

ERRA INTERNATIONAL CONFERENCE, 19-21 April 2010

**Converting Adversity into Opportunity:
Learning from Experiences in Reconstruction and
Rehabilitation for Rebuilding Lives and
Communities after Disasters**

Report of Proceedings

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Abbreviations and Acronyms

ADB	Asian Development Bank
ADRRS	Agency-Driven Reconstruction in Relocated Site
ADRS	Agency-Driven Reconstruction in Situ
AHAN	Aik Hunar Aik Nagar
AJK	Azad Jammu and Kashmir
AP	Associated Press
BHU	Basic Health Unit
BISP	Benazir Income Support Programme
CBDRM	Community Based Disaster Risk Management
CBO	Community Based Organization
CDPM	Centre for Disaster Preparedness and Management
CDR	Community-Driven Reconstruction
CGI	Corrugated Galvanized Iron (sheets)
CIF	Community Investment Fund
CLRP	Community Livelihood Rehabilitation Plan
CMT	Construction Monitoring Team
CRW	Community Rehabilitation Worker
DEAS	Damage and Early Assessment Survey
DFID	Department for International Development (UK)
DHQ	District Headquarter Hospital
DNA	Damage Needs Assessment
DRAC	District Reconstruction Advisory Committee
DRM	Disaster Risk Management
DRMP	Disaster Risk Management Programme
DRR	Disaster Risk Reduction
DRU	District Reconstruction Unit
EIA	Environment Impact Assessment
EPC	Environment Protection Cell
EPI	Expanded Programme of Immunization
EQAA	Earthquake Affected Areas
ERRA	Earthquake Reconstruction and Rehabilitation Authority
FAO	Food and Agriculture Organization
FMIS	Financial Management Information System
FRC	Federal Relief Commission
GOP	Government of Pakistan
GRRN	Gender Reconstruction and Rehabilitation Network
HCM	Housing Complaints Manager
HFA	Hyogo Framework for Action

IDP	Internally Displaced Person
IEE	Initial Environment Examination
IP	Implementing Partner
ISDR	International Strategy for Disaster Reduction
ISMEP	Istanbul Seismic Risk Mitigation and Emergency Preparedness
IWM	Integrated Watershed Management
KAP	Knowledge, Attitudes, Practice
KMC	Knowledge Management Cell
KP	Khyber Pakhtunkhwa (formerly NWFP)
KPI	Key Performance Indicators
LAC	Legal Aid Centre
LCU	Livelihood Coordination Unit
LFA	Logical Framework Analysis
LHV	Lady Health Visitor
LHW	Lady Health Worker
LWC	Livelihood Working Committee
M3	Minutes of Meetings Manager
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
MoWD	Ministry of Women Development
NDMA	National Disaster Management Authority
NESPAK	National Engineering Services Pakistan
NGO	Non-Governmental Organization
NOC	No Objection Certificate
NRW	Non-Revenue Water
NSET	National Society for Earthquake Technology
NWFP	North West Frontier Province
ODF	Open Defecation Free
ODR	Owner Driven Reconstruction
PDNA	Preliminary Damage and Needs Assessment
PERRA	Provincial Earthquake Reconstruction and Rehabilitation Agency
PIDE	Post-Disaster Impact Evaluation
PMU	Project/Programme Management Unit
PPAF	Pakistan Poverty Alleviation Fund
PSLM	Pakistan Social and Living Standards Measurement Survey
PWD	Persons with Disabilities
RCC	Reinforced Cement Concrete
RCT	Randomized Control Trial
RHC	Rural Health Centre
RHRP	Rural Housing Reconstruction Programme
RLP	Rural Landless Programme
RRR	Recovery, Reconstruction and Rehabilitation

RWH	Rainwater Harvesting
SERRA	State Earthquake Reconstruction and Rehabilitation Agency
SHYDO	State Hydel Development Organization
SIDA	Swedish International Development Agency
SPC	Special Projects Cell
SRSP	Sarhad Rural Support Programme
SST	Social Survey Team
SWC	Social Welfare Complex
SW&WDD	Social Welfare and Women Development Department
TAMEER	Technical Assistance for Management of Earthquake Early Recovery
THQ	Tehsil Headquarter Hospital
TQM	Total Quality Management
TVS	Targeted Vulnerability Survey
UC	Union Council
UCDMC	Union Council Disaster Management Committee
UCERT	Union Council Emergency Response Team
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNIFEM	United Nations Development Fund for Women
USAID	United States Agency for International Development
W3	Who, What, Where (Matrix)
WatSan	Water and Sanitation
WAQIPH	Water Quality Improvement and Promotion of Hygiene (Project)
WASEP	Water and Sanitation Extension Programme (Agha Khan Foundation)
WB	World Bank
WDC	Women Development Centre
WHO	World Health Organization
WM	Watershed Management
WMC	Water Management Committee
WSS	Water Supply Scheme

Message from the Chairman ERRA

It is a matter of immense pleasure for me to present this Report of Proceedings of the ERRA International Conference 'Converting Adversity into Opportunity: Learning from Experiences in Reconstruction and Rehabilitation for Rebuilding Lives and Communities after Disasters'.

Taking place almost four and half years after ERRA was established, the Conference provided a unique opportunity to share experiences and lessons with stakeholders and others working in the field of disaster response, and to gain inputs to inform and enhance the remaining reconstruction work in earthquake affected areas of Azad Jammu and Kashmir (AJK) and Khyber Pakhtunkhwa (KP) [formerly NWFP].

The ERRA International Conference was very well-attended. The format of presentations by distinguished national and international speakers and discussion, led to stimulating exchange of ideas on a range of themes. The proceedings of the Conference detailed in this report will further contribute to learning on post-disaster reconstruction and rehabilitation.

ERRA is grateful to all those who participated in the conference, and provided inputs. I would like to take this opportunity to thank our development partners who supported ERRA in holding the International Conference: the Asian Development Bank (ADB), UKAID (formerly Department for International Development/DFID), Food and Agriculture Organization (FAO), United Nations International Strategy for Disaster Reduction (UNISDR), United Nations Children's Fund (UNICEF) , United Nations Development Fund for Women (UNIFEM) and the UN-Habitat . I would also like to commend the many ERRA personnel involved in organizing the conference and making it such a success.

Much has been achieved in the past four and a half years, and a sense of normalcy has already returned to affected areas. We are determined to continue our mission to 'Build Back Better'. I am confident that the exchange of information that took place over the three days of the ERRA International Conference – and recorded in this publication – will not only help us take us closer to our mission, but would also be of use to other post-disaster reconstruction organizations.

Mr. Altaf Muhammad Saleem
Chairman, ERRA

Foreword

The Earthquake Reconstruction and Rehabilitation Authority (ERRA) was set up with a unique and extremely challenging mandate: to carry out reconstruction and rehabilitation following the massive devastation caused by the October 2005 earthquake. ERRA has been engaged in this effort for the past four and a half years. During this period it has gained considerable experience and very useful insights.

The ERRA International Conference ‘Converting Adversity into Opportunity: Learning from Experiences in Reconstruction and Rehabilitation for Rebuilding Lives and Communities after Disasters’ was held from 19-21 April 2010. The aims of Conference were to bring together national and international stakeholders, academics, post-disaster reconstruction practitioners and others to share the lessons learned by ERRA, and to seek input based on experiences & practices elsewhere to inform ERRA’s remaining programmes. The Conference was divided into thirteen sessions covering a range of sectors and themes, and featured presentations by distinguished speakers from Pakistan and abroad.

This report gives a session-wise summary of the conference proceedings. It is hoped that it will serve as a useful reminder for those attending the conference (of the main issues discussed and points raised), and enable those who could not attend to access the information shared there. The specific aim of producing this report is to facilitate continuation of the learning process undertaken in the conference: learning that can enhance future disaster responses across the globe in general and the reconstruction work underway in affected areas of AJK and Khyber Pakhtunkwa (KP), in particular.

Considerable effort has gone into the preparation of this report and even more into the organization of the ERRA International Conference. I would like to take this opportunity to thank all those involved in compiling this report, and making the Conference a success.

Lt. Gen. Sajjad Akram, HI (M)
Former Deputy Chairman, ERRA

Executive Summary

The **ERRA International Conference on ‘Sharing Experiences in Reconstruction and Rehabilitation for Rebuilding Lives and Communities after Disasters’** was held from 19-21 April 2010 in the Serena Hotel, Islamabad. The aims of the Conference were to bring together stakeholders and those engaged in areas of disaster management and reconstruction; to share the experiences gained and lessons learnt by ERRA since its establishment in 2005 as a source of help in future post-disaster situations; and to obtain input based on international practice and experience in other disasters, that could inform ERRA’s own programmes. The Conference was divided into thirteen sessions, in addition to the Inaugural and Concluding Sessions. Speakers were drawn nationally and internationally, while participants included political dignitaries, members of the diplomatic and donor community and ERRA, its affiliates, civil society organizations, other government (including provincial and state) Departments, international financial and academic institutions and the media.

DAY ONE: 19 April 2010

In his welcome address, in the **Inaugural Session**, the Deputy Chairman ERRA, Lt. Gen. Sajjad Akram gave a succinct but comprehensive overview of ERRA’s aims and structure, its approach, and the progress made in reconstruction since its establishment. General Akram laid out clearly the many challenges facing ERRA and the manner in which it set about its formidable task. As he highlighted, the commitment to ‘Build Back Better’ – to turn adversity into opportunity – was part of ERRA’s vision from day one.

The Deputy Chairman explained that by working with all stakeholders, taking advantage of the strengths offered by being a hybrid organization, developing streamlined planning, approval and other procedures, robust financial and information management systems, involving communities in their own reconstruction, making use of the considerable funding and technical support provided by international partners, ERRA had come a long way towards achieving its vision. He noted that over 96% rural houses had been reconstructed, 81% projects in ‘hard’ sectors were completed or well underway, and similarly a further 75% in ‘soft’ sectors. But he stressed that there were always lessons to be learned. The critical point made by Lt. Gen. Sajjad Akram was that ERRA was about much more than simple ‘brick and mortar’: its goal was to rebuild lives.

Under the theme “**Reflection by Development Partners**”, there were addresses by Mr. Rune Stroem, Country Director, Asian Development Bank; Mr. George Turkington, Country Head of UK AID; Raja Rehan Arshad speaking on behalf of Mr. Yusupha Crookes, Country Director, World Bank; and Dr. Akhtar Bhatti, Resident Representative of Islamic Development Bank. All lauded ERRA on the impressive progress made to date – particularly in rural housing reconstruction – and expressed appreciation for ERRA’s commitment to constantly appraising its performance and learning and applying lessons.

In his address the Chief Guest, Chairman ERRA, Mr. Altaf Muhammad Saleem reiterated ERRA’s constant efforts to build back better and restore the livelihoods of the affected people. He highlighted the fact that, of the target 13,000 infrastructure projects identified by ERRA, over 80% were either complete or underway. The Chairman stated that the ERRA was on schedule to achieve completion of bulk of its portfolio by 2011. The Inaugural Session concluded with the **launch of three new ERRA publications**: ‘ERRA M&E Report 2009’, ‘Social Impact Assessment Report 2009’, and ‘Build Back Better: Lessons Learned from the Experience of ERRA’.

The Inaugural Session was followed by technical sessions, of which the **Sessions II, III and IV** were all devoted to ERRA’s flagship **Rural Housing Programme**. Session I on Rural Housing began with a ‘setting the stage’ presentation by Mr. Tariq Bajwa, DG Planning ERRA, in which he outlined the challenges faced and the approach taken by ERRA: the owner-driven strategy, rebuilding in situ, tranching payments through banks, the insistence on compliance with seismic resistance and other safety standards, provision of broad guidelines rather than fixed designs, adoption of local techniques and materials, considerable effort put into awareness-raising and training, focus on vulnerable groups, use of material testing labs to ensure quality and of construction hubs and other systems to ensure both supply and price controls, and setting up of grievance redressal mechanisms to ensure rapid resolution of complaints. As Mr. Bajwa explained, it was critical choices made in each of these aspects of the rural housing programme which culminated in its overall success.

A number of the other distinguished speakers provided international perspective on rural housing reconstruction: Professor Ian Davis, Dr. Jennifer Duyne Berenstein and Professor Kenji Okazaki shared the experiences in Aceh, the 2004 Gujarat earthquake, Sri Lanka and other post-disaster situations, which endorsed the Owner Driven Reconstruction (ORD) strategy adopted by ERRA. Mr. Mehmet Emin Akdogan shared the experience of the Istanbul Seismic Risk Mitigation and Emergency Preparedness (ISMEP) Project. Specific aspects of ERRA’s Rural Housing Programme – disbursement, inspections, training – were detailed by Mr. Kamran Akbar of PPAF; Dr. Amod Mani Dixit of NSET; Ms. Maggie Stephenson of UN-HABITAT, Mr. Masood-ul-Mulk of SRSP and Ms. Shahnaz Arshad of World Bank.

The final **Session VI** of Day One was on one of ERRA's three cross-cutting programmes: **Disaster Risk Reduction (DRR)**. Air Commodore (Retd.) Naunehal Shah outlined the goals and main activities of ERRA's Disaster Risk Management (DRM) Programme – and related these to Pakistan's commitments under the Hyogo Framework for Action. He explained that DRM is about reducing risks – such as through seismic-resistant construction techniques – and about preparing for disasters, e.g. by training community level teams in emergency response. Looking to the long-term, Professor Amir Nawaz Khan explained the knock-on benefits of integrating DRR into education, while Mr. Usman Qazi gave a donor (UNDP) perspective on DRR promotion. The general consensus was that ERRA had come a long way in laying the foundation for DRR – especially when it was recalled that few people had even heard of DRR before October 2005 – but there was still much to do.

DAY TWO: 20 April 2010

Sessions VII and VIII on Infrastructure Building focused on the particular challenges involved in working in seismic-risk zones. Brigadier (Retd.) Pervaiz Hayat Niazi, DG Planning, ERRA gave an overview of ERRA's reconstruction strategy, followed by specific features of reconstruction in the education, health, WatSan, roads, power, telecommunications and social protection sectors. Other speakers – Mr. Shaukat Shafi of ADB, Ms. Madhavi Ariyabandu of UNISDR, Mr. Jamil-ul-Din Khilji of NESPAK, Dr. Kiminori Matsumoto of Japan, Mr. Tanveer Sahoo and Dr. Garry de la Pomerai of UK - discussed specific aspects of large-scale infrastructure reconstruction.

Session V on the Role of the Media in Post-Disaster Situations had to be postponed to Day Two. The session was chaired by Syed Talat Hussain of Aaj News, and featured short addresses by representatives from Al-Jazeera, CNN, Dawn and other leading news agencies. The format of the session was designed to promote interactive discussion and audience participation. The key question of how the media balances support for the national effort in a disaster situation, with its role as neutral observer and watchdog was debated at length. So too the way the media in Pakistan had evolved in its reporting of disaster-conflict situations, and the way in which ERRA and other government agencies could facilitate them.

Session IX on Livelihoods featured presentations by two international speakers – Dr. Thomas Hofer from FAO talking on watershed management and Dr. Florence Egal from FAO on community-based livelihoods planning. Brigadier (Retd.) Akhtar Javed Warraich described how both these features fitted into ERRA's Livelihood Strategy. The session also featured a presentation from a community member, Raja Afaq Ahmed, highlighting the stress placed by ERRA on community participation.

Session X was on **Gender Equality**, the second of ERRA's cross-cutting themes. Ms. Fareeha Umar and Ms. Christine Oullette shared their experience of working as Senior Gender Advisers ERRA and the significant inroads ERRA made in raising awareness of gender equality issues and promoting gender mainstreaming. The gender session echoed the overall theme of the conference – and indeed, of all ERRA's work – that crises are a source of both adversity and opportunity: in this case, to promote women's and girls' access to services, enable them to take on new roles, and become economically empowered. What was equally stressed was the need for collaborative, incremental approaches that respected cultural sensitivities.

Environmental Safeguards, the theme of **Session XI**, focused on the third and final cross-cutting theme being promoted by ERRA. Following an introduction of ERRA's overall environmental strategy by Dr. Shujat Ali, SMA ERRA, various aspects were elaborated by other speakers: Mr. Irfanullah Tunio, Dr. Bashir Hussain Shah and Mr. Shahid Lutfi. It was noted that, as with DRR and gender equality, ERRA's work in this area was really trail-blazing. While it had managed to establish a strong platform for environmental protection, the challenge was very much on-going.

Speakers in **Session XII** on **Water and Sanitation** (WatSan) described how, in its approach to WatSan reconstruction, ERRA was striving not just to restore pre-earthquake services, but to expand and improve the quality of these, and – critically – to meet the looming challenges of water scarcity and environmental protection. Syed Zaheer Hussain Gardezi, DG WatSan ERRA, explained these in his presentation, while specific aspects such as water quality, sustainable protection of water sources, community and school hygiene programmes, disease prevention and water supply were elaborated by other speakers.

The final sessions of day two focused on two extremely important aspects of ERRA's functioning as an organization: **Session XIII** on its **Monitoring and Evaluation (M&E) framework** and **Session XIV** on its **Financial Management Information System (FMIS)**. Mr. Chris Lewis-Jones, Mr. Badar Mahmood, Mr. Hammad Yunus and Mr. Abdul Waheed Khan, DG ERRA explained how FMIS had increased efficiency, resource management, improved reporting and enhanced confidence of external stakeholders in ERRA. The session on M&E highlighted both the great stress placed on this by ERRA and the extensive use of IT to support M&E – including a web-based M&E database. ERRA's robust M&E mechanisms involved regular technical monitoring of the projects. Moreover, in keeping with the focus on people rather than simply bricks and mortar, it was noted that ERRA placed equal stress on social monitoring to gauge the impact of its interventions on people's lives.

DAY THREE: 21 April 2010

The **Concluding Session** of ERRA International Conference was held on Day Three. It began with a summary of proceedings of preceding two days by Dr. Shujat Ali, Chief Conference Coordinator. It was followed by an address by the **Ambassador of Turkey to Pakistan, H.E. Mr. Mustafa Babar Hezlan**. The Ambassador described considerable support provided to help people in affected areas by the Government and people of Turkey, as evidence of strong bilateral relationship between two countries. He recommended that considerable expertise gained by ERRA in post-earthquake reconstruction be made available to others and to help in future disaster situations.

In his address, the **UN Resident Coordinator Mr. Toshihiro Tanaka** congratulated ERRA on organizing the Conference & sharing considerable experience, it had gained through managing one of the worst disasters in recent history. He described UNDP support provided to earthquake response, & highlighted the use of Cluster Approach following 2005 disaster; the fact that there were now institutional mechanisms for DRR & DRM in Pakistan, & that one of the five Joint Programmes in One UN System being piloted in Pakistan was on DRM. As Co-Chair of UNJP- DRM, Mr. Tanaka congratulated ERRA on its achievements, & its contribution to learning on national & international DRM.

Chief Guest in Concluding Session was the Chairman of Senate, **Mr. Farooq Naik**. He congratulated ERRA for organizing a very successful International Conference, noting that the lessons & recommendations would be of great value for future post-disaster reconstruction & rehabilitation efforts. Referring to the story of Noah's Ark, Mr. Naik said that the God tested people with natural disasters. While disasters came without warning, the awareness & preparedness could reduce vulnerability & destruction. He said no such systems had been in place when the 2005 earthquake struck, but thanks to Pakistan Army, civil society, international community & others, the victims had been helped. He noted that today Pakistan had disaster management system at all levels. Turning to ERRA, the Chairman said it had shown that disaster could be turned into opportunity & reconstruction in affected areas, thus giving people a better quality of life.

The **vote of thanks** was made by Chairman ERRA, Mr. Altaf Saleem. Noting the very appropriate timing of Conference – enabling lessons learned by ERRA to be shared with others, and allowing ERRA to take whatever course-corrections were needed in its remaining programmes. He lauded the excellent participation in Conference and highlighted the success of ERRA's flagship Rural Housing Programme; and identified support by UN-HABITAT and the Prime Minister Mr. Yusuf Raza Gilani as critical to this. He reiterated that ERRA was on track to complete the bulk of projects by 2011. He said it was important to showcase the progress made in reconstruction in EQAAs; both to raise the morale of people in the area and to share something positive coming out of Pakistan. In conclusion, the Chairman thanked the agencies who had supported the Conference and the many people in ERRA who had been involved in its organization.

Introduction

The ERRA International Conference on **‘Converting Adversity into Opportunity: Learning from Experiences in Reconstruction and Rehabilitation for Rebuilding Lives and Communities after Disasters’** was held from 19-21 April 2010 in the Serena Hotel, Islamabad.

The Earthquake Reconstruction and Rehabilitation Authority (ERRA) was set up in the wake of the 8 October 2005 earthquake and the massive devastation it caused. Its mandate was to carry out early recovery, reconstruction and rehabilitation in the worst affected nine districts of Azad Jammu and Kashmir (AJK) and Khyber Pakhtunkhwa (KP) [formerly NWFP]. Over the past four and a half years ERRA has made substantial progress in achieving its goal to ‘Build Back Better’. During this period it has also gained considerable experience, useful insights and learnt many lessons.

The ERRA believes that its successes and the experiences gained and lessons learned during the implementation of its various programmes in diverse sectors, should be shared with others (organizations) both at national and international level, working for post-earthquake/disaster recovery, reconstruction and rehabilitation. These lessons could prove helpful in designing reconstruction and rehabilitation programmes in similar post-disaster situations. At the same time ERRA is in continuing need of feedback on its own programmes and projects from academics/practitioners around the world, in the light of principles evolved, approaches designed and implemented in other disaster contexts, to enrich and enhance its efforts.

This was the background to the International Conference 19-21 April 2010. The specific aims of the Conference were as follows:

- To share ERRA’s experiences in post-earthquake reconstruction and rehabilitation with, and to learn from, the national, regional and global community. These experiences encompass a wide spectrum of sectors and programmes: rural housing, education, health, water supply and sanitation, livelihoods, gender equality, environmental protection and disaster risk reduction.
- To reaffirm commitment of the Government of Pakistan and ERRA to ensure speedy completion of reconstruction and rehabilitation programmes with the fullest involvement of stakeholders and the affected population.
- To bring together policy makers and practitioners to help find how far conceived policies can/have been translated into practice.
- To interact/network with regional and international disaster management institutions.

The Conference was divided into thirteen spread over the first two days, sessions in addition to the inaugural and concluding session. Day Three, in addition to concluding sessions featured a field visit to Muzaffarabad (AJK). Three sessions were devoted to rural housing - ERRA's flagship programme - and two to infrastructure building (which encompassed education, health, power, telecommunications and so on). The other sessions covered key sectors in which ERRA is carrying out reconstruction - water and sanitation and livelihoods - and its three cross-cutting themes: disaster risk reduction, gender equality and environmental protection. There were also sessions on the role of the media, monitoring and evaluation and ERRA's Financial Management Information System (FMIS).

Speakers were drawn from ERRA, implementing partners, academic institutions and other organizations involved in disaster management/reconstruction. The Conference featured presentations by international speakers as well. Participants included personnel from ERRA and its affiliated bodies, implementing partners, donor organizations, academic institutions, agencies involved in disaster management and post-disaster reconstruction and rehabilitation, civil society organizations, politicians and the media.

The ERRA International Conference was made possible through support by the Asian Development Bank (ADB), FAO, ISDR, UK AID (formerly DFID), UNDP, UNICEF and UNIFEM.

This report details the proceedings of the Conference. For each session, it gives summary of the presentations and the key points made in the discussions. Full presentations are available on the ERRA website: www.erra.pk.

**PROCEEDINGS OF DAY
ONE:**

19 April 2010

INAUGURAL SESSION

The Chief Guest in the Inaugural Session was the Chairman ERRA, Mr. Altaf Muhammad Saleem. It featured addresses by the Deputy Chairman ERRA, Lt. Gen. Sajjad Akram and representatives of ERRA development partners: Mr. Rune Stroem, Country Director, Asian Development Bank; Mr. George Turkington, Country Head, UK AID; Raja Rehan Arshad, speaking on behalf of Mr. Yusupha Crookes, Country Head, World Bank; and Dr. Akhtar Bhatti, Resident Representative, Islamic Development Bank.

Lt. Gen. Sajjad Akram, Deputy Chairman ERRA: 'Welcome Remarks and Sharing of ERRA's Experiences Post-Disaster Earthquake 2005'

In his welcome address, the Deputy Chairman ERRA Lt. Gen. Sajjad Akram thanked national and international participants in the conference, and explained that the aim was to share experiences, exchange views on various aspects of disaster management, e.g. reconstruction of rural housing, promotion of gender equality and DRR, and learn from other good practices. Referring to the unprecedented devastation caused by the 2005 earthquake, Lt. Gen. Sajjad Akram explained that at the time there was no institutional set-up to take on the massive recovery and reconstruction work. He described the immediate rescue and relief phase of the earthquake response as one of the finest hours for Pakistan as a nation: the whole country united to help the victims. Once the relief operation was over, the Federal Relief Commission set up for this task was subsumed under ERRA.

The Deputy Chairman gave a brief overview of ERRA's mission, scope and organizational structure. Explaining that it had to undertake some 13,000 infrastructure projects, he detailed the many challenges facing ERRA: the need for institution building, the vast area involved and difficult terrain, and so on. He then described key features of the approach taken by ERRA: the goal to 'Build Back Better'; establishment of an institutional framework that included Provincial and State Earthquake Reconstruction and Rehabilitation Authorities (PERRA and SERRA respectively) and District Reconstruction Units (DRUs) at province, state and district level respectively; identification of soft and hard sectors, and development of sectoral strategies for each; stress on sustainability and on livelihoods generation; the initial damage assessment undertaken by teams that included Pakistan Army personnel; preparation of district profiles; stress on transparency and accountability; and the many innovations in ERRA's own institutional development.

