

C o n t e n t s

Introduction

Programme

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I n t r o d u c t i o n

The International Recovery Forum is an annual event organized by the International Recovery Platform (IRP) to help ensure that disaster risk reduction approaches are systematically incorporated into the design of emergency preparedness, response, and recovery programs in accordance with the strategic goal of the Hyogo Framework for Action. The Forum provides an opportunity for policymakers and practitioners to get together and exchange experiences from recent recovery operations to address gaps in recovery practices and resources. Based on the challenges emerging from recent disasters, the theme for the Forum in 2009 is “Building Back Better and Greener”. The central issue is how to improve recovery processes, where environment is both a driver of disaster (e.g. environmental degradation weakens resilience) and a casualty of disaster (e.g. impacts of relief and recovery operations to environment). Recovery processes must assure the sustainability of future generations’ lives while reducing the risks to people today. The International Recovery Forum 2009 has engaged with Governments that are recently affected by disasters and key regional and international actors involved in recovery operations to draw lessons and good practices and to translate these into sound guidance. The Forum has contributed towards more coordinated actions on a number of key efforts by Government to implement the Hyogo Framework for Action, particularly the implementation of integrated environmental and natural resource management approaches that incorporate disaster risk reduction.

D a t e : 26 (Mon.), 27 (Tue.) January 2009

V e n u e : Kobe Portopia Hotel “Ohwada”

Organizers : International Recovery Platform (IRP) Secretariat, Cabinet Office of Japan, Hyogo Prefecture, Asian Disaster Reduction Center (ADRC), United Nations International Strategy for Disaster Reduction Secretariat (UNISDR), United Nations Development Programme (UNDP), International Labor Organization (ILO), The World Bank, United Nations Environment Programme (UNEP)

Under the Auspices of : Ministry of Foreign Affairs of Japan, Disaster Reduction Alliance (DRA), NHK

Participants : More than 250 participants from 28 countries and 10 international organizations

Working Language : English

P r o g r a m m e

DAY2 ; 27 (Tue.) January

- 10:00-10:10 Opening Remarks: Mr. Alfredo Lazarte Hoyle, Director, ILO/CRISIS
(Chairman of IRP Steering Committee)
- 10:10-11:00 Country Presentations by high level representatives:
“Recent recovery experience with regards to the integration of environment and climate change concerns”
-Col. Mamy Razakanaivo, Directeur Executif, Cellule de Prevention et Gestion des Urgences Primature, Republic of Madagascar
-Mr. Anucha Mokkhavesa, Director General, Department of Disaster Prevention and Mitigation, Kingdom of Thailand
- 11:00-12:00 Presentations from UN Experts: “Environment and Disaster Recovery”
-Mr. Muralee Thummarukudy, Programme Officer (Special Duties), UNEP
“Overview of innovative techniques in environmentally-aware recovery for infrastructure”
-Mr. David Salter, Technical Manager, SEACAP (South and East Asia Community Access Programme)
- 14:00-17:00 Panel Discussion: “Building Back Better and Greener”
Facilitator: Ms. Helena Molin Valdes, Deputy Director, UNISDR
Panelists: Mr. Ola Almgren, Senior Recovery Advisor, BCPR, UNDP
Ms. Constance Thomas, Director of ILO Office in China, and on behalf of the UN Resident Coordinator in China
Mr. David Salter, Technical Manager, SEACAP
Mr. Muralee Thummarukudy, Programme Officer, UNEP
Commentators: Mr. Naoto Tajiri (Director for Disaster Preparedness and International Cooperation, Cabinet Office, Government of Japan)
Country Presenter: Mr. Tshewang Rinzin, Governor of District Administration, Ministry of Home & Cultural Affairs, Kingdom of Bhutan
Mr. Iswar Raj Regmi, Under-Secretary of Disaster Management Sectory, Ministry of Home Affairs, Federal Democratic Republic of Nepal
- 17:00 Closing Remarks: Mr. Koji Suzuki, Executive Director, ADRC

O p e n i n g R e m a r k s



Mr. Alfredo Lazarte Hoyle

Director of ILO/CRISIS
Chairman of IRP Steering
Committee

Opening Remarks

Mr. Alfredo Lazarte Hoyle

It's a great honor for me, in my position as chairman of the IRP steering committee, to open this second day session of the International Recovery Forum, focused this year on building back better and greener, engaging partners for environmentally sound recovery. The International Recovery Forum reaches the third edition and has already become an important landmark for the international community on the road to recovery practices. It is one of the most important means used by the International Recovery Platform, to disseminate lessons learned, through the experience of those actors directing morbid and critical decision-making on the latest and most relevant experience of recovery. The International Recovery Forum is achieved thanks to the generous support of the prefecture of Hyogo and the government of Japan, and the dedicated effort of the IRP secretariat, supported by the ISDR office in Kobe. An important complementary, financial, and technical effort coming from different stakeholders, institutions, associated to IRP, contribute to this important common endeavor. All these efforts can not succeed without the outstanding interest and patient contributions of those who bring their national experience with the candid and solidarity aim to share dilemmas, constraints, challenges, frustrations, mistakes, and successes. At moment of natural disaster, we are working to alleviate sufferings of the affected population, building better conditions of life, and securing dignity for those who suffer.

I want to express my gratitude both personal and institutional comment on consolidating the IRP process to all who are ready to come, happy to share and to listen, all the fellow countries, with the common goal to contribute to a common better resilience to natural disaster, incorporating risk reduction issues, on post-disaster recovery. Our challenges go beyond the realization of this. It supports, as well, the effective operation of a dynamic community of practices, which could communicate and exchange knowledge on real time, supported by modern tools, such as the web page launched yesterday, which pretends to become both a knowledge platform and a permanent vehicle forum. To make sustainable this effort, IRP needs to confront additional challenges. We will need to progressively expand our constituency, to attract new partners, principally those who become the repository of the practical knowledge on recovery, require us to navigate through linguistic barriers, and to be able to be listened, and to listen as well by different communities. We need to become alive in different regions, between both other specialized bodies, both regional and sub regional, to raise their voices and methods to the regional platforms of the ISDR system, to attract new kind of partners, like universities, or the private sectors, to explore creative solutions, to reach the local institutions on those areas of high risk, to create and propose a strong alliance to develop and to disseminate knowledge, and to be able to facilitate the knowledge when new disasters occur, and ideally, to anticipate it and to contribute to prepare better, quicker, and efficient recovery operations.

Associate post-disaster recovery on reverting environmental degradation, and addressing the challenge of climate change and adaptation measures, is an important step that we must initiate from this forum. This was necessary, and should continue contributing to close efforts of the international community, to bridge those agendas, and to articulate the relevant communities. In summary, all that means for IRP, to be alive every day of the year, to illustrate and provide accessible and opportune knowledge on more effective recovery.

Since the adoption of the Hyogo Framework for Action on this same room four years ago, and after the enthusiastic launching of the IRP following the international seminar on post-disaster recovery, hosted in Kobe in May of the same year, important achievements have been reflected on the evolution of the international disaster reduction and recovery architecture,

principally on the combination improvement on recovery operations to the cluster working group on early recovery; the creation of an important financial and technical support for enhanced recovery operations, since the launching of the global facility for disaster reduction and recovery by the World Bank. Significant advancement on creating a common framework for post-disaster assessment, and on developing common tools, not only among UN agencies through the PDNA and the World Bank, but as well, with important participation of donors such as the EU, are moving quickly to become a common and growing standard. This experience as well is looking for new areas of common development, such as the pre-disaster planning for recovery, and as well, to develop common training packages, such as the one on disaster risk reduction, within the framework of sustainable local development. Important initiative from bridging those communities and agendas on DRR, climate change, and reverting environmental degradation, have already started on important international policy forums, in Carleton 2007, Oslo and Copenhagen 2008, and we find a golden opportunity for advancement on the forthcoming Copenhagen forum on climate change and adaptation late this year. But no less important, the development by UNDP in cooperation with UNISDR, of common guidance to further mainstream disaster risk reduction into UN programming processes at country level, and systematically and coherently increase the UN system country level of operation to member states to implement DRR strategies. All these initiatives constitute outstanding achievement. IRP, foundational concerns were addressed, and in many of these cases, have even influenced the processes established. These provide to us a measure of satisfaction, and as well, alleviate the burden of our original enthusiasm, but too extensive, original agenda, and provide us with the opportunities to focus more on prevailing doubts, on such does on the area of knowledge management. Finally, I have used my privilege to be on the podium to gratify the deep institutional commitment of my institution, International Labour Organization, on pursuing the achievement proposed by the Hyogo Framework of Action, through our active participation and principally engaged on the success of IRP. Thank you again for your patience, and I invite you to continue enjoying the privilege to listen to our outstanding speakers and panelists. Arigato gozaimasu. Thank you very much.

C o u n t r y P r e s e n t a t i o n s
by high level representatives

“Recent recovery experience with regards to the integration
of environment and climate change concerns”



Mr. Mamy Razakanaivo

Executive Secretary,
Prevention and
Emergency
Management Unit,
Republic of Madagascar

Country Presentation

Madagascar Fanele and Ivan Cyclone

Mr. Mamy Razakanaivo

Madagascar is the largest island situated at the south-east part of Indian Ocean in Mozambique Channel. Madagascar is a developing country, and it is the thirteenth country most exposed to tropical cyclones in the world. The annual revenue per capital is 330 dollars in 2007. About 25 percent of the population lives in the area at risk, because 20 percent of the territory is coastal region at risk of the cyclone. Only 5 percent of the population have completed the secondary school because of the poverty and the lack of infrastructures which are the destroyed by cyclones. The total damage here, caused by the cyclone in 2008, is about 4 percent of the GDP. Madagascar is hit by 3-4 cyclones each year and we have the droughts and the locust invasion every 5 years.

Among the African countries, Madagascar is the most exposed to cyclones. More than 60 percent of the cyclones formed in the Indian Ocean hit Madagascar from more cyclones coming from east and some hit Madagascar from the Mozambique Channel. Regarding the topic of the environment and deforestation, Madagascar was called as "Green Island" before. 80 percent of the land was covered by different types of the forest and vegetation. You can see in the slide, what Madagascar in 1950 and in 2008. The vegetation and forest are different. The big source of this degradation is the massive deforestation because many Malagasy families still use wood and charcoal from the wood for the household needs protection and 60% of the population used it for cooking. The second is the slash and burn agriculture. This is also still practiced in Madagascar. Moreover, bush fires are the biggest cause of the environmental damage and the reduction of the forest area. The population practices it for the sake of land clearance, pastoral land, and they speak into adjacent bush land. The consequence of this practice is the catastrophic erosion in the wetter states. The catastrophic erosion is amplified by severe rainfall during the rainy season. We have about 112 tons per hectare that's 250 metric tons per hectare in some regions. But now, we believe it is the "red island."

The impact of the severe rainfall from the tropical rain combined with the environmental degradation produced the following impacts. First, accelerated erosion, increase of the river sedimentation, increased mudslides, change of the river direction, broken infrastructure, damage to Madagascar unique ecosystem and biodiversity.

Regarding climate change analysis, according to the report of the methodological analysis between 1950 and 2000 it showed the increased average temperature, maximal, about 1.2 degrees. But the present report showed the increasing between 1.1 to 2.6 degrees. It means that there is a possibility of the increasing of average temperature in the future.

With regard to rainfall, we have noticed that the length of the season and the ten days delay of the rainfall before the rainy season. Here, the global circulation model validates, for Madagascar, predicts the increase of the intensity of the strongest cyclones. That's why the category 4 and 5 are doubled in frequency especially in the north part of the island of Madagascar. In fact, of the cyclones as also increase the economic development, population concentration, and environmental degradation.

Last week, Madagascar was hit by two cyclones that entered through the island, so we have in the Mozambique Channel one cyclone, and in the Indian Ocean also one cyclone. Here is the first evaluation, assessment of the impact of these two cyclones, 9 people died, and 33.000-34000 homeless, 1646 dwellings destroyed, and 2235 hectares flooded.

Generally, 14 cyclones formed in the Indian Ocean, and 3 cyclones hit Madagascar in 2008. One is in the red color, in the northwest. The blue color

from the Indian Ocean and the yellow color are from Mozambique Channel. We have three major cyclones, very strong. 106 died, about a million displaced persons, and about 119,000 homeless. The damage and loss estimate is 333 million dollars.

Here is the detailed data of the damage and the loss in each sector. 6% of the health center and 4% of the schools in Madagascar were destroyed. You can see the different categories such as social sector, productive sector, and infrastructure sector that we made the assessment. After this cyclone, in order to reduce the impact, the government of Madagascar, assisted by technical partners, has made the following effort: major simulation exercise for flood, cyclone, fire, food stock, and supplies. So in Madagascar we have the problem with the transport, that's why we put the food in the carrier every year. Adopting of the contingency plan which adopted is the national contingency plan, for cyclone, in the national and the regional level also. We developed also the disaster risk management school manual, so we try to improve the activity in the school, how to against the cyclone, what is the preparedness, what is the response, and so on. Rapid response training was held in the region, in collaboration with the national bureau for disaster risk management, in the different levels, namely national, regional, district and communal levels in the country. Rapid and widespread different decision of early warning, it's also, we need to reinforce the material of the communication. The last one is establishing the contingency fund. We just established the national contingency fund to cover the cost of humanitarian aids and the second one is for the recovery of the infrastructure.

In the end of the season cyclone 2008, with the financial support by global facility for disaster risk and recovery, and with United Nations system, the joint team from the government, United Nations, World Bank, and different partners, realized the joint damage and the loss and needs assessment in Madagascar. It is the first time that the damage and loss method is applied to an African country. One report with some recommendations is the fruitful result of this assessment. The report could be accessed through the website of the World Bank. Other great benefits from this program are the increasing of the assessment methods allowed for more current estimation of the damage and loss impact, and the needs. Formulated strategy, action plan, and project involving early recovery, major rehabilitation and long-term reconstruction, identified for the recovery and the reconstruction recruitment, but unfortunately, it was not successful to the conflict places. The JDLMA produced five recommendations. The first is creating national plan for disaster risk reduction, strengthen the risk assessment, early warning system, and develop cyclone norms and standard. These are the priority action with the GFDRR project, with new building codes, road infrastructure and agricultural infrastructure. The last one is established the catastrophic risk financing and transfer.

