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Mr. Natarajan has been with Union Carbide Corporation for over 35 years. He joined Union Carbide in 1958 as a geologist. He has been associated with various product divisions including Mining and Metals, Chemicals and Plastics, Consumer Products, Linde Gases as well as Engineering Products and Processes. He worked in Union Carbide Headquarters in New York during 1971-1973. He moved to Hong-Kong in 1978 as Product Director and was subsequently reassigned as Vice-President of Union Carbide Eastern Inc.

Born in India, he graduated with a BSc Honours from Presidency College in Madras and received a Master's Degree from Harvard University, USA. He is a member of the American Business Council, Singapore, as well as a member of the Membership Committee of the American Club. He has been a speaker in many forums on subjects concerning environment, management of multinationals, global marketing and other related issues.

# The Role of the Private Sector in Disaster Management

*Economies and the Asia-Pacific are rapidly growing. So, too, are the risks from hazards — whether natural, technological, political or a combination of these. Industry has discovered that environmentalism is cost-effective, and has acquired experience in risk management that could be shared with governments and NGOs. Building country disaster management teams is outlined as a “win-win” proposal, by focusing on and enhancing what industry, government and NGOs can best contribute to such partnerships.*

I appreciated the opportunity to join the participants in Yokohama to discuss the role of the private sector in disaster management. Being surrounded by all these experts I felt a little like the old farmer who sat next to two engineers in a cafe who were discussing nuclear energy.

The engineers thought they'd have a little fun and one of them said to the farmer, "Where would you like to be in the event of a nuclear explosion?" The old farmer replied, "Some place where I could be around to say, What was that?"

Change is endemic to the world we know.

Nowhere is this more apparent than in the burgeoning economies of Asia and the Pacific.

We have all become accustomed to rapid change in the world's social, political and economic scene over the past few years. Each day brings some new event, announcement or discovery.

New investments help create wealth and bring job opportunities to our countries, so many of which have pressing population demands and rising community expectations.

In the two hundred years since Adam Smith wrote his *Wealth of Nations*, his model of economic behaviour has become predominant in the world we know. The "hidden hand of self-interest," with open pricing signals directs our everyday lives and most economies. It has served well in bringing our standard of living to the present.

Maybe we can learn from these experiences, but our performance must improve.

## ■ The Asia-Pacific challenge

This is a very challenging time in world history. The easing of tensions between East and West has given way to a promising new age of co-operation and economic potential, particularly for industrial development in the Asia-Pacific rim.

In a region that averaged nearly 13% annualized growth in manufacturing output throughout the 1980s, it's hard to imagine better economic times than the ones we've had. But already the 1990s are shaping up as an even greater period for growth and advancement.

The International Chamber of Commerce, for example, is conservatively projecting manufacturing growth of the magnitude of 18% a year in the Asia-Pacific region throughout the first half of the decade.

With it will surely come another infusion of investment and technology — technology that can generate tremendous socio-economic improvements — or the potential to do harm.

Unfortunately, this region of the world knows both sides of the technological coin.

On the one hand, the East Asian economic miracle has brought tremendous social benefits to countries like Japan, South Korea and Thailand.

But at the same time, the trappings of technology have given us some of the worst environmental, health and safety problems in the world

Many of our industrialized cities are choked with pollution. Groundwater supplies in a growing number of Asian/Pacific countries are threatened by pollutants seeping in from surface water.

And from 1987 to 1990, the number of deaths and injuries stemming from industrial accidents and disasters in this region jumped more than 35% over the previous three-year period.

We need to be sure that the lessons of Bhopal, Chernobyl and Love Canal are learned and never repeated.

Michael Bennett is correct in his observation that in terms of environmental awareness and regulation, the Asia-Pacific region varies enormously.

Japan represents the most advanced stage of environmental development, followed by Singapore.