Lt Gen Sajjad Akram went on to describe the progress made by ERRA to date. In the 'hard' sectors 81.08% projects have been completed/were under construction or in the design/tendering stage; for 'soft' sectors the figure was 74.82%. In ERRA's flagship Rural Housing Programme, of a target 436,486 houses identified for reconstruction, 419,624 (96.14%) were completed.

The Deputy Chairman then identified the main lessons learned by ERRA through its work over the past four and a half years. These include: the importance of having a dedicated, dynamic, hybrid organizational structure; ensuring stakeholder involvement; complementing 'brick and mortar' projects with 'soft' activities; carrying out owner-driven housing construction; the need for a comprehensive damage assessment upfront; development of customized planning and approval procedures; use of alternative fast-track construction technologies; multi-tiered institutional arrangements; stress on process documentation and knowledge management; and the need for decentralized grievance redress mechanisms.

In conclusion, Lt. Gen. Sajjad Akram stressed that the ERRA's work was not simply about 'brick & mortar': rather it was about rebuilding lives, ensuring the needs of vulnerable groups were addressed, and mitigating the damages from the 2005's earthquake disaster. The Deputy Chairman ended by expressing gratitude to the Government of Pakistan, international partners, ERRA's affiliated bodies and others for supporting its work and enabling it to 'convert adversity into opportunity'. He also thanked ADB, FAO, ISDR, UK AID, UNDP, UNICEF and UNIFEM for their support to the ERRA International Conference.

REFLECTIONS BY DEVELOPMENT PARTNERS

Mr. Rune Stroem, Country Director, Asian Development Bank: In his remarks, Mr. Stroem lauded ERRA for 'managing for results' – its continuous efforts to obtain feedback, learn what had worked and what hadn't. In this regard he said the lessons learned from the International Conference would go a long way towards guiding the management of future disasters. The ADB Country Director gave a brief overview of the Bank's contribution to the reconstruction effort: a total commitment of over US\$1 billion, a further \$100 million leveraged through co-financing partners – most of which had been disbursed; \$165 million provided by ADB for road construction of which a substantial portion had been completed; and technical assistance. Mr. Stroem said that ERRA's success was due to the commitment of its leadership and staff, its ability to learn and adapt. He particularly highlighted the decision to put people in charge of rebuilding their homes as one that had paid off – both in terms of getting homes rebuilt and in building back safer.

Mr. Stroem said completing all reconstruction work on time remained a challenge. He stressed that ERRA still had to come a long way, but noted that being self-critical was an important and necessary step in its growth and maturity. He urged that bad experiences not act as a deterrent on moving forward; rather successful approaches should be applied to new initiatives. In conclusion the ADB Country Director said normalcy had returned to the affected areas: homes had been rebuilt, services and livelihoods restored, and people could look forward to a bright future. On behalf of ADB, he expressed gratitude to ERRA, co-financing partners and others who had made such progress possible.

Mr. George Turkington, Country Head, UKAID (formerly DFID): Mr. Turkington began his address by recalling the over 73,000 people who lost their lives in the 2005 earthquake: he described the Conference as honouring their memory by ensuring that lessons were learned and future disasters handled well. He also characterized it as an opportunity to celebrate the achievements and progress made to date – adding that the contribution of the private sector and the general public in this should not be forgotten. Mr. Turkington too highlighted the success of ERRA’s Rural Housing Programme in getting homes rebuilt so as to be safer. He particularly lauded the strategy to place local people at the centre of decisions about home reconstruction and the stress by ERRA on building local capacity.

However, Mr. Turkington stressed that the job of reconstruction was not yet complete: he identified services, roads and urban development as some of the areas in which a major push was still needed. It was against this context, he explained, that UK AID (DFID) support for reconstruction in the affected areas had been extended. This included direct financial support as well as much-needed technical assistance. Mr. Turkington said DFID had felt that it was important from the outset to build ERRA’s capacity and demonstrate confidence in the Government of Pakistan by providing direct financial support. He added that ERRA’s FMIS and M&E systems were both important components of its functioning, which enhanced external confidence. In conclusion, Mr. Turkington congratulated ERRA on its achievements to date, and stressed the need to ensure this was sustained.

Mr. (Raja) Rehan Arshad on behalf of Mr. Yusupha Crookes, Country Head, World Bank: [Mr. Arshad explained that Mr. Crookes was out of the country and hence could not attend the Conference, but had insisted that his speech be read out.] In his remarks, Mr. Crookes thanked ERRA for organizing the Conference and noted the central theme of converting adversity into opportunity. He described the ‘cross-fertilization of ideas’ as being very useful for handling of future disasters; indeed he observed that lessons from the post-2005 earthquake had already informed disaster management in other parts of the world.

Mr. Crookes described the World Bank as a key partner in the earthquake response right from the outset: in the immediate aftermath a preliminary damage assessment was carried out by the World Bank and ADB in less than a month – this provided the basis for resource mobilization and future planning. Mr. Crookes highlighted the World Bank’s role in supporting ERRA’s Rural Housing Programme. Despite initial scepticism on the part of many, he said the Bank and ERRA had pushed to make the owner-driven strategy work, and with time it had been proven to be the right approach. He lauded the financial support and technical assistance provided in a ‘spirit of collaboration’ by all donors for the reconstruction effort

The World Bank head expressed satisfaction at the achievements and progress made in reconstruction, and specifically lauded the focus on addressing needs of vulnerable groups, ensuring stakeholder participation, and the strong lead provided by the Government. He appreciated the role and guidance provided by ERRA, and its ability to overcome obstacles. He said the ‘uncharted terrain of disaster management in Pakistan’ had been handled well. Mr. Crookes concluded with words of ‘hope, encouragement and congratulations’ for ERRA, adding that it should learn from its successes and failures.

Dr. Akhtar Bhatti, Resident Representative, Islamic Development Bank: Dr Akhtar Bhatti began his address by stating that the Islamic Development Bank acted quickly and substantially after the 2005 disaster with its announcement of an over \$500 million earthquake recovery package. He went on to give some examples of the types of interventions being supported by the Bank: rural housing reconstruction in Bagh and parts of NWFP, and a \$93 million on-going project to promote development in the ‘backward’ districts of Shangla and Kohistan.

Turning to ERRA, Dr. Bhatti said the Islamic Development Bank was very impressed with ERRA’s performance; it had always found it to be a highly professional and committed organization, and IDB projects were implemented efficiently and on time. He added that ERRA was very responsive to the Bank’s requirements, and always willing to do more. The high level of satisfaction felt by the Bank towards ERRA was demonstrated by the fact that it had shared the ERRA model **among its other fifty-seven member countries**. In conclusion, Dr. Bhatti congratulated ERRA on holding the International Conference and wished it continued success.

Mr. Altaf Muhammed Saleem, Chairman ERRA: Address by Chief Guest

In his address to the Conference as Chief Guest, the Chairman ERRA Mr. Altaf Muhammad Saleem welcomed all participants. After briefly reviewing the damage caused by the 2005 earthquake, he apprised them of progress made in the reconstruction effort and stated that ERRA was on schedule to complete the bulk of its work by the

target date of 2011. He highlighted the fact that the flagship Rural Housing Programme was almost complete, and that of the target 13,000 infrastructure projects, over 80% had been completed or were underway. The Chairman described ERRA's robust monitoring and evaluation mechanisms and its ability to make mid-course corrections as needed, as major factors in its success.

With regard to the Conference, Mr. Saleem said that – coming some four and a half years after ERRA was set up, as the reconstruction phase was entering its final stages – its timing was highly appropriate. The Chairman thanked the various sponsors who had made the Conference possible and expressed the hope that it would be successful.

Launch of New ERRA Publications:

The Inaugural Session of International Conference also saw the launch of following three new ERRA publications by the Chairman ERRA and Chief Guest.

- *ERRA Monitoring and Evaluation Report 2009*
- *ERRA Social Impact Assessment Report 2009*
- *Build Back Better: Lessons Learned from the Experience of ERRA.*

SESSION II: Housing Reconstruction Policy, Strategy, Objectives and Implementation Tools

The first technical session on housing reconstruction was chaired by Mr. Jan Meeuwissen and featured an 'overview' presentation by Mr. Tariq Bajwa, Director General, ERRA, followed by presentations by Professor Ian Davis on the roles of different stakeholders in post-disaster reconstruction, Mr. Kamran Akbar on PPAF's experience as implementing partner in ERRA's Rural Housing Programme, and Dr. Jennifer Duyne Berenstein on owner-driven approaches to housing reconstruction. Neither Professor Davis nor Dr. Jennifer could attend the Conference because of flights cancellation due to volcanic ash over Europe; hence their presentations were made by others.

Mr. Tariq Bajwa, DG Planning and Special Projects Cell, ERRA: 'Rural Housing Policy: Its Implications and Impacts'

In his presentation Mr. Tariq Bajwa gave an overview of ERRA's Rural Housing Reconstruction Programme (RHRP). Noting that a total of 600,000 houses were destroyed or damaged in the 2005 earthquake, Mr. Bajwa said the focus of the RHRP was on the 463,243 houses that were completely destroyed. He described some of the reasons

for the widespread destruction: unsafe *kacha* houses, un-reinforced stone masonry, heavy flat timber roofs or heavy RCC flat roofs not connected to walls.

Under the compensation scheme devised by ERRA, subsidy of Rs.175, 000 was paid in four tranches to those whose houses were completely destroyed, Rs.75, 000 to those suffering partial damage, and Rs.25, 000 to those whose houses had negligible damage. The first tranche was paid in December 2005, while the housing policy was approved in March 2006. The aim of ERRA's RHRP was: 'to ensure early completion of seismic resistant houses through an owner driven, assisted and inspected construction regime'.

Mr. Bajwa listed the salient features of the housing policy: owner-driven reconstruction; rebuilding in situ; seismically safe construction; payment of a uniform assistance package; consistent and transparent damage assessment criteria; judicious use of grants through signing of MoUs; payment through banks; provision of training using a 'cascade approach'; and establishment of public grievance redressal mechanism. He noted that the first course correction was done in December 2006 with the approval of *dhajji*¹ construction techniques.

The DG Planning reminded participants of the scale of the task facing ERRA – housing dispersed over 30,000 sq. km of rugged mountainous terrain, the huge social mobilization needed to deal with remote mountain communities, and housing damage equivalent to 6-7 times the scale of contemporary post-disaster housing programmes. He also listed the many challenges faced in implementation: remote areas, short building seasons, high transport costs and difficulty in accessing materials, shortage of skilled labour, dealing with a large and diverse range of stakeholders, disseminating information to people, tracking progress, ensuring compliance with building codes, drop-outs by those simply interested in securing the first tranche of housing subsidy, and the urgency with which people needed housing.

Mr. Bajwa then gave details of various aspects of implementation of the rural housing programme: survey conducted by teams comprising of personnel from the Pakistan Army, local governments and social mobilizers using the definition of a house as a building used for residential purposes and with a minimum covered area of 200 sq. ft; the policy of one roof-one compensation; issuance of guidelines for housing designs rather than fixed designs, thereby allowing people to build according to their needs; insistence on seismically safe construction; promotion of traditional techniques and use of local materials; payment of housing subsidies through banks.

¹ *Dhajji* or 'patchwork' construction is a traditional wooden construction technique well known in Kashmir. A *dhajji* house is made of a combination of a lightweight frame and in fill of mud or small stones, which form walls of regular or irregular 'patches'. Using many small panels and small elements, and being lightweight, the building performs well in earthquakes.

For social mobilization, Mr. Bajwa described the formation of village reconstruction committees, comprising male & female members, which made people aware of ERRA policies, & served as a useful source of feedback. Various tools were used to raise awareness including print & electronic media, road shows & posters. Training was carried out through partner organizations, which were allocated geographic areas to work in. A cascade training model was used, including set up of housing reconstruction centers and provision of need-based training. He highlighted ERRA's stress on ensuring support to vulnerable groups: one model house in each village was built for a female-headed household. He also described mechanisms set up by ERRA to ensure quality of materials & ensure supply at stable prices, & for timely public grievance redressal.

Alongwith 96.14% houses reconstruction completed, Mr. Bajwa described the social impact of ERRA's RHRP: he noted that the owner-driven approach had brought about a paradigm shift in the affected areas towards seismically resistant construction. New construction, even outside the ambit of RHRP, was following ERRA principles. Moreover, living in safer houses, families were able to focus on re-establishing their businesses and other aspects of their lives.

Mr. Tariq Bajwa concluded by listing the main lessons learned by ERRA:

- Owner-driven approach with assistance & inspection regime promotes efficiency;
- Use of technology during damage assessment reduces grievances;
- Sustained awareness-raising efforts should be made to ensure home construction is in compliance with safety standards and for those failing to comply, additional technical support should be provided to encourage them to do so;
- Flexibility in design and implementation is more effective than a one size fits all approach; use of local practices in construction techniques and solutions ensures ready acceptance and adoption;
- Special efforts should be made to address the needs of vulnerable groups;
- Disbursal systems should be simple and easily 'monitor-able'; payment through bank accounts is an effective option;
- An easily accessible & responsive grievance redressal system be established;
- Its good to outsource - diverse partners in the program bring credibility and augment capacity.

Dr. Ian Davis, Visiting Professor, Oxford Brookes University and Kyoto University:
'Roles, Relationships and Relevant Skills needed for Effective Disaster Reconstruction'

In his presentation, Professor Ian Davis posed five key questions:

1. What are appropriate roles to be played by external bodies?
2. What skills sets are required by external actors?
3. What are the pros and cons of owner-driven reconstruction?

4. How can external actors work together, and be productive and effective in supporting the affected communities?
5. Why is the ERRA reconstruction of international significance?

In response to the first question, Professor Davis described the roles that could be played by a range of external bodies: foreign governments, UN agencies, international finance institutions, international NGOs, and technical professions. These variously included raising finance, providing technical assistance, ensuring coordination between UN agencies, between all development partners and with government, developing close working relationships with affected communities, and providing capacity building support to local offices.

With regard to skills required by external actors, Professor Davis stressed that these were unlikely to be found in one individual, but would need to be assembled within well-integrated teams. Key skills included: general management skills; specialized skills in managing disaster recovery and development; advanced social and political skills; conflict management; cross-cultural teamwork/coordination; empathy to work with the poor/affected communities; and creativity.

In order for external actors to work together productively, Professor Davis urged that more reliance be placed on trust rather than control. He also recommended development of mechanisms for assisting groups to be genuinely accountable to [the beneficiaries](#) and empowering communities to play a decisive role in their own recovery. In this regard he emphasised recognizing the strengths of local capacities.

To explain the pros and cons of owner-driven reconstruction, Professor Davis referred to the example of Ache, Indonesia and various user-build approaches taken by communities there, with technical support from an NGO. The benefits of this approach included: it served as valuable psycho-social therapy for the community; community solidarity; strengthened local economy; acquisition of new skills in building, community organization, etc thereby strengthening livelihoods; physical recovery; safer houses; actions to support environmental recovery; and reduced corruption. However, he added the cautionary note that user-build approaches take time, while stakeholders often expect quick results.

In response to the final question, Professor Davis cited several examples of previous disasters through history which had contributed to important lessons being applied, and said that in the same manner there had been learning from Pakistan's experience. He highlighted the approach adopted; focused attention on reconstruction policies, the use of banks to make payments to poor families, and the fact that Pakistan had been able to sustain reconstruction efforts on such a vast scale.

Professor Davis concluded with a ten-point summary on which emphasis should be placed for effective reconstruction:

1. role casting by the National Government of all external actors
2. teamwork to provide essential skill-sets
3. building local capacity
4. a development perspective for reconstruction
5. making certain that the surviving population are active participants in managing their own recovery
6. owner-driven housing programmes as compared with using large building contracts
7. ensuring building safety
8. the importance of the 'process' of recovery , not just 'products'
9. 'Demand' side of reconstruction, not just the 'Supply' side
10. 'Trust' not just 'control'.

Mr. Kamran Akbar, Chief Operating Officer, Pakistan Poverty Alleviation Fund (PPAF): 'Monitoring and Data Management for Policy Implementation'

Mr. Kamran Akbar began his presentation by listing the cornerstones for implementation of housing reconstruction: ownership by the people, participation and ensuring special care for the vulnerable. He then gave a brief introduction to PPAF, describing it as the apex poverty alleviation institution to provide financial and technical support to CSOs in Pakistan. Funded by the Government, international development partners and the local corporate sector, Mr. Akbar said PPAF was working in 129 districts with 160,000 community groups through 84 partner organizations.

In the context of the earthquake response, Mr. Akbar said PPAF's role was to implement ERRA policies in 34 Union Councils of the affected areas. It had carried out damage assessment of 121,938 houses of which 107,091 were completely damaged, and arranged orientation/training of 93,000 individuals. The PPAF CEO described the implementation principles followed by the Fund: ERRA policy had to be implemented without exercising any discretion; monitoring and control regime placed before initiation of damage assessment; and MIS adjusted with policy changes. Turning to infrastructure on ground, Mr. Akbar said PPAF had 131 teams, (each comprising an engineer, one female and one male social mobilizer) which submitted weekly reports using GPS, laptops and digital cameras.

Mr. Akbar listed the multiple components of PPAF Management Information Systems: damage assessment, Plinth and Roof Inspections (Brick, Block, Confined, Timber Frame, and Bathar), **disbursements**, **house owners'** orientation training, Craftsmen training, Personnel Information, and Engineers' Spot Checks, and showed examples of each of the different types of forms/reports.

Mr. Akbar listed the **main lessons learned** by PPAF through its experience in EQAA. Foremost among these was the need for a regulatory authority to provide a framework for action – indeed, he observed that had there been no ERRA, there would have been another disaster. He also stressed the importance of developing personal relationships, of standardization to ensure quality and reduce opportunities for corruption, and inter- and intra-donor coordination. He urged the need to develop a common perspective among all stakeholders of the primary objective of reconstruction, and that political expediencies must not be allowed to over-ride technical work. He also advised against frequent policy changes and relaxation of standards. With regard to communities, Mr. Akbar identified ‘education, engineering and enforcement’ as the three vital areas to emphasize in housing reconstruction. He also urged that communities be encouraged to resolve their problems themselves. Other recommendations were for transport and logistics cost to be factored into planning, and for collective procurements to save costs.

In conclusion Mr. Kamran Akbar identified strengthened M&E, capacity building (particularly of local governments), allowing a logical time for damage assessment and re-verification, and reduced dependence on external agencies as critical factors for success. He summed up the key to PPAF/ERRA’s success as the owner-Driven approach and the focus on the ‘human being behind the systems’.

Dr. Jennifer Duyne Barenstein, World Habitat Research Centre, University of Applied Sciences, Switzerland: ‘Towards an Owner-Driven Housing Reconstruction Policy’

In her presentation Dr. Jennifer Duyne underlined the importance of owner driven reconstruction (ODR) national and international policies. She began by giving a brief overview of five different reconstruction approaches pursued in the context of different disasters:

- 1) Agency-Driven Reconstruction in Relocated Site (ADRRS)
- 2) Agency-Driven Reconstruction in Situ (ADRS)
- 3) Community-Driven Reconstruction (CDR)
- 4) Owner-Driven Reconstruction (ODR)
- 5) Cash approach

It was explained that ADRRS gave the lowest opportunity to people to participate in the reconstruction of their houses. Under this approach houses were reconstructed by **contractors on** a new site without any involvement of the house owner and the community. Houses tended to be of a one-type-fits-all design, alien to the local housing culture, and incompatible with people’s way of life. **She** explained that many INGOs and private corporations liked this approach because it allowed **them full control** over the reconstruction process and also gave them high visibility. ADRRS was used in Gujarat

(India) after the earthquake of 2001 but people refused to accept the houses. The same was the case in Sri Lanka and Ache.

With regard to ADRS, this involved tasking a professional building contractor to design and build houses. Again, typically, designs, materials and expertise were imported from outside the community. This approach allowed people, formally or informally to have some degree of control and participation because they knew which was going to be their house. House owners could suggest/make modifications themselves during construction. The presenter informed that ADRS was the dominant reconstruction approach pursued by NGOs in Tamil Nadu after the tsunami of 2004, but its implementation was problematic.

Dr. Jennifer went on to describe the CDR approach which was adopted by many national NGOs in Gujarat and many national and international agencies in Ache. Under CDR, the people were extensively involved in the reconstruction process, though the precise degree varied between and even within agencies. The advantage was its flexibility, local accountability and the control of the house-owner over reconstruction. It generally also had a high capacity building component. Dr. Dwayne noted from the Gujarat examples that when people really had a say in reconstruction they tended to choose designs and materials familiar to them.

Dr. Dwayne described the ODR approach as enabling people to have full control over the reconstruction of their houses through financial and technical support. Applied by the government of Gujarat after the earthquake of 2001, it proved - as in Pakistan - to be highly successful. It led to high levels of satisfaction and people were able to move back to their houses much earlier than those who opted for agency-built houses. Finally, Dr Dwayne said the cash approach was similar to ODR but the disbursement of financial support was not embedded into any enabling mechanisms. It could be appropriate where there was a high construction capacity, such as in Santa Fe, Argentina, following severe floods in 2003.

Dr. Dwayne described the findings of a comparative analysis of citizens' satisfaction with different reconstruction approaches conducted in 2004. The study clearly indicated that the higher the level of participation, the higher the satisfaction and that ODR was the most cost-effective strategy and reached the highest levels of satisfaction. While highlighting the advantages of ODR, she pointed out that it was no panacea for sustainable reconstruction; a prerequisite for sustainable and equitable reconstruction was good land use planning and good governance. She also noted the challenges and risks associated with ODR, e.g. it could be more difficult to implement in resettled and poor communities with no building experience (e.g. urban squatters).

Given this, Dr. Duayne identified a number of factors upon which successful ODR was contingent. These included: a technical support system for homeowners; ensuring access to affordable and good quality building materials; equitable assistance sufficient to satisfy minimum housing standards; building codes based on local building technologies and materials; provision of adequate training for local builders; special attention and support to vulnerable groups (orphans, widows, elderly, and the very poor).

Turning to the question of whether ODR should be replicated in all reconstruction contexts, Dr. Duayne noted that ODR had proven to be the most friendly, cost-effective and time-effective approach to housing reconstruction in different political, administrative and socio-economic, and cultural contexts. But at the same time she stressed that every reconstruction experience was unique and implementation strategies needed to be adapted to the local context.

In conclusion, Dr. Duayne said the review of past reconstruction experiences showed that many agencies were involved in post-disaster reconstruction. Given the clear advantages of ODR, policies to promote this should be formulated in 'normal' times. She said governments should take the lead in this, and thereafter in regulating the reconstruction approach of international agencies in accordance with ODR policies. She added that international organizations such as UN Habitat and the World Bank had a key role in policy advocacy and training to persuade the reluctant actors (e.g. some/INGOs) to adopt the ODR.

SESSION III: Owner Driven Rural Housing Programme – Community Participation, Sustainability and Risk Reduction

This technical session on housing reconstruction was chaired by Mr. Arif Hasan of Orangi Pilot Project (OPP) and featured presentations by Ms. Shahnaz Arshad of the World Bank on engaging with communities in post-disaster housing reconstruction, Mr. Mehmet Amin Akdogan on the Istanbul experience of promoting disaster management, Dr. Asif Hussain Shah, Director General, SERRA on institutional frameworks for ensuring quality private housing, and Professor Kenji Okazaki on earthquake risk perception and policy making.

Ms. Shahnaz Arshad, World Bank: 'The Why's and How's of Engaging Communities in Post-Disaster Housing Reconstruction – Case Study Pakistan: Achieving Greater Seismic Compliance through Social Mobilization'

Ms. Shahnaz Arshad began her presentation by explaining that the 2005 earthquake was massive, not so much in terms of severity, but in terms of its impact. Housing was the priority need of affected people. In this regard the World Bank and ADB were asked by

ERRA to undertake a preliminary damage assessment, and thereafter develop rural housing and social protection programmes. The Pakistan Army were later engaged to conduct a detailed damage assessment and beneficiary eligibility survey: they were chosen both for on-ground presence and technical expertise. Based on these, Ms Arshad said an ambitious housing reconstruction programme was launched in the nine affected districts, which provided homeowners with Rs.175, 000 grants for reconstruction of completely damaged homes, and Rs.75, 000 for repair of partially damaged houses.

Ms. Shanaz explained that while the short-term goal was to 'Build Back Better' – based on the perception that the widespread destruction caused by the earthquake was due to poor construction standards – the long-term goal was to inculcate a culture of seismic compliance in the affected areas. The perception that poor construction was primarily at fault, was confirmed by analysis of previous earthquakes which showed that it was buildings and not earthquakes themselves which killed. Given this, Ms. Arshad said there was little room for compromise on seismic resistant construction standards – despite the public pressure for quick results. Noting that ERRA was under great pressure to 'get on with the programme', she gave kudos to the Government and ERRA for ensuring that policies were applied uniformly across the board, and there were no parallel reconstruction programmes which could have led to varying results.