In the recovery and rehabilitation process, Madagascar has four steps for the recovery and reconstruction. The first one is the immediate response. That is the rapid, multi-sectoral assessment with the system with national bureau for disaster risk management and we deploy the risk management committee safe rescue operations. The second point is the early recovery. It is the humanitarian response, and assisted by partners, and after that, the government also launched the international appeal, when the cost is very high, and after that, the United Nations also launched the flash appeal, but sometimes, the recovery fund that we received is only about 46 percent. The third point, the mid-term and long-term recovery. We only have the fund on financial support from the sectoral program and project. Until now, this is the big gap, but unfortunately there is no partner can support such very high rate of destruction. The final point is the effort of the government. The results are the lower damage, bigger intervention, improved coordination, implication, all the sector in the response. Madagascar has continued to develop the preparedness and the response, and the recovery, but I would like to close with a reminder that the prevention is not only important but it has an economic sense. For every dollar we spend on prevention, Madagascar is changed towards prevention and makes also a priority the adoption of cyclone-proof standard for infrastructure and buildings. Preparedness activities include, develop ment of new national contingency fund, improving risk assessment, create the national risk atlas, and take greater disaster risk assessment, risk reduction into a sectoral program, and the last and big is the reforestation. The important message I bring today is that a country like Madagascar, which was through disasters, and has a high proportion of its population living below in the poverty line, needs the help and support of the different partners to reduce our vulnerability and implement our development program. It's also the time to converse and combine the disaster risk reduction with the climate change adaptation, especially in the environmental dimension.

I appreciate and applaud the support from the World Bank's global facility, and United Nations, with the ISDR, with its support, technical partners on disaster assistance, and we urge them to increase their commitment and determination to help the high risk partner countries such as Madagascar. Thank you very much for your kind attention.



**Mr. Anucha
Mokkhavesa**

Director General,
Department of Disaster
Prevention and Mitigation,
Kingdom of Thailand

Country Presentation

Thailand

Mr. Anucha Mokkhavesa

It is no doubt that people who suffer from the disasters are in desperate need of timely help. Delays do not only imply inefficiency, but also loss of life, property. As basic necessity of government, organizations, and agencies we must bear in mind that our successful contribution depends on our concerned practice and collective efforts in rendering assistance to the victims of disasters. Therefore, it is highly beneficial that good practice and lessons learned are shared among practitioners, managers, and policy makers. These are the reasons why we are here today.

After 2004, it is fortunate that we have had no last disasters in our country. However, we have been experiencing in the recovery work after the horrifying disaster from the Indian Ocean Tsunami in the year 2004. In response to this we would like to share with you some of our experiences. Moreover, apart from the recovery, we would also like to share with you our preparation for consequences of the climate change.

Please allow me to give you some broad picture of the impact the tsunami had on our environment. The giant wave destroyed beach, left behind a large amount of debris and hazardous material, caused extensive damage to coral reefs, marine and coastal habitats. About 20% of coral reefs, 10% of sea grass beds, and 1% of mangrove forests, were severely affected. Seawater intrusion brought impact on 30,000 hectares of land, including vegetation cover and medium-to-long-term fertility of the soil.

Before the tsunami in 2004, the environment was exploited for the tourism industry. To look at the brighter side, the tsunami disaster gave us an opportunity to put things right by improving coastal zone planning and strengthening measures to protect the environment. In this connection, our government adopted long-term vision and planning framework as a key to sustainable development. Recovery work also contributes to this sustainability. The recovery activities include re-landscaping the beach, enforcement of building codes, restoration of coral reefs, mangrove forests, and sea grass. And because of those recovery efforts, now the natural process and environment around Andaman coast, such as Phuket, and Phang Nga area, are restored better than the pre-tsunami period.

Regarding climate change issue, in January 2005, after a series of meetings and consultations, a draft of national strategic plan for climate change and adaptation was finalized. The plan was later adopted by the cabinet, and is now used as a framework to prepare for possible adverse impacts of the climate change. The plan comprises six strategies: that is, capacity building on adaptation, reduction greenhouse gas, research and development, public awareness, training, and international cooperation. To materialize these strategies, the department of disaster prevention and mitigation, the central body for inter-agency collaboration on national disaster management, is formulating a master plan for climate change adaptation, and is expected to complete it by September 2010. I believe we will be then better equipped to handle the effect of climate change.

Finally, with regard to recovery and preparation that the government undertakes in response to environmental problem, there is certainly the long way down the road from planning and implementation to appropriately prepare us for natural disasters. We therefore appreciate that we need to invest more planning, implementation, resource mobilization, coordination, and collaboration. We strongly hope that our officers will be well prepared and our equipment ready, thereby, more people will be saved.

E x p e r t

P r e s e n t a t i o n s

“Environment and Disaster Recovery”



Mr. David Salter

Technical Manager,
SEACAP (South and
East Asia Community
Access Programme)

Expert's Presentation

SEACAP

Mr. David Salter

The South East Asia Community Access Program, or SEACAP is a research program trying to improve the performance of rural transport and rural access for the purposes of poverty reduction and growth. We are working in three countries, presently, focusing in Vietnam, Lao, and Cambodia. The main emphasis of our program is research into practice. This morning, I'd like to tell you about the project work we're doing that has application both development, and recovery operations. SEACAP is not specifically looking at recovery types of things, but there are some commonalities, I think, that spans both areas of work.

There are four issues that I would like to present. The first issue is the experience and techniques we found for risk and hazard assessment for managing mountain slope instability. The second area is bioengineering for both road embankment, and mountain slope erosion protection and stabilization. The third is the use of tsunami debris as a material for construction of rural roads, and finally, the development of standards and specifications that will allow us to use local materials and available materials in our operations.

Let's take a look at the hazard and risk assessment first. This is based in Lao PDR. This is a problem that is regional in nature. It doesn't just apply to Lao. but in that part of their sub region. It's a common problem. There are significant social and economic and engineering losses from these landslides in the mountains, and we have an illustrated example in Lao. This is, typically, there is limited information as to where the landslides are and where high-risk and potential risk locations can be found. So we found that there was often insufficient technical data for making good management decisions on high-risk sites. This seriously limits the ability to be prepared for such hazards. Often, the recovery, insufficient attention is paid to getting the expertise that is needed to understand how to manage the hazards and the response and the recovery. Quickly, this is where Lao, the area that we're looking at is up here. This is the mountainous area. We know that Lao is more than 50 percent forest. There is heavy summer rains, monsoon rains, with in some places, 4 meters of rain annually, depending on the year and events of 100 mm of rain per day.

Upslope from the road is a typical upslope failure. This is a typical down slope failure from the road. Now, we did a research project called SEACAP 21, as we number our projects. It consisted of three components. The first component was carrying out stabilization trials in cooperation with the World Bank and the government of Lao. The second component was assessing the feasibility for a national program to manage slope stability, and the third component was mainstreaming the outputs of these two studies into practice. The objective of our program is always research into practice, and this is, I think, differentiates us from other programs in that research often ends at research. We have almost the same amount of research to take research outputs and get them into practice: get them into the university curricula, get them into the private sector practice, and the ministry practice, and other regional forums.

The finding from the trials was that in the Ministry of Public Works and Transport, a capacity has been developed for them to manage relatively moderate risk problems. But there is a national gap in terms of geotechnical expertise to understand and manage the more complex failures. We did find that the trials, it was very amazing to me how cost effective the kinds of interventions that we were using can be, so you can greatly reduce risk for relatively low budgets. Quality is essential in carrying out any infrastructure work, particularly through slope types of things, and we

developed managements and maintenance manuals for use by the practitioners. Now, on the feasibility study, we carried out a landslide inventory. We were able to develop a risk ranking and prioritization system for landslide interventions, and importantly, a strategy statement for service standards for the ministry to use. These service standards are then put into contracts for the contractors who carry out the recovery operations. From the inventory, we began to understand quite a bit of the nature of the problem we were confronted with. Importantly, most of the failures were in residual soils and weathered rock. This means that this immediately opens the door for large-scale bioengineering, surface protection types of investments. And importantly, really only a small minority of the problems involves deep-seated geotechnical problems where you have the whole mountain slope moving, in which there is essentially nothing you can do about it. You don't have to try to read this, of course, but this is the prioritization system we came up for ranking interventions. This is the strategy statement for service standards, where there is a certain tolerance for how quickly one has to react to a failure or a problem. This makes the management more affordable. In other words, the contractors don't have to deal with all problems at once. They can deal with the most important problems in a prioritized fashion when responding to a problem. On the mainstreaming activities, we believe that both technically and from the economic analysis we did, that the management program for slope stabilization is feasible and needed. We recommend a national landslide inventory for the entire network. We recommend that this inventory is entered into a database with risk locations and impacts, and the implementation of priority works should proceed as quickly as possible. Such a system, I should also mention, helps the ministry enormously when they go from convincing the ministry of planning and finance the necessity of the funding support. If you have a list of priorities and what the potential impacts are, your cases are made much better with the decision makers on the purses. And we recommend a strengthening of the technical capacity of the ministry, private sector, and other contributing organizations. We think that there needs to be the possibility for bringing in technical expertise for important decision making advice. We think that in development, there needs to be more procedures and better procedures developed and mainstreamed for proactive and reactive mitigation, and integrating all of these points will strengthen and improve the preparedness and recovery for these kinds of problems. The second issue is bioengineering. We looked at two areas: embankment, rural road embankments, in the flood plains of Cambodia, and in the highlands of Lao. Bioengineering is the use of live vegetation in civil engineering to protect earth surfaces. This is important point. The nature of it is that you don't get the same strength as you get from hard materials or predictability, because it's a live material and there is a lot of variation, but it can work and complement and integrate into the whole engineering approach. So, looking at highlands and at lowlands characteristic in Lao how can we apply bioengineering? This is a typical slip in Lao. This is the response. You see a toll wall, that is not a retaining wall or just a retaining wall, and then different kinds of vegetation applied to stabilize that upslope. This is a rural road in Cambodia. You can see the effects of the flood as it eats away at the embankment of the road. This is the kind of response that will help to stabilize it. If you have 10,000 kilometers of rural roads, you're not going to be able to put concrete over those roads, so you really need something cost-effective and find local species that will work. The main findings are that bioengineering can contribute significantly to civil engineering, where you have extensive requirements. It's a low-cost option. You can use methods from other areas, and we use some methods that are used in the Himalayas, but you have to adapt and be very careful in what you are doing. The principles are the same. You can avert crisis by having a strategy for bioengineering. But there are still many factors which need to be understood better, and there's always more research needed to fill these gaps.

We should keep in mind that bioengineering is not a response mechanism. It takes time. It takes 2-10 years, for the bioengineering to really take hold. It's a preventive and mitigation measure. In our examples, the technical models are understood, and what trialing is needed, we understand that as well. How to proceed with the trials to fill those knowledge gaps? It should be part of a long-term package. It's low-cost, but you need long-term vision and commitment. The third part of my presentation is looking at with the theme of available materials, is looking at the tsunami and the use of tsunami debris in Sri Lanka for the construction of roads. As you know, Sri Lanka has a large population and coastal population. Apart from the human losses, there is large-scale destruction of both public and private infrastructure. It left a lot of debris, which included variable components of brick and concrete. At the same time, it became apparent that there was a lack of appropriate standards to guide how the recovery and infrastructure recovery could take place. This led to inappropriate use, or waste, of the tsunami debris. It was seen as a waste product, not as a potential material. The use of gravel as a wearing course is unsustainable. Sometimes the tsunami debris was used but not processed. It just dumped into road bases, covered with gravel or laterite and washed away within a year.

In SEACAP, in the three countries I mentioned, we have been doing a lot of work on paving and surfacing technologies. The UNOPS program in Sri Lanka was aware of these and took across some materials as it could be adapted for the relevance of certain climatic and geological similarities. They designed similar trials. So the tsunami debris itself was used in the sub-base layer of a pavement structure. The debris was taken and crushed and blended with sand, so its materials were changed. It was not just used as found in

situ, it was crushed, blended with sand. This activity had a high local labor input. Further, there were also jobs created by the collection and transport, using local transport modes. The materials were tested in the laboratories to understand what the characteristics of materials were, so that it could be used appropriately in the pavement structure, and this leads to a point that what we want to do is build infrastructure with available materials. We do not want to import materials, so we look at what is available, we understand their engineering properties, and then we use them accordingly. This may mean that some weaker materials, we make thicker pavement structure, or we blend it as we did with sand in this case. This is a cross-section of the pavement that was constructed. You can see the debris has been crushed and mixed, blended into the sub-base. Aggregate base course is on top with a single seal surface. Also, tsunami bricks were used to line the side drains, so another use of materials that might otherwise be discarded.

Here is the material, the sub-base, as it is being compacted, and here is the finished product. After two years, the road is in excellent shape, so there has been some monitoring of the performance. However, some of the things we found are that there was limited uptake by others. As you know, in that tsunami situation, there were a large number of actors, and there was limited uptake by others of this kind of approach, so we saw a lot of potentially valuable material was simply wasted. This leads us to think that there is a need to define what is good practice. There is a need for training of practitioners in the practice, and all of this needs to be set in a framework and context of appropriate standards and specifications, which is my next point. Standards and specifications that enable you to use the materials you have are needed to be developed. Otherwise, engineers will not be able to respond effectively to a crisis situation where the material that's there, they would not know how to use it nor import other materials. So the key things in developing standards and specifications are that you make it so that they respond to the road task.

Obviously, in a response situation, the road may be needed for certain functions that it's not going to be needed for five years down the way. But there is no reason you can not design for both, and again, available materials. Three, key issues are making sure that the standards and specs are practical. In other words, they produce an asset that's fit for purpose, usable, that what you're building can be accomplished within the restraints and constraints of your local construction industry, and controllable. That you make sure that the proper characteristics of materials and so on are understood and quality assurance is enforced on the job. The key steps towards developing standards and specs, again, are to define the road task, define geometric standards, identify available construction materials, identify suitable standard road designs, and then draft the construction specifications. Road task means what the road is supposed to do, what kind of traffic, what is the type and volume, vehicle size, at low volume road, and probably in a response situation, you will be designing for perhaps some heavy trucks with heavy tire pressure, as opposed to multiple loading on the pavement. You do it within the road environment, such as topography, climate, and environment at low volume roads, the controls are the local environment, and basically tire pressure. So do you want heavy loads over a short period, or do you really need to just get something so that pedestrians and bicycles can move back and forth? The materials you'll find in a crisis will have variable non-standard behavior characteristics. So you need to again, define what those characteristics are, and set up the specifications for how they may be used in a particular road task. The application framework is concerning on how you take these standards and specifications into practice. We're working on something called environmentally optimized design, which takes available resources, budget, and I'm sure in the response situation, time is the control, and materials, for the most cost-effective counter to the stresses that will be put on the road.