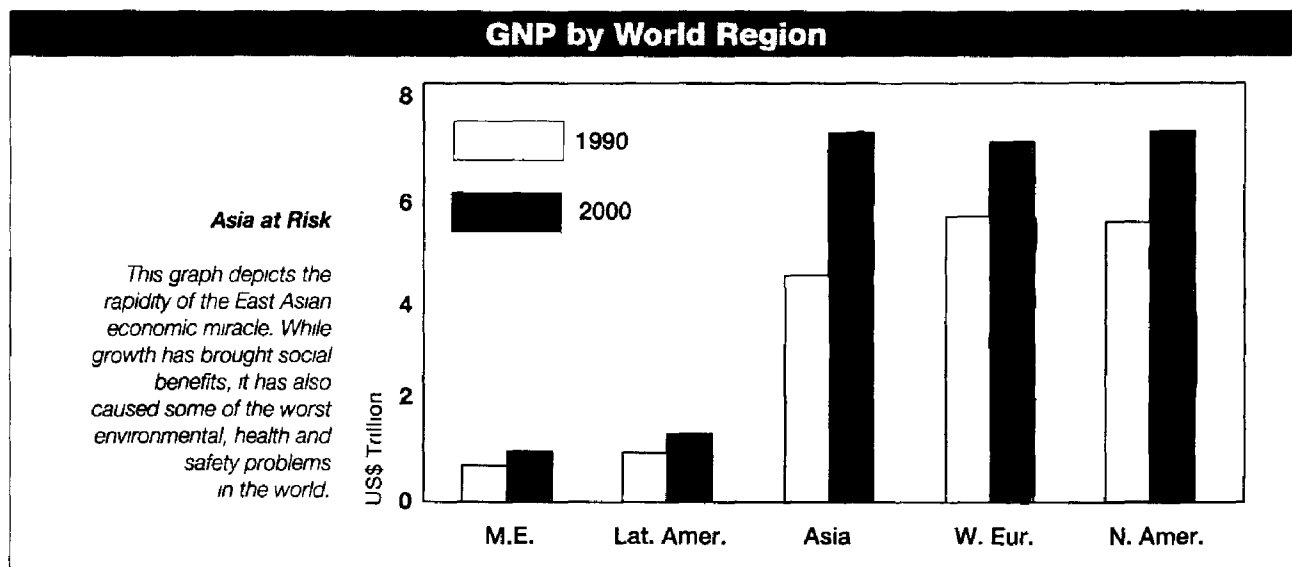
As published in *Petrochemicals*, Bennett went on to state that:

*Taiwan, Hong Kong and South Korea share many of the problems caused by intense and rapid economic expansion and weak environmental programmes: water and air pollution, soil and groundwater contamination and problems with waste disposal. All three countries are, however, moving vigorously to implement measures to clean-up the environment, Taiwan being the most advanced.*

*Thailand, Indonesia and Malaysia have significant industrial capabilities and associated environmental problems, but lack the financial resources to deal with them and face conflicting demands between economic development and environmental protection.*

*Environmental awareness is growing and there are even Green movements emerging, but basic pollution legislation still falls short of 'best practice'.*

A generation of industrial catastrophes should make us aware that the improbable is possible — and we have learned in industry that disaster is something you not only have to contemplate, but something you must constantly work and plan to prevent.



And despite the advances in risk management techniques, we're just beginning to address the issue in many parts of the world. Here in our own region, the vast majority of Asian/Pacific countries are, in fact, light years behind the West in assessing and coping with the risks of technology.

In the rush to capitalize on our economic good fortune, it is troubling to note that many countries have taken the position that the benefits of technology are so great that we can ignore the risks.

We in Asia tend to look the other way when it comes of issues like public and employee safety, episodic risk management, chemical spills, and industrial accidents.

And apart from plants managed against standards imported mainly from the West, we tend to do a poor job of maintaining our plants and training our employees.

Through it all, we've held steadfast to our belief that foreign investment will continue to pump new technology into our economies simply because our labour costs are among the lowest in the world. This belief is misguided.

