

Draft Report

Hazard Mapping and Participatory Vulnerability Assessment

Program for
Hydro
Meteorological Disaster Mitigation for
Secondary Cities in
South Asia and
South East Asia (PROMISE)



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Asian Disaster Preparedness Center (ADPC)
Hazard and Vulnerability Assessment Report

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Executive Summary

Pakistan is vulnerable to disaster risks from a range of natural hazards including earthquakes, droughts, floods, landslides, avalanches, cyclones and storms, tsunami, glacial lake outbursts, river erosion, epidemics and pest attacks. The human induced disasters that threaten the country include transport, industrial and nuclear accidents, oil spills, urban fires, civil conflicts and internal displacements of communities due to multiple factors.

Hydro meteorological disasters are most frequent disasters occurring in Asian region. The Asian Disaster Preparedness Center (ADPC) has picked up five cities each from Pakistan, Bangladesh, Srilanka, Philippine and Vietnam with the purpose to pilot mitigation project in collaboration with the lead partner organization in respective countries through an analysis conducted in South and South East Asia for city demonstration projects. The selected cities are among the most vulnerable secondary cities subjected to hydro-meteorological events in the recent history. They are rapidly urbanizing and have the potential to be impacted severely affected by hydro-meteorological events in future.

Hyderabad is a historical old city of Sindh Province of Pakistan having established in 1843. It is the 8th largest city in Pakistan and 2nd largest in Sindh with a population of 1.6 million and a growth rate of 2.62%. The female population share is 47%. Hyderabad has a got a forty years old drainage system which often chokes down when it rains heavily. The system is only capable of draining one inch rain water in a 24 hours which is insufficient in case of torrential rains. Even in the normal conditions the existing system is not able to cope with the pressure of sewage because of ever growing population size and urbanization. In many of the low lying areas of Taluka (sub district of Latifabad) even the water disposal machines come under stagnant water.

To map and assess the hazards and vulnerability it was proposed that information should be collected through primary and secondary sources. The team gathered valuable data and relevant information and maps of the city of Hyderabad from city government and other private/civil society working in the city which helped directly or indirectly in understanding the various typology and dimensions of the hydro meteorological issue.

The study was conducted in highly participative manner involving different stakeholders. The process of the study included conducting meetings with representatives of the local government, community workshops with local councilors, citizens and members of different civil society organizations. The target communities were involved in data collection process through participatory rapid appraisal (PRA) techniques. The three inception workshops were held at Union Council level in UC 13,14 and 12 of Taluka Latifabad.

Through the secondary data and interviews with the stakeholders and first hand experience during torrential rains of the year 2006, most of the areas of Taluka Latifabad were identified to be highly vulnerable to hydro meteorological disasters. The current study therefore focuses on most of the areas of Taluka Latifabad and one area of Union Council 16 of Hyderabad City.

The recent heavy rains have exposed the vulnerability of the city against these disasters. The main challenge is to rectify sewage and drainage system of entire city especially low lying areas of the city. As indicated by the people there is likeliness of other disasters to occur in future like earthquake and breaches in canal/river banks which may pose a considerable threat to the dwellers. The summary of disaster events and potential hazards reflects that such disasters may happen in future. Despite the fact that the area under study is prone to recurring disasters, no preparedness strategy has yet been developed. Therefore through PROMISE there is an opportunity to design such a coping capacity of at-risk communities.

The issue of disaster risk reduction needs to be taken up at both policy and community level. At community level some pilot projects could be developed which demonstrate the value of disaster preparedness, additionally, disaster prone communities need to be mobilized for a rights-based activism to secure their rights to lives and livelihoods. At policy level there is a need to undertake target-oriented advocacy by incorporating disaster coping strategies in development planning.

With the establishment of district assemblies under Devolution Plan it needs to be realized that the scope of linking disaster management with overall development planning at district level has been increased. According to the Local Bodies Ordinance 2001 it has become mandatory for each district government to develop a five-year plan for the district. Taking this legal provision as an entry point it could be lobbied that the element of disaster management should be linked with five year development planning and priority should be given to disaster-prone communities and areas in annual resource allocation at district, tehsil and union council level.

The study specifically suggests the following:

- Disaster management in research areas should be linked with the process of annual development planning within the ambit of district assembly. Floods, droughts, earthquakes should not be viewed as transitory and isolated events rather they should be looked at as pending issues of development and governance. Thus, this calls for gearing up line departments to attend to these issues on long-term basis.
- Water and habitat insecurities need to be addressed prominently as these are basic elements, which constitute a livelihood.
- The proposed disaster preparedness strategy may also include health and awareness raising services to disaster prone communities as these two vital components substantially contribute in risk reduction process.
- The dwellings, hamlets and villages which are situated in the low lying areas of Hyderabad city (mostly in Latifabad sub district) are the most frequent subject to the periodical disasters. The structure and placement of houses, non-availability of disaster-resistant physical infrastructure and remoteness comes into alliance to constitute the physical vulnerability of communities at large.
- The recent floods (2006) in Hyderabad occurred solely because of the inadequate sewage system, which has caused huge losses to human misery and infrastructure. Few people

also lost their lives. Therefore some structural and non structural coping mechanisms need to be adopted. Some of the measures needed to be taken include:

- The existing sewage system is inadequate to cater growing population need as outlet drains are narrow and not capable to drain out enough sewage water than required. Whereas the additional pumping stations need to be constructed and Government needs to focus and address this issue at macro (city) level
- In the disaster period outbreak of epidemics is a common thing. The community awareness program and training of volunteers on providing first aid should be the priority of the project. Government should focus to strengthen its vaccination system
- A detailed survey of weak infrastructure is required to be done. A joint survey by AKPBS, Pakistan and Local Government may help identify the intensity of the problem. A building code for seismic proof buildings be established and apex development authority - HDA (Hyderabad Development Authority) should take effective measures to regulate these codes. The community should also be trained in adopting seismic and flood resistant housing techniques
- Water security was the first foremost issue emerged in the vulnerability context alongwith habitat and work security. Community water filters are required by the community to be established at flood safe places
- Since the community is mostly unaware about the coping mechanisms therefore a comprehensive capacity building training program is required to be designed to cater emergency challenges.
- There is considerable volunteerism spirit available in the communities however a thoroughgoing social mobilization process is required to facilitate to form disaster preparedness and management committees. Later on they should be registered as community citizen boards (CCBs). The capacity of these CCBs should be enhanced and strengthened so that they could mobilize public resources in support of community projects aimed at reducing community vulnerabilities against disasters
- Sewage water and rain water disposal be treated and managed separately so as rainwater can be harvested for future use
- Technical capacity of community organizations, masons, school teachers may be enhanced to deal with disaster risk reduction and preparedness issues
- The programmes require focusing on local institutional development, capacity building, and implementation of preparedness activities at neighbourhood or city levels. The program should include strengthening of livelihoods and implementation of small scale mitigation schemes to be identified through local prioritization process
- The community is not much aware about the disaster risks and vulnerabilities as well as basic strategies to deal with the disasters, specific trainings in the areas of response would be needed; e.g. search and rescue, first aid, evacuation, camp management and relief distribution
- Technical capacity of district and municipal officials in hazard prone areas enhanced on disaster risk reduction and preparedness

- Tri partite (Government, Citizenry and Civil Society) dialogues and working group at community level for mainstreaming and development planning should be established
- An emergency operation centre at the Taluka level should be established; and the community organizations will be trained to develop local early warning systems
- Considering the importance of media in awareness raising and education of communities and stakeholders, the project team will establish closer liaison and partnerships with electronic and print media.
- Encourage NGO participation in disaster risk management activities aimed at reducing vulnerability of at-risk-communities and individuals. In specific terms NGO's will be encouraged to participate in training, public education, damage assessment, rehabilitation and construction projects in disaster stricken areas.
- Review the existing building codes, revise and finalize the building codes if necessary and involve in consultation with the city officials Hyderabad Development Authority for wider information;
- Hold workshops with relevant stakeholders (local political leaders, local government departments, NGOs, community groups, civil society organizations) to share the results of risk assessment and to identify strategies for vulnerability reduction; also identify social, technical and financial resources that are locally available to reduce vulnerabilities and mitigate hazards;
- Organize drills at the district/municipal levels with participation of all emergency response agencies;
- Small structural mitigation schemes implemented in most vulnerable villages and towns
- Hold stakeholders consultations including members of vulnerable communities, sectoral representatives, NGOs, technical experts (masons, researchers, engineers) to identify small scale mitigation schemes for implementation in most vulnerable villages and towns; This will be done considering local capacities in mind;
- Prioritize and implement mitigation schemes based upon an analysis of resources available at local level

1. Background

Pakistan is vulnerable to disaster risks of natural hazards that include earthquakes, droughts, floods, landslides, avalanches, cyclones, storms, tsunamis, glacial lake outbursts, river erosion, epidemics and pest attacks. The human induced disasters that threaten the country include transport, industrial and nuclear accidents, oil spills, urban fires, civil conflicts and internal displacements of communities.

Although high priority hazards in terms of the scale and frequency of occurrence and the impact include earthquakes, droughts, flooding and transport accidents; however the most frequent disaster event in Pakistan is floods. The most affected areas are the plains of Sindh and Punjab provinces situated in the lower watershed of the Indus Basin Rivers system; the NWFP and Baluchistan are also affected but mostly by flash floods and hills torrents. In countries like Pakistan the economic pressures force many of the poor to live in dangerous locations; such as flood, drought and land slide prone areas.

Fifty six (56%) per cent of the Indus river basin, one of the largest river basins in Asia, lies in Pakistan and covers approximately 70% of the country's area (IUCN, 2005). Generally major floods in the Indus basin occur in late summer (July-September) when the South Asian Region is subjected to heavy monsoon rains. In the upper to mid reaches of the Basin, it is generally the tributaries like Jhelum and Chenab rivers, which are the cause of flooding, rather than the Indus river itself. The monsoon low depression that causes intense rain develops either in the Arabian sea or the Bay of Bengal. Major flooding is generally associated with the depression from the bay of Bengal moving across India in west/north-westerly direction and then turning north at the border with Pakistan.