There are two aspects, or possibilities, from this: one is a variable longitudinal design on the road, just changing the design according to the local circumstances: for example, in a mountainous road, your standard for, say, a class B road may be a seven-meter carriageway. Well, at certain points where you want to reduce the impact on the slope of the road that cuts into the slope of the road, you may relax that to be 4-5 meters, which will really improve the sustainability and reduce the impact on the environment. The other way in which this might be applied is through spot improvements. In other words, identifying the most critical obstacles to access, and putting a road down that's suitable to carry the traffic that's required. Now, in conclusion, we have a general methodology for using local materials for developing standards and specifications. The principles may be adopted for the crisis sector, where you need to achieve routes in a rapid fashion. So that's a little bit about the kind of work that we're doing, and where I see perhaps it could cross over to the recovery and crisis work. Thank you very much.

Expert's Presentation

Environmental Dimension of Disaster

Mr. Muralee Thummarukudy

Before we get on to environment and disaster recovery, we should understand why environment matters in a disaster situation. First of all, all conflicts and disasters cause environmental damage. Regardless of the nature of the disaster, there is some environmental damage, and the damage would vary depending on what is the type of the disaster, but also the context in which it's happening. This impacts human health, livelihood, and security. Again, the scale would depend upon the context, but it always happens, and this can then contribute to sickness, displacement, and economic instability, which could then further raise the same set of impacts.

However, the interesting thing is that environmental damage also contributes to disasters. It's not only the consequence of disasters, but it also contributes. For example, mismanagement of natural resources increases the vulnerability. A lot has been said about the destruction of mangroves in Myanmar, for example, as an aggravating factor to the Cyclone Nargis, and there are other situations: slope stability, deforestation, in earthquake situations. So a corollary of that is that improved management of natural resources can reduce disaster risk. Thus it is important that we understand that not only disaster impacts environment but that environment also impacts disasters. This is something which is less understood, that relief operations have environmental impacts as well also, not only that disaster causes environmental impacts, and environmental are driven by disaster, but the act of relief often causes environmental impacts. For example, if you have a camp of 50,000 people put in a location which is not housing 50,000 people before, you have to find water for them, you have to find fodder for them, there is transportation, there is sanitation, the location may be on the top of the ground water table, water well, and therefore, if you look at this camp, this is actually a very good camp, but there are situations where camps are causing major environmental damage. In the case of disasters, these are somewhat temporary, but in conflict, for example, in Darfur, a few million people staying in camps, extended period of time is causing huge environmental impact, particularly in terms of fuel wood, water supply, and that is aggravating this. Again, one has to understand that relief operations themselves have their environmental suffering.

Environmental footprint of recovery had been mentioned earlier. If you have a huge recovery program coming up after disaster, such as in China, it will have corresponding environmental impact. For example, land use changes. In China, after the earthquake, you need to rehabilitate hundreds of thousands of people into areas which are not used for habitation until that time. They were probably less fit, suboptimal, for example, but you have to find a place to rehabilitate these people. So there were land use changes which would happen. But also, look at the construction materials which would be needed. Yesterday, there was a number like 5 million houses to be rebuilt. Five million houses need a lot of number of bricks. These are actually pictures from China, all along Sichuan. You could see truckloads of bricks. Some question regarding this situation appeared. Is it a good idea to continue with the existing set of construction practices? Is brick the right solution, for example, as a standard? If you assume that due to the local construction industry and housing, brick housing is appropriate, then you should look at is burned brick the right solution. If you imagine the carbon footprint associated with burning of this many bricks enough for 5 million new households, it's going to be huge. There are alternative methods of making bricks. There are pressed bricks, for example. So you must look at these as well. What new construction materials are possible, which will reduce



**Mr. Muralee
Thummarukudy**

The Post-Conflict and
Disaster Management
Branch of UNEP

footprint. On the contrary, if you have to use a certain construction material, where is the footprint going. Now, most of these bricks may be made in some parts, in other parts of the country, and some of the material may actually be coming from other parts of the world. There are natural resources, such as wood, iron, for example, utilities, extended pressure on the urban services, so they said there are impacts of recovery also on the environment, so it's pertinent that you understand that there are four sets of impact when you have a disaster.

How about assessment of disasters? When you typically talk about environmental assessment of a disaster, you typically have in mind, you have a disaster, you go there, you look at what are the primary impacts of that disaster. But that is not enough. You have to look at the whole context: what existed before, what happened during the disaster, what's the impact of the recovery and relief operation, and what will be the impact of the recovery programs. Only when you have the whole spectrum covered, you are in a position to manage the entire environmental impact of a disaster. Here we look at four sets of assessments. The first one is the assessment of environmental impact. The second is the primary impacts; mainly the assessments of damage and losses. The third is the assessments of environmental needs, and finally the assessment of environmental footprint. Each of them is critical.

Assessment of Environmental impacts: This is a case which we did in Albania last March, where they had a site which is a military explosive storage site. It's due to extreme poverty in Albania, and very high price of scrap metal, the bombs and shells were unscrewed by children who didn't understand the risk, in a temporary factory, and the factory exploded, and the explosion went on for hours together. When we went there, you could not look at where the factory was. The entire hillside where the factory once existed, somewhere, was strewn with metallic debris, and this is all part of the hillside. Probably what you can see here are actually stored shells, tank shells, and this is the one which is being unscrewed. The key questions which there were, what is the environmental impact of that in the whole district, because the explosives went all over the place, what type of explosive existed in that area, and is the water safe to drink. Are the crops which are standing, can now be used, lettuce for example, or cabbage, can we use those because of the nature of the chemicals that is probably spread? You do extensive amount of sampling. You don't know, it's almost like a chemical investigation, especially in a military site, you don't know what exactly you're looking for, and it could be rapid, but it could be long-term. In a military site, in a sense it's rapid because you have a limited range of possibilities. So we went there, conducted the assessment, collected samples, and then gave the conditions to the local government as to what is appropriate, what could be drunk, used for irrigation, and so on. We could use either UNDAC methodology, which is the United Nations Disaster Assessment and Coordination Team, they have a methodology, or the flash environmental assessment methodology, which is a methodology promoted by a joint unit with UNEP.

Assessment of damage and losses: Here the focus is on economic value of the disaster. As you know, the environmental damages are sometimes very difficult to quantify. This picture is actually from Ukraine, where we did the assessment last June. This is an oil spill which happened in November, 2007. This is Kerch Strait, there's a very big storm, unusual in that part of the world, and 27 ships capsized, and one of them carried 5000. I think, 1500 cubic meters of fuel oil, and you can see it spread all over the place. This is Russia and this is Ukraine, so there are also political difficulties in that area. I put this picture up to show two things: one is extensive use of remote sensing in risk assessment, but secondly, this is the first study where we did economic assessment of environmental damages, and as the professor mentioned yesterday, it's not particularly good science, but there are techniques available. Environmental economics is not entirely nascent. As early as Exxon Valdez, environmental assessment techniques have been used. It has been evaluated by panel in the US, and has been found robust, so it's not known that environmental economic techniques are used to quantify economic damage. We could also use the methodologies, but I think that's more appropriate for environmental infrastructure, rather than for intrinsic value of environment. This is a beach where thousands of tourists come every year, and the beaches are less attractive this year than last year, and what is the economic value of that, so that is the type of analysis one sometimes have to.

Environmental needs assessment: This focuses on identifying the local and national needs to recover from the disaster, and the focus is on how we can help the local and national authority to get back to development trajectory. All disasters are, they said, is a slippage from a development trajectory, and the objective of the international community is to assist the local and the national government to get back onto that trajectory. So a need assessment focuses not only on physical environment but also on institutional environment.

Assessment of recovery footprint: This is Wenchuan city center, China, which has been devastated. and this earthquake happened on May. A series of landslides happened in September. As a consequence, this place is now buried up to the third story from the ground in mud, and the government has decided to leave this place as a living museum of earthquake and natural disasters. This place will not be rebuilt. The city itself is being shifted to another location along with these 5 million other homes. You can imagine the huge, huge footprint which it will have. The footprint will be much bigger than the earthquake area. The area which was impacted in China is big enough. It is -- someone was telling us that the impacted area is bigger than the size of the UK. But the footprint area will even be bigger. It would go right across China, but it also goes right

across the continent. The wood probably comes from Africa. So when you look at footprint, you look much, much broader than the immediate context.

In such a situation, UNEP's role is to do an independent scientific assessment. Our team of 25 people based in Geneva deployed in times of conflicts or disasters. Right now we are working in Gaza. For those of you on the back side, who are not familiar with the UN system, when you have a crisis, you have relief, recovery, and development, and the immediate aftermath of the disaster is the UNEP, look after the issue, and then we look after the post-conflict and disaster management branch of UNEP, coming into play. We then look at health, saving lives, then we look at livelihood and environmental security issues. In terms of phases, we have the emergency phase, 3-10 days, typically, in a good situation and good logistically of the emergency response, then you have the detailed environmental assessment, which could take as long as 12 months. Typically we try to finish that in 3 months. These are some of our reports. So these are tsunami, Sri Lanka, Seychelles, Maldives, these are the disaster reports. We have just completed our Ukraine report as well. Then after the report is published, we don't keep our report on the shelf, we actually continue the work with the recovery program, so we did that in Sri Lanka, we did that in Indonesia, we are now doing that in Myanmar and in China. Eventually, we will hand it over. In the interest of the back row, since we handle both conflicts and disasters, I would just explain why the disaster and conflict situation is different. In terms of disaster we have to deploy experts rapidly. This is the key, and they happen without any notice. So there is no planning possible. The institutional capacity most likely exists in the country, that's good news, and the impact will be very site specific, and there are very limited security and logistic constraints. Whereas in conflict situations, you can not mobilize that fast, primarily because it's conflict, there are political issues, major security constraints, but the problem is that the local institutions are collapsed, so they need help even more in a conflict situation.

I will now conclude my presentation with a few examples of what we did. In Indonesian tsunami, we did an assessment first, published, and then we integrated worked with the UN country team and the local government in Banda Aceh to rebuild as a part of this rebuilding team. All projects of government as well as international donors were screened for the environmental impacts. To a degree possible, recommendations were given to mainstream them. but we also undertook some clean up projects, especially of asbestos, and we did not do this debris recycling. That's something that I think we should more actively get into. We did also very similar work in Sri Lanka. The only difference in Sri Lanka is that we did some mangrove restoration work in the east coast, and we also did the asbestos cleanup work. In Maldives, we did some disaster risk reduction operations, asbestos cleanup, and debris cleanup. In Albania, we stopped at giving recommendations. These are actual live tank shells which are still lying at the site, and this is the agricultural area I was mentioning. These are all civilian housing which were destroyed. Regarding Cyclone Nargis in Myanmar, we are associated with the processes. I will talk about this in the other session. We are now working with the country team to mainstream the environment into the follow-up plans of the government as well as the international community. This is China's schoolchildren, thousands of them. We are again working with the Ministry of Environmental Protection to mainstream environment into this huge 1,000 billion Yuan reconstruction program.

I think it will be the biggest reconstruction program ever after conflict or disaster. We expect this to be a long-term sustained continuous involvement, working in the ministry of environmental protection. This was Ukraine. Actually, we are now assisting the government of Ukraine to build a system for emergency response in the event of oil spill. Ukraine, as you know, is the home of Chernobyl, so they have an internally robust program for nuclear disasters, but they do not have an equally robust program for oil spill. They have this Kerch Strait, where hundreds of ships pass every day, and now we are assisting the Ukrainian government to build stockpile, association of international counterparts on disaster response. So this is the set of activities we do in environment and disasters. Thank you very much.

P a n e l D i s c u s s i o n
“Building Back Better and Greener”

Panel Discussion

"Building Back Better and Greener: Engaging Partners for Environmentally Sound Recovery"

The panel discussion is focused on two major topics:

- Barriers to carrying out an integrated recovery operations that builds on existing development priorities and reduce future disaster risks
- Assessing environmental impacts in post-disasters and strengthening the required support and guidance

Facilitator

Ms. Helena Molin Valdes

Deputy Director, UNISDR

Government Presenters

- **Mr. Tshewang Rinzin**
Governor, Ministry of Home and Cultural Affairs, Bhutan
- **Mr. Iswar Raj Regmi**
Undersecretary, Ministry of Home Affairs, Nepal

Panelists

- **Mr. Ola Almgren**
Senior Recovery Advisor, BCPR, UNDP
- **Ms. Constance Thomas**
Director of ILO Office in China, and on behalf of the UN Resident Coordinator in China
- **Mr. David Salter**
Technical Manager, SEACAP (South and East Asia Community Access Programme)
- **Mr. Muralee Thummarukudy**
Programme Officer (Special Duties), UNEP

Commentator

Mr. Naoto Tajiri

Director for Disaster Preparedness and International Cooperation, Cabinet Office, Government of Japan

Background and Mechanics of Discussion

Ms. Helena Molin Valdes

The panel discussion will look at some of the practicalities and maybe next steps on how we can try to promote and address environmental concerns in recovery. We have heard from a lot of country representatives yesterday, and also some provocative and very practical examples this morning, on how this is framed, and how we can proceed in certain areas. We have a panel, seven panelists that will join me at the table in a while. You might also have taken a copy of a background paper, which is called "Reducing risk through environment in recovery operations: an initial review of the status," which was produced and commissioned especially for this particular recovery forum. We commissioned from IRP this study, and it was developed by UNEP as partner of the IRP as well with some support from UNSDR and others. This paper helps us to lay out some of the key issues which we have already started to discuss throughout the presentations. I wanted to quote four of the questions that were set out from the start. These were: how to assess environmental impacts post-disaster effectively, relating to assessment and do the assessments actually take into account the environmental concerns or not?