No company today can knowingly risk the possible consequences of relying on anything less than the best technology and the best available risk management techniques.

And they are increasingly reluctant to invest in any region without an infrastructure to support risk management.

### ■ Risk management is the key to success

We need to move quickly to correct this deficiency. We also need systems that assign proper roles to industry and government in managing risk. Government must recognize that risk management is the key to continuing economic development. Industry should accept that health and safety management programmes are a prerequisite for doing business, and that better risk management makes industry more efficient and productive at the same time.

The great engineering works of the future will not be bigger dams and bridges, but more likely to be improved sewage works and safe waste disposal.

Most successful risk management systems address a number of common elements. Among these are education; employee training; communication; emergency planning and crisis management; land use planning; uniform standards and supportive government policies; role clarity between the public and private sector; provision for adequate public facilities; and guidelines to manage litigation processes. *(See also box, right.)*

### ■ Taking natural disasters into account

Prevention and mitigation of natural disasters need to be linked to these trends. Based on the elements addressed in

linking industrial growth and environmental protection, more could be done to ensure that natural disasters are taken into account in the development process

Unfortunately, many governments in Asia-Pacific region, which have historically maintained heavy control over business development, are looking at the environmental codes of the west and emulating their worst aspects. The crisis approach leading to "end of pipe" controls and

over-regulation is frequent. Government inspectors often lack the training and awareness to be a real party to the greening process underway in companies. Lack of political commitment to change the status quo leads to insufficient public awareness and education. Furthermore, different countries and governments create different sets of regulations

Global industries have increased their obligations, efforts and successes in protecting the environment. Non-governmental organizations have been catalytic in getting all concerned to do the right thing. However, many governments have yet to articulate clear, cost-effective long-term, sustainable and integrated policies for disasters and development. Standards are lacking. Governments, like industry, need to rethink their approach to environmental protection. Old relationships have to be cast aside. Roles need to be redefined. Fear and anxiety need to be replaced by scientific facts and rationale. A new environmental agenda needs to be developed that stresses understanding and cooperation over confrontation.

**Government must recognize that risk management is the key to continuing economic development.**

**Industry should accept that risk management is a prerequisite for doing business.**

## ■ A call for leadership

Political leadership needs to promote a strong partnership between sectors. The time to do this is now, with a great deal of skills building up in the private sector for preventing and mitigating technological hazards. Natural disasters can be easily tied to technological hazards in the process of prevention and mitigation, education and training, damage

control and public awareness. Many of the elements of risk management are identical in natural and technological disasters.

Let me elaborate. All governments and political leadership are clearly aware of natural disasters and have managed such disasters to varying degrees, in various occasions. They are acutely aware of the political consequences of failures in dealing with natural disasters.

### Risk Management: Applications for Partnerships

● **Education.** Without educated employees — people who understand the technology they're using and how to deal with the hazards of technology — risk management will always be an uphill climb. The best systems take a long-term approach to risk management training. Educational efforts start at elementary school level and continue at every stage of the learning process.

● **Employee Training.** More than 80% of all employees in our region do not have high school equivalency degrees, yet everyday we expect them to understand and cope with risks that they do not fully understand. Comprehensive employee education programmes focusing on quality control, risk management and pollution prevention are the best ways to insure against disaster.

● **Communication.** The most successful risk management systems are well conceived and well communicated. Both government and industry have to act as conduits — providing information to people about technological risks that can lead to better handling of products, and more effective plans for dealing with emergencies.

● **Emergency Planning.** Responding to emergencies is the most critical phase of risk management, requiring the highest levels of co-ordination and simulated training between private and public responders. In Japan, for example, industry and government drill together constantly. Both do a tremendous job of simultaneously reacting and containing problems when they occur.

● **Land use planning.** Development of industrialized zones, away from heavily populated areas, protects high-density areas from harm. Governments have to designate access areas where commercial interests can develop. And they must prevent people from living on top of facilities where potentially hazardous materials may pose a risk to health and safety.

