Orissa witnessed a series of major natural disasters in 1999. To begin with there were the severe floods in August, which affected seven coastal districts. Then, in October, within a span of just 11 days, 14 districts in the state were devastated by two cyclones. The first cyclone, which lasted overnight from 17 to 18 October, was classified as a very severe cyclonic storm with wind speeds reaching 200 km per hour. The second cyclone, from 29 to 30 October, was a rare cyclone of catastrophic intensity, with wind speeds of 300 km per hour. It swept the entire Orissa coast, affecting 12 districts and parts of neighbouring West Bengal, devastating a 250 km stretch of eastern Orissa’s coast. Ten thousand people were reported killed and many thousands more devastated.

The violent cyclone swept the state with sustained winds of 160 mph. It was the worst cyclone in meteorological history, with one of the highest wind speeds ever recorded--223 mph. It lasted 24 hours when most cyclones last no longer than three. The storm hurled 30-feet waves onto shore, washing away entire villages, flattening mud huts, and drowning thousands who managed to survive the powerful winds. The super cyclone exposed the people and the landscape to the impact of 3 natural hazards:

- Storm surges
- High-speed wind
- Heavy torrential rain.

These resulted in 3 different types of impacts:

- Physical destruction
- Saline inundation
- Flooding
The official death toll was 9,893, but there were difficulties in making accurate estimates and local people insist the final death count was much higher. Whole villages along the sea in Ersama block of Jagatsinghpur district, were washed away - no one knows how many people were lost. The cyclone also destroyed the livelihood of the coastal state's farming community--it saturated more than 1 million hectares of cropland under salty water and killed some 406,000 livestock. Millions of people who eked out their living on the land were left homeless and without a means to survive. The cyclone struck just three weeks before the harvest; almost all the plantations in this mostly agricultural community--paddy fields, sugar cane, and vegetable crops--were destroyed. About 11 million people, nearly a third of the state's population of 35 million, were estimated by the UN agencies to be directly affected, having lost their shelter, crops, cattle and livelihoods. Another seven million people were partly affected due to the large-scale collapse of infrastructure, including communications and surface transport. The worst affected coastal districts of Puri, Cuttack, Kendrapara, Nayagarh, Khurda, Bhadrak, Jagatsinghpur, Japur, Balasore, and Ganjam were in fact Orissa's most fertile belt often refered to as the state's rice bowl. The districts of Kendrapara, Jagatsingpur, and Puri suffered saltwater inundation from a 5-meter tide that penetrated 26 km inland, further affecting agricultural cropland. The cyclone hit 12 coastal districts that constitute the grain bowl of Orissa.

The most severely affected districts were Balasore, Bhadrak, Cuttack, Ganjam, Jagatsinghpur, Japur and Kendrapara (total population: around 11 million people). The districts of Khurda, Puri, Nayagarh, Gajapati, Keonjhar, Mayurbhanj and Dhenkanal were partly affected. OCHA reported that in the seven worst affected districts, over 70% of the shelters were completely destroyed, including 10- 15% of those houses with non-thatch roofs. The Southern Electricity Supply Corporation estimated that total damage to the power grid was approximately Rs 330 million.

**DESCRIPTION OF INITIAL RESPONSE ACTIVITIES**

The Indian Meteorological Department (IMD) issued cyclone warnings three days before the cyclone struck Orissa in October 1999. Residents within ten km of the sea were asked to evacuate their homes. Nearly 150,000 people were shifted from the coastal villages of Puri, Bhadrak, Jagatsinghpur, Kendrapara and Balasore districts. Cyclone shelters constructed by the Red Cross in six coastal districts of Orissa helped to protect 30,000 people from the fury of the cyclone. But what caught everyone off-guard was the sheer ferocity of the storm which swept the entire Orissa coast, across 12 districts and parts of neighbouring West Bengal, at wind speeds of 300 km per hour. The administration learned that it was a super cyclone at 5:30am on 29 October. District Collectors were immediately informed. At around 7:30am the state's communication networks collapsed and the situation could no longer be monitored.