The second question is: what constitutes environmentally sound relief and recovery operations? It's easy to say, but what is it actually, what are the elements? We had a very good outline of that through UNEP's presentation earlier before, but again; let's look into some of the practicalities in this panel. Thirdly, how do we engage, and how to engage environmental actors early in disaster recovery? This is a field that is emerging, and it has not been given in the past, that environment as a sector and as a topic has automatically been taken into account when it comes to both disaster preparedness but in particular when it comes to disaster recovery and reconstruction frameworks. So one is the topic, another is the actors. Who are those actors that actually needed to be involved, and are they involved? The fourth question that was raised in this paper is: what environment related support and guidance is available in disaster context, and if it's not available, what is it that we need, and how do we use it? So these are just to start the thinking process of addressing environmental concerns in recovery. The paper examines these questions based on a couple of case studies, using Myanmar and Bangladesh in particular, but also making reference to others.

We will have two country case presentations. We will have Mr. Tshewang Rinzin from Bhutan. He is governor, and he is from the Ministry of Home and Cultural Affairs. He will be our first speaker. He will be followed by Nepal, represented by Mr. Iswar Raj Regmi. He is the Undersecretary for Ministry of Home Affairs, and he will talk to us about the situation in Nepal. Following these two country cases, we will have an overview from Mr. Ola Almgren, who works for UNDP, United Nations Development Program, and BCPR, Bureau for Crisis Prevention and Recovery. He will talk about the recovery needs assessment frameworks and some of the challenges related to this development. Then we will try to examine some of the practicalities of coordination and strategic frameworks and recovery planning. We will come back to our colleagues Dr. Salter from SEACAP, who made a very useful presentation this morning. He will take that presentation a bit forward. He will be followed by our colleague from UNEP, Mr. Muralee Thummarukudy, who will again re-examine some of the experiences in Myanmar and try to roll out how all these frameworks actually were put in place. If it worked, if it didn't work, what we can learn from this in Myanmar. After him, we will have Constance Thomas, the Director of ILO office in China, who will talk to us about raising some of the challenges, based on all of the previous discussions we have had, what are the challenges, looking in particular on the policy challenges, for recovery. All of the speakers have been asked to also think about the financial aspects of recovery, because actually we did



Ms. Helena Molin Valdes

Deputy Director, UNISDR

want to, and as we say up here, recovery financing, that promotes environmental concern, this is of course financing in the end, is what makes things happen in the long run. Financing is an issue that is high on the agenda when it comes to disaster risk reduction. It is an area which is not a sector, nor a budget line, it's not something that is easily identifiable, neither in national budgets, nor in the international financing structures and donor policies. Recovery is a little bit the same. Is it humanitarian, is it development, is it the sectors, where does it fit? We are not going to discuss this, because we don't have the expertise in the room to do that. However, when we discuss the frameworks, and the assessments, there is a strong element of finance in that, and I just want us to keep that in mind. If we don't bring out elements of this nature, I hope that we can maybe pick up some of your comments, who sit in the public, how we move forward on this. What is it that drives the financing of recovery? What are the key questions that we could raise, and how do we influence the financing towards recovery?

After all these presentations, we will have a comment from our host, Mr. Naoto Tajiri, who is the director for disaster preparedness and international cooperation of the cabinet office, Government of Japan. We would be very thankful for your comments, your questions, but also your additional insights, in particular, when it comes to financing of course. We would like to get out of this panel having a sense of direction, how to move this particular subject of environmental aspects in recovery forward. Not only in assessment side, on the framework side, but also in the practical terms or methodological approaches. If we can leave the room with at least a few points for action that we try to take forward, at least until next year and maybe something that IRP could look into a bit further, then we would be very satisfied with the discussion.

Panel Discussion

Disaster Hazards in Bhutan

Mr. Tshewang Rinzin

Disaster strikes one and all, small or big, no caste, no religion, cross-country. Many of the modern technologies fail to detect when it happens. Preparedness is the only way to save lives. As a layman, let me present to you about disaster hazards in Bhutan. Out of the list displayed which most of these are natural, there are some which are manmade. I will be dwelling more time on manmade disasters, especially glacial lake outburst flood, which is affecting Bhutan the most.

Bhutan lies on the seismic zone 4 and 5, so there are occurrences of earthquake till date, and you could have a look at it, 8+ Richter scale in the years mentioned, 7 still, 6-plus, and 5-plus. The recent one was 2006. However, out of all these earthquakes that happened in Bhutan, no loss of life has occurred so far. As I said, glacial lake outburst flood is manmade, so I will be dwelling a little more on this. Bhutan is located on a Himalayan range, big tall mountains, and we have about 3000 glacial lakes. 25 of them are identified as potentially very dangerous. Hazards due to growth are likely to intensify with the impact of climate change, and if you read the framework of climate change, Bhutan has made a lot of commitments in that area. At present, growth can either be totally prevented or predicted. The slides would let the participants visualize the extent of water accumulation in one of the most dangerous lakes.

Basically, these are the transfiguration of glaciers in Bhutan from 1957 until 1994. The black region that is being shown is the amount of water that has been accumulating due to the melting of the glaciers. It also shows that the barrier between different lakes are becoming smaller, and just to get a feel of it. The barrier between the two most dangerous lakes was changing from 75 meters in 2006, to 46.8 meters in 2007. It also shows that decrease in the barrier produced the likely chance of an outburst any moment. Further it also shows that the glaciers are retreating very fast. As per DGM, department of geology and mines report on 21st January 2009, made by 50 technical experts who gathered in Paro, Bhutan to deliberate on the glacial lake outburst, the director-general said that the glacier is retreating 30-35 meters every year. So that is becoming a big concern for us. This shows how much of a retreat from 1984 until 1999. You could see the red line there which is indicating the snow line, ice line, and then you could see how much has retreated so far.

We had major growth in 1957, 1960, and as recent as 1994. In 1994, there was a flood that gave the devastating effect. We lost only 21 lives, but considering the population of Bhutan, which is about 600,000, 21 lives is quite a lot. The flood had damaged 1700 acres of arable land. Bhutan has only 7-8% of arable land, and losing 1700 acres is a big chunk. Related to Lake Outburst and the monsoon, we have occurrences of flood. The flood that happened in 2004, in the east part of Buthan killed 9 people, destroyed 29 houses and washed away 664 acres of land. The most recent flood, on monsoon 2004 happened in the district where I work. 49 lives were lost, and 17, 4-storied houses were destroyed. Because of the flood and the glacial lake outburst, the natural formation of dams occurs, and most of the time, these dams burst, and creating havoc to people dwelling downstream and damaging the most precious hydro power of the country. Landslides, in the young mountain Himalaya, and landslides are frequently occurred. This is yet another disaster that happened caused by manmade and natural as well. Of course, we have epidemics, pest, and diseases too.

Now, if you look at all this, we have 70% of the people living along the river basins posing a big threat to the lives those who live in the low-lying plains. Further, it is not only Bhutan that is going to be affected. I think down



Mr. Tshewang Rinzin

Governor, Ministry of
Home and Cultural Affairs,
Bhutan

the line, India, our closest neighbor, is also going to get affected, if there is a catastrophe that happens. Although the lost of life were not much and the damages are not so big, as the other presenters had presented, so far in the forum, however, in order to address this, we are looking at it from two aspects; prevention, that is pre-disaster and assessment. We are carrying out assessment on potential disaster risk factors, and then based on that potential disaster risk factors; we are working on the mitigation works. As I was saying, as recent as 21st of this month, 50 technical experts gathered from different countries, like Pakistan, India, UK and Thailand had put their heads together, in bringing forward certain mitigation rules. We would be spending US dollars 7.8 million just for one lake, and there are 25 potentially dangerous lakes. A small country like us, spending 7.8 million is a lot of money, so it has to come from donor agencies. The donor agencies are willing and ready to support, if we have to a good plan. The plan that we, in Bhutan, are making, is through collective effort, because we don't have the expertise, so we call in international organizations and expert views from the developed countries.

We are also at a very advanced stage of introducing early warning system, because when the glacial lake outburst happens, it takes hours and days to reach the human settlement. So if you have such system in place, then I think we could save more lives and properties. The second thing that we are doing at present is post -disaster preparedness. First of all we are building up the capacity, putting the institutions such as the disaster management department, and the disaster management committee into the place right down to the village level. Drills are being practiced in the schools, so that if any catastrophe happens, from the small children to the old people are ready to evacuate or take action. Awareness is a drive that is being taken forward very seriously at this juncture, and we are preparing local action plans and area-based, so for example, school, if there is an earthquake what are the actions that the school are going to take? So these are two measures that we are taking.

Although Bhutan is one of the ten hotspots, it maintains 72% of its total land under forest cover, that's not enough. I think we all have to join hands to reduce the effect of climate change, and that is more important. If you we our little part, the bigger ones will be taken cared of by themselves. Thank you very much.

Facilitator:

Thank you very much for the very illustrative example, and I think this is actually the first time that we have identified and explicitly referred to climate change as one of the drivers of the problem. In your last comment, we need to take action towards reducing the effects of climate change. We have an opportunity to do this, as we are negotiating the new agreements of post-Kyoto.

Panel Discussion

Disaster Hazards in Nepal

Mr. Iswar Raj Regmi

Nepal is a disaster-prone country, especially earthquake and flood. Nepal lies between India and China. This is a map of Mount Everest. There have been successive archeological excavations here. This is the palace where Gautama Buddha was born. It was destroyed by earthquakes and other geographical conditions. This is the shrine where Siddhartha Gautama, who later became Buddha or the enlightened one was born. Emperor Ashoka strengthened the shrine of the nativity spot, marking the exact location of birth of Buddha on his pilgrimage to the sacred birthplace. This is the region of the Tamur River. This river is located near the birthplace of Buddha. These are the community people who are engaged to trim the Tamur River. 25 years ago, there was a devastating flood, but now, it is properly trimmed. This is the plan to trim Tamur River, which is located in Nepal. We can translate it as a lesson learned for communication other rivers like Koshi, Konaldi and Markali in the west, Kosi in the east. This was the flood affected area in Kosi River. That was a big flood disaster. We can call it man-made disaster, because that is some human influence from people who live near the area in Nepal and possibly in India. Nearly 60,000 people displaced, and billions of property destroyed by this Kosi River flood in this year. This is also the area that was affected by Kosi river flood. This condition had happened for three months in Kosi. As I have already mentioned, more than 60,000 people in Nepal, maybe more than 1 million people in India also, displaced by this river flood. This is the flood rehabilitation scenario. I am going to show you another area, which is located in the western part of Kosi River and the Midwestern part of Nepal. 3 months ago, there was a big natural flood caused by heavy rain in this area. Many people have been displaced, and billions of property damaged by this disaster. We are planning to revive its people from western side and people from eastern side, by the help of government, internal agency, outside governments, our partners, UN agency, and others. This could be implied that a lot of landslides and floods are happening in Nepal, with less of financial support and humanitarian grounds. Human take a role in the climate change. Now, the strategy and new policy are focusing on the implementation process. There are five points that Nepal is going into process. We are introducing in Nepal new concept and we are going to manage disaster with this new concept. Thank you!

Facilitator:

Thank you very much. I think what you are pointing out is the essence of the lessons that we could learn from this presentation are not only on pre-planning, legal frameworks, institutional will, new concept, new government, new ideas, but also to work with communities. You were talking about removing seals, removing sand, removing stones, from the river beds, as a very concrete act to reduce the floods. You were also saying that this could only happen with community participation because you have to involve the communities already from that phase, which prepares them also for the facts and the floods. I think this is entering into the big floods that you showed on the photographs, and how to assess these floods, and how the assessments become part of the policies and the reconstruction works.



**Mr. Ishwor Raj
Regmi**

Under Secretary, Ministry
of Home Affairs,

Nepal



Mr. Ola Almgren

Senior Recovery Advisor,
BCPR, UNDP

Panel Discussion

The Post Disaster Needs Assessment Tool

Mr. Ola Almgren

UNDP has many environment experts, working in our country offices and working also at the global level. I am not one of them. I am a disaster recovery advisor, and as such, I work with various areas of expertise that we have in UNDP. Along with other partners internationally and at the national level, we try and bring about a coherent recovery process in response to disasters. We are also trying to support the building of capacities at the national level to manage recovery before the disaster happens.

This little planetary system at the bottom of the slide is meant to represent all the partial scope assessment that we typically see in a post-disaster situation. There are many of them. Each circled and representing a particular angle or particular type of assessment, or particular organization conducting assessment in the emergency response. There are many of them I believe this is not an exaggeration, rather the opposite. It is an outburst, a plethora of assessment in post-disaster situation.

One thing that we can ask ourselves, of course, is where is the environment in all of these assessments? Some of them may include environmental concerns. Others do not. Some focus on immediate emergency response, others focus on a little bit of a longer-term perspective in how we organize ourselves to support recovery. But then again, where is the environment? This is one of these assessment, or it's included in several of them, and how do we make sure that we can create connects? There are several challenges in this picture, obviously. One is that we, whether we are responding as civil society at the local community level, or whether we are responding as national emergency managers, or whether we, as international organizations, are responding in support of a national response, we are leaving gaps that could be spatial. Are we sure that we assess the full affected area, that our assessment representative of the totality of needs? There can be gaps in scope: for instance there can be situations where the environment is not assessed at all. We also know that there are several gaps when it comes to tools and methodology. I think we have the opportunity to discuss or perhaps hear a little bit more about the tools that exist or the absence of tools when it comes to assessing environment and needs in a post-disaster situation.

We also have lots of overlaps, obviously, leading to perhaps in some cases assessment fatigue. The same target being asked similar questions over and over again, and perhaps, most importantly, disconnects between all of these that prevent us from creating a coherent understanding of the disaster situation and bringing about a well-coordinated and coherent response to it. Other challenges, for those of us who are interested in recovery, are the shift in emphasis from emergency response to recovery. To shift from substitution in the emergency response to the restoration of capacity, which requires, perhaps a little bit of a different mindset. These represent challenges, and of course, the question of whether other intuitional capacities and dedicated resources available to this, and do we give sufficient attention to crosscutting issues? Again, just to make a reference to environment perhaps as its own sector and the need of a specific focus in assessment but also as a subject that needs to be included across all sectors of recovery. When I speak here, I speak mostly focusing on assessment again from the recovery point of view, a little bit into the emergency but certainly beginning whilst the emergency response is still ongoing. The challenges in it, as people, or the responders, naturally want to focus on delivering relief, but we know that we already at that stage need to start refocusing our mind on recovery.

