



10/9/10

Mission Note:

RAPID ENVIRONMENTAL ASSESSMENT OF THE FLOODING IN PAKISTAN (25/8 – 31/8/10)

INTRODUCTION

Pakistan's worst floods in 80 years have killed more than 1,800 people and affected more than 20 millions - more than a tenth of the population (see map of Flood Affected Districts in Annex). The floods, which began in late July after heavy monsoon rains over the upper reaches of the Indus River basin, have ploughed a swathe of destruction from northern Pakistan's Gilgit-Baltistan territory to the southern province of Sindh.

Poor vegetation cover in the uplands is one of the root causes of the flooding. In addition, due to the construction of barrages and hundreds of kilometres of flood protection embankments the floodplains of the Indus River have been considerably reduced. They can no longer cater to exceptionally high floods. As such, these floodwaters are carried away by canals to considerable distances away from the floodplains. The canals in turn flood the colonised areas. Not only have the floodplains shrunk, the riverine forests have been destroyed to make way for agriculture and settlements. This has increased the scale of flooding and the velocity of the water.

About one third of Pakistan has been affected by the floods, an area bigger than Great Britain. Almost 2 million houses have been damaged and numerous power stations, roads and bridges destroyed thereby complicating relief efforts. The floods have ruined crops over more than 1 million hectares. Around 200,000 cows, sheep, buffaloes, goats and donkeys have already been confirmed as dead or missing - but that number could run into the millions, according to the FAO. The flooding has also devastated parts of Khyber-Pakhtunkhwa province, which has seen some of the fiercest fighting in Pakistan's war against Taliban insurgents. People in the Swat Valley - who had been trying to rebuild their lives following a massive military operation against the Taliban last year - have been particularly badly affected.

The aim of the short mission to Pakistan was threefold:

- 1) Quickly assess the institutional set-up and mechanism for the coordination of environmental issues including the Government of Pakistan, UN, international and national NGO's as well as any other relevant actor.
- 2) Identify all environmental issues related to the floods and ascertain their priority according to their short, medium and long term effects.
- 3) Identify environmental priority issues related to the floods which need to be addressed immediately and which are not yet tackled by any actor and could be supported by the Swiss Agency for Development and Cooperation (SDC).

COORDINATION

This task was carried out jointly with the environmental experts from UNDAC carrying out a Rapid Environmental Assessment (see UNDAC Rapid Environmental Assessment, Update 1, 3 September 2010). There was no single institution in charge for the coordination of environmental issues and nor any recognised by all actors. The World Bank (supported by the Asian Development Bank) started a Damage and Need Assessment in collaboration with the Ministry of Planning. A “Rapid Assessment of Flood Impact on the Environment in Selected Affected Areas of Pakistan” has been carried out by Wetland Programme from UNDP/Ministry of Environment (MoE). In addition, UNDP is preparing an Early Reconstruction Needs Assessment. There was lack of information sharing and it was difficult to obtain an overview of all environmental initiatives undertaken and the actors involved.

MoE should be the lead agency for all environmental issues and we suggested that it should be represented in the Damage Assessment Committee under the Planning Commission (Ministry of Planning) to ensure that environmental priority issues are considered by the National Disaster Management Authority and by the humanitarian aid agencies. Environment is a crosscutting issue what further complicates any coordination effort what also holds for the UN cluster system.

OVERVIEW OF ENVIRONMENTAL ISSUES

In collaboration with UNDAC, Pakistan Environment Protection Agency (EPA), Sustainable Development Foundation (SDF), Sustainable Development Policy Institute (SDPI) and national environmental experts a process has been initiated to identify all environmental effects of the floods in order to inform and guide the humanitarian response from relief over early recovery to rehabilitation. Therefore, a overview table of all environmental issues related to the floods has been elaborated showing the short, medium and long term environmental effects of each impact. In addition, also all current and potential actors are listed. We hope that this overview table will facilitate the coordination between the numerous actors dealing with environmental issues. This table will be further developed by UNDAC in collaboration with a working group under MoE. Please contact Jolanda Roelofs, UNDAC environmental expert (undacpakistan@gmail.com) for a copy of the overview table or for further information.

REHABILITATION OF HOUSING SETTLEMENT

The floods induced mass population displacements and destroyed or damaged almost 2 millions houses. The approaching onset of the winter will put under risk the most vulnerable people amongst the IDP's if they do not have appropriate shelter. Some house owners started already to reconstruct their houses.