In the aftermath of the 29 October super cyclone, urgent needs had to be met: drinking water, foodstuff and kitchens, clothing, blankets and utensils, healthcare to control the outbreak of epidemics, temporary shelters, cooking fuel and kerosene and the disposal of carcasses. But aid workers faced many obstacles.

With the state administration paralysed, immediate rescue and relief measures had to be organised from outside the state. The Chief Minister of Orissa appealed to individuals as well as to national and international aid agencies to extend humanitarian
support. The state also asked for assistance from the central government, defence and paramilitary forces.

The Prime Minister created a task force headed by the Defense Minister to direct and coordinate all rescue, relief, and rehabilitation efforts. The Task Force identified seven priority areas, namely drinking water, foodstuff and free kitchens, clothing, blankets, utensils, health, temporary shelters, polythene sheets, cooking fuel, kerosene and disposal of bodies, carcasses for immediate action. The state government received a total of Rs 828.15 crores (US$184 m) from the National Calamity Relief Fund and Rs 38.10 crores (US$8.46m) from the Prime minister’s Relief Fund.

The United Nations Disaster Management Team (UNDMT) convened in New Delhi to set up emergency relief operations. The UN Resident Coordinator offered the Chief Minister of Orissa the full support of all UN agencies in India in restoring normalcy and mobilizing funds for rehabilitation and reconstruction. Interacting with the Government at the Centre and the State, as well as collaborating with international and national non-governmental organizations (NGOs), the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP) and the World Food Programme (WFP) prepared daily situation reports that were shared with the donor community. UNDP coordinated the efforts of all UN agencies working in Orissa.

The total UN special assistance to the victims of the cyclone amounted to almost $16 million. UNICEF contributed more than half -- some $9.4 million, including $3 million worth of medical and relief supplies distributed by the end of December 1999. WFP contributed some $5.1 million worth of blended food, rice, pulses and high-energy biscuits. The United Nations Population Fund (UNFPA) provided assistance worth $700,000, which included supply of reproductive health kits, support to five mobile medical units and logistic support. The World Health Organization (WHO) contributed $100,000 towards the setting up and management of an emergency surveillance system to control the spread of epidemics and technical assistance.

Other UN agencies made cash contributions to be routed through UNDP for use in Orissa. The United Nations Educational, Scientific and Cultural Organization (UNESCO), the UN Office for the Coordination of Humanitarian Assistance (OCHA), and the Government of Norway each contributed $50,000. UNDP allocated $420,000 through its ongoing programmes on food security and water rehabilitation, and an additional $15,000 towards the supply of groundnut seeds for farmers in the affected areas.

The World Bank too was a participant in the UNDMT meetings with NGOs and bilateral agencies in New Delhi and its 20 member assessment team visited Orissa in December 1999. In one of its largest release of emergency funds since the Kosovo crisis, the United Nations Children's Fund (UNICEF) released $3 million from its Emergency Fund to finance programmes in health, education, nutrition, water & sanitation, and child protection services. In the days preceding the super-cyclone UNICEF India mobilized 450 tonnes of food, medicines and emergency supplies worth more than $1.25 million.

The U.S. Ambassador to India issued a disaster declaration in the wake of the cyclone and USAID/OFDA responded immediately by providing $25,000 to the Prime Minister’s National Relief Fund. At the request of the Ambassador, USAID/OFDA provided
The Orissa Super Cyclone 1999

approximately $107,000 to the USAID Mission to support a grant to CARE for the local purchase of plastic sheeting. A USAID/OFDA Regional Advisor, based at the regional office in Kathmandu, traveled to Orissa on October 22 to participate as a member of the UNDAC team. On his recommendation, and in coordination with the government and other U.N. agencies organizations, USAID/OFDA transmitted $3.2 million to the USAID Mission in support of CARE and CRS emergency relief programs.

The UNICEF state representative in Bhubaneshwar conducted daily coordination meetings with high-level participants from state and local government and international and national relief agencies (including Caritas, MSF, EFICOR, CRS, CARE, Action Aid, Plan International, Save the Children, Lutheran World Services, IFRC and Oxfam). Over 25 international NGOs were involved in the relief effort.