Ms. Shanaz said the World Bank's previous experience of post-disaster housing reconstruction across the globe led it to recommend the owner driven reconstruction (ODR) approach. Under this homeowners were put in charge of rebuilding their homes. An enabling environment to promote compliance with safety standards was created through the use of subsidies, awareness-raising campaigns, use of local construction techniques and materials, use of own labour, encouraging use of salvaged material and development of effective building materials supply chains. These were supplemented by 'sticks' to ensure compliance: signing of MOUs with eligible beneficiaries committing them to adhere to seismic resistant structural standards and committing ERRA to provide training and technical support; extensive public information campaigns reminding people of the dangers of non-compliance; and grant disbursement in tranches based on inspections.

Ms. Shanaz then outlined the logistical and psychological challenges involved in social mobilization. The former stemmed from the vast area involved, difficult terrain and scattered housing pattern. The latter arose from dealing with affectees who had suffered great trauma and faced the dilemma of a declining value system, coupled with the need to motivate them to change traditional practices. Ms. Arshad listed the key strategies adopted by ERRA to overcome these challenges:

1. Providing timely information and involving beneficiaries from the outset, e.g. through public awareness campaigns, giving advanced notice of damage assessments, signing of MoUs;
2. Community validation for determining grant availability, e.g. involving communities to apply the one roof-one grant policy;
3. Providing an enabling environment for compliance, e.g. through training and on-the-spot technical assistance;
4. Promoting a community-driven approach even though private assets were being created, e.g. encouraging collective action to help vulnerable members of the community, sharing knowledge and labour. In this regard village reconstruction committees were formed which carried out various functions, e.g. served as an interface between individuals/communities and partner organizations/ERRA, organized collective material procurement, collected data on communities.
5. Delivering the message repeatedly, as there was a tendency to forget and not everyone started construction at the same time or were at the same stage.
6. Ensuring public sector involvement, not just for oversight but for implementation, e.g. through involvement of the army, pooling of resources of local government institutions for various tasks. The stress on a public-private sector approach was based on the appreciation that, for reconstruction on such a vast scale, private sector organizations alone would not be sufficient as well as to overcome bureaucratic hurdles and ensure sustainability.

Looking to the future, Ms. Shanaz identified the main challenges as: absorbing and mainstreaming capacities developed within ERRA, its affiliates and partners organizations; further incentivising the housing sector so that people using their own funds also adhered to seismic resistant construction; defining the contours of private-public partnerships in mobilizing communities for disaster response; introducing a greater 'social engineering' theme in the work of local institutions and engineering bodies; and preparing homeowner friendly, seismic-resistant low cost structural designs and construction guidelines. Among additional lessons learned through ERRA's housing reconstruction programme, Ms. Arshad noted that partner organizations were not suited to taking on an arbitration role, e.g. in land disputes; inclusion of **penal- clauses** in MoUs for intentional misuse of grants was effective; the menu of technical assistance needed to be expanded, e.g. to include use of salvaged material; the need to project local champions and successful beneficiaries to motivate others; and the need for refresher trainings in social mobilization.

In conclusion, Ms. Shanaz stated that the value addition of effective social mobilization could be gauged from the findings of Progress Monitoring Teams' surveys conducted just one year after the earthquake. They reported the rate of seismic compliance for effectively mobilized communities (70%) was roughly double that for communities with little or no partner organization coverage (30-40%).

Mr. Mehmet Amin Akdogan, Senior Engineer, Istanbul Governorship: 'ISMEP: Sustainable Disaster Management through Mass Awareness and Skill Enhancement with the Help of Disaster Management Networks'

Mr. Akdogan began his presentation by reminding participants of the truism: 'Human memory is, fortunately and unfortunately, shorter than the return period of most disasters'. He explained that Turkey was prone to three types of natural disasters: earthquakes, floods and landslides. Of these, earthquakes in particular had taken a heavy toll both in terms of human lives and economic costs. An average of 950 people was killed by earthquakes per year, while the average direct annual economic cost exceeded US\$1 billion. Mr. Akdogan said Turkey's experience of earthquakes had led to a paradigm shift in thinking: from seeing these as 'fate', being reactive, taking ad hoc actions, engaging in crisis management, focusing on recovery, etc, the country had adopted a new strategic approach that was proactive, focused on mitigation and risk management, was comprehensive and ensured sustainable development.

Mr. Akdogan then explained the background to the Istanbul Seismic Risk Mitigation and Emergency Preparedness Project: 20% of Turkey's population live in the Istanbul region and more than 40% of the country's GNP is generated there. Its degree of seismic risk is comparable to that of San Francisco and Tokyo, while the estimated impact of a 7.5 on the Richter scale severity earthquake would be 70,000 dead and over \$30 billion in direct economic loss. To mitigate against such a disaster the ISMEP project was launched in 2006 with funding support from the World Bank and European Investment Bank. The goals of ISMEP, which is to run until 2014, were:

- Strengthening institutional and technical capacity of emergency management.
- Increasing emergency preparedness and response awareness.
- Retrofitting/Reconstruction of priority public buildings.
- Vulnerability inventory & project design for cultural and historical heritage assets.
- Taking supportive measures for the **efficient implementation of building codes**.

Mr. Akdogan described the three components of the project:

- Component A - Strengthening Emergency Management Capacity, e.g. through emergency communication and information management systems, raising public awareness and training;
- Component B - Seismic Risk Mitigation for Public Buildings, e.g. retrofitting of priority buildings, conducting risk assessments of historic buildings;
- Component C - Enforcement of Building Codes, e.g. through public awareness raising, development of a regulatory framework, streamlining of building permits issuance procedures.

Of these, Mr. Akdogan said Component B – seismic risk mitigation of public buildings – was the biggest, e.g. 347 schools had already been retrofitted and retrofitting of a further 112 schools was underway. Under Component A, he highlighted public awareness raising as one of the most successful aspects of the project. Mr. Akdogan concluded by saying that ISMEP was contributing to:

- Prevention of potential loss of life.
- Mitigation of social, economic and financial effects of a possible earthquake.
- A model for the design and implementation of other projects and activities within the field of disaster management.

Dr. Asif Hussain Shah, Director General, SERRA: 'Institutional Framework for Ensuring Quality and Sustainability of Private Housing'

Dr. Asif gave an overview of damage caused to housing in AJK as a result of the 2005 earthquake: 307,494 private houses were destroyed or damaged of which 282,049 houses were in rural and 25,445 in urban areas. He then gave an update of the current status of reconstruction in AJK: Rs.48.936 billion had been disbursed, and 96% of affected houses had been reconstructed and were compliant with seismic resistance guidelines.

Dr. Asif noted that main causes of the massive devastation caused by earthquake related to poor construction: use of inappropriate construction technologies and inappropriate building materials; poor workmanship; complete ignorance about seismic resistant requirements in construction; & an absence of building control mechanisms in rural areas & sub-optimal ones in urban areas. He reiterated the features of ERRA's housing policy described by earlier speakers, which aimed to ensure safe construction of new homes.

Turning to the way ahead, the DG, SERRA identified a number of requirements for sustained quality of private housing: a legal framework for private housing encompassing building codes and building control mechanisms; designation of the Local Government and Rural Development Departments as the building control authority for rural areas; strengthening of the equivalent authority/building control mechanisms in urban areas; and training and capacity building programmes.

Professor Kenji Okazaki, National Graduate Institute for Policy Studies, Japan: 'Earthquake Risk Perception and Policy Making'

Professor Okazaki pointed out that, while disasters should be reduced, a disaster that had already occurred represented an opportunity to rebuild safer communities. He cited the example of Ache where 120,000 houses were destroyed by the December 2004 Tsunami: this provided the opportunity to rebuild a safer Ache able to withstand earthquakes.

Professor Okazaki detailed the findings of a survey of reconstructed buildings conducted in Ache in 2006. Its aims were to study the level of earthquake vulnerability of ongoing reconstructed buildings (mainly houses and school buildings) and develop recommendations to improve the quality of reconstructed buildings in Ache. Flaws identified included: inadequate infrastructure (drainage, sanitation, electricity, etc) which in some cases led to completed houses lying vacant; use of imported materials and technology that was sometimes hard to maintain; lack of detail in structural drawings leading to poor quality construction; poor quality bricks and incorrect mixing of concrete aggregates; lack of anchorage for walls leading to collapse; use of different types of bricks in the same wall; improper spacing of bricks; failure to follow structural drawings.

He summed up the findings as follows:

- Quality of construction was below standard
- Lack of supervision/inspection
- Construction differed from drawings/specifications
- Unskilled workers

To address these issues, Professor Okazaki recommended the following measures: community involvement for awareness raising; good communication and coordination among donors, governments and communities; enforcement of Building Codes; mechanisms for quality control; training of workers and supervisors; and dissemination of appropriate construction methods. He also recommended that a similar survey be carried out in Pakistan by a third party to evaluate the seismic safety of reconstructed houses.

Professor Okazaki observed that in most earthquake-caused deaths, people were killed by their own houses, mostly built of adobe, brick, stone, and wood (non-engineered houses). He added that non-engineered houses could be strong if constructed/retrofitted with appropriate technologies. A big challenge, however, was that house owners lacked motivation to invest to ensure the safety of their houses, particularly for retrofitting. He pointed out that decisions on safety were made, not based on the actual risk but on the perceived risk.

He then detailed the findings of a survey on seismic-risk perceptions conducted in 2007-08 in a number of earthquake-prone countries: Japan, Nepal, Pakistan, Indonesia, India, Fiji, Turkey and the Philippines. The aim was to better understand the earthquake risk perceptions of residents, national/local government officers, and house builders/head masons, and how they wanted to avoid such perceived risk. In Pakistan the survey was conducted in two villages: Panyali village in Bagh, AJK where there were stone masonry houses and Kamman village in Okara, Punjab, where there were brick masonry and a few adobe houses. There were some significant differences between the answers of respondents from the two villages: 80% of Panyali respondents identified natural

disasters as the event that would most severely affect their lives; in Kamman the highest number of answers (40%) was for unemployment.

In a comparison of different countries, the question 'Do you think your house is strong enough against a big earthquake' elicited the least number of 'yes' answers from Pakistan. Similarly when local government officers were asked 'What do you think is the biggest problem in your city in terms of urgency and importance?' the lowest number of people answering 'natural disaster' was in Pakistan. Pakistani respondents were far more willing to spend heavily on saving their house/property from a big earthquake than on saving their families.

Noting the great variety of responses from different countries and even within countries, Professor Okazaki said the risk perceptions of stakeholders should be reflected in the development of policies and strategies for earthquake disaster reduction. For example people in different countries had different views on who should take responsibility for destruction of houses (e.g. government, owners), and housing safety policies should target the respective groups identified. Similarly, in order to motivate residents to retrofit their houses, the probable loss of their house/property should be emphasized in some countries (e.g. Pakistan), while the probable harm to their families should be emphasized in others. Government officers generally tended to think that individuals were responsible for non-compliance with building codes and damage to houses in the event of earthquakes. Professor Okazaki said training/education would be effective to enhance their sense of responsibility to develop and enforce building regulations.

Discussion

In his closing remarks, the Chairman Mr. Arif Hasan observed that in such a big programme there were bound to be constraints and shortcomings which needed to be presented. In the context of building controls, he suggested that consciousness was more important than rules and regulations; consciousness, in turn, was related to historic memory, which could be kept alive in schools. Hence, Mr. Hasan said education about such issues at school level was very important. He added that the success of community participation depended to a great extent on decentralization of decision-making and implementation. Finally, he suggested that in devastated areas what had worked in the long-term (indeed, he said there were no short-term solutions) was setting up research and extension organizations.

In response to a comment that it was a good time for ERRA to reflect and assess its results, not just in terms of numbers of houses constructed but also in terms of overall compliance and impact, Mr. Tariq Bajwa, DG Planning, ERRA, clarified that ERRA was in the process of developing TORs for a third-party evaluation, and this was expected to be carried out in the summer.

Referring to the payment of housing grants in four tranches, one participant suggested that while the first and second tranche amounts were understandable, the final two payments were too small to justify the considerable cost involved in making payments to so many people. He suggested that the final two tranches be merged into a single one to reduce disbursement costs.

In response to questions about the reasons for delays in starting construction, and why housing insurance policies were not being introduced in affected areas, Ms. Shanaz explained that when the 2005 earthquake struck winter was already setting in, rendering a number of areas inaccessible. This, and the need to carry out a detailed damage assessment, was the main factors holding up construction. With regard to insurance, she said there was no culture of insurance in Pakistan – not even for health or cars – so it was necessary to first ‘sell’ the idea of disaster risk insurance.

One participant suggested, in the context of risk perceptions, that mosques and imams could be an effective means to persuade people to build safer houses. However, Mr. Akdogan noting that official policies did not include reconstruction of mosques **suggested** that the **focus should** be on building safe mosques just as much as on safe hospitals and schools.

SESSION IV: Build Back Better - Housing Construction, Settlement and Protection Issues

The third and final technical session on housing reconstruction was chaired by Mr. M. Francis Ghesquiere from World Bank and featured presentations by Ms. Maggie Stephenson of UN-Habitat, Mr. Masood-ul-Mulk of SRSP and Dr. Amod Mani Dixit of NSET, Nepal detailing the roles played by their respective organizations in implementation of ERRA’s Rural Housing Reconstruction Programme.

Ms. Maggie Stephenson, UN-Habitat: ‘Build Back Better’

Ms. Stephenson explained that UN-HABITAT had taken over the role of Pakistan Army in conducting inspections in parts of the affected areas, and **provided support** for housing reconstruction. She highlighted the many difficulties involved in construction, e.g. transporting materials.

She then gave details of the different types of construction carried out in EQAA: 46% block houses, 30% *dhajji* and 24% bricks and stone. Illustrating each with photographs, Ms Stephenson noted that *dhajji* houses tended to have a more finished look than block/brick houses because in the former plaster was of mud and therefore cheap and easy to apply; in the latter cement was needed which was expensive and hence people

were inclined to postpone plastering. With regard to finished results, she highlighted the wide variations – reflecting owners’ personal choice and taste. She lauded the ERRA approach which provided guidelines for housing reconstruction rather than standard designs. ERRA had stipulated single-storey houses in EQAA, but Ms. Stephenson illustrated how people had found innovative ways to gain some use from their roof space, while remaining compliant with the single-storey rule.

Turning to the issue of non-compliance, Ms. Stephenson said the number of houses not meeting ERRA’s seismic resistance and other safety standards had fallen from 29,838 in December 2007 to just 1,366 by December 2009. She explained that most cases of non-compliance arose when people had started construction early – before guidelines were available – and then not been in a position to start again. She said technical assistance had been slow to come, and hence people had started building and made mistakes.

Ms. Stephenson lauded the mid-course correction by ERRA to endorse *leepa* construction and to allow retrofitting. She also explained the concept of ‘forced non-compliance’, e.g. ERRA required all houses to be built at least 4 feet distance from any slope, but in some cases the plot sizes were so small that there was no scope to leave 4 feet space. In this regard, she stressed the need to find engineering solutions to enable compliance rather than imposing simple vetoes, e.g. in cases where house openings (doors, windows) were all on one side, these could be reinforced to increase safety.

Referring to the need to protect the environment and natural resources such as wood, Ms. Stephenson pointed out that *dhajji* construction used far less timber than modern construction techniques. A house built of *dhajji* walls and a simple roof used 300 cubic feet of timber compared to 342 C. Ft. for a comparable size house made of brick walls and tower roof. Moreover, she said the real problem was use (wastage) of timber as fuel; to curb this she said UN-HABITAT was trying to promote the use of fuel-efficient stoves which could achieve 40-60% reduction in fuel consumption. Ms Stephenson added that, where so much effort had been put into public awareness-raising and capacity building, with just a little extra effort additional positive features and practices, e.g. rainwater harvesting, house insulation, could have been promoted as well.

Ms. Stephenson identified poor construction work as one of the factors causing the widespread devastation following the 2005 earthquake, and stressed the need to develop skills. She lauded the development of traditional skills (thanks to a return to safer, traditional construction techniques that had been indigenous to the affected areas but had died out for lack of use). However, she cautioned that these skills would again die out if their use was not sustained.

Based on ERRA’s and UN-Habitat’s experience in the EQAA, Ms. Stephenson identified a number of principles for housing construction which were applicable to all situations –

not just post-disaster: enable households to build their own homes, build on local knowledge, build skills, and trust communities. She highlighted that housing falls in the private sector, outside the main concerns of government departments and officials, yet it accounts for 90% of losses in disasters. Other lessons learned included: field-driven programmes needed to be responsive to maximize results; responsiveness in turn depended on the quality of information and quality of communication; skill development, awareness-raising and sustained technical support were needed. 'Build Back Better' should be more comprehensive, since this only happened once did not entail much extra cost.

In the last part of her presentation Ms. Stephenson focused on future challenges being posed by rapid urbanization. She pointed out that Pakistan was the fastest urbanizing country in Asia, the majority of growth would be in secondary cities with an additional 60 million people living in cities by 2025 and 30 million in informal settlements. Ms. Stephenson described the risks posed by this massive urbanization as huge and requiring action to tackle them now.

Mr. Masood-ul-Mulk, CEO, Sarhad Rural Support Programme (SRSP): 'Local Institutions: Blending top-down and bottom-up approaches in Owner Driven Housing Reconstruction'

In his presentation on the role of SRSP in ERRA's housing reconstruction programme, Mr. Masood-ul-Mulk explained that SRSP's approach was to take advantage of the potential of communities for self-help: based on social capital and networks, the capacity for collective action and strong ties of reciprocity. He described SRSP's role as that of a catalyst organization: promoting social mobilization, cultivating social activists, providing technical assistance, etc.

With regard to housing reconstruction in EQAA, Mr. Mulk said the first task for SRSP was to undertake damage assessment. There were numerous challenges involved in this: the difficult terrain, wide spread of houses, variety of cultures, tenancy issues and the sheer scale of the task – 62,683 houses were assessed of which 51,049 were reconstructed – and the fact that this was a new activity for SRSP. To facilitate implementation SRSP allocated 15 of its assigned 18 Union Councils to NGOs. He then outlined the various steps involved in the process of damage assessment, including information campaigns, community meetings, measurements by GPS, filling out of forms and data entry, data verification by PPAF, issuance of advice notes for payment and follow-up for payments. Other challenges faced in these processes were opening of bank accounts (a condition for receipt of grants), issuance of multiple checks, left out cases, need for grievance redressal mechanisms, and houses falling in red zones or areas of land sliding.

Mr. Mulk stated that particular emphasis was placed by SRSP on identifying and helping vulnerable cases, e.g. women-headed households, widows, orphans, the elderly and the disabled. Of 318 vulnerable cases identified, houses were completed for 286, while 32 migrated from the area. Moving on to the reconstruction process, Mr. Mulk explained the steps involved in this: mobilizing communities, orienting 43,334 house owners on construction guidelines, formation of village reconstruction committees, and training of 8,837 individuals in masonry, carpentry and steel fixing skills. He stressed that SRSP followed an owner-driven reconstruction approach, seen in its provision of technical guidance only and the fact that no contractors were involved.

In terms of impact, it was able to achieve 96% reconstruction of houses compliant to lintel level with safety standards, and disbursement of a total of Rs.8.73 billion. Mr. Mulk highlighted the role of community participation and feedback in refining policies, e.g. endorsement of local structures (techniques). Other factors contributing to success were: the focus on integrated livelihood-centred programmes supporting long-term objectives; outreach and accessibility of communities; transparency and accountability; monitoring and revalidation; promotion of a culture of openness and flexibility within the organization and open communication channels; and community-based DRM.

Among the lessons learned, Mr. Mulk identified the importance of local knowledge, ensuring a wide impact, addressing missing dimensions, making effective use of intermediary organizations (NGOs) and taking a holistic approach. In conclusion, he said the experience and lessons learned through housing reconstruction in EQAA could be applied in implementing similar programmes for IDPs affected by conflict in FATA and NWFP.

Dr. Amod M. Dixit, National Society for Earthquake Technology (NSET), Nepal:
'Learning from Pakistan Earthquake Reconstruction for Promoting Earthquake Risk Reduction and Preparedness in Nepal'

In his presentation Dr. Amod Dixit detailed the capacity building support provided by NSET for housing reconstruction in EQAA and the lessons learned from this. He began by detailing NSET's extensive involvement in the earthquake response, from the emergency phase, through early recovery to reconstruction. Examples of NSET projects included: Capacity Building for Earthquake Reconstruction (with UNDP) and Shake Table Demonstrations (JICA) during the early recovery phase; Training Support for Earthquake-Resistant Housing Reconstruction, (ERRA and UN Habitat) and School Earthquake Safety Program (in Gilgit) during the reconstruction phase; and Program for the Enhancement of Emergency Response (with NDMA).

Based on NSET's extensive experience of working in EQAA in Pakistan, Dr. Dixit identified 'what worked' in the each phase of the earthquake response. He highlighted

the importance of stressing earthquake safety in the earliest stages; creating enabling conditions for subsequent reconstruction by training a critical mass of masons and builders during the relief and early recovery phases; using a cascade approach to create a multiplier effect; and adapting approaches based on local conditions and cultural sensitivities. In the reconstruction phase, he noted the development of a rural reconstruction strategy, issuance of guidelines for seismic-resistant construction of non-engineered buildings, and the stress on training as important factors in success.

Dr. Dixit elaborated on the training approach taken by NSET. As well as use of a cascade model to create a multiplier effect, he described the range of curricula/materials produced – for engineers, artisans, social mobilizers, owner building, damage assessment, etc – with separate instructors and participants’ manuals for each. Dr. Dixit said that in total NSET conducted 66 trainings between Nov. 2005 and May 2007, training a total of 2,580 professionals and 700 masons, and developing 28 master instructors and 850 instructors/trainers. The main scope of training courses was on safer construction practices for common, non-engineered residential houses, and on damage assessment. In advocating technical solutions for seismic-resistant construction, Dr. Dixit said NSET was guided by the promotion of local materials and construction technologies – finding local solutions to local problems. He added that NSET worked in close collaboration with local people and organizations in conducting its trainings, emphasised hands-on and on-the-job training and engaged in ‘training-implementation-monitoring-evaluation-strengthening’ as a continuous process.

Turning to challenges faced in working in EQAAs; Dr. Dixit cited the vast scale of the task, the fact that NSET had a very small team, the diverse target groups to be trained (engineers, sub-engineers, masons, homeowners, social mobilizers, etc), the need to work at both central and local levels, the lack of competencies for seismic-resistant construction work, and the fact that considerable time was taken up on discussions. Looking ahead, Dr. Dixit noted that challenges would also be faced in ensuring sustainability of learning and its application for construction. He suggested various measures to overcome these including: advocating for ‘Build Always Better’ (as opposed to simply ‘Build Back Better’), sustaining learning and capacity development, developing standard processes for compliance with seismic-resistant construction standards, and developing one national curriculum.

Dr. Dixit concluded by detailing how the lessons from Pakistan’s reconstruction experience had been transferred to Nepal, e.g. through visits by government officials, development of guidelines and training manuals for damage assessment, masons training and engineers training.

Discussion

In his closing remarks the Chairman Mr. Ghesquiere noted that Haiti was currently facing a similar situation to that in Pakistan following the 2005 earthquake: with over one million people rendered homeless, the challenge was how to deliver quick results but do so in a manner that was acceptable to local people and safe? He noted that many lessons could be learned from the Pakistan experience, and pinpointed 'the need to provide engineering solutions rather than vetoes', i.e. finding ways to help people rather than simply applying rules.

In the discussion, questions were raised about the use of fuel-efficient stoves and of timber for construction, the future of skill development programmes, and the impact of women as training supervisors. In response to the first, Ms. Stephenson said UN-Habitat had looked at many different types of stoves and reached the conclusion that those based on local skills and materials were the most likely to be adopted by people. She said the response rate to date to fuel-efficient stoves was very positive, but UN-Habitat was constantly adjusting its approach based on feedback from users.

On the wider issue of timber conservation, Ms. Stephenson said natural resources needed to be managed better: she called for community-driven solutions which, in turn, required awareness-raising. Referring to skills development, Ms Stephenson said it was necessary to think beyond the earthquake to the considerable potential for economic growth from the housing sector. Noting that lots of people were falling into poverty, she urged that future planning be carried out now to address this issue and take advantage of the massive potential in the housing sector.

Responding to the question about women, Mr. Masood-ul-Mulk said that the SRSP was strongly committed to gender equality – many leading positions in SRSP were held by women – but when promoting this within general society it was important to take into consideration the local sensibilities and culture. He stressed the need to work with cultures rather than against them.

SESSION VI: Disaster Risk Reduction

The session on disaster risk reduction was chaired by Mr. Wolfgang Harbinger of World Food Programme, and featured an 'overview' presentation by Air Cdre. Naunehal Shah (Retd.), Advisor ERRA, followed by presentations by Dr. Markus Zimmerman, Professor Dr. Amir Nawaz Khan, University of Peshawar and Usman Qazi of UNDP. Dr. Zimmerman could not attend the Conference because of flight cancellation due to volcanic ash over Europe, so his presentation was made by Air Cdre. Shah.

Air Cdre. Naunehal Shah (Retd.), Advisor ERRA: 'ERRA Disaster Risk Management Programme "Trail Blazer in DRR in Pakistan"'

Air Cdre. Naunehal Shah began his presentation by describing Pakistan's risk environment: it faced multiple hazards, pressure on natural resources was growing, climate change and environmental degradation were increasing. He stressed that disasters had to be seen as development failures: stemming from poor land use planning, development in the wrong place, and so on. He then explained that disaster risk reduction (DRR) was a pre-disaster preparedness concept with three over-arching goals: to reduce existing risks, prevent the build-up of new risks, and adapt to the changing risk environment.