Based on the presentations, there have be many assessments after

disaster. Each one of these assessments represents a multi-hundred thousand dollar investment, and of course it's our responsibility to make sure that we conduct them as well as we can and that we get as much as possible out of them as we can. These reports represent, in my view, interesting reading, and for anyone who is interested in looking at how each one of them, in slightly different ways, has approached recovery, you will find them on the IRP website.

I want to introduce a model that we are working on when it comes to assessment, placing assessment in the context of planning. One challenge that we have is very often we see assessment as a standalone. They lead to a report, but then what? The important thing for us is that assessment is something that really supports the recovery planning effort, and here is a model that we worked out in a project that we called the post-disaster needs assessment project. It is a project that we, on the United Nations side, are conducting together with colleagues from the World Bank and the European Commission. There are just three things that I want to say about this model. First, it is called Assessment from an integration point of view, to make sure that we don't have this planetary system. In particular, between two very traditional perspectives on disaster recovery; on the one hand, the valuation of damages and losses, and on the other hand, the identification of human recovery needs, a deeper look at the programmatic response is needed in recovery.

Second aspect of this is the development of tools for the identification of those human recovery needs. There is a very well-established tool for the valuation of damages and loss. It's the damage and loss assessment methodology. We have a task to make sure that we can match that tool when it comes to looking deeper at what can we do particularly at the community level, not exclusively, but particularly at the community level, in meeting human recovery needs, the softer side of recovery. Lastly, to put this in a process that makes sure that the assessment report doesn't become just an assessment report but that it actually leads to action through recovery planning process.

We've developed a model for this, which is far too complicated, to go into any details here. I just want to make you aware that this is a schematic that we're looking at from a recovery planning point of view, and we tried to build in all aspects required to ensure that recovery planning is effective. I would point out three aspects of this. The first one, we can not be successful in recovery for the environment or for any other aspect, unless we have a vision. A vision that we can perhaps pick up from pre-existing development plans, but it needs to look beyond the horizon, not just at the immediate recovery need, but what will recovery look like when it's finished, when we are back to development. The second aspect is outcomes. To make sure that we cover all the sectors that are essential for recovery, including the environment perhaps as a specific sector, but also as a crosscutting issue, and for each one of those sectors, we define what we want recovery to look like when it's finished.

Again, so that we don't just respond with a knee jerk to what is in front of our eyes, but that we identify needs on the basis of what we believe full recovery will look like, and I am sure there is a lot of experience in this room, having dealt with these precise issues. I think the presentation that we heard yesterday from ERRA gave very good examples of how this needs to be dealt with. The last one is to look at this over the timeline: from the humanitarian context, what we call "early recovery", through longer-term recovery, and back to the development phase where investments in recovery may need to be protected for many, many years in order not to be eroded again, particularly when it comes to the environment.

Some main points to be concluded here are we need to see assessment as part of a planning process. We are still lacking at the international level and also at the national level, in commonly, let's say, accepted or agreed tools and in tools that are accessible to practitioners, guidance that is accessible to practitioners. There is a fantastic wealth of experience out there. Now, we have a challenge. I think, we as the IRP community and also us as individual agencies in capturing that experience and making sure that it's turned into tools and guidance that can be then again made readily available for the recovery practitioner. The second conclusion, is that our work can not be successful unless the recovery process is government-led, including the assessment process, and that it draws on community involvement. So our primary task in this is to be supportive of a government-led assessment process, a government-led recovery planning process, which again very much draws on community involvement, to make sure that the local perspective, perhaps even down to the household or certainly the civil society perspective, of an affected area, is taken account of in recovery. Again we know that if that's not the case, recovery is not successful.

We can not be effective in post-disaster assessment or in post-disaster recovery unless we invest in pre-disaster capacity building. This is not something that we learn on the job. That's really a worst-case scenario. We need to invest, whether we are international organizations or national organizations, we need to invest in building capacities before the disaster happens, and that has to include all systems required for effective recovery, including legislation that's adjusted for the purpose, institutional arrangements, who is in charge, and how do we divide responsibilities amongst us, human resources that are ready to engage in this process, and financing: where do we find the resources to make sure that we can actually respond whether from the national budget, from the private sector, from international contributions. Lastly, as a contribution, and I hope that we can have a discussion a little bit around this, when we're talking disaster recovery, whether for the environment or whether for any other aspect, there's an important shift in mindset from emergency

response to the recovery process, and I think, when we look at the various occurrences of disasters that we see around us, very often, this shift of mindset or shifting of gears doesn't happen as early as it could do or as effectively as it could do, and we continue to respond to the needs that we see in front of our eyes. The recovery process requires broader involvement of various actors, whether at the national level, different government institutions, and also at the local level, to make sure, again, that recovery doesn't become a knee-jerk reaction: the house fell down, let's build it back up again, but that recovery really becomes a better look at what does the community look like, over the horizon when recovery is completed.

Facilitator

Thank you, Mr.Ola, and I think that this gives us food for thought in moving forward. I just want to take the opportunity to remind ourselves again what Minister Bellerive also said yesterday, picking up Ola's comments. He said, I'm proposing a paradigm shift: instead of taking the ex ante situation as the target to reach, even in a recovery situation, we should use the strategy for growth and poverty reduction. The poverty reduction strategies or development plans, should be used roadmaps for development, including in a recovery situation. So we don't want to reconstruct the poverty we had before. We want to really use it much beyond utilizing the plans in almost all cases already in place, and I think this is what you were hinting towards also in your last bullet point there, which goes totally beyond, and that raises a second thing, that I think is part of our discussion afterwards. How much do we actually use the needs assessments to allocate resources and to eventually redefine our development plans? That is the whole purpose. We do all the big efforts of assessment. Does it mean anything for the development plans? Does it change anything? I think it's a relevant question. I don't think we actually have any real answers to that eventually, and that would be useful for you to comment on as well.

Panel Discussion

Bioengineering Solutions in Recovery and Rehabilitation Process for Sustainability

David Salter

I'm trying to put into context of a recovery program some of the ideas I spoke about this morning. I realize I am not a specialist in this area, and perhaps my terminology might confuse you, but it's from lay terminology that I'll make this. So I divided the recovery cycle into preparation, mitigation, response, and recovery. Again, using a context of the Lao roads instability problem, you can extract what you want as it's relevant to perhaps other situations. Preparation, I mean by that, in your steady state, your regular development work, your normal work of your departments. A number of things can be done to prepare, both for your normal work and for possible risks and hazards in the future. This is getting the standards and specifications in place that are needed. This is developing the guidelines and taking them into practice. This is having your inventories up to date and ready. Step two of this phase, as I see it, is your assessments of hazards and risks. These are already prioritized, so you're not caught by surprise when something does happen. This is an example of guidelines, prepared in Lao, for managing the slope stability. Carrying out your inventory of your hazards, also making what kind of species you do have, an inventory species, what species that would be useful to grow, so you have a general knowledge of the fauna and flora in your area. Then into your assessment, looking at what is your hazard and what are your risks. Looking at mitigation, again, from a lay point of view, I think that you can mitigate a lot by addressing your top priorities. Sometimes these are expensive interventions, but also at the same time, there are low-cost things you can do, such as making sure your drains are clean and your routine maintenance is performed. Make sure your appropriate standards are being applied, and do your bioengineering before, to mitigate any potential crisis.

Here are three falls that are keeping the drains clean. You can see that the water will run through that drain as it's supposed to, and there's a healthy vegetative cover on that very steep slope, that will prevent erosion. This is a case where there was a minor slip. It blocked a side drain. That water runs across the road, is blocked, and is running across the road, and has created this hazard, which will cost, I reckoned on the back of a cigarette package, you could have employed those three guys for about 100 years for what it's going to cost you to repair this problem. You have a log of your local materials, and also your local capacities. If you can cut and dress stone into the nice one in the corner, bottom corner right, that's something you should know about. You can put in place things such as live check-bounds. This is a bioengineering measure. Everything in that dam is local. There's nothing imported, and all of those, which look like sticks, are actually live materials, are hardwood cuttings that will grow into trees. So you can actually put into place a lot of measures which will mitigate potential problems, very low cost measures.

In the response phase, I think it's important to try to scale up existing capacity. In other words, in the preparation, you're ready, when you do have an event, that you can scale up what you're already doing, that your standards and specs already accommodate for such situations. Know your local materials. Moreover, avoid making the situation worse by causing new hazards. Here is a situation where you had a minor upslope from the road slip. It blocked the road. The contractor came along as he was supposed to. He cleared the road by dumping the material over the side of the hill. What has this done? This has killed the vegetative cover on the down slope. It has surcharged that slope, and with the first rain, this bottom slope will fail. This



Mr. David Salter

Technical Manager,
South and East Asia
Community Access
Programme

SEACAP

has created a far worse problem than you had in the first place.

Why did he dump it there? Because the specifications in the contract did not require him to remove the material to a safe place where it would not cause further damage. So you have gone from a fairly minor problem into a very serious and expensive problem. In the recovery phase, sustainability has to be the issue. With infrastructure, which is the focus of what I'm talking about, any infrastructure asset you create has a recurrent cost associated with it to maintain it. If you are creating assets that are beyond the capability of the authorities and the owners to maintain it, you have made a mistake, so whatever you create has to be within that envelope of possible maintenance capacity, and possible recurrent budgets. Regular as practice, it turned out to be good.

Talk to local people. They will benefit from employment and from a better environment. In the case of bioengineering, they know what will grow where, and they will know what will grow that's useful for livelihoods, that give them an ongoing interest in the possibility of maintaining the bioengineering interventions. Look at the different species, use them in combination. This is on a fill slope where we're trying to stabilize that. Bioengineering and civil engineering combined here, and here after a relatively major slip, the slope has been prepared, has been trimmed up. Small engineering works, civil engineering works, have been put in place, and you can see the planting of the various kinds of brush, shrubs, grasses, that has been in place to stabilize this.

Facilitator

Thank you very much. I think it's very healthy for us, who have been in the business for some time. Mr.Ola mentioned 20 years, to get insights from completely different disciplines, and suddenly make the most theoretically complicated equations something extremely practical and simple. I think that's what we are looking for the idea how to apply these concepts into practical solution in the different disciplines and for the different sectors. I have an anecdote from the Czech Republic. They had a long national discussion and national fights about how to reduce the flood risk of the Danube River, which has been flooding now in several occasions. According to the debate, it was between the techies, the engineers, and the greenists, the environmentalists, and it was either we do engineering solutions and build dams and build real concrete solutions, or we do forestry and we plant. I think that the example that you mentioned right now is the perfect example of combining the two, which is also very healthy to see. Bioengineering, you use engineering solutions but also building in an environmental aspect, so again, think creatively, using the disciplines and the knowledge in those disciplines by applying the disaster reduction and the recovery concepts.

Panel Discussion

Needs Assessment for Recovery Purposes

Mr. Muralee Thummarukudy

Earlier, I talked about the theory of undertaking post-disaster environment assessments, and now I will speak about the practice. How it actually plays out in a disaster situation.

This is Nargis, the slide which you saw this morning. It went all the way up. It caused a lot of damage. As you can see, the entire community here was wiped out, and this happened on the night of first of May. This is where the difference between theory and practice comes. Ideally, we should have been there within 6 days, 3 days, 48 hours. We had Swiss aircraft on standby, with the UNDAC system developing. But it spent more time sitting in Delhi trying to get in, and Mr.Ola spent more time sitting in Yangon trying to get me in to Myanmar than actually doing the assessment, and this is the first lesson learned. There is always a lot of logistics of trying to get into to undertake assessment.

The second point is that we would have ideally liked to undertake field assessment ourselves, but by the time we managed to get in, a lot of the fieldwork was already underway. In the end, turned out to be not a bad thing. As Mr.Ola said, there is a lot of fatigue that sets in with 200 different agencies trying to collect their own primary data. But in Myanmar, in the end, there were only two sets of primary data collection. I think in the end, I would say that is a good thing. It would have been better if all agencies could have created input as to what data was needed, and then some agencies had to do with what data was available, I think on the balance of it, it wasn't too bad. But from the primary data available to us, so secondary for us, from a unit point of view, we could identify the key issues. The first issue was the salt water intrusion to agricultural land. A lot of delta has been converted into paddy fields. Salt intrusion into drinking water is a key issue. Sedimentation and its effect on navigation, disaster waste related issues, must less significant than in China, because of the nature of the housing and the nature of the event. A lot of the waste was washed off into the sea. In terms of environmental damages, 33,000 hectares of natural and plant, mangrove destroyed, 43% of the total area were damaged. A lot more were salt intrusion. 63% of paddy field was flooded with salt water, a substantial amount of damage thereafter, is already manifesting in food crop production. The impact of by wind-sent storm surge, sedimentation and debris from shelters and jetties, is also affecting the fisheries sector. The key process in Myanmar, where the tripartite core group was formed to facilitate the assessment, post-Nargis joint assessment, and then UNEP was involved in the Ponja assessment and contributed to the report not only in the environmental sector, but also in a number of other sectors, which we had opportunity to review.

Unlike other countries where environment is important, in Myanmar, environment is life. Without environment there is no life in that delta. So that, all sectors of livelihood is entirely dependent upon nature in a pristine manner. Agriculture, fisheries, salt production, forestry services, so if environment is not in its primary state, life is simply not possible in Myanmar. In fact, it is not that Nargis didn't hit on a pristine environment which was all good. It was already quite bad. It was already stressed.

Already 80% of the original mangrove was destroyed due to population pressure, forestry, cutting for converting to farmland as well as for timber. Shelter, overexploitation, timber and hatching resources, of again mangrove farming systems, fisheries, intensive agriculture, and inadequate planning, indicate that there was already a lot of trouble there and probably disaster.