● **Uniform Standards.** Consistent safety and environmental standards that apply to all industries are critical for benchmarking and measuring progress.

● **Sabotage control** to be reflected in design, layout and operations.

● **Role clarity** of partners in mixed sector (Public/Private) enterprises; and elimination of conflict of interest.

● **Government policies** on technology transfer and industrialization.

● **Public facilities** for immediate relief and rehabilitation - based on risk scenarios, there is a need to develop and establish appropriate facilities for relief.

● **Litigation processes**, how to handle ambulance chasers, which disrupt maximization of immediate relief.

● **Crisis management** as a science, involving government, community and industry.

## ■ Disaster management teams

Such disasters are measured in human suffering and property losses and therefore are viewed, incorrectly, as not business-type disasters which are assessed often in economic terms.

Natural disasters, however, can and do cause tremendous problems for businesses (destruction of plants, loss of manpower, lower productivity, disruption of utility supplies, etc.).

Equally truly, technological disasters (while they do occur on their own) can be caused by natural disasters.

Herein lies the opportunity to bring in the public, private and voluntary organizations together into a common force for the cause of prevention and mitigation of disasters.

Herein again lies the opportunity to motivate government and political leadership to form partnerships with industry and NGOs because the government clearly understands its active role related to natural disasters; the private sector with its wealth of knowledge and preparedness related to disaster prevention and management recognizes the adverse business consequences of natural disasters; and the voluntary organizations can expand their role beyond being a catalyst for environmental advocacy to being a part of the country's disaster management team

Such a group with broad-based participation helps in:

**1-** Enhancing the role of political leadership from that of a source of vague policies on environment, to that of a leader of a team of professionals integrating disaster management with sustainable development;

**2-** Enhancing the private sector's role from beyond looking after just what they do (and do it well) to that of an organization deeply committed to the community in protecting their interest regardless of the nature of the disaster, through planning approaches, logistic support and other resources;

**3-** Enhancing the effectivity of the voluntary organizations in building political and public awareness, and actively participate in disaster prevention and mitigation.

I believe that the industry has the capability and desire to contribute to prevention, mitigation and high performance response to disasters. Industry would like to be a partner in public policy covering disaster management. The government will benefit from tapping into such a partnership along with voluntary organizations. The public and the environment will gain immensely from such a development ■

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that disaster is something you not  
only have to contemplate,  
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## ***Recommendations/Private Sector***

### **Disaster Management Teams — A “Win-Win” Proposal**

National disaster management teams are a “win-win” opportunity for the public, private and voluntary sectors to work together to protect the achievements of economic and social growth. The teams should focus on prevention and mitigation, not just relief.

Such broad-based teams will enhance the role of each sector:

- Governments can lead a team of professionals to integrate disaster management with sustainable development.
- Industry can bring its experience in risk management to the partnership. It can be pro-active in protecting its interests through support with planning, logistics and other resources.
- Voluntary organizations can expand their role beyond being a catalyst for environmental advocacy. As active participants in team working for disaster prevention and mitigation, they will have greater effectiveness in mobilizing political and public awareness.

## Q&A Highlights

*What follows is an edited version of questions posed to the panellists and their response. The audience represented official national delegations, UN and related agencies, NGOs, regional organizations, and scientific institutions.*

*The questions and answers underline the need for concerted approaches to emergency management and development. Participants addressed emergency management in general, rather than addressing natural disasters, technological disasters or complex emergencies separately:*

*The questions are important not only for the answers they elicit, but, perhaps more importantly, as an indication to donors, UN officials and other policymakers of the concerns of national government officials, NGO workers and others “in the field.”*

### Private Sector Role

**Harry Jayasingha**

Asian Disaster Preparedness Centre, Thailand

*Q. How do you get the private sector to go beyond looking just at in-plant and off-site accidents, to looking at the total impact of natural disasters on the community? How does one get the private sector to participate in pre-disaster planning?*