Air Cdre. Shah made reference to the Hyogo Framework for Action 2005-2015, which requires the countries to promote: governance and DRR mainstreaming; risk assessment and early warning; education and awareness; mitigation of underlying risk factors; and preparedness for better response. He explained that, in Pakistan, the primary institution with responsibility for implementing the Hyogo Framework was the National Disaster Management Authority (NDMA) and listed the many activities it was undertaking in this regard, e.g. national hazard and vulnerability assessments, promoting DRM planning and mainstreaming DRR into development.

Turning to the disaster response situation in Pakistan at the time of the 2005 earthquake, Air Cdre. Shah described this as predominantly 'post disaster response-centric', with little or no focus on disaster preparedness, mitigation and risk reduction. He then detailed the many ways in which ERRA was integrating DRR into reconstruction, including: seismic micro-zonation and building codes; development of manuals, seismic resistant design sketches and other awareness material; linking financial support for housing with compliance with standards & designs; training practitioners, engineers and masons in seismic resistant construction techniques; incorporation of risk reduction measures such as doors opening outwards, and emergency fire exits in schools and health facilities; relocation of schools and health facilities falling on fault lines; small scale landslide mitigation projects along selected roads; and supporting the development of District Disaster Risk Management Plans for the earthquake affected districts.

Air Cdre. Shah said ERRA's Disaster Risk Management Program was one of the major ways in which ERRA was integrating DRR into reconstruction. Supported by the World Bank and running over a three year period (March 2008 – May 2011), he outlined its main components:

- Hazard Identification and Mapping;
- Mainstream Disaster Risk Reduction (DRR) in development planning process;
- Developing response capacity of communities at district and union council level.

He listed some of the results achieved under the DRM Programme to date: hazard indication maps prepared for landslides, rock-fall, snow avalanche, and debris-flow; guidebook compiled for mainstreaming DRR at district level and DRR checklist for inclusion in PC-1; over 168 Union Council Disaster Management Committees (UCDMC) and Emergency Response Teams (UCERT) established; over 10,600 volunteers trained to date in Mansehra, Muzaffarabad, Neelum, Bagh and Abbottabad districts; stockpiles of emergency tools and equipment established for immediate response at local level; and DRR Chairs being introduced in Hazara and AJK Universities.

Air Cdre. Shah highlighted the efforts made by ERRA to promote ownership and coordination of these diverse initiatives, in particular with the NDMA and also with the Governments of KP and AJK. In conclusion, he listed the main lessons learned through ERRA's DRR efforts:

- Its programme gained uniqueness and authenticity through its development during an actual disaster of devastating proportions;
- Working in synergy with relevant sectors enhances programme effectiveness and leads to greater impact;
- Community sensitization and willing participation are key to achieving desired results;
- Adopting good practices from other countries is essential to maximising programme quality;
- Periodic participatory programme evaluation and course correction enhances confidence of donors and partners and improves the programme;
- Cultural sensitivities of beneficiary communities need to be respected.

Dr. Markus Zimmerman, NDR Consultant, Switzerland: 'Disaster Risk Reduction on Local Level: A necessity for sustainability in recovery and long-term development'

Dr. Zimmerman said natural disasters could be seen both as 'development killers', in that they caused massive damage and diverted resources from development into rescue and relief, and as 'development failures' because the damage caused often stemmed from human activity in the wrong place, at the wrong time and/or in the wrong way. In the 2005 earthquake that struck Pakistan, for example, it was the missing seismic resistance which caused buildings to collapse rather than the earthquake itself. He then emphasized that **the local level** was very important, because the damage occurred at local level; the local population was most affected; and the future disasters could be effectively mitigated at local level.

Dr. Zimmerman referred to the Hyogo Framework for Action (HFA) and reviewed its implementation, and the challenges faced in this, in the earthquake-affected areas of AJK and NWFP. Priority action 2 of the HFA is about knowing risks and monitoring for

them. Noting that multiple risks – not just earthquakes – were prevalent in affected areas, he said ERRA was carrying out hazard and risk mapping at district level. Among challenges he listed the need for detailed scale for local planning (e.g. individual structures should be visible) and stressed that information on such maps must then be implemented in local planning. He also described quantitative risk assessments as necessary, e.g. for priority setting and justifying the DRR measures.

The HFA priority action 3 calls for raising awareness and building DRR capacity at all levels. Dr. Zimmerman noted the many measures being taken by ERRA to raise local awareness of disaster risks and how to mitigate against these, e.g. through seismic-resistant construction. However he also noted that people’s risk perceptions were shaped by factors such as their beliefs, value systems and life experiences. Under HFA priority action 4 efforts are to be taken to mitigate against risk factors. He said ERRA had provided guidance for mainstreaming DRR into district planning, an important first step being adaptation of the PC-1 planning document. But he added that DRR needed to be systematically integrated into all development planning processes, which would require national policy as well as capacity building of local governments and awareness-raising among the local population.

Next HFA priority action 5 refers to the capacity to respond to disasters at local level. He reiterated the importance of the local level by pointing out that community members were the ones most affected by a disaster, they had the most interest in addressing it, they knew the area and affected sites, and they were the first on the scene. Among measures being taken by ERRA he cited the establishment of Union Council Disaster Management Committees and Emergency Response Teams. Dr. Zimmerman cautioned that the challenge would be to maintain awareness, political will and efforts to be operational at the local level even after many calm years. He stressed that community preparedness was a continuous process.

In conclusion, Dr. Zimmerman said the ERRA – and its DRM programme in particular – had made considerable efforts to render reconstruction and is long-term development resilient. But, he said a number of challenges had been only partially addressed in the affected areas: the need for detailed risk mapping and quantitative risk assessments to promote risk-conscious decisions; fully mainstreaming DRR at all levels; and establishing a culture of risk prevention. Finally, he warned that “climate change” would be a major issue, not just for the earthquake affected areas, but for Pakistan as a whole.

Professor Dr. Amir Nawaz Khan, Director, Centre for Disaster Preparedness and Management, University of Peshawar: ‘Need and Importance of DRR Education in the Context of Pakistan’

In his presentation Professor Amir Nawaz Khan firstly defined disaster risk reduction followed by DRR education: ‘The required knowledge and skills to achieve the

possibilities of minimizing vulnerabilities and disasters in a society to prevent, mitigate and prepare for the adverse impacts of hazards, ultimately aiming at the achievement of sustainable development.' He said the objectives of DRR education were to generate and disseminate knowledge about disaster risk through research, teaching and extension work; acquire skills for effective implementation of policies and programmes for DRR; and provide the qualified human resource base for this.

Professor Khan stressed the need for an interdisciplinary approach to DRR education, explaining that this would enable the multiplicity of factors involved and complexity of disaster risk issues to be addressed. Moreover he cautioned that without such an approach satisfactory acceptance of DRR education would probably be difficult to achieve. Professor Khan then gave a brief update of the status of DRR education in Pakistan. He noted that very few academic institutions were offering DRR education. The only public sector institution offering this is the University of Peshawar and its Centre for Disaster Preparedness and Management (CDPM).

To underline the importance of DRR education, Professor Khan cited some of the damage caused by recent disasters in Pakistan: in the October 2005 earthquake over 73,000 people were killed and reconstruction costs were estimated at \$5.2 billion; in the February 2005 floods 7 million people were affected. Given the huge physical and financial toll taken by disasters, Professor Khan urged that prevention was better than cure. He calculated that investing \$1 in preparing for a disaster would save \$4-10 spent on recovery from it. Based on these figures, he called for a paradigm shift from conventional disaster response to comprehensive DRR, and added that this was the key to sustainable development.

Professor Khan then elaborated a two-pronged strategy for DRR education comprising the infusion approach and stand-alone programmes. The former entailed DRR education being made an integral part of the total curricula at school level. In this way he said DRR education would emerge as the outcome of a re-orientation of the various disciplines and would raise DRR awareness among youth in general. By contrast, stand-alone programmes would be a separate discipline or specific subject at higher level, which would give rise to a special cadre of people specifically trained in DRR. He said both the infusion approach and stand-alone programmes were needed for effective DRR education.

Professor Khan presented a hypothesis for the wider impact of DRR education. Based on data that enrolled students and teaching staff account for one quarter (26%) of the population of Pakistan, and on the assumption that 'each one teach one', he asserted this would mean 50% of the population would attain DRR education.

In conclusion, Professor Khan reiterated that the cost of disaster damage was far beyond the affordability of Pakistan's economy and that integration of DRR education on a

sustainable basis could only be achieved through implementation of the two-prong strategy.

Mr. Muhammed Usman Qazi, Advisor on DRR to UN Resident Coordinator Bangladesh: 'Role of UNDP in Disaster Response - Reminiscence from Pakistan Earthquake 2005'

Mr. Usman Qazi clarified that he was making the presentation on behalf of Mr. Hossein Kalali, Bureau for Crisis Prevention and Recovery, UNDP.] Mr. Qazi began by explaining the temporal order of a disaster response: the first 6-12 months comprised the relief phase, the first 12-18 months the early recovery phase, while the reconstruction phase could last from 3-6 years. Adding that there could be overlap between these, he defined each phase:

- Relief - To save lives and to prevent secondary disasters;
- Early Recovery - To restore lives; to provide transitional arrangements; to pave way for reconstruction;
- Reconstruction - To rebuild lives, livelihoods and infrastructure to present day requirements; to mainstream risk reduction in recovery.

Mr. Qazi highlighted the fact that there had been no second disaster in Pakistan due to disease or the onset of winter, and described this as a source of great pride for the nation. He then described the generic role played by UNDP in recovery: Post Disaster Needs Assessment (PDNA); support to strategic planning; sharing of international experiences and knowledge; recovery initiatives; provision of technical assistance and capacity building support; and normative advocacy.

Specifically in the case of the Pakistan earthquake 2005, he listed the following contribution by UNDP:

- Support to the Formulation of Early Recovery Framework (2005) and Early Recovery Plan (2006);
- Strengthening of ERRA through Policy Advice and Technical Assistance;
- Field Based Projects: Transitional Shelter and Training in Earthquake Resistant Construction Techniques; Rubble Removal; Community Based Livelihood Recovery; Restoring the Local Government Capacity; Slope Stabilization; Disaster Risk Reduction;
- Advocacy for Rights Based Approach;
- Fostering Global Learning.

Based on UNDP's experience he identified the following lessons learned: the need to invest in preparedness; spending on DRR was equivalent to 'a stitch in time; the DRR

was everybody's business; the need for institutional development and capacity enhancement at all levels of governance and across society. Mr. Qazi concluded by outlining the ways in which UNDP had adapted its functioning based on its experience of the 2005 earthquake response: the initiation of a surge roster to allow rapid enhancement of staff capacity; introduction of fast-track processes to enable quick interventions; and the compilation of a corporate PDNA guideline.

Discussion

In his closing remarks, the Chairman posed the question whether poor communities and poor people could afford to worry about DRR? He then added that the ERRA example proved that there were efficient and popular ways of incorporating DRR without inconveniencing people and imposing great burdens.

In the discussion, one participant suggested involving the media in DRR education, pointing out that it had considerable outreach to the mass public. In response, Professor Khan said changes could be brought about through the media, e.g. it could publicize the proceedings of the ERRA International Conference. He endorsed the potential for the media to be a strong partner in promoting DRR awareness. In response to a question whether DRR education should rely on traditional or activity-based curricula, he said CDPM had prepared detailed curricula based on practical examples. He added that there had always been elements of DRR in education curricula, but more systematic efforts needed to be made for DRR education.

**PROCEEDINGS OF DAY
TWO:**

20 April 2010

SESSION V: Role of the Media in Post-Disaster Relief, Recovery and Rehabilitation

The session on the role of media was to have been held on Day One of the Conference, but had to be postponed because the media representatives were called away to cover the signing of 18th Amendment by the President. The session was therefore, held on Day Two. It was chaired by Syed Talat Hussain of Aaj News. Its format differed from other sessions in that the focus was on “interactive discussion” rather than “formal presentations”. As such, each speaker delivered a short address, and the floor was then opened up for discussion. The speakers represented a number of leading national and international news organizations: CNN, Al-Jazeera, Dawn News, AP and the Xinhua News Agency.

Syed Talat Hussain, Executive Director News and Current Affairs and Anchor, Aaj News: In his opening remarks, Syed Talat Hussain said the media was criticised for being random in its coverage and selection of stories. It was accused of only reporting from areas its cameras could reach, and failing to cover those they could not. Mr. Hussain countered such criticism by pointing out that, following the 2005 earthquake, news cameras reached places that were hard to access, e.g. near the Line of Control (LOC). Mr. Hussain then posed the question: ‘What is the role of the media in crisis situations?’ With demands from communities on the one hand, and officials wanting to get their positions across on the other, he asked how these often conflicting interests could be reconciled with the media’s interests.

Mr. Muaffaq Zaidan, Al-Jazeera: Mr. Zaidan said the media’s role was to report events in an impartial, neutral manner, but in the case of natural disasters such as earthquakes, it had to start with the victims. He noted that when disasters struck, agencies would push their reporters to cover it. But, because of constraints of resources and time as well as new competing stories, they were often not interested in returning to disaster-affected areas and reporting what was happening. He stressed that this applied to national as well as international media agencies across the world. Mr. Zaidan suggested that organizations involved in post-disaster reconstruction should identify human interest stories to retain media interest and ensure continued coverage. Mr. Zaidan also observed that many journalists did not have the capacity or experience to report on major crises. In conclusion, he made the point that the biggest threat facing Pakistan was not disaster risks (from natural hazards) but the increasing power shortage and cuts.

Mr. Fahim Zaman Khan, Dawn News: In his short address Mr. Khan stated that the news today was more of a commodity than an attempt to convey information. He added that this reflected the interests of readers/viewers – people did not want to read, they were not interested in ‘serious’ news. In the context of post-disaster reconstruction, he expressed scepticism that people were interested in stories about seismic-resistant

construction or other such aspects of reconstruction. With regard to the media's role in disaster situations, Mr. Khan noted that if reporting was positive the media were accused of being sycophantic, and if critical then of undermining the relief effort. He echoed the dilemma posed by Talat Hussain: 'How to get balance? How to report in a manner that achieved a purpose rather than simply raking in advertising revenue? He opined that there were no simple or easy answers to these questions.

Mr. Adnan Shaukat, AP: Mr. Shaukat observed that reporting styles had changed rapidly in recent years, with many factors to consider: newsworthiness, selling points, ratings, and so on. He described this as a new process for Pakistan and, happening so quickly, the results were mixed. However, he also asserted that reporting in Pakistan was becoming more mature, and was continuously improving. Mr. Shaukat made the additional point that reporters in Pakistan used to be unaware of security risks to their own person, but this too had changed. He said media personnel now went into disaster areas properly equipped.

Mr. Li, Xinhua News Agency: In response to the question initially posed by Talat Hussain, Mr. Li said that in China the country's (national) interest was always put above media interests. He cited the example of the massive 1967 earthquake that hit a city in the north of China. Its population was over one million people and the earthquake struck early in the morning when most people would have been asleep. The official news agency simply gave a short, one-sentence report detailing the location and magnitude of the earthquake: the death toll was kept a state secret for over three years. The number of dead was in fact over 240,000 people, but because of the political environment in the country at the time (the Cultural Revolution was underway), everything was viewed through an ideological prism: China's leaders were neither prepared to reveal the scale of the disaster, nor accept foreign aid.

Mr. Li added that, since China's 'open door policy', there had been a massive change in Chinese attitudes and policy towards coverage of disasters. He illustrated this with the example of the 12 May 2008 earthquake that struck the south-west province of Sichuan. That disaster was reported almost immediately by the Chinese media and other foreign agencies. Similarly local, national and foreign media all had free access to cover the earthquake of 14 April 2010 that struck north-west China. Mr. Li attributed the change to China's desire to open up its economy and promote economic growth. He claimed that, just as it had one of the leading economies of the world, so the Xinhua News Agency was one of the leading in the world. He added that the media was playing a very important role in strengthening Pak-China relations.

Mr. Reza Sayyah, CNN: Mr. Sayyah echoed the point made by earlier speakers that media reporting was changing - he described the changes as going in a 'disturbing direction'. He commented that TV today was a business, with the aim to get people to

watch by any means necessary. However the CNN reporter added that – even with this ‘troubling purpose’ – there was no reason why news agencies and those engaged in post-disaster relief and reconstruction could not work together. Mr. Sayyah said the best way to get long-term viewer interest in a disaster situation, was through human stories. He noted that ‘amazing stories’ came out of disasters: those involved in disaster responses should tap into the media’s desire to tell amazing stories by facilitating them in doing so. He also highlighted the power of the media to get people to ‘reach into their pockets’ and make donations to help those affected by disasters.

Discussion

In the discussion one participant asserted that the role of radio in reporting on the 2005 earthquake was not sufficiently lauded or recognized. In response, the Chairman acknowledged that radio stations like Power 99 had played a critical role in reporting from affected areas. He also cited the example of messages issued by a radio station in Swat, which were very helpful in getting people out of the area before the launch of military operations. Mr. Fahim Khan of Dawn News echoed Syed Talat Hussain in asserting that, in countries like Pakistan, outreach and effectiveness of radio was much greater than that of TV.

A question was raised about the role of women reporters in covering crisis situations. Mr. Reza Sayyah answered that for cultural reasons, access by and to women was often limited. He conceded that women’s issues and views were not adequately covered by the media. Syed Talat Hussain also acknowledged that no special effort was made to cover women’s stories because of cultural constraints, plus that fact that women were not in decision-making positions in the media. He observed that Dawn News, which was dominated by women, could not afford to have a male bias (!), but this was not the case for the majority of media organizations. Mr. Adnan Shaukat said many more female reporters and camerawomen were now being seen in the Pakistani media, which was enabling greater access to and coverage of women. Mr. Fahim Khan pointed out that in disaster / crisis situations, the victims were predominantly women and children.

In the discussion, the Chairman again referred to the dilemma facing the media of how to report information critical of the government at a time of national crisis, knowing that such coverage would anger the government and demoralize affected communities? Mr. Muaffaq Zaidan of Al-Jazeera admitted that, at times of disaster, it had to be selective in its reporting. Mr. Reza Sayyah said that also the CNN would be selective, unless there was a situation where the same governance failings were being seen again and again, and where reporting them could lead to pressure for change and improvement. Mr. Li of the Xinhua News Agency said in China there were rules which journalists had to follow.

On the related issue of maintaining neutrality and objectivity, Mr. Fahim Khan conceded that it was very hard to be neutral: reporters did get affected by the situations they were reporting and they could have very strong reactions to these, thus losing their objectivity.

Syed Talat Hussain gave the example of recent media coverage of demonstrations in Hazara to show that the reporters could be biased. He said most of the Peshawar-origin media teams in Hazara did not accurately reflect local sentiment in their reports, and it was only when Islamabad-based teams were dispatched that the real picture came out. In this context, the Chairman added that there was also often an urban bias in reporting, because of ease of access. In the immediate aftermath of the 2005 earthquake, the focus of media reporting was the collapsed Margalla Towers in Islamabad: it only later shifted to the much greater devastation in AJK and KP.

A woman in the audience complained that no media organization had carried follow-up stories on some people who had suffered back injuries in the 2005 earthquake – despite the fact that they were in Islamabad and easily accessible. In response, several of the speakers referred to the numerous demands being made on the media – the many other stories ‘competing’ for their attention – the fact that air-time and even print space were limited, and the resource constraints facing media organizations. Put simply, they said it was impossible for the media to report on everything. Mr. Fahim Khan made the further point that – in a context of terrorist attacks, IDP crisis in Swat, political upheavals, crippling power cuts, and so on – the story being highlighted by the questioner was mundane. Syed Talat Hussain noted that in Pakistan the media tended to be considered solely as TV, print and radio, when in fact there were numerous other components: documentaries, films, theatres and the internet. He suggested that, with space on TV channels and other ‘mainstream’ media so limited, these alternatives should be availed to keep issues alive.

A participant accused the media of acting as if it was ‘beyond accountability’: in the drive to get viewers. She said media organizations would show gory pictures and/or run unverified stories. Even if apologies were later issued, these would be much smaller than the original story and correspondingly get less attention. In response, Mr. Reza Sayyah said that in CNN fact-checking was of the utmost priority: nothing was more important than being accurate because otherwise the agency would not have credibility. He acknowledged that inaccuracies were being seen in the reporting of some relatively young media channels, but added that this reflected their inexperience and would improve as they became more established. Syed Talat Hussain added that people had ‘an absolutist view of the media’s perfection’, when in reality there were huge problems because of the speed with which so many new channels had emerged and the consequent lack of skills and experience. He also pointed out that in Pakistan most media personnel were engaged in ‘crises reporting’, which was not conducive to developing good journalistic practice. However, he concluded that the bottom line was that to preserve viewer-ship / readership, the media organizations had to be accurate.

In a final comment, a senior ERRA official referred to the bias of media organizations, and urged that what ERRA or any other government organization were seeking was

simply for things to be put in perspective. If the media reported on shortcomings in one area, they should also highlight achievements in others, so the reader/viewer obtained a holistic view rather than a narrow, restricted view.

SESSION VII: Planning, Designing and Reconstruction of Facilities in Severe Seismic Environment

The first of two sessions on infrastructure building was chaired by Lt. Gen. (Retd.) Syed Shujat Hussain and featured an 'overview' presentation by Brig. (Retd.) Pervaiz Hayat Niazi, DG Planning ERRA, followed by presentations by Mian Shaukat Shafi of ADB on institutional arrangements for post-disaster reconstruction, Ms. Madhavi Malalgoda Aryabandu on the importance of reconstructing safe education and health facilities, and Dr. Garry de la Pomerai on fast-track reconstruction for schools. Dr. Pomerai's presentation was made via video-conference link from the UK.

Brigadier (Retd.) Pervaiz Hayat Niazi, Director General Planning ERRA: 'Building Back Better in Earthquake Affected Areas'

Brigadier Niazi began his presentation by outlining the scope of ERRA's reconstruction and rehabilitation work in affected areas: it covered twelve sectors, with three cross-cutting themes – DRR, gender equality and environmental protection – and encompassed a total of about 13,000 projects costing over US\$5 billion. He then listed the main features of ERRA's reconstruction strategy: participatory approach involving affected communities; use of seismically safe designs, construction techniques and practices; use of all available fast track construction technologies; integration of service delivery; promotion of gender mainstreaming, gender equality and social uplift, and ensuring environmental safeguards.

Brigadier Niazi stated that of a total of 12,944 projects, 44% had been completed and 36.23% were under construction. He then gave a sectoral breakdown of ERRA's reconstruction portfolio: 5,808 educational facilities including three major universities, 62 colleges and 5,737 middle and primary schools; 307 health facilities; 1,841 major government buildings; 233 road projects including 92 bridges; and 4,746 WatSan (water supply and sanitation) projects.

This was followed by **description** of the way ERRA's 'Build Back Better' philosophy was being applied in specific sectors. **In education**, Brigadier Niazi said that ERRA was working to ensure better social service delivery, improved design of facilities and provision of additional facilities. This encompassed, among others, ensuring equitable education provision from gender and geographic perspectives, providing hazard resistant and seismically-safe design, favouring low maintenance designs, providing appropriate WatSan facilities in all schools and colleges, putting up boundary walls, and using standardized child-friendly, fire-resistant furniture.

In the health sector, Brigadier Niazi said ERRA's focus was on rationalization of the health system with integration of smaller health units and up-gradation of others, providing reproductive health services and psycho-social support, establishing well-equipped EPI centers, increasing the number of hospital beds and providing separate waiting areas for males and females, providing the latest equipment, diagnostic and therapeutic services.

Similarly, in the governance sector Brig. Niazi said the focus was on improved service delivery by constructing district government complexes, such that all Departments were co-located in one compound. Efforts were being made to provide better amenities, working environment, and promote standardization of design for similar buildings like police stations and residential accommodation. In the WatSan sector, projects were being implemented through participatory approaches wherein line agencies, communities and partner organizations were fully involved. This was integrated with mass awareness campaigns through the media and implementing partners. In addition to providing easy access, ERRA was working to improve water quality and promote rainwater harvesting as a means of tackling water scarcity.

Brigadier Niazi listed ERRA's activities in the transport, power and telecommunications sectors and described how these too were designed to both increase access to services and improve the quality of services. He concluded with social protection, for which he said ERRA was setting up Social Welfare Complexes and Women Development Centres in all affected areas at district level, and up-grading Family Welfare Centres.

In conclusion, Brigadier Niazi listed the lessons learned through implementation of ERRA's infrastructure reconstruction projects. Among 'generic' lessons was the need to carry out a comprehensive damage assessment covering all sectors and technical aspects; he described this as the most important one-time step that needed to be taken upfront before the start of reconstruction and rehabilitation activities to ensure better planning and designing. He said prioritization of sectors and activities should be based on available resources and capacities, and realistic timelines and targets should be set to avoid raising unwarranted expectations. He noted that normal procurement procedures and observance of PPRA rules could lead to delays. Hence relaxation of these procedures and rules was essential for carrying out expeditions post-disaster reconstruction activities. Use of alternative fast-track construction technologies should also be encouraged right from the outset, to help meet target objectives on time. However, he cautioned that capacity to handle new technologies was essential.

Turning to 'sector-specific' lessons, Brigadier Niazi said consistent, timely and strategic interventions in the education and health sectors facilitated early recovery, rehabilitation and brought back a semblance of normalcy. He noted that the integration of smaller units into the primary health care system had produced impressive results. Similarly,

construction and functioning of co-located government complexes had significantly increased efficacy, convenience, effectiveness and quality of services. Finally, he said construction of a well-designed road network in seismic areas needed to be given top priority in the overall development sector portfolio.

