulehti's gracious assistance, there are a hundred invisible signs and there is no doubt that without their support we would never have gathered together under this almost midnight sun.

Similarly, the Annenberg Washington Program represented here today by Senior Fellows David Webster and Fred Cate, and Associate Director, Yvonne Zecca, played a dual godfather role - or perhaps, in deference to Yvonne - a dual godmother role. It was to Annenberg, and especially to Yvonne that I first turned for help in planning this conference, as I knew of their considerable efforts in this field. Annenberg's role has been crucial, both in terms of intellectual and financial support. Yvonne was my original bridge into the disaster

communications field and Annenberg has stood beside us all the way, through the difficulties of postponement caused by the Gulf war and the increasing complexity of our effort as the original conference concept developed a range of new dimensions.

So having taken some liberty with time to explain how we came to gather in Tampere, it is important that I explain our concept for this conference.

This is not a formal conference in the sense that many of you are used to - it is a conference about garnering ideas and reactions, and using the experience and expertise gathered in this room to plot a feasible way forward to achieve our agreed aims. We have dispensed with rigid protocol in order to generate maximum interaction.

As you look around this room, one element of our approach will be clear - we consciously chose to invite a varied and broadly-based group of individuals, NGO's and government entities to this conference. Some around this table are here in their private capacity and some in their organizational capacity. But we are all here in pursuit of a common purpose in wishing to establish ways to facilitate the maximum benefit of the use of communications technologies in the disaster context. We all recognize the difficulties inherent in the pursuit of that objective; but if we thought those problems were insuperable, none would bother to be here today.

I hardly need point out to anyone in this room that our meeting occurs at a most pertinent time. When we originally planned this conference first for February, and then for May, only the wildest imagination could have foreseen the devastating events of the last six months. So we are met in Tampere at a time when public attention is rivetted on disasters and the multiple tragedies which surround us. In such an atmosphere of heightened awareness, one hopes that much may be possible, especially in the political realm. As fate and nature have brought us together at such a moment, we have a responsibility of the widest humanitarian kind to take advantage of these critical times and to ensure that the momentum caused by these events is not lost.

Having said that, we do not expect at this conference to make great, unrealistic leaps. We recognize that this is a step in a long process which predates the Annenberg Project on Disaster Communications of 1988 and the 1990 UNDRO conference in Geneva involving the private sector, NGO's and government entities.

We are however committed to taking the process forward - the recognition of that need has brought us all here today.

We have attempted to facilitate that process by providing to you in advance a copy of a draft Tampere Declaration on Disaster Communications - a Draft most ably executed by Philippe Sands, and which is the product of months of intensive consultation with UNDRO, ITU, LRCS, UNHCR, WMO, the Annenberg Program and other interested parties. I must emphasise that it is <u>not</u> a final product - it is <u>not</u> a Convention - it will emerge from Tampere as a Declaration recognising acknowledged needs and identifying appropriate roles and an agreed direction for future action.

This conference is intended to gather the broadest possible range of views in order to reach agreement on the most suitable path to the adoption of a Convention on Disaster Communications. We are cognizant of the difficulties involved - but we are firmly committed to achieving the broadest possible consensus as a base for future action.

We understand clearly that a group such as this cannot develop and adopt a Convention - however, this group is an appropriate one to identify needs and establish goals. After Tampere, our efforts will pass to the hands of representatives of government agencies and international organizations with all the requisite exchange of views. The Declaration is, of course, non-binding - and the eventual draft Convention will pass through the established process with which you are all familiar.

So we do not expect that at Tampere we will leap over the mountain, but we are committed to establishing a firm base for that assault, and in view of the international events which surround us, we have, I believe, a responsibility to waste no time in establishing that base.

Ever since I became involved in planning this conference, people have cautioned me constantly about the difficulties of achieving very much. Though an outsider to your community, I now appreciate those problems well. However, as I look around this room, I am tempted to optimism. To have gathered such an impressive, elusive group from such a wide variety of sources at such a time - and to have secured both the presence in Tampere and continuing support of Mr. Essaafi, Dr. Tarjanne and Mr. Stenback - imbues me with what I hope is not the unreasonable expectation that here, far to the north of our globe, this impressive group will achieve substantial progress in facilitating the maximum exploitation of communications technology where it is needed most.

The Tampere Declaration on Disaster Communications

Philippe Sands
Barrister; Director,
Centre for International Environmental Law,
School of Law, Kings College London;
Visiting Professor, New York University Law School

I was very honoured to be invited by the International Institute of Communications, with the support of the Aamulehti Group Ltd and the Annenberg Washington Program, to prepare a preliminary draft of the Tampere Declaration, and to serve during the meeting as a Rapporteur. Not unexpectedly, this led to a large number of changes to the original working documents, of style and substance.

The final result is a Tampere Declaration which incorporates the views of a large number of people, representing governments, international organizations, non-governmental organizations, and the private sector, from the five continents of our planet. Whilst not legally binding, the Tampere Declaration contains the most detailed and specific proposals for the future development of international law in this area.