In 1992, there was flooding of three major rivers, Chenab, Jhelum, Indus. In all the rivers the flood level recorded was exceptionally high, and the flood was rightly called a super flood with exceptional loss to life and property. Over 7.6 million inhabitants were affected and about a million houses were demolished or severely damaged. In addition to loss of livestock, over 1,300 people are reported to have died. Amongst its after effects, the 1992 floods alone reduced the gross domestic product growth from 6.2% to 4.7%.

Floods in the year 1996, affected 39 districts. A total of 3,486 villages and 1,383,089 persons were affected, almost 1.9 million acres of land was inundated out of which 1.001 million acres carried crops. It caused damage to 44,904 houses of all types and destroyed 20, 146 houses of all types.

1990-2005	
Disaster	Total of damage in USD (,000)
Drought	226,9300
Floods	3,190,7074
Wind	670,107
Storm	

In year 2001 on 23rd July, the cloud burst and heavy torrential rains resulted in floods in areas of Mansehra, Bunair, Rawalpindi, and Islamabad, which caused heavy loss of life and property. Islamabad received 620mm of rainfall in a short span of 7-8 hours, which broke the record of last 100 years.

In 2003 the torrential rains struck a disaster in Southern Sindh resultantly affecting thousands of families in coastal belt and creating emergency situation in urbanities like Hyderabad disrupting life in urban areas.

The recent torrential rains of August-September 2006 were severest ever in Pakistan in general and Sindh and Hyderabad in particular. The down pour was recorded more than 18 hours continuously. In Hyderabad city life remained at a stand still for more than a fortnight leaving inhabitants at the mercy of rain waves.

The recurring phenomena of floods have taken a heavy toll on the socio-economic development of the country. The vulnerabilities of Pakistan and its people are aggravated by a number of factors and conditions that act as dynamic pressures. They include the size and growth of human population, the size and growth of animal population in the arid zones, urbanization and the resultant environmental degradation, climate change and variability. An analysis of the hazards, vulnerability and dynamic pressures indicate that frequency and severity of certain hydro meteorological and geological hazards may increase in the coming years and decades. This would lead to greater social, economic and environmental losses.

2. Introduction

Hydro meteorological disasters are most frequent disasters occurring in Asian region. The Asian Disaster Preparedness Center (ADPC) has picked up five cities each from Pakistan, Bangladesh, Srilanka, Philippine and Vietnam for the purpose to pilot disaster mitigation demonstration projects in collaboration with the lead partner organization in respective countries through an analysis conducted in South and South East Asia. The selected cities are among the most vulnerable secondary cities subjected to hydro-meteorological events in the recent history. They are rapidly urbanizing and have the potential to be impacted severely affected by hydro-meteorological events in future. City authorities of the respective candidate cities consider risk management as one of the priority issues among the problems faced by residents of the respective city and have shown a keen interest to take up activities under city demonstration projects.

In context of above assessment, ADPC has identified the following secondary cities as primary target area for project implementation, namely Chittagong in Bangladesh, Hyderabad in Pakistan, Dagupan city in Philippines, Kalutara in Srilanka and Da Nang in Vietnam.

2.1. The Hyderabad City

Hyderabad is a historical city of Sindh Province of Pakistan having established in 1843. It is the 8th largest city in Pakistan and 2nd largest in Sindh Province with a population of 1.6 million and a growth rate of 2.62%. The female population is 47%. Its importance lies in the fact that it is the District capital and the nearest town to the biggest metropolis, Karachi. The city has a lot of tourism potential due to its archaeological and historical sites and also due to presence of river Indus and various lakes within its boundaries. Its growth potential also lies in its small-scale industries such as food processing, textiles, hosiery, cement, cigarettes, glass, bangles, soap, paper, leather and plastic goods. Hyderabad City is a centre for handicrafts and has good educational and health facilities.

Hyderabad is one of more disaster prone cities in Pakistan and is often plagued by floods due to torrential rains. According to the city government officials, 20% of the population lives in the low lying areas which are flood prone. The ground water table situation in low lying area are near to surface in some places hence the infiltration rate is very low and consequently most of the runoff goes to low lying area and accumulates in very short time. Currently, the city has the maximum capacity of draining out one inch of rainfall in 24 hours which is insufficient. As the result of sudden monsoon rains, the low lying areas of Hyderabad face the issue of drainage disposal and stagnant water becomes the cause of damage to the infrastructure, houses etc as well as becomes a source of water borne diseases.



A view of Hyderabad Old Mud Fort (Katcha Qila)

2.2. Disasters Affecting Hyderabad City

Hyderabad is prone to multiple hazards. The city is particularly vulnerable to disasters like floods, torrential rains, and human induced disasters like fire, gas leakage etc. The other disasters include traffic accidents, electrocution and heat strokes. Unlike floods and torrential rains, drought has a moderate indirect effect on the community economy as food items become dear in drought spells.

The city of Hyderabad lies on the left bank of mighty Indus river and surrounded by canal system is always exposed to breaches in canal and river system. The vulnerable points along main protective bund in the entire District are identified by the provincial irrigation department as under¹:

S#	Taluka/Sub District	Vulnerable Point	Location
1.	Latifabad	Giddumal Front Bund	mile 1/5 to 4/4
2.	Qasimabad	Jamshoro Front Bund	mile 1/0 to 2/0
3.	Hyderabad Rural	Ghaliyoon Front Bund	mile 3/0 to 5/2
			mile 7/0 to 9/0
			mile 10/0 to 12/7
		Hajipur Bund	mile 8/0 to 8/4
		mile 12/4 to 13/5	

Hyderabad has a got a forty years old drainage system which often chokes down when it rains heavily. The system is only capable of draining one inch rain water in a day which is insufficient in case of torrential rains as stated by the local community. Even in the normal conditions the existing drainage system is not able to cope with the pressure of sewage because of ever growing population size and continuous urbanization. In many of the low lying areas of tehsil (sub district of Latifabad) even the water disposal machines come under stagnant water.

January through mid February is a water hard period; when city water sources are exhausted and water becomes a rare commodity everywhere. Knowing no other source the city dwellers have to resort for untreated polluted water that is some times brought from *Manchhar* Lake.



Street Inundation after heavy downpour



Pumping station is submerged under rainwater

¹ Source: Emergency Plan for 2006

Hyderabad city has a sizable industrial establishment that comprises of industries like textiles, cement, glass and soap, pottery, tanneries, and film; handicraft. The silver and gold work, lacquerware, ornamented silks, and embroidered leather saddles, are also well established. Hyderabad is a major commercial centre for the agricultural produce that include millet, rice, wheat, cotton, and fruit. The industrial waste of the city is disposed off in Phuleli Canal which is a source of water supply for irrigation and drinking purposes to Districts of Tando Muhammad Khan and Badin. The water becomes a high risk and has a potential of creating a disaster for the inhabitants of the two districts.

The city of Hyderabad has developed in epochs of time and evolved from a tiny town to a medium level city providing shelter and civic services to more than one and half million population. Hovering electricity cables in entire city is a common scene and it possess a potential to become a disaster. Especially in period of floods and monsoon rains as well as in routine the electricity cables may create disaster due to cables break down taking the lives of people at risk.

2.3. Administrative System of Hyderabad

Hyderabad District is comprised of four Talukas (sub Districts) ie: Hyderabad City, Latifabad, Qasimabad and Hyderabad Rural.

Under the devolution system the District is headed by a Nazim (Administrator) elected by Union Council (basic administrative unit) Nazims (Administrator). At the District level the district assembly takes care of development planning. The Union Nazims become the members of the house and represent their respective areas in the assembly.

The District Coordination Officer (DCO) works under District Nazim as the chief of District bureaucracy. About 11 Executive District Officers (EDOs); (department heads such as Health, Revenue, Agriculture) work under DCO. A district has a number of Talukas (sub district level unit above the UCs) which have similar elected Nazims and govt. officials system as the District for localized services. Under Talukas there are a number of Union Councils headed by Nazims and Naib Nazims at UC level.

There are 46 union councils in Hyderabad District; from which 16 union councils are only in Taluka Latifabad. Most of the areas of Latifabad Taluka are low lying. The Government has identified 26 locations as very low lying.

3. The PROMISE Program

Asian Urban Disaster Mitigation Program (AUDMP) 1995-2005 was the program launched and successfully accomplished by Asian Disaster Preparedness Center (ADPC) which provided the context for the PROMISE program. As the PROMISE was based on learning of its fore-runner AUDMP project following was the basis which served as rationale for the PROMISE:

- Context provided by and lessons learned from the Asian Urban Disaster Mitigation Program implemented by ADPC during 1995 to 2005.
- Priority action for reducing disaster risks identified by ADPC during the course of implementation of its various projects on Urban Disaster Risk Management Program objectives and expectations outlined in the APS.
- Interactions and dialogue with partner institutions during the proposal writing.
- Demonstration activities in target countries.
- Strong network of cities dedicated to risk management practices within Asia.
- Partnership with a number of local partner institutions.
- Regional training courses, specific to the urban context.
- Regional and national level workshops to promote urban risk mitigation practices.
- Primer for Risk Management.
- Publications such as the Manual for training masons for construction in earthquake prone areas, Proceedings of Regional Workshop on best practices in disaster mitigation, Handbook for housing in flood prone areas.
- Collaborations with number of international institutions and networks.
- Risk Management Strategy 2020 for Urban Disaster Risk Management.
- Develop more field level champions to promote awareness and political will for vulnerability reduction.
- Make available more simple, cost effective methods, technologies, tools for conducting regular vulnerability assessments for the benefit of practitioners.
- Promote creation of a participatory governance mechanism sensitive to community perceptions and needs, making the most vulnerable groups a partner in decision making process.
- Increase the awareness of cost effective solutions and options for reducing vulnerability through more demonstrations.
- Develop plans and formulate short and long-term strategies for risk reduction at city level.
- Make available more decision making tools for policymakers to undertake appropriate decisions related to macro level issues in terms of physical planning and construction in prone areas.
- Promote more collaborations between public, private and non-government sector to increase the involvement and investment in risk reduction activities.
- Encourage community based financial mechanisms for improvements in shelter and community infrastructure.

