3 ˚ŒĿł–˚ı#

#

$ı#$ı˚Êˡłł#–#ª ˇ#æ ø˚˝#–#ª ˇ# ºłł ¸ˡ#2ı#0 ' * ˡ#
łı#3 ˚ŒĿł–˚ı#

February 2011

Table of Contents

#

Acronyms

AJK	Azad Jammu and Kashmir
ANC	Antenatal Care
BDS	Business Development Services
BHU	Basic Health Unit
CFW	Cash for Work
CMW	Community Midwife
CPI	Consumer Price Index
CPR	Contraceptive Prevalence Rate
DAP	Diammonium Phosphate
DHQ	District Headquarter Hospital
DNA	Damage and Needs Assessment
EEICs	Emergency Employment Information Centres
EES	Emergency Employment Services
EGS	Employment Guarantee Scheme
EmONC	Emergency Obstetric and Neonatal Care
FAO	Food and Agriculture Organization
FATA	Federally Administered Tribal Areas
FBS	Federal Bureau of Statistics
FIMA	Flood Impact on MDG Analysis
GB	Gilgit Baltistan
GDP	Gross Domestic Product
GHD	Gender related Human Development
GEM	Gender Empowerment Measurement
GER	Gross Enrollment Rate
HIES	Household Integrated Economic Survey
IFI	International Financial Institution
ILO	International Labour Organization
IVA	Initial Vulnerability Assessment
Kcal	Kilocalorie
KPK	Khyber Pakhtunkhwa
LFPR	Labour Force Participation Rate
LFS	Labour Force Survey
LHW	Lady Health Worker
LHV	Lady Health Visitor
MDG	Millennium Development Goals
MMR	Maternal Mortality Rate
MCHC	Maternal and Child Healthcare Centre
McRAM	Multi-cluster Rapid Assessment Mechanism
MNCH	Maternal Neonatal and Child Health
NDMA	Pakistan National Disaster Management Authority
NER	Net Enrollment Rate
NGO	Non Governmental Organization
OCHA	Office for the Coordination of Humanitarian Affairs
PARC	Pakistan Agriculture Research Centre
PLHIV	People living with HIV/AIDS
PPP	Purchasing Power Parity
PSLM	Pakistan Standard Living Measurement Survey
PwD	Persons with disabilities
PPP	Purchasing Power Parity
RHC	Rural Health Centre

SBA	Skilled Birth Attendant
SIYB	Start and Improve Your Business
SR	Survival Rate
SUPARCO	Pakistan Space and Upper Atmosphere Research Commission
THQ	Tehsil/Taluka Headquarter Hospitals
TFR	Total Fertility Rate
TREE	Training for Rural Economic Empowerment
UNICEF	United Nations Children Education Fund
UNIDO	United Nations Industrial Development Programme
UNFPA	United Nations Population Fund
WFP	World Food Programme
WHO	World health Organization
WMO	Women Medical Officer

Executive Summary

1. The One UN Program 2009-2012 aims to ensure coherence across the development programmes and strategies of UN agencies, guided by an enduring commitment to promote human development in times of stability or disasters, conflict or peace.

2. The impact of the devastating 2010 floods in Pakistan will result in: increased poverty and destitution; increased numbers of girls and boys out of school as poor families can no longer afford to enrol them (and may depend on their labour for survival); increased spread of malaria and other diseases; pregnancy and childbirth related mortality as the leading cause of death among women of reproductive age; and reversals in advancements made in gender equality. The health status of children in the affected areas has been gravely compromised, with potential long-term consequences for their physical and mental development. In particular, an increase in diarrhoea, acute respiratory infections and acute malnutrition, coupled with a reduction in access to health services, will increase mortality and morbidity rates, with long term implications for learning ability (MDG 2) and livelihoods generation (MDG 1). . These are among the human costs of this crisis that will persist long after the critical relief and early recovery periods are over, even as physical reconstruction of damaged infrastructure continues apace.

3. The Government of Pakistan began an emergency rescue and relief operation on July 30, after declaring an emergency in the northwestern region of KPK. Thousands of rescue workers have been deployed. A host of UN agencies, international aid groups such as the Red Cross/Red Crescent and other nongovernmental organizations have been supporting the Government of Pakistan's response to the emergency. Using trucks, helicopters and even mules to transport food around the country and reach those cut off from help. Many schools are being used as emergency shelter, and more of the displaced population is receiving clean water, Cholera kits, anti-snake venom doses, surgical supply kits and oral dehydration salts for saving lives.

4. The UN is committed to a relationship of solidarity for full recovery with the millions of Pakistanis who are coping with the realities of today and the concerns for the future. In the recovery period, we pledge to support the Government of Pakistan to restore them to at least the pre-crisis level of human development, so that the full force of longer-term development can advance their health and prosperity.

5. This commitment is reflected in the framework of the Millennium Development Goals. Based on an analysis – in terms of boys, girls, men and women – of how the floods have and will continue to threaten progress on each MDG, the UN is estimating the cost of the requisite multi-year recovery strategies that will be needed. The FIMA findings will be used to inform revision of the One UN programme; it will continue to inform and shape Pakistan's progress on the MDGs at the national and sub-national level through strategic development interventions throughout the country.

6. The Government of Pakistan has requested the World Bank and the Asian Development Bank to support the preparation of the Damage Needs Assessment. At the same time the Government has requested the UN system, coordinated by

UNDP to assess the impact of floods on human development. Therefore, there are two related but parallel analytical processes: A UN-led Impact of Floods on MDG Analysis (FIMA) and an IFI-led Damage and Needs assessment (DNA). These reports are to be released jointly and finalized by 15 November 2010.

7. Under the umbrella of the One UN Program for Pakistan and with government endorsement, FIMA analysis outlines the damage and losses to the MDG target indicators as a result of the floods, commits to a five-year (maximum) recovery period,[1] and costs the resource envelope required to restore the MDG Target Indicators to their pre-crisis level. The FIMA will be released jointly with the DNA on 15 November. The analysis is based on the damage estimates and reconstruction schedules in the DNA, humanitarian analysis (including Early Recovery), One UN Thematic Working Group experts and other secondary data.

8. It is to be noted that estimation of the resources required to achieve MDG by 2015 (a task for the development community in Pakistan, one slated for late 2010/early 2011) is beyond the scope of this exercise.

9. The FIMA recovery package offered against each MDG costs a package of services considered as the minimum requirement for a full recovery to the pre-flood level. That is, these interventions, which may also build back better where applicable, are primarily focused on bringing Pakistan back to its pre-flood MDG level within a maximum five year time frame.

10. Another important consideration is that this report assesses both private and public damage and losses due to the floods. Other assumptions that feed into the damage, loss and needs analysis are stated in the methodology section in the annex. The report therefore presents a possible scenario for MDG recovery given certain assumptions and should not be interpreted as the definitive assessment on damage, loss and recovery.

11. This process establishes synergies with the DNA process through provision of UN agency experts (WFP, FAO, UNIDO, UNESCO, WHO, ILO, UNDP, UNICEF, UNFPA) to 11 out of the 17 DNA teams. The DNA is one source of data for UN estimates of the human costs of the floods and related resource needs. In some instances, such estimates overlap with the DNA while in others they are additional to the DNA estimates.

12. In the context of the flood crisis, the one major challenge across almost all MDGs is the availability of reliable data to quickly produce an accurate assessment of damages, losses and needs. Although there is a lot of information through the surveys, rapid assessments, preliminary assessments and DNA, “standardized” information is not available consistently across sectors or geographical regions. Furthermore, there is ongoing dialogue between the provincial governments and the IFI’s regarding the verification of the damage data. For this reason, the FIMA has used different sources to overcome the data gaps and corrected for minimum consistency.

13. The MDG 1 – Eradicate Extreme Poverty and Hunger is measured in the case of FIMA with four indicators 1/Proportion of population below minimum level of dietary energy consumption; ; 2/Prevalence of under-weight children under 5 years of age; 3/Proportion of employed people living below $1 per day; 4/ Proportion of own-account and contributing family workers in total employment; .

    a. As a result of the floods, the proportion of population below the minimum level of dietary energy consumption increased by 3 percentage points

[1] The Government of Pakistan has defined the period for reconstruction and rehabilitation to be five years.

(from 52% to 55%). This has caused an additional 5 million people to become undernourished, pushing the national number of undernourished people in Pakistan to 93.5 million. Among the population affected by the flood, one-half were already consuming less than the minimum quantity of food needed to provide energy for a healthy and productive life. For those millions already undernourished, the depth of undernourishment (severity) has increased substantially. If measures to address these declines are not maintained, the most significant nutrition impact of the floods will be an increase in acute malnutrition (wasting) among children, particularly children under five, which will seriously compromise the health status of children.

b. The damage to crops and other food sources has been significant which has contributed to the rise in the price of food staples, burdening household access to food. Over the medium term the level of undernourishment is expected to decrease as relief and food security measures are put in place.

c. The total number of workers affected by the floods is estimated at more than 5.4 million. Affected workers are those who have lost their livelihoods as a direct result of the floods. It is estimated that more than 1.2 million female workers , or almost 23 percent of all workers have been affected by the floods. Overall, more than two thirds of the workers affected by the floods are employed in agriculture, and the same is true for more than 90% of the female workers affected. Furthermore, Sindh province has the largest number of affected workers with the highest proportion of workers in agriculture. The destruction caused by the floods in terms of dwellings, crops, livestock, other assets and infrastructure will have long-term implications for development outcomes, making it even more difficult for these workers to earn a decent income and escape poverty.

d. Preliminary cost estimates indicate that around USD 650 million is needed to implement high priority immediate and short-term interventions through end July 2011 just to stabilize and prevent further deterioration in poverty and under nourishment in the flood affected persons. An additional USD2.4bn is required to restore livelihoods, generate employment particularly in the agricultural sector in Pakistan.

14. MDG 2 – Achieve Universal Primary Education is measured in the case of FIMA with two indicators: 1/ the Net primary enrolment ratio; 2/ the Survival Rate to Grade V.

a. Pakistan's Net Enrolment Rate (NER) was 59.4% in 2010 and projected at 65.4% in 2015. In effect, Pakistan was already behind the 100% mark set for that target. As a result of the floods the NER will decline to 56.4% in 2010, showing a drop of 3.0 percentage points. This amounts to more than half a million children prevented from participating in education. The two provinces of Balochistan and KPK witness the highest drop in NER. The decline is explained by the following factors: first, the pupils who were attending schools that were completely or partially destroyed no longer have access, or have partial access, to learning. Second, a number of schools in flood affected areas remain closed even after the summer vacation, negatively affecting the overall national enrollment rates. Third, schools that are used as shelters for affected families are unavailable for teaching.

b. The public school survival rate of children in grades 1-5 is likely to decline (from 57.6% to 50.6 percent) as a result of the floods. This means that out of 3 million children that enter Grade 1, 1.28 million would have left the system before reaching Grade 5. Due to the flood, this loss is likely to increase by 210,000 (totaling 1.49 million). The increase in the survival rate is due to: the tendency for pupils to cease or postpone schooling in areas where schools and facilities are damaged; deterioration in teaching and learning conditions; the loss of instructional materials which in turn reduces promotion rates; and economic hardships faced by communities as a result of the flood and its effects.
c. Preliminary estimates reveal that US$ 496.9 mn is required to improve the NER and SR and ensure that the indicators are back to their pre-flood MDGs pathways. Key interventions include back to school programs as well as budgetary support for supplementing government education budget.

15. MDG 3 – Promote Gender Equality and Women's Empowerment is measured in the case of FIMA with two targets: 1/Gender Parity Index2/ Share of women in wage employment in the nonagricultural sector.

a. economic conditions and cultural factors that favor boys education over girls; geographic displacement increases the vulnerability of girls and constrains their mobility. There are also challenges on the supply side including: difficulties in establishing 'culturally sensitive' learning spaces to encourage female enrollments; ensuring return of female teaching staff; reducing pre-floods levels of absenteeism amongst female teaching staff, in order to enhance 'the participation, retention and survival rates of the girl students.
b. Nonagricultural wage employment for women in the flood affected areas is characterized by home-based work. FIMA estimates approximately 1.23 million female workers have lost their livelihoods as a direct result of the floods. Out of these over 100,000 were employed in the nonagricultural sector with women workers from Sindh and Punjab the worst affected.
c. Preliminary cost estimates, specific to achieving Gender Parity in secondary schools, indicate that $67,000 is required to encourage parents to send girls to school.
d. Estimates indicate that US $813,704 will be required to establish a gender monitoring and response cell in the education and in labor departments for each of the 28 severely affected districts for 3 to 5 years. Services at provincial level will include mobilization of professional anti trauma counselors to assist to urban and rural home-based workers cope with post-flood stress and facilitate their return to work.

16. MDG 4 – Analysis of the impact of the floods on Child Mortality is based on the following indicators: 1/Under five mortality rate; and 2/ Infant mortality rate.

a. The 2010 floods have affected more than 2.8 million children under five, 1.4 million of them severely. Even though the current trend of the U5MR in Pakistan is at 90, more than 5 million children in the flood affected areas are at higher risk and face an U5MR estimated between 110 and 120 deaths per 1,000 live births. Data from the Ministry of Health and the World Health Organization confirm that the

incidence of diarrhea, acute respiratory infections and suspected malaria has increased while access to health facilities has fallen.

b. The incidence of diarrhea and pneumonia has increased as a result of massive population displacement and concentration of people in camps characterized by poor hygiene and sanitation conditions. The lack of access to facilities has made it difficult for mothers to provide proper care for their sick children. Combined, these factors will result in an estimated 10% increase in the under-five mortality rate on average in flood affected districts, an increase in the neonatal mortality rate and an immediate increase in the incidence of wasting;
c. Population displacement of population, has meant that around 10,600 or 1/3 of Lady Health Workers in flooded areas are unable to function. Consequently, it is estimated that access to health service workers in flood-affected areas has been reduced by at least 1/3 particularly for the extremely vulnerable communities.
d. The cost of reducing child mortality to pre-flood levels is estimated at $425m for interventions such as free antenatal care, expanded immunization coverage and mass awareness campaigns on breast feeding, diarrhea, and pneumonia management.

17. MDG 5 – Improving Maternal health is measured in the case of FIMA as 1/ Proportion of births attended by Skilled Birth Attendants (SBA) and the 2/ Contraceptive Prevalence Rate (CPR).
    a. As a result of the damage caused by floods the proportion of births attended by skilled birth attendants will decline to 36% from the national average of 39% implying that an additional 15,000 pregnant women will nothave access to SBAs. The effect will be more devastating on the already vulnerable populations such as rural residents and people in the lowest wealth quintiles. Over the long term, displacement of significant proportions of Lady Health Workers (almost 10,500) and Community Midwives will not only reduce promotional and preventive coverage but will also hinderappropriate and timely referral to skilled healthcare providers.. Access to emergency obstetric care (EmOC) including within the framework of extended humanitarian response for the Minimal Initial Services Package (MISP) will be critical to reducing maternal mortality and morbidity.
    b. Damage to health facilities and displacement of LHWs will reduce access to the supply of contraceptives. FIMA projects that the floods will likely reduce the contraceptive prevalence rate to 27% from its current level of 30%. This means that an additional 96,000 women of reproductive age will fail to use modern contraceptives in the affected areas. Since poor EmOC is a critical determinant of poor neonatal outcome, neonatal deaths are projected to the post-flood period. This may compel families to have more children, further underlining the importance of restoring access to contraceptives as soon as possible..
    c. Preliminary cost estimates for improving maternal health are around $136m. Priority interventions focus on mass awareness on essential new born care, deployment of mobile maternal and newborn and child health care teams; provision of supplies to LHWs and CMWs for service restoration.

18. MDG 6 – The following indicators are used to assess the impact of the floods on HIV/AIDS, Malaria and Other Diseases: 1/HIV/AIDS prevalence among

15-24 years; 2/ Proportion of population in malaria risk area using effective malaria prevention and treatment measures 3/ Incidence of Tuberculosis per 100,000 population; 4/ Proportion of TB cases detected and cured under DOTS.

a. Based on data records provided by the national and provincial AIDS programmes across the country, the flood damage on AIDS prevalence is expected to be modest for the general population but high for people living with HIV (PLHIV) currently on anti-retroviral therapy (ART). Up to 1,000 people living with HIV need support in flood affected areas. The ensuing loss due to the floods is the increased risk of contracting HIV due to poor infection control measures in health facilities (including condom availability), reduced access to treatment of Sexually Transmitted Infections and behavioral changes including risk-taking behavior and contractual sex. Losses will also accrue through disruption of specialized health care including the treatment of Opportunistic Infections (OI), poor or absent access to ART combined with poor living conditions.
b. The floods will have the greatest impact on malaria risk. The annual parasite incidence rate has increased sharply to 7/1000 population from the initial 1.9/1000. This means that due to the floods the confirmed malaria cases in the country has increased from 168,000 in 2009 to now 1.12 million cases. The malaria transmission is expected to end in November in the KP province while the malaria risk in the South will persist, albeit at lower levels, during the winter. The disease may also spill-over to neighboring districts, if population movement from high to low endemic areas is significant and living conditions remain poor. In addition, an increase in the incidence of Dengue/DHF is expected particularly in urban areas.
c. It is not easy to correlate the incidence and prevalence of TB to the floods. Due to the floods, around 20 million people have been displaced and it is estimated that around 46,000 TB cases exist in the displaced population, including 20,000 cases under treatment, which are highly infectious and can spread TB to others if not treated. It is estimated that one smear positive TB case can transmit the disease to up to 10 people in a year. Population mobility, poor living conditions, over-crowding, malnutrition and scarcity of access to health services and drugs will likely disrupt TB treatment and contribute to enhanced transmission.
d. Preliminary cost estimates to reduce transmission of Malaria, TB and HIV/AIDS comes to around $135m. Priority interventions include early detection, access to treatment, care and support, information management and coordination.

19. MDG 7 – FIMA uses the following indicators to measure the impact of the floods on Environmental Sustainability: 1/ Forest Cover including state owned and private forest and farmlands; 2/Proportion of population with sustainable access to improved water source, urban, rural; 3/ Proportion of population with access to sanitation, urban, rural.
    a. Approximately two-thirds of the total forests are in the flood affected areas. It is estimated that the net change in forest cover due to floods and flood responses is estimated as 11.2% of the total forest cover in the whole geographical area of Pakistan. This is 0.56% of the land area (as compared to the pre-flood forest cover of 5.02%). Destruction of forest cover will make Pakistan susceptible to additional flooding in future. To the extent that the

forests are a source of livelihood for communities (e.g., protein, wood) loss of forest cover is likely to increase the incidence of poverty. Deforestation has also been linked to climate change which is in turn manifested by extreme weather conditions including floods and droughts.

b. As a result of the floods the proportion of the population in the affected areas with access to improved water source (i.e. hand pump, well/spring, piped water supply) has experienced substantial decline (from 75% to 55%). Given that the floods have affected 1 out of every ten Pakistanis , this means that 2.0 to 2.1% of the population of Pakistan no longer have access to safe drinking water due to the floods. Moreover, due to widespread damage only one out of every two persons in most provinces and districts has access to toilets. . The low coverage in improved water supply and compromised sanitation systems, will likely contribute to increased incidence of waterborne diseases in the country, such as diarrhea, typhoid, cholera, intestinal worms and hepatitis, expected to be major causes of morbidity and mortality.

c. Preliminary estimates of resources required to combat forest cover loss, improve water and sanitation facilities are around $310m. Priority interventions include promotion of environmentally friendly technologies, facilitating resettlement, addressing water contamination and community based water resource management.

20. MDG 8 – Developing a Global Partnership for Development. For the purpose of FIMA, the focus this aspect of the analysis is on the implications of the floods for Pakistan's debt burden and in turn the likely impact of debt buildup on inflation and poverty.

a. Flood-related debt build-up and reduced GDP growth will negatively impact Pakistan's economy. Slow growth coupled with rising debt service expenditure will result in reduced fiscal envelope and constrain development and social spending. Furthermore, the disruptions in commodity exports particularly cotton (yarn and textile) will likely result in a deterioration in the current account balance and depreciation of the rupee.

b. The expected growth in the debt burden is also likely to have inflationary effects. Over the last two years the debt stock has increased on average by 24.4%, with a concurrent rise in inflation. . Rising inflation will increase the incidence of poverty by eroding the purchasing power of vulnerable groups who lack the requisite assets to cushion themselves from the upward price spiral.

c. Preliminary estimates of interventions needed to revitalize trade and reduce reliance on debt amount to $10.5million.

21. In order to promote and accelerate the recovery of human development, the FIMA lays out an MDG investment strategy that identifies short (to recover from the damage to human lives) and long term interventions (to recoup the potential losses that may ensue from the flood damage in the absence of support). These interventions are anchored within each MDG goal and are costed by indicator. The key elements of the recovery strategy are grouped as follows:

- **Promote Rural Livelihoods:** aims to improve access to food stocks, restore ownership to productive assets, generate rural income and promote employment for building resilience of the poor against natural disasters;

- **Enhance Educational Attainments:** through incentivizing families, communities and service providers for early return to schooling, ensuring gender parity and targeting the vulnerable;
- **Reduce Morbidity and Maternal Deaths:** by restoration of safe water and improved sanitation systems; and promoting safe hygiene practices; providing supplementary nutritional support; immunization coverage, and redeployment of lady health workers, skilled birth attendants including community mid wives and provision of essential drugs to curtail spread of malaria, acute diarrhea, typhoid and cholera;
- **Protect the Fiscal Space for the MDGs:** FIMA recommends Pakistan to lobby and advocate for grant funding to support the recovery, rehabilitation and reconstruction of the flood affected areas. This is necessary as the country presently consumes one third of its GDP in debt financing. Any further increase in debt will fuel inflation resulting in increased poverty and reduced fiscal space to finance the MDGs.
- **Mainstream Cross-cutting Issues**: Mainstreaming gender equality, environmental sustainability and disaster risk reduction into each and every sectoral intervention for recovery through community based, people centred participatory approach.

22. It is important to note that this exercise is the very first of its kind, where damage, losses and needs are analyzed through the lens of the MDGs, thus highlighting the human dimension of this unprecedented disaster that has so far affected over 20 million people. The task of providing initial relief is essential and lays the foundation for a more secure and sustainable recovery. This report serves to orient the recovery process around the human development needs of victims and affected communities to promote sustainable recovery to pre-flood MDG levels. Therefore, its primary aim lies in highlighting the implications of disasters for achievement of the MDGs, assessing the recovery needs, formulating appropriate and feasible strategies to bring Pakistan back on to a positive development trajectory and galvanizing, through advocacy, domestic and international support for the recovery effort.

23. The report from here onwards is broadly organized in four Sections. Section I introduces and familiarizes the reader with the devastation caused by the 2010 monsoon floods and the approach used in this assessment to arrive at a human development centred recovery framework. It elaborates the conceptual linkages between MDGs and Disaster Risk Reduction (DRR), and describes the pre-flood MDG status. This introductory section underscores the utility of the MDG framework as a useful lens to appreciate the human development cost of the disaster and related measures to recover from the crisis. Section II presents the key findings of the impact of the floods in terms of human lives for each MDG indicator. This section is divided into eight sub-sections, one for each MDG. The findings capture the “damages” and “losses” incurred in terms of people affected as a result of the floods. Section III presents the recovery framework and highlights the needs and related interventions required to recover the pre-crisis status for each MDG. The section provides a budgeted package of support over a period of five years disaggregated by short-term (recovery from damage) and medium-long term (recovery from losses) measures. Section IV presents a brief conclusion on the significance and relevance of this recovery framework for post flood planning.

Section I. The Floods and Human Development

The aim of this report is to provide an analysis of the impact of the floods in Pakistan on human development and to use this analysis to develop an indicatively costed recovery and development framework for the flood-affected areas which can serve as a basis for programming by government and UN partners as well as for advocacy. The objective of the approach is to ensure that, for the people of Pakistan, full recovery means being able to get back on track to meeting MDG targets. This human development-centred approach to recovery planning has been carried out by analyzing the damages and losses caused by the disaster to Pakistan's ability to meet the Millennium Development Goals.

The Monsoon Floods of 2010

The 2010 Pakistan floods began in July 2010 after exceptional monsoon rains affected Khyber Pakhtunkhwa (KPK), parts of which received over 200 mm of rain over a 24-hour period, an amount equivalent to nearly 180% of total average July rainfall. Flooding continued in late July as rainwater from the highlands fed into major rivers. During the first 10 days of August, parts of Pakistan received 24 mm per day more rainfall than expected. As a result, other provinces also experienced heavy rains and flooding, including Baluchistan, Punjab, Baltistan and, to a lesser extent, Pakistan-administered Kashmir and Gilgit. In early August, flood waters began to recede in the Northern provinces but the Indus River continued to rise as the waters headed southward, flooding at least eight districts in Punjab and thousands of communities along the river in Sindh Province. An estimated one-fifth of Pakistan's total land area (62,000 square miles) was submerged by the flooding. It is widely considered to be one of the most severe natural disasters in the country's history.

The affected area is vast, with flood-affected populations spread from the Chinese border to the mouth of the Indus River. The number of people directly affected by the floods has been estimated in excess of 20 million. Of these, an estimated 7 million people remained in need of emergency humanitarian assistance as of late October 2010. The NDMA reports the death toll at 1,802, with 2,994 confirmed as injured. A total of 1.9 million houses have either been damaged or destroyed, with the greatest impact in Sindh (1,114,629) and Punjab (509,814).[1] A breakdown of the number of deaths, injuries and damaged houses by province is provided below.

Table 1.1: Number of Deaths, Injuries, and Houses Damaged by the Floods

Province	Deaths	Injured	Houses Damaged	Population Affected
Balochistan	48	98	75,261	*700,000
Khyber Pakhtunkhwa	1,156	1,198	200,799	3,800,000
Punjab	110	350	509,814	8,200,000
Sindh	234	1,201	1,114,629	7,356,550
AJK	71	87	7,106	200,000
Gilgit Baltistan	183	60	2,830	100,000
Total	**1,802**	**2,994**	**1,910,439**	**20,356,550**

Source: NDMA,PDMA

[1] The figures of losses reported in situation reports are taken from the provincial and national disaster management authorities.

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

The Government of Pakistan began an emergency rescue and relief operation on July 30, after declaring an emergency in the northwestern region of KPK. Thousands of rescue workers were deployed. UN agencies, the Red Cross/Red Crescent Society, international aid groups and other nongovernmental organizations augmented the Government of Pakistan's response to the emergency.

Approximately 80% of the population in the flood-affected areas depends on agriculture for their livelihood. The floods struck at a critical time for farmers – just prior to the harvest (e.g., of rice, maize, vegetables, and sugarcane) and just before the wheat planting season in September/October. Flash floods damaged over 3.6 million hectares of standing crops worth $2.9 billion, 1.2 million large livestock, and 6 million poultry, in addition to destruction to primary infrastructure such as water channels, household storage facilities, animal sheds, and agriculture machinery and equipment.

The severity of the floods caused extensive damage to the country's infrastructure including houses, schools, hospitals, bridges and roads. Entire settlements of mud-brick houses were washed away, major bridges collapsed, and some provincial cities were entirely cut off when road and rail links were severed. The widespread disruption to the country's communication network has hindered access to the worst affected areas. With millions rendered homeless and displaced, food and shelter remain top priorities for the flood victims and affected communities while restoration of livelihoods is the principal focus of those who have returned to their home communities. Protection against water-borne threats remains an important focus in many flood-affected areas.

On 19 August 2010, UN Secretary General Ban Ki Moon briefed the UN General Assembly on his visit to Pakistan and called for a massive increase in aid, aptly describing the unfolding crisis as a "slow moving tsunami". The General Assembly adopted a consensus resolution (A/RES/64/294) urging the international community to extend full support and assistance to the Government of Pakistan (GoP) to cope with the immediate impact of the floods and to meet medium and long-term needs. Whilst humanitarian assessments have focused on the immediate needs, this FIMA provides additional analysis on the medium- to longer-term requirements for the recovery of human development in the wake of the floods.

Millennium Development Goals and Full Recovery

In the spirit of the Accra Declaration,[2] the UN Country Team in Pakistan turned its focus to analyzing the impact of the floods, using the MDGs as a lens through which to lay a foundation for the full recovery of human development, thus highlighting the human dimension of this unprecedented disaster.
The structure of the Flood Impact on MDG Analysis (FIMA) mirrors the IFI-led Damage and Needs Assessment (DNA). Just as the DNA relies on the UN ECLAC

[2] The Accra Declaration called for the "anchoring of…priorities in national development plans that are developed through inclusive national consultative processes and rigorous analysis and oriented to achieving the MDGs." The Declaration also called for strengthened international partnerships to develop (among other capacities) "statistical capacities and systems for data collection, analysis and dissemination to inform evidence-based policy making and allow measurement of progress, as well as for improved resource management".

Methodology for Estimating the Socio-Economic Impacts of Disasters, the FIMA likewise presents the analysis in terms of the "damage" and "losses" accruing from the floods. While the DNA focuses on physical damage and related socio-economic losses, the MDG Assessment evaluates damage and losses in terms of the impact on human capital and human development. To the extent possible, these disaster impacts are expressed in gender and generationally disaggregated terms: the number of boys and girls out of school, the number of women who have lost access to wage employment, etc.

It is important to note that this exercise is the first of its kind following any disaster anywhere in the world. Annex 1 provides detail on the assumptions, methodologies and sources used to estimate the damage, loss and related needs for sustained investments for a full recovery of those most affected by this crisis. The impact of the floods on the MDGs is expected to be variable, e.g., the proportion of seats held by women in national parliament,[3] is likely to remain unchanged while net enrolment ratio in primary education[4] will be significantly affected because many schools are partially/fully damaged or are being used to provide shelter for displaced persons. By assessing the floods' impact across all MDGs, the Flood Impact on MDG Assessment provides a quantitative analysis of the setback to development gains, including inter-linkages between the different sectors.

It is important to note that the MDG Assessment of needs and resources is limited to supporting strategies to restore MDG pathways/levels to their pre-crisis status at the national level over a five-year period. Thus conceived, the exercise does not necessarily cost the requirements for achieving the MDGs by 2015; it focuses on the resource envelope for restoring human development status of the affected population to its pre-flood levels by taking into account the damage, loss and required needs.

The analysis is based on secondary data, expert opinion and analyses, including information gleaned from humanitarian assessments. While methodologies and underlying assumptions for estimating damage, losses and needs differ across the goals, the overarching principle of using damage and losses to quantify MDG impact remains consistent for each goal. To the extent possible, assumptions associated with impact assessment findings for each MDG have been presented (see Annex 1).

Pakistan's Pre Flood MDG Status

In recent years, Pakistan has faced serious challenges in its efforts to meet the MDG targets by 2015. Political instability in 2007 was followed in 2008 by the transition from a military regime to a democratically elected government, a process that was also coupled with the sharp rise in oil and food prices. In 2009, developments in the ongoing War on Terror and external and domestic political and economic problems caused severe disruptions in the socio-economic development pathways. These were reflected in Pakistan's progress on MDGs (e.g., the MDG 2010 report, 2006-2010), leading to at times large gaps between status and targets. Pakistan lags (or worse) in the majority of targets, with the exception of a handful of indicators notably (but not limited to) women in parliament; HIV/AIDS prevalence and Treatment of TB through DOTS. The performance against the MDG indicators as tracked in the National MDG report 2010 is provided in Table 1.2.

[3] indicator 3.3 under MDG 3
[4] indicator 2.1 progress under MDG 2

Table 1.2: Pakistan's Pre-Flood MDG Status

Goal	Indicator	2006/07	2008/09	MDG Targets 2015
1. Eradicate Extreme Poverty and Hunger				
	Proportion of population below the calorie based food plus non-food poverty line.	n/a	n/a	13
	Prevalence of underweight children under 5 years of age	n/a	n/a	< 20
	Proportion of population below minimum level of dietary energy consumption	n/a	n/a	30
2. Achieve Universal Primary Education				
	Net primary enrolment ratio (%)	56	55	100
	Completion/survival rate: 1 grade to 5(%)	54.7	52.3	100
	Literacy rate (%)	55	56	88
3. Promote Gender Equality & Women Empowerment				
	Gender parity index (GPI) for primary, secondary and tertiary education	0.81 0.8	0.85 0.8	1.00 0.94
	Youth Literacy GPI	0.75	0.78	1.00
	Share of women in wage employment in the non-agricultural sector	10.53	9.89	14
	Proportion of seats held by women in national parliament National Assembly Senate	73/342 21% 17/100 17%	76/342 22.2% 17/100 17%	n/a
4. Reduce Child Mortality				
	Under-five mortality rate	94	n/a	52
	Infant mortality rate	75	n/a	40
	Proportion of fully immunized children 12-23 months	76	73	>90
	Proportion of under 1 year children immunized against measles	77	76	>90
	Proportion of children under five who suffered from diarrhoea in the last 30 days and received ORT	11	10	<10
	Lady Health Workers' coverage of target population	76	76	100
5. Improve Maternal health				
	Maternal mortality ratio	276[4]	n/a	140
	Proportion of births attended by skilled birth attendants	37	40	>90
	Contraceptive prevalence rate	29.6	30.2	55
	Total fertility rate	4.1	3.85	2.1
	Proportion of women 15-49 years who had given birth during last 3 years and made at least one antenatal care consultation	53	56	100
6. Combat HIV/AIDS, Malaria and other diseases				
	HIV prevalence among 15-24 year old pregnant women (%)	n/a	n/a	Baseline to be reduced by 50%

	HIV prevalence among vulnerable group (e.g., active sexual workers) (%)	n/a	IDU= 15.8 FSW=<0.02 MSW=1.5 HSW= 2.1	Baseline to be reduced by 50%
	Proportion of population in malaria risk area using effective malaria prevention and treatment measures	25	30	75
	Incidence of tuberculosis per 100,000 population	181	181	45
	Proportion of TB cases detected and cured under DOTS (Direct Observed Treatment Short Course)	85	85	85
7. Ensure Environmental Sustainability				
	Forest cover including state owned and private forest and farmlands	5.02	5.02	6.0
	Land area protected for the conservation of wildlife	11.3	11.3	12.0
	GDP (at constant factor cost) per unit of energy use as a proxy for energy efficiency	26,233	24,852	28,000
	No. of vehicles using CNG	1,600	1,900	920
	Sulphur content in high speed diesel (as a proxy for ambient air quality)	1.0	1.0	0.5 – 0.25
	Proportion of population (urban and rural) with sustainable access to a safe improved water source	66	66	93
	Proportion of population (urban and rural) with access to sanitation	58	66	90
	Proportion of Katchi Abadis regularized	n/a	n/a	95

Source: Pakistan National MDG Report 2010

The MDGs and Disaster Risk Reduction

Disasters and development are highly inter-related.[5] Large-scale disasters and recurrent localized disasters alike erode development gains and compromise prospects for achieving the Millennium Development Goals (MDGs) and Targets. Globally, these challenges are becoming progressively more significant as we move toward 2015, the deadline by when the MDG targets are to be met.[6] On the other hand, disaster risk-sensitive development programming is important for protecting both populations as well as progress on the MDGs.