Our major concern is to use environmentally-friendly material in the reconstruction of the houses in order to avoid additional widespread negative environmental impact. SDC has mandated the “Energy Efficient Brick Production” (EEBP) project to develop a demonstration project together with the Provincial Disaster Management Authority of Khyber-Pakhtunkhwa (KPK) promoting the use of Reinforced Earth Blocks or Stabilized Earth Blocks. These materials are much more environmentally-friendly than the use of fired bricks from kilns which consume a lot of energy and produce a lot of green house gases and soot (see concept note “Rehabilitation of Housing Settlement through Reinforced Mud Blocks”). Firewood is a major energy source in the production of fired bricks. The reconstruction of traditional house types requires also large quantity of wood (especially the roofing) which is

increasingly scarce in Pakistan. According to the State of the World's Forest (FAO 2009) the remaining forest cover in Pakistan is only 2.5 % and deforestation is ongoing at a high level.

MAJOR OBSERVATIONS AND FINDINGS

1. This disaster is unique in the sense that due to the time lag of the flooding of about one month between downstream and upstream, both emergency and early recovery activities are carried out. Early recovery activities have been started in Khyber-Pakhtunkhwa province while relief operation remain paramount in the southern Sindh province.
2. The livelihoods of about 20 million people have been seriously affected. The rehabilitation of livelihood, if not done in an environmentally friendly manner, is the major environmental concern and may lead to large-scale environmental damage. Due to overexploitation, many natural resources (e.g. water, forest, rangeland, soil fertility...) were already put under stress prior to the flooding. However, the rehabilitation provides also the opportunity for a more sustainable land-use considering the concept of food security and following a Disaster Risk Reduction approach.
3. Where there was no mud deposit the flooding had also positive aspects by fertilising agricultural fields and rangelands with nutrients. In addition, the flooding contributed to refill the groundwater table downstream in arid areas. A challenge would be to find ways for using future floods for replenishing the groundwater tables in arid areas what would be in profit of irrigation during the dry season.
4. The risk of floods is expected to increase in general due to climate change. In addition to extremely heavy monsoon rainfall the usual rainfall pattern is changing as experienced during this monsoon season when rather dry areas between the Indus River and the Afghan border in Khyber-Pakhtunkhwa province received a multiple of usual rainfall what lead to the immense flooding downstream of the Indus River.
5. The Pakistan Meteorological Department by its Flood Forecasting Division maintain a flood warning bulletin on their website (www.pakmet.com.pk). However, what is most needed is a flood alert system which is functional at the local level.
6. The large scale of the disaster has induced at governmental, community and donor level an increased awareness concerning the complexity of environmental interactions. This momentum should be used to tackle some of the root causes of the disastrous flooding. Large scale deforestation in the mountainous area and overgrazing of forests have led to a poor vegetation cover of the soil and thereby to increased surface runoff, erosion, frequent landslides and earth slips. Integrated Watershed Management following a community-based approach could be an option. However, this requires that landownership and user rights are properly addressed.
7. To continue the Rapid Environmental Assessment and the coordination effort regarding environmental issues, it is highly recommended that the Joint Unit UNEP/OCHA recruit immediately an international environmental expert to replace the UNDAC environmental expert, who will leave Pakistan soon.
8. The international aid community should support the Disaster Management Authority at federal and provincial level to build up their capacities for dealing more effectively with natural disasters in future.

Dr. Urs Bloesch

ANNEX: MISSION ITINERARY AND PEOPLE MET

Itinerary

| | | |
|----------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WED 25 August 2010 | 14:00-24:00 | Travelling Evilard-Zurich- (document reading) |
| THU 26 August 2010 | 3:00-18:00 | Arrival Islamabad; briefings SDC HQ; coordination meetings with UNDAC, UNDP, EPA, SDF, SDPI |
| FRI 27 August 2010 | 8:00-18:00 | Discussion with IUCN; working with UNDAC on environmental overview table |
| SAT 28 August 2010 | 8:00-20:00 | working on environmental overview table; field visit of flood affected areas at Chardsadda, Nowshera and Attock |
| SUN 29 August 2010 | 7:00-22:00 | Field visit of flood affected areas in Mianwali District (Daud Khel and Kalabagh); invitation at Swiss Embassy in Islamabad, briefing Head of SHA, discussion Intercooperation |
| MON 30 August 2010 | 8:00-20:30 | Discussion with PDMA KPK Province at Peshawar |
| TUE 31 August 2010 | 8:00-20:30 | Discussion with WWF, Ministry of Planning, MoE, World Bank; debriefing SDC together with EEBP |
| WED 1 September 2010 | 1:00-16:30 | Travelling Islamabad- Zurich-Evilard |