*Business and industry feel that they have paid taxes to the government and therefore, the impact of natural disasters on the community is the responsibility of the government. And they wash their hands of any other involvement. I have tried to reach corporate sector people all over the region. In my experience, people believe the role of the private sector is to provide biscuits and blankets — post-disaster handouts.*

**Mr. Natarajan**

*A. Governments and NGOs generally approach the private sector strictly from the point of view of donations. It is almost a “deep pocket” theory: there is a crisis, you have the money, give me some money. There is a change I appeal for you to make: to move away from looking at business as a mere source of funds for charity for a disaster. There is a lot of educational training and other things we can do. We should look at the private sector as capable of participating in and enhancing the entire capability of the community in dealing with disasters and hazards.*

### NGO-Government Relations

**Janak Juneja**

Ministry of Agriculture, India

*Q. Ms Miranda made a comment on NGOs not wanting to be “contaminated” by government. I think this comment is relevant at a micro level only. When we have disasters of the magnitude like we had in Maharashtra, governments have to intervene to direct operations which were on a gigantic scale. Now, in situations like that, I would like to have your comment as to what you think can “contaminate.”*

**Ms. Miranda**

A. The "contamination" that the NGOs may have from government is sometimes called "co-optation." It takes a very strong NGO to be able to work with governments and United Nations bodies: strong in terms of resources, political influence, sophistication and management skills. The majority of NGOs in the Philippines — and they number into the 60 000s — they do not have that capability. They would easily succumb to the power that government wields in something as complicated as disaster relief.

But I think the government has to be aware of where it can hurt and where it can foster and strengthen NGOs.



Photo: UN Department of Public Information

*Dr. Kakar preparing questions to the panellists.*

**Clarifying Roles between NGOs and Government**

**Faizullah Kakar**

Deputy Minister of Health, Afghanistan

*Q. Is it not the role of government to facilitate and integrate? Yet Ms Miranda said in her presentation that to facilitate and integrate activities is a job for NGOs. I would like her to explain that for me*

**Ms. Miranda**

A. When I mentioned that one of the roles of the NGO is to be an integrator and a facilitator, I was referring to a role NGOs can play to bring together often diverse agendas of different players in a partnership. While they don't necessarily oppose each other, one reason why the government and business cannot approach each other is because they express their agendas in different languages. What we need is a neutral worker who can help forge a common vision. That is what I meant by an integrator and a facilitator.

Furthermore, we must admit that if we were to bring the corporate sector into our partnership, we are talking about a sector that is used to quick action. That is not characteristic of governments, because of their need for accountability to the public.

**NGO Workers Killed in Disasters**

**Roberto Forlani**

International Task Force for Civil Protection, Italy

*Q. NGOs and volunteers are a great strength in disaster relief. The NGO role is increasingly recognized by the UN and the international community.*

*The important question is, many volunteer workers die. We had 10 die in Bosnia, another 10 in forest firefighting. From the point of view of insurance, how can NGO relief workers providing international relief be recognized by the UN or by an international system of insurance?*

**Ms. Taft**

A. This is a very important issue. Not only because of the risks they put themselves through, but because of the liabilities of NGO boards of directors, bilateral donors which give grants to NGOs; and UN relief agencies that use NGOs as implementing partners. Whether in Bosnia, Somalia or elsewhere, the core problem is that they tragically become targets of conflict. It has been appalling to see the disregard for the sanctity of the Red Cross emblem, or even the neutrality of the UN, for relief workers on the front lines. This is a moral question that has to be communicated around the world. They work as neutral assistance personnel. NGO representatives should not be targets of conflicts.

In the US, we recently had a case with a member agency of Interaction with an NGO worker whose foot was blown off by a land-mine in Somalia. As a result of problems with lack of insurance coverage, we found out that most American NGOS don't have appropriate insurance coverage. Normally in the US, work-related injuries are covered by workmen's compensation. But that is only valid within the US.