The relationship between crisis and progress towards MDG attainment is reflected in the 20 July 2010 "Accra Declaration: Achieving the MDGs in Crisis Settings" which called on Heads of Government to support, among other initiatives, the "strengthening of national capacities and institutions to prevent and manage the impact of internal and external shocks such as natural, human-made and climate related disasters." Table 1 provides generic descriptions of the impacts that disasters can have on the achievements of MDGs.

Table 1.3: Impact of Disasters on Achieving the Millennium Development Goals

GOAL 1: Eradication of extreme poverty and hunger	Extreme poverty and hunger have many consequences for the human condition in general and specifically in relation to disaster risk exposures. These include the increased likelihood of poorer populations living in hazard-prone areas, less protection against disaster impacts, limited coping capacities during disasters, and severely hampered recovery period, leading to deepened poverty and hunger.
GOAL 2: Achieving universal primary education	Disasters can disrupt educational processes through human loss and injury, social upheaval, school property damage and closings which combine to force children to leave school in the recovery period because poorer families need help to meet basic needs and restore livelihood systems.
GOAL 3: Promoting gender equality & empowering women	During and after disasters, many women play a key role in helping families and communities to manage the exigencies of disasters. Women are frequently, disproportionately and negatively affected by disasters, including through the risk of exploitation. Gender inequality may result in women having less access to household income and assets. Similar risks may be present for other marginalized groups in society.
GOAL 4: Reducing child mortality	Infants and young children are among the most vulnerable segments of any population. Young children may be more susceptible to negative physical outcomes or emotional trauma in the aftermath of disasters given interruptions to basic infrastructure, overtaxed emergency and health care facilities, disease epidemics, and the loss or injury of care givers and income earners.
GOAL 5: Improving maternal health	In the areas of the world with underlying high rates of maternal morbidity and mortality, there is also a high risk of disasters. During and after disasters, access to community-based networks

[5] This section draws heavily on the UNDP Bureau for Crisis Management Programming Guide for Disaster Risk Reduction (2010).

[6] To partially address this challenge, the MDG Achievement Fund is supporting several DRR programmes under its thematic window for environment and climate change.For more information refer to: http://www.mdgfund.org/.

	of trained birth attendants as well as medical clinics and hospitals may be grossly disrupted. Lengthy reconstruction and recovery periods exacerbate the risks to maternal health caused by the disaster.
GOAL 6: Combating HIV/AIDS, malaria and other diseases	Economically and socially marginalized and other disadvantaged populations who suffer from serious diseases can face a disproportionately negative disaster impacts. This can be exacerbated by a loss of care, especially a loss of access to complex treatments such as for HIV/AIDS and TB. With basic infrastructure damaged and interrupted, water-borne and insect vector diseases can escalate rapidly, which severely hampers recovery and development efforts.
GOAL 7: Ensuring environmental sustainability.	The link between environmental degradation and disasters is well documented. Deforestation and soil erosion increase mudslides, landslides and flash flooding. Desertification increases drought. Climate change/variability is one of the causal factors of extreme weather events. Degradation of the resource base leads directly to reduced access to resource–based livelihoods as well as migration to marginal and often more hazard-prone areas, including to increasingly vulnerable urban slums.
GOAL 8: Global partnerships for development	Mainstreaming disaster risk reduction continues to gain momentum at all levels with development efforts increasingly including risk reduction considerations, with risk reduction initiatives further incorporating wider development viewpoints. More efforts are required so such approaches become 'the norm' in the development community.

Source: Adapted from UNDP (2004), Reducing Disaster Risk: A challenge for development (Box1.2, page 16)

Disaster-related deaths are disproportionately high in countries that rank low to medium on human development indices (UNDP 2004), while disaster risks can be a disincentive for development. Recurrent and expensive disaster relief, recovery and reconstruction operations (while important to save lives and livelihoods and restore development losses) nevertheless drain resources that might otherwise be used for development. The negative relationships between disasters and development are well known in Pakistan. The Pakistan 2005 earthquake caused the collapse of many schools and high losses of life, thus demonstrating the consequences of failing to address disaster risk in construction of essential infrastructure. The earthquake caused an estimated USD 5 billion in damage, roughly equivalent to the total development assistance to the country for the preceding three years (World Bank 2006).

Disaster Risk Reduction (DRR) strategies promote the achievement of MDGs by a) reducing disaster-related losses that could arrest or reverse progress on MDG targets, and b) re-establishing the foundations and restoring progress on meeting MDG targets following a disaster. For example, the protection of infrastructure like schools and hospitals, facilitates achievement of MDG 2 (universal primary education), MDG 4 (reduced child mortality) and MDG 6 (combat diseases and improve health); protection of economically productive activities and assets contributes to the achievement of MDG 1 (eradicate extreme poverty and hunger); promotion of gender equality and women's empowerment during disaster recovery supports MDG 3 (promote gender equality and empower women); cultivation of mangroves to act as breakwaters in the case of a cyclones and tsunami provides breeding grounds for flora and fauna, as per MDG 7 (environmental sustainability)

and MDG 8 (partnerships for development). Therefore, it is important to for communities, states and partners to engage actively in the DRR-Development nexus if progress on the MDGs is to be sustained (see Table 1.4).

Table 1.4: The DRR-Development Nexus (Select Examples)

	Economic Development	**Social Development**
Disasters undermine development	Destruction of fixed assets Loss of production capacity, market infrastructure or material inputs Damage to transport, communications or energy infrastructure Erosion of livelihoods, savings, physical capital and access to infrastructure	Destruction of health or education facilities Death, disability or migration of key social actors leading to erosion of social capital
Development causes disaster risk	Unsustainable development practices that create wealth for some at the expense of unsafe working or living conditions for others or degrade the environment	Development initiatives generate cultural norms that promote social isolation, inequalities or exclusion
Development reduces disaster risk	Access to adequate drinking water, food waste management and a secure dwelling increases people's resiliency Trade and technology can reduce poverty Investing in financial mechanisms and social security can cushion against vulnerability	Building community cohesion, recognizing excluded individuals or social groups (such as women), and providing opportunities for greater involvement in decision making, enhanced educational and health capacity increases resiliency
Recovery reduced disaster risk	Physical reconstruction of damaged infrastructure to best practice building codes provide resilience against future threats Environmentally-focused labor-intensive public works enhance natural capacities to withstand hydro-meteorological threats.	Political momentum for disaster risk recovery is highest post disaster; community, sub-national and national DRR strategies Disasters may alter gender relations – to the betterment of women; recovery processes can consolidate these

		advances

Source: Adapted from UNDP, 2004.

Section II: Measuring the Impact: MDG Damage and Loss Findings

MDG 1: Eradicate Extreme Poverty and Hunger

Pre-Flood MDG 1 Performance

Table 2.1: MDG 1 Performance Pre-Flood

Goal/Indicator	2006-07	2008-09
Proportion of population below minimum level of dietary energy consumption	On Track	Lag (worsened since 2006)
Proportion of population below the calorie based food plus non-food poverty line	On Track ('05-'06 data)	Lag (worsened since 2006)
Prevalence of underweight children under 5 years of age	Lag	Lag (worsened since 2006)
Employment-to-population ratio		
Proportion of employed people living below $1 per day		
Proportion of own-account and contributing family workers in total employment[7]		

Source: 2010 Pakistan MDG Report

In 2008, as in other developing countries, the global financial crisis hit Pakistan at a time when the country was already facing a balance of payments crisis stemming from inflated food and fuel prices in the world markets. The combined effects of the global food and fuel crises undermined the country's gains in poverty reduction, and severely eroded the purchasing power of households, particularly the poor. A consistent increase in Pakistan's in inequality (as measured by the Gini coefficient) reflects a growing rural-urban divide and increasing disparity in consumption across Pakistan but particularly severe in urban localities. Whilst confirmed estimates will only be available when consumption data is available for 2008-09, initial independent estimates suggest that some 12-14 million people may have fallen below the poverty line because of the difficult years from 2005 to 2009, an estimate that translates into an increase in poverty from 22.3% of the population in 2005-06 to 30-35% in 2008-09.

Combined, these factors explain why key MDG 1 indicators were lagging prior to the 2010 Monsoon Floods. The tremendous impact of the floods on poverty and hunger is detailed in this section. The analysis underscores the importance of timely, effective and appropriate humanitarian responses, including life-saving relief and livelihood-

[7] The last three target indicators on employment as it relates to poverty and hunger are not reported in the 2010 MDG Report for Pakistan.

supporting early recovery activities as important measures for stemming the immediate damage to the MDG targets. Sustained, appropriate and effective multi-year recovery strategies are required in order to limit the losses that will flow over time, and to reverse the overall downward trend in Pakistan's progress on MDG 1.

This section, like the seven which follow (one for each MDG) is organized around the target indicators developed in previous years to serve as proxies for Pakistan's progress on the MDG. It considers damage to the indicator, that is, the short-term implications of the floods for the target indicator, as well as the losses that will accrue from 2011 onward. Measures for addressing the issues raised in the analysis are found in Section III, the Human Development Recovery Framework.

Indicator 1, MDG1: Proportion of population below minimum level of dietary energy consumption

Pre-flood Status

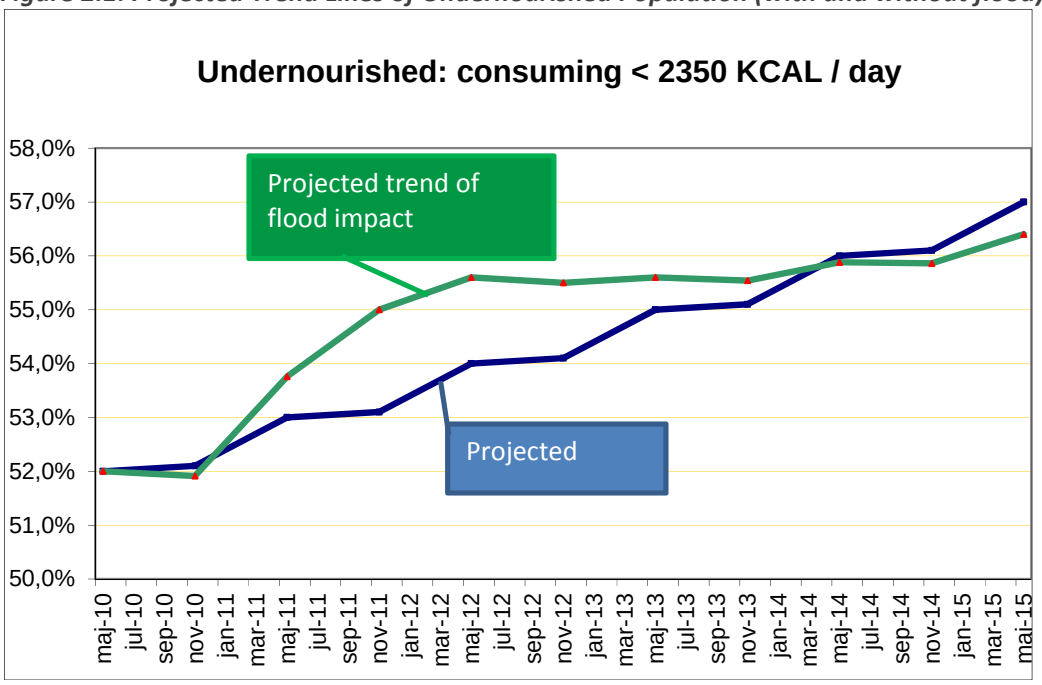
Pakistan's 2015 target is to reduce the proportion of population below the minimum level of dietary energy consumption to 13%. The last officially reported status of this indicator dates to 2001-02 and was 30% of the population consuming less than 2,350 calories per day. More recent studies by WFP suggest worsening food security, with over 40% of the population being food insecure. Pakistan's food security issues are related to the six "F" crises that collectively threaten the livelihoods and food security situation of the poorer segments of the population: Food, Fuel, Fiscal, Functioning democracy, Frontier[8] and Fragility of climate.

Damage

As a result of the floods, a sudden and acute lack of access to food supply at the household level occurred as a result of the damage to shelter, savings, household food stocks, productive assets, and roads connecting people to markets. By the end of 2011, the model used to estimate the impact of the floods this indicator predicted that undernourishment will increase from a pre-flood level of 52% to a post-flood level near 53%. The model assumes aggressive humanitarian food assistance and other emergency interventions to support dietary intake among flood-affected populations (see Figure 2.1).

[8] i.e., The War on Terror

Figure 2.1: Projected Trend Lines of Undernourished Population (with and without flood)



Source: WFP/FAO Joint programme on shock modelling (2010)

The figure depicts two scenarios over the period 2010 through 2015. The blue line illustrates the trend in under-nourishment had the floods not occurred. Should Pakistan continue to face the types of economic and political challenges that characterized the pre-flood period, the percentage of under-nourished population would have continued to increase over the period 2010-2015 at a rate of 1% per year, even in the absence of the floods. The green line illustrates the negative impact of the flood mitigated by two types of interventions:
Relief and recovery in the form of food assistance to flood affected households by government and stakeholders over a one year period from the onset of floods in July 2010 through mid-2011; and
Medium- and long-term investments to accelerate the recovery of agrarian livelihoods and to restore crop production and livestock holdings to pre-flood levels.

Loss
By mid-2012 as a result of the floods, the number of undernourished people in Pakistan is estimated to rise to 93.5 million (an increase of five million people). The proportion of the population below the minimum level of dietary energy consumption is estimated to increase by more than 3% over the pre-flood status nationwide (from 52% to 55.6%) and by more than 4% in rural areas as a result of the flood (using the 2005-2006 Household Integrated Economic Survey, PLSM).[9] Among the populations affected by floods, an estimated one-half were consuming less than the minimum quantity of food needed to provide energy for a healthy and productive life prior to the floods. For those already undernourished, the depth of undernourishment

[9] The FAO-WFP partial equilibrium (shock) model has been used to estimate the change in undernourishment. The results of the analysis correspond with the findings of the post-flood field assessments, such as those conducted by government, UN and partner organizations. According to the UN Multi Cluster assessment 2010, some 10 million people were in need of immediate humanitarian assistance, including more than 6 million in need of food aid.

(i.e., severity) is anticipated to increase substantially. In addition to the immediate food insecurity, the negative impact of the floods on vulnerable livelihoods is expected to have long-term consequences in terms of (i) greater exposure to risk of disasters/shocks (e.g., through displacement, loss of housing and damage to ecosystems), and (ii) reduced coping capacity among affected households.

Though varied across regions and commodities, the average price increase is estimated between 15-25% for basic food items as a result of the floods. The price level for staples is expected to remain inflated over the short- to medium-term. This risks long-term losses of nutritional status, health and overall economic productivity. The nutritional survey indicates increased levels of malnutrition which will be exacerbated by inflationary trends in food commodities. Undernourishment in pregnant and lactating women lactating poses a severe threat to the health of dependent children as well as mothers, with severe undernourishment an important threat to infant survival. The consequences of extended undernourishment in children include stunted physical growth, reduced learning abilities, and higher rates of school drop-out by both boys and girls due to heightened susceptibility to illness and other factors.

Indicator 3, MDG 1: Prevalence of underweight children under 5 years

Pre-flood status

The causes of poor nutritional outcomes for children under five years include a combination of limited access to a quality diet (due to inflation, poverty, loss of stocks, etc.), inadequate caring practices and inter-current childhood illnesses such as diarrhea and inadequate nutritional intake. The most recent nutrition survey (2001-02) reports a national baseline of 38% of children underweight. Given the date of the survey, it is difficult to extrapolate with confidence national nutrition trends. However, with a target of less than 20% of all children underweight, it is not expected that the target indicator will be met by 2015.

Damage

An estimated 10-11% of the total population of children under five are affected by the floods (i.e., approximately 2.4-2.8 million children under five years "affected" and 1.2-1.4 million "severely affected"). Given that "underweight" reflects chronic problems of malnutrition, a reliable estimate of the short-term impacts of the floods on this indicator is not possible. The indicator is fairly insensitive to shocks and therefore is not used to measure the nutritional impact on children in a crisis situation. However, it is a concern over the medium- to longer-term. Wasting, by contrast, is highly sensitive to shocks and is the preferred nutritional measure of the impact of an emergency on children. The floods could potentially have a significant impact on wasting (and, thus, on child health) in both the short- and long-term. Recent assessment reports suggest an increase in wasting among some flood-affected populations of children.[10]

Loss

Given the limited availability of data (even anecdotal) for this indicator, estimates of losses are unreliable.

Indicators 4, 5 and 6, MDG 1: Employment:

[10] See, for example, the Health Cluster Bulletin No. 17, 14 September, 2010.

Pre flood status

These indicators of MDG 1 have not been reported in Pakistan's national MDG report(s). Therefore, the Government has not set any target for this indicator or monitored its performance. Information provided below is from the Pakistan Labour Force Survey undertaken annually. The information provided is important, particularly given the limitations in the analysis on the impact of the floods on hunger, above.

Before the 2010 Monsoon floods, Pakistan's labor force participation rate increased by 2.1% percentage points between 1999-2000 and 2006-2007 from 50.4% to 52.5%, while the unemployment rate decreased by 2.1 percentage points, reaching 5.1% in 2006-2007. During the same period the employment-to-population rate increased by 3%, particularly benefiting women (an increase by 5.7 percentage points, compared with 1.0 for men).

Therefore, pre-flood, Pakistan experienced low labour productivity growth (1.7% per year on average between 1999-2000 and 2006-2007) but strong employment growth, suggesting that many workers toil in low-productivity, poorly remunerated work. This is confirmed by the "vulnerable employment rate" and the "working poverty rate". More than 60% of workers in Pakistan are engaged in vulnerable employment (i.e., the sum of own-account work and contributing family work); more than 90% of workers are engaged in agriculture. Almost one of five workers belonged to the extreme working poor in 2005/2006, and more than half of all workers (56.5%) lived with families earning less than USD 2 per day.

Damage

The total number of workers affected by the floods is estimated at more than 5.4 million (see Table 2.2). "Affected workers" are defined as those workers who have lost their livelihoods as a direct result of the floods. Based on characteristics of the employed preceding the floods, it is also estimated that more than 1.2 million female workers have been affected, or almost 23% of all workers affected by the floods (see Table 2.3).

Table 2.2: Estimation of Livelihood Disruptions Resulting from Pakistan floods

Province	Houses/ dwellings damaged	Estimated female workers affected	Estimated male workers affected	Estimated workers affected (both sexes)
Balochistan	75,261	21,104	164,176	185,280
Khyber Pakhtunkhwa	200,799	101,064	376,311	477,375
Punjab	509,814	371,325	927,073	1,298,399
Sindh	1,114,629	734,852	2,718,379	3,453,231
AJK	7,106	4,561	13,537	18,098
Gilgit Baltistan	2,830	1,695	5,033	6,728
Total	1,910,439	1,234,601	4,204,509	5,439,110

Sources: Damage estimates: Pakistan National Disaster Management Authority (NDMA), 13 October, 2010. http://ndma.gov.pk/flood-2010.html; Other variables: ILO estimates on basis of the Pakistan Labour Force survey 2007-2008 and Household Income/Expenditure Survey 2004 (Islamabad, FBS).

Table 2.3: Estimated Male and Female Workers Affected

Province	Estimated female workers affected	Estimated male workers affected	Total

Balochistan	21,104	164,176	185,280
Khyber Pakhtunkhwa	101,064	376,311	477,375
Punjab	371,325	927,073	1,298,399
Sindh	734,852	2,718,379	3,453,231
AJK	4,561	13,537	18,098
Gilgit Baltistan	1,695	5,033	6,728
Total	1,234,601	4,204,509	5,439,110

Source: ILO

Table 2.4: Affected Workers by Aggregated Sector, '000

Province	Agriculture	Industry	Services	All sectors
Balochistan	117,168	13,506	54,606	185,280
Khyber Pakhtunkhwa	246,746	75,219	155,409	477,375
Punjab	752,040	234,721	311,637	1,298,399
Sindh	2,606,041	256,603	590,587	3,453,231
AJK	11,028	2,719	4,351	18,098
Gilgit Baltistan	4,100	1,011	1,618	6,728
Total	3,737,123	583,779	1,118,208	5,439,110

Table 2.5: Affected Male Workers by Aggregated Sector, '000

Province	Agriculture	Industry	Services	All sectors
Balochistan	97,407	13,340	53,430	164,176
Khyber Pakhtunkhwa	160,396	69,811	146,104	376,311
Punjab	455,173	189,770	282,131	927,073
Sindh	1,889,850	252,445	576,084	2,718,379
AJK	7,199	2,306	4,032	13,537
Gilgit Baltistan	2,676	857	1,499	5,033
Total	2,612,701	528,529	1,063,279	4,204,509

Table 2.6: Affected female workers by aggregated sector, '000

Province	Agriculture	Industry	Services	All sectors
Balochistan	19,761	166	1,177	21,104
Khyber Pakhtunkhwa	86,351	5,408	9,306	101,064
Punjab	296,868	44,952	29,506	371,325
Sindh	716,191	4,158	14,503	734,852
AJK	3,829	413	319	4,561
Gilgit Baltistan	1,423	153	119	1,695
Total	1,124,422	55,250	54,929	1,234,601

Loss[11]

[11] The loss to employment has been partly picked up in the analysis of loss to other MDG 1 indicators.

Given that much of the floods focused on predominantly rural areas, it can also be expected that own-account workers and unpaid family workers make up a significant proportion of the number of workers affected. In many cases, such workers were already poor preceding the floods, as indicated by aforementioned working poverty rates. As noted above in the section on food security, the destruction caused by the floods in terms of dwellings, crops, livestock, other assets and infrastructure will make it even harder for these workers to earn a decent income and escape poverty.

It is also important to note that the floods could aggravate the already vulnerable position of children, many of whom may be left orphaned, homeless, and out of school in the wake of the disaster, and forced to seek alternative forms of support. In addition, women and youth have traditionally found it particularly difficult to find decent employment opportunities and to escape a life of poverty. Without both immediate and more sustained recovery assistance, poverty among these groups will grow, leaving thousands more young people and women with little hope for the future.

Post-flood impact on MDG 1: Conclusions

Progress on MDG 1 lagged prior to the flood disaster. This analysis has demonstrated that the floods are likely to cause an accelerated rate of decline, further jeopardizing Pakistan's hope for firstly re-establishing pre-flood MDG 1 targets levels as well as the ultimate attainment of the MDG by 2015.

Pakistan will suffer significant setbacks to the targets for indicators 1,2 and 3 relating to consumption.

Employment indicators are also seriously affected. Analysis shows likely short and long term unemployment as well as negative impact on livelihoods especially agricultural sector. This disproportionately affects women's employment given that a higher percentage of women who are employed are employed in agriculture. Given large tracts of agricultural land under cultivation have been destroyed, it can safely be expected that more households will fall below the poverty line.

MDG 2: Achieve Universal Primary Education

Table 2.7 Pre-Flood MDG 2 Performance

Goal/Indicator	2006/07	2008/09
Net primary enrolment (%)	Lag	Lag
Completion/survival rate: grade 1-5 (%0	On Track	Lag
Literacy rate (%)	Lag	Lag

Source: MDG Report 2010

In this section, Indicators 1 and 2 of MDG 2 are examined in order to assess the impact of the flood crisis on progress towards the achievement of universal primary education in Pakistan.

Indicator 1, MDG 2: Net and gross primary enrolment ratios (NER/GER)

Pre-flood status

Pakistan aims to attain 100% primary enrolment of children aged 5-9 and an adult literacy rate (10 years and above) of 88% by 2015. Prior to the flood, with almost one out of every two children out of school, the target of achieving the MDG indicators on universal primary education was unlikely to be achieved; As per 2008-09 data, the Net Enrolment Ratio (NER) was 57%. There are significant variations in NER across the provinces, with Punjab seeing the highest NER. Gender disparity has shown a slight reduction over time but only one-half of students enrolled in primary schools complete their education.

Damage

The flood crisis has direct consequences on Net and Gross Enrolment Ratios through two main pathways: first, the pupils who were attending schools that were completely or partially destroyed no longer have access, or have only partial access, to learning space and facilities. Second, schools that are used as shelters for affected families are equally unavailable to students or faculty. Table 2.8 shows the number and percentage of schools and pupils directly impacted by the flood by province (excluding federal).[12] A proportion of the total schoolchildren (3.2%) are estimated to have directly been impacted by the flood (including those in private schools).

Table 2.8: Number of schools and pupils directly affected by the flood crisis by Province

		Balochistan	KPk	Punjab	Sindh	Total
Total Enrolment (2010)		862,743	2,383,465	9,780,762	3,493,164	16,520,134
Number of schools	Totally destroyed	25	197	281	1,327	1,830
	Partially destroyed	470	540	1,304	1,909	4,223
	Occupied	0	797	2,064	1,246	4,107
Total affected schoolchildren		28,314	167,684	123,477	202,256	521,731
% Total of total affected		3.3%	7.0%	1.3%	5.8%	3.2%

Sources: KPk & Balochistan: DNA data; Sindh:Reform Support Unit, Education & Literacy Dept, Govt of Sindh; Punjab: PIMU & Data for the Donors Conference

[12] Note that the data may differ from that in other documents. Several sources were simultaneous providers of data and this data is being continuously updated as the extent of the floods becomes better understood.

Loss

Given the large proportion of over-age pupils attending primary school, it is useful to review the GER in addition to the NER. Moreover, the GER is more readily useable for needs projection. Chart 2.1 and Table 2.10 below show the evolution of the NER and GER recorded between 2004 and 2008 for Pakistan. These ratios are projected up to 2015. Given an estimated population of 18,268,540 children aged 5-9 year in 2010 and a primary enrolment of 17,318,576 (public and private), it is expected that 521,731 children will be prevented from attending school due to flooding and the occupation of schools by internally displaced persons (IDPs).

In the absence of floods, the NER is estimated to be 59.4% in 2010 and 65.4% in 2015. That shows that progress against the MDG was lagging pre-crisis. As a result of the disaster, it is estimated that the NER will decline to 56.4% in 2010, a drop of 3.0% points from pre-crisis anticipated ratio for 2010 (Table 2.9).

Table 2.9: Decline in NER end GER due to Floods

YEAR	NER Pre-flood actual or projected	NER Post 2010 flood projected	GER Pre-flood actual or projected	GER Post 2010 flood projected
2004	52.0%	n/a	86.0%	n/a
2005	53.0%	n/a	87.0%	n/a
2006	56.0%	n/a	91.0%	n/a
2007	55.0%	n/a	91.0%	n/a
2008	57.0%	n/a	91.0%	n/a
2009	58.2%	n/a	93.4%	n/a
2010	59.4%	56.4%	94.8%	90.8%
2011	60.6%	58.2%	96.2%	93.0%
2012	61.8%	60.0%	97.6%	95.2%
2013	63.0%	61.8%	99.0%	97.4%
2014	64.2%	63.6%	100.4%	99.6%
2015	65.4%	65.4%	101.8%	101.8%

Source: 2004-08: PSLM; 2009-15: UNESCO (Pakistan) projections

The anticipated flood-related declines by province in NER and GER are found in Table 2.11. Losses for the whole of Pakistan will result in a drop in NER and GER of 3.0 and 4.0 points respectively. This amounts to more than half a million children prevented from participating in education. It appears that the two provinces with the lowest NER pre-floods (Balochistan and KPk) are also those that are likely to see the steepest decline (4.9 and 4.6 points respectively).

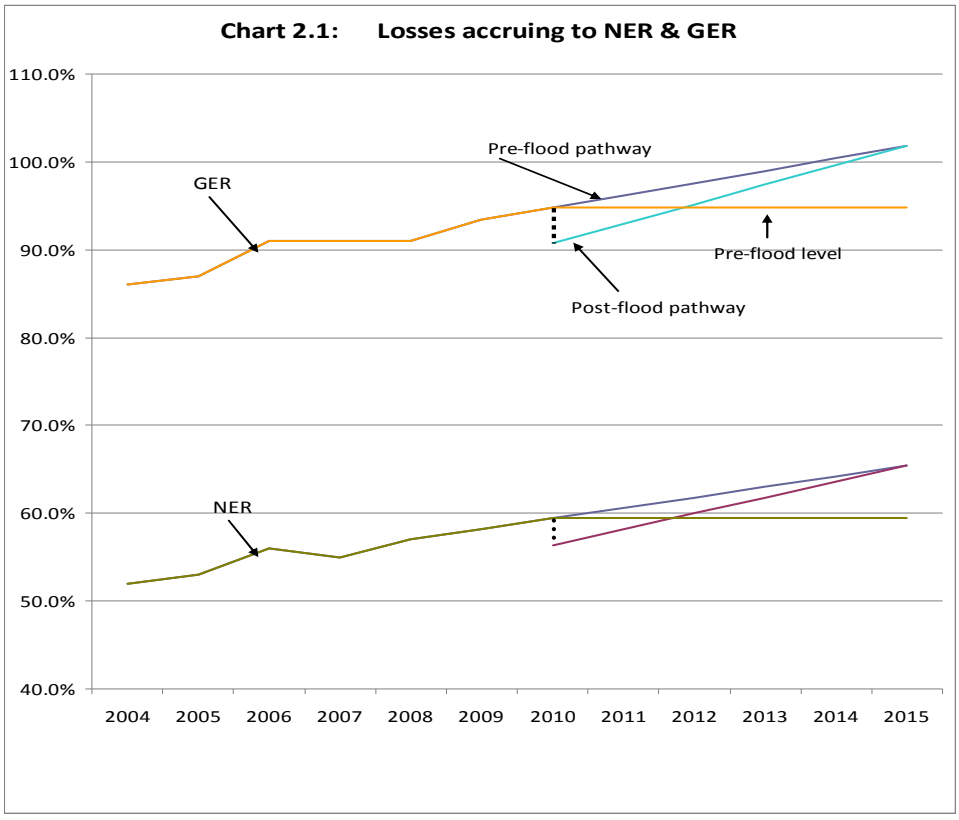
Table 2.10: Losses by province in 2010 NER and GER resulting from the floods

		Balochistan	KPk	Punjab	Sindh	Total
Population 5-9		1,062 491	2,690,141	9,839 801	4,024 383	18,268 540
2010 NER	Projected	47.8%	53.2%	64.8%	55.8%	59.4%
	Expected	42.9%	48.6%	61.7%	52.1%	56.4%
	Drop	4.9%	4.6%	3.1%	3.73%	3.0%
2010 GER	Projected	81.2%	88.6%	99.4%	86.8%	94.8%
	Expected	78.5%	82.4%	98.1%	81.8%	90.8%
	Drop	2.7%	6.2%	1.3%	5.0%	4.0%
Est. number of children with disrupted enrolment in 2010		28,314	167,684	123,477	202,256	521,731

Source: UNESCO (Islamabad) calculations

Figure 2.2 shows the pre- and post-flood projected pathways. The area delineated between the pathways from 2010 to 2015 represents the accumulated losses. It also shows that in order to achieve the target of restoring the pre-flood pathway by 2015, it is expected that the pre-flood NER and GER levels can be reached by 2012 as a result of both growth in NER/GER in non-flood areas as well as recovery of enrolment ratios in flood-affected areas. Aggressive and targeted interventions to promote increased GER and NER in the flood-affected areas will be needed through 2015 to ensure that the ratios are recovered to their pre-flood expected levels.

Figure 2.2: Losses Accruing to NER and GER



Source: UNESCO

Indicator 2, MDG 2: Completion/Survival Rate (SR) to Grade V

Pre-flood status

The survival rate (SR) is the proportion of children who start Grade 1 and who reach the final grade of primary (Grade V). The ability of the school system to keep the learning interest of the children and the willingness of the families to keep their children in school up to completion are great challenges, especially where inequalities based on gender and wealth are deep.

Pakistan targets a 100% completion/ survival rate. As per 2008-09 data, 54.6% of the students complete their studies from grade 1 to grade 5, with little disparity between girls and boys. Even before the flood, the SR has been on the decline in public schools (in part due to student transfers to private schools during the course of primary schooling) and projected to worsen overall, with increasing gender disparity (Table 2.11, Chart 2.3).

Damage

The 2010 floods will likely impact the survival rate due to several reasons: in areas where schools and facilities are damaged, many children will cease or postpone their schooling; deteriorated learning and teaching conditions as well as the loss of instructional materials will reduce the promotion rates; the same will reduce the repetition rates with little incentive to spend additional years in school compounded by dim prospect of successful schooling; as families strive to recover after the crisis, the opportunity cost of keeping children in school, especially at higher grades including girls, will increase significantly and cause the drop out to rise.

In many cases, the removal of children from school is an indicator of destructive coping mechanisms such as child labor and early marriage, incidences of which are likely to rise significantly in the aftermath of the floods. Girls and boys will be affected by these protection risks in different ways. Out-of-school children are also at heightened risk of recruitment, trafficking, and other forms of abuse and exploitation that may be triggered or exacerbated by the crisis.

Analysis of the impact of the floods on the SR has focused on the four provinces (Punjab, Sindh, KPk and Balochistan), which then made it possible to estimate, with the necessary weighing, the global picture at the national level.

Loss

The survival rate of children in grades 1-5 is likely to decline in 2010 in public primary schools to 50.6% due to the impact of the floods as against an expected rate of 57.6% had there been no floods. Even before the flood, the survival rate has been on the decline in public schools (in part due to student transfers to private schools) and was projected to worsen overall, with increasing gender disparity (Table 2.4, Chart 2.2).