People Met

| | |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EEBA | Mr. Tahir Pervaiz Dar, National Project Director |
| EPA | Mr. Asif S. Khan, Director General MoE |
| Forest service | Mr. Malik Muhammad Saleem, District Forest Officer, Mianwali |
| GTZ | Mr. Kamran Malik, Planning Advisor KPK |
| INTERCOOPERATION | Mr. Pierre-Yves Sutter, Delegate Pakistan Mr. Shabir Hussain, Team Leader Livelihood Programme |
| IUCN | Mr. Mahmood Akhtar Cheema, Manager Mr. Hamid Sarfraz, Programme Coordinator Mr. Ahmad Saeed, Project Manager Mr. Saadullah Ayaz, Coordinator Climate Change/EFR |
| Ministry of Economic Affairs and Statistics | Dr. Mohammad Khurshid, Deputy Secretary, Economic Affairs Division (Forest expert) |
| MoE, Federal Government | Mr. Muhammad Javed Malik, Secretary Environment Mr. Saqib Aleem, Joint Secretary Environment |

| | |
|------------------------------------------|----------------------------------------------------------------------------------|
| | Mr. Jawed Ali Khan, Director General Environment |
| | Mr. Mohammad Omar Khalid, Environmental and Social Assessment, Resettlement Plan |
| Ministry of Planning, Federal Government | Mr. Shahid Niaz, Member of Planning Commission |
| | Mr. Ahmed Owais Pirzada, Additional Secretary Planning Commission |
| | Mr. Tahir Shamshad, Joint Secretary / DG (Infrastructure) |
| | Mr. Hamid Marwat, Chief Forestry & Wildlife, Planning & Development Division |
| OCHA | Mr. Manuel Bessler, Head of OCHA |
| | Mr. John Long, Senior Humanitarian Affairs Officer |
| PDMA KPK | Mr. Ashgar Ali, Director Human Resources/Admin |
| | Mr. Omer Khan, Team Leader of donor coordination |
| SDC | Mr. André Huber, Coordinator |
| | Mrs. Corinne Beyer, Deputy Coordinator |
| | Mr. Daniel Maselli, EEBP |
| SHA | Mr. Ernesto Morosin, Assistant Humanitarian Coordinator |
| | Mr. Hans Keller, SET Team Leader |
| | Mr. Lars Büchler, Cash |
| | Mr. Marc-André Bünzli, WASH |
| | Mr. Matthias Kobel, Logistics |
| | Dr. Markus Zimmermann, DRR |
| | Mr. Simon Biesuz, Security |
| SDF | Mr. Nazir Mehmood, Executive Director |
| SDPI | Mr. Shakeel Ahmad Ramay, Head Climate Change Study Center |
| UNDAC | Mr. Dennis Bruhn, Environmental Expert |
| | Mrs. Jolanda Roelofs, Environmental Expert |
| UNDP | Mr. Shiraz Ali Shah, Programme Officer |
| WWF | Dr. Ejaz Ahmad, Deputy Director General |



Fig. 1. Thick mud deposit along the Kabul River nearby the confluence with the Indus River.