Based on the context and learning of AUDMP, ADPC has launched ‘Program for Hydro Meteorological Disaster Mitigation in Secondary Cities of South and South East Asian Countries - PROMISE’.

3.1 Program Goal

The broader goal of PROMISE is:

“Reduced vulnerability of urban communities through enhanced preparedness and mitigation of Hydro meteorological disasters in secondary cities of Pakistan”

3.2 Program Objectives and Components

The proposed project will build on the activities undertaken and strategies developed under the AUDMP for achieving the above goal through:

- Adoption of specific hydro-meteorological disaster preparedness and mitigation measures to manage hydro-meteorological disaster risk by stakeholders in targeted cities;
- Increased stakeholder involvement and further enhancement of strategies, tools and methodologies related to community preparedness and mitigation of hydro-meteorological disaster in urban communities;
- Enhanced coordination with USAID missions to promote sustainability and ensure program activities accord with USAID country and regional strategies;
- Strengthen networks and regional links among relevant risk management institutions/ organization for improving potential and capacity for application and dissemination of lesson learned.

Hence the project has been divided into following components:

- Component I: Hazard Vulnerability and Risk Assessment.
- Component II: Mitigation and Preparedness.
- Component III: Training and Public Awareness.
- Component IV: Advocacy for Mainstreaming risk management in urban governance.

3.3 Selection Criteria

Following particular criteria was set out for the appropriate selection of the candidate secondary city:

- Vulnerability to hydro-meteorological hazards of various kinds, namely floods, cyclones, storms, droughts, hydro-logically triggered landslides, or a combination of these hazards.
- Growth potential (such as tourism development, or growing industrialization) based on current trends and increasing role of the city in the national economy.

- Readiness and willingness of the local government and key stakeholders for utilization of lessons learned, linkages with and partnerships developed under the Asian Urban Disaster Mitigation Program, implemented by ADPC.

Hyderabad fulfilling all the requirements for the PROMISE was selected as candidate city from Pakistan. Aga Khan Planning and Building Service (AKPBS), Pakistan with experience in habitat risk management was selected as implementing agency for the project.

3.4 Program Strategy

ADPC has proposed following strategy for the proposed program:

- Increased adoption of private and public sector mechanisms for community preparedness and mitigation of Hydro-meteorological disaster risk in urban areas of South and South East Asia which will measurably alleviate human suffering, prevent loss of life, and reduce the potential for physical and economic damage.

The PROMISE program in Pakistan following the broader strategy will adopt following specific methodologies to achieve results of the project.

The project will carryout hazards and vulnerability assessment of the Hyderabad city. It would assist the local government to establish a sustainable disaster management strategy and an emergency response plan. The project will build the capacity of AKPBS for the planning and implementation of such projects in the future. Small-scale demonstration projects will be conducted in a low-lying slum area in Hyderabad, which is prone to hydrometeorological disasters.

Findings are being documented and will be discussed at the policy level and at the grassroots level through workshops and seminars with government agencies, private sector and civil society organizations and communities. Consultative workshops will be organized with relevant public and private sector agencies and civil society organizations to plan actions for preparedness and mitigations.

4. Design and Process of Hazard, Vulnerability and Risk Assessment

To map and assess the hazards and vulnerability it was proposed that the information will be collected through primary and secondary sources. The team gathered valuable data and relevant information and maps of the city of Hyderabad from city government and other private/civil society working in the city which helped directly or indirectly in understanding the various typology and dimensions of the hydro meteorological issue.

The probability of occurrence of the extreme levels of natural hazards which can cause a disaster may be estimated by statistical extrapolation from data on the normal levels of occurrence. The accuracy of such estimates depends on the amount and completeness of data and the period of time over which it has been collected.

The AKPBS, P team conducted the Hazard Mapping and Participatory Vulnerability² Assessment using primary and secondary sources of information.

a. Objectives of the Study

The main objectives of the study were as follows:

- To identify potential hazards and assess the disaster impacts in terms of socio-economic, physical, material, natural and financial on local residents and community.
- To identify particularly vulnerable groups and their existing capacity to cope with and cover from episodic disasters.
- To present a vulnerability study to serve as the basis for communities and governmental counterparts to develop sound and targeted plans for emergency response preparedness and disaster mitigation in future disasters
- Describe the extent of gender roles in mitigating disaster impacts

b. Methodology Adopted

The study was conducted in highly participative manner involving different stakeholders. The process of the study included conducting meetings with representatives of the local government, community workshops with local councilors, citizens and members of different civil society organizations. Following specific data sources was sought and incorporated in the process of the study:

- Data Collection from secondary sources
- Flood Emergency Rain Relief Plan
- Rainfall Data
- Social Mapping
- Transect Walks
- Seasonal Calendars
- Historical Profiling

² the degree of loss to each element should a hazard of a given severity occur

The community was oriented with the objectives of the study and PROMISE project itself. The community groups were involved primarily in identifying potential disaster risks, mapping their respective areas on vulnerability scale, preparing social maps by identifying vulnerable structures and safe areas, recommended potential measures and coping strategies.

c. Orientation Meetings and Workshops

The three inception workshops were held at Union Council level in UC 12, 13 and 14 of Taluka Latifabad at the meeting hall of one partner organization Pak Social Welfare society situated in UC 13, while one workshop was held at Ali Abad *Mohalla* in UC 16 of Taluka City on November 4,7 and 10, 2006 respectively.

Participants: In the orientation and inception meeting 77 (male and female) participants from local government, NGOs, civil society organizations and different stakeholders



Purpose: The purpose of these workshops was to introduce the organization and PROMISE program to the grass roots stakeholders.

Contents: Following contents were discussed and deliberated during the orientation meetings:

- Introduction of Institutional Partners (AKPBS, Pakistan, ADPC and USAID)
- Introduction of PROMISE
- Presentation on World Disaster Situation
- Open Discussion on program and hazard mapping strategy

Community Comments

>> UC 12, 13, 14

- Dr. Saif-ur- Rehman, Social Worker informed that, last heavy rain fall caused heavy damage in his Union Council specially after flood situation, the acute problem surfaced was need of drinking water
- Miss Farzana Syed, Social Activist and member of Hyderabad Social Welfare Education Society said that, their council faces lot of problems especially drainage system is very old and unable to dispose of usual sewage water, therefore heavy rain water disposal was beyond imagination. We expect to learn new strategies and solutions to our problems
- ‘We are happy that for the first time hydro- met risk mitigation program has been introduced in our city therefore we are very happy and thankful to ADPC and AKPBS, Pakistan to come up and building community capacity to respond disasters’, said Mithoo Bhai Councilor

Community Comments

>> UC 16 (Alyabad)

- We are organized and educated but we don't know about how to manage any hydro-meteorological disaster. In our last experience we were so much disturbed after rain because we have no proper drainage system to drain out storm water from our area. It damaged our infrastructure like Govt School building and injured 3 school children seriously, said by Mr. Iftikhar Ali Social activist.
- We have lot of communal problem because here people are so much poor and unable to solve their problems without any external support. We are thankful to AKPBS, P and ADPC which will provide technical support to overcome Hydro-Meteorological Disaster impacts on community, said Ms Abida Villyat social activist
- We are very happy that AKPBS, P is going to introduce the program in our UC 14. This program is our essential need and I am personally interested in this program to enhance my capabilities regarding Hydro-Meteorological disaster management. As Naib Nazim of UC 14 I support the program and would like to add that every one should participate sincerely, said by Dr. Mehfooz Gadi.
- Today I am very happy says Mrs. Zubida UC General councilor. She mentioned that in the last disaster due to rain in our locality irritated us because we were unable to mitigate this problem. But now they would be able to manage because of the knowledge she got through these workshops.

In last of each meeting participants show their hands up for working as volunteers and cohorts in this program. The strategy for hazard mapping and vulnerability assessment was also developed with the support of participant and day, time and venue selected for this activity.

d. Hazard Mapping Activity Workshops

For the purpose of hazard mapping and vulnerability assessment five activity workshops were conducted in different parts of the city. The field team used different PRA tools and questionnaires to gather data from the respondents. In each workshop the community activists were distributed in different groups of 8-10 members and facilitated to prepare social maps after conducting the transect walks.



The community groups also prepared disaster calendars mentioning the months in which different disasters usually hit their respective areas. They ranked the intensity of each disaster and their likely impacts on residents.

The community groups were also involved in group discussions to identify problems related with the disasters. They also outlined recommended measures to cope with the disasters.

5. Scope and Socio Economic Profile of Research Area

Brief Introduction of the City: About 75% population of District Hyderabad lives in the city. Hyderabad is the second largest city of the province after Karachi. It provides shelter to around 1.6 million population. It is a growing city with industries includes textiles, cement, glass and soap, pottery, tanneries, and film; handicraft industries, including silver and gold work, ornamented silks, and embroidered leather saddles, are also well established. Hyderabad is a major commercial centre for the agricultural produce of the surrounding area, including millet, rice, wheat, cotton, and fruit. There is a thermal power station nearby.

The site of Hyderabad was occupied before the 8th century, but the modern city was founded in 1768 by Ghulam Shah, with his fort and palace as important features. The city was the capital of Sindh until the province was captured by the British in 1843.

Hyderabad is the home of the University of Sindh (founded in Karachi in 1947). Other higher education establishments are the Liaquat University of Medical and Health Sciences, Mehran University of Engineering and Technology and Isra University.