Table 2.4: Survival rates pre and post floods, Primary level

	Pre-flood projection				Post-flood
YEAR	SR (M)	SR (F)	SR (MF)	GPI	SR (MF)
2001	53.3%	64.3%	57.3%	1.21	57.3%
2002	55.0%	54.7%	54.9%	1.00	54.9%
2003	61.4%	56.8%	59.5%	0.93	59.5%
2004	61.8%	75.8%	67.1%	1.23	67.1%
2005	71.6%	72.8%	72.1%	1.02	72.1%
2006	60.1%	57.9%	59.1%	0.96	59.1%
2007	53.2%	50.2%	51.9%	0.94	51.9%
2008	54.8%	54.3%	54.6%	0.99	54.6%
2009	59.3%	55.9%	57.9%	0.94	57.9%
2010	59.4%	54.8%	57.6%	0.92	50.6%
2011	59.5%	53.7%	57.2%	0.90	*52.0%*
2012	59.5%	52.6%	56.8%	0.88	*53.4%*
2013	59.6%	51.5%	56.5%	0.86	*54.8%*
2014	59.7%	50.4%	56.1%	0.84	*56.2%*
2015	59.8%	49.3%	55.8%	0.82	57.6%

Source: 2001-2007: AEPAM; Ministry of Education; Govt. of Pakistan; 2008-15: projections by UNESCO (Islamabad)

Due to the floods, the number of the school children (in government schools) failing to survive to Grade V is anticipated to be appreciable.[13] Using the reconstructed cohort method, it is estimated that, of the 3 million children that are expected to enter Grade 1 in 2010, 1.28 million would have left the system before reaching Grade 5. Due to the flood, this loss is likely to further increase by 210,000 students (totaling 1.49 million children). The accumulated potential loss attributed to the flood (even assuming that the survival rate will recover to the pre-flood projected level) will total 0.63 million through 2015.

Table 2.12: Potential loss of survivals to Grade V due to the 2010 flood

	Balochistan	KPk	Punjab	Sindh	Total*
2010	23,573	5,938	178,410	21,459	209,665
2011	18,858	4,751	142,728	17,167	167,732
2012	14,144	3,563	107,046	12,875	125,799
2013	9,429	2,375	71,364	8,583	83,866
2014	4,715	1,188	35,682	4,292	41,933

[13] As a result of the damage to school infrastructure, loss of equipment and instructional materials as well as increased opportunity costs for families concerned about recovery, promotion (or registration to the next grade) will decrease significantly. It is assumed that in the affected districts, promotion rates will decrease by 70% in areas where schools are fully damaged and by 30% where schools are partially damaged. The repetition rates would reduce by 50% due to higher opportunity costs.

2015	0	0	0	0	0
Total	70,718	17,815	535,230	64,376	628,994

** Total includes the federally administered areas*

Figure 2.3 reflects the uneven progression of the SR as well as the severe drop resulting from the floods and the required recovery pathway that needs to be pursued in order to mitigate the floods impact on the SR over time.

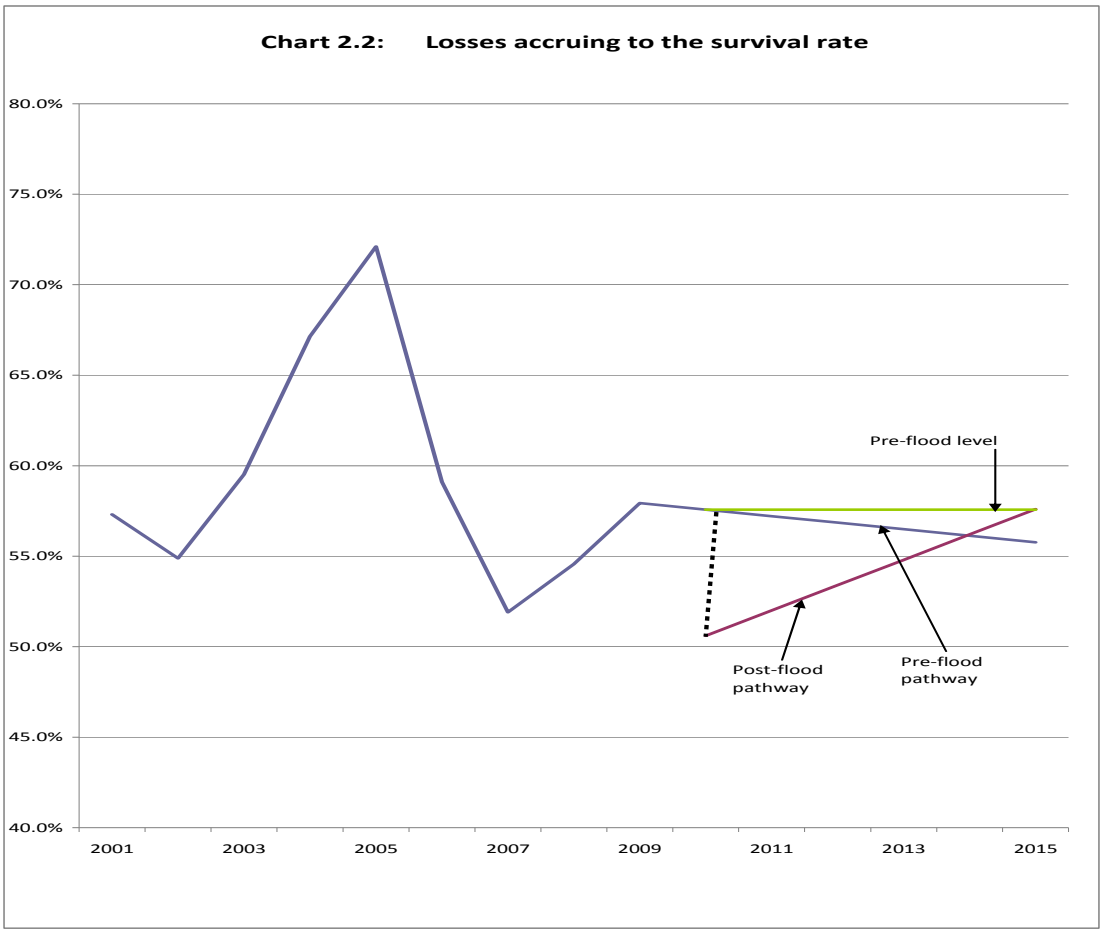


Figure 2.3: Losses Accruing to Survival Rate

Post-flood impact on MDG 2: Conclusions

The MDG indictors for universal primary education were already unlikely to be achieved before the flooding. The floods have served to accelerate the rate of decline in the indicators on net primary enrolment and completion rates. This will require a wide range of interventions, including targeted female literacy initiatives, to maintain and possibly reverse the trend.

In order to enable Pakistan to attain its pre-flood MDG 2 targets the following areas require targeted programmes and funds:

Primary enrolment ratio: Targeted efforts are needed to quickly rebuild or replace schools which have been damaged or destroyed. Where they are being used to host IDPs, more durable solutions for the IDPs should be found or replacement schools provided. Displaced children are especially vulnerable to being excluded from education and targeted facilities should be provided. Where teachers are among the affected population, targeted measures may be needed to enable them to work in a proximate temporary or replacement school. Measures to reduce the cost of attending schools (fees, uniforms, equipment, etc.) especially for the flood affected will be needed in both the short- and medium-term.

Survival rates.

The cumulative loss between the floods and the resumption of the initial pathway represents 2,071,744 children. 1,170,876 are children who would have attended school but will be prevented from doing so; and 900,868 are children who will enter school and who, under earlier conditions would have reached Grade 5 but will never do so following the floods of 2010. Since official population projections forecast a decline in the 5-9 population from 2013 onwards, Table 2.6 shows negative numbers of children prevented from attending school, in 2013 and 2014.

Table 2.13: Cumulative losses to the GER and SR following 2010 floods

	5-9 population	Gross enrolment ratio (GER)		Children prevented from attending school		Pupils entering school & prevented from reaching G5 (SR)		Accumulated losses
		Pre-flood	Post-flood	Number	Cumulative	Number	Cumulative	
2010	18 268 540	94.8%	88.4%	1 169 640	1 169 640	300 289	300 289	1 469 929
2011	18 330 450	96.2%	91.1%	3 171	1 172 811	240 231	540 520	1 713 331
2012	18 343 860	97.6%	93.8%	515	1 173 327	180 174	720 694	1 894 021
2013	18 297 000	99.0%	96.4%	-1 200	1 172 126	120 114	840 808	2 012 934
2014	18 199 370	100.4%	99.1%	-1 250	1 170 876	60 060	900 868	2 071 744
2015	18 077 800	101.8%	101.8%	0	1 170 876	0	900 868	2 071 744

#

MDG 3: Promote Gender Equality & Women's Empowerment

Table 2.14: Pre-Flood MDG 3 Performance

Goal/Indicator	2006/07	2008/09
Gender Parity Index (GPI) for primary, secondary and tertiary education	On Track	Slow
Share of women in wage employment in the non-agricultural sector	On Track	Slow
Youth Literacy*	On Track	Slow
Proportion of seats held by women in national parliament*	Ahead	Ahead

** Post flood damage and losses will not be calculated because the floods are not expected to significantly impact these indicators. Source: MDG Report 2010*

Pakistan has fared well in promoting gender equality and women's empowerment. Prior to the floods, there was a strong likelihood of achieving the target for the Gender Parity Index (GPI) for primary and secondary education. However, notwithstanding government efforts, gender disparities in literacy rates and non-agricultural sector wage employment persist.

Indicator 1, MDG 3: Gender Parity Index for primary, secondary and tertiary education[14]

Pre Flood Status

In Pakistan, the GPI at primary level in 2001/02 was 0.72. It improved to 0.82 in 2006/07 and to 0.86 in 2007/08 but fell to 0.83 in 2008/09. For secondary enrolments, the GPI improved from 0.73 in 2001/02 to 0.77 in 2007/08. The Index fell for the secondary level to 0.77 in 2005-06 and 0.77 in 2007-08 (GER and NER) but, again, registered improvement from their 2001-02 level of 0.73. Despite improvements, it is evident that girls continue to face significant disadvantage in access to education overall. In certain subject areas at the higher education levels, the index is in favour of females.

Damage

The analysis[15] focuses on girls' secondary education highlighting the post flood state of damage. The damage to the primary enrollment is reflected under MDG 2. Of note, there has been more absolute flood damage done to boys' schools as compared to that for the girls', reflecting an underlying bias in the total number of boys' schools as compared to the total number of girls' school. The DNA does not provide sex disaggregated school damage figures as yet, but attempts have been made to develop preliminary estimates. These estimates will be revised when DNA gender disaggregated information is made available. According to initial estimates, approximately 613 boys' and 301 girls' secondary schools were damaged during the floods (Table 2.15). Of these, approximately 20% are fully damaged while the remaining are partially damaged. The greatest damage to girls' secondary schools was in Punjab (144), followed by Sindh (99). Over 450 boys' secondary

[14] Gender parity Index is the ratio of the female gross enrollment rates at primary, secondary and tertiary levels in public and private schools to the number of male gross enrollment rate.

[15] There is minimal damage to tertiary educational institutions. This may nonetheless, have implication for female students' continued participation, retention and completion of their higher education and so requires a separate study through a pan-provincial survey (which is beyond the scope of this relatively rapid assessment).

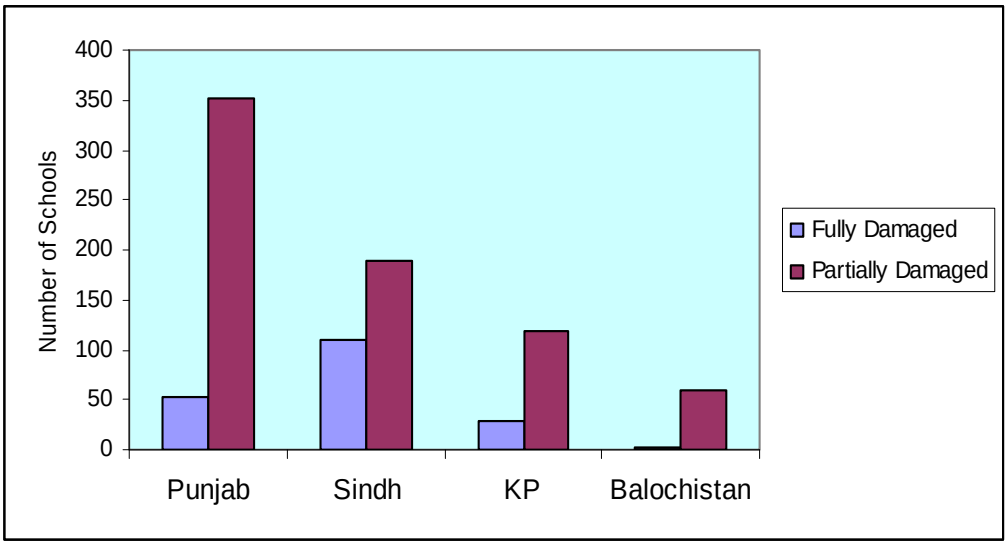
schools were damaged in these two provinces. In the context of secondary schools, in Khyber Pahktoonkhwa, almost 100 boys' and 50 girls' schools; and in Balochistan 45 boys' and 17 girls' schools were damaged.

Table 2.15: Estimated Number of Secondary Schools Damaged by 2010 Floods

	Punjab		Sindh		KP (Total)		Balochistan		Total*	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Middle										
Fully Damaged	24	10	36	20	12	8	0	1	72	39
Partially Damaged	130	100	56	52	41	20	23	13	250	185
Secondary										
Fully Damaged	12	7	40	5	6	3	2	0	60	15
Partially Damaged	95	27	54	11	30	13	20	3	199	54
High Secondary										
Fully Damaged	0	0	7	1	0	0	0	0	7	1
Partially Damaged	0	0	15	2	10	5	0	0	25	7
All Secondary Schools										
Fully Damaged	36	17	83	26	18	11	2	1	139	55
Partially Damaged	225	127	125	65	81	38	43	16	474	246

*For KP, the total figure was disaggregated according to the ratio of boys to girls institution for each level; *Total of the four provinces; Source: DNA Sept 2010.*

Figure 2.4: Estimated Number of Schools Fully and Partially Damaged by Provinces



While it is clear that more boys' secondary schools have incurred damages, reinstating girls' schools (and, more importantly, re-establishing pre-floods levels of participation and attainment) poses specific gender challenges and requires affirmative action for redress. While the damage to the boys schools outstrips those to girls, the analysis of gender parity based on past practices and international research, reveals a greater displacement of girl students.[16] This is for a number of reasons including: inevitable shifts in families' economic

[16] Making a difference – Promoting Gender Equality in Pakistan Response to the 2005 Earthquake, CIDA-Govt, ERRA of Pakistan Publication, Sep 2009.

conditions coupled with unexpected changes in socio-cultural patterns which can lead to curtailing of girls' mobility and access to education. There are also challenges on the supply side, including multi-sectoral difficulties in re-establishing culturally appropriate learning spaces, and challenges in facilitating the return of floods-affected female teaching staff to their jobs and reducing pre-floods levels of absenteeism by female teaching staff, a factor likely to enhance the negative impact on girls' participation, retention and completion of schools-based studies.

Loss

Similar to the loss in primary enrolments due to the floods, secondary enrolments will also suffer. It is estimated that almost 100,000 secondary students (70% of which are boys and 30% are girls) are presently affected due to their schools being fully or partially damaged or otherwise occupied. This represents about 1% of the total secondary enrolments. Recovering this loss will require concerted efforts, especially for female secondary school students as their schools have to be provided with certain facilities such boundary walls, toilets, etc.

Table 2.16: Estimated Number of Secondary Students Affected by 2010 Floods

	Punjab		Sindh		KPk		Balochistan		Total	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Middle										
Fully Damaged	3,192	1,130	5,292	3,500	2,076	1,072	0	128	10,560	5,830
Partially Damaged	17,290	11,300	8,232	9,100	7,093	2,680	2,369	1,664	34,984	24,744
High										
Fully Damaged	1,596	791	5880	875	1,038	402	206	0	8,720	2,068
Partially Damaged	12,635	3,051	7,938	1,925	51,90	670	2,060	384	27,823	6,030
High Secondary										
Fully Damaged	0	0	1,029	175	0	0	0	0	1029	175
Partially Damaged	0	0	2,205	350	1730	670	0	0	3,935	1,020
Total										
Fully Damaged	4,788	1,921	12,201	4,550	3,114	1,474	206	128	20,309	8,073
Partially Damaged	29,925	14,351	18,375	11,375	14,013	4,020	4,429	2,048	66,742	31,794

Source: Pakistan Education Statistics 2008/09: For average student per secondary school – this was then multiplied by the number of damaged schools (obtained from DNA & provincial estimates of the number of damaged secondary schools) to get an estimate of the students affected.

Indicator 2, MDG 3: Share of women in wage employment in the non-agricultural sector

Pre Flood Status

As per 2008-09 Labor Force Survey, only 10.64% of women are in wage employment in the non-agricultural sector, against Pakistan's target of 14%. The Pakistan Employment Trends for Women report (2009) shows that more than 35% of women with paid jobs are home-based as opposed to 17% of men, and the proportion of home based women workers to male workers (77% in 2008) is growing. Women home based workers are increasingly

found in the industrial sector; the proportion increased from 74% to 77.4% between 2000 and 2008.

Table 2.17: MDG1B and MDG3 employment indicators

Population aged 15 and above	1999/2000	2004/2005	2006/2007
Employment-to-population rate (1)			
Both sexes	46.8		49.8
Males	78.6		79.6
Females	13.7		19.4
Vulnerable employment rate (1)			
Both sexes	63.1		60.6
Males	62.5		57.3
Females	66.7		74.6
Working poverty rate (2)			
Both sexes		19.3	
Males		18.7	
Females		22.0	
Share of women in non-agricultural paid employment (3)	13.0		13.2

Sources: Pakistan Employment Trends No. 4 (Islamabad, Ministry of Labour and Manpower, 2008), http://www.lmis.gov.pk/Publications.html. Key Indicators of the Labour Market (Geneva, ILO, Table 20b), http://www.ilo.org/trends. United Nations Statistics Division, http://mdgs.un.org/unsd/mdg/Data.aspx.

Damage

The floods will increase the vulnerable employment rate and the working poverty rate. Wage employment will suffer from the impact of the floods on companies and establishments, some of which have closed down temporarily or have laid off workers permanently. This means that it will be more difficult to secure decent work in flood-affected areas, in particular for new entrants to the labor market and disadvantaged groups, including women. Women and girls in the t the flood affected areas are employed as home based workers in industries .

A quantitative assessment of the impact of the floods on the working poverty rate can be made definitively once a new household integrated survey has been conducted. The female occupations in the service sectors tend to be found with lower pay, lower status and few advancement possibilities. The impact of the floods on salaried public and private workers, noting an overrepresentation of women as nurses and teachers, and lesser representation in administration and managerial jobs, needs to be validated through the above survey.

By end 2010, key MDG indicators like the number of workers affected by the floods; and employment to population ratio; will need to be disaggregated by sex, to appreciate the implications of the floods and flood responses on the lives of men and women. Other factors to consider when analysing the impact on women include:

- Increased competition in accessing various levels of jobs due to competition from high number of agricultural sector laborers affected by the floods
- Women's non return to wage employment during recovery/rehabilitation due to domestic labor priorities
- Women's non return to home based wage employment due to losses in financial capital, inventory, debts, and inability to meet outstanding contractual obligations.

- Potential opportunities arising from affirmative action through setting women employment targets in public and private sector partnerships

Loss

The impact of the flood on the proportional share of women in wage employment in the non-agricultural sector is related to the losses of jobs for women and men in the agricultural and non-agricultural sectors alike which will fuel competition in the non-agricultural job market, particularly for unskilled jobs. Some 73.8% of the women (2008) worked in the now heavily affected agricultural sector, whilst more than 71.7% of women working in the non-agricultural sectors worked in the informal economy which is characterized by vulnerable employment conditions. Further shifts to vulnerable employment in the non-agricultural sector are likely for home based women workers and unemployed women farm workers.

Given that much of the floods have hit predominantly rural areas, it can also be expected that own-account workers and unpaid family workers will comprise a significant proportion of total workers affected. In many cases, such workers were already poor preceding the floods; the destruction caused by the floods in terms of dwellings, crops, livestock, other assets and infrastructure will make it even harder for these workers to earn a decent income and escape poverty.

Post-flood impact on MDG 3: Conclusions

On the basis of initial data it is difficult to fully assess the impact of the floods women's empowerment and gender equality. However, following conclusions are offered:

Disparities in educational enrolment and sustaining education: With regard to school enrolment, boys may be disproportionately affected due to the higher number of boys' schools that have been damaged by the floods. For this reason, any improvements in GPI should be treated with caution. However, based on previous experiences, there is sufficient reason for extrapolating that girls education is at even greater risk following such a large scale crisis. Recovery interventions regarding education should ensure damage to schools does not have disproportionate impact on boys or girls in terms of their enrolment or continuation of their education. There is a need to ensure interventions are sensitive and creative to prevent a differential impact of the floods on boys' and girls' education.

Women's employment opportunities: While women largely work in agriculture and are the primary livestock managers at the household level, however lack of data restricts a comprehensive analysis on the disaggregated impact of the floods on the lives of men and women.

#

MDG 4: Reduce Child Mortality

Table 2.18 Pre-Flood MDG 4 Performance

Goal/Indicator	2006-07	2008-09
Under-five mortality rate	Lag	Lag
Infant mortality rate	Lag	Off Track
Proportion of under 1 year children immunized against measles	On Track	On Track

Source: Pakistan MDG Report 2010

With a fairly robust GDP growth between 2002-07, the infant mortality rate showed a constant trend towards improvement but even at 75/100,000, Pakistan remained off track. With the notable exception of the Punjab province the percentage of Pakistani children immunized against six preventable diseases declined between 2004-05 and 2008-09. Millennium Development Goal 4 (MDG 4) calls for reducing the under-five mortality rate by two-thirds between 1990 and 2015. In the context of Pakistan, this means reducing under-five mortality from 130 deaths per 1,000 children in 1990 to 43 deaths per 1,000 live births by 2015. Current rate is 87 deaths per 1,000 live births[17], if the current slow trend of decline continues; the U5MR would only be 75 deaths per 1,000 live births in 2015.

Figure 2.5: Infant (IMR) and Under-five Mortality (IMR) Trends, 1990-2010

Indicator 1, MDG 4: Under Five Mortality Rate

Pre-flood status

Already before the floods, the affected population was among the most deprived in Pakistan, with mortality rates well above the national average (estimated among the lowest quintile of the population at 110 to 120)). Children of these remote rural areas were more

[17] IGME 2010

malnourished, with stunting[18] up to 54% in DG Khan district underweight[19] up to 41% in Multan district, and wasting up to 17% in Savoda. These rural areas also reported with higher incidence of diarrhea, pneumonia and malaria (fever).

Given such challenges, the target of achieving 52 deaths/1,000 live births, will be difficult to achieve.

Damage

Information provided through the DNA suggests that the impact on health infrastructure has been mild to moderate. Based on the previous access and use of the health system, the vulnerable population is facing additional burdens due to the floods, which are estimated as follows:

- Stocks having been destroyed, availability of essential drugs and commodities are estimated at only 10% of pre-flood conditions for the extremely vulnerable and at only 20% for the vulnerable ones.
- (10,600) 1/3rd of Lady Health Workers in flooded areas were unable to function. Therefore it is estimated that the human resources in flood affected areas have been reduced by at least 1/3 of pre-flood capacity in extremely vulnerable communities.
- Given the immediate reduction of health services, it is estimated that mothers and children reduced their utilization, continuity and quality of care by 1/3 compared to their pre-flood behavior

In order to run the simulation for the estimation of the flood impact on MDG 4, the following assumptions have been made:

- National Under-five mortality rate is at 87 deaths per 1,000 live births and Infant mortality rate is at 71 deaths per 1,000 live births in 2009. Given the very deprived situation of the affected population, higher rates are estimated between 110 and 120 deaths per 1,000 live births- equivalent to the lowest quintiles rates. Similarly, other indicators like wasting[20] among under-five vulnerable and extremely vulnerable flood affected children are assumed at to be between 15 and 17% prior to the floods
- Assuming a 10% increase due to floods, Under 5 Mortality Rates for vulnerable and extremely vulnerable flood-affected children are assumed at 112/123 deaths per 1,000 live births.

More than 2.8 million children under five are affected, 1.4 million of them severely, by the 2010 floods. Even though the current trend of the U5MR in Pakistan is at 87, more than 5 million children in the flood-affected areas are at higher risk and face an U5MR estimated between 110 and 120 deaths per 1,000 live births. Data emerging from the Ministry of Health and WHO confirm that the incidence rate of the diarrhea and acute respiratory

---

[18] In stunting, height is significantly lower than expected at a given age. Stunting can indicate either chronic malnutrition or episodes of acute malnutrition in the past.

[19] A child is underweight if the weight is lower than expected at a given age. Underweight is the most frequently available composite indicator of both wasting and stunting, but it does not differentiate between them.

[20] Wasting is low weight-for-height. A child is wasted if the child's weight is significantly lower than expected for a given height. Wasting is taken as an indicator of current acute malnutrition.

infections has increased while access to facilities has fallen. According to preliminary results of the DNA, approximately 515 health facilities have been damaged or destroyed, out of approximately 3,760 total in the affected districts (13.7%). Stocks of essential drugs have been wiped out, and skilled professionals have deserted damaged health centers, leaving the extremely vulnerable without any access to the health system.

Prior to the floods, the affected populations were facing lack of commodities, lack of human resources and a shortage of facilities, a situation which has been exacerbated by the floods. The already low demand for quality of care (e.g. antenatal care, skilled delivery) has been dramatically reduced during the floods. Malnourished children facing greater food insecurity are estimated to have aggravated their wasting and underweight status. Given the massive movement of population and the proximity in camps where hygiene and sanitation was lacking, diarrhea and pneumonia has increased. The lack of access to facilities has reduced mothers' ability to seek proper care for their sick children. Even more the lack of privacy has resulted in a reduction in breastfeeding. The cumulative effect of these factors is likely to be an increase in under-five mortality rate of 10 %, an increase of neonatal mortality and an immediate increase in the prevalence of wasting.

Loss

Damage to the health status of children will have a long-term impact, in some cases for the entire lifetime of the child. The long-term physical and mental development of children can be significantly affected by health issues early in life, in particular malnutrition. Although impossible to quantify, it can be expected that many children under five will not reach their full physical or educational potential as a result of deteriorated health and nutrition status in the aftermath of the floods. Loss can therefore be understood not only in terms of lagging progress in the achievement of MDG 4, but also in terms of spill-over effects on MDGs 2 (education) and 1 (poverty).

Indicator 2, MDG 4: Infant Mortality Rate

Pre-flood status

The estimates of IMR for the years 1990 and 2009 are 101 and 71 deaths per 1,000 live births, respectively.[21] If the current rate of decline were to hold, the projected infant mortality rate would be 62 deaths per 1,000 live births by 2015. The most important fatal diseases of under-five children in Pakistan are diarrhea and acute respiratory infections and newborn death, with the underlying causes of 38% of children being undernourished.[22]

Pakistan's current national health strategy could lead to notable improvements in access to healthcare and health outcomes, but is unlikely to be sufficient to reach the MDGs. The strategy does little to address demand-related constraints to scaling up service coverage. More importantly, the strategy as currently conceived could actually exacerbate existing disparities. In order to meet the MDG target, greater effort and investment with a focus on the most vulnerable children through an equity approach is required.

Damage

In order to run the simulation for the estimation of the flood impact on MDG 4, the following assumptions have been made:

[21] Ibid.
[22] Based on NCHS/WHO reference

- Infant mortality is estimated before the floods between 90 and 94 deaths per live births for populations in the flood affected areas
- Similarly, other indicators like wasting among under-five vulnerable and extremely vulnerable flood affected children are assumed to be between 15 and 17% prior to the floods.

Assuming a 10% increase, the IMR is estimated to increase to 92-95 deaths per 1,000 live births, and wasting assumed to be 17-20%.

As with the U5MR, the most significant impact of the floods will be on the health status of infants, rather than the mortality rate per se. Loss can be understood in the same terms as described above for U5MR.

Indicator 3, MDG 4: Proportion of children under one immunized against measles; Proportion of children 12-23 months fully immunized.

Pre-flood status

The percentage of children under one year of age who are fully immunized against measles has held steady since 2004-2005.[23] As of 2008-2009, 79% of children under one received measles vaccines. The percentage of children 12-23 months of age who are fully vaccinated against the expanded programme on immunization (EPI) target diseases has held relatively steady since 2004-2005.[24] As of 2008-2009 data, 78% of children 12-23 months were fully vaccinated.

Damage

According to preliminary results of the DNA, approximately 515 health facilities have been damaged or destroyed, out of approximately 3,760 total in the affected districts (13.7%). Assuming that all of these health facilities played a role in EPI, and assuming further that damage to such facilities would necessarily result in full disruption of EPI services, approximately 98,000 children under one would not be immunized as a result of the floods. At the national level, this corresponds with approximately 1.5% of children in this age bracket, representing less than two years of progress to this indicator (based on the AARC of 1).

This is the worst-case scenario; in reality, routine immunization in Pakistan is not wholly facility-based, and therefore the damage or destruction of health facilities does not directly correlate with a disruption of routine immunization. A more realistic assumption would be a <1% decrease, even in the absence of remedial interventions.

Loss

Following the flood, the Government of Pakistan took the immediate decision to ensure a mass campaign for measles and polio with supplementation of Vitamin A to maintain high coverage of immunization and has coupled immunization activities with maternal and child health weeks in order to restore routine EPI activities. These efforts need however to be

[23] Ibid
[24] PSLM 2004-2005 through 2008-2009

maintained on a longer term to sustain the EPI coverage. Health cluster partners have committed, through the FERP, to supporting the MoH to restore 100% of cold chain facilities within 12 months. As a result, it is possible to commit to recovering the loss to this indicator within 1 year. EPI Department of Ministry of health reported that 2.8 million children under-five have been reached with polio immunization and more than 2.5 million children have been immunized against measles. Taking the opportunity of movement of population and important needs in sanitation, in nutrition and health equity measures implemented at large scale to these most deprived populations could influence the acceleration of the national trends towards achievement of the MDGs.

Post-flood impact on MDG 4: Conclusions

Although already below target, infant and child mortality is likely to worsen as a result of the flood impact both in 2010 and in the next 5 years. More significantly, however, the health status of children in the affected areas has been gravely compromised, with potential long-term consequences for their physical and mental development. In particular, an increase in diarrhoea, acute respiratory infections and acute malnutrition, coupled with a reduction in access to health services, will cause excess mortality and morbidity, with potential knock-on effects for learning ability (MDG 2) and thus economic potential (MDG 1) over the course of a lifetime.

MDG 5: Improve Maternal Health

Table 2.19: Pre-Flood MDG 5 Performance

Goal / Indicator	2006-07	2008-09
1. Proportion of births attended by skilled birth attendants	Lag	38%
2. Contraceptive prevalence rate	Lag	30%
3. Maternal Mortality Ratio	276/100,000	260,100,000
4. Total Fertility Rate	Lag	4.0
5. Proportion of women 15-49 years who had given birth during last 5 years and made at least one ANC consultation	Lag	Lag

Source: MDG Report 2010

Out of the five MDG 5 indicators, the FIMA focuses on two: 1) Proportion of births attended by Skilled Birth Attendants (SBA) and 2) Contraceptive Prevalence Rate CPR). These two indicators serve as proxy measure to assess the effect that the floods have had on the other two indicators, i.e., Maternal Mortality Ratio (MMR) and Total Fertility Rate (TFR), whereas data shows that Antenatal Care (ANC) has minimum association with MMR, if any.[25]

Improving maternal health in Pakistan remains one of the biggest challenges to MDG achievement. Infrastructural damage to primary care health facilities including maternal and emergency obstetric care, and emergency services are likely to lead to further maternal morbidity and even death without intervention. This is especially true given that MMR is almost double in rural areas, such as the flood affected regions, as compared to urban counterparts. Fertility rates remain high in Pakistan. With limited access to modern contraceptive supplies, further increases are expected. This may be especially true when merged with loss of disposable family income that could have been used to purchase contraceptives or other reproductive health services. Fewer than half of all deliveries are attended by skilled personnel, and this represents a serious risk for the estimated 75,000 of 575,000 estimated pregnant women affected by the crisis who are expected to have complicated births in the next 12 months. Efforts to scale up investment in LHWs and SBAs will be critical first steps in improving the health of Pakistani women.

The MMR measures the risk of death per pregnancy. MDG 5 focuses on improvement in maternal health, with a target of reducing the MMR by three-quarters between 1990 and 2015. Generally high maternal mortality rates are alarming;[26] yet more threatening is the fact that there has been very little change in these statistics during last 20 years.[27]

In Pakistan, with an estimated population of nearly 177 million people, pregnancy and childbirth are one of the leading causes of death, disease and disability for women of reproductive age. They are the largest single contributors (20%) to the burden of disease in women in the age group15–49.[28] United Nations Interagency estimates the MMR in Pakistan

[25] Nancy L. Sloan, B W and Fikree F. An Ecologic Analysis of Maternal Mortality Ratios. Studies in Family Planning , Pages: 352-5; Volume 32 Number 4 December 2001

[26] WHO 1986] [35][[35] (1986): 'Maternal Mortality Rates: A Tabulation Of Available Information', Geneva.]

[27] House of Commons, International Development Committee, Maternal Health, Fifth Report of Session 2007–08, Volume I.

[28] Pakistan Demographic and Health Survey 2006-2007. National Institute of Population Studies, Islamabad, Pakistan. Columbia MA: IRD/Macro International

to be 260 per 100,000 live births, while the Pakistan Demographic and Health Survey 2006-07 reports a slightly higher MMR of 276. Pakistan compares poorly to other South-East Asian countries like Bangladesh, India and Sri Lanka in many indicators of maternal health as seen in Table 2.20.

Table 2.20: Pakistan & South-Eastern Countries: Selected Demographic Data

Country	Population(000s)	Health Expend% GNI	MMR	ANC	TFR	CPR%
Pakistan	176 952	2.7	260	28	4.0	29.6
Bangladesh	160 000	3.4	340	21	2.3	55.8
India	1 181 412	4.1	230	37	2.7	56.3
Sri Lanka	20 061	4.2	39	-	1.4	68.0

The underlying causes of maternal mortality in Pakistan are the poor state of women's health resulting from high proportions of women with lesser food and calorie intake and iron deficiency anemia.[29] Maternal health is significantly influenced by health systems and gender-related dynamics. These include male preference[30] with a subordinate status for women within the family and society[31]. These gender inequities[32] make Pakistani women vulnerable by placing them in a subordinate position with increased vulnerability to illness, little or no decision making power, and limited access to maternal healthcare, especially if state-subsidized facilities and services are not available.