The Declaration serves as the framework against which to judge future efforts to remove regulatory, practical and other barriers to the free movement of communications equipment into areas affected by natural, man-made and environmental disasters. It will surely be a constant source of reference as the international community moves towards the development of a binding legal instrument in the next few years.

My interest in this subject is that of a public international lawyer seeking to progressively develop the substantive rules of public international. Whilst the Declaration is not legally binding, it is likely to serve as an important framework for the development of what many hope will ultimately be a legally binding international instrument. Such an instrument should ensure that the greatest possible use of modern telecommunications technologies be made to limit the effects of natural, man-made and environmental disasters.

Indeed, there are no reasons of principle or practise why an international legal instrument adopting the recommendations of the Tampere Declaration could not be negotiated and opened for signature in 1993. Many of its provisions are already found in the 1986 Assistance Convention adopted under the auspices of the International Atomic Energy Agency following the Chernobyl accident. The combined efforts of all participating in its development and adoption will, hopefully, contribute to the early adoption of a Convention.

Opening Speech

M'Hamed Essaafi
Under-Secretary General
United Nations Disaster Relief Co-ordinator - UNDRO

Mr. Chairman, Distinguished Delegates, Ladies and Gentlemen,

Only a few periods in recent history have made the world's community as dramatically aware of the immense threats posed to our planet and its inhabitants by disasters, as the last few months and weeks. We seem to have entered into a state of continuous emergency - worldwide - with all regions seriously affected and caused by every conceivable type of disaster.

On 30 April the world was shocked by the news and horrifying pictures from Bangladesh of the disaster caused by one of the strongest storm surges over the last 20 years resulting from a cyclone of exceptional violence. With these scenes fresh in our minds we continue to face, in the Middle East, the terrible consequences of war and internal conflict which have led to one of the most prominent international emergency operations since the Second World War. At the same time, however, the detrimental situations in Liberia, Somalia and the Sudan should also not be forgotten.

With regard to technological threats, the recent images of the accidents in the Mediterranean Sea and the ensuing pollution have been brought to us almost exactly five years after the tragic events of Tchernobyl. The terrible effects of industrial accidents on populations had already been demonstrated in a most harrowing manner by the scenes after the Bhopal catastrophe of December 1984.

Other natural disasters continue to cause human suffering and to place a heavy burden on national economies, particularly in the developing world. The disastrous cholera epidemic in Latin America; another enormous famine that is developing in the Sahel region; and, just a month ago, the severe earthquake in Costa Rica and Panama all remind us of the vulnerability of societies to natural hazards.

I have already mentioned Bangladesh: having myself just returned from there, I should like to give you an impression of the extent of the damage wrought on that country by referring to some of the preliminary findings that speak of devastating destruction of homes, crops, livestock, and essential infrastructures such as roads, embankments and communication installations.

According to Government estimates, well over two million survivors are in immediate need of drinking water, food, shelter and medical assistance with, altogether, 9.8 million people affected by the cyclone. Emergency assistance needs are quoted in the range of 665 million US dollars and total aid requirements, including rehabilitation and reconstruction are expected to reach an amount of up to 1.4 million dollars.

In reaction to the disaster in Bangladesh international solidarity is, once again, promptly manifesting itself and national and international efforts of disaster response are in the focus of worldwide attention.

However, by providing a striking indication of the severe disruption of societies caused by disasters, particularly in developing countries, these figures also point out the importance of going beyond post-disaster reaction to successful disaster prevention.

Based on the recognition of the devastating impact of disasters on socio-economic systems as a whole, with the beginning of the 1990s the international community has embarked on a major effort to reduce significantly the immense human and economic losses resulting from natural disasters. The International Decade for Natural Disaster Reduction (IDNDR) provides a framework for the effective application of existing scientific knowledge and technological potential to risk reduction in a coherent and co-ordinated approach. It will also stimulate further structural development and research in this field within the context of national development planning. Technological advances relevant to disaster management will continue to improve the effectiveness of disaster relief, early warning and applied disaster mitigation. The Decade will provide renewed impetus to improve the networking of all concerned sectors at both the national and international level.

The goals and objectives of the IDNDR correspond closely to UNDRO's mandate. UNDRO, therefore, participates fully in the Decade and takes a decisive interest in its successful implementation.

UNDRO is the United Nations Office that deals exclusively with disaster management. Since its inception, and as laid down specifically in its founding resolution of 1971, the Office's responsibilities comprise - on an equal footing - both the mobilization and co-ordination of disaster relief and the promotion of disaster mitigation in the fields of preparedness and prevention.

Activities in disaster management in either area are never isolated but form part of an interdependent framework of actions within a disaster cycle. They range from forecasting and early warning, through pre-impact preparedness or protective measures, to the management of response, move into the rehabilitation and reconstruction phase and lead up to integrating long-term preventive planning into national development.