Scope of the Study: Through the secondary data and interviews with the stakeholders and first hand experience during torrential rains of the year 2006, most of the areas of Taluka Latifabad were identified to be highly vulnerable to hydro meteorological disasters.

The current study therefore focuses on most of the areas of Taluka Latifabad and one area of Union Council 16 of Hyderabad City.

5.1 Socio Economic Profile

The field team has gathered following data to assess basic socio economic profile of the targeted union councils. Semi structured questionnaires and interview techniques were used to gather the data at household level.

Household Construction: Household is the basic unit of social system, its management and strength reflects social, physical and economical well being of the community. Safe household unit prevents the physical damages occur during different disasters. Present survey reveals that almost 90% households in the targeted union councils are *pacca or semi pacca*, and majority of them are made of concrete structures, but the buildings of most of these houses are very old and in shabby conditions. Especially in Ghera Hindu community of UC 13 and Alyabad community of UC 16 of City Taluka, the situation of houses is very deplorable and flood disaster has added their vulnerability further. Sixty eight percent households are comprised of three rooms, twenty three percent households are comprised of two rooms and nine percent households have only one room. People remain under threat during the emergency situation in floods. This situation takes people



out of their homes during the floods. During discussing with the survey team about 79% respondents told that they leave their houses during flood because after flood houses get cracked and people remain out of their homes, whereas remaining population face the difficulties posed by floods in their native places. The sewerage system partially works because in some places these are above the disposal points.



During the present study it was observed that houses are built on the conventional methods and are not safe against vulnerability and physical hazardous like earthquake, and floods.

Drinking Water Facility: It was found that most of the project area is facilitated with a water supply pipe line and about 85% households avail this facility. Water supply is directly operated by the Taluka Municipal Administration, which becomes non functional during rainy season as the water supply line sub merges with sewage lines and electricity breaks down. Survey reveals further that about 78% people are satisfied with the facility, whereas remaining 22% are of the view to improve the facility by proper cleaning of supply ponds on regular basis.

Electricity: Electricity is a the sign of modern life, which make people more productive in any hour of day or night. Entire target area is provided with this facility. Almost 100% households avail this facility.

Fuel/Energy: Natural Gas is the major source of energy in most of the entire union council. The natural gas which is provided by the Government is used for cooking and heating purposes. 95% households avail such facility. In Alyabad locality about 30% population lacks this facility.

Work status of the population: Analysis of the household survey in the project areas reflects most of the communities are engaged in labour in various home based and big industries as the industrial area is very near to the residential areas of the project. The women also do labour in bangle industry. While in Alyabad almost 60% of the population is engaged in doing labour cattle farms. The inhabitants of Union Councils 2, 5, 8 and 11 are comparatively better of as they are doing various kinds of businesses as well as engaged in Government, semi Government and private jobs.

Household Income and Expenditure: Average income of household is about Rs. 120,000/- per year and major sources of income are Government and private jobs and second is business. Whereas on an average expenditure of one household is about Rs. 1,14,400/- per year. Major expenditures incur on food and health care which is 52% of the total annual expenditure. Generally 12.2% is spent on clothing, 6.9% on education, 8.2% on utilities, 4.3% on social functions and 15.7% incurs on transportation expenses annually.

The format used for collecting household data is given as **Annex-A**.

In Deep Waters: Situation on Recent Rain Flood in Hyderabad

On September 8, 2006, the people living in Hyderabad, Latifabad and Qasimabad were taken aback. When they woke up in the morning what they saw was reminiscent of a tsunami-hit area. But nothing like that had hit them. It was only the rains. Little did the people of Latifabad and Qasimabad talukas know that what they were taking lightly would soon land them into a serious crisis. By Friday morning they were in troubled waters. Of all the affected areas, inhabitants of Latifabad units 2, 8, 12, 13, and 14, and some parts of Qasimabad had to face unimaginable hardships.

Chaos could be seen at the offices of the district government, Water and Sanitation Agency (WASA) and the Hyderabad Development Authority (HDA). The last two civic bodies are primarily responsible for maintaining sewerage and drainage infrastructures in the region. The civil administration had to seek the army's help to evacuate the people who were stranded in the middle of nowhere. An 18-hour long fresh spell of moderate to heavy monsoon rains, which began at 5pm on Sept 7, continued till 11am of Sept 8. Those who had double-storey accommodations shifted to the upper portion of their houses, and those who lived on ground floors had no option but to climb rooftops, leaving their valuables to be washed away. Perhaps civic agencies had considered the August 17 downpour as the closing spell of the current monsoon. They were sadly mistaken. Admittedly, after 1962, it was the heaviest rainfall witnessed, that is, 170mm in the city and 190.4mm rains in rural talukas were recorded. The residents of units 2, 8, 9 10 and 11 who had not recovered from their miseries caused during earlier bouts of monsoon rains, had to face a serious crisis.

Troops arrived with a few boats in the afternoon on Friday and evacuated the people from the areas submerged by rainwater. Most of them shifted to their relatives' places or their second accommodations. But those who had no one to take care of them had to live in relief camps and to wait for food and other relief items to come. They kept on wading through chest-high stagnant water. Initially, people were not willing to leave their homes hoping against hope that water would recede, but after seeing no chances till Saturday a large number of them had to leave the area.

The inundation of six out of eight pumping stations made matters worse, not only for residents but also for WASA. Efforts were first made to restore them, which came to a halt. Officials were so bogged-down that they couldn't sense the enormity of the crisis which can be gauged from the fact that on September 8 the civil administration had only requested for boats as five to six feet of rainwater had entered residences, business places, shops, mosques, health centres, educational institutions, and police stations. The people could not visit graveyards during Shab-e-Bar'at and many in Latifabad couldn't offer their Friday prayers since mosques were inaccessible.

The water that had accumulated on roads had turned into booby-traps for the people, and no barriers were erected to prevent the people from falling into them. The authorities were simply unable to cope with the situation. Till Sept 14, there was no significant improvement in the situation as the sewage-mixed rainwater's terrible smell was too unbearable which made the authorities unable to completely drain out the water.

Zila Nazim Kanwar Naveed Jamil was in London on Sept 7, but came back to the city a day later. His presence, however, failed to bring any immediate change to the situation. “Actually, the civil administration sent a requisition for one-company force and some boats. But when sequences of events unfolded, two battalions were sent in,” Brigadier Ghulam Murtaza told the press at a briefing.

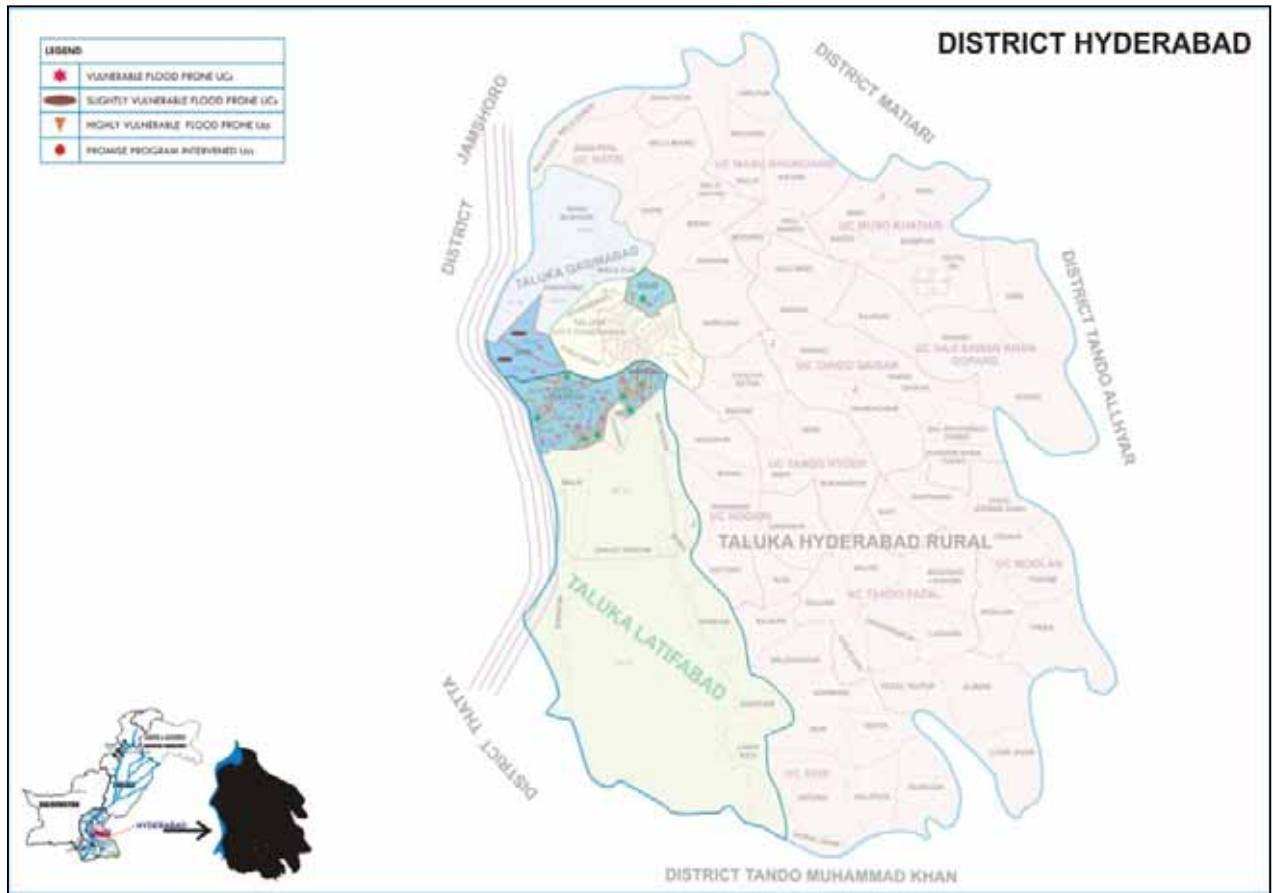
According to Director General HDA, to clean up one inch of rain in the city, it requires the sewerage system to work 24 hours a day. “Forty per cent of the area doesn’t have proper sewerage system. According to meteorological office, 300mm of rains were recorded in August while our city’s average rainfall is 100mm,” says DG. Geographically speaking, the unit-2 of the region is a bowl-shape locality, surrounded by arteries from four sides. It always receives flows of rainwater because roads are built higher than the residential areas and no one had so far realised it. New roads continued to be built and re-built without maintaining the level of roads and the area.