Maternal health care in Pakistan is provided mainly by three sectors: public or government, private and Non Governmental Organizations (NGOs). The public sector caters to around 20% of the population; however, there are major differentials in coverage by residence and income, with coverage lowest in rural areas and lower income quintiles.[33] Maternal health services are provided through a three-tier system, i.e., primary, secondary and tertiary levels. Primary level facilities (Civil Dispensary, MCH center, Basic Health Unit and Rural Health Center) are responsible for basic EmONC, while the secondary (District Headquarter and Tehsil/Taluka Hospitals) and tertiary level facilities (the teaching hospitals in major cities) provide comprehensive EmONC services. In addition, promotive, preventive and selected curative services are provided through home-based community-based workers including Lady Health Workers (LHWs) and Community Midwives (CMWs).

Indicator 1, MDG 5: Skilled Birth Attendants

Pre-flood status

Using WHO standards for human resource requirements, Pakistan clearly has insufficient health workers to meet ever-growing population needs.[34] In addition to an overall shortage of health personnel, there is an acute deficiency of female Skilled Birth Attendants (SBAs).

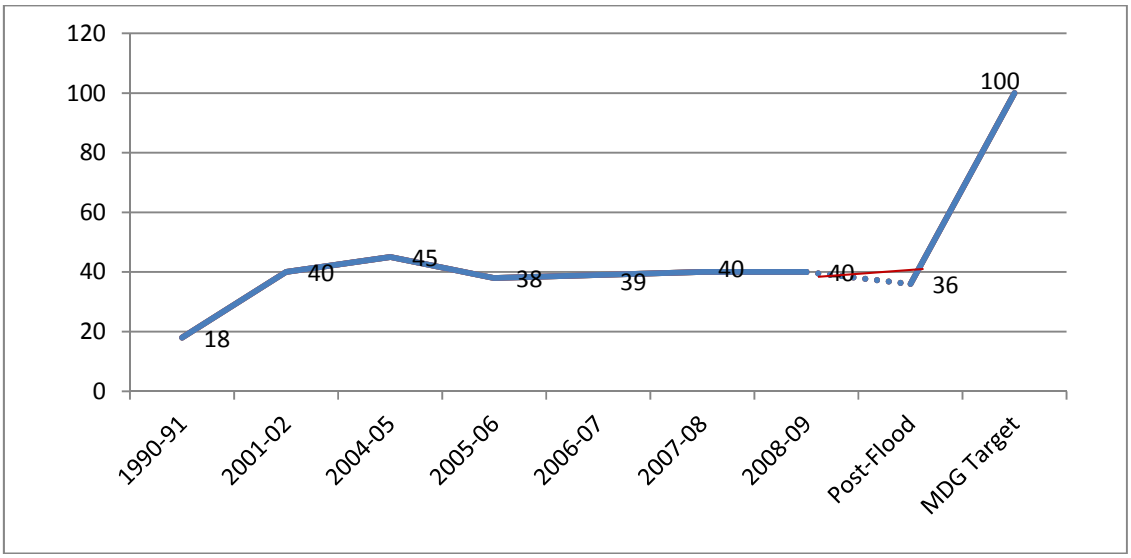
[29] National Nutrition Survey 2001-02, Planning Commission, Government of Pakistan.
[30] Asian Development Bank. Asian Development Review. Studies of Asian and Pacific Economic Issues 1999; 17
[31] Qureshi AF, Qudsia A, Ahmed Y, Imtiaz K, *A situation analysis and recommendations for Evidenced-based approached, Strategies for integrated maternal and child care in Pakistan in community setting*. National Consultation on "Maternal and child health and family planning in Pakistan: Planning for the future", Islamabad. January 7-9, 2003, Background Papers.
[32] Pakistan Country Gender Assessment, *Bridging the gender gap opportunities and challenges* Washington D.C., The World Bank, 2005.
[33] Government of Pakistan. Pakistan Social and Living Standards Measurement Survey, 2006-07. Islamabad, Pakistan: Federal Bureau of Statistics, Statistics Division; 2005.
[34] World Health Statistics 2010.

Estimates of deliveries by SBAs for the years 1990 and 2009 are 19% and 39%, respectively.[35] If the current rate of improvement were to hold, the projected rise in deliveries by SBA would be 45% by 2015.

At primary and secondary levels these SBAs include Women Medical Officers (WMOs), Lady Health Visitors (LHVs), Nurses and Midwives who manage normal delivery cases and refer complicated cases to the tertiary care hospitals for further treatment under obstetricians. This severe scarcity of female healthcare providers results from inadequate sanctioned posts for female workers, an inability to recruit female health providers on sanctioned posts and a high (4%) attrition rate among female health workers. This shortage of female health providers at health facilities results in inadequate and unskilled care during pregnancy, delivery and the critical immediate postpartum periods usually administered by a female family member or traditional birth attendant.

Damage

Figure 2.6: Damage Caused by Flood to Deliveries by SBA



Displacement, death and loss of infrastructure have resulted in a parallel loss of health personnel, including SBAs. Based on the assumptions presented in Table 2.21, it is estimated that, as a result of damage caused by floods, the proportion of births attended by skilled birth attendants will drop to 36% (Scenario 2) from 39%;the effect, however, will be more devastating for the already vulnerable populations such as rural residents and people in lowest wealth quintiles.[36]

Table 2.21: Impacts of the floods on Proportion of Deliveries by SBAs: Three Scenarios

(Pre-flood SBA=40 in 2009)

Categories	Scenario 1	Scenario 2	Scenario 3

[35] Pakistan Millennium Development Goal report 2010. Government of Pakistan. Planning Commission. Centre for Poverty Reduction and Social Policy Development, Islamabad, September 2010.
[36] Pakistan Demographic and Health Survey 2006-2007. National Institute of Population Studies, Islamabad, Pakistan. Columbia MA: IRD/Macro International.

Decreased% of delivery by SBA in the affected area	5%	10%	20%
National post-flood SBA	38	36	32

Scenario 2 translates into an additional 15,000 pregnant women will not be delivered by SBAs as a result of floods in the affected areas. This decline is attributed to the effect of floods on: 1) Infrastructure such as health facilities, roads and communication mechanisms and transport; 2) Supplies and human resource like female health providers (doctors, Lady health visitors, Midwives, Lady Health Workers) and further deteriorating EmONC and preventive services; and 3) Land ownership and other assets causing insufficient family income and related capacities to pay for service. As a result, women will resort to Traditional Birth Attendant or even a family member rather than SBA which will have a negative impact on pregnancy outcomes including MMR and maternal morbidity.

Loss

The destruction of dwellings, crops, live stocks and infrastructure (residences, health facilities, schools, roads, etc.) would affect employment and educational opportunities. Reduction in employment would reduce family income and hence would lower the capacity for out-of-pocket expenditures on health. This, compounded by gender inequity, would leave woman without funds to avail themselves of services from skilled healthcare providers. Further, fewer educational opportunities (e.g., due to damage to education infrastructure) will increase illiteracy, especially among females. This will further limit awareness by women about the importance of skilled care during pregnancy and childbirth.

The flood has further deteriorated the health system situation in Pakistan which was already under a severe human resource crunch, especially with regard to female healthcare providers, to cater to the rising number of births.[37] The displacement of significant proportions of LHWs (as described earlier) and CMWs as a result of flood will not only reduce promotional and preventive coverage but will also affect appropriate and timely referral to skilled healthcare provider in case of maternal complications. The loss of a mother and caretaker in the family will inevitably have negative repercussions on the entire household, especially the oldest girl child. School drop-out and increases in illness, including psychosocial trauma, are all risks associated with maternal death.

Indicator 2, MDG 5: Contraceptive Prevalence Rate (CPR)

Pre-flood status

Between 2001-02 and 2008-09, contraceptive use among married women increased from 28% to 30.8%. The social cultural norms pose a formidable barrier to wider adoption and use of contraceptive use which requires concerted efforts at social and behavorial change than simply increasing the availability of contraceptives. The target of reaching 55% of the eligible couples for using a contraceptive method by 2015 seems difficult to achieve.

Damage

In Pakistan, it is popularly considered that a woman's duty is to bear and rear children, preferably sons.[38] The foundation of this norm is rooted in the country's patriarchal society where history and traditions dictate that women are given lesser status. A Pakistani woman

[37] World Population Prospects 2008 Revision

[38] National Institute of Population Studies. *Pakistan Demographic and Health Survey 1990-1991.*Islamabad: National Institute of Population Studies. IRD / Macro International 1992.

therefore has to continue bearing children until several sons are born. This, ultimately, affects the Total Fertility Rate and the overall health of women.

Loss

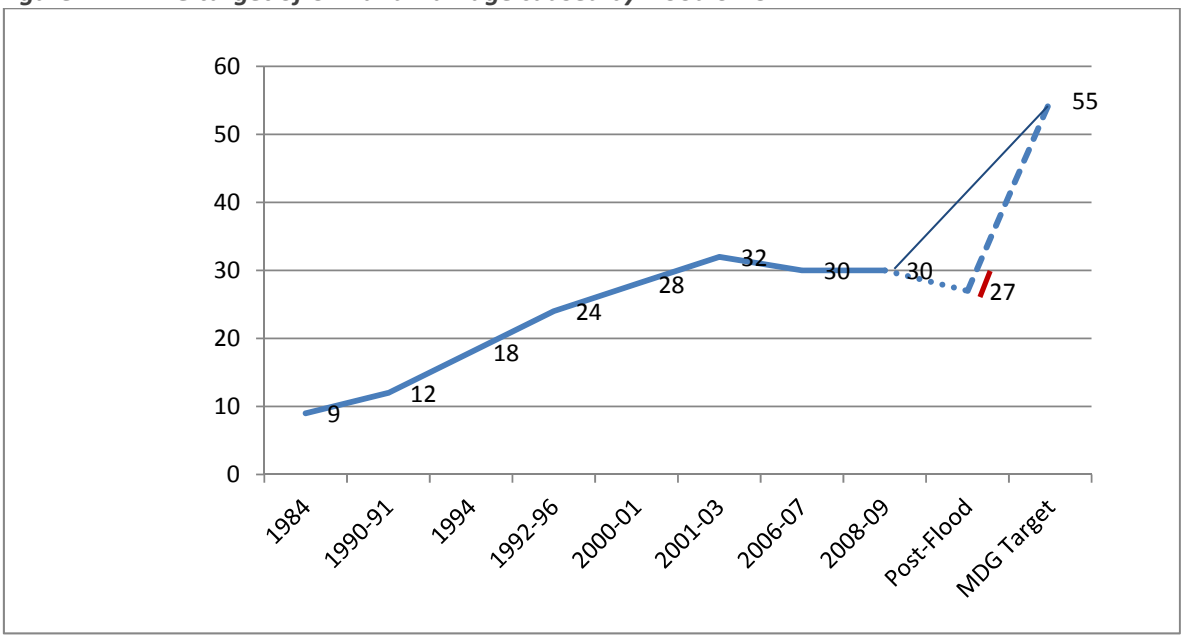
Though public programs have helped raise the modern CPR from 9% in the mid-80s to 305 today, it is estimated that is likely to fall to 27% (Scenario 2) based on the assumptions of the table below. This means that an additional 96, 000 women of reproductive age group will fail to use contraceptives due to floods in the affected areas over the next five years.

Table 2.22: Impacts of the floods on CPR

(Pre-flood CPR=30 in 2009)

Categories	Scenario 1	Scenario 2	Scenario 3
Decreased% of CPR	5%	10%	20%
National post-flood CPR	28.5	27	24

Figure: 2.7 MDG target of CPR and Damage caused by Flood on CPR



Reduced CPR is mainly the result of both supply and demand impacts. Supply considerations arise from damage/destruction of reproductive health facilities, availability of contraceptives and qualified personnel (LHWs) for dispensing. Some 10,500 LHWs have been displaced in the flood affected areas with insufficient attention to counter this loss from government population control programs. Demand side include inadequate utilization of contraceptive services. If the expected rise in neonatal and infant deaths in the post-flood period continues, especially if they are male children, it is likely that sociocultural and economic demands on the family will drive the fertility rate even higher to compensate for the loss. It is worth mentioning that reduction in CPR will affect particularly the use of modern contraceptives since it is influenced directly by health services which in turn will have tangible effect on TFR. This is especially true where there are no public programs to provide or subsidize contraceptives in an environment of limited disposable family incomes.

Data shows that, in addition to knowledge of family planning methods and provision of contraceptives services, contraceptive use is dependent upon a number of socio-economic and behavioral factors, most significantly female literacy and economic class.[39] The floods are expected to have a negative effect on both of these indicators. As explored earlier, the primary enrolment of girls will be severely affected due to loss of enabling factors, namely, infrastructure damage (schools, roads, transport) and an increase in proportion of the poor population due to damage or loss of lands and livelihoods from the floods.

Post-flood impact on MDG 5: Conclusion

The floods will compound the challenges that Pakistan faces in addressing maternal mortality through disruption of healthcare services. With over ten thousand lady health workers displaced as a result of the floods, the provision of primary mother and child health care services provision will be compromised and contribute to a reduction in extension of family planning services.

Furthermore the destruction of health facilities will result in reduced access to services of skilled birth attendants including women medical officers, nurses and midwives, who manage normal delivery as well as provide referrals to tertiary care facilities.

Conservative estimates forecast around 3% point drop in maternal and neonatal services performed by these health personal contributing to rise in fertility and potential maternal deaths.

[39] Pakistan Demographic and Health Survey 2006-2007. National Institute of Population Studies, Islamabad, Pakistan. Columbia MA: IRD/Macro International

MDG 6: Combating HIV/AIDS, Malaria and Other Diseases

Table 2.23 Pre-Flood MDG 6 Performance

Goal/Indicator	2006-07	2008-09
HIV prevalence among 15-24 year old pregnant women (%)	Ahead	Ahead
HIV prevalence among vulnerable groups (e.g., active sexual workers) (%)	Ahead	Ahead
Proportion of population in malaria risk area using effective malaria prevention and treatment measures	Lag	Lag
Incidence of tuberculosis per 100,000 population	Lag	Lag
Proportion of TB cases detected and cured under DOTS (Direct Observed Treatment Short Course)	Ahead	Ahead

Pakistan has a low prevalence rate of HIV/AIDs and has witnessed modest gains in curbing TB under DOTS. However the biggest challenge is to tackle the malaria incidence that is the 2nd most common communicable disease reported, apart from acute watery diarrhea it also poses risk of outbreaks especially after the floods. Reaching 3 out of 4 malaria infected person would already have required strong surveillance and extension capacity to graduate from the present rate of 30% even without the impact of the floods.

The health system has been severely affected in the flooded districts. According to the Damage and Need Assessments carried out by the World Bank, 558 health facilities out of a total of 9, 721 have been damaged. Out of those, 213 are not functioning implicating lack of access to health care services for their catchment population.

Indicators 1 and 2, MDG 6: HIV/AIDS Prevalence

Pre-flood status

The estimated number of people living with HIV/AIDS (PLHIV) according to WHO/UNAIDS, has risen from 75,000 in 2007 to 97,400 in 2009. Intravenous drug users comprise the core group driving the epidemic and exhibit the highest prevalence (20.8%), followed by Hijra sex workers (HSWs) (6.1%) and Male Sex Workers (0.9%). HIV infection rates among FSWs (Female Sex Workers) remain low (0.97%). Considering the overlap between IDUs and at-risk sexual networks, it is likely that a rise in HIV prevalence among IDUs could lead to increases also within networks of commercial sex workers and their clients.

Pakistan is in the early phase of concentrated epidemics and the number of registered patients is low compared to the prevalence estimates. By the end of 2009, 2,917 HIV/AIDS patients were registered in 13 treatment centers and 7 PPTCT centers across the country. Of these, 1,320 were being treated with anti-retro viral (ARV) drugs (908 men, 355 women and 57 children under 15 years). They also received treatment for AIDS-related opportunistic infections e.g. TB.

Damage

Based on data records provided by the national and provincial AIDS programs across the country, it is estimated that up to 1,000 people living with HIV need support in flood affected areas due to disruption in health services, medication, testing, counseling facilities, and loss of contact with caregivers.

Loss
The floods emergency could amplify the risk of contracting HIV due to poor infection control measures in health facilities, reduced access to treatment of STIs and behavioral changes, including risk taking behavior and contractual sex. The overall impact of the flood crisis on AIDS prevalence is expected to be modest for the general population but nevertheless serious for people living with HIV (PLHIV) currently on anti-retroviral therapy (ART). Disruption of specialized health care, including the treatment of Opportunistic Infections (OI), poor or absent access to ART combined with poor living conditions, are all factors that will contribute negatively to the evolution of the disease. There may also be lack of funding to continue the prevention and control of HIV in the country due to the floods, as most donors and funding agencies would ignore the subject due to the impact on other diseases, thus not only increasing the spread and reduce the VCT services but also distracting from advocacy on the issue.

Indicator 3, MDG 6: Malaria Indicator - The prevalence of malaria and death rates[40]

Pre flood status
The prevalence of malaria and death rates indicator is measured through the Annual Parasite Incidence (API)/1,000 people/year. In 1990 the API was 1/1,000 and the target set for the MDG target was to reduce this by 75%, i.e., 0.25/1,000. According to WHO estimates, 1.5 million cases of malaria occur in Pakistan annually. Most of districts sharing major burden of the disease are located in Balochistan, FATA, Khyber Pakhtunkhwa (bordering Afghanistan and Iran) and in the Sindh provinces.

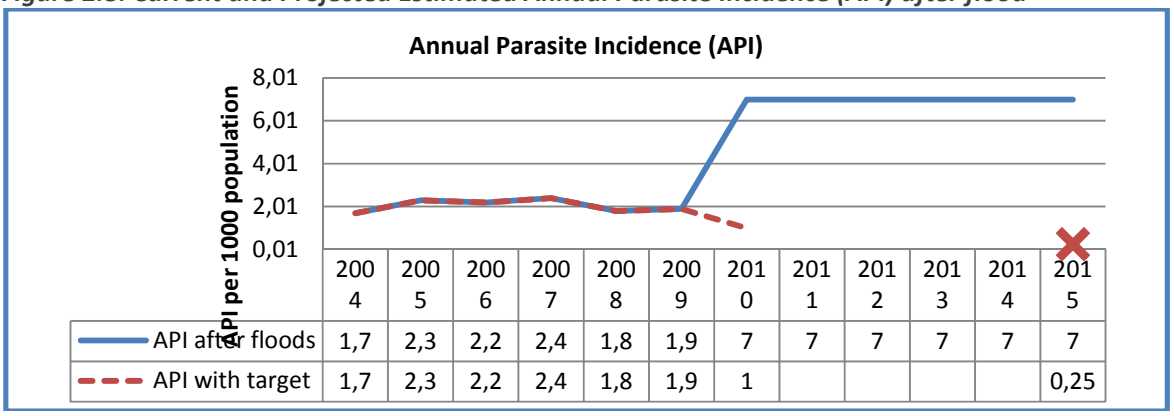
Damage
The floods will have a deep impact on malaria risk and require appropriate preventive and curative measures to be in place. Favorable temperature, humidity and stagnant water result in the abundance of mosquito vectors. This, combined with highly exposed populations, has enhanced the malariogenic potential of all the flood-affected districts, including districts that previously fell in low endemic categories. This is evident from the rising trend of malaria cases in the flood-affected districts of low endemic province of Punjab and the developing outbreak situations in Sindh, Balochistan and the KPK provinces, where the Slide Positivity Rate (SPR) has reached 50% and the incidence has been doubled as of mid-September 2010.

Based on the annual confirmed cases during the previous years, during 2010, it is estimated that the Annual Parasite Incidence (API) rate will be as high as 1 million cases. . Stagnant water will increase the mosquito populations and abundance of mosquito vectors in the presence of highly exposed populations will enhance the malariogenic potential of all the flood affected districts, and may also affect neighboring districts, even those previously falling in low endemic category. Destruction and damage to health facilities providing malaria preventive and curative services will impact on malaria control. Unfortunately a large number of long lasting insecticide impregnated nets (LLIN) that were provided pre-crisis through Global Fund were lost during the flods thus increasing the vulnerability of the populations. Other vector borne diseases like dengue fever, dengue hemorrhagic fever will pose a risk for the population. The emergency situation due to floods and its consequences is anticipated to worsen

[40] Malarial prevalence is used as a sub – indicator to measure the effectiveness of the preventive and curative measures.

Based on the assumption that the floods will have long-lasting effects on malaria transmission potential and its intervention coverage, it is estimated that the API incidence would increase to 7 per 1000 population with over 200,000 cases of Plasmodium falciparum and a mortality of about 23,260 per year. This trend is likely to continue until 2015 (see Figure 2.8).

Figure 2.8: Current and Projected Estimated Annual Parasite Incidence (API) after flood



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
API after floods	1,7	2,3	2,2	2,4	1,8	1,9	7	7	7	7	7	7
API with target	1,7	2,3	2,2	2,4	1,8	1,9	1					0,25

Loss

Assuming that no interventions would be made by the health sector, then it is feared that the API will remain at 7/1000/ year as seen in the chart above, way above the MDG target. However there are many interventions ongoing while additional strategies would be required to achieve the MDG target. The malaria transmission is expected to end in November in KP province but the malaria risk in the South will persist, albeit at lower levels, during the winter. Epidemiology of the disease may also suffer from a spill-over effect in neighboring districts, if population movement from high to low endemic areas occurs and if living conditions remain poor. In addition, an increase in the incidence of Dengue/DHF is expected to increase, particularly in urban areas.

Indicator 4, MDG 6: Proportion of the population in malaria risk area using effective malaria prevention and treatment measures

Pre-flood status

According to the Pakistan Demographic Health Survey 2006 - 2007 (PDHS), only 6% of households have at least one mosquito net. Almost no households have an Insecticide-Treated Net (ITN). Ownership of nets varies by province, with 16% of households owning a net in Sindh and Balochistan compared to only 3% of households in Punjab and NWFP. Only 2% of children under five and 2% of pregnant women slept under a net the night before the survey. Most households adopt no mechanism to repel or avoid mosquitoes. Fifteen percent use mosquito coils and 23% use mats.

In 2009 and 2010, 1 million LLINs (Long Lasting Insecticide treated Nets) were distributed among vulnerable groups (defined as households with children under 5 years old and pregnant women) in 19 of the 38 high risk/endemic malaria districts; hence the coverage of nets went up to 21%. The PDHS also reports that in the two weeks before the survey, 31% of children under age five had fever, the primary symptom of malaria. Of these children, 3% took an anti-malarial drug. SP/Fansidar was the most commonly used anti-malarial drug.

According to the Malariometric Survey of 2009, the current diagnosis and treatment coverage through public sector health facilities is 50.5%, hence about 49% of the people with suspected malaria have either no access to free diagnosis and treatment services at public health facilities or they access to private sector care delivery system where national guidelines of case management are seldom followed.

Damage

Destroyed and damaged health facilities have contributed to reductions in curative services as well as low coverage of malaria case management and prevention services. This has resulted in high incidence of *falciparum* malaria. Lack of early diagnostic services and effective treatment definitely increase morbidity and mortality due to severe *falciparum* malaria in highly vulnerable groups (pregnant women and children under 5 years), hampering the target achievements in MDG 4 and 5 as well.

Given the damage to health facilities (as described above as well as in the DNA), people in many flood-affected catchment areas now have no access to health services. Around one million Long Lasting Insecticide treated bed Nets (LLINs) distributed to pregnant women and under five children in 19 target districts before the current crisis have been lost because of the floods, thus erasing a key development gain and increasing the vulnerability of the populations many fold. The diagnosis and treatment coverage would decrease due to the damage while the incidence of the disease will increase effectively reducing the coverage to as low as 5% (see Figures 2.9 and 2.10).

Figure 2.9: Current and projected estimates of the coverage of diagnosis and treatment of Malaria

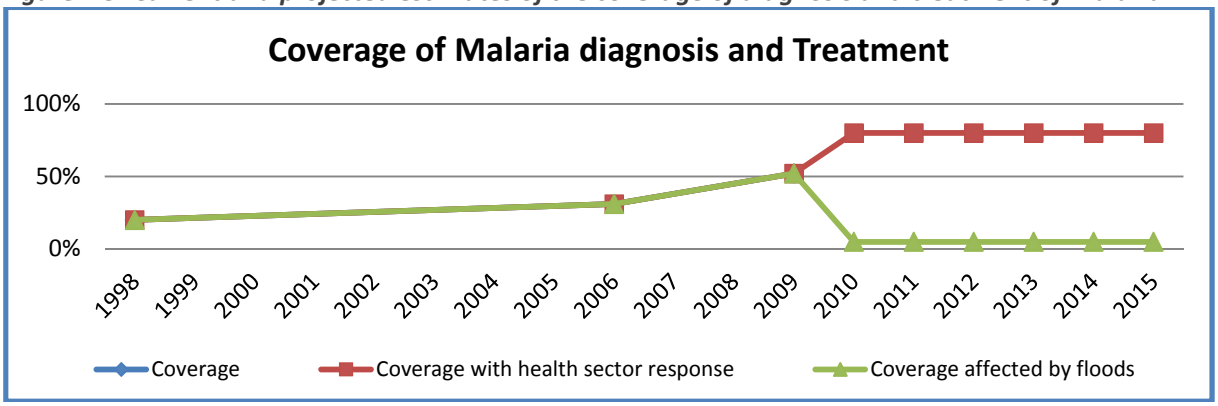
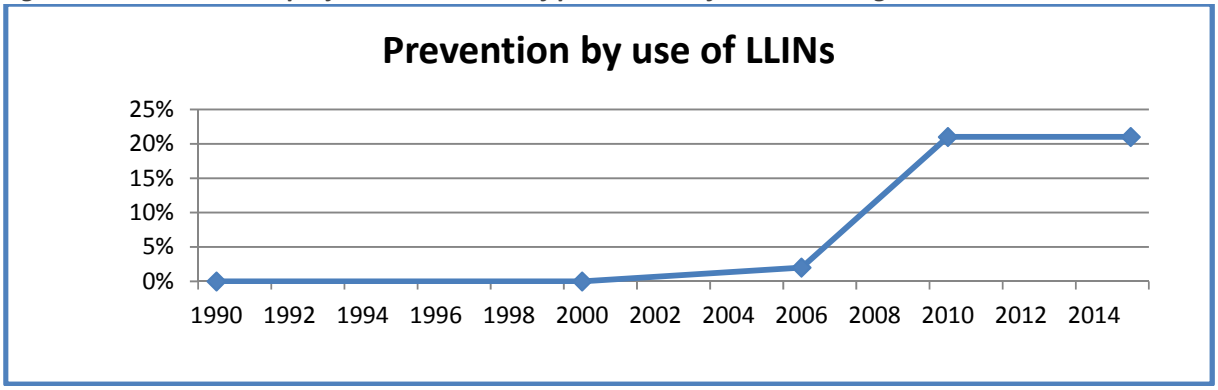


Figure2.10: Current and projected estimates of prevention of Malaria using LLINs



The coverage initially was 52%, according to the Global Fund Report 2009. If malaria cases increase with no additional resources for diagnosis and treatment, then it is assumed that the coverage will be as low as 4 – 5%. However, the health sector response has been tremendous with currently 100% coverage of prevention, diagnosis and treatment in Punjab and approximately 70-80% in Sindh and Balochistan.

Loss

It may take at least a year or two for the restoration of health services in the flood-affected areas. The lack of adequate staffing, equipment and medicines may also be a challenge. High transmission potential in flood-affected endemic districts will increase the need for diagnostic and treatment facilities. Coupled with reduced coverage of prevention measures, this may result in high morbidity and mortality in affected communities. However, it is expected that support from current emergency control plan will be able to cope with the emerging diagnostic, treatment and prevention needs of affected communities. Nevertheless, more attention needs to be paid to those districts which are not included in the list of flood-affected districts and where malaria endemicity has already reached beyond the epidemic line.

Indicator 5, MDG 6: Incidence, prevalence and death rates associated with tuberculosis

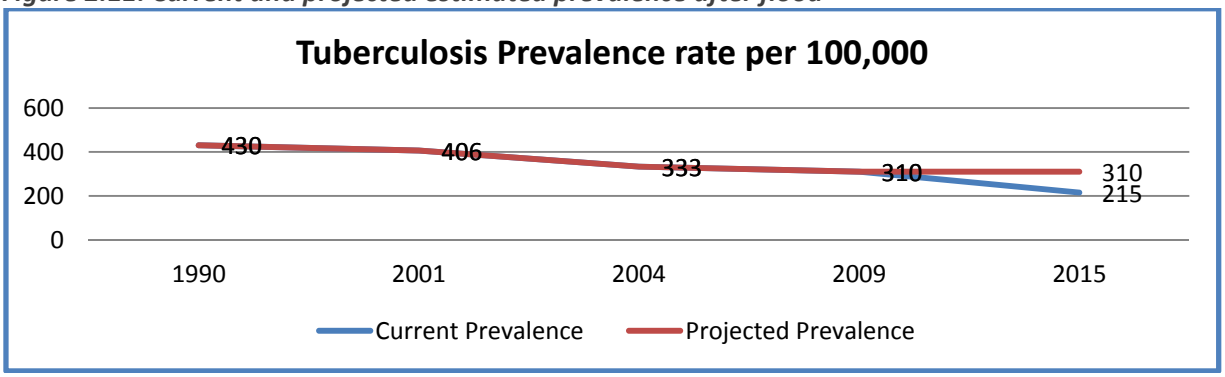
Pre-flood status

TB is a major public health problem in Pakistan. Pakistan ranks 8th amongst the high burden TB countries and harbors 55% disease burden of the Eastern Mediterranean Region. The current incidence is 181 per 100,000 and prevalence is 223 per 100,000 (Global TB Teport 2009). It is pertinent to mention here that WHO has recently revised the estimates of incidence and prevalence of TB in the country, now estimated to be 230 per 100,000)see Figure 2.11).[41]

Damage

It is not easy to correlate the incidence and prevalence of TB to the floods. Around 20 million people have been displaced and it is estimated that around 46,000 TB cases exist in the displaced population, including 20,000 cases under treatment which are smear positive TB cases, which are highly infectious and can spread TB to others if not treated. 26,000 cases are likely to be undiagnosed.

Figure 2.11: Current and projected estimated prevalence after flood



Loss

[41] WHO Global TB Report, short updates.

It is very likely that in the flood affected populations TB incidence will increase due to an accumulation of risk factors such as measles, malnutrition, and prolonged delay in seeking healthcare. It is however difficult to have more precise estimates of the contribution of the floods due to significant uncertainties in the current as well as previous estimates.

It is estimated that one smear positive TB case can spread infection to ten people in a year. So, it is expected that the incidence and prevalence may be increased in the coming years, particularly in the displaced population. The increase in the incidence will mean moving away from the target of 45 cases per 100,000 people, hence making it difficult to achieve the MDG target by 2015. Further exacerbating this problem, the funding sources currently may not consider TB as a priority compared to other acute killers such as acute diarrhea, malaria and measles.

Indicator 6 and 7, MDG 6: Proportion of tuberculosis cases detected and cured under directly observed treatment short course (DOTS)

Indicators 6 and 7 for MDG are the Tuberculosis detection rate under DOTS, % (mid-point) and Tuberculosis treatment success rate under DOTS, %, respectively.

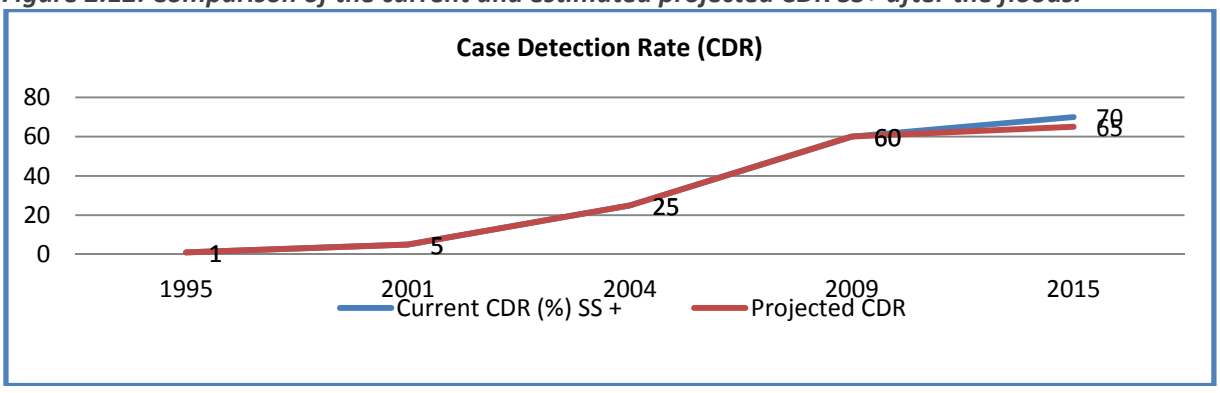
Pre-flood status

The national targets are in line with the MDGs, i.e., to cure 85% of detected new cases of sputum smear positive pulmonary TB and to detect 70% of estimated cases once an 85% cure rate is achieved. Steady progress has been made since the revival of the National TB Program (NTP) in 2000 to improve the case detection and treatment success rate. NTP achieved two MDG-related indicators in 2009. The case detection rate in 2009 was 75%, while the treatment success rate was 91%.[42]

Damage

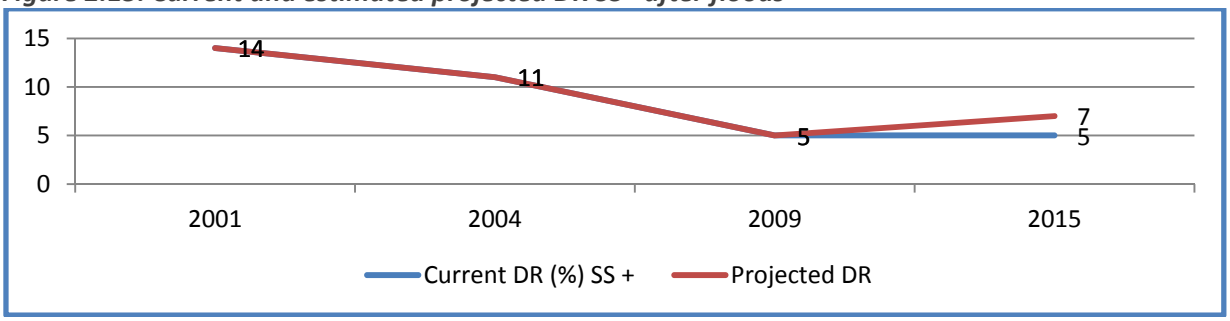
It is expected that the current case detection and treatment success rate will decline due damage to the health infrastructure and high number of displaced population. The case finding may reduced up to 5 -10% and default rate may increase as well. The current and projected targets are portrayed in Figures 2.12 and 2.13.