Just as disaster-management activities cannot be seen in isolation, the actors within the disaster-management community are part and parcel of an overall, global network of institutions and individuals, in which a multitude of specific inputs must constantly be shaped into a concise programme of action that enables implementation of generally scarce resources for humanitarian assistance in the most efficient manner.

It is this networking of all potential partners in disaster management, the integrated approach of all sectors concerned - the public sector, the United Nations System and Intergovernmental Organizations, the NGO community, the private sector including industry and banking and, as highlighted by the IDNDR, the scientific and technical community - that is one of the major aims of co-ordination both in disaster response and mitigation.

For the successful execution of its co-ordination mandate UNDRO depends greatly on the effective collection, analysis and dissemination of disaster-related information which has to be shared with as many of its operative partners as possible at all times.

An indispensable tool and pre-condition for the dissemination of all disaster-related information are functioning telecommunication systems. It is obvious, therefore that the issue of communications is, in general, not just one sector of many in disaster management but is at the heart of any disaster situation and the related warning and response activities. It would certainly be no exaggeration to say that telecommunications are one of the essential lifelines of successful disaster management.

It is for this reason that UNDRO has given due credit to the issue by holding, right at the beginning of the International Decade for Natural Disaster Reduction, an International Conference on Disaster Communications in Geneva in March 1990, bringing together equipment manufacturers, service providers and members of the international disaster-management community from the United Nations, Governments and non-governmental organizations.

It gives me great satisfaction that this Conference in Tampere has evolved in the process of pursuing further the necessary developments in this crucial area. Referring to my opening remarks, it is obvious that the timing and the subject of this Conference could not have been more appropriate.

During the coming days we will be able to concentrate our efforts on a number of different issues relating to disaster communications. We will deal with the aspect of telecommunications as a supporting tool for post-disaster assistance with the aim of improving the application of state-of-the-art technology for this purpose and of streamlining the administrative and legal environment.

One of the principal recommendations that emerged from the UNDRO Conference was the need to obtain international agreements facilitating entry, exit and operation of communications equipment by relief teams in disaster-stricken countries. I believe such agreements will be an important contribution to progress in disaster management at all levels, and as such to the IDNDR, and that the declaration to be submitted to the participants in this Conference is a step in the right direction.

I welcome that you, as representatives of governments, business and the community of disaster-management experts, will discuss and put forward a declaration proposing international agreement on the requirements for the use of communications in disaster management. You represent a broad base of support that is required to champion these issues at all levels of the international community and to ensure that the ideas expressed receive the attention they deserve. I can assure you that UNDRO places a high priority on these issues and, for its part, will continue to maintain an open dialogue with all concerned.

In line with the goals and objectives of the Decade we will, however, take the discussions beyond these more technically-oriented post-disaster considerations towards the recognition that national communications systems themselves must be adequately protected against disaster,

since they are, as already expressed earlier, one of the most crucial sectors for the functioning of societies, and, if need be, for effective disaster management. Still, the issue of disaster communications is too often considered primarily in the post-disaster context. A resilient telecommunications infrastructure - planned and selected with an appreciation for the identified risk and for the recurrent natural phenomena that are common to the service area - will lessen the need for special and extremely costly services to be deployed after a disaster in relief, rehabilitation and reconstruction.

Another important area for our consideration will be the topic of monitoring, prediction and early warning in the context of disaster management. Prediction capabilities vary with the type of disaster but considerable advances have improved these capabilities - these advances must be applied concretely and practically. Of absolute importance in predicting the type, time, and location of a disaster event is a communications capability which is mobile, versatile, as inexpensive as possible, and dependable under all conditions. If such systems exist we must use them - if and where they are not yet available we must place high priority on their development.

Finally, I should like to mention a fourth major item for discussion during this Conference to which I look forward with particular interest - the role and participation of the broadcasting media in disaster management.

We all know that with regard to this issue quite distinct and often diverging views are voiced inside and outside the media and the disaster-management community. It must be acknowledged, however, that the role of the broadcasting media has expanded significantly in recent years, reflecting both new advances in technology and an openness on the part of disaster-prone or disaster-stricken countries to share information with the world.

Undoubtedly tribute must be paid to the media for the support they have rendered on numerous occasions for soliciting international solidarity and assistance in times of major disaster, and the events in Bangladesh have been yet another outstanding example of this potential.

On the other hand, however, when dealing with the disaster issue the media unfortunately limits itself mostly to the response phase, and to deficiencies that will always exist as disaster management takes place in exceptional situations in a disrupted environment.

In this respect the International Decade for Natural Disaster Reduction presents us with another major challenge, namely a co-operative and constructive approach by the media and the disaster-management community to raise individual and collective awareness for the immense potential for successful disaster reduction.

I should like to conclude by wishing all participants in this important Conference a fruitful three days of stimulating discussions. May I express my gratitude to our hosts, the Government of Finland, the City of Tampere and the Aamulehti Group, for providing such excellent facilities for our efforts. Let me also warmly thank the organizers of the Conference, the International Institute of Communications, and all those individuals, institutions and organizations that have contributed to this very promising preparatory process.