Mian Shaukat Shafi, Asian Development Bank: 'Planning and Institutional Arrangements for Post Disaster Reconstruction and Rehabilitation'

Mian Shaukat Shafi began by pointing to the widespread and increasing prevalence of natural disasters – particularly in the Asia-Pacific region – and the huge human and material losses they caused, to justify the need for post-disaster recovery, reconstruction and rehabilitation (RRR) capacity.

He then listed the guiding principles for planning and coordination for RRR, Mian based on international practice and lessons learned. These were: people-centred solutions; subsidiarity and restoration of responsibility to legally mandated institutions; prioritize district and central strategic coordination and accountability; manage demands through technical and policy choices; enhance operational capacity to respond by known institutional solutions; accountability and enforcement of standards and norms

Among key activities to be undertaken for RRR, Mian Shaukat Shafi cited the following: damage needs assessment (DNA) (including economic impact, loss, reconstruction costs, generic/ sector strategies and policies); securing resource commitment such as through donor conferences; carrying out detailed assessments; formulating sector strategies; defining planning roles and approval limits/bodies; sector and inter-sector planning/coordination; resource mobilization – realizing commitment/agreements; individual project selection, detail surveys, plans and design; and approval of sub-projects.

Mian Shaukat Shafi then highlighted some of the requirements/lessons for effective planning, based on the experience of the 2005 earthquake response: strong national leadership, stakeholders and local participation strengthened DNA ownership; triangulation, cross verification, trends – were key tools for DNA; need for stronger links between early recovery and RRR; the quality and ownership of DNA defined donors commitments; multi-purpose primary assessments were efficient and effective but difficult to organize; local participation and third party oversight were key to objective assessment; the need for political economies impact assessment; sector assessments shaped the future of RRR and should benefit from international experiences and strategic guidelines; it was important to manage demand, ensure equity, promote people centered solutions, avoid overkill and ensure sustainability; checks and balances in plans and their approvals; implementation phasing of plans should be done inter-sectorally but was hard to do in practice; inter-sector coordination at district level and sectoral/donor coordination at provincial and federal level were good; coordination needed dedicated

resources; designs should make use of local technology, materials and skills, and focus on social acceptability.

In the third and final part of this presentation, Mian Shafi focused on implementation arrangements for RRR. He identified the guiding principles for this as follows: independence and self-sufficiency; subsidiarity and decentralization; restoring capacities to manage the recovery process; and transparency and accountability. Based on these, he said the options were to **set up new and/or existing and/or hybrid institutions at strategic level, but existing at middle-lower levels institutional arrangements.**

Mian Shaukat then highlighted the key features of implementation arrangements for RRR in the wake of the 2005 earthquake. These included:

- Establishment of a centralized special purpose strategic and financial planning, donor coordination and M&E - ERRA;
- Decentralized special purpose bodies for planning, operational coordination, financial management and approvals - PERRA/SERRA and DRUs;
- Use of the existing devolved system and institutions, and executive Driven special purpose bodies within existing institutions for implementation;
- FMIS, internal audits and control in all special purpose bodies and implementing agencies, and dedicated external financial/performance audit;
- Detailed design and supervision function outsourced and NGOs/private sector capacities used where comparative advantage-exists.

In conclusion, Mian Shaukat Shafi listed some of the key lessons/issues to emerge from the experience of the 2005 earthquake RRR arrangements. He noted that time and effort was required to establish a new institutional set up, while incentives were needed to resource and motivate existing institutions. He recommended assessment of local capacities before deciding institutional arrangements, and cautioned that there could be duplicity of functions and turf issues between new and existing institutions - in turn, requiring alignment between these. He also cautioned against establishing large bureaucracies which reduce efficiency, and warned of the danger of 'monitoring overload'. Finally, he pointed to some gaps in the integration of themes that were cross-cutting/outside the sector, and noted that it was individuals who shaped institutions.

Ms. Madhavi Malalgoda Ariyabandu, UNISDR Asia-Pacific: 'Safeguarding critical infrastructure: focus and prospects for hospitals and schools safe from disasters'

In her presentation, Ms. Madhavi Malalgoda Ariyabandu first detailed the damage caused to education and health sectors by the 2005 earthquake: 7,669 schools damaged, 18,095 students and 853 teachers/educational staff killed; 574 health facilities partially damaged or destroyed; 21 staff deaths. She described similar damage caused by the 2008 earthquake in Sichuan, China: 11,000 hospitals damaged/destroyed and over 12,000

schools (40% of total) damaged. Noting that other disasters in the region had caused the same extensive damage to health and education facilities, Ms. Ariyabandu explained the implications of this. People in unsafe schools, hospitals and health facilities were at the greatest risk of losing their lives and most vulnerable in disaster situations. Destruction of health facilities hampered treatment of the sick during a catastrophe, while damage to schools disrupted learning opportunities. Other implications were economic losses (due to structural damage, disruption of services), undermining of development, and social, psychological and political effects.

Referring to Hyogo Framework for Action (2005-2015), Ms. Ariyabandu described goals related to DRR and health & education sectors that national governments had committed to achieve: national assessments of the safety of existing education & health facilities by 2011; concrete action plans for safer schools & hospitals developed & implemented in all disaster prone countries and risk reduction included in all school curricula by 2015.

Ms. Ariyabandu pointed out that there were two aspects to safety: **structural** – and added that incorporating safety features at the design stage was far less costly than doing so later; and **non-structural** – knowledge, awareness raising and capacity building. She then described the various roles that different stakeholders – governments and legislators; agencies and NGOs; health/education institutions and workers; universities, schools and experts; donors; financial institutions – could play in promoting DRR and making schools and hospitals safer.

She described global campaigns being conducted by UNISDR system to promote DRR in the education and health sectors including: ‘DRR begins at school’, ‘Hospitals Safe from disasters’ and the ‘One million Safe schools and hospitals pledging campaign’. Under the latter, Ms. Ariyabandu explained that individuals, families, communities, organizations, governments, businesses or any other entity were encouraged to make a pledge for a school or hospital to make them safer now to survive disasters. The pledge could be for public awareness, emergency and disaster preparedness, or disaster risk reduction.

In conclusion, Ms. Ariyabandu reiterated key messages from her presentation: disasters were a development issue; protecting health/education facilities from disasters was not just possible, but cost effective; health/education workers were crucial agents of disaster risk reduction; and building a culture of safety was everybody’s responsibility

Dr. Garry de la Pomerai, DRR Expert: ‘Fast Track Construction for Sustainable Safer Schools’

In his presentation Dr. Garry de la Pomerai noted that in post-disaster situations, the temptation was to pursue fast-track construction and for quick results but warned that this could have a detrimental effect on important aspects such as DRR, local ownership, strategic management and sustainability. However, he added that these risks did not

mean ruling out fast track construction techniques altogether. Rather they could be deployed immediately post-disaster within early emergency shelter provision, as well as through the transitional phases to the longer term permanent re-construction.

Dr. Pomerai gave two options for potential use of fast track reconstruction for schools and shelter: cold-formed steel and temporary shelters. He explained that cold-formed steel offered many advantages including: ease of prefabrication and mass production, uniformity of quality, low weight, economy of transportation and handling, and quick and simple erection or installation. Cold-formed steel panels could also be used for enclosing buildings for insulation. With regard to shelters, Dr. Pomerai said various prototypes of these had evolved from the Haiti earthquake recovery phase. The aim was to use sustainable materials that would allow for future continued use, e.g. bamboo, straw bales, steel frames, timber. He described a number of designs, and said the choice of material and shelter design would depend on factors such as predicted hazards and expected weather changes. He stressed that it was particularly important to take these into account when deciding for schools: the structure had to be conducive to teaching and learning, climate controlled, noise contained, child friendly and above all, safe.

Dr. Pomerai noted that the majority of temporary structures erected during the immediate recovery period would remain permanent, absorbed into the final rebuild or incorporated into the natural expansion of the community. He said recent experiences showed that temporary structures were rarely demolished even after their 'sell by date' and cited this as a further reason for ensuring that schools were addressed separately and very early on within any recovery strategy: they were likely to be incorporated as key focal points within a community's recovery and development.

In terms of appearance, Dr. Pomerai said most communities felt comfortable with indigenous designs (or facades). Moreover using materials and designs alien to them would be potentially expensive and logistically difficult to acquire within remote locations. Again he stressed that schools were normally a focal point within most communities and played a critical role in early recovery by generating through their reopening, the first stages of a community's return to normality, releasing parents from purely child minding duties. In sum he said it was essential that a holistic approach be taken to (school) reconstruction, within safe locations using socially acceptable, economically affordable designs, with an efficient and realistic supply chain of sustainable materials.

Dr. Pomerai continued that the challenge was how to meet these criteria and yet enable Fast Track reconstruction. In the case of Haiti he said it had taken three months to make the transition from emergency tentage to proper hazard resilient shelter, and it would take several more months to complete the shelter construction phase to house the present displaced victims. While he described this controlled, caution approach as necessary to provide the firm foundations of recovery, he questioned what would have been done if the earthquake had struck just before or in the midst of the hurricane season? In

response, he suggested that data on diverse options for long term shelter facilities to cater for the differing expected environments should be collated, peer reviewed and - once consensus was reached on which would be most appropriate for which hazard/environment - regional stockpiles should be established, as was already being done for initial tents, blankets and food supplies.

Dr. Pomerai pointed out that, over and above design construction and resourcing, land tenure and land allocation was a major problem. He said, if and when **resettling** tens of thousands of homeless, there would ultimately be some land tenure casualties in order to benefit the greater need. He recommended that an approach based more on carrot than stick be adopted. The 'carrot' had to be inclusivity of the community within planning and design, and ensuring security of tenure equivalent to their existing or previous tenure. Moreover those in administration had to guarantee the infrastructure from which sustainable communities could evolve. Dr. Pomerai cited Balakot as a prime example of the challenges faced: the main city fell within a seismic red zone and relocation was the only logically safe option, but to where and more importantly to what?

Finally, Dr. Pomerai said education provided the best chance to raise DRR awareness and develop a DRR culture: today's children would be tomorrow's decision-makers. He stressed the need to address: awareness, strategic planning, community involvement, resourcing, assessment of need and of vulnerability, mapping of promise and of commitment and mapping of progress of physical implementation. He added that, in order to generate the 'desired pace' of recovery, it was necessary to: consider the development of a defined national policy, legislated Building Codes for new build, relocation and build back better, and optimum design principles for retrofitting and maintenance; address the challenges of compliance; and generate resources for stable project management and comprehensive capacity build programmes. With regard to the latter, he recommended formation of school clusters.

In summary, Dr. Pomerai said that using and prioritising the School wisely would develop the potential tools to, one, aid a 'Fast Track' Recovery for the whole affected community through all post-disaster phases and two, aid Fast Track Disaster Reduction Preparedness within all communities.

Discussion

In the discussion, it was pointed out that challenges were being faced in the supply of steel for steel frame structures to affected areas. Hence, while steel frame structures would be ideal, people were resorting to more accessible brick and mortar construction instead. In response, Dr. Pomerai agreed that ideal materials were not always available on a consistent basis for post-disaster reconstruction and hence 'we can't do everything that we want to do'. In such situations, he advocated adapting available indigenous construction methods and materials.

SESSION VIII: Reconstructing Earthquake Damaged Infrastructure – Challenges and Lessons

The second session on infrastructure building was also chaired by Lt. Gen. (Retd.) Syed Shujat Hussain, and featured three presentations: the first by Mr. Jamil-ud-din Khilji, Vice President NESPAK on the challenges of earthquake reconstruction, and the second by Dr. Kiminori Matsumoto, R&R Expert, Japan on reconstruction of transport engineering (notably bridges) and the third by Mr. Tanveer Raza Sahoo, on effective seismic resistant structures.

Mr. Jamil-ud-din Khilji, Vice President NESPAK, Earthquake Reconstruction Division: ‘Challenges of Earthquake Reconstruction’

After a review of the vast destruction caused by the 2005 earthquake, Mr. Jamil-ud-din Khilji listed the tasks assigned by ERRA to NESPAK as general consultants. These included: conduction of seismic studies, hazard assessment and micro-zonation; revision of the Building Code of Pakistan to incorporate provisions for seismic resistance; conduct a topographic survey; vetting of the designs by donors/sponsors for over 1,000 buildings; design and supervision of over 4,500 schools, colleges and universities, 1,500 governance and allied buildings, 30 Kuwait-funded colleges, over 100 health facilities, 741 km of roads and 9 bridges; development of New Balakot City; master planning of major towns; urban development projects for Bagh, Rawalakot and Muzaffarabad; and preservation of heritage buildings.

Having outlined the huge scale of the task assigned to NESPAK, Mr. Khilji then described the work it had undertaken. This included numerous surveys as part of a preliminary damage assessment – he also showed an example of a damage assessment form for a school, part of a GIS based database with decision support system. Mr. Khilji gave examples of seismic zoning maps prepared by NESPAK and seismic hazard micro-zonation maps. In the housing sector, he showed various flyers/posters produced by NESPAK to raise awareness about safe building techniques, and he outlined the content of a comprehensive booklet for earthquake resistant construction which identified mechanisms for site selection, appropriate planning, construction with seismic considerations, and retrofitting of structures.

Mr. Khilji listed challenges faced by NESPAK. In the design phase these included: difficulties in conducting surveys & hazard assessment, need to augment NESPAK resources, law & order situation, inaccessible sites, lack of power, & shortage of human resources. In construction phase these related to construction management, establishment of field offices, logistical support, bid evaluation, databases and quality control.

Mr. Khilji described institutional arrangements within NESPAK to handle the earthquake reconstruction work. He said there were a total of 34 offices involved: the Islamabad

head office, 19 offices for building works, 4 for road works, 5 for ADB projects, 2 for UNICEF projects & 3 for urban development projects. He also detailed the management systems used by NESPAK: for design, contractors, agreements, construction and billing.

Dr. Kiminori Matsumoto, Japanese Bridge R&R Expert: 'Current Standards/Practices used for Reconstruction in Bridge Engineering in the World's Severe Seismic Zones'

Dr. Kiminori Matsumoto explained that Japan was the highest risk country in the world with regard to earthquakes. Hence it had developed the technology of earthquake engineering many years ago. He showed photographs of damage and destruction caused to bridges during past earthquakes in Japan, and explained the country's bridge engineering code had evolved on the basis of past earthquake experiences.

Lessons learned from past disasters included that damage to bridge superstructures was rare & limited to connections between superstructure and substructure. By contrast, substructures were directly and severely impacted by vibration caused by earthquakes. Based on this evidence, the Japanese realized that regulations for seismic-resistant design must concentrate on substructure & connection devices. Other cases of destroyed bridges and viaducts showed that top-heavy structures were extremely inferior for resisting earthquakes, so too structures that had abruptly changing sections. Also, serious damage due to bridges falling down could be prevented by providing suitable support devices.

Dr. Matsumoto highlighted a recent innovation in design of railway bridges in particular. This was the provision of damper system devices to decrease the effect of earthquakes on the main bridge structure. One type of damper was filled with viscous liquid, which would take the impact of vibrations caused by any earthquake. He summed up basic requirements for seismic-resistant bridge design: the overall structure of bridge must be seismic-resistant; for normal bridges design calculations were based on the earthquake co-efficient, but in case of longer and complicated bridges dynamic analysis was needed using earthquake acceleration records; and anti-falling down devices should be provided.

In conclusion, he said earthquakes could strike any country, and cause serious loss of life as well as damage to infrastructure. But by deriving lessons from past experience and making use of knowledge, the earthquake damage could be minimized. He urged continuous endeavours in this regard.

Mr. Tanveer Raza Sahoo, INCA Engineer, USA: 'Efficient and Cost Effective Seismic Resistant Structures in Earthquake Environment of Pakistan'

Mr. Tanveer Sahoo firstly explained the philosophy of seismic design: there should be no building damage during frequent minor earthquakes, no structural damage during occasional moderate earthquakes, and no building collapse during rarely occurring major

earthquakes. He then listed the basic requirements for seismic resistant systems: strength, ductility and stiffness.

In an analysis of what had gone wrong during the 2005 earthquake, he identified a number of failures: mistakes made in choosing building configuration; inadequate detailing and proportioning; and no building codes or construction regulations. Based on this analysis, he made the following recommendations for achieving efficient and cost-effective seismic resistant systems in Pakistan: choose good building configurations; conduct satisfactory analysis; ensure proportioning and proper detailing; and ensure construction follows structural designs and is properly supervised. He added that seismic resistant design could be achieved through local and commonly available materials. Mr. Sahoo showed drawings of a brick wall corner detail, ductile beam-column intersections; shear wall section and x-wall bracing elevation to illustrate proportioning and proper detailing required for seismic resistance.

SESSION IX: Livelihoods – Participatory Approaches

The session on livelihoods was chaired by Dr. Zafar Altaf, Chairman PARC and featured an 'overview' presentation by Brig. (Retd.) Akhtar Javed Warraich, Director General on ERRA's livelihood strategy, followed by presentations by Dr. Thomas Hofer of FAO on integrated watershed management; a community member – Raja Afaq Ahmed, and Dr. Florence Egal FAO; on community-based livelihood planning.

Brigadier (Retd.) Akhtar Javed Warraich, DG ERRA: 'Restoration of Livelihoods through Participatory Approaches: ERRA's Perspective'

Brigadier Akhtar Warraich firstly outlined the immediate measures taken by ERRA to assist families rendered vulnerable by loss of livelihoods following the 2005 earthquake: 0.3 million of the most vulnerable families were identified for immediate help and provided relief through monthly cash grants of Rs.3,000 per family for one year. For the long-term, he said ERRA devised a Livelihoods Strategy, consistent with the goal to 'Build Back Better'. The strategy had four key objectives: restore livelihoods of the affected population to at least pre-disaster levels; ensure effective coordination of livelihood rehabilitation activities to avoid duplication/under-coverage; strengthen CBOs and communities in carrying out community livelihoods rehabilitation plans; and strengthen capacities of livelihoods related line departments.

Brigadier Warraich then gave details of the two main interventions in ERRA's livelihood rehabilitation programme: CLRP and "watershed management". He explained that the CLRP (Community Livelihood Rehabilitation Programme) was identified and planned

jointly by communities and implementing partners. Support and approvals were provided by Livelihood Coordination Units and Working Committees (LCUs and LWCs), and DRUs in consultation with DRACs. Funds of Rs.0.75 million were available for each CLRP and released in tranches; the total outlay of the Government on the programme was Rs.1.58 billion. Projects implemented under CLRPs included: construction of **bridal** paths and shingle tracks, skill development centers, promotion of kitchen gardens, rainwater harvesting, irrigation channels and grinding mills. Brigadier Warraich said each UC could have 10 CLRPs and the programme was targeting 179 UCs. As of 31 March 2010, 600 CLRPs had been completed, but the target was to complete 1,789 by June 2011.

Turning to the Integrated Watershed Management programme, Brigadier Warraich said this had been launched with technical support from FAO. Under the programme 17 watersheds were being developed with the active participation of communities. He stressed that interventions were mostly needs-based with emphasis on preservation of natural resources, forests and soil protection. Of the target 17 watersheds, he reported that 10 had been completed by end March 2010 and the rest were due to be done by the end of the year.

Brigadier Warraich then gave an assessment of the overall impact of the livelihoods programme. In addition to income generation – particularly for the vulnerable – and resultant poverty reduction, he highlighted the sense of community ownership and involvement in planning and implementation processes that had been developed; so too the strengthened relationships within communities as they worked together. By providing equal opportunities to males and females, and particularly to widows and female-headed households, it had promoted gender mainstreaming. Finally, he said it had contributed to capacity building of IPs, communities and Line Departments – indeed, it had led to the creation of village level CBOs.

In the final part of his presentation, Brigadier Warraich listed the main lessons learned through ERRRA's implementation experience. He noted that flexible implementation mechanisms, performance-based fund release mechanisms, selection of IPs with relevant experience, capacity building of IPs, communities and Line Departments, and mid-term reviews by experts leading to course corrections, had all contributed to the programme's effectiveness and attainment of its objectives. Active participation of all stakeholders in all aspects of programme interventions had ensured ownership and sustainability. The Brigadier said analysis had revealed CLRPs and Integrated Watershed Management Plans as the most cost-effective and quick-impact livelihood interventions. Finally he observed that the watershed management projects had promoted natural resource preservation and use of modern agricultural and bio-engineering techniques by communities.

In conclusion, Brigadier Warraich stated that the programme would not have been a success without the will of the government, the active participation of local communities, and the financial and technical support of development partners.

Dr. Thomas Hofer, FAO, Rome: 'Integrated Watershed Management as a Livelihood Intervention'

Dr. Thomas Hofer began by explaining that FAO had a long involvement with watershed management. He defined the 'watershed' as an area drained by a water-course, and 'watershed management' as any human action aimed at ensuring sustainable use of water resources. He explained that integrated approaches to watershed management (WM) encompassed both the natural system and the socio-economic system (economic and social policies, culture, etc), and was also influenced by external factors. WM planning was therefore necessary for effective WM.

Among the watershed services Dr. Hofer listed: fresh-water & flow regulation; source of energy; biodiversity; fertilization of low-lands; minerals and mining; and recreation. He added that WM contributed to disaster risk mitigation, e.g. reforestation could promote slope stabilization. In this context he cautioned that risk mitigation was only possible to a certain extent: some natural disasters could not be averted by human actions.

Among risks and threats to watersheds Dr. Hofer listed: pressure on natural resources; degradation and desertification; increasing hazards; infrastructure; climate change; market forces and globalization. He explained that collaborative management entailed both top-down and bottom-up approaches, with upstream-downstream linkages, and promotion of participation, negotiation and collaboration between different stakeholders. Such approaches could lead to improved local livelihoods. With regard to the economics and financing of WM; Dr. Hofer said this could be generated by products with quantifiable market values, provision of services as 'public goods' and through schemes which led to knock-on economic benefits for watershed inhabitants. He stressed the importance of effective governance and policies for WM; including a focus on decentralization, setting up proper institutional arrangements for WM; provision of technical expertise and development of WM as a science, and the need to take a long-term approach.

Turning to WM in the context of Pakistan, Dr. Hofer noted that Pakistan had long experience of watershed management. In the context of disaster response, he said WM was appropriate in the recovery phase rather than the immediate life-saving phase. Dr. Hofer cited the relevant output of a SIDA project for WM: 'Stakeholders of degraded hillsides adopt a collaborative watershed management approach to natural resources management, socio-economic development, sustainable livelihoods and poverty reduction'. He also cited the vision of ERRA's livelihood strategy: 'a revitalized and strengthened livelihood support system with an inclusive, community-based approach'.

Dr. Hofer listed the steps (activities) involved in implementation of the 17 watershed management projects being undertaken by ERRA: mapping, PRAs institutional situation; formation of Watershed Management Committees; development of Watershed management plans; implementation of prioritised activities; capacity building and training; and monitoring for lessons learned. He then gave specific examples of WM projects in the EQAA. The Gulmera Batora project included agriculture training, terracing, ponds for water harvesting, livestock vaccination, kitchen and flower gardens, tree nurseries and marketing strategies.

In conclusion, Dr. Hofer said integrated watershed management was a livelihood option and described FAO's role (together with ICIMOD): to further the concept of WM, bring in experiences and perspectives from other countries/regions, and support Pakistan to build back better and to build on its vast experience in WM.

Raja Aufaq Ahmed, Community Member

In his short address, Raja Aufaq Ahmed described his community's experience of watershed management. He described the situation in his village before the WM project: many people had lost their source of livelihood and there were few opportunities for employment and income-generation. These issues were addressed through ERRA's WM project. He explained that this was implemented by the local Water Management Committee, under the guidance of the Departments of Forests, Agriculture and Livestock. The focus was on irrigation channels, establishment of fruit orchards, construction of retaining walls and improved utilization of agricultural fields. Raja Aufaq reported that the local people took keen interest in watershed and livelihood issues. As well as providing a source of livelihood, e.g. for local women who were able to earn money by selling their produce the project ensured watersheds were protected from damage, and improved coordination with Line Departments, notably for Forests, Wildlife and Fisheries.

Dr. Florence Egal, FAO; Rome: 'Community-Based Livelihoods Planning: the way forward to sustainable development'

Dr. Florence Egal began her presentation by explaining the learning about livelihood rehabilitation that had taken place through past humanitarian responses. She said evaluations of the tsunami response concluded that a livelihoods approach should have been incorporated from the start, inter-sector collaboration was important and local institutions had a key role to play. She pointed out that without such dedicated effort for livelihood rehabilitation – taking a 'business as usual' approach – would lead to dependency, and make the transition from relief to development very difficult.

By contrast, Dr. Egal described the attention to livelihoods from the early recovery phase of the 2005 earthquake response as a breakthrough. She noted how quickly the first

livelihood assessment was made, a Livelihood Adviser fielded, ERRA's livelihood strategy was developed and projects formulated. She also stressed how challenging this was for all stakeholders: it entailed a different way of working, adapting procedures, staff adopting different perspectives.... And was very much a joint learning process with lots of work and 'headaches'.

Despite such problems, Dr. Egal said the approach taken in Pakistan had worked. Beside, generating livelihoods for affected people, it had many other positive effects: empowered communities; established/strengthened partnerships between government & communities & NGOs; capacity building of local institutions; integration of reconstruction & development; and building on local knowledge & experience. For communities specifically, she said the approach had made them more resilient, & rebuilt their human, physical, financial & social capacities. She also queried whether rehabilitation of livelihoods had improved nutritional status (diet) of communities? Dr. Egal stressed that the key to sustainable livelihoods was bringing together food security and environmental management. She listed the core principles for this: pro-poor, participatory, integrated, environmentally sustainable, dynamic and featuring micro-macro linkages.