Markets remained closed for over one week in the rain-affected areas. The deplorable part of the story is that theft was reported from a few localities. “I lost Rs 8,000 which I had saved from the earnings of my husband. My daughters’ marriage ceremonies were due and the things that I was supposed to give them had been completely washed out,” said Bilquees, who arrived in an army medical camp after quite a bit of struggle.

There was another woman seen screaming and crying. “Just give me drinking water and I will not make any more complaint. My husband is bed-ridden and my children earn for the family on a daily basis,” Shahnaz said.



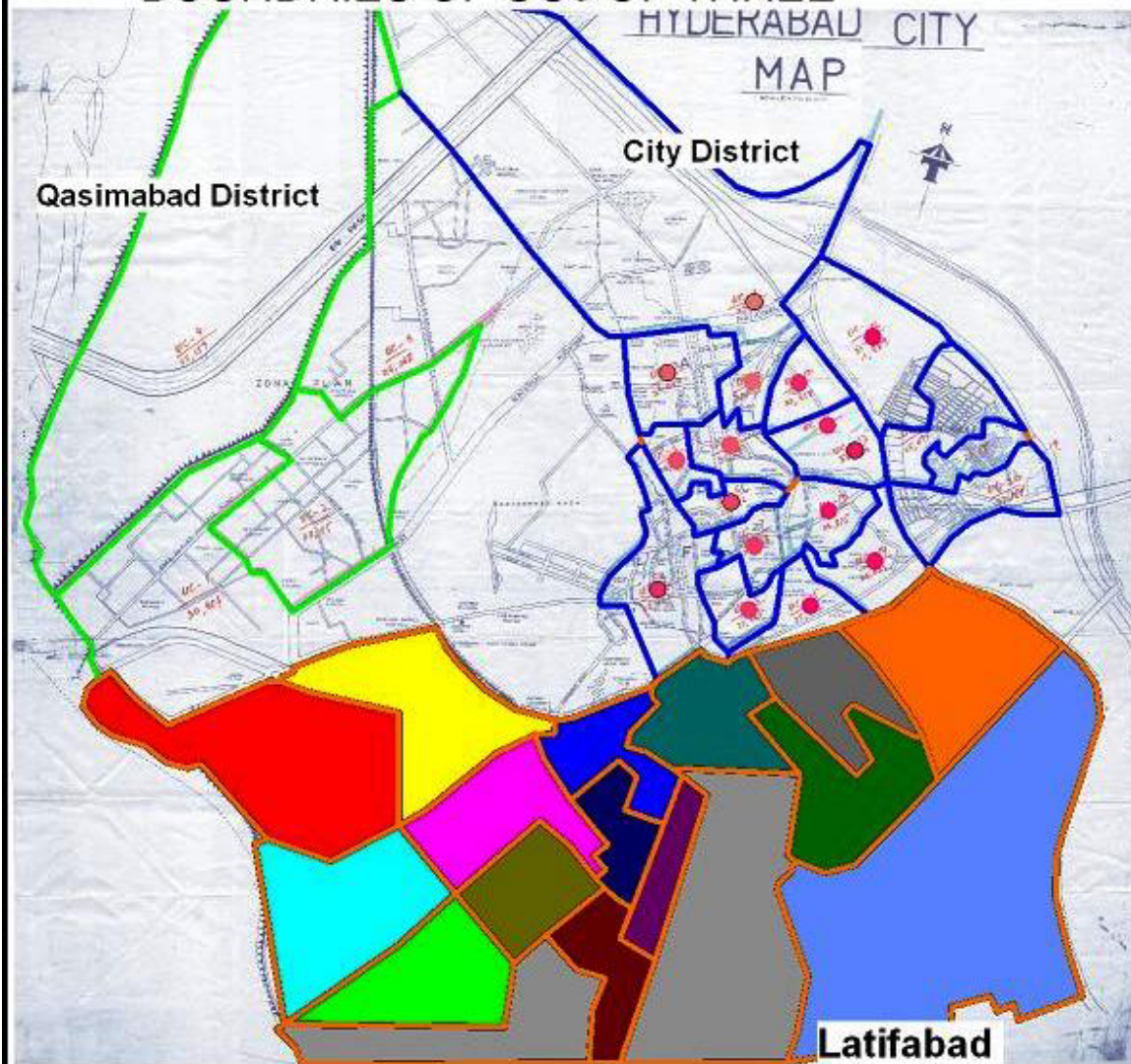
Low Lying Vulnerable Areas of Hyderabad





An aerial view of Project Areas of Latifabad Taluka

MAP OF HYDERABAD WITH BOUNDRIES OF UCs OF THREE



■ SRC	■ UC6	■ UC12
■ UC1	■ UC7	■ UC13
■ UC2	■ UC8	■ UC14
■ UC3	■ UC9	■ UC15
■ UC4	■ UC10	■ UC16
■ UC5	■ UC11	

- Boundary of HyderabadCity
- Boundry of Latifabad
- Boundry of Qasimabad

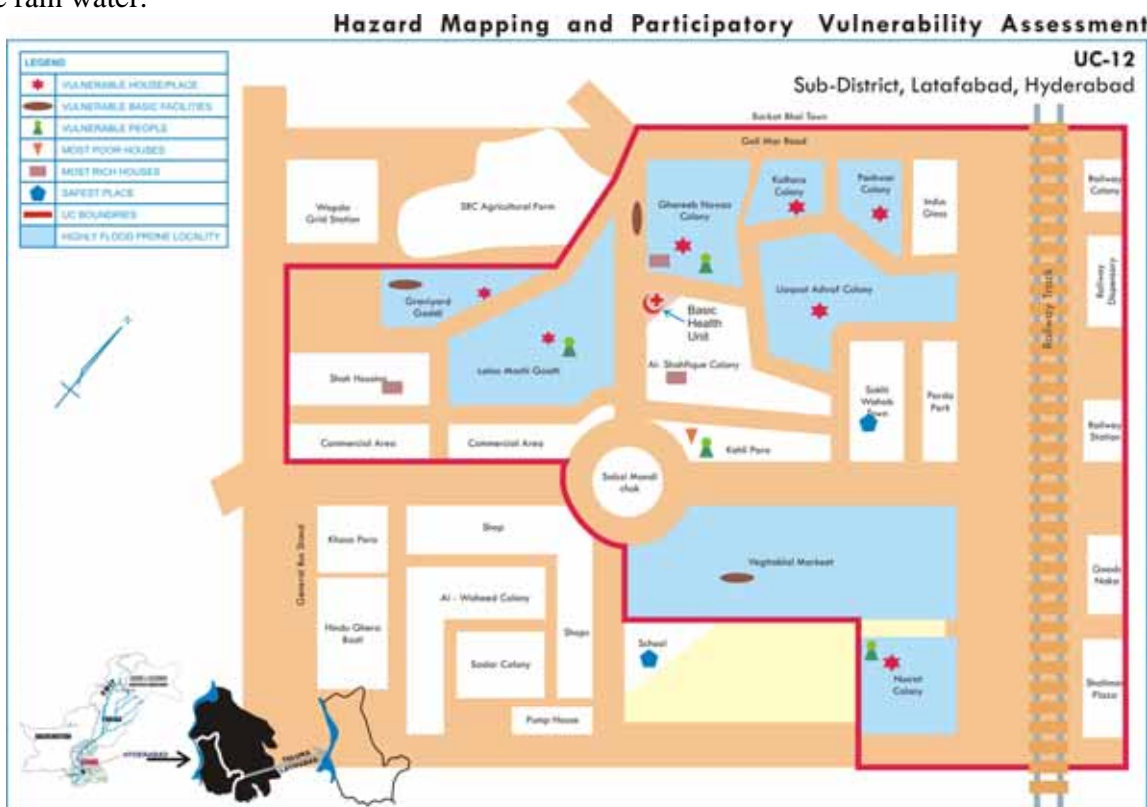
6. Field Assessment and Results

The field team conducted the study using different techniques of data collection. Participatory rapid appraisal methods were especially incorporated to gather information at community level. People were extensively involved in preparing maps, identifying potential risks and recommending measures to handle disasters.

6.1 Case Study: Union Council 12

Union Council 12 of Latifabad is comprised of Panhwar Goth, Kalhora Goth, Shah Housing Society, Al Shafiq Colony, Gharib Colony, Lalu Machhi Goth, Kolhi Para, Sakhi Wahab Town and Liaquat Ashraf Colony. The population of entire union council is 23,285 households. The basic amenities available in the area include one basic health unit, two glass factories, furniture industry, bus body building factory, soap making industry, vegetable market and railway station. The women in the area are employed in home based glass industry and handicrafts.

The community through social mapping process identified that the areas like Gharib Nawaz Colony, Kalhora Colony, Panhwar Colony, Liaquat Ashraf Colony, Laloo Machhi Goth and Graveyard Godi are the most vulnerable areas of the union council 12. In these areas the flood water stagnates at the depth of 3-4 feet for many days as there was no any passage to drain out the rain water.



The only safest place in entire union council is Sakhi Wahab Town, where water stagnation is quite less as compared to other parts of the union council. The basic facility like basic health unit

also comes under water but it is located slightly at high level therefore it continued its services. The public places like graveyard, vegetable market, road leading to vegetable market are highly inundated with rain water leaving business activity paralyzed for many days.