Figure 2.12: Comparison of the current and estimated projected CDR SS+ after the floods.



[42] NTP website – ntp.gov.pk

Figure 2.13: Current and estimated projected DR SS+ after floods



Loss

Displacement and migration would make TB case detection difficult, especially in the flood affected areas. In addition, in flood hit areas it may take time to restore the health services and so patients with TB may have no access to diagnosis and treatment, which will also negatively impact the case detection rate.

Post-flood impact on MDG 6: Conclusion

MDG 6 targets are highly likely to be negatively affected by the flood impact both in 2010 and by 2015. A focus on prevention, diagnosis and treatment of all indicative diseases will be required to ensure the health situation of the affected populations can be ameliorated. The provision of appropriate and accessible health services will be essential.

The overall impact of the flood crisis on AIDS prevalence is expected to be modest for the general population and high for people living with HIV (PLHIV) currently on anti-retroviral therapy (ART). Disruption of specialized health care including the treatment of Opportunistic Infections (OI), poor or absent access to ART combined with poor living conditions are all factors that will contribute negatively on the evolution of the disease and to the achievement of the MDG targets.

Destroyed and damaged health facilities have contributed to reductions in curative services as well as low coverage of malaria case management and prevention services. This has resulted in high incidence of *falciparum* malaria. Lack of early diagnostic services and effective treatment increases the morbidity and mortality due to severe *falciparum* malaria in highly vulnerable groups (pregnant women and children under 5 years), hampering the target achievements in MDG 4 and 5 as well.

Pre-flood TB cases were already on the increase; however, it is very likely that displacement and poor access to health care and treatment could impede diagnosis and exacerbate the rate of spread of the disease.

MDG 7: Ensuring Environmental Sustainability

Table 2.24: Pre-flood MDG 7 Performance

Ensure Environmental Sustainability	2010
Forest cover including state owned and private forest and farmlands*	Lag
Land area protected for the conservation of wildlife	On Track
GDP (at constant factor cost) per unit of energy use as a proxy for energy efficiency	Slow
No. of vehicles using CNG	Ahead
Sulphur content in high speed diesel (as a proxy for ambient air quality)	Lag
Proportion of population (urban and rural) with sustainable access to a safe improved water source*	Lag
Proportion of population (urban and rural) with access to sanitation*	Lag
	-

**Proxies for this MDG have been limited to these indicators.*

Indicator 1, MDG 7: Forest Cover including state owned and private forest and farmlands

Pre-Flood Status

Pakistan's forest cover, as a percentage of total land area, has slightly increased over time, from 4.2% in 1990 to 5.02% in 2008-2009. Although there had been a marginal increase in forest cover and conservation areas, the situation remains fragile and is threatened by a growing population, insecurity, and unsustainable coping strategies. Recent natural disasters have taken their toll on the environment; during the 2005 Kashmir earthquake, a total of 0.17 million hectares of forestland was affected by in the form of landslides, uprooting of trees and shaking of root systems.

Damage

Based on data gathered from a rapid assessment of forest loss in a selected number of regions,[43] which is the only data available at present, the net change in forest cover due to floods and flood responses is estimated as 11.2% of the total forest cover in the whole geographical area of Pakistan.[44] This is 0.56% of the land area (as compared to the pre-flood forest cover of 5.02%). It is estimated that the floods have widened the gap between the actual status of forest cover in 2010 (before the floods) and MDG target 2015, from 0.98 to 1.54% (percentage of land area).
Table 2.25 reports the additional damage to forest cover by the floods.

[43] Rapid Assessment of Flood Impact on the Environment in Selected Affected Areas of Pakistan, Pakistan Wetlands Programme, 22 August 2010.
[44] Please see the methodology (section 7 below) for details as to how this figure was calculated.

Table 2.25: MDG indicators on forest cover and estimated impact of floods

Pre- and Post-Flood	Estimated Post-Flood Forest Cover (% of total land area)	Pre-Flood Forest Cover (% of total land area)
1990-91		4.8
2001-02		4.8
2004-05 (PRSP Target 2005-06 =5.0)		4.92
2009-10 (before floods)* (MTDF Target 2009-10 =5.0		5.0
MDG Target 2015		6.0
2010 Pre-flood and MDG Target 2015 difference		1.0
Post Flood 2010 estimate	**3.85**	
2010 post-flood and MDG Target 2015 difference	**2.15**	
Increase in difference, pre- and post-flood	**1.15**	

** Assumed since MDG Report Draft does not report the figure for this year, but notes lagging behind the target.*

Loss

As reported in Table 2.25 above, it is estimated that the floods will widen the gap between the actual status of forest cover in 2010 (before the floods) and the MDG target for 2015 from about 1% to over 2% of land area. It is estimated that 0.4% (about 349,100 hectares) is likely to be lost within the first year after the floods due to coping strategies by people affected by the floods. With appropriate remedial action, these losses are likely to be recovered over a four to five year period. However, this would mean that Pakistan is likely to have only 5% of its land area covered with forests in 2015 against the MDG 2015 target of 6% even if remedial strategies are successfully implemented.

Table 2.26: Recalculated revised post-flood annual target indicators, MDG 7

Year	Expected annual net change in forest cover (A)	Revised recalculated post-flood annual target indicator	Loss/gain (in hectares of forests) on annual basis
2010	(-)0.35*	0.8981#	(-) 299480
2011	(-)0.21	0.8576	(-) 179688
2012	0	0.8576	0
2013	0.40	0.8885	342263
2014	0.16	0.9653	136905

**It is presumed that there will be some regeneration of forests in certain areas.*
[#] This value is calculated as (5.02 –A2010)/5.2.

The loss of forest cover and conversion to other land uses can adversely affect freshwater supplies, threatening the survival of millions of people and further damaging the environment (FAO 2003). As such, destruction of forest cover will make Pakistan susceptible to additional flooding. To the extent that the forests are a source of livelihood for communities (e.g., protein, wood, shelter), loss of forest cover is likely to increase the incidence of poverty. Deforestation has also been linked to climate change that, in turn, manifests in extreme weather conditions, including floods and droughts. Loss of forest cover leads to soil erosion, and negatively impacts biodiversity by disturbing natural and agro-ecosystems.

Indicator 2, MDG 7: Proportion of population with sustainable access to safe improved water sources

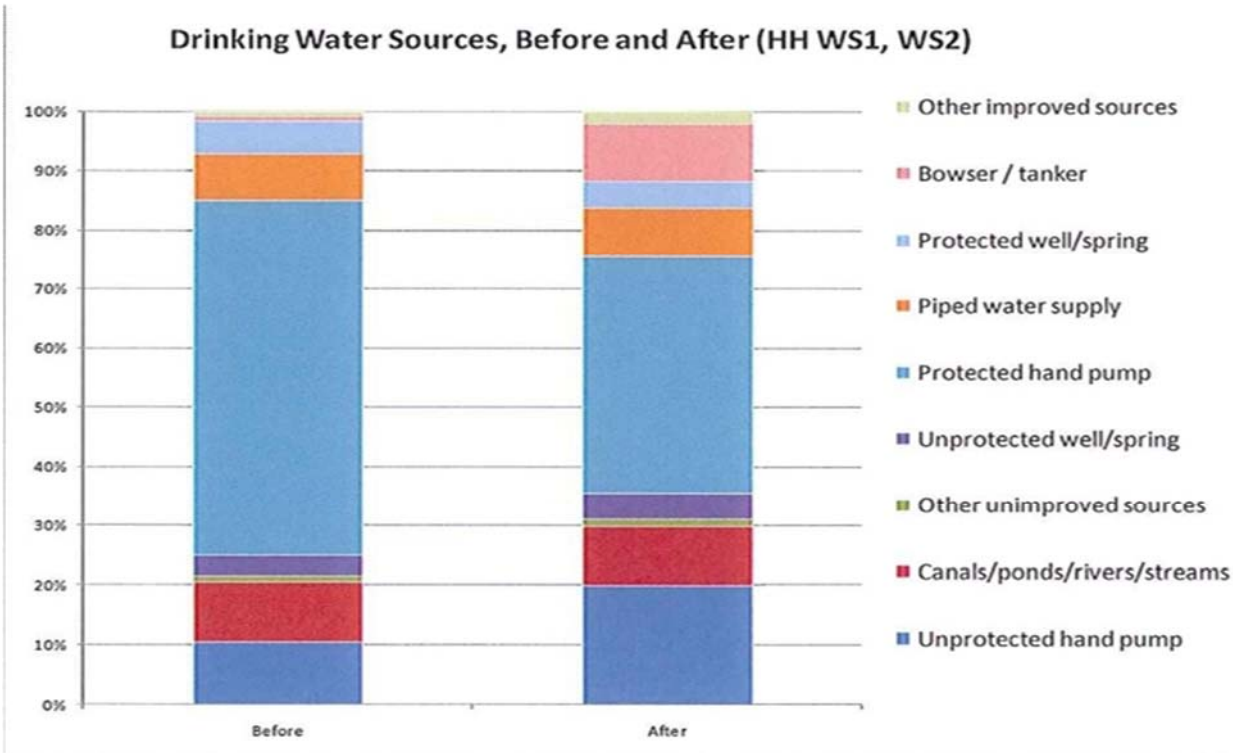
Pre-flood Status

The percentage of population with access to improved water source has steadily increased over time, from 53% in 1990 to 65% in 2008-2009. However, in recent years this figure has remained more or less stagnant, decreasing from 66% to 65% from 2003-2004 to 2008-2009.

Damage

The Damage and Needs Assessment (DNA) estimates that the amount of drinking water polluted with sewage as a result of the flood is about 632,000 m³ per day. The UN System's Multi-cluster Rapid Assessment Mechanism (McRAM) Report provides some information on drinking water sources before and after the floods, as set out in Figure 2.14.

Figure 2.14: Drinking water sources before and after the flood



Source: McRAM report, September 2010.

The data indicates that the percentage of the affected population using improved sources of water (i.e. hand pump, well/spring, piped water supply) decreased from 76% to 65%. This also includes the provision of water through tankers. If we exclude the increased dependence on tankers due to floods (the cost of which needs to be accounted as part of the impact of floods), the percentage of population with access to safe sources of drinking water decreased from 76% to 55%. Thus, it is estimated that there has been a reduction of some 20% in the population in the flood-affected area with access to safe drinking water. Given that the floods have affected 10% of the population, this means that 2.0% of the population of Pakistan no longer has access to safe drinking water due to the floods. According to the 2010 MDG Report, in 2008-2009, 65% of the population in Pakistan had access to safe drinking water. Based on the above calculation, this figure

has decreased to 63% as a result of the floods[45] and serves as another example of the development losses that have been incurred as a result of the disaster.

Loss

According to the DNA, only 35% of Pakistan's population had (intermittent) access to piped water before the floods. This low coverage of drinking water supply, which is one of many water resource management problems (others include water scarcity, mismanagement, institutional malaise, and surface and groundwater pollution), is a driving factor behind the high rate of waterborne diseases in the country, such as diarrhoea, typhoid, intestinal worms and hepatitis. Waterborne diseases are likely to proliferate under the post-flood scenario. Sewerage services are inadequate, with most households not connected to systems. Many household latrines in rural areas are inappropriately sited and constructed, which also impacts negatively on water quality.

Table 2.27 predicts the expected recovery on an annual basis. While there is an initial negative impact on the indicator, starting in 2012, it is expected that losses will be consolidated and benefits will start to have a positive impact on the population. The expected annual net change in population with access to safe water is expected to increase by 0.5% annually for 2012 and 2013 and 1% for 2014, thus increasing the number of beneficiaries by end 2014 to 3.6 million.

Table 2.27: Loss calculations for access to Safe Drinking Water

Year	Expected Annual net Change in population with access to safe water (%)	Revised Recalculated post-flood annual target indicator	loss (number of people losing/gaining access to safe water) on an annual basis
2010	-2.0	0.83	-3,412,000
2011	0	0.83	0
2012	0.50	0.835	953,000
2013	0.50	0.842	953,000
2014	1.0	0.855	1,706,000

Indicator 3, MDG 7: Proportion of population with access to improved sanitation

Pre-flood status

Pakistan targets 90% of the population (urban and rural) with access to sanitation. The PSLM data 2008-09 reported that sanitation coverage in the country increased from 30% in 1990 to 63% in 2008-09. Despite improvement, the country has still a long way to go to reach the MDG target (see Table 2.28).

Table 2.28: Proportion of population with access to improved sanitation

Indicator	Definition	1990-91	2004-05	2006-07	2007-08	2008-09	MTDF target 09-10	MDG target2015
Proportion of population (urban and	% of population with access	30	54	58	66	63	70	90

[45] While the impact on the entire population is worth noting, what is particularly significant in regard to these figures is the 20% or so reduction in access to safe drinking water in the flood affected areas.

rural) with access to sanitation	to sanitation							

Damage

Table 2.29 shows the impact of the flood on the availability, and thus use, of toilets has been significant. In most provinces and districts, the use of toilets after the flood has dropped by over 50%, suggesting widespread damage. For example, in Sindh, the percentage using toilets after the flood dropped 65 percentage points as compared to use of toilets prior to the flood (i.e., from 70% to just 5%). In Punjab, KPK, Gilgit/Balistan, and AJK the drop in percentage of people using toilets before and after the flood is 55%, 57%, 28% and 50%, respectively.

Table 2.29: Pre- and post-flood changes in number of people using toilets

Region	% using toilets before flood	% using toilets after flood	Change in%
Sindh	70	5	65
Punjab	65	10	55
KPK	75	18	57
Gilgit/Baltistan	100	72	28
Balochistan	0	0	0
AJK	100	50	50

Source: Assessment Report, Flood Affected Areas of Pakistan, UNHABITAT

Based on the figures reported by the UN HABITAT assessment (Table 2.29), the average reduction in use of toilets across provinces is approximately 42.5%. As an estimated 10% of the population is affected by the floods, approximately 4.25% of the total population (some 7.2 million people) has lost access to toilets due to floods.[46]

Loss

Through a coherent and multifaceted recovery strategy, the initial damage is expected to be overcome within a five-year time frame. The impact of the floods has decreased the proportion of population with access to sanitation to 58.8%, against a Medium Term Development Framework (MTDF) target for 2010 of 70%. The MTDF target will surely be missed. It is assumed that the recovery process will take 4 years from 2011, providing access in each year to nearly 1% of the population. By 2015, the MDG indicator will reach 63% in 2014 against the 2015 MDG target of 90%. The last column in Table 2.30 calculates the number of people that are expected to gain access to sanitation each year.

Table 2.30: Loss Calculations for Sanitation

Year	Expected annual net change in% of people with access to sanitation	Revised recalculated post-flood annual target indicator	Loss/gain (people losing/gaining access to toilets) on annual basis
2010	-4.25	0.839	-7,250,500
2011	+1.0	0.853	+ 1,706,000
2012	+ 1.0	0.867	+ 1,706,000
2013	+1.25	0.885	+ 2,132,500
2014	+1.0	0.9	+ 1,706,000

[46] The figures reported should be considered in the context of the flood-affected areas, where access has plummeted by up to 65% in some areas due to the floods.

Post-flood impact on MDG 7: Conclusion

The immediate impact of the flood on the forest, access to improved drinking water sources and sanitation, especially for the poorest, is extremely serious. In addition to water scarcity and surface water pollution, only two-thirds of Pakistanis has access to a safe drinking water source, a major cause for water borne diseases. Although modest improvements are witnessed in water supply and sanitation coverage, reaching the target of over 90% by 2015 was unlikely even prior to the floods. While, the floods have further jeopardised this progress the development community and the government is presented with an opportunity to build back better given the previous state of infrastructure.

#

MDG GOAL 8: Developing a Global Partnership for Development

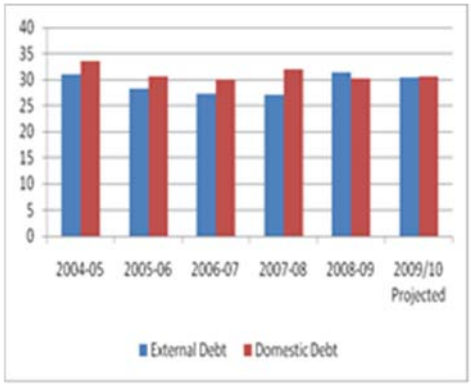
Pre Flood MDG Performance

Concerned Indicator: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term

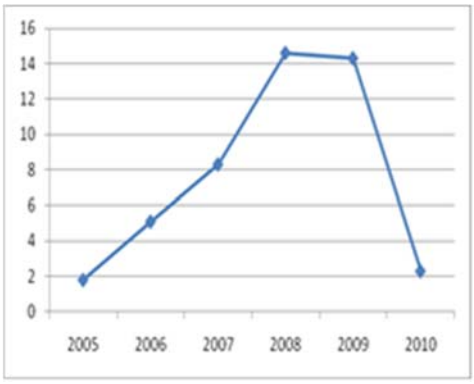
Pre-Flood Trend

Prior to the floods the country's fiscal space had come under considerable pressure due to the: food and energy crisis; global economic crisis; and increased expenditure to respond to the deteriorating security situation. Pakistan will need the support of the international community to finance reconstruction recovery from the flood-related disaster. In the absence of grants and concessionary loans Pakistan's already high debt burden is likely to grow to unsustainable levels.

Ratio of Debt to GDP



Growth in External Debt

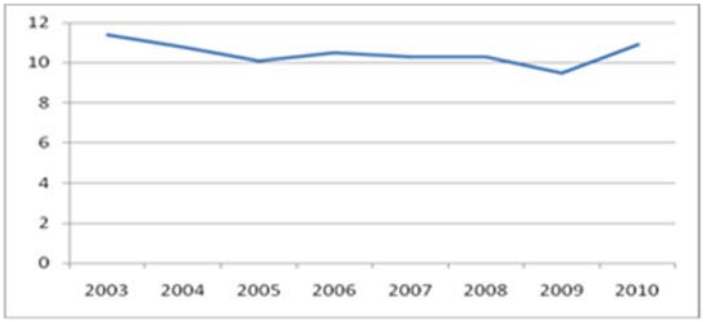


Source: Pakistan Economic Survey 2009-10. Government of Pakistan, Finance Division, Economic Adviser's Wing, Islamabad

Pakistan's public debt (i.e., both domestic and external) has been on the rise since 2005-06. Growth in the external debt peaked in 2008 following a sharp real increase (9.7 percent) before declining to 2 percent in 2010. As of end-March 2010 both the external and domestic public debt accounted for a little over one half (56%) of GDP. The bulk of the increase in public debt is attributable to the higher-cost domestic debt and shrinking flows of external resources. The following factors account for the debt build-up:

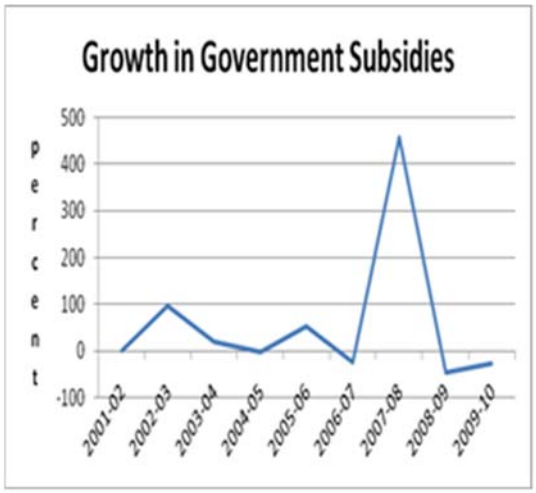
1. **Weak domestic resource mobilization:** Pakistan's domestic resource mobilization efforts have been weak even as the economy has expanded. This is evidenced by a relatively low tax to GDP ratio which has remained stagnant at around 10 percent since 2002-03. As a result, government has had to borrow from domestic and external sources.

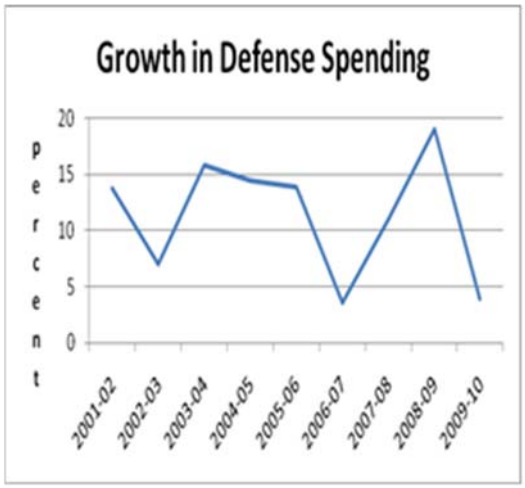
Tax Revenue as a Percent of GDP



Source: Pakistan Economic Survey 2009-10. Government of Pakistan, Finance Division, Economic Adviser's Wing, Islamabad

2. **Rising Government Spending:** Public expenditure outlays have increased for a number of reasons including:





Source: Pakistan Economic Survey 2009-10. Government of Pakistan, Finance Division, Economic Adviser's Wing, Islamabad

Increased expenditure on energy-related subsidies: To cushion the population from rising food and energy costs government pursued a policy of subsidization which increased spending. In particular, failure to account for large subsidies to the oil and power sector in prior years has exerted pressure on the budget in 2007-08 and 2008-09.

Increased spending on security: Security-related spending rose sharply in 2008-09 in response to increased terror-related activities. Failure to budget for maturing defense financing instruments put pressure on the budgets as the Defense Savings Certificates matured in 2007.

Increased debt service expenditure: The growing share of domestic debt in the debt portfolio has increased the debt service burden by increasing the cost of borrowing because Pakistan's domestic debt portfolio is dominated by short term instruments which carry higher interest rates. More than half of the domestic debt is composed of government debt instruments with maturities of one year or less. Such instruments are subject to interest rate volatility and susceptible to refinancing risks.

Economic Indicators (2009-2010)

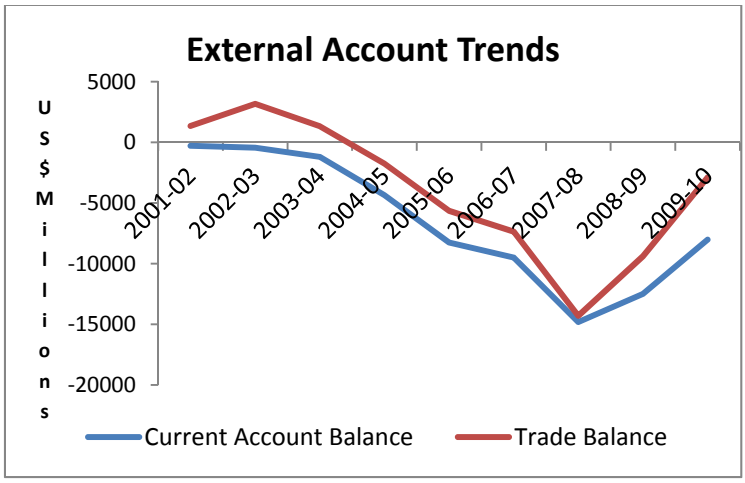
Indicators	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	(July-June)

									2009-10
Exports (Billion $)	9.13	11.16	12.31	14.39	16.47	17.01	19.22	17.79	19.364
Imports (Billion $)	10.34	12.22	15.59	20.6	28.58	30.54	39.96	34.82	3.22
Trade Balance (Billion $)	1.2	1.06	3.28	6.21	12.11	-13.53	-20.74	-17.03	-1.4
FDI (Million $)	484.7	798	949.4	1524	3,521	5,125	5,152.80	3,719.90	2,205.70
Foreign Investment (Million $)	475	820	922	16677	3,872	8,417	5,193.00	2,665.00	2,141.20
Workers' Remittances (Billion $)	2.39	4.24	3.872	4.17	4.6	5.49	6.5	7.81	8.91
Forex Reserves (Billion $)	6.43	10.72	12.33	12.61	13.14	15.18	10.83	12.23	16.626
Exchange Rate (Rs. / US$)	61	57.7	57.92	59.66	60.16	60.5	71	88.9	85.59
GDP Growth	3.60%	5.10%	6.40%	8.40%	6.60%	7.00%	5.80%	2.10%	4.10%
Inflation	3.40%	3.30%	3.90%	9.30%	8%	7.90%	10.30%	13.10%	13.30%

Source: State Bank of Pakistan, Federal Bureau of Statistics and Federal Board of Revenue

3. **Deterioration in the External Balance:**

Pakistan has also incurred external debt to finance deficits on the current account. The current account balance deteriorated steadily since 2002-03 and only began to improve in 2008-09 however both the trade balance and current account balance continue to record deficits. The deficits stem largely from weak global demand for exports due to the global slowdown. Textile exports have suffered disproportionately, dropping from US$10.6 billion in 2007-08 to US$9.6 billion in 2008-09. The external debt stock (including foreign exchange liabilities) was US$54 billion or 31.1 percent of GDP by end-March compared to 27 percent in the 2006-07 fiscal year.



Source: Pakistan Economic Survey 2009-10. Government of Pakistan, Finance Division, Economic Adviser's Wing, Islamabad

Post Flood Trend

Damage

In the context of Goal 8, the damage refers to the liabilities incurred by the government of Pakistan due to the flood-related destruction of the country's productive assets. Preliminary estimates suggest that direct damage from the floods is greatest in the housing, roads, irrigation, and agriculture (including livestock) sectors, with crop loss estimated at $1 billion[47]. The government of Pakistan will have to incur a substantial amount of debt to offset the liabilities. A sectoral analysis of the damage provides insights into the scope and extent of the liabilities incurred by the nation due to the floods.

Agriculture

Within the agricultural sector substantial damage has been recorded in rice and cotton production. Approximately 367270 hectares of rice crop equivalent to 850,230.05 tonnes or 12 percent of the previous year's output is estimated to have been damaged by the floods. In addition, the floods are estimated to have damaged approximately 415,905 hectares of cotton crops[48] equivalent to 285,172.19 tonnes[49] of cotton production or 13 percent of previous year's output.

Damage to Key Export Crops

Province	Cotton	Sugarcane	Rice	Total	Provincial Share
Punjab	315769	64467	72086	661636.00	50.36
Sindh	99930	20072	217074	357488.00	27.21
KPK	206.00	41986.00	36542	191020.00	14.54
Balochistan	0.00	0.00	41455	92369.00	7.03
PAK	0.00	0.00	113.00	11242.00	0.86
Total (Hectares)	415905.00	126525.00	367270.00	1313755.00	100.00
% of Total Crop Area	13.39	13.42	12.74		
Total kg/Hectare	285172195.00	6431645325.00	850230050.00		

[47] http://www.imf.org/external/pubs/ft/survey/so/2010/car090210a.htm

[48] Factbox - Facts about Pakistan's key crops after the floods. http://in.reuters.com/article/idINIndia-50885020100817.

[49] A conversion factor based on average yield over 2007-8 to 2009-10 fiscal period is used to translate crop area damage to output lost.

Total Tonnes/Hectare	285172.20	6,431,645.33	850230.05		
% of 2009-10 Output	13.20	13.03	12.35		

Source: Preliminary Rapid Damage Assessment in the Agricultural Sector for Flood Affected Areas of Pakistan, September 2010.

Manufacturing

Direct damages to industrial sector largely include physical damage to buildings, machinery and equipment, and to a lesser extent, stocks and inventories. In addition to the direct damages, there has been immense loss of jobs and livelihoods. A large number of workers in manufacturing, trade and services sectors have become unemployed. Preliminary estimates suggest that more than 5 million formal and informal sector workers have lost their jobs, as a result of damages to the public and private sectors.

Damage to the manufacturing in all the four provinces (Balochistan, Khyber Pukhtunkhawa, Punjab and Sindh), and in the three special regions (i.e., Azad Jammu and Kashmir (AJK), Gilgit-Baltistan and Federally Administered Tribal Areas (FATA)) is estimated at US$319 Million (World Bank DNA estimates). The sector accounts for a significant share of GDP (26.8% in 2008[50]). Specific damage include:

a. Complete destruction of the furniture cluster in Dir district;
b. PKR 750 million in estimated damage to the bee keeping business and a projected decline of 30 to 35 percent in Pakistan's honey exports;
c. Extensive damage to a large number of marble factories including an estimated 20-40 percent damage to the biggest marble cluster situated in Nowshera district at Jehangira. This cluster has 253 small units and 79 medium sized units;
d. Total destruction of approximately 2000 local (village level) sugar manufacturing units in Charsadda district;
e. Damage to an estimated 500 to 600 wood collection and trading places in Charsadda district.

Losses

Over the medium to long term the liabilities arising from the flood-related damage will translate into new debt. Furthermore, damage to export sector will contribute to deterioration in the current account balance. Lower exports and disruptions in production will reduce GDP growth and in turn undermine government revenue. Financing the debt will increase the debt service burden and coupled with a decline in revenue will reduce the fiscal space for development spending as more resources.

GDP Growth

The IMF projects post-flood GDP growth to decline from 4.5% to 2.75% for 2010-2011. Weak agricultural and manufacturing growth will all contribute to the projected decline in GDP. The performance of commodities such cotton and rice will be key in determining GDP growth. Cotton accounts for 8.6 percent of agricultural value added, about 1.8 percent of GDP and it contributes significantly to foreign exchange earnings. A decline in cotton production due to the floods will therefore have an adverse impact on foreign exchange earnings in direct proportion to the scale of damage. Rice, accounts for 6.4 percent of agricultural value added, 1.4 percent of GDP and 11.2 percent of Pakistan's

[50] Asian Development Bank, Key Indicators for Pakistan 2009

export earnings (2008)[51]. Livestock account for more than half (53 percent) of total agriculture - more than the combined contribution of major and minor crops - and 11.4 percent of GDP. Reconstruction activity could provide some boost to the growth rate, but it is likely that any positive effects will only show up in 2011 and beyond, and even then it may not be sufficient to bring the growth rate back to the 2009 level of 4 percent for several years.

The Fiscal Deficit

Reduced GDP growth result in lower revenues and increased pressure to borrow both domestically and externally. In the absence of concessional loans and grants and significant domestic resource mobilization efforts, Pakistan's fiscal deficit is expected to rise increasing the debt stock. Indeed, the Finance Minister noted that the floods will lower growth and affect the government's budget as reconstruction costs are unlikely to be matched by increased revenue.

The current account balance:

The floods will influence the trade balance through its impact on key export commodities particularly cotton. Pakistan is the fourth largest cotton producer in the world and textiles account for over one half (52 percent in 2008) of total exports and contribute two thirds of the country's foreign exchange earnings (US$11.0 billion in 2008). Preliminary damage estimates suggest that 13.4 percent of total cotton crop area has been destroyed by the floods. Based on estimates of yield per hectare this implies a cotton output loss of 13.2 percent relative to 2009-10 output (see table). Damage to the cotton crop will translate into lower exports, diminished exchange rate earnings and without a corresponding decline in imports, deterioration in the current account balance. Imports are however likely to rise to offset shortfalls in domestic production. The rate of increase will depend on foreign reserves and the level of external aid flows. Preliminary estimates suggest that flood damage to the cotton crop will result in a US$3 million increase cotton imports to feed local manufacturing industries further depressing foreign exchange earnings. The IMF estimates foreign reserves will decline from by almost a billion US dollars (i.e., from $17.9 billion to $16.7 billion) [52].

Indeed IMF estimates[53] merchandise exports to decline from a pre-flood rate of 4.7 percent to 3.0 percent post flood. Import growth is projected to rise from 6.9 to 8.7 percent over the same period. As a result the current account balance as a percentage of GDP is projected to climb to -3.1 percent post floods from the pre-flood rate of -2.4 percent. While growth in remittances is to increase from 4.5 percent (pre-floods) to 7.1 percent (post-floods) this is not expected to offset export declines and increases in imports.

Currency Depreciation

Foreign exchange losses from reduced cotton export (yarn and textile) will likely contribute to the depreciation of the rupee and increase the price level by increasing the

[51] Pakistan Economic Survey 2009-10. Government of Pakistan, Finance Division, Economic Adviser's Wing, Islamabad.
[52] IMF Country Report No. 10/295 September 2010. Pakistan: Use of Resources—Request for Emergency Assistance—Staff Report; Press Release on the Executive Board Discussion; and Statement by the Executive Director for Pakistan.
[53] IMF Country Report No. 10/295 September 2010. Pakistan: Use of Resources—Request for Emergency Assistance—Staff Report; Press Release on the Executive Board Discussion; and Statement by the Executive Director for Pakistan.

domestic currency price of imports. Without strict monetary and fiscal discipline, the rate of inflation will rise pushing larger number of people below the poverty line.

Debt and Debt Servicing:

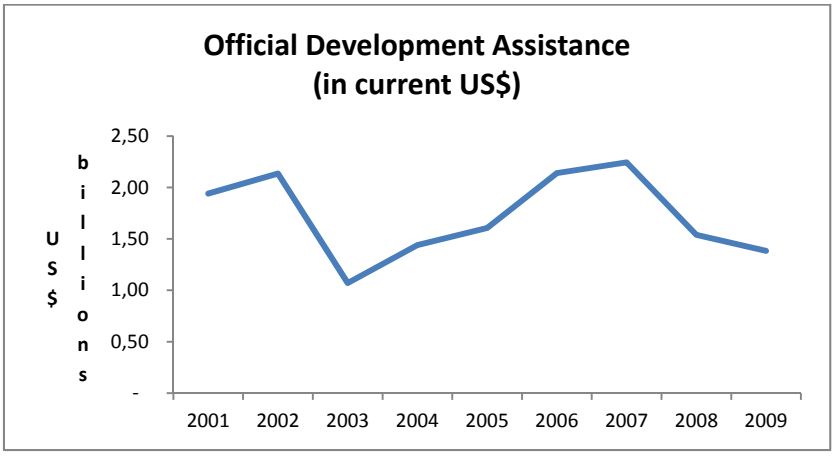
In a context of slow GDP growth, declining foreign exchange earnings and increased pressure to respond to the reconstruction needs of the country, the floods will impact on debt sustainability through increased borrowing to finance recovery. The recent approval of $3.45billion (IMF: 450m emergency loan; World Bank: 1 bn; ADB: 2bn) in concessionary loans will ease some of the immediate fiscal constraints to recovery but will also add to the burgeoning debt stock albeit at a lower debt service cost. Financing the recovery through domestic borrowing is likely to be more costly given the shorter maturity and higher interest rates associated with such loans.