Looking ahead, Dr. Egal said the next steps for ERRA's livelihood programme were to consolidate and promote integration with other sectoral activities (notably health and education), assess impact and document and apply lessons learned, promote DRR mainstreaming, and co-opt local stakeholders for exit strategies. She also urged the need to look at nutrition. From a wider perspective, she said the experience of livelihood rehabilitation in the 2005 earthquake response should be shared with others, and possibly expanded/replicated/adapted to other crises, other countries and/or as part of disaster preventions and preparedness activities.

SESSION X: Gender Equality in Reconstruction and Rehabilitation Programmes

The session on gender equality was conducted in parallel with another session on livelihoods. The gender equality session was chaired by Ms. Alice Shackleford Harding, Country Director UNIFEM and featured presentations by two of ERRA's former Senior Gender Advisers, Ms. Fareeha Ummar and Ms. Christine Ouellette UNIFEM Consultant, followed by Ms. Deborah Clifton, IASC Gender Advisor, and the UNICEF Country Head Mr. Martin Mogwanja.

Ms. Fareeha Ummar, former Senior Gender Adviser, ERRA: 'Ensuring Gender Equality in ERRA's Earthquake Response'

After giving a quick recap of the overall damage caused by the 2005 earthquake, Ms. Fareeha explained that gender advocates always look for entry points and opportunities

to promote gender mainstreaming. She listed the opportunities available when she started working as ERRA's Senior Gender Adviser in autumn 2006: the diverse needs of the affected population; the presence of gender perspective in key programme documents and strategies of ERRA; available resources to promote gender equality in reconstruction and rehabilitation; the existence of gender equality considerations in national priorities; willingness of senior management in ERRA to take gender issues into consideration; and the availability of financial resources from external sources.

Ms. Fareeha defined the framework for gender mainstreaming they applied: 'To promote principles of inclusion, equality, and sustainability in reconstruction and rehabilitation efforts to increase the likelihood that the benefits accrue equitably to women, men, boys and girls, and to vulnerable groups.' She clarified that gender equality did not mean treating men and women or boys and girls exactly the same, but rather recognising that they have different needs and priorities. Achieving gender equality meant taking into account these differences in the design, planning, implementation, monitoring and evaluation of all policies, programmes and projects so that both women and men benefited, and inequality was not perpetuated.

In this regard, Ms. Fareeha highlighted the importance of sex-disaggregated data: both to help draw the attention of senior managers to gender issues, and to support programming based on facts rather than assumptions. She said the existing databases of ERRA were not gender-friendly so specific questions were given to the MIS section to organize data such that sex desegregations was the basic query. Other areas requiring attention in October 2006 included: lack of a policy instrument; the ERRA Operations Manual was gender neutral; gender was equated to women and women were perceived as vulnerable or victims; there were no focal persons for gender equality in ERRA, SERRA, PERRA and the DRUs, and no gender-specific co-ordination mechanism.

Ms. Fareeha then listed the key actions taken to date to promote gender equality and gender mainstreaming. Among policy measures she cited the placement of gender experts/coordinators at ERRA, PERRA/SERRA and DRU level and establishment of a Gender Core Group; development of a gender policy for EQAA; and amendment of the ERRA PC-1 to take into account gender and vulnerability dimensions.

Among operational measures, Ms. Fareeha cited the establishment of sex-disaggregated rural housing and livelihood cash grant sector baselines; capacity building on gender analysis for priority sector staff; review of Key Performance Indicators and data collection tools with a gender lens; establishment of 6 Gender Reconstruction and Rehabilitation Networks in affected districts; establishment of Women Development Centres in EQAA; development of a Gender Training Manual for integrating gender in disaster situations; and approval of projects providing opportunities for income generation to vulnerable women.

Turning to gender outcomes, Ms. Fareeha highlighted gender awareness workshops for over 900 people; the Targeted Vulnerability Survey which identified 233,344 vulnerable women; provision of 5 Marlas of land to 12,311 landless households 10% of which were female-headed; the gender-sensitive Legal Assistance Programme in which 26,321 cases were registered, 29% by women of which 91% were resolved; medical rehabilitation services reaching 35, 553 beneficiaries of which 40% were women; women forming 27% of the total beneficiaries reached under livelihood cash grant assistance; a 21% increase in enrolment of girls in educational institutions; women Village Reconstruction Committees forming 22% of all VRCs; and a saving of average 57 minutes per day on water collection – primarily the responsibility of women.

Ms. Fareeha then described the challenges faced in promoting gender equality and mainstreaming. She noted that the expected pace of work was sometimes difficult to maintain as it involved stakeholders operating from different levels and capacities. Collection and availability of sex disaggregated data was another problem. Related to this was the preference to look at the entire household as an identical entity without making any distinction of needs and interests of men, boys, girls and women within the household. She added that few spaces existed to share issues and experiences on gender equality that could facilitate linkages and systematic flow of information from the field to the policy level. She stressed that religion and culture were critical in the context of the EQAAs and were therefore given due consideration; besides developing the political will on gender equality, since this would secure human and financial resources for translating such policies into practices.

In conclusion, Ms. Fareeha identified next steps needed to ensure the progress achieved to date was sustained: monitoring of gender policy priorities and related projects; provision of guidance to ensure that sectoral strategies gave due emphasis to integrating gender priorities; provision of technical backstopping, especially for designing and planning tangible initiatives that highlight the significance of gender equality principles in rehabilitation and reconstruction; maintaining a sustained engagement with a variety of the government actors and CSOs at all levels; continued collection of sex-disaggregated data; and sharing of ERRA's gender mainstreaming experience for other emergency situations.

Ms. Christine Ouellette, former Senior Gender Adviser, ERRA: 'Mainstreaming Gender in Earthquake Response: Lessons Learnt'

Ms. Christine Ouellette began by asking the audience if they thought men, women, boys and girls were the same? All responded in the negative and Ms. Ouellette used this as the basis for her explanation of the need for mainstreaming gender, i.e. that women, men, girls and boys experienced reality differently, had different roles and responsibilities, and had different needs and priorities.

Turning to lessons learned from the 2005 earthquake response, Ms. Ouellette said crises such as the earthquake generated opportunities for change, but added that transforming the mainstream was a process which took time and was context-specific. Among success factors she identified senior leadership's willingness to champion gender mainstreaming and making gender dimensions relevant to the response of a disaster or crisis, and linking these to leadership's concerns and priorities. She said linking gender mainstreaming efforts to national policies and international commitments, building relationships with key decision-makers at all levels, and involving donors were all critical.

Ms. Ouellette stressed that the process of mainstreaming gender dimensions had to go beyond policy statements and should start before there was an emergency. She said advice alone was not sufficient: commitments to gender equality and mainstreaming had to be reflected through clearly articulated gender-sensitive results and indicators and resource mobilisation (financial and human).

To promote gender mainstreaming, she said it was necessary to establish a gender 'infrastructure' at all levels with easy access to decision-makers. She also recommended adopting a strategy of constructive engagement combined with flexibility and pragmatism. In this regard, she stressed the need to take into account cultural norms and practices in a given area, and to identify entry points and champions at all levels. Ms. Ouellette added that adopting communication tools and language customised for specific audiences would foster greater understanding. She also stressed the need to actively involve women, men, girls and boys affected by the disaster, and even creating dedicated space for women's views to be expressed.

With regard to interventions, Ms. Ouellette said these should be based on data from needs assessments which should, in turn, be disaggregated from the outset (relief phase) by sex and other key variables such as age. She added that to do this effectively required in-house capacity to analyse data with a gender lens (and other dimensions), in support of policy development, as well as effective programme planning and implementation.

Ms. Deborah Clifton, Gender Adviser, IASC: 'The Impact of Gender Mainstreaming in Earthquake Relief and Rehabilitation'

Ms. Deborah Clifton noted that in the initial period of the 2005 earthquake response little attention was paid to gender equality and to addressing the differing needs of women and men. But she said this situation changed as the response progressed, and described some of the impacts of good gender equality programming seen in the affected areas. These included: raised awareness, capacity and willingness for gender equality work; wider recognition of gender gaps that needed to be addressed in several sectors, and the need for women's services; communities encouraging women to expand their roles;

heightened media interest in practical challenges and improvements for women, not just their plight as victims; participation of women in rural areas, recognition of their knowledge and roles; strengthening of NGO and civil society lobbies for gender equality, and creation of new and influential advocates for increased gender equality.

Ms. Clifton then identified how these impacts had been achieved. She noted the focus on gender equality outcomes and on addressing these in the design phase of reconstruction and rehabilitation efforts. Also the significant investment made in social mobilization for gender equality – including to get men on board – and on ensuring equal attention to women’s opinions and needs. Ms. Clifton noted that gender equality interventions which demonstrated the benefits of improving women’s lives, e.g. through enhanced income for the family, it was effective. ERRA’s interventions often addressed both practical needs and longer-term strategic issues.

Among lessons learned, she pointed to the fact that traditional/cultural barriers could be successfully challenged when women’s empowerment led to increased access to financial/productive assets. She noted that financial empowerment of women led to additional benefits, such as less violence and more respect for them on the part of men. On the issue of difficulties in accessing women, Ms. Clifton said some organizations accepted this situation and ‘walked away’, but others such as FAO sought out ways of reaching women, e.g. hiring more female social mobilizers.

In conclusion, Ms. Clifton highlighted areas for further study, particularly related to the long-term impact of gender interventions: to what extent had changes and new practices been maintained? Were retention rates for girls in schools higher? Had employment roles and income changed in the longer term? Were impacts going beyond practical improvements to change people’s thinking about equality? Had women’s control of resources improved and been sustained over the long-term?

Mr. Martin Mogwanja, Country Head, UNICEF : ‘Promoting Gender Equality in Humanitarian Situations’

Mr. Martin Mogwanja began by stating that the current capacity in Pakistan to respond to humanitarian needs, and specifically to respond to gender equality needs, was much greater than that in 2005. Both the Government of Pakistan and development partners ensured that women and girls played an active part in the humanitarian response, and that their voices were heard. He said the key lesson from the process of response to the 2005 earthquake was that such crises presented opportunities to strengthen gender equality in delivery of social services, in particular access to healthcare, education and chances for employment (for female teachers, health workers). He also noted that some unique social services had been established in the earthquake response, e.g. Social Welfare Complexes.

Mr. Mogwanja then described the contribution of UNICEF in promoting gender equality in social service delivery. In education, he said that since the earthquake, UNICEF had supported the enrolment in government primary schools of about 464,000 children in six affected districts, including more than 36,000 children – mostly girls – who had never attended school before. Its interventions had helped restore balance between the number of girls and boys schools, and he stressed that reconstruction of girls’ schools was carried out to the same standard as that of boys. Mr. Mogwanja also listed some of the challenges faced: in some communities there was greater reluctance to make land available for girls schools than for boys – which required social mobilization; special mobility support had to be provided to female teachers to enable them to travel to schools and thus ensure these were functioning at all times. Based on UNICEF’s experience, he urged that new solutions be found to overcome challenges.

In the area of child protection, Mr. Mogwanja said UNICEF had helped create 133 Child Friendly spaces, which provided psycho-social support to 13,200 girls and 10,800 boys. Child Protection Units were set up in AJK within ERRRA’s Social Welfare Complexes benefitting 11,783 children [6,654 girls and 5,129 boys. 160 Child Protection Committees were formed in 5 districts of AJK for registering, reporting & referral of vulnerable girls & boys. He added that this was first time such an intervention had been initiated in AJK.

In the WatSan sector, Mr. Martin Mogwanja listed the following achievements by UNICEF: completion of 223 water supply schemes benefitting 387,025 individuals, especially women; provision of WatSan facilities to 17,400 children in 192 schools; provision of access to drinking water in villages and towns benefitting 200,000 people; and use of both male and female hygiene promoters to show that it was important for men/boys and women/girls to use latrines.

In the health sector, Mr. Mogwanja said a new cadre of community health workers had been created that did not exist before the earthquake. In response to the difficulty of finding sufficient qualified women to become LHWs, he said UNICEF had trained 2,800 female community health workers (lower education requirements), adding that 1,100 of these were absorbed by the government as full time health workers. Martin Mogwanja said UNICEF had faced pressure from males to give them these jobs, but the agency had stuck to reserving the positions for women.

In conclusion, Mr. Mogwanja said the capacity for gender-aware humanitarian response planning had built up in Pakistan over time, and was currently being put to good use in the IDP crisis response in FATA and NWFP. But he stressed that this was still a fragile capacity, which needed to be nurtured and sustained. He identified ERRRA’s gender analysis work as critical for this. He ended by urging that gender-aware capacity to handle future humanitarian crises had to be present from day one, rather than being built up over time.

Discussion

In response to a question about what was being done to promote income generation opportunities for women with industrial/vocational skills, Dr. Farhat Sheikh, ERRA Gender Adviser, said a number of Women Development Centres had been set up. These would be used to set up skill development training centres in collaboration with AHAN, and the women will also be trained to make marketable products which would be sold with the help of AHAN. Dr. Sheikh added that such interventions would target vulnerable women identified in the Targeted Vulnerability Survey (TVS).

A participant asked what social protection data collected by ERRA was being used for. In response, an ERRA official said the TVS data was being shared with all relevant programmes, both within and outside ERRA, including NGOs. He said there had been considerable success in getting organizations to feature data in their programmes and plan interventions accordingly. He confirmed that the TVS data had also been shared with the Benazir Income Support Programme (BISP).

In her closing remarks, the Chairperson said 'everything is possible, nothing is impossible'. She highlighted the fact that crises – along with loss of life and destruction – offer opportunities for women and girls to have improved access to services. Indeed – pointing to the greatly expanded use of cell phones in affected areas – she stressed that all people could benefit from the potential for improved services. In conclusion she stressed that verbal commitments to gender equality were not enough: they had to be backed up with resources and personnel to ensure implementation.

SESSION XI: Safeguarding Environment

The session on safeguarding the environment was chaired by Mr. Ali Hassan Habib, Chairman WWF (Pakistan) and featured a short introductory presentation by Dr. Shujat Ali, SMA; ERRA followed by presentations by Mr. Irfanullah Tunio on environmental management in EQAA, Dr. Bashir Hussain Shah, on integrated watershed management-slope stabilization and Mr. Shahid Lutfi, on timber usage in rural housing reconstruction.

Dr. Shujat Ali, DG Environment, ERRA: 'Environmental Sector Introduction'

In his brief introductory presentation, Dr. Shujat Ali described the extensive environmental damage caused by the 2005 earthquake, including destruction of forests, landslides, land shearing and the huge amounts of rubble generated by infrastructure collapse. Stressing that ERRA focused on addressing this issue from the outset, Dr. Ali laid out its strategic vision for the environment: 'To protect natural resources, prevent environmental degradation, restore damages, arrange safe disposal of debris; and, to establish principles and practices for environment friendly rehabilitation and reconstruction in the earthquake affected areas with sustainable use of resources'.

The DG Environment then explained the environmental significance of the affected areas, and the need for environment related interventions. With regard to the former, he pointed out that most of the forest area of NWFP fell in the affected region; the affected areas in NWFP and AJK contained the Rivers Kunhar, Neelum and Jehlum which were also major contributories to watersheds for Tarbela and Mangla Dams respectively; and a significant catchment's portion of the Tarbela and Mangla Reservoirs fell within the affected areas. With regard to the latter, he said these were to restore/rehabilitate infrastructure and natural resources damaged by the earthquake - encompassing reconstruction of damaged buildings (Forest, Fisheries & Wildlife), debris removal, reforestation, slope stabilization, integrated watershed management - and to mitigate environmental impacts during reconstruction. This entailed development of environmental checklists, conduct of environmental impact assessments and effective implementation of environmental management plans.

Mr. Irfanullah Tunio, Programme Manager Environment, ERRA: 'Environmental Management in Earthquake Affected Areas'

Mr. Irfanullah Tunio began by echoing the point made by Dr. Shujat Ali that the 2005 earthquake caused wide scale environmental damage. Among critical issues he listed damage to natural resources - slope destabilization, forest degradation, endangered wildlife, and watersheds - and the need for debris removal and proper disposal. He then outlined ERRA's framework for environmental recovery and rehabilitation comprising: Preliminary Environmental Assessment, Rapid Environmental Impact Assessment, the ERRA Environmental Strategy approved in Sep. 2006 with a budget of Rs.3.60 billion (US\$42.30 million), and development of Environmental Checklists for rehabilitation and reconstruction projects.

Mr. Tunio pointed out that ERRA's 'soft' environmental interventions were divided into those to be conducted immediately, e.g. environment assessment, slope stabilization & safe disposal of relief-waste, those to be carried out in short-term - solid waste management & debris removal, in medium-term - mainstreaming environmental concerns, & in long-term - natural resources management, slope stabilization & reforestation.

He then listed achievements to date in these areas: in NWFP 9,100 acres (66% of total targeted) of bad land stabilized; reforestation carried out in 8,500 acres (74% of target) and plantation of 22.35 million saplings (77%) completed; and in AJK 23,700 acres (71%) reforested and plantation of 11.05 million saplings (67%). Watershed management had been carried out in Karli Lake in AJK, and Kanshian and Ghanool in NWFP.

Among hard sector achievements, Mr. Tunio reported that in AJK 128 buildings of the Forest, Fisheries & Wildlife Dept were under construction (due to be completed before June 2011) while in NWFP 100 out of 338 buildings had been completed with the rest to be done before August 2011. Debris removal amounted to 9.81 million cubic feet from Muzaffarabad, 0.94 M. C. Ft. from Hattian Dupatta and 3.45 M.C.Ft. from Bagh.

Mr. Tunio stressed that environmental protection was a cross-cutting theme (one of three) in ERRA's reconstruction programme. As such, in addition to specific environmental interventions, ERRA was carrying out cross-cutting environmental activities. Mr. Tunio highlighted the fact that environmental assessment was mandatory for all projects under Pakistan Environmental Protection Act 1997 and said 36 Environmental Impact Assessment/Initial Environmental Examination reports of various projects had been submitted to the respective EPA's. In addition he said capacity building of relevant personnel in ERRA, SERRA, PERRA, DRU's and implementing partners on the environment sector had been carried out, and ERRA was working to ensure compliance and effective environmental monitoring of all reconstruction projects.

Mr. Irfanullah Tunio lauded the international cooperation ERRA had received to implement its environmental strategy. This included a rubble recycling plant in Muzaffarabad donated by the Belgian Building Research Institute, conversion by IOM of a rubble dumping site at Maakri Nullah into a Community Recreational Park in Muzaffarabad, and development of a recreational park for children in Jalalabad-Muzaffarabad by "Save the Children UK".

In conclusion, Mr. Tunio identified the main lessons learned by ERRA. He described commitment by management as essential for mainstreaming environmental concerns and said that integration of environmental aspects into all reconstruction projects was important for sustainable development. Environmental Management Plans for each project helped to mitigate the negative environmental impacts, as did environmentally sensitive engineering designs of buildings and land use planning. He also pointed to the benefits of capacity building for environmental mainstreaming, and of community participation in reforestation and watershed management to promote ownership and sustainability of initiatives.

Dr. Bashir Hussain Shah, Consultant (UNDP): 'Integrated Watershed Management and Slope Stabilization under Environmental Recovery Programme for the Earthquake Affected Areas'

Dr. Bashir Hussain Shah elaborated on ERRA's watershed interventions in Karli Lake in AJK, and Kanshian and Ghanool in NWFP mentioned by Irfanullah Tunis. He described the steps involved in the planning processes for these projects: introductory meeting at watershed level; socioeconomic data collection at household level, tabulation and

analysis; socioeconomic reports; formation of village organizations; need assessment exercises; participatory village planning; integrated watershed management plan development; and sharing of plans with stakeholders in a workshop.

Dr. Shah listed and quantified the different activities carried out under watershed management, such as development of irrigation water schemes, rainwater harvesting, schemes, establishment of fruit tree nurseries and orchards, promotion of kitchen gardens, floriculture and mushroom cultivation, plantations on community and forest lands, improvement in livestock breeding and livestock disease control.

With regard to landslide and slope stabilization, Dr. Shah highlighted the fact that an integrated approach was taken which placed emphasis on biological and soil bioengineering techniques, e.g. brushwood retaining walls, brush-hedge layering, brush fences. For retaining walls the same mixture of engineering and biological solutions was used, e.g. gabion retaining walls, plain cement concrete walls, vegetated concrete blocks, vegetated crib walls and vegetated loose stone walls. Similarly check dams were of gabion, concrete, loose stone and – a biotechnical solution – vegetated loose stone.

Dr. Shah pointed out that, through the IWM interventions, the capacity of the Forest Department had been built and it was in a position to take up slope stabilization programmes. He also noted that the soil bioengineering technology used by ERRA was now being replicated in NWFP and AJK by the NHA. Overall, he said, integrated watershed management models were taking shape which could be replicated in future by the Forest Department.

In conclusion, Dr. Shah identified a number of policy decisions that had to be taken. He urged that slope stabilization be made mandatory with new roads construction and in widening projects in hilly areas in moist temperate zones. Secondly, he called for engineering structure activities to be undertaken by the Roads Department and soil bioengineering activities to be the responsibility of Forest Department.

Mr. Shahid Lutfi, Environmental Specialist: ‘Timber Usage in Reconstruction of Rural Houses Damaged by Earthquake’

The focus of Mr. Shahid Lutfi’s presentation was on the Limited Environmental Assessment of Rural Housing Reconstruction carried out by ERRA, in particular the use of timber, and on ERRA’s Reforestation Program. He began by describing the vast scale of rural housing reconstruction in the affected areas, and the different types of construction techniques and materials used – stone masonry house, mud houses, brick and block houses, *dhajji* houses. Mr. Lutfi said these all generally made heavy use of timber, but the exact requirement ranged from 60-180 cft per house, depending on the

type of construction and the location. *Dhajji* houses required the most – 180 cft for a house with two rooms of size 12' x 15' – while other types of construction used 80-117 cft.

With regard to sources of timber for reconstruction, Mr. Lutfi listed recovery from damaged houses, timber depots, *guzara* forests, and illegal cutting of protected forests. He said it was very difficult to estimate precisely how much was coming from each source, but field surveys of over 132 villages and 2,100 houses indicated that 25-46% was recovered timber, and 54-75% was new timber. He calculated that the new timber used in rural housing reconstruction was equivalent to 262,833 trees.

Mr. Lutfi said the timber demand for housing reconstruction could be reduced through sustainable engineering design of houses and through use of recovered timber. To address this problem he said ERRA had an extensive forest rehabilitation plan. Under this 22.35 million trees had been planted in 8,500 acres of forest in NWFP, and a further 11.05 million in 23,700 acres in AJK. Viewed as a whole, this meant ERRA had achieved 72% of its target planting across affected areas of NWFP and AJK; in AJK 89% of the target had been achieved, and in NWFP 74%.

Mr. Shahid Lutfi described some of other measures being taken by ERRA to protect forests. This included establishment of timber depots providing wood for reconstruction of damaged houses at subsidized rates – this initiative was being carried out in collaboration with AJK and NWFP Forest Departments. To control illegal cutting of trees from protected forests, strict monitoring was being carried out, night watch & ward patrols had increased, and those caught were penalized & their wood impounded.

SESSION XII: WatSan Programme – Challenges of Sustainability

The session on the water and sanitation sector was chaired by Ms. Yasmeen Lari, Member ERRA Council and featured two presentations on works being done by ERRA in EQAAs: the first by Syed Zaheer Hussain Gardezi, Director General ERRA on the overall WatSan sector strategy, focusing on rainwater harvesting, and the second by Dr. Abdur Rehman Khan, Professor COMSAT on water quality. Mr. Fahim Sami gave an assessment of the global WatSan situation, while Dr. Karim Alibhai and Dr. Raj Shreshta described two WatSan initiatives underway in the Northern Areas of Pakistan and in Nepal.

Syed Zaheer Hussain Gardezi, DG Water and Sanitation, ERRA: 'WatSan Sector ERRA with focus on Rainwater Harvesting (RWH) in EQAA of Khyber Pukhtunkhwa & AJK'

In the first part of his presentation about ERRA's WatSan sector programme, Syed Zaheer Hussain Gardezi explained the aims of ERRA's WatSan strategy: to restore all public and community-owned drinking water supply, sanitation and solid waste managements

damaged/destroyed by the 2005 earthquake; expand and improve WatSan services; build the capacity of relevant Government Departments, community organizations and others; and promote behavioural change in favour of safe hygiene practices. Actual activities were divided into hardware and software components. The former included 4,001 water supply schemes, 623 sanitation schemes, solid waste management facilities in 23 towns, and 100 office/residential buildings. The latter encompassed hygiene promotion, water quality improvement, and capacity building of relevant Line Departments/other stakeholders.

Of this total scope of work in the sector, Syed Gardezi reported that 80% of physical work for hardware components had been completed, while the remaining 20% was in an advanced stage. Results to date for software components included: establishment of 8 water quality labs and training on water quality testing and monitoring for line agencies/communities; inspection, mapping and protection of 3,500 water sources underway; provision of technical staff, office equipment, vehicles, etc to build capacity of Line Departments; formation and training of water management committees for operation and maintenance of water supply schemes in rural areas; mass hygiene awareness campaigns launched and 5,526 hygiene promotion sessions conducted at community level.