The CARE program, at a cost of $2 million, provided household kits (consisting of clothing, cooking utensils, basic tools, plastic sheeting, and sleeping mats); seeds and tools for kitchen gardens; and, clean drinking water to 250,000 beneficiaries in Kendrapara, Jagatsinghpur, Cuttack, and Puri. The CRS program, at a cost of $1.2 million, provided shelter and clothing. On November 2, USAID and Food for Peace redirected 10,380 MT of Title II assistance to CARE and CRS to meet the food needs of 1.2 million cyclone victims in Orissa State over the next several months.

DESCRIPTION OF RECOVERY/ RECONSTRUCTION ACTIVITIES AND THEIR ASSESSMENT

In the aftermath of the super cyclone on the request of the government of Orissa, a joint UN assessment framework was developed. Immediate assessment was carried out by UN Agencies:

- UNDP
- UNICEF
- FAO
- WHO
- WFP

To enumerate the loss caused to different sectors during the cyclone. In November and December 1999, several UN missions -- the International Labour Organization (ILO), WHO, UNESCO and the Food and Agriculture Organization (FAO) -- visited Orissa to assess the impact of the cyclone and the long-term rehabilitation needs in agriculture, livelihood, health and education. Thematic workshops aimed at addressing emerging issues at the relief, rehabilitation and reconstruction phases were organised. Workshops were held in February and March 2000 on shelter (sponsored by UNDP) and food security (FAO), and those on education (UNESCO) and health (WHO) in April and May 2000.

A high-level team from the World Bank visited the cyclone-devastated state to assess the damage. The primary task of the 20-member team was to assess the resources needed to rebuild the state's economy. In addition to the regular coordination meetings, two policy workshops were held at the UN House in Bhubaneshwar, bringing together key NGOs, government agencies, donors, bilateral agencies and UN organizations to focus on rehabilitation activities. The UN agencies worked out a preliminary budget of $ 50 million to be spent in the 15 years following the disaster.
An important outcome of these meetings was the establishment of the Orissa Disaster Mitigation Authority (OSDMA) by the Government, as the nodal coordinating agency with representation from all key players. Government of Orissa constituted Orissa State Disaster Mitigation Authority (OSDMA) after the October 1999 super cyclone, to have a systematic and planned approach to disaster mitigation management in the State.

The UN initiatives in Orissa were taken in collaboration with the State Government and OSDMA and addressed issues related to food and nutrition, health, livelihood, agriculture, shelter, water and sanitation, and disaster management, strengthening of infrastructure, etc. OSDMA worked in close coordination with Government of India and its agencies, Government of Orissa, its various departments and agencies, the administration of all 30 districts of the State, local self government, communities, non-governmental organisations (NGOs), community-based organisations (CBOs), bilateral and multilateral aid agencies, U.N. agencies, governments of other states in the country.

In the month following the super cyclone UN assistance to the rehabilitation efforts was around $3 million. UN agencies also sought support worth $50 million from international donors for an action plan and prepared a joint report to the donor community following a request by the Orissa Chief Minister. In response to this appeal Denmark donated $30,000 and the Netherlands $46,500.

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<tr>
<th>Agencies</th>
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<tr>
<td>OCHA</td>
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<td>UNDP</td>
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<td>WHO</td>
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<td>UNFPA</td>
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<td>WFP</td>
<td>$200000 + $375000 = $575000</td>
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<td>UNICEF</td>
<td>$200000 from executive directors emergency fund</td>
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Note: UNICEF also provided $ million in aid for cyclone victims. It also pledged $15 million to carry out restoration and rehabilitation in the next 15 years.

Source: Orissa Super Cyclone, M.C. Gupta and Vinod Sharma, NCDM

INTERNATIONAL RED CROSS SOCIETY
Under the Orissa Disaster Mitigation Programme - supported bilaterally by the German Red Cross - training for village level volunteers, task force members and woman volunteers was conducted in the disaster preparedness training centre of IRCS Orissa state branch. A 12 member Disaster Preparedness Committee (DPC) was formed for each cyclone shelter and these in turn recruited about 25 persons as a task force. The Task force members are trained in disaster preparedness, first aid, search and rescue, home nursing and vocational training (to strengthen self-help groups) and health awareness.