We have tried to find insurance on the open market, and let me say it is very expensive. The UN insures its people, and it is very expensive. We have approached the UN to see what responsibility it might extend in providing insurance to its implementing partners, who seldom can afford the cost.

### **Building Commitment for Disaster Prevention**

#### **Ferruccio Ferrigni**

European University Centre for Cultural Heritage, Italy

*Q. How can we encourage all the agencies involved in maintenance of buildings to undertake appropriate and preventative maintenance instead of waiting for earthquakes?*

*Researchers in Italy discovered that among decision-makers, interest in reconstruction laws is eight times higher than interest in prevention laws. So people are waiting for earthquakes instead of preventing them.*

#### **Mr. Presenti**

A. In Italy, we have a new government and we have two departments in the Presidency of the Council of Ministers: the Department of Civil Protection and the Department of Technical Services. I hope the place these departments have in the new Italian government can ensure major attention to prevention. As I said earlier in my speech, I am putting much hope in the help of major Italian environmental NGOs, which have indicated their interest to me in raising awareness about the need for prevention.

#### **Didace Ndayen**

Chairman of National Firefighting Committee  
Central African Republic

*Q. Our institutions are not well structured for us to respond to the programmes of the "Decade." While goodwill exists, we lack the necessary ink, stamps and stationery materials to even write to institutions such as the IDNDR secretariat or WHO's Pan-African Centre for Emergency Preparedness and Response.*

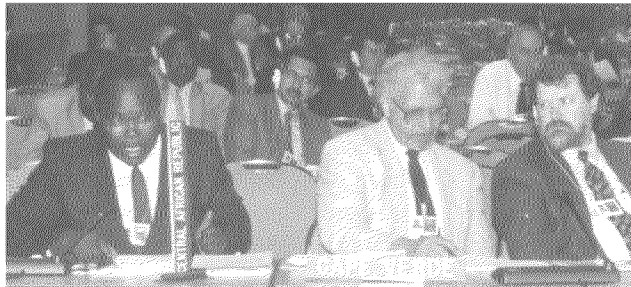
*There is no comprehensive programme to put things together. For example UNDP recently organized and financed a "Day of the Tree" in our country. A few years later, left to nature, the forests burn — including the trees planted in that ceremony.*

*Meanwhile, when industries set themselves up in our country, there is no vehicle for them to put prevention mechanisms in place. For example, a palm oil refinery was established without any plan to transform pollutants that may be released in the event of brushfires.*

*If UNDP put people in their country office who could meet directly with officials like me who deal with disaster preparedness and response, it would be a good thing. Dr. Tevoedjre has expressed the first good words I have heard on this subject. What can IDNDR do to help?*

#### **Dr. Tevoedjre**

A. IDNDR has encouraged the process underway at this conference for Africans to shape a special document dealing with Africa's participation in IDNDR. Regarding specific issues related to national management of natural disasters, there are representatives from WHO, OAU and UNECA who are available to answer such questions.



*Can IDNDR act as a framework to connect officials dealing with disasters and development?*

## Role of Media in Disaster Preparedness

### Laiataua Kilafoti

Chairman, Western Samoa National Disaster Council,  
Samoa

*Q. The media plays an important role in disaster prevention and mitigation. Hostile media can also play a damaging role, especially if the media is hostile to the government of the day. They may even provide misinformation regarding disaster preparedness and mitigation. Does IDNDR have any programme to assist in educating media in this aspect?*

### Ms. Taft

A. IDNDR has organized a media round table with the Annenberg School, which takes place following this session.

Media takes a bad rap on communicating disasters. They are trying to respond to interests of their "listenership" and readership. What we need to do is figure out messages of hope rather than despair that must be communicated to audiences around the world.

I think that while the media may need education (on the issue of disaster preparedness), we can use them and their access to communicate concerns about incipient disaster areas in the world. That's one area in which I hope media can be helpful partners.