About 6% disable and aged population in Gharib Nawaz Colony, Laloo Machhi Goth, Nusrat Coloy and Kohli Para is more vulnerable to disasters and need immediate attention to reach at a rescued place.

The housing infrastructure in most of the residential colonies of the union council is in shabby condition as the construction of houses is very old and the communities being very poor mostly living hand to mouth therefore not able to regularly repair their houses. Additionally stagnant water in case of floods also renders their houses weaker and dilapidated.

The community map is given in **Annex-B**.

Assessment Results of UC 12

6.1.1. Hazard Assessment

The community workshop was conducted in union council 12, where community members including councilors, activists, women councilors and volunteers were involved in different exercises related with the study. The community was distributed in different groups. Each group was assigned a particular task. The group identified following hazards in the area:

- Heavy rains
- Flood
- Drought

These hazards were identified as most frequently occurring phenomenon in the union council. Heavy rains take a severe form when every street is inundated by water and since many of the areas of union council are low lying therefore the residents suffer heavily: financially and socially.

S#	Type of Disaster	Frequency of Occurrence (Months)											
		J	F	M	A	M	J	J	A	S	O	N	D
1	Storm/Heavy Rain						x	x	x				
2	Flood							x	x	x			
3	Drought					x	x	x					

The community is of the opinion that if the sewerage system of the area is properly made and functions appropriately they would be able to counter any disaster efficiently.

Since Hyderabad city lies on the fault line therefore there is always likeliness of the earthquake to hit the area. Whereas the population was unaware whether their housing infrastructure is seismic proof against any earthquake possibility; however they had fear that in case of any serious jolts they are not equipped to respond the disaster adequately.

The most vulnerable sections to disasters

Vulnerable Sections	Heavy Rains	Flood	Drought	Heat Stroke	Ranking	Remarks
Kolhi Para	x	x	x	x	1	<i>Population is very impoverished and their houses less resilient to any kind of disasters</i>
Panhwar Goth	x	x	x	x		
Lalu Machhi Goth	x	x	x	x		
Gharib Nawaz Colony	x	x	x	x	2	<i>Population comparatively better off and housing structures in a better condition</i>
Rafiq Colony	x	x	-	x		
Sakhi Wahah Town	x	x	-	x		
Liaqat Ashraf Colony	x	x	x	x		

Disaster and their Characteristics	Major Impacts
Heavy rains: Occur during monsoon season that starts from June and lasts until end of August. The severity of inundation depends upon downpour	<ul style="list-style-type: none"> • Accumulated rain water becomes breeding ground for diseases • Probability of falling walls and impending danger of casualties • Drainage water also mixes up with rain water • Diseases outbreak • Huge financial loss
Floods: The floods occur due to canal breaches. However since last many years there is continuous shortage of water therefore the downstream water flow is quite low	<ul style="list-style-type: none"> • Housing infrastructure at great risk • Drainage water also mixes up with rain water • Outbreak of Diseases • Huge financial loss
Earthquake: Earthquake is quick onset disaster creating havoc in population. In 2002 the city was hit by the earthquake resulting few casualties and infrastructure damaged severely	<ul style="list-style-type: none"> • High rise buildings and old infrastructure may damage resulting loss of economy as well as potential risk to human lives • Business activity likely to be severely hit and disrupted
Drought: drought occurs mostly every after few years but since last seven years there is continuous spell of dry years resulting in severe drought in the country. The most affected months are mostly May-June. During this period drinking water becomes short commodity	<ul style="list-style-type: none"> • Use of un-hygienic water results in outbreak of diarrhea diseases • Economic loss on maintaining health • Price hike due to low agricultural productivity

6.1.2 Vulnerability Assessment

In Union Council 12 vulnerability assessment was carried out by involving community members and their local elected representatives. The information against the indicators mentioned below:

Emergency Rescue Activity: The communication system in the Union Council includes phone lines and radio communication. In the emergency situation the telephone communication is often prone to disruption and disorder. The loudspeakers in mosques are often used for communicating messages regarding relief. These loudspeakers could be used for raising awareness for hygiene promotion in case of emergencies.

No well developed mechanism is available at union council level to respond to emergencies, while people have limited capacity and they are not mostly tuned to face the catastrophe effectively. In case of emergency armed personnel are often called for assistance.

Food and Water: Since the sewage water mixes up with rain water therefore water taps become un-usable as water flows through the lines is contaminated. People are usually rescued and provided temporary shelter in Government buildings were primary schools. The water and food provided in relief is often inadequate. People especially women, children and old have always to suffer.

Health and Environment: Water stagnates for two-three weeks after heavy rainfall or flood which is prone and serves as breeding ground for mosquitoes and diseases like malaria and gastro. There is no emergency response plan at the local level with union council administration to handle flood and sewage water.

Infrastructure: The pumping station is in dilapidated condition and needs to be repaired. The community is given shelter in Sakhi Wahab school buildings which remain close for educational activities for a longer period of time.

The vegetable market being in a very low lying area also suffers from flood water and the traders shift their business to *naya pull* (new bridge) which result in heavy traffic jams.

The main problem faced by the people is the accumulation of water during the rainy days. The water was accumulated in the streets and inside the houses. As area is low lying and no proper storm water system in the area. The level of the houses is below the open drain line so that water is entered in the houses and damaged floor and furniture of the houses. According to the local people accumulated water level remains almost 3'-0" inside the houses and stagnant upto seven days after rain.

6.1.3. Capacity Assessment

The community can volunteer their services in case of emergencies; however this potential needs to be harnessed effectively. The response of the local government at present is less effective as mentioned by the communities. Institutions and volunteer base are already existing which could be mobilized through raising institutional awareness and capacity building. Trainings in emergency response and first aid will become very effective for reducing risk of disaster.

6.1.4. Specific Problems and Recommended Measures

Problem	Recommended Measure
<ul style="list-style-type: none"> • Drainage system overflow in case of heavy rains 	<ul style="list-style-type: none"> • The existing sewerage system is inadequate to cater growing population need as outlet drains are narrow and incapable to drain out enough sewage water than required, hence big drainage system is required • Additional pumping stations need to be constructed
<ul style="list-style-type: none"> • Outbreak of epidemics 	<ul style="list-style-type: none"> • Community awareness program and training of volunteers on providing first aid • Well equipped dispensary should be established and vaccination provided
<ul style="list-style-type: none"> • Destruction of infrastructure 	<ul style="list-style-type: none"> • Survey of old and weak infrastructure • Community awareness raising in constructing seismic proof buildings
<ul style="list-style-type: none"> • Weak embankments of river Indus 	<ul style="list-style-type: none"> • Advocating the problem with line department and stone pitching of river embankments
<ul style="list-style-type: none"> • Contamination of drinking water 	<ul style="list-style-type: none"> • Communal water filters should be introduced in the union council



Picture: An aerial view of Nusrat Colony, Union Council 12, Latifabad

6.2. Case Study: Union Council 13

The union council 13 is comprised of Bombay press, Jehangir Para, Sardar Colony, Alwaheed Colony, Bohri Compound, Unner Mirani Goth, American Quarters and Pathan Colony. The population of the union council is 25,173 whereas there are 13,977 registered voters. The basic facilities available in the union council include 13 private schools, two (2) government high schools and five (5) primary schools, one basic health unit and a general bus stand. There are eighteen (18) small and big industrial units including Fateh Textile, bangle industry, Treet Corporation. Majority of the women are employed in home based bangle industry and other factories in the area.

Around 50% of the area of this union council comes under heavy stagnant water, especially Unnar Mehrani goth, Oad Mohallah, Kohli Para, Bangle Factory, Jahangir Para, Bombay Press Area, Hindu Ghera Basti are the most vulnerable areas. The drainage system bursts as main pumping station also chokes down. The public places which remain under stagnant water during heavy rain and flood disaster are: Municipal Workshop, Government Primary School, Jamia Mosque and Pumping Station.

Hazard Mapping and Participatory Vulnerability Assessment



The housing infrastructure in Bombay press area, Pathan Colony, Juma Goth, Chotay American Quarters, Hindu Ghera Basti, Kohli Para, Odd Muhallah and Jahangir Para is in dilapidated condition. The community prepared map is given as **Annex-C**.

Assessment Results of UC 13

6.2.1. Hazard Assessment

The community in union council 13 was involved in hazard assessment and participatory vulnerability assessment process. Participatory rapid appraisal techniques were employed to gather information and community perceptions. The community identified following hazards in the area:

- Heavy rains
- Flood
- Heat strokes
- Drought
- Gas Leakage in Factory

These hazards were identified as frequently occurring phenomenon in the union council. Since many areas of the union council are low lying and sewerage system being very old therefore it is not able to drain out the sewerage water efficiently. Heavy rains take a severe form when every street is inundated by water and since many of the areas of union council are low lying therefore the residents suffer heavily: financially and socially.

Table: Disasters and their Frequency of Occurrence

S#	Type of Disaster	Tiem of Occurrence (Months)											
		J	F	M	A	M	J	J	A	S	O	N	D
1	Storm/Heavy Rain						x	x	x				
2	Flood					x	x	x	x				
3	Heat Strokes					x	x	x					
4	Drought*												
5	Gas Leakage in Factory												

* Drought is annual occurrence in Pakistan, however the most affected months are May, June, July

Table: The most vulnerable sections to disasters

Vulnerable Sections	Rains	Flood	Drought	Heat Stroke	Ranking	Remarks
Unner Mehrani Mohallah	x	x	x	x	3	
Bohri Compound Mohallah	x	x	x	x	2	
Ghera Hindu Colony	x	x	x	x	1	<i>Ghera hindu is more vulnerable to any disaster being very low lying in the entire UC</i>

The housing infrastructure in these colonies especially in Ghera Hindu community is in dilapidated condition. The sewerage system is almost non-existent and the communities living in very poor conditions.