Between April and September 2001, 489 volunteers were trained in disaster preparedness and management, 321 volunteers in first aid, 312 in search and rescue and 239 in home nursing. A feeding programme was implemented in six villages catering to 852 children, 278 women and destitute people. This programme was supported by the Swiss Red Cross and the Bavarian branch of the German Red Cross.

**ACTION AID**
Action Aid, the international development agency, launched its programme for the community care of destitute women and children, termed the Sneha Abhiyan Campaign, literally the Campaign of Love in November 1999. Between December 1999 and July 2000, hundreds of women and children were rehabilitated in temporary shelters called Mamta Gruhs.

Under Sneha Abhiyan, 801 orphaned children and children at risk, 638 widows/single women at risk and 209 aged persons were identified and taken care of. The programme also targeted longer-term rehabilitation through education and livelihood-generation. Educational support was provided to 360 children. A sum of Rs 476000 was provided to restore the livelihoods of 170 families. Credit was provided to 99 families. These families would have to repay their loans to their self-help groups after a period of one year, at an interest rate of 12 per cent per annum.

In response to this need, the UK government’s Department for International Development (DFID) allocated a further £25 million to target the rehabilitation of the livelihoods of the poorest affected people. This money was administered through DFID’s India office (DFIDI) based in Delhi.

**YMCA**
YMCA built cyclone resistant houses, particularly in two villages: Olatpur and Jojala. The beneficiaries were selected through Community Management Groups, formed by all sections of the community. The cyclone-resistant houses were designed and constructed with people's participation. The rehabilitation process included the preservation of people's livelihood, through the supply of agricultural tools, seeds and livestock. Two schools were rebuilt. A book bank was also planned and scholarships provided for students. Under the Integrated Health Promotion Project, a daily clinic was started at Olatpur, and children in the age group of 6 months to 2 years regularly receive milk mixed with high protein mix. Also, 5 tube wells were installed in the two villages.

**CARE**
The largest single programme of CARE in Orissa was the Household Livelihood Restoration Support Project. This project targeted 40,000 poor farmers and share croppers in 500 villages by supplying them with them with paddy seeds. Ploughing and
planting was often difficult as hundreds of thousands of cattle had been killed in the storm, so, where possible, CARE helped farmers with tractors and power tillers. Another CARE project replanted 2.6 million saplings to help replace trees and bushes lost in the cyclone.

Helping the population of Orissa prepare for future storms was another key part of CARE's response. One project established a baseline map of areas most at risk from future storms. CARE partnered with India's National Institute of Amateur Radio to organise a radio network and train volunteer radio operators to serve as an early warning system. CARE committed itself to building 20 cyclone shelters in Orissa aimed to protect 60,000 people. It also supported the poorest families to build smaller secure shelters on their land, to protect them during storms.

**UNICEF**

According to its estimates more than 3.3 million children were affected by the cyclone and an undetermined number had been separated from their families, orphaned or seriously injured. In some of the affected districts of Orissa, UNICEF mounted a door-to-door campaign in conjunction with other agencies in which volunteers walked from village to village in an attempt to identify lost, injured or orphaned children. UNICEF laid out immediate, medium and long-term interventions based on the "Five-R Strategy" - rescue, relief, restoration, rehabilitation, and reconstruction – enumerated by the government of Orissa.

It organised programs in the areas of health, education, nutrition, water & sanitation, early childhood care, and special protection of orphaned and injured youngsters. Among some of the donors of the UNICEF programme were the governments of Netherlands, France as well as the German and Spanish committees for UNICEF. UNICEF with DFID funds supplied textbooks printed by the government of Orissa to schools. The textbooks are part of the book bank scheme of the schools.

**WHO**

was a part of the UNDAF assessment team to Orissa and conducted the initial rapid health sector assessment and provided inputs into the UN appeal. It also provided other technical assistance to the health authorities throughout the initial disaster period. Guidelines on the management of diarrhoeal diseases (including cholera guidelines) and acute malnutrition were provided. The World Health Organisation (WHO) and Medecins Sans Frontieres (MSF) helped the State government set up a disease surveillance system, which will give early warning in case of an outbreak of diseases following a cyclone. In the worst-hit areas, several U.N. volunteer-doctors were involved in training field staff and improving the quality of disease surveillance.