Among challenges faced, Syed Gardezi identified the difficulty in accessing sites/water sources scattered over rugged terrain, and the need to ensure both water quality and adequate water quantity. To address these issues he said ERRA had taken a participatory approach, involving communities, line agencies, sponsors, NGOs and INGOs in implementation. The WAQIPH project had been launched to enhance water quality and promote safe hygiene practices, and ERRA was promoting rainwater harvesting as an alternative source of water.

With regard to the social impact of ERRA's WatSan interventions, Syed Gardezi highlighted the enhanced access of communities and households to clean drinking water, the substantial time saving for rural women in fetching water – time that could be used for other productive activities, and the potential reduction in diseases through enhanced hygiene awareness.

Among lessons learnt, Syed Gardezi pointed to the importance of capacity development and community involvement. The former was necessary to ensure effective operation and maintenance of WatSan facilities, while the latter ensured interventions were needs-based and promoted ownership and sustainability. He particularly stressed the need to involve women, as they were the primary beneficiaries of WatSan facilities. Other lessons cited by him were the need for robust institutional mechanisms to monitor water quality, the role of hygiene awareness campaigns in reducing incidence of disease, and the significant contribution donors/NGOs could make to strengthen the WatSan sector, e.g. through capacity building, awareness-raising, setting up WSS facilities, etc.

In the second part of his presentation Syed Gardezi focused on ERRA's rainwater harvesting project. He began by saying there was a general misperception about EQAA – prompted by the 'green' appearance of the region – that there was plenty of spring water available and hence no issue with water scarcity or quality. In reality, Syed Gardezi said both were problematic: during the dry periods of the year (May-June, Oct-Nov), there was water shortage; while during the rainy seasons there were issues with water quality.

Syed Gardezi identified a number of additional factors compelling the search for alternative solutions: per capita availability of water across Pakistan had fallen drastically while consumption had increased; in EQAA there was massively increased demand for water because of reconstruction activities but tectonic movements had reduced yield of springs; both deforestation and the increase in cement buildings/roads had caused increased water run-off and decreased ground water recharging. He explained that the capital cost of piped water supply schemes in EQAA was high because of the far-flung gravity sources, the need to lift water from rivers/springs or perennial streams, and the population spread in mountainous regions.

Given all these constraints on water availability, Syed Gardezi said ERRA was promoting rainwater harvesting (RWH) as one of the best alternative and supplementary solutions. He listed a number of factors which enhanced the potential of RWH: EQAAs had the highest average rainfall (>1,500 mm) in the country; since the earthquake almost 95% of buildings had CGI roofing which was the most efficient catchment's surface for RWH. Mr. Gardezi calculated that a 100 sqm (32' x 32') rooftop could catch 32,000 gallons of water annually at 90% efficiency rate. In this way 60-70% of daily demand for water could be met from RWH including 15-20% of water needed for drinking and cooking, and 80-85% of that needed for cleaning and livestock. He added that RWH was equally useful in snowfall, for a one-time investment households could enjoy a lifetime of free water, and promotion of RWH would reduce the silt load on Mangla and Tarbela Dams.

Syed Gardezi said ERRA had already carried out a number of pilot projects for RWH. One at UC Chitrah Topi in Bagh covered a RHC, one boys and one girls high school, and 25 of the most vulnerable households – he added that the demonstration effect of this had led many others to install RWH systems themselves. ERRA had also developed technical guidelines and awareness material on RWH.

For the future, he said the ERRA had launched a pilot project costing Rs.496 million which would benefit a population of about 240,000 across 20 union councils in AJK and KP. Under a separate project, about 4,000 masons/artisans were being trained to install RWH systems. Finally, Syed Gardezi said that RWH had been made an essential part of all (8,000 plus) public sector buildings to be reconstructed under various ERRA's programme.

Dr. Abdur Rahman Khan, COMSATS Institute of Technology, Abbotabad: 'Status of Water Quality and Sustainable Protection of Water Sources in the Earthquake Affected Areas of Pakistan'

Dr. Abdur Rahman Khan firstly explained the importance of clean, safe water by describing the global situation in relation to this: nearly 1.5 billion people had no access to safe (potable) water and 2.6 billion did not have basic sanitation; water-borne diseases accounted for 50% of hospital cases globally; 80% of illnesses in developing countries were water-borne infections – diarrhea, cholera, typhoid, hepatitis, etc; and 5 million people annually in developing countries died from contaminated water.

Having given the context for why access to clean water and sanitation facilities was so important, Dr. Khan then gave the results for water quality status in NWFP and AJK. 410 samples were tested from five districts of NWFP for pH, turbidity and presence of E. Coli. While turbidity and pH mostly fell within permissible limits, in 75% of samples levels of E. Coli exceeded permissible limits. From these results it was recommended that 14% of the 410 water supply schemes tested needed major work (exceeding Rs.50,000) and a further 49% needed minor civil works (less than Rs.50,000). Similar results were seen in AJK. Of 333 WSS schemes tested in districts Bagh and Poonch, 76% had excessive E. coli levels, while in 20% turbidity exceeded permissible limits. Of 516 WSS tested in Tehsils Muzaffarabad, Hattian and Authmuqam, turbidity results were better (9% of samples were excessive), but the E. Coli exceeded permissible limits in 86%. Out of 327 WSS across EQAA of AJK, it was recommended that 5.20% required major civil works, and 72.48% required minor civil works.

Dr. Khan summarized the overall conclusions from the tests as follows: 65-85% water was microbiologically contaminated because of free access by humans and animals; chemically the water quality both in NWFP and AJK was more or less potable on the basis of the limited parameters tested; source protection was imperative; while for a sustainable solution periodic assessment of water quality and proper maintenance of rehabilitated water sources was needed. Dr. Khan listed some of the available measures for source protection: fencing to limit human and animal access; spring box/catchment's tank; diversion ditch; cut-off wall for streams; and slow sand filtration for microbiological control. He described the last of these as particularly important.

Dr. Karim Alibhai, CEO Agha Khan Foundation (Pakistan): 'Water and Sanitation Extension Programme (WASEP)'

In his presentation, Dr. Karim Alibhai described the WASEP initiative being implemented by Agha Khan Foundation in Chitral, Gilgit and Baltistan. He explained that the focus of the programme was on working with communities to reduce diarrhoeal morbidity in the target areas by 50%. A range of criteria as well as participatory

assessments were used to select villages for interventions. Factors considered included presence of village and women's organizations, village unity, level of diarrhoeal morbidity, sources of drinking water and health impact potential. Using such well-defined indicators, villages were scored and ranked for selection.

Once the selected local committees were formed to administer and manage the scheme, two salaried employees were appointed: male Water and Sanitation Operator, and a female Water and Sanitation Implementer. Under the terms of construction, the communities were responsible for providing local material and unskilled labour, and WASEP for technical support, non-local materials, skilled labour and latrine incentives.

The major thrust of the programme was on health and hygiene. Information about knowledge, attitudes and practices (KAP) related to water use, defecation, cleaning, food preparation, etc was collected from the field. Female health and hygiene promoters carried out household visits and conducted education sessions. Stress was put on interactive learning with role plays, dramas, posters contributing to a marked two-way flow of information. Monitoring was carried out both during the bimonthly interventions, and through KAP questionnaires administered after six months and then after two years. Standardized scoring was used and results compared with the baseline.

The WASEP's School Health Intervention Programme focused on primary school children, as their age made them the most susceptible to messages and gave the most potential to influence their behaviour. A child to child approach was used to raise awareness about seven topics: clean hands and personal hygiene; children's stools and hygiene; clean, safe water; diarrhea - causes, prevention, and cure; intestinal worms; clean, safe food; and water use and O&M. The unique approach entailed listening and understanding, independent research, data analysis, implementation of ideas, evaluation of performance, and efforts to sustain healthier behaviour. A similar approach was used in the Community Health Intervention Programme.

Dr. Alibhai reported findings on the impact of WASEP interventions in the target areas were as follows: 89% increase in the average score for overall status of hygiene among partner villages in Gilgit; 22% in Baltistan; and 87% in Chitral. These increases were seen between July 1998 and Feb 2000 in the case of Gilgit and Baltistan, and between July 1998 and Dec. 1999 in the case of Chitral. The reduction in diarrhea incidence between baseline figures and those one year after interventions began, were as follows: 52% reduction in Gilgit, 36% in Baltistan, 64% in Chitral - coming to an overall average of 50.6%.

Dr. Alibhai described the challenges faced in the design and implementation stage, and in the operations stage. The former included: lack of community participation; unreliable supply of water; unsatisfactory service level; inequitable distribution; lack of priority for

sanitation facilities; lack of priority for quality of water, health and hygiene and capacity building; and inappropriate engineering design and quality of construction materials. The latter included: limited community involvement; absence (or lack of capacity) of vigilant and vibrant community based organizations; absence of women in the village based organizations; less attention towards building the capacity of the organization; absence of community-based financing system through tariff collection and other means; and problems with procurement of spare parts. He added that there was very limited post-construction monitoring and evaluation.

In conclusion, Dr. Alibhai listed the key lessons and recommendations to emerge from WASEP's experience. He noted that the WatSan need increased in the reconstruction phase and it was imperative to ensure these needs were met. He suggested that temporary restoration of existing water systems would be quicker and more effective in ensuring supply of ample quantities of water than bringing in more high-tech solutions. Involving communities and IDPs in project planning and implementation served as psycho-social therapy; provision of water for kitchen gardening similarly was effective psycho-social therapy and also revived economic activity. Finally Dr. Alibhai said it was imperative to provide IDPs with bathing and washing facilities as well as latrines to avoid outbreak of diseases, and addressing the gender needs was crucial in all phases.

Mr. Farhan Sami, Water and Sanitation Program (WSP), World Bank: 'Water Supply and Sanitation Status in Pakistan and the Way Forward'

Mr. Farhan Sami began his presentation by describing the situation with regard to water supply and sanitation in Pakistan. Per capita water availability had fallen from 5,260 m³ in 1951 to 1,100 m³ in 2006 and was predicted to drop to under 900 m³ by 2025. Overall just 36% of households in Pakistan had access to tap water: there were significant urban-rural differences - 61% of urban households compared to 22% of rural households. He highlighted the high prevalence of non-revenue water (NRW) in Punjab: 38% average ranging from 20% NRW in Gujranwala to 53% in Rawalpindi.

Mr. Sami then explained the options for improving water supply: eliminate wastage - reduce NRW and increase irrigation efficiency; promote community education on simple technologies; create an enabling environment for Water Safety Plans; and improve service delivery through performance-focused institutions.

Turning to sanitation, Mr. Sami noted that 1.6 million deaths each year were due to diarrhea, with 88% of cases due to unsafe water and sanitation. Most of these were concentrated in developing countries among children. He said that, while the status of open defecation had dropped from 24% worldwide in 1990 to 18% in 2006, 1,080 million people in South Asia defecated in the open daily - 52 million of them in Pakistan. He

described the significant impact that had been achieved by initiatives such as Total Sanitation Campaigns in India and Bangladesh, e.g. sanitation coverage in rural areas of Bangladesh had increased from 28.77% in 2003 to 90.86% in June 2009.

In his concluding review of options such as latrinization to promote sanitation coverage in Pakistan, Mr. Sami stressed that the aim had to be to achieve open defecation free areas. He added that the ODF (Open Defecation Free) was equally important in emergency situations. Describing vertical projects as the 'killer', Mr. Farhan Sami strongly urged involvement of communities. He also highlighted the need for a Provincial W&S Directorate/Secretariat. Mr. Sami's final observation was that resource allocations between 2001-2 and 2006-7 for WatSan were consistently a fraction of those for education, and significantly less than those for health.

Dr. Roshan Shreshta, Regional Technical Advisor South Asia Water for Asian Cities Programme, UN-HABITAT: 'Youth Mobilization to Mitigate Cholera Outbreak in Nepal'

In his presentation, Dr. Roshan Raj Shreshta described an initiative in Nepal which utilized youth volunteers to help reduce incidence of cholera and other water-borne diseases by promoting safe hygiene practice. Explaining the background to the project, Dr. Shreshta said toilet coverage in Nepal was less than 50%. Incidence of diarrhoea and cholera was very high - with a particularly severe epidemic in summer 2009 - due to contaminated water supplies and the difficult terrain which limited people's access to medical facilities.

To address this serious problem, the youth mobilization project was initiated by a group of NGOs. They interacted with youth committees and other stakeholders, and devised a campaign called Mission Mid-West (*Paschim Paaila* in Nepali). Its aims were to assist in controlling diarrhoea epidemics in the mid- and far-west of the country by mobilizing youth to raise awareness on WASH, increase access to safe water and emergency supplies, and carry out research on the situation. For the youth, mostly from Kathmandu, it represented an opportunity to learn about their country and make a difference. A further aim was to use the 'hype' generated by the prevailing epidemic situation to push for drastic improvements in the WatSan situation in Nepal.

Over 200 youth volunteers joined the mission; as preparatory steps they were trained and engaged in participatory planning. The first step in implementation was dispatch of five-member rapid assessment teams to the target areas. Comprising WatSan and public health experts, the teams assessed field conditions, coordinated with on-ground stakeholders and made preparations for the arrival of the volunteers. In the second step the volunteers went to the target areas - with a big send off to encourage them - and engaged in a range of activities: managing diarrhoea cases, carrying out chlorination of water sources and reservoirs, raising awareness about the importance of hand-washing,

providing water purification solution to schools, distributing the same solution and ORS among communities, and so on. A lot of stress was put on communication: as well as setting up a blog and google group, the volunteers provided weekly updates, held meetings with different groups and engaged with the media.

Dr. Shreshta explained that the mission was carried out largely with support from ENPHO, as well as donations from the NGOs, rotary clubs and the individuals.

SESSION XIII: Monitoring and Evaluation in Reconstruction and Rehabilitation

The session on monitoring and evaluation was chaired by Mr Saeed Ahmed Khan, Secretary, Statistics Division and featured presentations by ERRA's M&E Wing and MIS Cell – the former by Mr. Ahmed Shaikh, describing the structure and processes for M&E, while the later by Col. Amer Mohsin, illustrated the numerous IT tools used by ERRA to support M&E. Professor Dr Ali Sajid, made a presentation on total quality management and applied this to the context of ERRA, while Dr. Marie Gaarder explained the concept and features of post-disaster impact evaluations.

Mr. Ahmed S. Shaikh, Adviser, M&E Wing, ERRA: 'Monitoring & Evaluation at ERRA'

Mr. Ahmed S. Shaikh stressed the ERRA's commitment to institutional transparency and enhanced accountability, and explained that this was primarily carried out through the dedicated M&E Wing. As well as monitoring implementation of projects (results and challenges faced), the M&E Wing assessed the quality of programmes. Describing the structure of the M&E Wing, Mr. Shaikh said that in addition to the Wing in ERRA HQ, there were M&E Zonal Offices in NWFP and AJK and Social Survey Teams (SST) and Construction Monitoring Teams (CMT) in each district responsible for social and technical monitoring respectively. He said all analyses were elaborated through sex disaggregated Key Performance Indicators (KPIs) within sectoral Logical Framework Analysis (LFAs). ERRA took a holistic multi-tiered approach to M&E that looked at inputs, outputs, outcomes and impact (changes in people's lives).

With regard to technical monitoring, Mr. Shaikh said the aim was to ensure contractors complied with contracts in terms of quality and timelines. Field CMTs (comprising one engineer and one sub-engineer) carried out daily inspections, and weekly technical monitoring reports were generated and shared with concerned stakeholders to take corrective action as necessary. For projects where critical observations were made, work on site was immediately stopped through 'the Consultant' (NESPAK). He explained it was the 'Consultant's' job to ensure rectification – with measures being verified through repeat visits by CMTs. On average 600 visits were made each month, but this was being doubled with the induction of additional personnel. Mr. Shaikh stressed the huge size of

the technical monitoring portfolio (almost 13,000 projects), which covered all twelve core reconstruction sectors, and were spread over the entire 30,000 sq km affected area.

By contrast, Mr. Shaikh explained, the aim of social monitoring was to assess the effectiveness of interventions and the changes in people's lives. The monitoring comprised of outcome and impact assessment surveys, conducted by teams of surveyors, supported by evaluators and data managers. He said the surveys were empirically based, using representative samples. Mr. Shaikh said outcome surveys were conducted on a six-monthly basis and covered completed projects in education, WatSan, health and governance sectors. They looked at the adequacy of facilities and functioning of staff, availability and use of equipment and extension of services; and the satisfaction level of users. The latest outcome survey (2009) covered 496 facilities and around 2,500 users. Impact assessments were carried out through household surveys for urban and rural areas. In 2009 a total of 4,168 households were surveyed. The questionnaire largely followed the structure of the Pakistan Social and Living Standards Measurement (PSLM) Survey to enable easy comparison and establish a baseline. Questions focused on education status, health services and status, employment and economic condition, ownership of assets, household construction details, and access to services and satisfaction.

Mr. Shaikh also described measures for survey quality assurance. The M&E staff was regularly trained in sampling techniques, questionnaire design, etc. Monitoring was carried out to ensure data collection was in compliance with survey plans, and a post-enumeration survey was administered on 10% of the total sample to ensure reliability. Data results were also substantiated through Focus Group Discussions (FGDs) with local communities, structured interviews with key stakeholders, and direct observations across all the districts.

Databases were maintained at zonal offices and HQ. Editing/coding, computerized cleaning, validation checks, data processing, development of tabulation plans and analyses were carried out. Mr. Shaikh described the various reports generated by ERRA's M&E Wing: six monthly outcome reports, annual social impact assessment report, consolidated annual report, and case studies. The focus was very much on assessment, lesson learning and making recommendations for improvement. The latter fed into ERRA's formal decision-making processes, and were also shared with stakeholders in various forums.

Mr. Shaikh gave a brief picture of the key results to emerge from M&E: ERRA's interventions were resulting in reconstruction of housing stock, restoration of physical infrastructure and other civic facilities, rejuvenation of the local economy and improvement in the overall quality of life of communities. He highlighted the spread of seismic-resistant construction, provision of integrated essential social service delivery

packages (health, education, WatSan), heightened public awareness of solid waste management, and the mainstreaming of DRR and gender concerns.

Finally, he summarised the lessons learned from ERRA's M&E experience. In these, he stressed the need to develop appropriate systems and procedure which were localised yet aligned with international best practices, adding that mutually agreed upon strategic frameworks enhanced shared understanding of all the stakeholders. External technical support and capacity building ensured quality of findings. Mr. Shaikh noted the advantages of using existing indicators from national survey instruments, both to expedite data collection and analysis, and to establish useful baselines. He called for sufficient human, technical and financial resources to be provided for M&E, and endorsed the multi-tier structure established by ERRA. He also lauded the role of 'consultant' (engineering firms) in ensuring compliance, as well as ERRA's general stress on using M&E findings to make mid-course corrections and improvements, i.e. to support a continuous learning process.

Col. Amer Mohsin, DDG (MIS Cell), ERRA: 'Acquaint with the IT related services being provided by MIS Cell, ERRA, for Monitoring and Evaluation'

In his presentation, Col. Amer Mohsin showed the various IT tools being used by ERRA and gave illustrations on their use. Among "operational software" he listed the following:

- ERRA Reconstruction Monitor (ERM)
- Housing Complaints Manager (HCM)
- Targeted Vulnerability Survey (TVS)
- Livelihood Cash Grant
- Housing Cash Grant
- Website
- WAQIPH (Water Quality Improvement & Promotion for Hygiene)

He also presented the following "Administrative software":

- Minutes of Meetings Manager (M3)
- ERRA Telephone Directory (ETD)
- Personnel Information System (PIS)
- ERRA Payroll Manager (EPM)

Elaborating on the ERRA Reconstruction Monitor (ERM), Col. Mohsin noted that with many thousands of reconstruction projects being undertaken by ERRA, the manual monitoring and management of these would have been both cumbersome and time-consuming. Hence, the ERM had been developed as an IT tool to facilitate all levels of

managers to monitor effectively and take timely decisions, as well as to make use of the M&E reports generated by ERRA's M&E Wing. In addition to managing and monitoring the reconstruction activities, the ERM aimed to promote donor/sponsor satisfaction, organize unified data, maintain a reconstruction history and facilitate future accountability.

Key features of the ERM included: single platform for all users; web-based centralized database; data captured where generated; comprehensive reporting system; side by side progress comparison of portfolios; comparison of progress with previous month(s)/year(s); history of projects also maintained through images; and availability for authenticated users only.

In the remainder of his presentation, Col. Mohsin gave graphic examples of the various IT tools used by ERRA: the details included in project progress reports, the many different kinds of reports included in ERM, access of these through the ERRA website, the Housing Complaints Manager, Targeted Vulnerability Survey, IT tools for managing housing and livelihood cash grants disbursement, various reports generated by the Minutes of Meetings Manager (M3), as well as administrative forms for personnel, salary payments, etc.

Professor Ali Sajid, Director, Institute of Business and Management, University of Engineering and Technology, Lahore: 'Enhanced Delight to Earthquake Victims in Pakistan through Process Based Quality Service Delivery at ERRA'

Professor Sajid began his presentation by explaining the concept of 'quality' and then defining what this meant in the context of ERRA, e.g. efficiency, compliance with policies, providing good products, etc. He stressed that the overall aim was not simply to avoid annoyance for victims, but to 'please and delight' them. He continued that total quality management (TQM) meant involving and empowering the entire ERRA workforce to constantly strive to improve the quality of goods and services being provided, consistent with the goal to 'satisfy and even delight' those affected by the 2005 earthquake.

The TQM placed great stress on the perspective of the customer or user. Noting that there were many different TQM models, Professor Sajid listed some of those that could apply to a service sector organization like ERRA, e.g. 7QC Tools, Deming 14 Points, and the Kano Model. After describing some features of these diverse models, he stressed that the essence of the TQM approach was continuous engagement in a cycle of: consumer satisfaction, process planning, process management, process improvement, and organization involvement.

Professor Sajid defined the 'service' as any activity that did not directly produce a physical product, i.e. a 'non-goods' transaction between service provider and user. He

listed the four elements of service management in ERRA as: service strategy; service design; service operations; and continual service improvement. Assessments of service strategies entailed looking at both systems and procedures, and personnel, while indicators of service delivery included: timeliness, empathy, courtesy, consistency, accessibility and responsiveness. Professor Sajid noted the unique characteristics/challenges of service delivery for ERRA: each customer had different requirements leading to a high degree of customization; mostly intangible outputs; large volumes of customers had to be handled; services were produced and consumed simultaneously; quality had to be developed and built into the service; and it was highly labour intensive.

Professor Sajid then described the features and requirements for effective process management and performance measurement, e.g. the need to break processes down into sub-processes, activities and tasks for individuals; linking process hierarchies with team hierarchies – senior management, process teams, functional teams; performance matrices should include customer feedback and skills levels and requirements of personnel.

Professor Sajid suggested how these features could be applied to ERRA. He called for its Mission, KPIs, targets and core processes to be determined at the highest level (ERRA Board), but flexibility should be allowed in how these translated into operational units. Decisions about this should be made by senior personnel in each unit/division. Within each unit the same process should be repeated to develop its own mission, KPIs, targets, etc. This would then be reflected in a matrix, linking the impact of achieving individual operational units' targets with the overall corporate targets.

In conclusion, Professor Sajid summarized the overall approach that ERRA should be taking to achieve 'delight' among earthquake victims: use of several TQM approaches with proper action plans to fit different contexts; service delivery models based on process management and improvement; education of top management, implementing managers and field workers on these models; local body involvement and stress on social responsibility; determination of stakeholders and victims interests; and implementation of planning, control and audit on pre-defined successful standards.

Dr. Ann Marie Gaarder, Deputy Director, International Initiative for Impact Evaluation (3ie): 'Post-Disaster Impact Evaluation (PIDE)'

Dr. Marie Gaarder began by giving an introduction about the International Initiative for Impact Evaluation (3ie). Created to increase development effectiveness through better use of evidence in developing countries, she said 3ie funded and promoted the production and use of evidence of what worked, when, why and for how much, from high quality impact evaluations. After giving some examples of impact evaluations carried out by 3ie, she listed the main reasons for undertaking an impact evaluation:

- Did the program/intervention have the desired effects on beneficiary individuals/households/communities?
- Can these effects be attributed to the program/ intervention?
- Did the program/intervention have unintended effects on the beneficiaries?on the non-beneficiaries (externalities)?
- Is the program cost-effective? What do we need to change to become more effective?

Dr. Marie stressed the challenge of attribution: how to ensure that changes in beneficiary condition were due to the project (intervention) and not to other factors? This required the use of 'counter-factual' - analyses of what would have happened to beneficiaries if the intervention had not been carried out. She explained the usual method was to compare a targeted group with another with the same characteristics, who were not targeted in the intervention. She highlighted the related problem of bias in sample selection: there would be an inevitable tendency to select those who had benefited from interventions. She said examples of selection bias were rampant in the humanitarian sector and in post-disaster settings. Other methods of getting valid counter-factual included: randomized control trials (RCTs), regression discontinuity and the pipeline approach.

Dr. Marie continued by explaining why impact evaluations in post-disaster situations were different: they were unanticipated interventions with no planning for baselines; there was limited time to plan and implement interventions and scope for targeting was limited; it would be clearly unethical to have an excluded comparison group (i.e. those in need of relief but not provided it); and there was a triple selection bias - exposure, out migration and treatment.

Dr. Marie defined the comparisons typically made in post-disaster impact evaluations. These were based on time and disaster impact-treatment. The time comparison would look at the pre-disaster situation (t-1), immediate post-disaster (t0), post-relief (t1) and post-reconstruction (t2). The second entailed comparison of three types of groups: A - affected by the disaster and treated; B - affected and untreated; and C - unaffected and untreated.