Table: Disasters and their Impacts

Disaster and their Characteristics	Major Impacts
Heavy rains: Occur during monsoon season that starts from June and lasts until end of August. The severity of inundation depends upon downpour	<ul style="list-style-type: none"> • The rain water stagnates in all low lying areas including households • Drainage water also mixes up with rain water • Diseases outbreak • Huge financial loss
Floods: The floods occur due to canal breaches. However since last many years there is continuous shortage of water therefore the downstream water flow is quite low	<ul style="list-style-type: none"> • The flood water accumulates in households • Drainage water also mixes up with rain water • Diseases outbreak • Huge financial loss
Drought: drought occurs during the months of May-July when drinking water becomes scarce commodity as all reservoirs start to dry up	<ul style="list-style-type: none"> • Use of un-hygienic water results in outbreak of diarrhea diseases • Economic loss on health maintenance
Gas Leakage: there is always likelihood of leakage of gas in the factory as it is situated inside the population	<ul style="list-style-type: none"> • Fire may erupt damaging life and property of the population

6.2.2 Vulnerability Assessment

Emergency Rescue Activity: Loud speakers are used in all the mosques of the union council to call people for prayers. However very few of the mosques have standby power supply system (generator, battery) to support speakers to function in case of power failure in case of emergencies. The mosque loud speakers may play effective part in case of emergencies if they are provided with standby power supply system.

Government has a force of 15 civil defense volunteers which could be utilized for coping with disaster situation if there are properly trained they are not trained in disaster facing situation; they also lack appropriate equipment for such situations. The existing health facility in the area is also not enough to provide medical response to large population. The poor communities have little awareness about the health and hygiene practices due to lack of education.

Food and Water: In a period of emergencies the houses are usually filled with 2-4 feet stagnant water; therefore the kitchens are in fact become ineffective to be utilized for cooking purposes. Therefore the communities in UC 13 especially from Bombay press, American quarters, Unner Mirani goth, Jahangir Para suffer a lot and fell prey to diseases.

Health and Environment: Stagnant water serves as breeding ground for mosquitoes and diseases like malaria and gastro erupt and spread quickly. The union administration becomes

ineffective in draining the rain water out of the areas because of lack of funds. The rain water mixes with sewage water that makes conditions more adverse.

Production: In the entire union council sixty per cent (60%) women are engaged in home based glass industry. As rain water inundates houses and remains there for almost half a month the economic activity comes to a standstill. All the economic activity in the area freezes including trading and business as shops, small factories come under water.

Infrastructure: There is one main pumping station in Union Council 13 through which water is disposed off into main drain. The main drain is constructed decades earlier and it gets breaches in emergency situation. In the monsoon rains of 2006 the drain breached from many points as a consequence entire union council came under water. The electric pump at the pumping station also got faults.

The community is given shelters often in school buildings which remain close for educational activities for a longer period of time.

The area has no proper planning for the Houses. Some houses were in lines with very narrow streets. And some clusters of houses with open space in the middle. The house structures are mostly made of bricks with wooden roof or tier girder roof. The house plan comprises of one main room with a lounge in front and kitchen mostly in the Lounge. There is no proper ventilation in the houses. No toilets inside or outside the house. There are four public toilets which are not sufficient for 350 households. The health and hygiene conditions are very poor.

The main problem faced by the people is the accumulation of water during the rainy days the water was accumulated in the streets and inside the houses as area is low lying and no drainage system in the area. According to the local people accumulated water level in the ground was 4'-0", and almost 2'-6" inside the houses.

The highest level of education amongst the community is matriculation, completed by four individuals from the Colony.

Men and women are indulged in addiction of *berri*, cigarettes and most commonly *pan* and *gutka*. According to the area members the consumption of these products takes up major portion of total household expenses.

It was generally observed that people are not even aware of their own problems and not taking interest to send their children to schools.

6.2.3 Capacity Assessment

The volunteer potential in the communities is available in high degree which needs to be harnessed effectively. Institutions and volunteer base is already existing which could be mobilized through raising institutional awareness and capacity building.

Under the recently introduced devolution system in the country there are institutions are grass roots level (union council and village level). These institutions however need to be sensitized and their capacity built in the context of disaster preparedness and management.

6.2.4 Specific Problems and Recommended Measures

Problem	Recommended Measure
<ul style="list-style-type: none"> Community unprepared and unaware 	<ul style="list-style-type: none"> Community awareness programs and training needed to cope with the disasters Provide training on building techniques resistant to floods
<ul style="list-style-type: none"> Road infrastructure in streets inadequate 	<ul style="list-style-type: none"> Infrastructure issues can be properly addressed through like local government institutions. Proper advocacy skills may be built to help the councilors to present the case effectively at union council level
<ul style="list-style-type: none"> Sewage Disposal 	<ul style="list-style-type: none"> Government needs to focus and address this issue at macro (city) level drainage disposal system

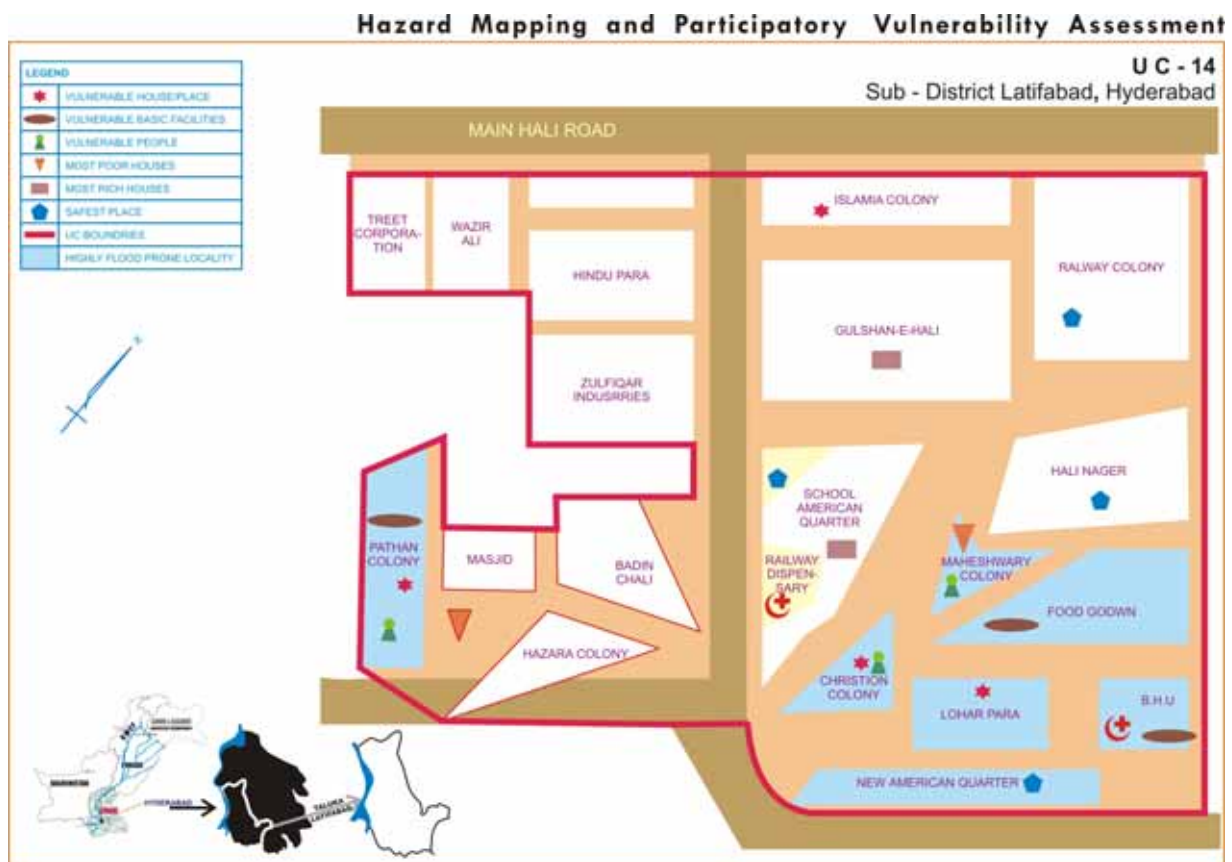


An aerial view of Union Council 13 (Gheera and Bohri compound area as most vulnerable section of the UC)

6.3 Case Study: Union Council 14

The union council 14 is comprised on railway colony, American Quarters, Gulshan Hali and Hazara Colony. The population of entire colony is 32,133. There is one Basic Health Unit, Six (6) schools: one each secondary and middle school, 4 primary schools. People are engaged in Bangle industry, Wazir Ali Industries, Zulifqar Industry, Treat Corporation, Silver Cotton Mills.

The community through social mapping process identified that the areas like Pathan Colony, Maheshwary colony, Food godown, Christian Colony, Lohar Para, New American Quarters, and BHU areas as most vulnerable areas of the union council 14, where flood water stagnates at the level 4-5 feet for many days.



The people in Christian colony, Maheshwari Colony and Pathan Colony are most vulnerable to flood and rain related disasters as sizable aged and poor community is residing which is always in a condition of seeking help for rescue and relief. The housing infrastructure in these colonies is also in dilapidated conditions. The safest places in entire union council include Railway Colony, Hali Nagar, American Quarter School.

The community map is given in **Annex-D**.

Assessment Results of UC 14

6.3.1. Hazard Assessment

The communities were involved in mapping exercises to identify potential hazards and vulnerable sections of the population. The community in union council 14 identified following hazards in the area:

- Heavy rains
- Flood
- Earthquake
- Drought

These hazards were identified as most frequently occurring phenomenon in the union council. Heavy rains take a severe form when every street is inundated by water and since many of the areas of union council are low lying therefore the residents suffer heavily: financially and socially.