**UNDP** launched the Community-Based Disaster Programme (CBDP) in the state which trained small armies of volunteers to handle evacuation, first aid, reconstruction, carcass disposal and counseling in disaster situations. (Case study: annex 4) UNDP contributed $ 50,000 USD and DFID contributed $ 270,000 USD for the programme. This programme on CBDM was supported by the United Nations Development Programme (UNDP) and the Department for International Development (DFID) of the Government of UK. The Orissa State Disaster Management Authority (OSDMA) was the nodal agency for implementation and monitoring of the project at the State level.

The activities of the Programme included:
- Preparation of Block and Gram Panchayat Disaster Management Plan for the selected ten blocks
- Preparation of Village Contingency Plans for cyclones and floods for all villages of the aforesaid blocks
- Organisation of Training of Block and Gram Panchayat functionaries in disaster preparedness
- Training Programme for the task force constituted from the village preparedness exercises
- Mock drills at the Block/GP level involving all stakeholders
- Networking of all government departments and NGOs for disaster

With a focus on disaster preparedness and mitigation, the programme operated through a small army of National United Nations Volunteers (NUNVs) - trained professionals in fields as diverse as medicine, agriculture, information technology and construction. The NUNVs facilitate the setting up of empowered groups in each village.

More direct development interventions of the CBDP included the setting up of information centres in the state. The centres were equipped with internet-ready computers to access aamagaon.com, the local e-governance portal developed by UNDP. The portal made available application forms for pensions, loans and kisan (farmer) cards. Villagers' grievances were emailed to local authorities. The centre facilitators also helped the villagers surf the Net for agricultural information, and imparted computer training to local boys and girls.

Another important communication practice encouraged was the use of amateur (HAM) radios in the villages. Simple to operate and not very expensive to install, HAM radios are reliable means of communication during floods and other disaster situations. UNDP brought in instructors from the National Institute of Amateur Radio (NIAR), Hyderabad, to offer free training programmes to villagers. Along with the Swiss Development Corporation the UNDP has provided $3.44 lakhs for the construction of cyclone resistant structures. The UNDP has also decided to set up a regional networking agency for disaster preparedness programmes in Bhubaneswar, the capital of Orissa.

**DFID**

After the 1999 super cyclone, Department for International Development (DFID) provided over £27 million to meet immediate rehabilitation requirements in the 14 cyclone-affected districts. This assistance given through government, UN agencies and civil society organizations contributed towards restoration of livelihoods, essential health services, educational materials and damaged lift-irrigation points. DFID provided substantial support of over £27 million towards urgent relief and rehabilitation in the 14 cyclone-affected districts. £33.2 million of DFID assistance is helping reconstruct up to 3,500 primary schools destroyed during the cyclone. DFID has supported UNDP in providing technical support to Orissa State Disaster Mitigation Authority (OSDMA) to pilot a community based disaster preparedness initiative in the cyclone prone areas of the state. This project aims to build the capacity of the community and its institutions in disaster preparedness and management.

The projects funded under the DFID rehabilitation programme varied in duration from 10 to 24 months and most of them were implemented over the period from February 2000 until December 2002. Some of these were:
- Orissa Cyclone Health Support (UNICEF)
Orissa: Post Cyclone Livelihoods Rehabilitation, through Catholic Relief Services (CRS)
Orissa Disaster Management Project in 10 most vulnerable coastal blocks
Orissa Post-Cyclone Assistance: Immediate Emergency Repairs of Health Facilities in Worst Affected Areas
Rehabilitation of Cyclone Damaged Lift Irrigation Points in Orissa

WORLD BANK
In the aftermath of the cyclone that ravaged Orissa, India applied for a $300 million World Bank loan and received $150 million. After an on the spot study the bank was of the opinion that the state government would not be not be able to utilize an amount beyond $ 150 million. Some of the World Bank assisted projects and their present status is given below:

1) Roads
OSDMA has accorded Administrative Approval for 60 projects. Out of for this 5 projects were dropped or contract terminated leaving a balance of 55 projects. The project cost is Rs.5,911.67 lakhs. 22 projects have been completed with the expenditure of Rs.1,796.05 lakhs. 32 packages are under execution.