PONJA recommended to follow up on several issues, such as the footprint of recovery, the capacity gap at the community, local, and national levels, and the capacity for long-term disaster and post-disaster strategy planning. This



**Mr. Muralee
Thummarukudy**

Programme Officer
(Special Duties)

UNEP

is what we are actually following up at this point in time. So there are both, there is a set of government plans which are coming out and there is a set of TCG plans which are coming out. Ideally, they should merge, and I think at some point they will merge, but right now they are on parallel tracks, more or less. So let's say shelter and building back better. While it is not an environmental sector, it has an environmental component. Where is the timber for this building back better going to come from? Is it going to come from lowlands or upland? So is the footprint going to be somewhere else? Access to safe drinking water, is an objective, is a big issue. The people in the delta always used to drink the surface water, and the surface water was fine, but now that it has all got salted in. UNICEF is drilling, and also other international agencies, and national agencies, are drilling groundwater. In Myanmar, as it is in the rest of the delta in Bangladesh and India, the groundwater has a high concentration of arsenic. So as you bring out deep water, you are bringing a problem which was not existent before. UNEP is assisting the local authority to first of all test the water which is coming out to see if an arsenic problem is manifesting. In agriculture, salinization of the soil, we are working with the ministry of agriculture and fisheries. We will be looking at mangroves and forestry.

In the post-Nargis recovery plan, we also have similar sectors and similar issues, so the only additional point is the disaster systems which UNEP is setting up, or trying to set up a new project, on capacity building for disasters, including pilot projects in Myanmar. That's what we are up to at this point. So at this point of time, UNEP is providing technical advice to both the government plans, as well as the PONRP team which is developing the plans. We are also already conducting capacity building works in Yangon as well as in government officials. We are undertaking train-the-trainer operations for water quality testing on the ground, and I would -- and also we are facilitating information exchange. I would just close by saying one point which was only mentioned in passing here, that the future of how it will play out will depend upon the donor funding, and at this point in time. Myanmar is not really very popular in terms of money flows into, and also there are other disasters coming up which have happened. So at this point in times we do not have firm funding for laying out all this. I think some degree of discussion at some point in time on how we could facilitate more funding coming into environmental sectors would be quite useful. Thank you very much

Facilitator

I think that all the speakers have been very precise in both observations, and actually in providing some hints towards areas where we need to enhance our thinking. In particular, in our actions and practice, we hope to catch up on this, and follow up on this and summarize this when we finish this discussion. One thing that has been mentioned now on a few occasions, and I would like to kind of inject now, is that we talk about not reconstructing the risks. That's a given, as a concept and as a theory. In practice, I think somebody actually mentioned in the presentation yesterday, that is not really easy to do, because there is a lot of pressure of going on quickly, and some of the problems being pointed out here in the last presentation might have to do with pressure in time as well. But when it comes to reducing risk, and what we refer to as disaster risk reduction, and the priorities set out in the Hyogo Framework, in particular when it comes to reducing the underlying risk factors, which is basically sector-by-sector, it's crosscutting, same as environmental aspects, as you mentioned right now, is in many occasions crosscutting as well in the shelter sector, in the infrastructure sector, in many sectors, if not all, there is an ecological footprint one way or the other. The same is with reducing risk, so it's very important. I think, when we talk about assessment, and when we talk about plans, we need to have a particular emphasis on disaster risk reduction, as we need for environment. We also need to have a very clear understanding of how this folds out in the different sectors, because it's not useful to have a reconstruction plan or development plan which includes institutional legal aspects, schools, hospitals, roads, and bridges. It that does not take into account neither environment nor how those particular plans influence the risk scenario. We saw some examples, showing that we need to think about both environment and risk reduction measures as something particular. We also need to make sure that we think in those terms in each of the sectors.

Panel Discussion

Policy Options and Some Reflections on Financing Disaster

Ms. Constance Thomas

I will try to be provocative. I have just a couple questions. Some of these are more questions than responses, but also challenges. They're framed from the China context, but I think some of this applies broader and into many national post-disaster contexts. The first is the issue, I frame under policy coherence. When we're looking at incorporating the environment, how are we looking at the plans, the disaster plans for recovery, reconstruction, or even back to the reduction plans? How are we linking those? How are governments linking those to other national plans, the national development plan, and the sector-specific plans? How is this being linked so it is not set as part, as its own entity driven very separately by separate financing? At some point, it would seem to be effective. It has to come together, with the development plan, with the sector plans. How to ensure that it happens within the national level, and how to ensure within the UN and other actors, who are supporting the government? How are we moving in that direction? We talk within the UN now about policy coherence. But we tend not to put the disaster within that terminology. It's challenging enough just marrying the economic and social, and newly, now, we're talking about the environment. How do you put, then, the disaster planning and the disaster recovery plans into that mix? My hypothesis is that in fact, this is a challenge, and that you can use these other policies to enhance not only your preparedness, but also the recovery and reconstruction plans. So when you're looking at what you're doing for the environment in recovery and reconstruction, you should also be looking at the national environment plan. It should be always looked at within the context of the national development plan. Then, of course, the lessons learned can feed into the next national development plan, or whatever terminology is used, because you're not going to get a change in that right away. Development plans come periodically, but how do you use those plans to not only keep it at the national development, so that you're marrying the development work with the reconstruction recovery work? It also then allows you to deepen it into the sectors. So you're feeding the sectors in, and you're feeding into the sectors. It would be interesting for some government feedback on that, and certainly the agencies, we have seen if you are working as one UN and then joint programming, that's what you should be doing. You should avoid mis-stepping on one another, but that's another challenge: from practical point of view, how do we avoid mis-stepping on one another? Overlaying into each other areas? If you are linked into these different plans, you a bit know your own role and responsibilities. It helps streamline.

This has now become more complicated, or added another dimension to this policy analysis, and that is the crisis. Now the economic and financial, going into the economic crisis, which just about every country either, or will soon, be addressing or responding to. How does that impact the recovery and reconstruction? In China, this is a major challenge that is being addressed. One, this is a countervailing or outside influence. How do you deal with that? How again can you use that to enhance your implementation of your planning, but also what contingencies are there in existence to manage that? I'll give an example. In China, there was a plan on livelihood, the ways to create jobs. As soon as the economic disaster hit, that plan became unworkable, because where the jobs were to have been created, for the emigration of the community, those jobs are no longer there because of the economic crisis. So in fact, you have instead of an emigration, you have an immigration of all those migrants coming back to the disaster area, completely unanticipated.

So, the first is you have to deal with now the economic crisis is putting



Ms. Constance Thomas

Director, ILO Office
in China

another crisis for many governments on top of already what you're dealing with in terms of disaster recovery and how you can adjust to that. Number two, you have to deal with the policies that are being used to respond to the economic crisis, how they can also be used to, at the same time, further the post-disaster recovery. Again, in China, for the environment, this provides a very good opportunity. Many governments, large governments, and I imagine even smaller, are talking about economic stimulus packages. What do those packages entail? Are they bringing in the environment? Are they looking at the post-disaster areas, or for disaster preparedness, potential disaster areas that seem to be recurrent in some countries? How can you use those stimulus packages to promote the greener development, and again, how does that overlay? In China, this is now what the government officials are discussing, and what the UN is discussing. How we can advise on technical assistance to help marry some of these packages. But clearly, at the larger level, how will this economic crisis then affect financial responses to any disasters that are coming this year in 2009? What does this mean overall for international support? I think it's a question that all of us have to be looking at, and what kind of contingencies are already being at place at the national level, not only for the economic, but then to respond to if there is a disaster. Looking outward right now might not be as easy as it was a year ago. We're already hearing countries say you're not getting the financial support you're requesting. One could only imagine that's going to continue in that direction at least for 2009 and beyond.

Another issue is talking about the cost of the environmental concerns. Sometimes recovery plans are made at national levels and costs are borne at local levels. How can we ensure that those plans, we have, there's the feasibility of the costing? Where can that come? Where is the work that allows that to be already known, and the alternatives? I think there has to be this cost known, or at least ideas of the cost, in order to bring in the green growth at the implementation level, beyond the planning. How to do that, and have we done that well enough? Another challenge is increasingly, the cost of efficiency in, let's say, cleanup, in relief efforts in cleanup in early recovery. This is specifically China, but China is the latest. Others may be facing this. Increasingly, there is pressure for timeliness. Indicators on your effectiveness in the government are often now time indicators. How long did it take you to do something, and what are the costs of maybe stressing time over some qualitative analysis or assessments? We found that in China, we were learning some qualitative assessment indicators, but by the time those could even be put into place, the rubble had been cleared, or the buildings had already been down. We couldn't apply what looked like very good assessment indicators and tools that have been given for the sake of efficiency. Non-local actors came in and were very efficient at some aspects of clean-up. Where are we? What is the positive, and what is the drawback of this push towards speed and efficiency? I think we have to do some analysis of this, and clearly we see, in the area of environment, it has consequences.

We've seen a number of tools that have been used. While Mr.Ola presented very well the challenges and assessments of gaps, overlaps, disconnects, we do have more tools than were available some years ago. We have some assessment tools. From what I hear, there are examples of those being used. But has there been an analysis, and where is the analysis of the impact of the use of those tools? In terms -- and I think this is where Mr.Ola was referring to, where is the connection between the assessments and the plans and the actual recovery implementation? I want to talk about implementation, not only the plans and the reconstruction, but the implementation of the reconstruction plans. Where is that analysis, to show, again, the value-added of that? How has it been used, how has it improved? We didn't see anything, when we were trying to argue to China why we needed to use these. Where is the evidence? We need more of this evidence that these are useful and appropriate and value added tools, not just everybody putting together what they've been doing.

Does the national government have the expertise? So in the national government we're looking at capacity building, but what does that capacity building mean, and how can you assess capacity building? What capacities are we building, and for whom. Have we done a serious analysis of this? This is thrown back to the governments. What are the capacities that need to be built? For the UN agencies, and the donors, what is the expertise available? Are we ensuring, in our planning that recovery response plans, and implementation, are not a reflection of the expertise available? Especially in environment areas, that they are a reflection of meeting the needs, not the reflection of the expertise that happens to be available to get there, and how can we ensure that happens, and how can we ensure that we have the relevant and appropriate expertise in the environment areas, both as a sector and as well as a crosscutting in various sectors? I think particularly in the crosscutting, there is a dearth of experts. I think in the sector of the environment, UNEP comes. Crosscutting that into education, into livelihood, it becomes very challenging. How can we build those crosscutting experts? I will accept the invitation from Mr.Ola, to respond to his framework. I noticed livelihood was not on your list of sectors. I'm disappointed, astounded, and would ask that in any revision, certainly, livelihood must be one of the sectors that must be included in a recovery framework. Thank you.

Panel Discussion

The Global Environment Perspective of Hanshin-Awaji-Kobe Recovery

Mr. Naoto Tajiri

I would like to explain our experience in Hyogo Prefecture, to provide you with some basis for further discussion. It has been 14 years since the great Hanshin-Awaji earthquake occurred in Kobe of Hyogo Prefecture. Our experiences have been in many occasions and events; such as the world conference on disaster reduction in 2005. Many disasters occurred since then. Tsunami in the Indian Ocean, the earthquake in Pakistan, great cyclone in Myanmar, and earthquake in China. As been presented, the response and the restoration have been taken into action very rapidly. In that sense, with regard to disaster reduction, I think the level of recovery process has been enhanced throughout the world. The forum's theme is "building back better and greener", taking into consideration both environment and recovery, and this is a very significant theme. At the same time, a very difficult theme. Japanese government, in the process of recovery, considers environment. It is something that needs to be considered or taken into consideration in the future. When the Hanshin-Awaji earthquake occurred, the discussion on climate change was not as active as today.

In Rio de Janeiro, the world environment summit was held in 1999, and since then, the world environment issues have been taken up with great interest and attention. In Japan, in Hyogo Prefecture as well, the environmental ordinance with regard to environment was adopted and was introduced during this time. In that kind of process, the Hanshin-Awaji earthquake hit us, and so I think, as an incident that occurred in the transitional phase. I think it is worthwhile to talk about the Hanshin-Awaji earthquake. Therefore, since the time is limited, I would like to introduce to you about two things only. One of the things that I would like to say is that because of the great Hanshin-Awaji earthquake, it was recognized throughout Japan that when earthquake hit us, landslides can occur, and also lots of fire can break out since the earthquake hit the urban area. In the cities of Hyogo, there was lots of greenery and also open space or public space, and the function of such vegetation or trees played a very important role on the occasion of the earthquake. That was recognized through this great earthquake. Since the earthquake hit a very densely populated area, and so the buildings that were half destroyed were supported in some cases by some trees, which prevented the total destruction of the building. Also, the green parks, or the public space, avoided many buildings to burn down, or to be expanded. The fire could be expanded, so the role of the greenery, in order to avoid the expansion of the disaster, was of course recognized prior to the Hanshin-Awaji earthquake. I think we were able to recognize its function even greater on the occasion of the great Hanshin-Awaji earthquake. In Kobe, as you can see, the ocean is very close and we are located in this reclaimed land on the sea. At the same time, we have the mountains very close. From the past, from many decades ago, there have been incidents of landslides causing great disaster in this area. Therefore, greenery or vegetation has been expanded, reforestation has been made, and this importance is a lesson learned from the experience of the great Hanshin-Awaji earthquake.

So taking this example of greenery, when we talk about environment, I think, we have to recognize the effect of the reforestation and in terms of disaster reduction and in terms of policies for the environment. Taking this role of the trees or greenery, I think you can see for sure that they are related. There have been lots of difficult issues in order to conduct urgent and rapid response. We have to reconstruct the community, we should reconstruct the life of the affected, and there has to be prioritization for that. How far can we



Mr. Naoto Tajiri

Director for Disaster Preparedness and International Cooperation, Cabinet Office

Government of Japan

go into the environmental issue in that kind of circumstance? I think this is a very difficult thing that needs to be dealt with, but with respect to IRP's theme, it says, "building back better and greener," I think this is one of the greatest and most important themes. Recognizing this importance of building back better, we also have to consider environment, that is to build something that is greener at the same time. The relationship between recovery and environment is very important. Of course, this cannot be applied in all the cases throughout the world, but I think this is worthwhile to pay attention to the relationship between the two from the case of the great Hanshin-Awaji earthquake. Another thing that I would like to say is that in the process of response, participation from various agencies as well as various experts is very important. Taking the example of the great Hanshin-Awaji earthquake, there is an association of horticulture that participated in the process of disaster response. They were able to recognize the effect of green in disaster reduction, and this was communicated to the world. This was taken into consideration by the administration in Japan.