Inflation and Poverty

On average Pakistan's inflation rate increases by 0.134 percent with a unit increase in the total debt stock. Over the last two years the debt stock has increased on average by 24.4 percent[54]. Should this growth persist it will add an additional 3.12 percentage points to the inflation rate (year on year).
Domestic borrowing from the central bank is on the rise exerting it inflationary pressure on the economy. Between July and September 24 the government borrowed Rs 220 billion between from the State Bank of Pakistan (SBP) to finance the deficit. In the absence of prudent monetary and fiscal policy the inflation rate will spiral upwards, increase the cost of living and push more people below the poverty line.

The Significance of ODA[55] for Pakistan's Recovery

Overall, the impact of the disaster on Pakistan's debt sustainability will depend a largely on the extent to which assistance is provided in the form of grants and concessionary loans.

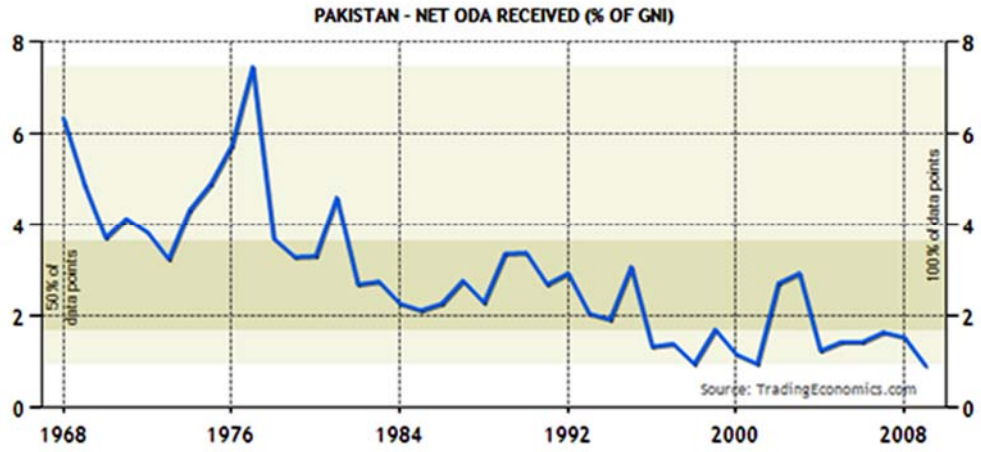


Source: Development Assistance Database.

Pakistan has received substantial volumes of aid over the years and in 2007, the country became the sixth largest recipient of official aid in the world receiving $ 2.2 billion in

[54] Pakistan Economic Survey 2009-10. Government of Pakistan, Finance Division, Economic Adviser's Wing, Islamabad.
[55] ODA includes loans with a grant element of at least 25 percent (calculated at a rate of discount of 10 percent).

Official Development Assistance (ODA)[56]. Excluding debt relief, ODA increased 6.8 percent in real terms from 2008 to 2009. If humanitarian aid is also excluded, bilateral aid rose by 8.5 per cent in real terms, as donors continued to scale up their core development projects and programmes. Most of the increase was in new lending (20.6 per cent), but grants also rose (by 4.6 per cent, excluding debt relief). Notwithstanding large inflows when one takes into account repayments of the principal ODA as a percentage of Gross National Income has been declining since the late 1970's reflecting a net outflow of resources from the country.

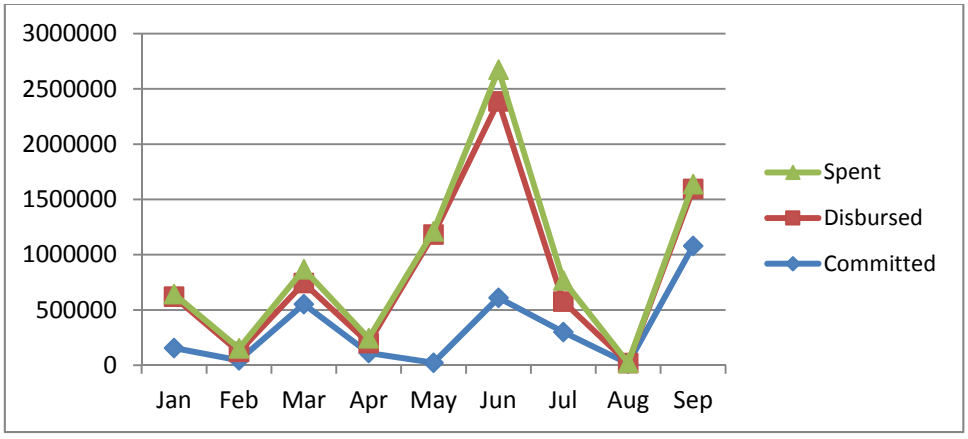


Ensuring aid effectiveness will require improvements in Pakistan's aid coordination and absorption. In particular, the multiplicity of aid sources coupled with aid volatility have posed a challenge for aid coordination and effective utilization. Aid trends for the period January to September 2010 illustrate the volatility in aid flows and the low ODA absorption in Pakistan. Data from the DAD indicates that during the period January to September 2010 the government spent approximately 17 percent of total aid disbursed.

Pre-Flood ODA flows to Pakistan

Analysis of pre-flood aid flows reveals that the absorptive capacity was lower than the average for the period January to September. Out of a cumulative total of $3.7 billion disbursed between January and June 2010 Pakistan spent only $0.5 million representing a 14 percent absorption rate.

Trends in ODA to Pakistan in the Year 2010



Source: Development Assistance Database.

Status of ODA during January to September 2010 (US $)

Month	Committed	Disbursed	Spent	Utilization Rate

[56] Ms. Gulmina Bilal, The Daily Times, Pakistan, Friday, 19th February 2010

Jan	155,594,168	465,621,278	22,366,595	4.80
Feb	45,262,483	76,219,145	31,995,125	41.98
Mar	552,085,387	191,950,320	124,856,444	65.05
Apr	111,268,514	89,657,953	44,134,365	49.23
May	23,529,357	1,158,618,021	29,063,504	2.51
Jun	610,414,606	1,776,417,109	286,396,438	16.12
Sub Total	**1,498,154,515**	**3,758,483,826**	**538,812,471**	14.34
Jul	301,151,913	275,132,632	190,708,784	69.32
Aug	15,248,006	5,293,341	1,056,926	19.97
Sep	1,079,925,342	515,639,023	43,052,988	8.35
Sub-Total	**1,396,325,261**	**796,064,996**	**234,818,698**	29.50
Totals	**2,894,479,776**	**4,554,548,822**	**773,631,169**	16.99

Source: Development Assistance Database, Economic Affairs Division.

Post Flood ODA flows to Pakistan

The aftermath of the floods has witnessed an improvement in aid absorption and utilization. ODA flows in the three months following the floods approximate the combined ODA inflow to Pakistan during the first half of the year 2010. Absorption has also increased from 14 percent to approximately 30 percent as Pakistan utilized around US$ 235 million out of the total disbursement of US $ 796 million.
Nonetheless, the stock of ODA does not cover for the identified needs of the affected populations. The immediate needs for humanitarian response and recovery were around US$ 4.5 billion while the amount committed as ODA was only US $ 1.3 billion representing a shortfall of US$3.2 billion.

In response to the United Nations global appeal on 19th September 2010 to raise a total of $2 billion for Pakistani flood victims a number of countries have pledged millions of dollars. As of October 28th only 38 percent ($759,610,420) of the amount required ($1.98 billion) had been funded leaving a funding gap of $1.22 billion). The $2 billion appeal is intended to cover the reconstruction efforts for up till August 2011, hence, they constitute only a fraction of what is required for the total reconstruction effort.

The World Bank and ADB in collaboration with UN Agencies project aid flows to reach US$13 billion by Feb 2011. The projections include regular ODA to Pakistan as well as ODA for flood recovery. But even if these funds are realized, they fall short of the $30 billion in Damage and Losses estimated by the Bank and the ADB plus the estimated $3-$4 billion in human development damages and losses estimated by the UN system.

It is hoped that consultations with development partners during key forums particularly the Friends of Democratic Pakistan and the Pakistan Development Forum will help mobilize additional resources for the post-flood reconstruction and recovery process. In parallel, efforts are needed to strengthen the institutional and individual capacity of government and other stakeholders for improved coordination and utilization of funds.

Post Flood Impact on MDG 8 Conclusion

Pakistan cannot fully recover from the floods without international support. Assistance largely in the form of grants and concessional loans will be vital in mitigating Pakistan's debt burden. The immediate effect of the floods has been an increase in the liabilities of the state. A portion of these liabilities have already translated into debt and the debt burden is likely to rise as the recovery and reconstruction process moves forward. Additional losses will materialize in the form of: weak overall GDP growth; deficits in the domestic and external balance; rising inflation; lower expenditure on socio-economic

services; increased poverty; and an increase in the debt stock and debt service payments. In the medium term losses will however, be mitigated if ODA flows are substantial enough to fill the financing gap and are used effectively. Effective use of aid will in turn depend on: the capacity for aid coordination and utilization; effectiveness in strengthening accountability in aid mobilization and utilization; and a commitment by government to supplement external aid with domestic resources through robust domestic resource mobilization measures. Without these efforts the floods are likely to saddle the state of Pakistan with an unsustainable debt burden.

Section III: Human Development Recovery Framework

MDG 1

Damage Mitigation

The government needs to take targeted actions in the immediate and long term to prevent the affected population of approximately 5 million people from becoming undernourished. In the short and medium term **food insecurity** could increase which would exacerbate efforts to meet these target. This needs to be tackled through counter-inflationary measures, targeted programmes in flood affected areas where next year's crops are affected, urban areas and pregnant/lactating women and children.

An estimated 10.1 million people are in need of immediate assistance. This also includes distribution of critical agriculture inputs including wheat seed, Urea/DAP fertilizer for Rabi 2010 cropping season in the severely affected districts and distribution of supplementary animal feed for at least three months and veterinary support. Over the short term, efforts to eradicate extreme poverty and hunger will focus on providing social protection measures and a social protection floor targeting the most vulnerable, including contract cultivators and share croppers, as well as women engaged in raising livestock. The key social protection measures are:

Unconditional Cash and in-kind Transfers: for households whose livelihoods have been permanently damaged by the floods. This would include those (a) whose houses were completely destroyed by the flood; (b) whose houses were significantly damaged and rendered unlivable; (c) who suffered extensive crop loss.

Food and Cash for Work linked to training and/or participation in community works; these interventions will provide an essential safety net, generating income and providing short-term employment for the most vulnerable households. This will be particularly crucial for households who have lost all productive assets, as well as those in the significant areas where the rabi agricultural season will have been missed.

Expansion of Cash for Work (CFW) operations and employment intensive reconstruction schemes in affected areas can be used to provide immediate employment for the flood affected population. An acceptable wage rate would be around Rs.300 in order to meet their immediate income needs and minimum wage requirements. A number of recovery activities[57] are being considered to engage flood affected women and men including measures to ensure children are not engaged in the worst forms of child labour.

Cash Grants for Asset Purchase. There will be a need for cash grants for asset purchase as millions of households have lost a large proportion of their productive assets. For many among the affected population, purchase of agricultural inputs and replacement

[57] These activities include management and distribution of foods and supplies in the relief camps; special help and care for children, disabled, sick and the elderly; clearance of debris and rubble from workplaces and public places (offices, shops, markets, streets, etc); removal of mud deposited by the floods in streets; removal of dead animals/corpses to avoid health & environmental degradation and; fumigation of the area - by spraying anti-mosquito substances; de-silting of irrigation and drainage canals; rehabilitation of secondary and tertiary roads; reconstruction of field terraces and animal shelters; and cultivation of vegetables and cereal crops.

of lost livestock will be high priorities. Given that animal products contributed significantly to household diet, and many women served as livestock carers it will be important to target women for restoration of livestock soonest.

Pilot Public Employment Programs. A pilot scheme launched in the most affected areas from the flooding is needed in order to address the new employment challenges. A training element would provide skills for rural unskilled workers,especially for women at risk of entering vulnerable employment, that would facilitate absorption into the labour market. Under the scheme, unskilled workers in rural areas are to be given employment at minimum wages for one hundred days in a year. The aim of this intervention is to target 120 union councils in 12 least developed and security affected districts of Khyber Pakhtunkhwa (KP) province. As many as 200,000 households are expected to benefit from this scheme in FY 2010-11. Opportunities will be given to women to determine their share in participation and involvement in a culturally sensitive manner.

Enhance share of decent and fully productive waged employment for women in non-agricultural sector

Considering the risk that from the 1.2 million on- and off farm employed women that lost their jobs due to the floods and will not be able to compete even in the unskilled labour market, many can fall into vulnerable employment , it is important establish fo 3 years a special Cell to monitor, prevent and reverse such risks following a disaster of this magnitude. The Gender Response Cell at each affected district level, comprised of two staff members reporting to the District Officer Labour and ultimately reporting to the Provincial Officer Labour/WDD Authorities, will in liaison with local CBOs,

- compile, collate and analyze data visualizing women's economic contribution to recovery and alert to risks of falling into vulnerable employment,
- monitor and facilitate women's access to key social protection measures proposed for restoration of livelihoods including grants, cash transfers and culture and gender sensitive public employment modalities
- provide women with diversified business skills and fair wage training,
- organize orientation and supervision visits for the WDDs, SWWDs, SMEDA, private-for- profit sector industry to facilitate direct access to flood aid related job and production opportunities as well as direct marketing channels
- mobilize professional anti trauma help (community based seminars and meetings) to urban and rural home based workers to cope with post flood stress and restart work.

Recovering Losses

Millions of rural families have seen their homes, assets and in many cases their family members washed away by the flood. The primary goal of the interventions given below is to allow people to return to their homes and restart economic activity. Support for on-farm livelihoods will require help with land clearing, restoration of on-farm facilities such as watercourses and tubewells, and provision of seeds, fertilizer and implements to start cropping, as well as a restocking programme complemented by provision of feed, fodder and medicine for animals.

Access to Agricultural Inputs and Rehabilitation of Agricultural infrastructure
Crops: Famers need to be provided support for seed, fertilizer, tools and implements along with support for land preparation, including clearing of debris and silt. A possible package could be based on the suggestions of the Ministry of Food and Agriculture, for wheat a support package for small farmers comprising 125kg seed, 125 kg DAP, 250 kg urea and PKR 12,000 for other costs, primarily land clearing and preparation. This

package would need to be supplemented by tools and implements, as well as seeds for other crops including vegetables.

Livestock: An assistance package comprising animals, as well as supplementary feed, vaccination and standard medication such as de-worming for cattle, sheep and goat. The affected livestock farmers also need support in repairing the critical animal sheds, acquiring essential utensils and equipment. For the purposes of costing a livestock support package is estimated to cost some PRK 20,000 per family and would comprise 2 sheep and goat, and 10 chicks with some feed and medicine.

- **Fisheries:** Repair, cleaning and restocking of private and government fish ponds, fish farms and hatcheries. Support to rehabilitation of sustainably managed freshwater fisheries and the provision of fishing livelihood inputs to existing fishers. Support to provision of appropriate equipment for simple handling/processing/conservation of fishery products from aquaculture and capture fisheries;

Agriculture lands and infrastructure: Repair of on-farm critical infrastructure (on-farm irrigation channels, water courses and water harvesting structures) and land rehabilitation/preparation (cleaning, clearing, terracing, drainage, ploughing, and stabilization).

Forestry: Distribution of fast growing tree seedlings to provide fodder, fuel and watershed protection, as well as fruit tree saplings. Establishment of small-scale and family run tree nurseries and analysis of feasibility of landslip stabilization programmes.

Support Off-farm livelihoods:

Sustainable self-employment and micro and small-enterprise development: Providing skills development and micro-business management training (SIYB) will be necessary to regenerate immediately much needed employment and livelihood opportunities targeting women, youth and severely affected households. Training for Rural Economic Empowerment (TREE) programmes that have already been adapted by Pakistan would also provide the basis for extending support to rural affectees.

Employment and Livelihood Recovery Response. Getting people back to work through participation in public works programmes (such as rebuilding community infrastructure) is key to reviving the local economy. The strategy is to: provide immediate quick impact support to the affected communities with employment and incomes and (ii) put in place the building blocks for longer-term employment and income generation**.** This can be done by strengthening existing community-level organizations, in particular village committees and self-help groups. Once the rural poor regain minimal livelihoods and income (e.g., through CFW activities restoration of shelter, community buildings, rural infrastructure, schools, health services, etc) a sustainable early recovery process can follow.

The following activities would be crucial:

- Skills development through emergency construction training programmes which provide appropriate technology solutions for cost-effective and efficient restoration of rural infrastructure;
- For the entrepreneurs, upgrading the quantity and quality of knowledge including their knowledge of safe and efficient demolition, local resource use in

construction, business management (including design and contracting capacities both with private sector and public agencies). Essential areas of skills development include: (i) Masons, carpenters, electricians, etc. (ii) Entrepreneurs' staff including managers, engineers and technicians, supervisors, operators (of minor construction equipment) business administrators, etc.;
- Support to advance safe work practices in employment and decent work in reconstruction, vocational skills and the use of local materials and resources, improved construction techniques for flood resilient buildings / infrastructure also incorporating the principles of universal design so buildings will be accessible to disabled persons;
- Support to establishing emergency employment services through Emergency Employment Information Centres (EEICs) to match available skills with reconstruction needs. The EEICs should catalogue jobseekers based on their skills and link them to employment opportunities based on the specific needs of the areas and will service as hubs for the collection and analysis of labour force data including by sex, age, location, occupation, trade, and qualifications.

Pilot public employment programmes. The Government of Pakistan, in the federal budget for the fiscal year 2010-11 national budget announced its intention to develop an employment guarantee scheme (EGS) which would aim to provide employment for mainly rural unskilled workers for a specified number of work days in a year carrying out small local level works with a guaranteed daily wage. The EGS could eventually provide a countercyclical and scalable scheme which would provide a more flexible mechanism to compensate lost earnings through emergency recovery and reconstruction public works, provision of social services, recovery of small and micro livelihoods among other alternatives. The availability of appropriate institutional capacity to deliver such a scheme would be essential.

A pilot public employment programme - to determine the institutional capacity and feasibility of such an EGS - launched in the most affected areas from the flooding could address new employment challenges that face the country. A training element could provide skills for rural unskilled workers that could facilitate absorption into the labour market. Under it, unskilled workers in rural areas would be given employment at decent wages. If 100,000 households were provided with 100 work days of employment or a total of 10,000,000 work days at the current minimum wage it would cost approximately $60 million in FY 2010-11.

Implementation of an employment guarantee scheme. An initial assessment of the economics of the design of an EGS was carried out in collaboration with various ministries. Although an EGS should be nationally driven and financed, further technical assistance may be required to set up the institutional design and incentives, targeting mechanisms and ensuring that decent work minimum standards and the gender dimension are considered. An EGS could be implemented in various phases in Pakistan, in different geographical areas or using other criteria.

The following features of an EGS can play a major role in the rebuilding of livelihoods in Pakistan in the medium to longer term by restoring employment also in the affected areas but mainly in building a long-term employment and social protection floor. An EGS could do this by:

- Transferring benefits to poor workers directly;
- Stabilising the consumption of the worst off;
- Helping kick-start the local economy;
- Facilitating a fall in potential crime;
- Contributing to infrastructure repair and development that can also have a tremendous impact in terms of infrastructure development and market access;
- Being used by the government for spatial targeting; and

- Providing a way for the government to influence market outcomes to achieve changes in systems and structures. Building on the experiences of the earlier pilot employment programmes, a national scheme could be developed.

Strengthen Policy Implementation of Rural Livelihoods Promotion

Government/Private Extension Services: Support for technological improvements in the agriculture and livestock of the affected areas, including improved animal health services; improved surveillance of livestock and crops diseases; focused research into the crops/water balance in flood prone areas; better targeted and farmer based extension to introduce new technologies including greater use of trees and bushes that could slow the flow of flood water; introduction of new crops (such as canola) or cropping cycles (such a maize and potato); strengthening of value chains by linking farmers or farmers groups with buyers in urban areas.

Rural Financial services: Promote and facilitate rural savings and credit services, crop and livestock insurance and other related services for livelihoods promotion.

Small Scale Flood Management Measures. Support small to medium scale investments in managing runoff in both normal and exceptional rainfall periods. In hilly areas such uplands of KP and Balochistan, these include small schemes for diversion of streams and rivers; water spreading works; and small water storage facilities. In the plain and riverine areas, these include improved drains, and fishponds that could capture stagnant flood waters.

Strengthening Key Government Policies Related to Management of Flood and Riverine Areas

As the rural populations return to their lands and restart economic activity, there are number of issues that will need careful attention such as land use in riverine areas, land ownership, tenancy agreements, agricultural trade policies, seed policies etc.

Recovery Package for MDG 1

Key Intervention Areas	2010 and Ongoing	2011					Total
RECOVERY FROM DAMAGE							
Unconditional Cash and in-kind Transfers	300 m	350 m					650 m
Food for Work							
Cash for Work		5.5m					5.5m
Cash Grants for Asset Purchase							
Distribution of critical agriculture inputs	60 m						60 m
Distribution of supplementary animal feed, medicines, plastic sheet, rope	20 m						20 m
Pilot Employment Program	30m	30m					60 m
Employment and livelihoods recovery response	18m	18m					36m
Total (Recovery from Damage)							831.5 m
RECOVERY FROM LOSS		2011	2012	2013	2014	2015	Total
Rebuilding Agriculture and Rural Livelihoods							
Crops		157	100	100	100	100	557 m
Seed/fertilizer/land preparation/ tools and implements							
Livestock		65	50	50			165 m
Restocking, Feed/medicine, Animal shelters							
Fisheries		2	1	2			4 m
Repair of fish hatcheries and Stocking of ponds							
On-Farm Water Management		20	30	10	6		66 m
Repair of damaged infrastructure (watercourses, tube wells, etc.)							
Building sustainable self-employment and micro-and small-enterprise development			2 m				2 m
Total		244	183	162	106	100	794m

Sustainable self employment and MSE development		5	6	6	6	23m
Expansion of an Employment and Livelihood Recovery Response		6	6	6	6	24m
Implementation of an Employment Guarantee Scheme		15	15	15	15	60 m
Addressing Developmental Constraints in Flood Affected Areas						
Community-based rural livelihoods support	50	70	70	30	15	235 m
Govt/Private Support services/regulatory framework	10	15	15			41 m
Improving Rural Financial services	50	150	112	100		412 m
Strengthening Key Government Policies Related to Management of Flood and Riverine Areas	10	10				20 m
Total (Recovery from Loss)						1609
Grand Total (Recovery from Damage + Recovery from Loss)						2440.5

MDG 2

Damage Mitigation

Creating Incentives for Primary Education

In the short term, strategies aimed at enhancing demand for education will involve targeted interventions to increase incentives for boys' and girls' education.[58] The key measures are the following:

Implement a school feeding program in the affected districts. This is intended to: (a) enhance pupils' concentration capacity (b) reduce some poor families' feeding burden.

- Implement a take-home food ration program for girl pupils, especially those attending higher grades (grades 3 to 5). This will encourage families to keep their daughters in school while cutting down their opportunity costs. This could be an extension of the ongoing WFP-funded program.
- Provide free items to students such as uniforms, school bags etc. if they reach the higher grades.
- Improve regional planning to ensure that secondary institutions are available for primary graduates of both sexes within reasonable distance, or else organize boarding systems, especially for girl students.
- Ensure implementation of the Inter-Agency Network for education in emergencies and to apply the Minimum Standards for education, including: Preparedness, Response, Recovery framework;
- Encourage timely admission into Grade 1, i.e. admit pupils at age 5 and even out the classes.
- Strengthen the coordinating mechanisms of Ministry of Education to ensure coherence in flood response.

Target Girls' Enrolment

In the wake of disasters, it has been documented that poverty is becomes a source of vulnerability, especially for girls who may risk being married off at an early age or in many cases be 'given away' as domestic 'servants' against a lump-sum of money by their family for recovering their livelihood losses. It is therefore important to target girls in the education strategy.

- Girl schools also need extra protective facilities e.g., as a boundary wall, toilets blocks;
- Provide monetary incentives of a monthly stipend of Rs 200 for all secondary school girl students for 5 years. This is necessary as poor households have fewer resources to invest in their children's schooling, health and other assets;
- Establishment a Gender, Tracking Monitoring & Evaluation Cells in the District Education Departments in 28 most affected districts for a period of 5 years to identify potential girl students, who may have dropped out due to flood-related problems and convince their families to send them to school;
- Each district level Gender Tracking, Monitoring & Evaluation Cell be resourced with accountability to relevant district and Provincial Education Authorities;
- The Cell would compile, collate and analyze Primary, Secondary and High school enrolled girls' status of school Participation, Completion, Attainment and trends in drop-out rates.
- The Cell working in close liaison with local CBOs would undertake comprehensive tracking of districts girls' schools status of functioning including school teachers'

[58] These are costed at an average package of Rs 3,000 per pupil.

returns, absenteeism, through regular record keeping and spot checks of schools in conjunction with the Education authorities.

Recovering Losses

Restoring Social Service Delivery - Education

Longer-term interventions are needed to restore the social services to pre-flood levels. With respect to education efforts will focus on improving the NER and GER, as well the retention rates, for girls.

Improve Access to Quality Education

Improve school retention and quality to move towards the MDG pathway
Over the medium term the following strategy will be adopted to improve retention and educational quality:

- Prioritize investments in physical infrastructure targeting the most affected and under-resourced districts and provinces. The latest statistical reports indicate, for example, in Sindh 25.9% of schools didn't have any buildings available. As the NEP urges, shelter-less schools shall be provided adequate building on urgent basis.
- Improve teachers' professional skills and motivation through in-service training and coaching;
- Strengthen supervision capacity at district level;
- Strengthen school based management with a focus on teacher supervision and school-community integration (School Management Committees), including training head teachers in social mobilization to involve the community effectively.

MDG 2

Goal 2 - Universal Primary Education (Rs. million)

	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Cost of damage	**6,541**	**6,984**	**0**	**0**	**0**	**13,525**
Development	4,139	4,536	0	0	0	8,675
Reconstruction of boy schools	2,774	3,018	0	0	0	5,792
Reconstruction of girls schools	1,365	1,518	0	0	0	2,883
Recurrent	2,402	2,448	0	0	0	4,850
Psycho-social and pedagogical training	813	863	0	0	0	1,676
Incentives for back to school programs	1,589	1,585	0	0	0	3,174
Primary System Costs	125,700	136,730	142,973	154,841	156,766	717,010
Recurrent	105,512	112,605	117,646	127,157	136,814	599,734
Capital	20,188	24,124	25,328	27,684	19,952	117,276
of which losses recovery	2,577	2,803	2,931	3,174	3,214	14,699
of which pro-girl education measures	**2,152**	**2,462**	**2,782**	**3,137**	**3,477**	**14,010**
Recurrent	1,111	1,267	1,420	1,604	1,806	7,208
Capital	1,041	1,195	1,362	1,533	1,671	6,802
Grand Total (Rs. million)	**11,270**	**12,249**	**5,713**	**6,311**	**6,691**	**42,234**
Grand Total (USD million)	**132.6**	**144.1**	**67.2**	**74.2**	**78.7**	**496.9**

MDG 3

Damage Mitigation:

Stipend A monetary incentive of a monthly stipend of Rs 200 for all secondary school girl students for 5 years;

Recovering Losses:

Establishment of Gender, Tracking Monitoring & Evaluation Cells in the District Education Departments in 28 most affected districts for a period of 5 years;

Each district level Gender Tracking, Monitoring & Evaluation Cell will comprise three staff members reporting to the District Education Officer and ultimately reporting to the Provincial Education Authorities.

The Cell would compile, collate and analyze Primary, Secondary and High school enrolled girls' status of school Participation, Completion, Attainment and trends in drop out rates.

The Cell working in close liaison with local CBOs would under taking comprehensive tracking of districts girls' schools status of functioning including school teachers' returns, absenteeism, through regular record keeping and spot checks of schools in conjunction with the Education authorities.

Damage Mitigation

Recovering Losses

Recovery Package for MDG 3

Recovery Package for MDG Goal 3 – Promoting Gender Equality							
		2010-11	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**TOTAL**
Monthly Stipend for return of girls to school	40000 @ Rs. 2400 p.a.	1,122,807	1,122,807	1,122,807	1,122,807	1,122,807	0
Tracking to Promote Enrolment and Sustainability in 28 Severely Affected Districts	28 districts @ Rs. 1.2 m p.a.	392,982	392,982	392,982	392,982	392,982	0
Cost of Gender Response Cell		22,400,000	22,400,000	22,400,000			
Improving share of women in wage based non agricultural sector		**261,988**	**261,988**	**261,988**			
TOTAL COST OF LOSS RECOVERY OF SECONDARY GIRLS ENROLMENT		**24,177,777**	**24,177,777**	**24,177,777**	**1,515,790**	**1,515,790**	**75,564,911**
In Dollars							**888,999**

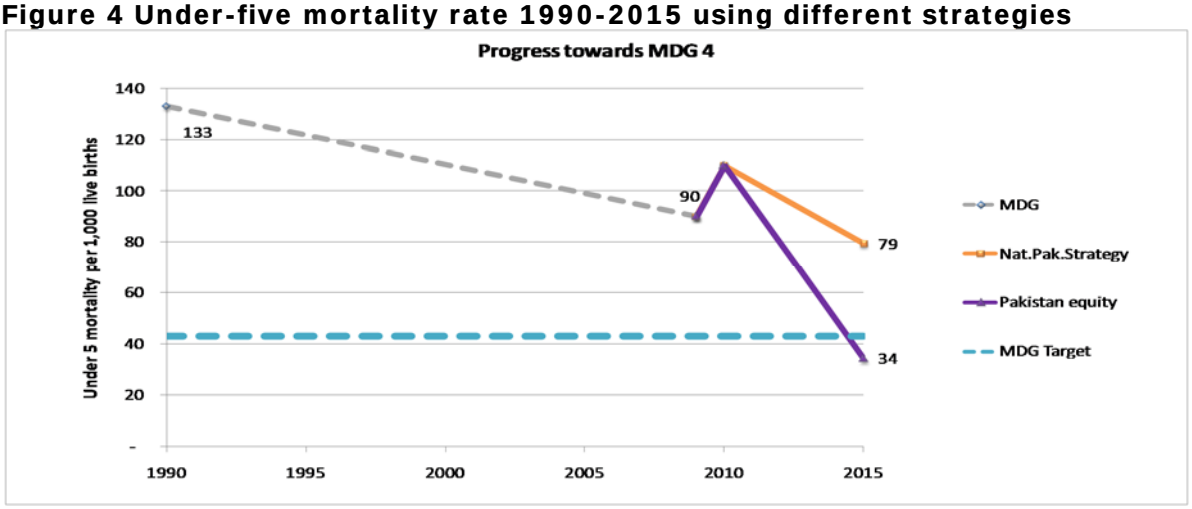
MDGs 4, 5 and 6

Damage Mitigation

Improve Child Health

The Government of Pakistan current national health strategy (yellow line) will bring the most deprived to an estimated U5MR of 79 which is insufficient to reach the MDG for U5MR by 2015. The emergency response undertaken by the Government of Pakistan coupled with equity measures (purple line) could allow for a rapid decrease of U5MR for the most deprived bringing the national average to reach the MDG target for U5MR. See graph below:

Figure 4 Under-five mortality rate 1990-2015 using different strategies



The recovery strategy will use an integrated and equity-focused approach to address factors that contribute to the main mortality risks for children under five, namely diarrhea, pneumonia, malaria, measles, malnutrition, and maternal and neo-natal mortality/morbidity.

To achieve this objective some measures are:

- Build upon the inter-cluster survival strategy outlined in the revised FERP. Equity-focused measures will be prioritized to ensure that the most deprived are reached by the health system.
- Ensure that interventions are backed by comprehensive communication for behavior change to increase demand for quality of care and information on proper use of latrines.
- Lobby for strengthening the national health strategy with additional equity measures that ensure access and use of essential services by the poorest;
- Build awareness on the need for equity in health service delivery by targeting the most deprived groups and communities and expanding services to remote areas for improved access to healthcare;
- Advocate for a package of incentives (e.g., hardship allowances, performance incentives) to attract skilled staff to remote areas.
- Sustain the practice of organizing Intensive maternal and child health weeks;

Improve Maternal Health

Over the short term while health facilities are being restored and rehabilitated, the following interim measures will be required to protect maternal health:

- Launch of a maternal care sensitization programme that specifically educates communities on issues relating to maternal care including birth preparedness and complication readiness;
- Deploy mobile Maternal Newborn and Child Health (MNCH) care teams consisting of LHWs and CMWs to deliver basic maternal newborn and child health services to the population living in camps/temporary shelters and in the place of return.
- Support the Ministry of Health, especially the Maternal Neonatal and Child Health program, to deliver a package of supplies (newborn care kits, clean delivery kits, contraceptives) to communities and households;
- Resource community-based workers, including LHWs and CMWs, with supplies and equipment to assist early resumption/restoration of community based MNCH services.

Provide Support to People Living with HIV/AIDS

A four pronged strategy with a phased approach will be adopted that takes into account the most immediate concerns as well as actions required in the transition from 'Relief' towards 'Early Recovery'. These include:

- Ensure uninterrupted services to People Living with HIV and their families;
- Assess HIV-related risks and vulnerabilities of the growing numbers of affected, displaced and homeless taking into account gender and social protection needs. Undertake a follow-up survey after the relief period to validate initial assessment.
- Conduct HIV awareness and education campaigns for those identified living with HIV to minimize HIV vulnerabilities for all segments of the population particularly for the displaced, the homeless and those living in shelters.
- Integrate HIV-related priorities into existing health and, in particular, reproductive health services for the flood-affected population, i.e. including key HIV prevention messages, infection control and blood safety measures, STI prevention and treatment, condom provision, and referral to PPTCT through existing mobile or fixed health services and camps.