2) Cyclone Shelters
Administrative Approval for 19 packages with 22 Cyclone Shelters was accorded by OSDMA, out of for which 5 packages with 5 Cyclone Shelters have been dropped leaving a balance of 14 packages with 17 Cyclone Shelters. Out of the 14 packages, 2 packages are completed and the rest 12 are ongoing projects with the value of work done is Rs.120.00 lakh and 138.91 lakhs respectively.

3) Rural Water Supply
65 packages related to RWSS are cleared by World Bank at an estimated cost of Rs.298.36 lakh. Out of the above packages, 62 packages at an estimated cost of Rs.275.86 lakh are taken up. Out of this 29 packages have been completed and 27 packages are in progress. The value of work done is Rs.204.69 lakh.

Source: Government of Orissa website

FAO
Food and Agriculture Organisation (FAO) of the United Nations constituted a FAO Mission for Orissa to assess the damages of the super cyclone on agriculture and allied sectors as well as to formulate project profiles for agricultural rehabilitation. The team comprised of three national consultants; one each from agriculture, animal husbandry and fisheries.
ASSESSMENT OF REHABILITATION WORK

A notable success of the international rehabilitation efforts was the creation of the programme on CBDM, supported by the United Nations Development Programme (UNDP) and the Department for International Development (DFID) of the Government of UK. The Orissa State Disaster Management Authority (OSDMA) was the nodal agency for implementation and monitoring of the project at the State level. One of the highlights of the programme was the preparation of Community Contingency Plans. The project implemented over a period of 19 months in 10 blocks in the state strengthened the capacity of the government functionaries as well as communities to cope with natural hazards more effectively. These initiatives helped the state government to develop a state disaster management plan and policy, currently in draft form and due to be placed in the Orissa State legislative assembly for approval. The project was also able to achieve a wide reach in which about 2550 community volunteers were trained. Approximately 400 villages took up even the Community Contingency Fund. Most importantly, it was not just the community members but also a whole range of associated personnel who were associated with the programme which included around 500 volunteers comprising teachers, college students, self help group members and, NGOs/CBOs personnel. The experience of the work carried out in Orissa has led to creation of a national programme to be carried out by UNDP. Based on the similar principles as the project, the new programme would seek to build capacity in disaster management of other agencies working at the grassroots in other parts of the country.

Another remarkable achievement of the international agencies was providing the decisive support for the establishment of the Orissa State Disaster Mitigation Authority.

The UN identifies its strengths in the entire rehabilitation and reconstruction efforts as:

- Policy changes made in the Orissa State agriculture with focus on Early Warning System
- Community Based Development Plan of Orissa placed as a model for other States
- Creation of positive environment for attracting funds which resulted in the UN system contributions of US$ 30million in response to Orissa Super Cyclone 1999 and over US$ 23 million in response to Gujarat earthquake 2001
- Partnership with the Secretary to government of India for Reconstruction Management
- Strategic support provided for setting up of State Disaster Mitigation Authority in Orissa
- Strategy of the on going programmes of the UN family to channelize individual resources through the network of NGO partners with strong field presence, trust and credibility among the local communities in the affected areas, in addition to their co-operation.

Despite the substantial support from the national government as well as the international agencies the rehabilitation efforts in Orissa have not met with the anticipated level of success. This has been largely attributed to the functioning of the state government. The performance of the state government can be judged from this report in the ‘Times of India’ three years after the cyclone.
• Only 11 out of 100 proposed cyclone shelters had been built
• A mere 392 out of 3,779 schools had been rebuilt
• Government departments had not spent funds allocated to them for relief and rehabilitation.

The Times of India again in a report dated 9, April 2002 cited the state’s revenue minister that major departments like water resources, rural development, and housing had not been able to utilize fully the funds allocated to them for rehabilitation works. Works worth only $ 9.55m of the $ 51 m sanctioned by the World Bank had been used by March 2002.

Another report in the India Today of 27 May, 2002 too gives examples of the poor state of the rehabilitation efforts.

Two years after the calamity, the state government had only been able to undertake reconstruction projects worth Rs. 600 million under World Bank assistance. The Bank had agreed to provide an assistance of Rs. 23.5 billion in the first phase.