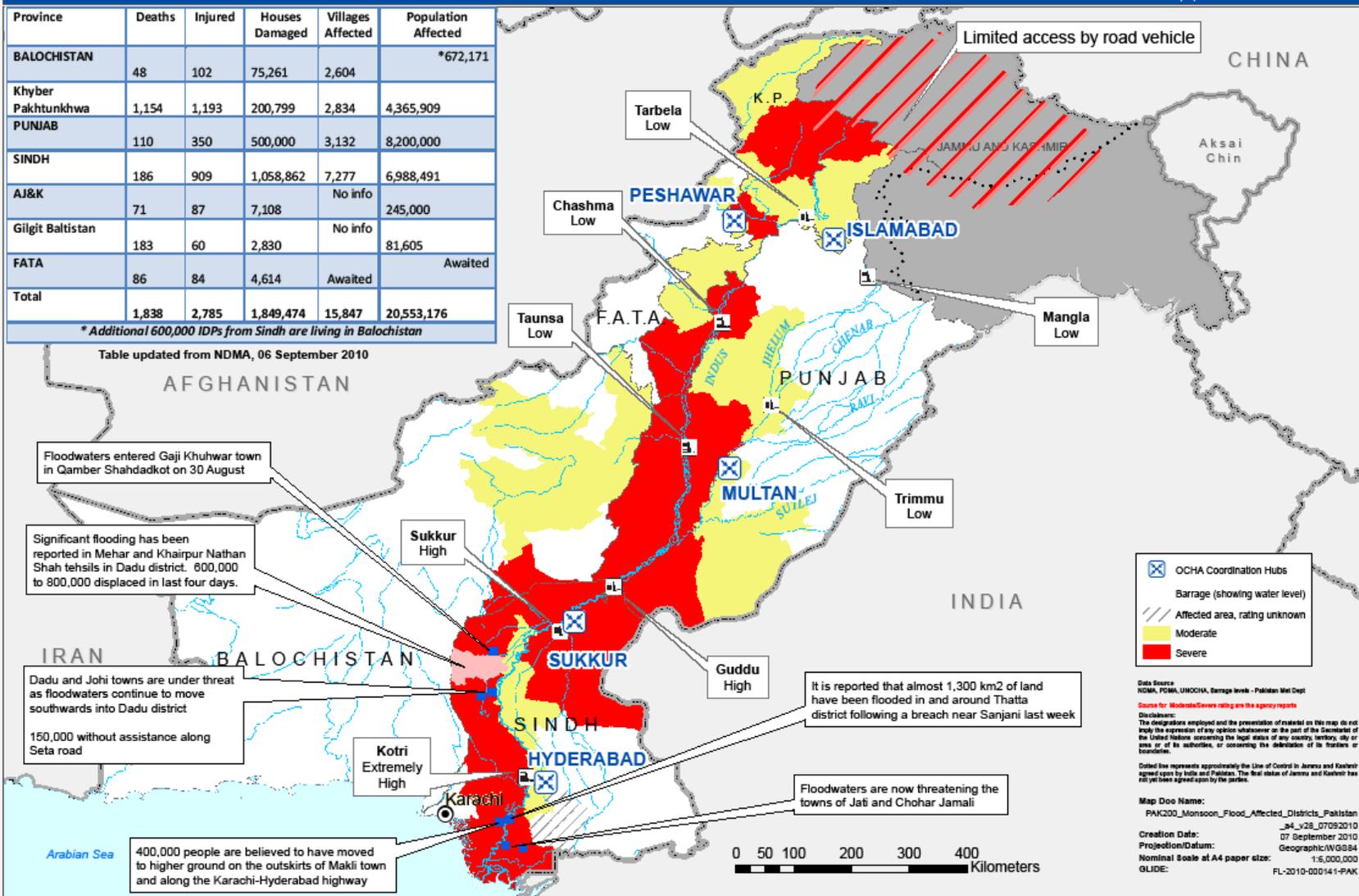


Fig. 2. Internally displaced people camp at Kalabagh, Mianwali District.

| Province | Deaths | Injured | Houses Damaged | Villages Affected | Population Affected |
|--------------------|--------------|--------------|------------------|-------------------|---------------------|
| BALUCHISTAN | 48 | 102 | 75,261 | 2,604 | *672,171 |
| Khyber Pakhtunkhwa | 1,154 | 1,193 | 200,799 | 2,834 | 4,365,909 |
| PUNJAB | 110 | 350 | 500,000 | 3,132 | 8,200,000 |
| SINDH | 186 | 909 | 1,058,862 | 7,277 | 6,988,491 |
| AJ&K | 71 | 87 | 7,108 | No info | 245,000 |
| Gilgit Baltistan | 183 | 60 | 2,830 | No info | 81,605 |
| FATA | 86 | 84 | 4,614 | Awaited | Awaited |
| Total | 1,838 | 2,785 | 1,849,474 | 15,847 | 20,553,176 |

* Additional 600,000 IDPs from Sindh are living in Balochistan

Table updated from NDMA, 06 September 2010



Floodwaters entered Gaji Khuhwar town in Qamber Shahdadkot on 30 August

Significant flooding has been reported in Mehar and Khairpur Nathan Shah tehsils in Dadu district. 600,000 to 800,000 displaced in last four days.

Dadu and Johi towns are under threat as floodwaters continue to move southwards into Dadu district
150,000 without assistance along Seta road

400,000 people are believed to have moved to higher ground on the outskirts of Makli town and along the Karachi-Hyderabad highway

Sukkur High

Guddu High

It is reported that almost 1,300 km2 of land have been flooded in and around Thatta district following a breach near Sanjani last week

Floodwaters are now threatening the towns of Jati and Chohar Jamali

Limited access by road vehicle

CHINA

Aksai Chin

AFGHANISTAN

INDIA

IRAN

Arabian Sea