Detect and Control Tuberculosis

The key short term measures for early detection and control of the spread of TB will focus on:

- Strengthening coordination of TB interventions at the federal, provincial and district level and with other health programs.
- Assessment of the flood affected areas to identify TB patients' already on treatment and identify new cases. Identification of points of intervention and facilities where TB drugs are made available for the affected population.
- Mapping of non-functioning TB centres, equipment and drugs as well as personnel and its impact on TB prevalence;
- Increasing access to supplies and equipment for effective TB treatment in affected and non-affected adjacent areas including through: appropriate storage of TB drugs and laboratory supplies; establishment of referral mechanisms; follow-up of patients under treatment; establishment of chest camps in shelters to diagnose infectious cases; and establishment of effective reporting and monitoring mechanisms.
- Sensitization and Advocacy about TB health risks: Health and Hygiene education to all the flood affected population especially those with TB and those at risk. Distribution of guidelines to organizations supporting health facilities involved in TB care and control in affected and non- affected areas;

Reduce Incidence of Malaria

The short term malaria control strategy will be underpinned by the following interventions:

- Immediate delivery of 2.2 million LLINs[59] will protect the highly vulnerable groups (pregnant women and children under 5 years of age) during the initial short term plan. These LLINs will be distributed in areas known for their high endemicity through existing community and health facility systems (LHWS). Providing one net to 2 persons a total 13 million LLINs will be required to achieve universal coverage of the flood affected population living in malaria endemic districts.
- 2 cycles of IRS applied using the WHOPES recommended insecticides will protect 1.2 million people living in localities hit by malaria outbreaks. This includes a total of 14500 kgs of deltamethrine with the required number of spray pumps.
- Early detection of malaria outbreaks and timely response through strengthened surveillance linked with other communicable diseases;
- Facilitation of reliable diagnostic tools for parasitological confirmation of suspected cases suited for use in emergency situations (RDTs) and the provision of prompt treatment with effective first line anti-malarial drugs;
- Adoption of appropriate vector control and personal protection methods for use in local circumstances and for rapid reduction in vector densities;
- Community Mobilization and Awareness. To ensure the effectiveness of the suggested interventions a coherent BCC component with the support of print and electronic media messages and community level awareness sessions.

Recovering Losses

Restoring Social Service Delivery - Health

Reduce Child Mortality

Since the onset of the emergency, partners have ensured the supply of 10,600 lady health worker kits including the ORS, antibiotics for pneumonia, screening for malnutrition while the Government of Pakistan immediately reacted with mass immunization campaign for measles and polio.

The recovery strategy is focusing on addressing child health factors that contribute to the main mortality risks for children under five, namely diarrhea, pneumonia, malaria, measles, malnutrition, and maternal and neo-natal mortality/morbidity. To achieve this, an integrated approach is essential, bringing together health, nutrition, WASH and other interventions, building on the inter-cluster survival strategy outlined in the revised FERP. In the early recovery phase equity focused measures will be crucial to ensure that the most deprived will be reached by the health system.

The Government of Pakistan should seize the opportunity of the recovery phase to implement large scale equity measures such as:

- Free antenatal care, including food supplementation for pregnant women;
- Upgrading health centers with community mid-wives in order to ensure 24 hour skilled delivery;
- Inter-personal communication through LHW on newborn care, especially initiation of breast feeding and exclusive breast feeding;
- Maintaining the cold-chain and restoring EPI activities;
- Multiplying maternal and child health weeks to increase awareness on quality care of diarrhoea and pneumonia;
- Installation of latrines, to educate the most vulnerable on the proper use as well as intensive communication for behavioral change in hygiene and sanitation;

[59] Long Lasting Insecticide treated Nets is considered as the most effective and economical tool to prevent malaria and other vector borne diseases. Its coverage in Pakistan stands at only 0.8% while only 2.6% of pregnant women and children under five years of age have access to it.

Mass communication on the need for expanding access to nutrition, diarrhea and pneumonia management as well essential drugs;

Additional equity measures such as hardship allowance for skilled professionals and supportive supervision and monitoring would be essential to ensure quality of care. If such measures are implemented not only will the impact of the floods on health-related MDGs be controlled but acceleration towards achieving health-related MDGs will be possible narrowing the gap between the most deprived flood-affected populations and the better of in Pakistan.

These equity measures in light of the scale of the disaster will be more expensive. However, the number of death averted (maternal, newborn and child death), the number of stunting and wasted averted will be maximized, improving greatly the cost-effectiveness of the national health strategy.

Improve Maternal Health

Over the long term minimizing the likely long term maternal health risks posed by the floods of 2010 will require an integrated approach that brings together health, nutrition, education and other sectors. This will require significant investments that will yield substantial returns in the future. The following measures are proposed:

Collaboration and coordination among health and other sector having influence on health such as population, education, nutrition, finance, etc.
Mobilizing funding from development partners/donors to finance needed investments
Sensitization and Advocacy to secure political will and adequate investment in women's health by federal and provincial departments of health
Partnership: Objective and transparent collaboration among government and private sector and NGOs with clear roles and responsibilities

Combat HIV/AIDS

- Coordination with National Stakeholders: Coordination and cooperation with civil society partners support people at risk or those living with HIV to promote effective treatment and prevention.
- HIV Prevention:Information, Education and communication to promote behavior change, counseling, provision of condoms and sexual reproductive health especially for the displaced, homeless and idle population with high vulnerabilities; Blood and Blood safety through screening, supply provision to prevent blood borne diseases including HIV
- Access to treatment, care and support: Ensure access, adequate and quality health care services for people living with HIV to reduce morbidity through availability and accessibility to antiretroviral therapy, prevention and treatment of opportunistic infections.
- Reducing HIV and AIDS stigma and discrimination: Destigmatize and reduce discrimination of health work force and communities towards HIV affected population.
- Information management:
    - Surveillance, operational research, social research, monitoring and evaluation systems strengthened to inform and improve response for people at risk or living with HIV.
    - Promoting Integrated approaches
    - Integration of HIV and AIDS in Sexual and Reproductive Health especially for STIs, would help to reduce access barriers and minimize stigma and discrimination.

Detect and Control Tuberculosis

In the medium to long terms the following measures will be undertaken to detect and control the spread of TB:

- Evaluation of the effectiveness of the National TB program including TB care and control activities carried out in the acute phase in affected and non-affected areas;
- Implementation of “Stop TB” activities in affected areas, including TB care and control activities at all levels in line with the NTP directives
- Implementation of TB control strategic plans within the ongoing international effort to rebuild the infrastructures in areas affected by natural disasters.

Control and Treat Malaria

Efforts are underway to improve the access of flood affected population to quality diagnostic and treatment services. The implementation of these interventions can only be mediated through a functioning health system, which is the first step to achieve the objective of the control plan.

In the medium and long term phase focus will be to:

- enhance the coverage of interventions based on feedback from strong monitoring and evaluation mechanisms.
- strengthen capacity at all levels through the establishment of strong national and provincial control teams. Efforts will aim to enhance the skills of care providers in malaria case management with the engagement of expert entomologists and vector control experts to plan and implement the Integrated Vector
- Control Management (IVM) strategy.
- Linkages with research institutions will be developed to ensure monitoring the efficacy of antimalarial drugs and the vector control interventions through operational research.

Recovery Package for MDG 4

Reduce Child Mortality

The following table is only indicative, estimated using the current national budget and simulating the additional requirement to ensure closing the gap between the most affected population of the floods and the better off in Pakistan while reaching not only MDG4 but the other related health MDGs. The major investment should be done at community level especially in the access to safe drinking water and the build up of individual latrines, as well as the set up of health centres upgraded with maternity services and equipment for skilled delivery. The maximum needed will be in the very first months after the floods in order to rebuild destroyed facilities, to recruit sufficient skilled staff and provide them with hardship allowances and incentive to perform in remote area. The following years will require maintenance and recurrent budget to maintain high quality of all health services accessible to the poor, including cash transfer for transportation and access to facilities.

Service Delivery Modes	***Recovery with Equity***					
	2011	2012	2013	2014	2015	Total
1. Family-oriented community-based services	79,719,720	15,753,439	21,200,246	26,323,571	31,029,628	174,026,604
2. Population-oriented schedulable services	13,599,170	12,756,188	17,327,609	21,787,542	26,089,684	91,560,193
3. Individual-oriented clinical services	16,639,732	22,869,765	28,191,163	32,736,904	36,395,054	136,832,618
4. District, provincial and national governance	16,649,334	1,500,398	1,587,876	1,662,420	1,724,031	23,124,059
Total	126,607,956	52,879,790	68,306,894	82,510,437	95,238,397	425,543,474

Recovery Package for MDG 5

RECOVERY FROM DAMAGE PIFERP/ Revised PIFERP	2011	2012	2013	2014	2015	Total
Developing and disseminating messages on health, specifically maternal health, Essential Newborn care, danger signs recognition and care seeking in illness						
Deployment of mobile Maternal Newborn and Child Health (MNCH) care teams to deliver basic MNCH services to the population living in camps/temporary shelters	3697177					
Assist the MoH, specially the MNCH program to deliver to communities and households a package of supplies (newborn care kits, clean delivery kits, contraceptives).	14788710					
Provision of supplies, equipment support to community based workers to	18485887					

assist early resumption/restoration of community based MNCH services						
Total (Recovery from Damage)	36,971,774					
RECOVERY FROM LOSS		2012	2013	2014	2015	Total
Ensuring home-based deliveries by SBA (CMW/LHV)		5,000,000	6,250,000	7,500,000	7,500,000	26,250,000.00
Provision of Family Planning Services including distribution of contraceptives		3,750,000	5,000,000	6,250,000	8,750,000	23,750,000
Behavior Change Communication (BCC) Strategy to mobilize communities in seeking skilled birth attendance and FP services		2,500,000	2,500,000	2,500,000	3,750,000	11,250,000
Ensuring 24/7 at all THQs/DHQs & selected RHCs and provision of post-abortion care (PAC)		7,500,000	10,000,000	10,000,000	11,250,000	38,750,000
Total (Recovery from Loss)		18,750,000.00	23,750,000	26,250,000	31,250,000	100,000,000
Grand Total(Recovery from Damage + Recovery from Loss)						136,971,774

Recovery Package for MDG 6

Combat HIV/AIDS, Malaria and Other Diseases

Priority disease	Recovery from damage Key interventions areas	Ongoing support	2010	2011	Total
Malaria	Enhanced Malaria Surveillance System	5million USD	1.7	3.4	5.1
	Standardisation of case management		2.5	5	7.5
	Preventive and control measure		7.7	3	10.7
	Community awareness and community mobilization		0.9	1.8	2.7
Tuberculosis	Standardised case management(availability of anti – TB drugs, equipment)	Drugs from Global Drug Facility	2.8	3.7	6.5
	ACSM(advocacy, communication and social mobilisation)		2.3	1.1	3.4
HIV/AIDS	Support the treatment		53,000	2	2.05
	Coordination and communication		5,000	1	1.01
	NFI and other support to PLHIV		142,000	1	1.14

Total required			11(7.1 available)		22 million USD	33m
Priority disease	Recovery from Loss Key interventions areas	2012	2013	2014	2015	
Malaria	Enhanced Malaria Surveillance System	3.4	3.4	3.4	3.4	13.6
	Standardisation of case management	5	5	5	5	20
	Preventive and control measure					
	Community awareness and community mobilization	1.8	1.8	1.8	1.8	7.2
Tuberculosis	Standardised case management(availability of anti – TB drugs, equipment)	3.7	3.7	3.7	3.7	14.8
	ACSM(advocacy, communication and social mobilisation)	1.1	1.1	1.1	1.1	4.4
HIV/AIDS	Provision of quality HIV treatment, Care and Support services	2	3	4	5	14
	IBBS surveillance among HRGs and vulnerable population	1	1	1	1	4
	Provision of harm	2	2	3	3	10

	reduction services to HRGs					
	Information and education to reduce vulnerabilities	1	2	2	2	7
	Capacity building of health care providers and NGOs and coordination to integrate HIV preventive and curative services	1	2	2	2	7
Total required		22	25	27	28	102m
Grand Total						135m

All figures in million USD except for HIV/AIDS as indicated
Total amount required: 135 million USD

Damage Mitigation

The most immediate early recovery action is to minimize, without compromising the needs of flood victims, the impact of the recovery process on forest resources by managing the potentially damaging coping strategies of flood victims and discouraging unsustainable practices of humanitarian and other actors during the early recovery process. Recommended actions over the short term include:

Promote Environmentally Friendly Coping Practices

Direct subsidies
Provision of kerosene or LPG to flood victims to use as cooking fuel (and heating fuel during winter).
Provision of fodder for livestock, especially during the winter period.

Promoting environmentally friendly technologies
Encouragement of alternative construction methods,[60] such as scaling up of SDC's pilot "Energy Efficient Brick Production" project, which promotes the manufacture and use of reinforced or stabilised earth blocks, which are more environmentally-friendly than fired bricks from kilns, which use firewood as the predominant energy source.[61]
Promotion of renewable energy technologies in reconstruction efforts, including solar power.[62]

Facilitating Resettlement
Development of new settlement areas in non-forest areas.
Rapid regeneration of existing farm lands, including removal of silt and debris.
Strengthening Effectiveness and Enforcement of Regulatory frameworks
Application and enforcement of environmental guidelines by all concerned parties involved in the management of camps and resettlement activities.
Advocacy
Awareness-raising campaigns in flood-affected areas to increase understanding of the value of forest resources, and how forest issues interact with other human development needs, especially those enshrined in MDGs 1 to 6.

Improving Access to Water and Sanitation

Supply of safe drinking water, sanitation promotion and hygiene promotion are priority areas in both the FERP and DNA. While the flood effect was limited, in many instances, to loss of capital assets, it has been established, by Government and development partners, that upstream and soft side interventions are prudent for action should current trends be reversed.

A Improving Access to Safe Drinking Water

- Repair and rehabilitation of water supply schemes at community level, particularly in rural areas.
- Promotion of household water treatment options.
- Rehabilitation of post-flood pollution hotspots that are degrading water quality, including flooded pesticide stores and oil depots. Removal of flood debris and waste – including stagnant pools of water and animal carcasses (this action is covered by the DNA).

[60] The UN has included in the Response Plan a $8 million project to develop disaster resistant and energy efficient low cost housing in selected districts affected by the floods.
[61] Mission Note: Rapid Environmental Assessment of the Flooding in Pakistan (25/8 – 31/8/10), Dr Urs Bloesch, SDC.
[62] The UN has included in the Response Plan a $9.25 million renewable energy project that seeks to restore community's energy needs through provision of subsidised and alternate energy in selected flood affected areas.

- Promoting community management of drinking water facilities with a view to fill the current gap more specifically on the operation and management of rural facilities and exploring private sector participation.
- Adequately address the quality dimension of water supplies including water supplies, as older information suggest that the majority of the water sources are contaminated.
- Examining existing and planned water supply schemes to ensure adequacy for meeting the desired service levels.
- Application of the "do no harm" principle in all relief and early recovery WASH interventions, paying particular attention to MDG themes, including: equity in access (especially women and children); incorporated of protection of women's privacy needs into the design of water supply points especially in rural areas; and integration of disease prevention (including malaria), pollution, prevention and disaster risk reduction measures.

B Improving Access to Sanitation and Hygiene Promotion

- Repair and rehabilitation of latrines.
- Appropriate siting of latrines and wells, to avoid cross-contamination and a further deterioration in the health of flood victims.
- Furthering hygiene promotion with particular focus on effective and focused messages addressing the underlying reasons for major threats. This would, preferably, focus on handwashing with soap.
- Broadening the sanitation lens to include domestic sewage drainage, wastewater treatment, effluent utilization and re-use of marginal quality water together with the holistic concept of sustainable sanitation.

Address water contamination and pollution threats

Rehabilitation of post-flood pollution hotspots that are degrading water quality, including flooded pesticide stores and oil depots. Removal of flood debris and waste – including stagnant pools of water and animal carcasses – is another immediate action required (this action is covered by the DNA).
Appropriate siting of latrines and wells, to avoid cross-contamination and a further deterioration in the health of flood victims.
Application of the "do no harm" principle in all relief and early recovery WASH interventions, paying particular attention to MDG themes, including: equity in access (especially women and children); incorporated of protection of women's privacy needs into the design of water supply points especially in rural areas; and integration of disease prevention (including malaria), pollution, prevention and disaster risk reduction measures.

Recovering Losses

A number of early recovery actions are needed to restore the damage done as a result of the physical impacts of the flood and early coping mechanisms of flood victims, in order to restore the forest cover indicator to its pre-flood levels. It is preferable to support restoration initiatives in affected areas, focusing on the most environmentally sensitive areas first (such as steep slopes and riverbanks). As mentioned above, such interventions have been integrated into the DNA and response plan. From a MDG perspective, it is important that these proposed restoration projects integrate the following considerations:

Strengthening capacities for and ownership of natural resource management
A community-driven and community-managed integrated watershed management approach to restoration;
Integration of climate change adaptation considerations and disaster risk reduction tools and methodologies into project design.
Capacity building of local communities in regard to natural resource management, especially as regards the important role of women;

Revitalizing Livelihoods
Promotion of diversification of livelihoods to reduce dependence on natural resources and stimulate local economic development;
Hiring of affected members of the population, including women, to undertake any required labour (e.g. through cash or food for work programmes);

Promoting Environmentally Friendly Practices
Promotion of the use of timber from sustainable sources in reconstruction efforts. (For example, in the recovery process after the 2005 earthquake, the Government implemented a policy that ten trees would be planted for every tree cut down.)

The application of the above will encourage a "building back greener and better" factor in the forest sector, and go further than mere recovery to pre-flood indicator levels.

Improving Access to Water and Sanitation

The supply of safe drinking water and restoration of sanitation is a priority in the WASH cluster within the Revised Emergency Response Plan, as well as the DNA. It is likely that, provided sufficiently resourced, a significant number of water supply and sanitation facilities, both private and public, will be rehabilitated over the course of the next two years, which will mitigate the impact on access to water supply and sanitation over the medium- to long-term.

Improving the quantity and quality of drinking water

1. The development of an integrated approach to water resource management that meaningfully involves communities and water users in decision-making and management, and adequately takes account of environmental concerns.
2. Examining appropriate technologies in the water sector.
3. Examining the current source utilization plan with a view to determine optimum water resources (i.e. groundwater, surface water, etc) to arrest overexploitation of certain sources.

Improving sanitation and hygiene over the long term

4. Promotion of community approaches to total sanitation at national, provincial/state, district and community levels. Supporting communities with goods and services needed for the poorest households to build their toilets. Supporting activities that stimulate demand for toilets and activities that strengthen the supply of goods and services, including sanitation marketing.
5. Examining appropriate technologies in the wastewater sector particularly in rural contexts.
6. Embarking on a national undertaking to trigger sanitation and hygiene promotion employing the Pakistan Approach to Total Sanitation together with ensuring government plans and resources are in place for furthering the initial achievements (i.e. attaining ODF status) with a view to prevent relapse.

Capacity building for operation and management

7. On a pilot basis in all affected provinces, provision of training to communities in regard to water resource management, including establishment of water user associations and other local-level water management institutions. Training on public health issues should also be provided.
8. Capacity development of Government and NGO workers in the areas of community participation and capacity building, community approaches to total sanitation, home water treatment, water quality surveillance, design standards, project design and monitoring.

Pursuing sector reforms

9. Amendment to the Clean Drinking Water for All, to take account of the floods, and is reflective of all MDGs, not only MDG 7. The proposed awareness-raising campaign outlined in the DNA may be integrated into this national programme.
10. Pursuing several initiatives including decentralization of service provision to the lowest possible and feasible level, separation of service provision and regulatory functions, pursuing integrated water resources management, application of several fundamental principles such as "Polluter Pays", pursuing cost recovery while maintaining social safety nets and the like.
11. Clear definition of roles and responsibilities of federal government, provincial governments, Public Health Engineering Departments, Local Government Departments and so forth bearing in mind the overall scope of work that includes water supply, wastewater, solid waste management, sanitation and hygiene promotion.
12. Completing outstanding enabling environment framework at federal and provincial levels while taking into account DRR and adaptation to climate change.
13. Promoting sharing of water sources in the rural areas through social mobilization, which is likely to result in advancing economies of scale and enabling regulatory functions to be pursued.
14. Embarking on a provincial WASH strategy with a long time horizon (e.g. 30 years).

Recovery Package for MDG 7

Recovery from Damage					
1	Implement a MDG-focussed post-disaster environmental assessment, clean up and follow-up monitoring project.	3			3
2	Conduct a strategic environmental assessment (SEA) of the early recovery plans and programmes.	1			1
3	Provision of 20 litres of kerosene to 732,000 families over a period of 12 months at 40 PKR per litre	40.5	40.5		81
4	Provision of 5 cubic metres of fodder to 366,000 families over a period of 6 months at 200 PKR per cubic metre.	26			26
5	Provision of solar energy in 10,236 villages (where village level cost is taken as 1,000,000 PKR).	59	59		118
6	Provision of renewable and alternative form of energy including Installation of Biogas Plants for domestic gas use	2	3	5	10
7	Implementation of an awareness-raising campaign in flood-affected areas to increase understanding of the value of forest resources, and how forest issues interact with other human development needs, especially those enshrined in MDGs 1 to 6.[63]	28			28
8	Implement a MDG-focussed post-disaster environmental assessment, clean up and follow-up monitoring project.	1	1	1	3
	Total Cost (Recovery from Damage)				270

[63] We assume that 12,000 villages are adjacent to such forests, and amount 200,000 PKR per village is needed for this purpose.

1	Capacity development of Government and NGO workers in the areas of community participation and capacity building, community approaches to total sanitation, home water treatment, water quality surveillance, design standards, project design and monitoring.	5	5
2	Revision and implementation of the Clean Drinking Water for All Programme to integrate MDG and flood considerations, including the proposed awareness-raising programme.	2	2
3	Development of an integrated approach to water resource management that is piloted in 50 communities in at least 2 of the flood-affected provinces within the first 3 years of the early recovery process.	2	2
4	Provision of training to 300 communities in 6 flood-affected provinces in regard to best practice in local water resource management, including establishment of water user associations and other local-level water management institutions and incorporating public health issues.	2	2
	Total Cost (Recovery from Loss)		40
	Grand Total (Recovery from Damage + Recovery from Loss)		310

[64] The costing for most of the interventions required for water and sanitation (including the two relevant MDG 7 indicators) is included in the DNA, which lists [US$ 91m] for household damages, [US$ 190m] for losses, [US$ 114m] for infrastructure, [US$ 8.5m] for awareness-raising, [US$ 4.5m] for clearing stagnant water, and [US$ 2m] for removal of flood debris.The Revised Pakistan Emergency Response Plan addresses water and sanitation comprehensively, with a total appeal for US$ 250 million for the WASH cluster. Many of the recommendations made in the previous section can be integrated into the design of these projects, with no need for separate funding. Assuming those projects are funded in due course, the additional investments required from an MDG-specific perspective in order to implement the proposed recommendations

Facilitate Increased Access to ODA

Concerted efforts are needed to support the Government of Pakistan to achieve the targets set for MDG 8. Increase in ODA as well as FDI with respect to initiatives suggested by UNIDO would enhance economic growth in the country and will support the achievement of other MDG targets. Likewise, improved access to information and communication technology is essential for improvind the knowledge base of society and providing opportunities to the people in business, knowledge and economic development.

In a scenario where the focus of attention is on improving progress on the MDGs, support programs for the Government of Pakistan and all other stakeholders are needed. These programs will enhance the capacity of the Government to improve upon its capabilities to utilize resources more effeciently and seek more assistance in the form of FDI and ODA. These measures could increase the FDI inflow to Pakistan and would expand the internet coverage enabling more people to use the electronic and efficient form of knowledge sharing.

The UN has carried out costing based on assumptions, which would be required to increase the FDI and ODA, increased market access to Pakistani exporters and increase the use of internet. To generate employment opportunities, improve the trade and finance as well as increase exports/ redcuce imports, the growth of private sector is a necessary prerequisite. In this regard support is needed to facilite SME growth, diversity production sector, improve infrastrcuture and support technological advancements.

Over the short term Pakistan will require concessional financing to reconstrcut its flood damaged economy. To this end, interventions should focus on:

Improving aid management and accountability systems: This will aid effectiveness through greater transparency and more effective monitoring mechanisms to track expenditures, outputs and impacts.

Strengthening ODA absorbtive capacity: The capacity of Pakistan to absorb ODA inflows mus also be strengthend to ensure expeditiuos utilization of such flows to address the pressing reconstruction needs of the country.

Revitalize Trade

While ODA is critical for recovery it is not sufficient and must over the long term be leveraged by Pakistan's internal capacity to generate revenue flows including through exports. In this context interventions to boost exports including through trade facilitation will be vital. Trade facilition measures include:

Minimizing phyical barriers to trade: Measures will include supporting foreign direct investments in trade-related physical infrastructure;

Minimizing regulatory and capacity related constraints to trade: Measures will focus on capacity building and trade policy reforms;

Mobilize Domestic Resources

Over the long term Pakistan will be best served by assuming greater financial responsibility for its development efforts through robust domestic resource mobilization efforts that:

Widen the tax net and minimize the tax burden on a small section of the community.

Link taxes to improved community development to strengthen the credibility of the tax system and strengthen the culture of tax compliance.

Emphasize progressive tax structures, institutional strengthening of tax collection agencies and improved systems of transparency and accountability to ensure that communities have a voice in the administration of tax revenue.

	2011	2012	2013	2014	2015	Grand Total
Target 8a: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system (Includes a commitment to good governance, development and poverty reduction; both nationally and internationally)						
Indicator No 8.9: Market Access: : Proportion of ODA provided to help build trade capacity	0.75	0.75	1.00	1.00	1.50	
Facilitating and enhancing the ODA absorption capacity of Government departments and stakeholders	2.75	3.50	2.25	1.25	1.00	
Target 8f: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications						
Indicator 8.16: Internet users per 100 population: Strengthen public-private partnerships in support of the use of internet services, including in the form of business communication networks and its applications towards improved business service delivery	0.5	1.0	1.5	1.5	2.0	
Total (of indicators)	4	5.25	4.75	3.75	4.5	22.25

Section V: Conclusion

Under the umbrella of the One UN Program for Pakistan and with government endorsement, FIMA analysis outlined the damage and losses to the MDG target indicators as a result of the 2010 floods, committed to a five-year (maximum) recovery period, and estimated the resource envelope required to restore the MDG Target Indicators to their pre-crisis level. The analysis is built on the damage estimates and reconstruction schedules in the DNA, the humanitarian assessments (including Early Recovery), the One UN Thematic Working Group framework and other secondary data. The value added of this report is the documentation of the human development costs of the floods. Indeed, this progress report has been able to quantify some but not all the damage and losses to the MDGs resulting from the floods.

Overall, the findings of the report suggest that Pakistan's modest pre-flood progress towards the MDGs will be further undermined by the devastation caused by the floods. The disaster has affected the health, education and agriculture sectors with critical implications for all the MDG indicators. Rising poverty due to the floods is manifested by deterioration in livelihoods and an increase in the proportion of population below the minimum level of dietary energy consumption.

Prices are on the rise due to crop damage and losses further eroding the purchasing power of the poor. The situation is likely to worsen if the recovery is financed through monetization of the debt. The human capital implications of the floods are only just emerging. A large number of children are out of school and a substantial number are likely to fall ill as a result of diseases such as malaria diarrhea and typhoid which are on the rise due to the floods. Moreover, the environmental implications of the flood are yet to be fully understood as the data is still preliminary. However, the estimated reduction in forest cover (23%) is significant and in the absence of quick interventions is likely to expose Pakistan to further climate related hazards.

Notwithstanding the devastation caused by the floods the human costs estimated at between $3 to $4 billion pale in significance to the benefits that will be gained through restored livelihoods, revitalized health systems and safeguards to the to the environment. Indeed, one cannot place a monetary figure on the human suffering that will be assuaged by effective, targeted and coherent interventions to return boys and girls back to school, to prevent more mothers and children from premature death, to put food on the tables of undernourished families and to safeguard the environment for future generations.

The resource requirements for these interventions while relatively modest, cannot be accommodated within the fiscal envelope of the government of Pakistan. The government's fiscal space is precarious, constrained by previous crises (security, food and financial crises) and weak internal resource mobilization efforts. While domestic resource mobilization should be improved to supplement external resources over the long term, ODA will be a critical source of funding in the short to medium term.

The UN has, in this context, made its largest ever appeal for funds from development partners. Without these contributions and support it is unlikely that Pakistan will recover from the disaster, resulting in higher levels of poverty and suffering which will likely create fertile grounds for insecurity and possible social unrest.

In order to promote and accelerate the recovery of human development, the FIMA lays out an MDG investment strategy that identifies short (to recover from the damage to human lives) and long term interventions (to recoup the potential losses that may ensue from the flood damage in the absence of support). These interventions are anchored within each MDG goal and are costed by indicator. The key elements of the recovery strategy are grouped as follows:

- **Promote Rural Livelihoods:** aims to improve access to food stocks, restore ownership to productive assets, generate rural income and promote employment for building resilience of the poor against natural disasters;
- **Enhance Educational Attainments:** through incentivizing families, communities and service providers for early return to schooling, ensuring gender parity and targeting the vulnerable;
- **Reduce Morbidity and Maternal Deaths:** by restoration of safe water and improved sanitation systems; and promoting safe hygiene practices; immunization coverage, and redeployment of lady health workers, skilled birth attendants including community mid wives and provision of essential drugs to curtail spread of malaria, acute diarrhea, typhoid and cholera;
- **Protect the Fiscal Space for the MDGs:** FIMA recommends Pakistan to lobby and advocate for grant funding to support the recovery, rehabilitation and reconstruction of the flood affected areas. This is necessary as the country presently consumes one third of its GDP in debt financing. Any further increase in debt will fuel inflation resulting in increased poverty and reduced fiscal space to finance the MDGs.**Mainstream Cross-cutting Issues**: Mainstreaming gender equality, environmental sustainability and disaster risk reduction into each and every sectoral intervention for recovery through community based, people centred participatory approach.

The findings of the impact of the floods on the MDGs has implications for the One UN programme. First the devastation caused by the floods requires a re-evaluation of the One UN targets. Furthermore, the indicators as well as the thematic and or spatial priorities articulated in the Programme will need to be reviewed to ensure that they reflect the new and emerging priorities arising from the floods. In particular, the most affected provinces and districts will have to be prioritized for interventions to avoid deterioration in poverty and inequality indicators. Moreover, coordination of recovery efforts will need to be strengthened to ensure coherence, minimize duplication of interventions and expedite delivery of recovery services at the district level.

In conclusion, it is important to note that this exercise is the very first of its kind, where damage, losses and needs are analyzed through the lens of the MDGs, thus highlighting the human dimension of this unprecedented disaster that has so far affected over 20 million people. The task of providing initial relief is essential and lays the foundation for a more secure and sustainable recovery. This report serves to orient the recovery process around the human development needs of victims and affected communities to promote sustainable recovery to pre-flood MDG levels. Therefore, its primary aim lies in highlighting the implications of disasters for achievement of the MDGs, assessing the recovery needs, formulating appropriate and feasible strategies to bring Pakistan back on to a positive development trajectory and galvanizing, through advocacy, international support for the recovery effort.

Methodologies and Sources

This section summarizes the methodologies used by the participating UN Agencies in estimating the impact of the floods for each of the goals.

MDG Goal 1

a. The Initial Vulnerability Assessment (IVA) conducted by WFP and partner organizations collected data on the number of people affected and the number of people in need of assistance. The latter was determined on the basis of the extent of damage of housing and crop land. The IVA covered all four provinces (KPK, Punjab, Sindh and Balochistan) and 49 flood affected districts. Data from AJK and GB was collected through WFP provincial offices. Data was collected between 29 July and 3 September 2010.

b. The Multi-cluster Rapid Assessment Mechanism (McRAM) provided household level data on the impact of the flood on livelihoods, food security and nutrition. Household data were collected in four provinces, covering 27 flood affected districts. The McRAM did not cover flood affected areas in Balochistan Province. For more details on the McRAM methodology contact www.pakresponse.info.

c. The damage and needs data is being compiled on the basis on information provided by the field staff in the provinces. This data has been validated with remote sensing information from SUPARCO, household level surveys by PARC and field visits by the DNA team.

Partial Equilibrium Shock Model: The prevalence of undernourishment and poverty headcount has been calculated for 2005-06 and estimated for 2008, 2010 (pre-flood), and 2010 post flood. The methodology used to estimate the proportion of population undernourished (consuming below 2350 kilocalories per day per person) and the headcount poverty rate is outlined below:

1. Code households by district
2. Organize the agricultural damages for each crop and major livestock by district
3. Estimate the impact on crop production, livestock production, agricultural income for each household
4. Estimate the market impact and employment impact
5. Estimate the impact on household income for each household
6. Estimate the impact on expenditure
7. Estimate the impact on food consumption for each commodity
8. Calculate: total household kcal intake/number of household members = average kcal per capita/day
9. Create livelihoods groups - as shown in table below - using industry division, main occupation, employment status, income source and district
10. Use Rs. 4000 as the minimum household expenditure (in Rs.) required covering essential non-food items in 2005, and adjust it for inflation using CPI data. Focusing on the second and third quintiles (including both urban and rural) in the base year 2005 (HIES 2005/2006), roughly 8,000 Rs. were required to reach a kcal intake of around 2350 kcal per capita per day. As roughly 50% were spent on

food, the non-food expenditure amounted to Rs.4,000/hh/month. It seems the Government uses currently 945 Rs per capita/month, which translates into Rs. 5670/hh/month

11. Use the following cut-offs to determine the proportion of the general population:
    a. Undernourished - proportion of population below the minimum level of dietary energy consumption (below 2350 kcal/person/day):
        i. Moderately food insecure: (1850 - 2350 kcal/person/day)
        ii. Severely food insecure: (1840 kcal/person/day)
        iii. Households at risk: (>2350 per person/day, but non-food consumption expenditure below x Rs.
12. Estimate number of people who were severely and moderately food insecure and at risk in 2005 using kcal and non-food consumption expenditure cut—offs.
13. Update latest prices of main food commodities (use retail prices at province level, estimate average for district strata) as well as wages and salaries
14. Determine price elasticities of demand for the main food commodities (based on full two stages of food demand estimated by WFP/FAO project team;
15. Simulate the floods and price change impact on households

For the MDG 1 indicators relating to employment, the estimation procedure is conducted for Table 1 is described for each column in turn. The main assumptions utilized in the methodology have been underlined for clarity.