In the immediate response phase, it is very difficult for the administration to also cover the area of environment. However, at the very early stage, experts and various entities came into the field, and they communicated with the administrators. I think this is a very important process, that is, to have the experts communicate with the administrators right after the disaster. In the case of the great Hanshin-Awaji earthquake, there were more than 1 million volunteers that participated right after the disaster, in order to help with the response process. The volunteer activities were not related to environment, they were related to relief and also assistance to the people who were evacuated. In this process, by coming onto the site, forestation or green activity also was enhanced and increased through such kind of volunteer activities. Unfortunately, this has not been really systematized yet. I think that through the Hanshin-Awaji earthquake, volunteer activities have been activated and there has been a process of networking of volunteers. The process of networking the volunteers, will enhance assistance when a disaster occurs.

O p e n F o r u m

Open Forum

“How to Address Environmental Concerns in Recovery”

Facilitator

I would like now to open the floor for comments, additional thoughts and questions, to nail down some of the next steps where we can make some efforts to improve how we address environmental concerns in recovery. When I say “we” it of course mean everybody within the community of IRP and also individual as stakeholders, or agencies, could take this forward. We have general principles, and we have specific tasks and responsibilities. We are not going to solve this in this open forum, but if we could leave this room with a clear set of issues and questions, where we believe we can do some headway, that would be a very good result of this forum. So, with that, I would like to open the floor for comments and questions.

Question1 : John Harding

The International Strategy for Disaster Reduction Secretariat in Geneva

My question pertains to the fact that recovery is eminently linked to development. It is carried out within different sectors. For example governments having integrated environment and to health sector, water, the human settlements, and so on. Each of those sectors has its own process for assessing its needs, for developing its recovery plan, and budgeting those needs. **“Should we be integrating, better environment into each one of those sectors, or is environment a sector in itself which has its own assessment processes and its own planning processes?”**

Answer:

Mr. Muralee Thummarukudy

Programme Officer (Special Duties), UNEP

I think the question, again, is one between theory and practice. In theory, it is good enough if environment is a crosscutting sector so that all environmental concerns are one way or another integrated into one or other major clusters. To give an example, in Iraq, when we were doing the post-conflict needs assessment, the overall budget umbrella for reconstruction was 37 billion dollars or something, and environmental needs were say, 600 million, you know, purely environmental whereas water supply needs were probably 3 billion dollars. So in terms of scale, it would be good enough if environment is actually captured in other clusters, other sectors. However, in practice, if environment is left only as a crosscutting theme, environment loses attention, and it is at the mercy of the individual sectors to address them or not address them. I must say that increasingly, all sectors are careful about environment. I think this reflects, in a sense, the awareness of the sectors. Therefore, it is getting more and more attention, even when it is not a separate sector. Our preference would be that environment remains crosscutting, in all post-disaster assessment, but also it gets as a sub cluster along with disaster risk reduction, gender, HIV/AIDS, a separate forum, where we could also manifest, if needed, our needs. So this would be the ideal situation. I would give my follow recommendation to the forum. What I did not see today is anybody from the donor community. I don't know if it's a part of the structure that you don't have donors. Our main challenge, of course, is predictability of donor response while responding to a disaster. So our response therefore to different disasters is not consistent, primarily because the donor response is not consistent. I think it would be extremely useful if the donors could be included into this platform, and this forum, so that we could share our wish list with them. Thank you.

Question2 : Alfredo Lazarte Hoyle

Director of ILO's Crisis Response and Reconstruction Programme, Chairman of IRP Steering Committee

This exercise of assessment should produce concrete proposals to be put in practice by the countries, and that's the only way how that could happen is to incorporate these proposals on national development plans. Obviously, with a focus, on high risk areas, the dilemma many times for the poorest countries, is how they are going to delay in terms of priorities when they need to deal with urgent health and security issues, when they need to deal with the basic income of the population, or they are going to invest on this kind of preparedness. My questions are

1. The first part is for the countries, dealing with priorities. They are ready even if this exercise happened, to incorporate in their national development plans, and as well, allocate resources in some way, because everything cannot come from the external world. They need to make a national effort as well. Please also share some particular case, if they are ready to be incorporating such a kind of process, and to allocate resources as well, to these kinds of priorities. This is not prevention. Its preparedness, because we are not

talking how to reduce impact, we are talking how we are going to deal with a better recovery

2. The second part of the question is for the international community. The community should not to solely follow the CNN reported impacts, to allocate resources, and better intend them to try to put the resources in advance to improve the future resilience capacity?

Answer:

1. Mr. Tshewang Rinzin

Governor from Ministry of Home and Cultural Affairs, Buthan

I think I may not be able to answer the whole thing, but I'll try to attempt. In Bhutan, basically, we have two levels of planning, one at the central, and one at the grassroots. During my presentation, I was quite brief, because I had only about 10 minutes, so I had to just skip through. We have certain organizations in place, like national environment commission, and then at the same time, we have department of disaster management. So there are two things that are in the center. But when it comes down to recovery, we are talking about in the case of disaster, or before a disaster strike, what are our plans? So I was just saying that we have committees at a lower level, grassroots level. In fact, all our development plans actually are coming from the grassroots level. So even just to construct a school, a village meeting is called. The villagers, they just say, this is the land I want to construct the school. We have some technical expert, and say, look at the geological aspect of it, and see whether that particular land is feasible for building a school, whether that would hamper the environmental aspect of it. So there are processes which are going to be dealt that way. In other words, to build a small school, you've got to have so many clearances done, before we can make the actual construction, even when the plan comes right from the grassroots.

When it comes down to disaster, the community is more important, because it is the communities that are getting affected. So let's sit together and then discuss about what are the potential threats and the disaster that could happen within their community. They just work out, have an action plan. So Bhutan, so far, has not experienced major disasters, so we are learning from the experiences of bigger disasters that took place in other countries, and the recovery and preparedness that took place. We talk about the earthquake here, we talked about the cyclone, and then we look into where and how, at what point, should the international organization come in, at what point the aid should come in, In the event of a disaster, the development activities would stop, and all the funds that is there for the particular development activity could be utilized and diverted towards the management of disaster. Thank you very much.

Facilitator

We actually had another question to you, to the governments, from Alfredo Lazarte, which was linked a little bit to what you actually answered now, which was, do you believe that it's useful, and have you taken any steps towards allocating some kind of budgetary resources, in case there is need for recovery efforts. You just mentioned now that development funds could be diverted towards recovery, if needed, and have you already taken some steps for that to be possible?

Answer (continued):

Mr. Tshewang Rinzin

Governor from Ministry of Home and Cultural Affairs, Buthan

See, when we allocate budget, it depends on the plan that comes out. The plan that each of the organizations come up with, right from the grassroots till the center organizations, for example, if it is related to nature issues, related to that certain amount of fund is kept. Likewise, for disaster, department of disaster, under department of disaster, for different district, for different villages, among them, the fund is kept, so that things like the equipment, pots and pans, whatever, have to be distributed there. The fund has to be there, so it is planned, and the funds are available. Thank you.

Answer : Mr. Iswar Raj Regmi,

Under Secretary, Ministry of Home Affairs, Nepal

In Nepal, we have development plan. Before, there is the national plan commission. Before accepting the national plan, from this commission, concerned ministry or the agency, had to show their plan activities regarding to the involvement planning. There is a land use plan also, of vulnerable areas, vulnerable communities that have to be decided in the development plan such as road.

We implement plan and policy in Nepal. We have resource crisis because Nepal is just a developing country. In this year we had several major disasters, mostly flood and landslide. In the eastern part, which I emphasize in my presentation and in the far western part, we have natural disaster. It could be implied also that we need a lot of resources. We have plan that is also integrated to the regional development. In the near future, Nepal will develop the tools for disaster preparedness in 5 development regions. We will transport the tools from one area to another area, where it is needed the most. We have the ministry of

physical planning, minerals, and water resource, with local development ministry. The ministry of physical planning manages road construction, house construction, and others. We are delivering from central level to local level. In the central level, there is the disaster management fund, headed by the minister of physical planning and minister of health. We develop a system to invite international agency which are concerned with the management of disaster in this central level committee, in the regional level committee, and in district and local level committee also. Now, we are going to revisit the legal framework. In central level, there will be an authority governed by the minister, and the other part will be governed by the local minister, local administrative minister, and the reconstruction and revival activity will be governed by the ministry of work and physical planning. We have succeeded in some parts, but we failed in some parts also. This is our policy and plan and we are revisiting our legal frameworks. Thank you.

Answer : Mr. Naoto Tajiri

Director for Disaster Preparedness and International Cooperation, Cabinet Office, Government of Japan

On my part, I believe we have received a lot of difficult questions. I don't know to what extent I would be able to respond to each question, but if in any case there is the middle scale disaster or the smaller scale disaster, what is the role to be played by the communities or the civil society? That was one of the questions, of course, depending on the country where you live in, the system is different, the mechanism is different, including the title in the properties, or who is going to be the central role to be played. Is it going to be the public sector, or the private sector? Depending on the setup in the system, it will be different. In the case of Japan, I would say, when it comes to the disaster and disaster prevention, the organization which is responsible is the local government. Other than the central government, we have the local government in Japan. We have the prefectural government and the municipal governments. Those are the two layers of the local governments when it comes to the basic countermeasures, relief, and recovery related to the disasters, because they are very close and very near proximity to the community. The municipal governments do have the say and responsibility. Of course, the municipal governments are not able to do everything, if that is the major disaster, probably one layer up, that is, the prefectural government, is going to play the role, and if it is the bigger disaster, the central government is going to play an important role. That's the division of labor. Of course, we have a lot of disasters in Japan every year, including flood. Also, snow damage. We do have a lot of them every year. In many cases, whenever we are attack by disaster, municipal governments will have on the first stage, taking the initiatives and leadership.

Of course, there are some cases that we do have the documented plan, depending on the incident. We try to implement the relief and new recovery plan, depending on the scope and scale of the disaster. If in any case, municipal government is going to play an important role or the leading role, for example, the infrastructure rebuilding, such as the roads, not only the municipal government, but also the prefectures, which is responsible for the management and administrating of the roads, and central governments do have the roles to play, because they do have the partial responsibility for those infrastructures.

I believe in the questions I have received, there is a role to be played by the communities or the bottom-up grassroots activities. Those plans, in the course of the planning, and preparing the program and the plan that is all based on the discussion on the local municipal assembly and also in the village level, in the community level, there have to be the exchanges of views, in order before those plans can be coming into the municipal government. It depends on how they can plan or draw those plans. What is going to be the priority in the plans, because there are a lot of plans which can be conceived? It's indeed a very difficult question. Those are the difficulties or the headaches, because we do have the limited resources wherever you live in the country. This is the common problem, the prioritization of the plan.

In the case of Japan, I would say it's not that we have one single established development plan nationwide, but rather, most of the economic activities are initiated and driven by the investment by the private sector. Therefore, if you ask me whether there is one single national development plan, we do have sort of the plan, but when it comes to the different developments, it's not wholly specified in that whole single development program. Thus with this as the precondition, prioritization of the different plans, I have to say, are all up to the cases. It's not that the single body of the organization is able to make the decision in judgment on the priorities of the different programs, as well as said by the representative of the UNISDR, when it comes to the infrastructure, economic activities, jobs, employment, we do have the different ministries which are responsible for the different activities, even in the plans, plan banking in the ministry, there are different agencies, and departments, which are involved.

The point is, whenever there is a disaster, the challenges and the issues faced by the local community have to be disclosed, and that has to be fully identified quickly. The challenges faced by the community, at the time of the disaster. Of course, that has to be fully identified and discussed before the disaster. In the case of Japan, when you go to the rural areas there is a prefecture called Niigata. Five years ago, there was a major earthquake. A lot of villages collapsed and were destroyed totally. One of the villages, all the villagers were evacuated even for several years, and they were forced to stay in the tentative houses. Currently, tentative houses were closed, and they are now back in the village. In those local, rural, areas, there are a

lot of older people, elderly society. I don't know whether you might be able to have a picture of the elderly society. The population is now declining in Japan. In such circumstances, especially when you go to the rural areas, there are a lot of aged people. In some villages, half of the villagers are older than 60 years of age. In those villages, even if there is no major disaster, you have to think about the program which can support the aged people including the medical care and the support for the agriculture. So this is the rather inherent issues, and those inherent issues become as the emerging challenges when the disaster hits those village. Those are some of the issues faced by the rural communities. We have been talking about the recovery. The recovery program alone does not exist as the standalone program, but there has to be the connection and the linkages with the different programs, which are seen in the different communities. That has to be the very strong connectivity and linkages. When we would like to have the effectiveness of the recovery program, we have to always take that into consideration, with the relativity and connection between the different programs and plans. This is how we face in Japan. Thank you.

Facilitator:

I would like give the floor to all the panel members, particularly those that haven't yet had a chance to comment, and I would like to ask you to think of,

“What you believe is the main priority areas that we in the IRP community should focus our efforts towards addressing environmental concerns in recovery, based on the frameworks that you have laid out as panelists, and based on the questions that have been raised in the public?”

You can mention one or two or three, depending on whether you believe that there are other things. I know that some of you also wanted to respond to the public, so you first respond, and then give me the one major priority that you see coming.

Comment : Ola Almgren

Senior Recovery Advisor, BCPR, UNDP

I just want to reassure that livelihood is a part of the recovery framework. We can't have a successful recovery process if we don't pay attention to the restoration of livelihoods, or the creation of new livelihoods. It's there, not in the graph that you saw but it's certainly in the framework. I said in my presentation that when we create the framework that it should really, it needs to build on pre-existing development plans. The challenge of that is, of course, that sometimes the development plans are at a very sort of national, generic level, and they are not at sufficient depth for the area that's been impacted by a disaster, but pre-existing development plans have to be the starting point when we look at our recovery. That also gives the opportunity, really, to look at recovery as a way of perhaps accelerating certain development goals if they are related to the environment if they are related to disaster risk reduction, but the rest are a very important opportunity in recovery, and we can pick up certain aspects of development planning and make sure that it happens faster or perhaps even better if we are dealing with a clean slate type situation, where everything that has been there before has been raised by the disaster.

In response to Helena's questions, I think that the IRP and the community of practice that makes up the IRP can play a very important role in making sure that we get access to experiences by sharing, as has happened here today, but we can continue to do that, now not only through the development of a new IRP web platform, but also the experience by the various members of IRP. It be consolidated into something which would build into a -- let's call it a "bank of good practices" that can then be turned around and that can be drawn upon by this community of practice, by the members, when they themselves stand in front of a disaster situation, so that they have access to that. We can accelerate learning from others, and make sure that we do as much as can ever be done to achieve effective recovery for those who have been affected by the disaster. Thank you.