Noting the difficulty in carrying out baseline surveys in a disaster response, Dr. Marie suggested a number of other sources for baseline (t-1) data: existing surveys, GIS data, and reconstruction of a baseline from administrative data and/or census-based poverty estimates. She concluded by describing different designs for impact evaluations depending on the phase of the emergency response. For the relief phase she cited process-oriented, real time evaluations, and outcome monitoring for basic outputs and outcomes, e.g. shelter. For the reconstruction phase she said these were usually pipeline or factorial, but there was scope for experimental design. Dr. Marie noted that there was

often scope for quasi-experimental impact design, e.g. a natural disaster such as an earthquake could give a source of exogenous variation to use as an instrument, such as distance from epicenter or fault line.

SESSION XIV: Modernizing Financial Management System

The session on ERRA's Financial Management Information System (FMIS) was chaired by Mr. Ayub Khan Tareen, AAGP; and featured a single presentation 'Enhancing Financial Management in ERR;' divided among four presenters: Mr. Chris Lewis-Jones, and Mr. Badar Mahmood from FMIS Project, Mr. Abdul Waheed Khan, DG Finance ERRA and Mr. Hammad Yunus, ADB.

Enhancing Financial Management in ERRA

Mr. Chris Lewis-Jones, Associate Director (Crown Agent), FMIS Project Manager (Crown Agent): 'Part I: Introduction'

In his introductory part of the shared presentation, **Mr.** Chris Lewis-Jones gave an overview of ERRA's financial management system and showed the numerous affiliated bodies and partners with which ERRA interacted and had financial dealings. He explained the goals with regard to financial management and highlighted how FMIS had helped ERRA achieve these: improved oversight of public money; enhanced stakeholder confidence; increased efficiency; increased reliability and better accessibility of information; improved decision-making; doing things in a single way across the ERRA 'family'; overcoming geographical barriers.

Noting that an effective governance structure was the single biggest factor ensuring success of delivering IT projects within budget and timelines, Mr. Lewis-Jones described that of FMIS, rested with the Deputy Chairman ERRA as its head. He related the benefits of FMIS to the commitments made by Governments and development partners under the Paris Declaration, i.e. to promote ownership, alignment, harmonization, managing for results, and accountability.

With regard to ownership specifically, **Mr.** Lewis-Jones said the ERRA took all major decisions regarding: revised accounting policies and procedures; human resource development; IT infrastructure enhancement; and revision of roles and responsibilities. FMIS supported alignment as it was based on a standard GOP NAM compliant Chart of Accounts; conformed to ERRA's own policies and processes; and allowed some process change and improvement but within ERRA's regulatory requirements framework. Managing for results was supported by: improved management information for ERRA 'family' and external stakeholders (donors, auditors); standard processes and reports across ERRA family leading to better performance management; and improved quality and access to information. Similarly, accountability FMIS supported this by bringing: improvement in the quality and accessibility of information; improvement in reporting to

donors and other stakeholders; and improved audit trails of 'who? what? when? why?' leading to transparency and accountability.

Throughout his presentation, Mr. Lewis-Jones stressed that the role of the consultant was to understand the ERRA's needs, develop solutions, facilitate change, encourage and build capacity in use of the system, i.e. it was a supportive role, with the lead very much being taken by ERRA. In this regard, he lauded the governance and strong leadership shown by ERRA, and specifically by the Deputy Chairman Lt. Gen. Sajjad Akram. The FMIS Project Manager also emphasized the fact that 'people, people and people' were what mattered in change projects.

Mr. Badar Mahmood, FMIS Project Team Leader (Crown Agent): 'Part II: FMIS Project at ERRA'

Mr. Badar Mahmood described the details of the FMIS Project. He divided project activities into those included in the original scope, i.e. inception, hardware and software procurement, and technology implementation, and those in its expanded scope, i.e. legacy data and process changes, and building sustainability. With regard to implementation, Mr. Mahmood explained that this began with training of the core implementation team. FMIS was first piloted in PERRA HQ and DRU Abbotabad; the second pilot was in SERRA HQ and DRU Muzaffarabad, followed by consolidation and review. Main implementation of FMIS took place in two phases, with consolidation and review carried out after each.

Mr. Badar then detailed the functional scope of FMIS: budgeting, contracts, forecasts, releases, payments, reporting, procurement, fixed assets and reconciliation. He identified areas where the main benefits had been seen as asset management, budgets and payments. FMIS had helped ERRA achieve faster and better reports, better control, and standardization of data and processes.

Mr. Hammad Yunus, Senior Financial Management Specialist, ADB: 'Challenges'

In the third part of the FMIS presentation, **Mr.** Hammad Yunus explained the challenges faced in implementing the FMIS, which he broadly divided into people, processes and technology. With regard to 'people; the biggest challenge was 'user fear': this was overcome by working with users to help them understand job requirements, explain what help could be provided by FMIS in daily tasks, the reporting requirements, and in promoting system acceptance. Extensive effort was put into communication, with workshops and training courses. To overcome the general low levels of previous IT use, basic IT training was given to all government staff and FMIS training to all accounting staff along with trainings on reports development and modified accounting policies and procedures.

Another challenge was faced in creating standard processes: The FMIS had to develop standardized NAM compliant Chart of Accounts; standardized transaction processing across the ERRA 'family'; standardized reports (for daily cash balances, sector-wise spending, financial statements, etc). The FMIS also had to deal with the huge issue of 'legacy update': there were 3 years to historical data which had to be collected, verified, converted from manual single entry to electronic double entry, uploaded in FMIS and consolidated – an enormous task. The FMIS was heavily dependent on technology and infrastructure: in this regard connectivity, hardware, software, infrastructure and outsourced hosting arrangements had to be provided, and new controls and skills developed in the ERRA IT Department.

Mr. Hammad estimated that 60% of the effort establishing the FMIS went into promoting change, as people were reluctant to implement the new system. But, he added that hard work, enthusiasm and commitment of workers, combined with strong support from the top leadership, were what helped overcome the various challenges faced in implementing the FMIS.

Mr. Abdul Waheed Khan, Director General Finance, ERRA: 'Outcome of FMIS in ERRA'

Mr. Abdul Waheed Khan concluded the shared presentation by describing the outcome of FMIS: 100% transactions recorded on the system; reconciled cash balances; and cross reconciliation with bank statements. In turn, he said this led to: reduction of fiduciary risk; transparency and accessibility of information; informed decision making; and effective oversight over all locations.

Listing some of the FMIS' specific achievements, Mr. Waheed cited:

- Production of consolidated Annual Financial Statement FY 2008-9 from FMIS
- On-Click production of Financial Management Reports
- Online cash balance reconciliation with implementing agencies
- Repository of:
 - Vendors
 - Contracts
 - Invoices, Deductions and Payments
- Enhanced internal control and management oversight.

In conclusion, Mr. Waheed noted that the FMIS had huge potential and its use could be greatly expanded – this required greater 'imagination' on the part of ERRA.

**PROCEEDINGS OF DAY
THREE:**

21 April 2010

CONCLUDING SESSION

The concluding session on Day Three of ERRA International Conference had as Chief Guest Mr. Farooq H. Naik.

Dr. Shujat Ali, SMA / Director General Environment and Chief Conference Coordinator, ERRA: 'Summary of Conference Proceedings'

Dr. Shujat Ali presented a summary of Conference proceedings from the preceding two days. He listed the sessions held on each day, speakers in each session and the topics covered.

His Excellency (Mr.) Mustafa Babar Hezlan, Ambassador of Turkey to Pakistan:

The Ambassador of Turkey described the considerable support provided to help people in affected areas by the Government and people of Turkey, as evidence of the strong bilateral relationship between the two countries. He highlighted the fact that Turkish teams were on the ground to help in the earliest stage of the emergency response.

Turning to reconstruction and rehabilitation, Mr. Hezlan said absorbing aid was a major challenge, which was handled effectively by ERRA. The Authority greatly facilitated the provision of aid from external sources like Turkey. He stressed that without ERRA it would not have been possible to achieve what had been done to date.

With regard to the specific contribution from Turkey, the Ambassador said his country had engaged, among other areas of support, in school building, preparing some government sites and university buildings. Turkey had on-going projects, and could implement new ones as well; it would continue working with ERRA. He noted that aid for the 2005 earthquake response was provided not just by the Government of Turkey, but also by the Turkish people. Adding that many Turkish NGOs became involved in Pakistan for the first time, Mr. Hezlan characterized the public response in Turkey as further evidence of the love between the two peoples.

In conclusion, the Ambassador recommended that, as ERRA was in the last stages of its work, the considerable experience & expertise gained by organization in post-earthquake reconstruction be made available to others in order to help in future disaster situations.

Mr. Toshihiro Tanaka, UN Resident Coordinator:

In his address, the UN Resident Coordinator Mr. Toshihiro Tanaka congratulated ERRA on organizing the International Conference and sharing the considerable experience it had gained through managing one of the worst disasters in recent history. He

commended ERRA on accomplishing an 'exemplary task', and particularly appreciated its recognition of women in the earthquake response.

Mr. Tanaka reminded participants of the scale of devastation that struck in October 2005, and the many logistical and other challenges faced in providing relief and subsequent support to affected people. Turning to the response of the UN System, he said the UN Impact Assessment team met the same day the earthquake occurred, and an UNDAC team arrived the following day and took over the response coordination role. The UNDP head then described the support provided by UNDP to the earthquake response, including relief supplies, transitional/winter shelters, rubble removal projects and so on.

Mr. Tanaka said ERRA had played a vital role in restoring life in EQAA, supported by UN and other donor agencies. It had been able to ensure reconstruction on a fast-track basis. However, he noted that improving the quality of life – notably through service delivery in vital sectors – and livelihoods had proven more difficult than infrastructure reconstruction. He urged the need for continuous effort in these areas.

The UN Resident Coordinator highlighted the use of the Cluster Approach following the 2005 earthquake disaster – Pakistan was in fact the first country where this approach was applied. He lauded the Government of Pakistan for playing a key role in improving the effectiveness of the approach, adding that – based on positive experiences following the 2005 earthquake – the Cluster Approach had become the norm for humanitarian responses anywhere in the world.

Noting that Pakistan was exposed to a variety of hazards, Mr. Tanaka lauded the fact that there now heightened awareness of DRR and institutionalized systems for DRR/DRM – notably the NDMA. He added that DRM was one of the five Joint Programmes in the One UN System being piloted in Pakistan. Mr. Tanaka reminded participants of the global campaign underway to build safe schools and hospitals, and stressed the importance of community-based DRR and DRM.

In conclusion, as Co-Chair of the UN Joint Programme on DRM, Mr. Tanaka congratulated the ERRA on its achievements, and its contribution to learning on national and international DRM.

Mr. Farooq H. Naik, Chairman of the Senate, Islamic Republic of Pakistan: 'Address by the Chief Guest'

The Chairman of the Senate, Mr. Farooq Naik congratulated the ERRA for organizing a very successful international conference, and sharing its experiences and lessons from carrying out reconstruction and rehabilitation work. He said the exchange of information would be beneficial to all participants, adding that the varied participation reflected the

importance of the conference. Mr. Naik said the lessons and recommendations emerging from the Conference would be of great value for future post-disaster reconstruction and rehabilitation efforts.

The Senate Chairman said an earthquake was the worst natural disaster; it exposed human weaknesses and strengths. He added that its impact could be reduced by adopting effective measures and strategies. Referring to the story of Noah's Ark, the Chairman Senate said the God tested people with natural and other disasters: tsunamis, floods, wildfire, terrorist attacks, and so on. He stressed that even developed countries could not always respond effectively.

But, while disasters came without warning, Mr. Naik said awareness and preparedness could reduce vulnerability and destruction. He said no such systems had been in place when the 2005 earthquake struck, but thanks to the Pakistan army, civil society, the international community and others, the victims had been helped. He lauded the fact that the Pakistani nation had rallied together to support earthquake victims in a manner never seen before. He also noted that today Pakistan had disaster management systems at local, provincial and national levels.

Turning to ERRA, the Chairman said it had shown that disaster could be turned into opportunity; reconstruction in the affected areas was well underway giving people a better quality of life. ERRA had emerged as an organization effectively carrying out its goal to 'Build Back Better'. Reconstruction and rehabilitation activities were being undertaken in one of the most inaccessible regions of the world. He remarked that from tragedy, the lesson had been learned to carry out seismic-resistant construction. In conclusion, Mr. Farooq Naik commended the ERRA and all the donors who had helped in organizing the Conference.

Mr. Altaf Muhammad Saleem, Chairman, ERRA: 'Vote of Thanks'

In his vote of thanks, the Chairman ERRA, Mr. Altaf Muhammad Saleem first thanked the Chairman Senate for his presence. He noted the very appropriate timing and theme of the Conference; with four years experience behind it, he said the ERRA wanted to reflect over and share with others its experiences and lessons. Furthermore, it could take whatever course corrections were needed in its remaining programmes. He also lauded the excellent participation, and the opportunities to hear the views of experts in various fields. Mr. Saleem pointed out that it was not easy to organize such a Conference: several months of effort had gone into it, and he commended all those involved for doing an excellent job.

The Chairman highlighted the success of ERRA's flagship Rural Housing Programme, which was coming to a close. Mr. Saleem described it as 'a miracle' that in such a short

period 3.3 million homeless people had moved into pucca housing; before the disaster, over 80% of the affected population lived in kacha houses. He said they were now in safe homes, and called this a profound shift. The Chairman identified support by the UN-HABITAT and the Prime Minister Yusuf Raza Gilani as critical to its success. He said that from day one, the Prime Minister had been personally involved in overseeing the work done by ERRA. He received regular reports on progress, and had helped to overcome problems when these were faced.

Noting that ERRA had to undertake some 13,000 projects – a massive task – Mr. Altaf Saleem observed that huge funds were involved and it was imperative to ensure transparency and accountability to satisfy the donors and others. He said the ERRA had effective mechanisms in place for this. He said the projects were being carried out ‘in record time’, with 80% completed or underway. He reiterated that the ERRA was on track to complete all projects by 2011.

Mr. Altaf Muhammad Saleem said it was important to showcase the progress made in reconstruction in EQAA, both to raise the morale of people in the area and to share something positive coming out of Pakistan. In conclusion, the Chairman thanked the agencies who had supported the Conference and the many people in ERRA who had been involved in its organization.

ANNEXES

ERRA INTERNATIONAL CONFERENCE 2010 PROGRAMME

DAY ONE	MONDAY 19TH APRIL 2010
0900-1000	REGISTRATION
1000-1130	INAUGURAL SESSION → RECITATION FROM THE HOLY QURAN → WELCOME ADDRESS AND SHARING OF ERRA'S EXPERIENCES POST DISASTER EARTHQUAKE 2005 BY DEPUTY CHAIRMAN ERRA → REFLECTIONS BY DEVELOPMENT PARTNERS → ADDRESS BY THE CHIEF GUEST CHAIRMAN ERRA
1130-1145	BREAK
1145-1315	SESSION II – HOUSING RECONSTRUCTION POLICY, STRATEGY, OBJECTIVES AND IMPLEMENTATION TOOLS → PRESENTATIONS → Q/A
1315-1415	LUNCH / PRAYER BREAK
1415-1545	SESSION III - OWNER DRIVEN RURAL HOUSING PROGRAMME - COMMUNITY SUSTAINABILITY AND RISK REDUCTION → PRESENTATIONS → Q/A
1545-1600	BREAK
1600-1730	SESSION IV – BUILD BACK BETTER - HOUSING CONSTRUCTION, SETTLEMENT AND PROTECTION ISSUES → PRESENTATIONS → Q/A
1730-1900	SESSION VI – DISASTER RISK REDUCTION → PRESENTATIONS → Q/A
DAY TWO	TUESDAY 20TH APRIL 2010
0900-1030	SESSION VII – PLANNING, DESIGNING AND RECONSTRUCTION OF FACILITIES IN SEVERE SEISMIC ENVIRONMENT → PRESENTATIONS → Q/A
1030-1045	BREAK
1045-1215	SESSION VIII – RECONSTRUCTING EARTHQUAKE DAMAGED INFRASTRUCTURE : CHALLENGES AND LESSONS → PRESENTATIONS → Q/A SESSION V - ROLE OF MEDIA IN POST DISASTER RELIEF, RECOVERY AND REHABILITATION → PANEL DISCUSSION → Q/A
2 Parallel Sessions	

1215-1315	LUNCH / PRAYER BREAK
1315-1445	SESSION IX – LIVELIHOOD: PARTICIPATORY APPROACHES → PRESENTATIONS → Q/A
1445-1500	BREAK
1500-1630	SESSION X – WATSAN PROGRAMME: CHALLENGES OF SUSTAINABILITY PRESENTATIONS → PRESENTATIONS → Q/A SESSION XI – GENDER EQUALITY IN RECONSTRUCTION AND REHABILITATION PROGRAMMES → PRESENTATIONS → Q/A 2 Parallel Sessions
1630-1800	SESSION XII – MONITORING AND EVALUATION IN RECONSTRUCTION AND REHABILITATION → PRESENTATIONS → Q/A SESSION XIII – SAFEGUARDING ENVIRONMENT → PRESENTATIONS → Q/A 2 Parallel Sessions
1800-1900	SESSION XIV – MODERNIZING FINANCIAL MANAGEMENT SYSTEM → PRESENTATIONS → Q/A
DAY THREE	WEDNESDAY 21ST APRIL 2010
0900-1000	CLOSING SESSION → RECITATION FROM THE HOLY QURAN → PROCEEDINGS OF FIRST TWO DAYS CONFERENCE → REMARKS BY ERRRA DEVELOPMENT PARTNERS → CLOSING REMARKS → VOTE OF THANKS
1000-Onwards	FIELD VISIT

ERRA International Conference 19-21 April 2010, Islamabad
Conference Speakers

No.	Session	Names of Chairpersons & Speakers
	19th April 2010	
	Inauguration	Inaugural Session
1		Mr. Altaf Muhammad Saleem, Chairman, ERRA (Chairperson)
2		Lt. Gen. Sajjad Akram, Deputy Chairman, ERRA
3		Mr. Rune Stroem, Country Director, Asian Development Bank
4		Mr. George Turkington, Country Head, DFID / UKAID
5		Mr. (Raja) Rehan Arshad, World Bank Resident Mission, Islamabad
6		Dr. Akhtar Bhatti, Resident Representative, Islamic Development Bank
	Rural Housing (I)	Housing Reconstruction Policy, Strategy, Objectives and Implementation Tools
7		Mr. Jan Meeuwissen (Chairperson)
8		Mr. Tariq Bajwa, Director General Planning and Special Project Cell, ERRA
9		Dr. Ian Davis, Visiting Professor, Oxford Brooks University and Kyoto University
10		Dr. Jennifer Duyne Berenstien, WHRC, Univeristy of Applied. Sciences, Switzerland
11		Mr. Kamran Akbar, Chief Operating Officer, Pakistan Poverty Alleviation Fund (PPAF)
	Rural Housing (II)	Owner Driven Rural Housing Programme - Community Sustainability and Risk Reduction
12		Mr. Arif Hasan, Orangi Pilot Project (OPP) (Chairperson)
13		Professor Kenji Okazaki, National Graduate Institute for Policy Studies, Japan
14		Mr. Mehmet Emin Akdogan, Senior Engineer, Istanbul Governorship
15		Ms. Shanaz Arshad, World Bank, Islamabad
16		Dr. Asif Hussain Shah, Director General, SERRA
	Rural Housing (III)	Build Back Better - Housing Construction, Settlement and Protection Issues
17		Mr. M. Francis Ghesquiere, World Bank (Chairperson)
18		Dr. Amod Mani Dixit, National Society for Earthquake Technology (NSET), Nepal
19		Ms. Meggie Stephenson, UN-Habitat
20		Mr. Masood-ul-Mulk, Chief Executive Officer (CEO), Sarhad Rural Support Programme (SRSP), KP.

Contd.

No.	Session	Names of Chairpersons & Speakers
	20th April 2010	
	DRR	Disaster Risk Reduction
21		Mr. Wolfgang Harbinger, World Food Programme (Chairperson)
22		Air Cdre. Naunehal Shah (Retd), Advisor, ERRA
23		Dr. Markus Zimmerman, NDR Consultant, Switzerland
24		Dr. Amir Nawaz Khan, Centre for Disaster Preparedness & Management, Peshawar Univeristy
25		Mr. M. Usman Qazi, Advisor on DRR to UN Resident Coordinator, Bangladesh
	Media	Role of Media in Post Disaster Relief, Recovery and Rehabilitation
26		Syed Talat Hussain, Executive Director News & Current Affairs and Anchor, Aaj News (Chairperson)
27		Mr. Muaffaq Zaidan, Correspondent Al-Jazeera TV Networks, Pakistan
28		Mr. Fahim Zaman Khan, Dawn News Group, Karachi
29		Mr. Adnan Shaukat, Resident Representative, AP; Islamabad
30		Mr. Li. U; Correspondent, Xinhua News Agency, Pakistan
31		Mr. Reza Syyah, Resident Representative, CNN; Pakistan
	Infrastructure (I)	Planning, Designing and Reconstruction of Facilities in Severe Seismic Environment
32		Lt. Gen Syed Shujat Hussain (Retd) (Chairperson)
33		Brig. Pervaiz Hayat Niazi (Retd), Director General Planning, ERRA
34		Mian Shaukat Shafi, Asian Development Bank
35		Ms. Madhavi Malalgoda Ariyabandu, UNISDR Asia-Pacific
36		Dr. Garry De La Pomerai, DRR Expert
	Infrastructure (II)	Reconstructing Earthquake Damaged Infrastructure - Challenges and Lessons
37		Lt. Gen Syed Shujat Hussain (Retd) (Chairperson)
38		Mr. Jamil ud Din Khilji, Vice President NESPAK, Earthquake Reconstruction Division
39		Dr. Kiminori Matsumoto, Japanese Bridge R&R Expert
40		Mr. Tanveer Raza Sahoo, INCA Engineer, USA
	Livelihood	Livelihoods - Participatory Approaches
41		Dr. Zafar Altaf, Chairman, PARC (Chairperson)
42		Brig. Akhtar Javed Warraich (Retd), Director General, ERRA
43		Dr. Thomas Hofer, FAO, Rome
44		Raja Afaq Ahmed, Community Member
45		Dr. Florence Egal, FAO Rome
	Gender	Gender Equality in Reconstruction and Rehabilitation Programmes
46		Ms. Alice Shackelford Harding (Chairperson)
47		Ms. Fareeha Ummar, Former Senior Gender Advisor, ERRA
48		Ms. Christine Ouellette, Former Senior Gender Advisor, ERRA
49		Ms. Deborah Clifton, Gender Advisor, IASC
50		Mr. Martin Mogwanga, Country Head, UNICEF
		Contd

No.	Session	Names of Chairpersons & Speakers
	Environment	Safeguarding Environment
51		Mr. Ali Hasan Habib, Chairman, WWF (Pakistan) (Chairperson)
52		Dr. Shujat Ali, Director General Environment, ERRA
53		Mr. Irfanullah Tunio, Programme Manager Environment, ERRA
54		Dr. Bashir Hussain Shah, Consultant (UNDP)
55		Mr. M. Shahid Lutfi, Environmental Specialist
	WatSan	WatSan Programme - Challenges of Sustainability
56		Ms. Yasmeen Lari, Member ERRA Council (Chairperson)
57		Syed Zaheer Hussain Gardezi, Director General WatSan, ERRA
58		Dr. Abdur Rehman Khan, COMSATS Institute of Technology, Abbottabad
59		Dr. Karim Alibahi, CEO, Agha Khan foundation (Pakistan)
60		Mr. Farhan Sami, Water and sanitation Program (WSP), World Bank
61		Dr. Roshan Raj Shreshta, Regional Technical Advisor South Asia, WACP, UN-Habitat, Nepal
	M&E	Monitoring and Evaluation in Reconstruction and Rehabilitation
62		Mr. Saeed Ahmed Khan, Secretary Statistics Division, Islamabad (Chairperson)
63		Mr. Ahmed S. Shaikh, Advisor, M&E Wing, ERRA
64		Col. Amer Mohsin, Deputy Director General (MIS Cell), ERRA
65		Dr. Ali Sajid, Director Institute of Business & Management University of Engg. & Technology, Lahore
66		Dr. Ann Marie Gaarder, Deputy Director International Initiative for Impact Evaluation (3ie)
	FMIS	Modernizing Financial Management System
67		Mr. Ayub Khan Tareen, Additional Auditor General of Pakistan (AAGP) (Chairperson)
68		Mr. Chris Lewis-Jones, Associate Director (Crown Agent) FMIS Project Manager (Crown Agent)
69		Mr. Badar Mahmood, FMIS Project Team Leader (Crown Agent)
70		Mr. Abdul Waheed Khan, Director General Finance, ERRA
71		Mr. Hammad Yunus, Senior Financial Management Specialist, ADB
	21st April 2010	
	Closing	Concluding Session
72		Mr. Farooq H. Naik, Chairman, Senate of Pakistan (Chairperson)
73		Dr. Shujat Ali, Chief Conference Coordinator / SMA (FM), ERRA
74		H.E. (Mr.) Mustafa Babar Hezlan, Ambassodar of Turkey in Pakistan
75		Mr. Toshihiro Tanaka, UN Resident Coordinator, Pakistan
76		Mr. Altaf Muhammad Saleem, Chairman, ERRA