Basically, the media responds to what they think people want to hear. If we can use media to make messages relevant to communities and governments about disaster

prevention and the "good" stories, I think we'll get broader support for initiatives coming out of conferences like this one, to try to focus resources on disaster management and preparedness.

## Reference Centres in Africa

### Mohammed El Sabh

University of Quebec, Canada

*Q. Dr. Tevoedjre has rightly shown us that there is no single country in Africa which is far away from natural, political or man-made disasters. He also stressed the urgent need for an African centre for disaster management that deals with training and information. What is the status of WHO's Pan-African Centre for Emergency Preparedness and Response, located in Addis Ababa?*

### Dr. Tevoedjre

A. Thank you for noting the importance of disasters for each African country today. When I spoke of the Disaster Management Training Programme, I could have said the Development Management Training Programme.

Today there is an active preparatory process underway in Africa, with implications that are larger than the governments, NGOs and businesses themselves which are involved in disaster management.

There are several initiatives underway in Africa. WHO's Pan-African Centre is a modest centre which is still very new, and deserves to be strongly reinforced. An OAU representative is at this conference who is trying to tie emergency actions in Africa with the conflict prevention programme of the OAU.

We also have the African Humanitarian Development Initiative, which I lead. We have sent teams to Rwanda, and plan to send more to Tanzania, Burundi and Zaire.

The fact that the Secretary-General of the UN was willing to put an African on the IDNDR Scientific and Technical Committee (related to this conference) also shows the interest we Africans are taking in shaping our own management role. I also expect these issues to be on the

agenda at the next meeting of OAU heads of state (Tunis, June 1994).

**Dr. Bassani**

A. A few months ago, we conducted an evaluation of the Pan-African Centre in Addis Ababa. As Africa is the continent most affected by disasters — as Prof. Tevoedjre said — we would like to place specific attention on the centre. The evaluation showed that we need stronger training programmes, which fit into prevention and preparedness.

This is in accordance with World Health Assembly Resolution 46.6, in which there is a precise indication to the Director-General of WHO to emphasize training. We would like to use the Pan-African Centre for this, because we believe training has to be done at the field level.

## **Disasters, Environment and Development**

**Faizullah Kakar**

Deputy Minister of Health, Afghanistan

*Q. In the name of development, man often interacts with the environment and causes ecological imbalances. We all know that to construct some towns, we remove trees and forests, causing deforestation. That causes soil erosion, drought and flooding. Yet when we think of droughts and floods, we think of natural disasters.*

I believe development should be ecologically sound and I would like Dr. Tevoedjre to comment on what he meant when he said, I think, "without development there is only disaster."

**Dr. Tevoedjre**

A. Development is not a concept reserved for just some societies. Industrial countries have development problems

too. Consequently, when I speak of development, I mean **all** that allows harmonious progress while taking ecological and social factors into account.

Even if an event is not officially defined as an ecological disaster, just because it occurs in an industrialized country as part of the development process, does not mean it is not a disaster. But I wouldn't want to say that disasters are equal to non-development. I hope I was clear on that.

## **Technological Disaster Prevention**

**Muhammad Dayf al-Ajlan al-Qurashi**

Department of Meteorology and Environmental Protection,  
Saudi Arabia

*Q. Natural disasters are a growing threat in our country. For several years, we have been reinforcing our preparedness and prevention programmes through training and public information.*

*As Mr. Natarajan noted, natural and technological disasters can overlap. We are concerned about prevention and preparedness for nuclear accidents. Many developing countries are not aware of the risks, or of the effect of nuclear fallout. What can be done?*

**Dr. Mahfouz**

A. Nuclear disasters are man-made, and sometimes do not respect boundaries. The International Atomic Energy Agency has mobilized scientific and technical assistance to countries on this issue. However, regional centres to disseminate scientific and technical information would be helpful as a backup to countries that wish to set systems of warning and assessment for radioactive pollution ■