Comment : David Salter

Technical Manager, South and East Asia Community Access Programme (SEACAP)

I'm unqualified to make recommendations to the IRP, but I can tell you some things we're doing in our program, which is ultimately an influencing program on practice. That is to follow the money. You have to be part of where the money is being spent, to influence. So that would be the way we're approaching some similar kinds of problems in getting the message across. I think, too, perhaps there is a similarity in that we're not so much researching knowledge gaps as application gaps. Somewhere, somebody knows what to do, and so how do we get the application into practice, which brings to the third point, I would say, is that trying to define good practice. What are the international sets of good practice? For example, in public health, if you have a cholera outbreak, there's a certain set of activities that the schoolteacher does, the health worker does, and so on, so how to define a package of international standards for good practice, which follows up on what Mr.Ola said. Then ultimately, how you take good practice into practice.

Comment : Constance Thomas

Director of ILO Office in China

In China, We had to mainstream crosscutting environment, but it wasn't an either/or. We also had to have it as a standalone sector, or it wouldn't receive sufficient attention or financing, so I do not think you ever need to have either. We also broke away from the clustering, and felt we had to do a sector-specific in order to address the appropriate national circumstance.

Then, what to do for the IRP? I think, it should be on knowledge building and the widening, focus on the environment in all of these areas, review ongoing operations, and in that area, perhaps not only the very large disasters. We've certainly heard a lot about the recurring smaller disasters that national governments are faced with on a continual, and will be increasing, due to climate change. If that level could be analyzed as well, then I think that would really help in terms of also assessing and building up then the responsiveness and the management to the large disasters. The last is what David said is application, bringing it down to the implementation level, both horizontally and vertically, within the government, is extremely important.

Comment : Naoto Tajiri

Director for Disaster Preparedness and International Cooperation, Cabinet Office, Government of Japan

This was my very first experience to be a part of the IRP. I'm very impressed. I feel I have had quite a fruitful experience myself, and of course, we have seen several initiatives, recommendations, and there should be the framework to be set forth for the donors, which was quite valuable input. It is quite important to have this opportunity to be able to see each other, face-to-face, meeting in a conference, so to take a part in this kind of forum has been a great experience. Of course, we looked at the environment as one of the most important topics, but when we talk about the environment, there are many perspectives. There are many significant meanings when it comes to the environment, so it's quite important for us to dig down further when it comes to the environment. Thank you very much.

Comment : Mr. Iswar Raj Regmi,

Undersecretary, Ministry of Home Affairs, Nepal

International donor committee, have to focus, in empowering local people. This is my experience from Nepal. We must try to focus to the community of local people who are directly affected from the disasters. If we succeed to focus there, and a resource have to apply to the local level, we can succeed to manage disasters, not only central level, but local level, must be there as the priority sector. Thank you.

Comment : Mr. Tshewang Rinzin

Governor, Ministry of Home and Cultural Affairs, Bhutan

Crosscutting at one point is related, but this could be ingrained in the developmental activities as a part and parcel of it. However, when it comes down to disaster, when we talk about disaster, it has to be separate, so that a focus can be directed and given. The other thing is, I think, a forum like this should, as one of the panel members here mentioned, that the donor agency should sit face-to-face so that we could voice out and then see the responses from their angle. Thank you very much.

Comments from the Audience:**Mr. Atapon**

Director of the International Affair, Department of Disaster Prevention and Mitigation, Thailand

The Commitment of ASEAN and Contribution of Thailand Government to Cyclone Nargis

After Nargis, the ASEAN Secretary-General organized the humanitarian task force. This task force comprised of two people from each of the ten countries of ASEAN. This task force has settled the Tripartite Core Group, or we call TCG. This Tripartite Core Group comprised of the three groups of people. Each group has three people. The first one is the United Nations, the second one is ASEAN countries, and the last one is Myanmar. The chairman of the Tripartite Core Group is the deputy foreign minister of Myanmar. We just had the meeting in Bangkok last week, Mr. U Kyaw Thu, his Excellency, is the deputy minister, and in the meeting, we have concluded that we even have the launching of the funding report for the various countries to support the Myanmar, next month on 6th or 7th of February. Thus, I would like to conclude that for Nargis, Thailand had a lot of support in the Myanmar situation. My department sent an emergency rapid assessment team to stay in the disaster area and we have a lot of support for Myanmar. Thank you very much.

Facilitator

This is a very good example of bringing specific institutional frameworks to specific disasters, both for the relief and the recovery phase, and I think this is something we should take note of, where there is a strong

collaboration between the affected governments, the UN as a system, including the banks in this particular case, if I am not wrong, and then to have the regional bodies, the neighboring countries. In the case of Nargis, it was ASEAN. I think this is a very interesting model that has not really been put in place so much in previous occasions, and maybe we should look into this for future consideration as well. Thank you very much for that comment.

Mr. Robbie Alley

Student of University of Pittsburgh, Visiting Researcher at the research center for urban security and safety at Kobe University

The Concept of Build Back Better and Greener for Disaster Recovery

First of all, I applaud the theme of this conference, which is building back greener and better. I think this is a very important concept, because disasters often hit in areas of great poverty, as well as in areas of pre-existing and great environmental stress, and sometimes, that are already really environmental priorities, and I'm thinking in particular of the case of Aceh in Indonesia, where I have done some work. We should not overlook the potential of a disaster as negative impact. Sometimes, to alter the trajectory of development in a positive way in the long-term, so that what was in Aceh previously a situation of great conflict, between the government and some rebel forces and so on, as well as some problems with development, there is and was an opportunity for a different course for development. There are some threats that come with that, for example, with the recovery process of having all the resources needed to rebuild homes and infrastructure and so on, but there are also opportunities to make the overall plan for development of a certain region to become greener than it might have been otherwise. So I just wanted to bring that point up, that this is sometimes an opportunity as well as a response to a terrible thing that's happened.

Simon Eckleshill,

International Federation of Red Cross and Red Crescent societies in Geneva

Community Empowerment in Disaster Recovery

I just wanted to pose a comment on the discussion that's gone before us and a question for the panel. We're giving a lot of emphasis in our discussions around the importance of national level planning, and we're also, in our discussions, talking about very large disasters that require an international response to relief and recovery. However, we are not really reflecting on the reality, I think, that the bulk of disasters that happen are small and medium-scale, and that the response to those disasters is often by the community themselves, and may not engage at the national planning level. One of the perspectives that I think has been lacking in the last two days is the perspective of civil society, and if we're looking particularly at how we can address environmental concerns in recovery, we need to be wary that we're not imposing standards or approaches from expat-driven external technical advice, but that we're doing what we have been talking about in terms of changing mindsets between the relief phase and the recovery phase, which is looking at engaging communities. Once their basic needs have been met, they have the capacity to participate in decision-making about their recovery.

So what is it that we are doing to empower communities, so that they can make informed choices about addressing environmental concerns, rather than approaching planning in a very centralized, top-down way, as we tend to do during the first days and weeks after a disaster. Thank you.

Mr. Shaukat Nawaz Tahir

Senior Member / Additional Secretary, National Disaster Management Authority, Islamic Republic of Pakistan

I would like to share with you the institutional structures under the law that governs disaster management in Pakistan. We have a three-tier system in Pakistan to deal with the disasters, right from the preparedness, mitigation response to the reconstruction. At the federal level, there is a national disaster management commission, headed by the prime minister. This commission has representation from the provinces. All the chief executives of the provinces, we call them chief ministers, they are members of this commission. All the federal key ministers, including the finance minister, the minister for interior, minister for social welfare, and a couple of others are members of this commission. This commission is policymaking body for the disaster management. It meets once in a year, and under this commission, we have national disaster management authority, which serves as the executive arm or the secretariat of this commission.

The law says that the national disaster management authority shall have a national disaster management fund. This is a legal obligation to create this fund. So we have done that, six months ago. Now, this fund is supposed to be used for preparedness, mitigation, response, and recovery purposes for any kind of disasters. The federal government is supposed to chip in the money in this fund, and then this fund can also receive donations from international agencies. Exactly on the same pattern, we have provincial setups. There is a provincial disaster management commission, under the law, headed by the chief executive of

the province, who sits as member in the national disaster management commission. The executive chief sits as the chairman of the provincial disaster management commission. Again, at provincial level, this commission is supposed to make policies for disaster management in the respective provinces, and again, at their disposal, they have the disaster management fund, provincial disaster management fund, which is operated by the provincial disaster management authority. At the district level, we don't have the commission, but instead, we have district disaster management authority, headed by the district chief who is an elected person, who heads the district assembly. The chief has also got the district disaster management fund under the legal authority of law. So at these tiers, we have this system, both the organizations, and the funding arrangements, permitting the response and recovery.

The other thing I wanted to share with you is a structure that we have conceived at the federal level. We have set up a national working group, national disaster risk reduction group, consisting of five big ministries. Such ministries, which control development plans, worth billions of rupees, and these ministries are the Ministry of Defense, Ministry of Industries, Ministry of Water and Power, Ministry of Housing and Works, and the Planning Commission. So this working group has been tasked to mainstream disaster management in the planning and development processes. This working group is looking into all the development plans which these ministries are preparing, to make sure that disaster management is part of this planning process, in their respective domains. So at the second tier, these five ministries have been asked to set up their own ministerial working groups, who are mainstreaming disaster management in their plans. They have been asked to prepare guidelines, how to make sure that disaster management is mainstreamed in their planning processes. Then, when these ministries prepare their development plans, we have asked the planning commission to review the PC1 to make sure that all the development plans prepared by various ministries in the government and submitted to the planning commission for approval, to make sure that all those plans have this element of disaster risk reduction, in the plans. So the ministry of planning, or planning commission, they are right now engaged in devising the PC1 format. This is another big initiative. Once we complete the five ministries, then we intend to start engaging other ministries, which are number two in terms of volume of projects. Thank you.

Facilitator

This sounds very much like what we are aiming towards, fulfilling the Hyogo Framework for Action. We call it national platforms as a generic, talking about multi-sectoral and multi-ministerial commissions. Hopefully, the national platforms, will engage with civil society and other sectors like scientific and technical institutions. It's really interesting to hear all these steps that Pakistan has been taking, over the last 6 months that these funds have been established. We'd like to very much follow the development and see how we can learn from that.

I think this has been a very interesting panel. Thank you so much for all the panel members, both for your presentations, and for your very insightful comments, and recommendations that we will take very strongly into account. I just wanted to also mention to everybody, and I hope I'm not lying, that all of the presentations on PowerPoint and also all the written inputs that we have received for this forum, will be uploaded and available on the IRP website. You saw the beta version yesterday, and this would be a good opportunity for you to actually visit the website if you are interested in any of these presentations. If you have any particular studies, cases, previous presentations we have done in other opportunities, assessments, anything that you believe, in any language, it does not have to be in English, it can be in any language, which you believe that there is other practitioners, agencies, donors, community leaders, that could benefit from, when it comes to improve the recovery practices, please upload them to the website. You can share it electronically with the IRP secretariat here in Kobe to make it available to the rest of the communities. Thank you.

C l o s i n g R e m a r k s



Mr. Koji Suzuki

Executive Director,
Asian Disaster Reduction
Center (ADRC)

Closing Remarks

Mr. Koji Suzuki

On behalf of the organizers of the International Recovery Forum 2009, I would like to express our heartfelt gratitude to all the resource speakers and panelists. To the delegates from Thailand and Madagascar, thank you for sharing your countries' recovery experiences. To the delegates from UNEP and SEACAP, thank you for offering your expert opinions on the baseline requirements for an effective integration of environmental issues in recovery. To all panelists and government representatives in the discussion, thank you for sharing your viewpoints on how to address and respond to a disaster's impact on environment. To Ms. Helena Molin Valdes of the UNISDR, thank you for providing us an excellent wrap up and for pointing out the key considerations to address:

- The barriers to carrying out an integrated recovery operations; and
- The challenges in assessing the environmental impacts of disasters.

The knowledge and experiences that you have shared in this Forum are very important to realize our vision of communities that "Build Back Better and Greener". While there are several ongoing initiatives towards this end, we still find the need to strive for more integrated and coordinated efforts to effectively reduce disaster risk. There are tremendous challenges ahead us. Reducing risk by taking into account environment and climate change concerns in recovery processes is only one of them. To better address these challenges, we need to continuously share our experiences and lessons as well as create synergies to facilitate more coherent actions towards achieving our shared goals. We have to build on our existing development priorities and reduce future disaster risks. We have to strengthen the required support services of disaster-prone countries. We have to utilize the lessons from previous disasters and translate them into an environmentally sound guidance for recovery operations.

As we conclude this Forum, I want to note that there are many disaster-prone countries that need our support to further build awareness and develop capacities to effectively recover from any disaster event. In this regard, I would like to encourage everyone, who is present here today,

- To grab any opportunities to share your lessons and experiences and disseminate knowledge products, tools, and methodologies on recovery, to the communities that need them most; and
- To actively engage and support relevant seminars, training activities, technical workshops, and other learning events that are organized to enhance recovery operations.

The IRP, as an international repository of knowledge, is giving much value to these activities to compile various recovery experiences and evaluate its concrete applications to other communities. This Forum is among the many avenues to share, discuss, and agree on priorities in addressing the issues and gaps in recovery practices. To make the findings from the country presentations and the panel discussion beneficial to the wider community of practice, IRP will compile and share the outputs of this Forum. In particular, IRP is going to organize a Side Event in the upcoming Global Platform for Disaster Risk Reduction Session in Geneva scheduled in June 2009. The outcome report of the Forum, including findings, reviews, country experiences, and suggested measures to further integrate environment and climate change concerns into recovery operations will be presented in the Side Event. Furthermore, the outcome report of the Forum will be also fed into a series of practical guidelines, which IRP is working on for policymakers and practitioners in the context of further supporting the implementation of the Hyogo Framework for Action.

In closing, I would like to post a reminder that post-disaster situations is one of the best times to promote disaster risk reduction and climate change adaptation, including sound environmental practices.

Again, thank you everyone for making this Forum fruitful.