- *Column (1):* The starting point is the Government of Pakistan's estimate of 1.84 million houses damaged in the floods, with provincial estimates ranging from a high of 1,058,862 houses damaged in Sindh down to 2,820 in Gilgit Baltistan. The first assumption utilized is that if a given dwelling has been damaged or destroyed by the floods, the livelihoods of the employed persons living in that dwelling have also been affected. As more than 60 per cent of workers in the affected rural areas work in the agricultural sector, damage to houses is believed to be a reliable proxy for damage to surrounding agricultural land and loss of livestock and other assets.

- *Column (2):* As employment data are available at the individual and household levels, but not at the level of houses/dwellings, a second assumption is needed as to the average number of households per dwelling. As this information is not currently available, a conservative assumption was made that one dwelling affected is equal to one household affected.

- *Column (3)*: Data on the average number of workers per household[65] in each province is available from the 2007/08 Pakistan Labour Force Survey. As the floods have primarily affected rural areas, it is assumed that the labour market characteristics of rural households provide a better representation of the underlying affected population, and consequently the figures in column (3) correspond to the average number of workers per household in rural areas.

- *Columns (4) and (5)*: Another assumption utilized is that it is the rural poor that have been most affected vis-à-vis loss of livelihoods. Therefore the "average workers per household" figures utilized in the calculations should correspond to the average number of workers in poor households in rural areas. The Pakistan Labour Force Survey, which is the official source of employment estimates in the country, does not provide information on poverty status. On the other hand, the country's Household Income and Expenditure Survey (HIES) does provide poverty status, together with estimates of average workers per household. Accordingly, the ratio of "average

[65] Based on the working-age population, including workers aged 10 and above.

workers per household in poor, rural households" to "average workers per household in rural households" is calculated on the basis of the 2004 HIES (column (4)). This ratio is then multiplied by the "average workers per rural household" figures from the 2007/08 Labour Force Survey (column (3)). The resulting estimate of average number of workers per affected household is given in column (5).

- *Column (6)*: The final estimate of workers affected by the floods is calculated by multiplying at the provincial level columns (1), (2) and (5). In total, this methodology results in an estimation of more than 5.3 million workers in Pakistan having lost their livelihoods as a direct result of the floods. This corresponds to approximately 10.0 per cent of all workers in Pakistan.

MDG Goal 2

The detailed computation on net primary enrollment as well as survival rate is provided within the body of the document. This particular section provides the provincial breakdown to appreciate the most affected provinces as a result of the floods.

Goal 2
Province-wise pre- and post-flood survival rates

	Punjab				Sindh				KPk				Balochistan			
	pre-flood			post-flood	pre-flood			post-flood	pre-flood			post-flood	pre-flood			post-flood
YEAR	SR (M)	SR (F)	SR (MF)	SR (MF)	SR (M)	SR (F)	SR (MF)	SR (MF)	SR (M)	SR (F)	SR (MF)	SR (MF)	SR (M)	SR (F)	SR (MF)	SR (MF)
2001	51,9%	69,4%	58,4%	58,4%	41,6%	45,4%	42,9%	42,9%	73,8%	61,7%	69,1%	69,1%	40,1%	38,8%	39,6%	39,6%
2002	52,8%	51,3%	52,2%	52,2%	43,7%	52,7%	46,7%	46,7%	83,0%	63,5%	75,3%	75,3%	48,1%	45,6%	47,1%	47,1%
2003	61,6%	59,8%	60,9%	60,9%	44,6%	41,1%	43,2%	43,2%	92,9%	65,8%	82,0%	82,0%	41,4%	54,8%	46,2%	46,2%
2004	76,0%	93,5%	83,1%	83,1%	42,5%	59,3%	48,0%	48,0%	72,7%	79,2%	75,0%	75,0%	43,6%	39,3%	41,8%	41,8%
2005	89,6%	89,7%	89,6%	89,6%	51,6%	55,3%	53,0%	53,0%	71,7%	59,8%	67,0%	67,0%	48,0%	49,8%	48,7%	48,7%
2006	72,4%	65,4%	68,9%	68,9%	38,8%	40,7%	39,5%	39,5%	64,8%	54,4%	60,6%	60,6%	44,6%	49,5%	46,4%	46,4%
2007	55,6%	54,1%	54,9%	54,9%	37,5%	34,2%	36,1%	36,1%	75,1%	64,3%	70,6%	70,6%	52,6%	45,3%	49,5%	49,5%
2008	59,0%	58,1%	58,5%	58,5%	46,6%	45,5%	46,1%	46,1%	61,7%	54,3%	58,0%	58,0%	54,0%	54,5%	54,2%	54,2%
2009	70,7%	64,9%	68,2%	68,2%	43,1%	41,6%	42,5%	42,5%	63,2%	57,4%	60,4%	60,4%	53,7%	52,7%	53,2%	53,2%
2010	72,0%	64,3%	68,8%	56,0%	43,1%	40,5%	42,0%	39,4%	60,7%	56,2%	58,3%	53,8%	55,3%	53,9%	54,7%	51,0%
2011	73,3%	63,6%	69,3%	59,1%	43,0%	39,3%	41,6%	40,0%	58,2%	55,0%	56,3%	55,1%	56,9%	55,1%	56,1%	53,2%
2012	74,6%	63,0%	69,8%	62,2%	43,0%	38,2%	41,1%	40,6%	55,7%	53,8%	54,2%	56,5%	58,5%	56,4%	57,6%	55,4%
2013	75,9%	62,4%	70,4%	65,3%	42,9%	37,0%	40,7%	41,2%	53,3%	52,6%	52,1%	57,8%	60,1%	57,6%	59,0%	57,6%
2014	77,2%	61,8%	70,9%	68,4%	42,9%	35,9%	40,2%	41,9%	50,8%	51,4%	50,0%	59,1%	61,7%	58,8%	60,5%	59,8%
2015	78,5%	61,2%	71,5%	71,5%	42,8%	34,7%	39,8%	42,5%	48,3%	50,2%	48,0%	60,4%	63,3%	60,0%	61,9%	61,9%

MDG Goal 4

Estimation of the flood impact
An equity approach using the MBB tool has been adopted to assess the impact of the floods on the health related MDG 4.

Prior to the floods the affected populations were facing lack of commodities, lack of human resources and facilities that all have been exacerbated by the floods. Their low demand for quality of care (e.g. antenatal care, skilled delivery) has been dramatically reduced during the floods. Destruction of the crops and displacement have made all affected population totally dependent from food distribution, resulting in major risk for malnourished children facing greater food insecurity to have aggravated their wasting and underweight status. Given the massive movement of population and the proximity in camps where hygiene and sanitation was lacking, diarrhea and pneumonia has increased. The lack of access to facilities has prevented mothers to seek proper care for their sick children. Even more the lack of intimacy have influence women not to pursue breastfeeding (recent report that 15% of lactating women in displaced camps of 15% women having stopped breastfeeding). All these will result in an estimated immediate increase in under-five mortality rate of at least 10 percent, subsequent to an increase of neonatal mortality rate and the immediate increase of prevalence of wasting, and an increase of maternal mortality.

In order to run the simulation for the estimation of the flood impact on MDG 4, the following assumptions have been made:

- National Under-five mortality rate is at 87 deaths per 1,000 live births and Infant mortality rate is at 71 deaths per 1,000 live births in 2009. Given the very deprived situation of the affected population, higher rates are estimated between 110 and 121 deaths per 1000 live births- equivalent to the lowest quintiles rates. Infant mortality is estimated before the floods between 90 and 94 deaths per life births for these very vulnerable population

- Similarly, other indicators like wasting among under-five vulnerable and extremely vulnerable flood affected children are assumed at to be between 15 and 17% prior to the floods

- Assuming a 10% increase due to floods, U5MR for vulnerable and extremely vulnerable flood affected children are assumed at 112/123 deaths per 1,000 live births, IMR estimated to increase to 92/95 deaths per 1,000 live births, and wasting assumed to raise to 17% to 20%.

- Based on their previous access and use of the health system, these vulnerable population are facing because of the floods additional burden, that are estimated as follow:
    - Stocks having been destroyed, availability of essential drugs and commodities are estimated at only 10% of what pre floods conditions for the extremely vulnerable and at only 20% for the vulnerable ones
    - Because of the displacement of population, (10,600) 1/3 of Lady Health Workers were in flooded area were unable to function. Therefore it is estimated that the human resources in flood affected are have been reduced by at least 1/3 of pre flood capacity in extremely vulnerable communities.

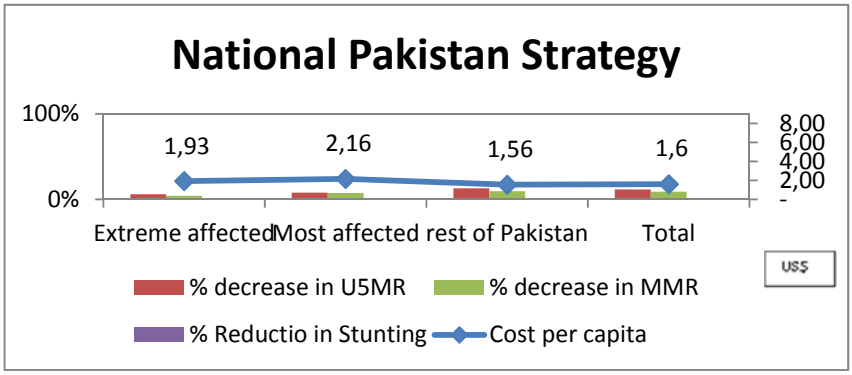
- During the floods, of 2957 facilities, 436 were destroyed or damaged, mostly in rural area, estimating therefore the access to health facilities reduced to 1/3 or ½ for extremely vulnerable.

- Given these immediate reduction of health services, it is estimated that mothers and children reduced their utilization, continuity and quality of care by 1/3 compared to their pre-flood behavior

Costing the Acceleration towards Achieving MDG4

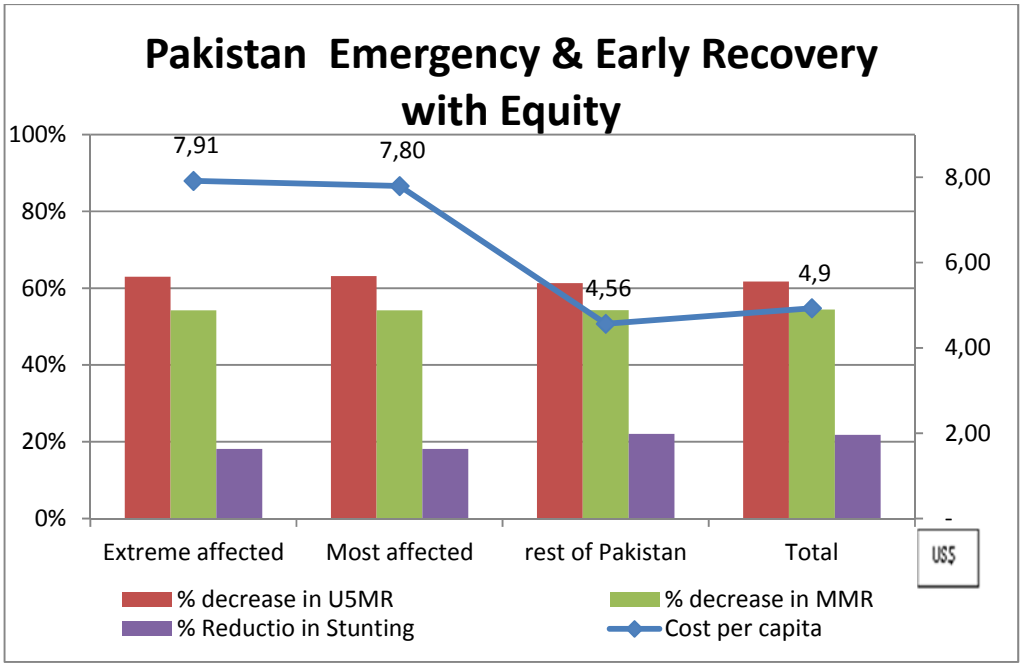
- As already described, the current National budget allocated to the National health strategy (total health expenditure US$4.5 per capita and Government health expenditure 16.4% of Government expenditure) is very reasonable but cannot be expected to have major impact on U5MR, MMR and stunting rather maintain the current trends.

Figure 5 Impact and cost of the National Pakistan strategy on various populations of Pakistan affected by the floods.



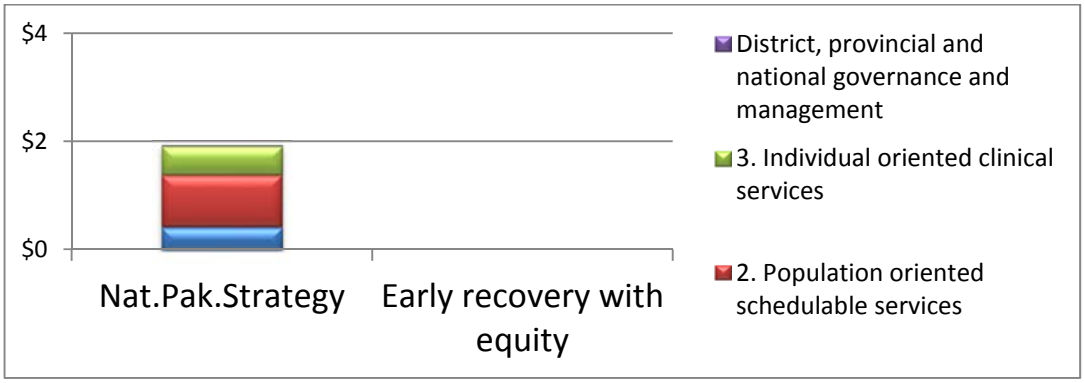
- The emergency response is requesting an additional U$ 8 per capita in the most affected area. Should the response from partners be adequately allocated on essential interventions such as nutrition , WASH, essential maternal and newborn health coupled with equity measures including hard ship allowance to maintain skilled staff in remote areas, rural rotation of medical doctors and mid-wives, performance incentives to ensure quality of care, deployment, training and supervision of community health workers including MHW, free access to drugs and essential services, conditional cash transfer for transportation for skilled delivery, all these will require an additional estimated 8 USD per capita per year reaching those most affected by floods.

- **Figure 6 Impact and cost on MDG 1, 4, and 5 of an Emergency and Early recovery strategy with equity on various populations of Pakistan affected by the floods.**



- This additional budget allocation of US$ 8 per capita for an equity based approach focusing on the most affected by the floods is of the most potential way to ensure a 60% reduction in U5MR, 50% reduction MMR and 20% reduction in stunting. The budget required for this early recovery strategy with equity will require to be adequately balance between a priority budget line of US$3 per capita allocated to family/ community based intervention, the maintenance of about US$1 for preventive outreach interventions like EPI and ANC, and some US$ 2.5 allocated to clinical level, covering the reconstruction of facilities destroyed by the floods, the recruitment and training of health staff and their deployment to remote area.

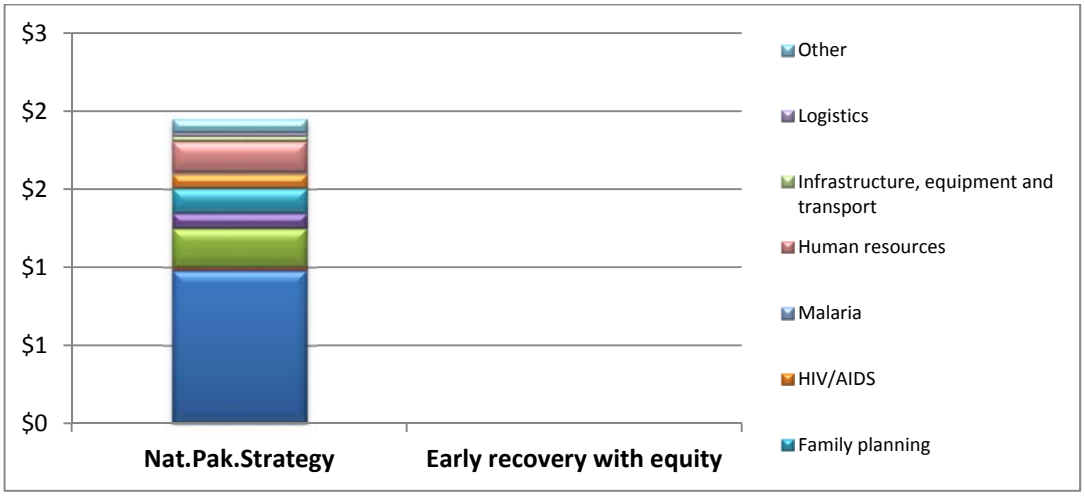
Figure 7: Allocation of cost per capita per year of National Pakistan strategy and Early recovery with equity strategy



- Compared to the National strategy, much will be needed in all line especially on water, sanitation and hygiene as well as on the investment needed to recruit and train sufficient number of skilled staff and to allocate them in remote area.

- Finally most of the reconstruction, water and sanitation and human resources budget lines should be forefront invested in the very first years in order for the health system to respond to the acute need for restoration, while all other lines will be more needed on a recurrent basis.

Figure 8: Distribution of budget lines needed for National Pakistan strategy and Early recovery with equity strategy



MDG Goal 5

A mixed[66] methodology is adopted for the rapid assessment of the effect of the flood on two selected maternal health indicators. Secondary data (see footnotes) has been used to estimate damage and losses to the maternal health indicator as result of flood. The change in maternal health indicators is estimated based on possible scenarios for changes in the coverage of routine health service during and after the flood.

The assessment is based on the following assumptions::

1. 9% of the total population of Pakistan was affected by the July floods
2. 48% of the affected population is female
3. Health services will improve in the immediate aftermath of the floods due to the humanitarian response, however the situation will deteriorate once this funding ends.
4. Maternal health is influenced by health systems and gender dynamics of the country.

It is important to note that the methodology adopted for this assessment exploits qualitative linkages among the process indicators (deliveries by SBA and CPR) on the one hand and outcome indicators (MMR and TFR) of maternal health on the other. In order to establish a quantitative correlation among these indicators and quantify the number of women affected

[66] Kori AT and Teddlie C. 2003. Handbook of Mixed Methods in Social and Behavioral Research.

in terms of mortality and morbidity a more comprehensive evaluation needs to be conducted as recommended by partner organizations (Population Council Pakistan and USAID | Deliver Project, John Snow Inc.) This evaluation will include: a review of baseline data for all the affected districts; case control study to assess the impact of pre and post flood variation in antenatal and postnatal care; and a cross sectional survey to assess changes in CPR, nutritional status and psychological status.

MDG Goal 6

This particular goal provides the assumptions for future projections within the body of the document.

MDG Goal 7

Methodology for Indicator 1

Table 1: Trends in Forest Cover

Indicator	Definition	1990 -91	2004 -05	2006 -07	2007 -08	2008 -09	MTDF target 09-10	MDG target 2015
Forest cover including state owned and private forest and farmlands	Forest cover including state owned and private forest and farmlands, as percentage of the total land area	4.8	4.9	5.02	5.02	5.02	5.2	6.0

Damages

A. Forecast to 2010 the denominator and numerator based on the MDG Target Indicator data from 2004/5 – 2008/9:
5.02/5.2 =0.9653

B. Estimate the ***net change*** in forest cover by end 2010 *as a result of the floods and flood responses.* Add/subtract the net change from the numerator in A, above:
This is estimated as 0.56[67] as per methodology set out in box 2 in the methodology section below.

C. Re-calculate the post-flood expected end 2010 Target Indicator proportion at the national level:

[67] This represents 11.2 percent of the forests affected (out of the total forests in Pakistan which is 5.02 percent). Therefore .56%=11.2%*5.02%. This destruction of 0.56 is inclusive of both immediate impact and including future impact as part of the coping strategy. It is assumed that 0.35 is damaged immediately after the floods, and the remaining is damaged within one year.

(5.02-0.56)/5.2 = 0.8576

D. The difference between A and C represents the damage to 2010 Target Indicator *as a result of the floods and flood responses:*
0.9643 – 0.8576= 0.1064

a) Losses

A. Commit to a recovery period of 5 years or less:
The recovery period is five years (2010 to 2015)

B. Forecast expected 2010 Target Indicator denominator and numerator based on the expected MDG Target Indicator 2010 level (because growth is stagnant):
5.02/5.2 = 0.9653.

C. Determine the *net change* in the forest coverage on an annual basis *as a result of the floods and flood responses:*
The expected annual net change in forest cover is shown in Table 2 below.

D. Recalculate the revised projected post-flood annual Target Indicator. (This will be on net change in flood affected areas.)
Recalculated revised post-flood annual target indicators are given in Table 2 below.

E. The area between the trend lines calculated in B and D represent loss at the national level.
See Table 2.

F. Translate this into the excess loss (in hectares) of forest cover as a result of the floods on an annual basis.
See Table 2.

Table 2: Loss Calculations for Forest Cover

Year	Expected annual net change in forest cover (A)	Revised recalculated post-flood annual target indicator	Loss/gain (in hectares of forests) on annual basis
2010	(-)0.35*	0.8981#	(-) 299480
2011	(-)0.21	0.8576	(-) 179688
2012	0	0.8576	0
2013	0.40	0.8885	342263
2014	0.16	0.9653	136905

* It is assumed that 0.35 is damaged immediately after the floods, and the remaining is damaged within one year.

Box 1: Forest cover calculation methodology

Total Geographical area of Pakistan= G; Total Population of Pakistan = P
Geographical Area Affected by Floods = G/5
Population Density in Pakistan = P/G
Population Density in Flood affected Area = (11P/100)/(G/5) = 11P/20G [11% of population living in one-fifth geographical area]
Population Density in non-flood area = (89P/10)/(4G/5) = 89P/80G [89% population living in four-fifths of geographical area]
Ratio of Population density of flood affected Area to that of the non-flood area = (11P/20G)/(89P/80G) = 44:89
Ratio of Forest Density in Flood affected Area to that of the non-flood area = 89:44 (based on the assumption that it is inversely proportional to the population density)
Ratio of Total Forests in flooded Area to that non-flood area = 89*(G/5):44*(4G/5) = 89:176
Thus the proportion of forests in flooded area to that of whole geographical area of Pakistan is 89/265.
Net Change in forest cover due to floods = (1/3)[68] * (89/265) of the total forests in Pakistan = 11.2 % of the total forests in Pakistan.

Table 3: Impressionistic accounts of loss of forest cover due to floods in Pakistan

District	Impressionistic account of area of forests destroyed	Remarks on the nature of destruction
Swat and Dir	• 2000,000 cubic feet (57000 cu.meter) approximately 350 hectares • 20 percent of new plantations • 20 to 25% of community forests • 25-35% plantations • 30% to 40% of the 800 acre plantation in Timargara, • 25% to 35% of the 600 acres plantations in Chakdarra • 25% to 35% of the 400 acres plantation in Samar Bagh • 50% to 80% damages to plantations on lands near to the River Swat and its tributaries • 1000 acres commercial poplar block plantations, 800 acres of domestic farm forests, and about 300 acres of linear plantations in lower Dir district • 30% of the natural forests of	Heavy damage in valley bottom and valleys No visible damage in Lower Dir district Many nurseries and seedlings destroyed

[68] An assumption based on impressionistic accounts.

	upper Dir District sustained damages	
Charsadda and Nowshera	• Flood has washed away eight out of 10 trees in linear plantation (80%), while in areas away from the rivers the damage range between 10% - 20% • In Kund Park, Nowshera and in the nearby villages 5 out of 10 trees (about 50%) of trees have been uprooted by the flood	Major damage to nurseries Forests near rivers heavily damaged

Methodology for Indicator 2

Table 4: Trends in Proportion of Population with Access to Improved Water Source

Indicator	Definition	1990 -91	2004 -05	2006 -07	2007 -08	2008 -09	MTDF target 09-10	MDG target 2015
Proportion of population (urban and rural) with sustainable access to a safe improved water source	Percentage of population with access to improved water source	53	66	66	66	65	76	93

Assumptions

- Although the floods will have a significant impact on access to safe water and sanitation in the short term, the MDG indicator refers to *sustainable access*, and therefore may not be severely affected in the medium to long term.
- Rural installations will be particularly hard hit. Repair of rural installations will lag behind urban installations.
- Rehabilitation of water and sanitation infrastructure will be more rapid in KP, where there is a comparatively greater number of partners operating in the sector.
- WASH cluster partners and the Government of Pakistan will be able to rehabilitate a significant number of water and sanitation facilities over the next two years, mitigating loss.

a) Damages

A. Forecast to 2010 the denominator and numerator based on the MDG Target Indicator data from 2004/5 – 2008/9:
65[69]/76 = 0.855

[69] Represents the percentage of the total population with access to improved sources of water (i.e. hand pump, well/spring, piped water supply).

B. Estimate the ***net change*** in population with access to safe water source by end 2010 *as a result of the floods and flood responses.* Add/subtract the net change from the numerator in A, above:
This is estimated as 2 percent.[70].

C. Re-calculate the post-flood expected end 2010 Target Indicator proportion at the national level:
(65-2)/76 = 0.83

D. The difference between A and C represents the damage to 2010 Target Indicator *as a result of the floods and flood responses:*
0.855 – 0.83 = 0.025

b) Losses

A. Commit to a recovery period of 5 years or less:
The recovery period is taken as up to five years (2010 to 2015)

B. Forecast expected 2010 Target Indicator denominator and numerator based on the **expected MDG Target Indicator 2010 Level** (because growth is stagnant):
65/76 = 0.855

C. Determine the ***net change*** in the population with access to safe water on an annual basis *as a result of the floods and flood responses:*
The expected annual net change in this regard is shown in Table 3.

D. Recalculate the revised projected post-flood annual Target Indicator. (This will be on net change in flood affected areas.)
Recalculated revised post-flood annual Target indicators are given in Table 3.

E. The area between the trend lines calculated in B and D represent loss at the national level:
See Table 3.

F. Translate this into the excess loss as a result of the floods on an annual basis.
See Table 3.

Table 3: Loss Calculations for Access to Improved Water Source

Year	Expected Annual net Change in population with access to safe water	Revised Recalculated post-flood annual target indicator	loss (number of people losing/gaining access to safe water) on an annual basis
2010	(-)2.0	0.83	(-)3,412,000
2011	0	0.83	0
2012	0.50	0.835	953,000

[70] It is estimated that there has been a reduction of 20 to 21% in the percentage of population in the flood affected area with access to safe drinking water. Given that the floods have affected 10% of the population, this means that 2.0 to 2.1 percent of the population of Pakistan no longer have access to safe drinking water due to the floods.

2013	0.50	0.842	953,000
2014	1.0	0.855	1,706,000

Indicator 3: *Proportion of population with access to improved sanitation*[71]

Table 5: Trends in Proportion of Population with Access to Improved Sanitation

Indicator	Definition	1990 -91	2004 -05	2006 -07	2007 -08	2008 -09	MTDF target 09-10	MDG target 2015
Proportion of population (urban and rural) with access to sanitation	Percentage of population with access to sanitation	30	54	58	66	63	70	90

a) Damages

A. Forecast to 2010 the denominator and numerator based on the MDG Target Indicator data from 2004/5 – 2008/9:
63/70 = 0.9

B. Estimate the ***net change*** in access to sanitation by end 2010 *as a result of the floods and flood responses.* Add/subtract the net change from the numerator in A, above:
This is estimated as 4.25[72] per cent.

C. Re-calculate the post-flood expected end 2010 Target Indicator proportion at the national level:
(63-4.25)/70 = 0.839

D. The difference between A and C represents the damage to 2010 Target Indicator *as a result of the floods and flood responses:*
0.9 – 0.839 = 0.061

b) Losses

A. Commit to a recovery period of 5 years or less:
The recovery period is taken as up to five years (2010 to 2015)

B. Forecast expected 2010 Target Indicator denominator and numerator based on the **expected MDG Target Indicator 2010 Level** (because growth is stagnant):
63/70 = 0.9

[71] The computations use access to toilets as a proxy for sanitation.

[72] This figure is based on the findings of UNHABITAT's assessment report (i.e., Assessment Report, Flood Affected Areas of Pakistan, UN HABITAT, September 2010) which finds that on average 42.5 percent of flood affected areas have no access to toilets after the floods. Since the flood affected areas constitute 10 percent of the national population an estimated 4.25 percent (i.e., 42.5*10%) of the national population have no access to toilets.

C. Determine the ***net change*** in the access to sanitation on an annual basis *as a result of the floods and flood responses:*
The expected annual net change in access to sanitation is shown in Table 5.

D. *Recalculate* the revised projected post-flood annual Target Indicator. (This will be on net change in flood affected areas.)

Table 6: Loss Calculations for Access to Sanitation

Year	Expected annual net change in percentage of people with access to sanitation	Revised recalculated post-flood annual target indicator	Loss/gain (people losing/gaining access to toilets) on annual basis
2010	(-)4.25	0.839	(-) 7,250,500
2011	+ 1.0	0.853	+ 1,706,000
2012	+ 1.0	0.867	+ 1,706,000
2013	+1.25	0.885	+ 2,132,500
2014	+1.0	0.9	+ 1,706,000

MDG Goal 8

Methodology for Projections

- OLS regression was used to estimate the elasticity of inflation with respect to debt. Inflation was regressed against ODA, Total debt, average nominal exchange rate, the fiscal deficit and the current account balance.
- All the coefficients were significant

Table 7: Some Determinants of Inflation

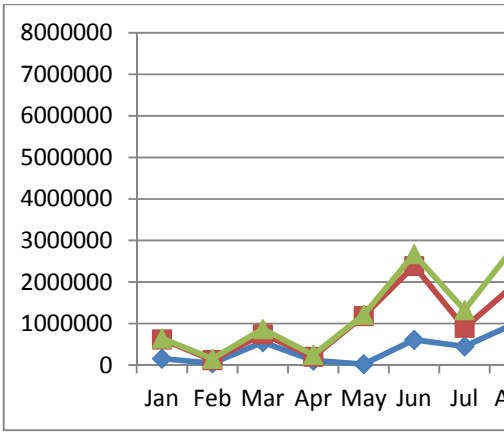
Variable	Coefficient	T statistic	F Statistic	R square
Current Account Balance	-0.0006	-3.16	25.77	0.98
Average Exchange rate	-2.75233	-5.33		
Fiscal deficit	2.171669	6.99		
Total debt	0.134169	2.95		
ODA	4.211468	3.02		

Dependent Variable=year-on-year CPI

Projected flow of ODA to Pakistan after floods 2010

Month	Expected Commitment	Expected Disbursement	Expected Utilization
Jul	450,000	450,000	425,000
Aug	1,000,000	950,000	925,000
Sep	1,500,000	1,490,000	1,480,000
Oct	1,750,000	1740000	1700000
Nov	1,800,000	1790000	1750000
Dec	2,000,000	1950000	1900000
Jan	2,250,000	2240000	2200000
Feb	2,500,000	2490000	2450000
Totals	**13,250,000**	**13,100,000**	**12,830,000**

2010 to Feb 2011 (US $ x1000)



ODA Flow Projections for July

Net ODA Flows to Pakistan (US$ billion)

Year	Net ODA Received	Year	Net ODA Received	Year	Net ODA Received
1967	6.35	1981	2.7	1995	1.34
1968	4.89	1982	2.76	1996	1.4
1969	3.72	1983	2.28	1997	0.96
1970	4.15	1984	2.13	1998	1.71
1971	3.84	1985	2.28	1999	1.71
1972	3.25	1986	2.78	2000	0.96
1973	4.34	1987	2.3	2001	2.72
1974	4.91	1988	3.37	2002	2.94
1975	5.75	1989	3.39	2003	1.25
1976	7.46	1990	2.7	2004	1.44
1977	3.7	1991	2.94	2005	1.44
1978	3.3	1992	2.06	2006	1.65
1979	3.32	1993	1.93	2007	1.54
1980	4.61	1994	3.08	2008	0.92

Pakistan's Net Official Development Assistance and Official Assistance[73] (US$)

Year	Net ODA & OA Received	Year	Net ODA & OA Received	Year	Net ODA & OA Received
1967	481820000	1981	820780000	1995	820850000
1968	400660000	1982	913580000	1996	881910000
1969	327910000	1983	726050000	1997	595610000
1970	420830000	1984	727480000	1998	1052390000
1971	413460000	1985	767490000	1999	732930000

[73] Official aid is provided under terms and conditions similar to those for ODA. Part II of the DAC List was abolished in 2005. The collection of data on official aid and other resource flows to Part II countries ended with 2004 data. Data are in current U.S. dollars.

1972	304730000	1986	912990000	2000	700350000
1973	282350000	1987	815690000	2001	1941510000
1974	444270000	1988	1353200000	2002	2135730000
1975	656920000	1989	1410500000	2003	1071370000
1976	1011750000	1990	1126620000	2004	1439310000
1977	585520000	1991	1368870000	2005	1606560000
1978	633370000	1992	1011490000	2006	2139820000
1979	708140000	1993	1001690000	2007	2243750000
1980	1180880000	1994	1603250000	2008	1539360000

#

#

Net ODA per Capita

Year	Net ODA per capita Received	Year	Net ODA per capita Received	Year	Net ODA per capita Received
1967	8.68	1981	9.65	1995	6.71
1968	7.01	1982	10.45	1996	7.03
1969	5.58	1983	8.08	1997	4.64
1970	6.94	1984	7.88	1998	8
1971	6.61	1985	8.1	1999	5.44
1972	4.72	1986	9.38	2000	5.07
1973	4.24	1987	8.16	2001	13.73
1974	6.46	1988	13.19	2002	14.74
1975	9.25	1989	13.4	2003	7.22
1976	13.8	1990	10.43	2004	9.47
1977	7.74	1991	12.36	2005	10.31
1978	8.12	1992	8.91	2006	13.45
1979	8.81	1993	8.6	2007	13.8
1980	14.27	1994	13.43	2008	9.27