S#	Type of Disaster	Potential Occurrence of Disasters (Months)											
		J	F	M	A	M	J	J	A	S	O	N	D
1	Storm/Heavy Rain						x	x	x				
2	Flood							x	x	x			
3	Earthquake												
4	Drought					x	x	x					

The most vulnerable sections to disasters

Vulnerable Sections	Heavy Rains	Flood	Drought	Heat Stroke	Ranking	Remarks
Kolhi Para	x	x			1	<i>The population in these areas are very impoverished</i>
Panhwar Goth	x	x				
Lalu Machhi Goth	x	x				
Gharib Nawaz Colony	x	x				
Rafiq Colony	x	x			2	
Sakhi Wahah Town	x	x				
Liaqat Ashraf Colony	x	x				

Disasters and their Impacts

Disaster and their Characteristics	Major Impacts
Heavy rains: Occur during monsoon season that starts from June and lasts until end of August. The severity of inundation depends upon downpour	<ul style="list-style-type: none"> • Accumulated rain water becomes breeding ground for diseases • Probability of falling walls and impending danger of casualties • Drainage water also mixes up with rain water • Diseases outbreak • Huge financial loss
Floods: The floods occur due to canal breaches. However since last many years there is continuous shortage of water therefore the downstream water flow is quite low	<ul style="list-style-type: none"> • Housing infrastructure at great risk • Drainage water also mixes up with rain water • Outbreak of Diseases • Huge financial loss
Earthquake: Earthquake is quick onset disaster creating havoc in population. In 2002 the city was hit by the earthquake resulting few casualties and infrastructure damaged severely	<ul style="list-style-type: none"> • High rise buildings and old infrastructure may damage resulting loss of economy as well as potential risk of human lives • Business activity likely to be severely hit and disrupted
Drought: drought occurs during the months of May-July when drinking water becomes scarce commodity as all reservoirs start to dry up	<ul style="list-style-type: none"> • Use of un-hygienic water results in outbreak of diarrhea diseases • Economic loss on maintaining health • Price hike due to low agricultural productivity

6.3.2 Vulnerability Assessment

Emergency Rescue Activity: Like in any union council also in UC 14 there is no ferry/boat service for emergency situations. Water inundates in houses and people are restricted to either use their roofs or seek some shelter with their relatives in other safer areas of Hyderabad or even they shift temporarily to other places of the city. Loud speakers are used in all the mosques of the union council to call people for prayers. Very few mosques have standby power supply system (generator, battery) to support speakers to function in case of power failure in case of emergencies.

The rain flood emergency hit the area to a great extent for the first time in 2006 monsoon season therefore the disaster situation exposed vulnerability of existing institutional arrangements.

Food and Water: Water becomes precious commodity especially in rain/flood disaster period because tap water can not be used as gets mixed with sewerage water and gets contaminated. As the household kitchen could not be used by the communities therefore the situation worsens for them and they have to rely on relief food. Few of the community members (rich) having alternative houses migrate temporarily or they stay with their relatives in other cities. Most of the families prefer to remain around due to fear of theft of household articles.

Health and Environment: Stagnant water serves as breeding ground for mosquitoes and diseases like malaria and gastro erupts and spreads very quickly. The union administration has to rely on sub-district (*tehsil*) administration for water disposal. The rain water mixes with sewerage water and conditions worsens more.

Production: Women in most of the households of the union council are engaged in home based glass industry. As rain water inundates houses and remains for more than a week the economic activity comes to a standstill.

Infrastructure: The main disposal drain is broken from various places in Union Council 14 and people have encroached the drain area that surrounds it. The walls and roofs and other housing infrastructure severely damaged by the rain/flood disaster.

Government schools are used for providing the community shelters which remain close for educational activities for a longer period of time.

The area has proper planning for the Houses. Houses are in line with wide streets. Some Houses are in centre of the colony and as sanitation line was not passing through them so facing a problem of disposable of waste water. The house structures are mostly made of bricks with wooden roof or tier girder roof. The house plan comprises of one main room with a lounge in front and kitchen mostly in the Lounge. Bathrooms and toilets are inside the houses. Some public toilets are also available.

Many houses damaged during last heavy rains. The residents of that house spend their thin time with other members of the area.

The main problem faced by the people is the accumulation of water during the rainy days the water was accumulated in the streets and inside the houses. As area is low lying and no proper drainage system in the area. The level of the houses is below the open drain line so that water is entered in the houses and damaged floor and furniture of the houses. According to the local people accumulated water level was almost 3'-0" inside the houses.

6.3.3 Capacity Assessment

There is one basic health unit and six schools which can be used as rescue places for the communities in low lying areas. The volunteer potential in the communities is available which can be mobilized through training and capacity building.

The local government system requires to be further strengthened and mobilized to acquire disaster resilience capacity through software and hardware support.

6.3.4. Specific Problems and Recommended Measures

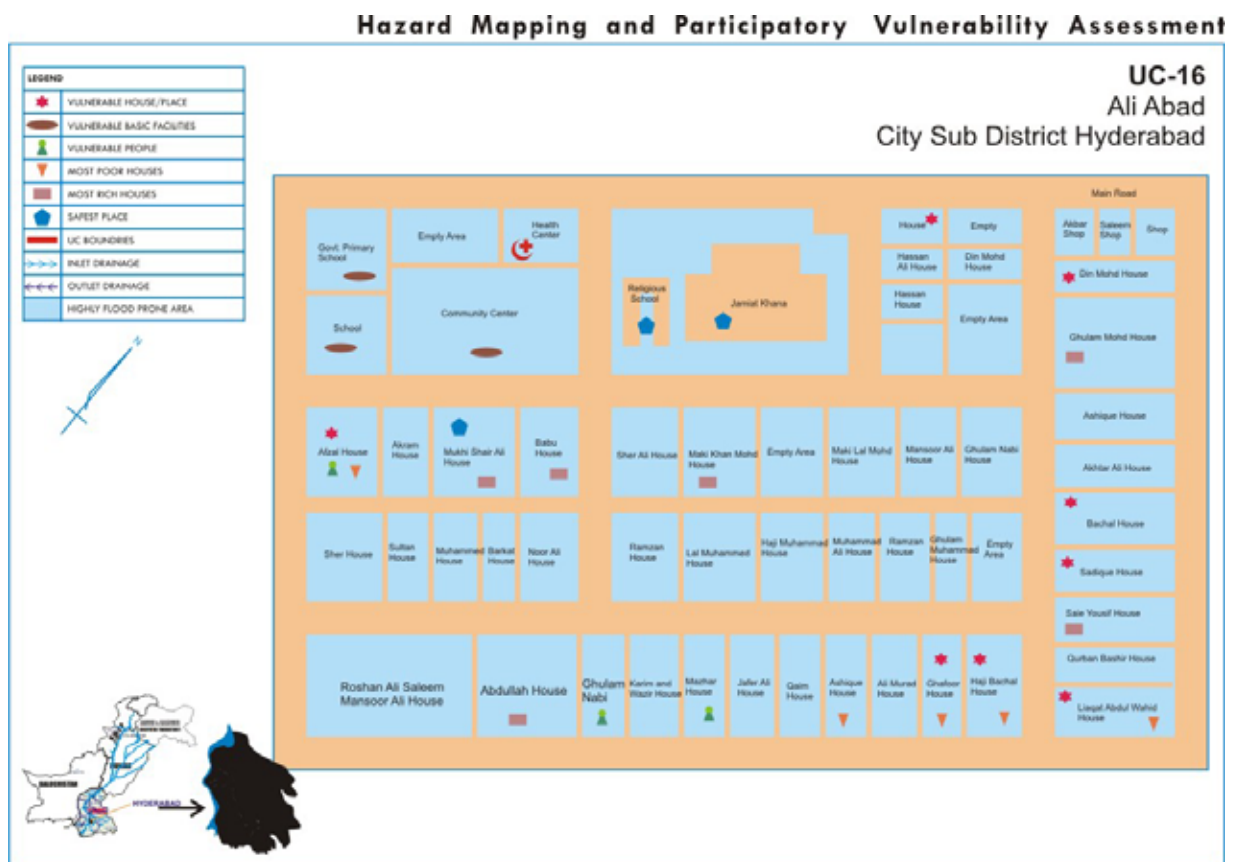
Problem	Recommended Measure
<ul style="list-style-type: none"> • Drainage system overflow in case of heavy rains 	<ul style="list-style-type: none"> • Sewerage pumping system be improved and addition pumping stations should be established
<ul style="list-style-type: none"> • Outbreak of epidemics 	<ul style="list-style-type: none"> • Community awareness program and training of volunteers on providing first aid • Well equipped dispensary should be established and vaccination provided
<ul style="list-style-type: none"> • Destruction of infrastructure 	<ul style="list-style-type: none"> • Survey of old and weak infrastructure • Community awareness raising in constructing seismic proof buildings
<ul style="list-style-type: none"> • Weak embankments of river Indus 	<ul style="list-style-type: none"> • Advocating the problem with line department and lining of embankments



An aerial view of Union Council 14 (Maheshwari Colony)

6.4 Case Study: Union Council 16

Aliabad is a small unit of union council 16 of City Sub District. It is situated at a distance of 2.5 kilometers from the city center. The locality is established in 1968 with a covered area of 6 acres and a population of more than one thousand. The area is most vulnerable in the Taluka City being very low lying. Out of the total 80 households; 47 houses are 5-6 feet below the road level. Hence water accumulates in these houses in rainy season and floods. Even in normal days the community outpours the sewerage water from their houses manually as sewerage system constructed by the Government is beyond their use.



Only Jamait Khana and a one house is a safer place where people can take refuge in case of emergency and disaster. Whereas in remaining most of the houses water accumulates for many weeks after rains.

The community map is given in **Annex-E**.

Assessment Results of Aliabad

6.4.1. Hazard Assessment

The community group was involved in mapping exercises to identify potential hazards and vulnerable sections of the population. The community identified following hazards in the area:

- Heavy rains
- Earthquake
- Drought

These hazards were identified as most frequently occurring phenomenon in the union council. Heavy rains take a severe form when every street is inundated by water and since many of the areas of union council are low lying therefore the residents suffer heavily: financially and socially.

S#	Type of Disaster	Potential Occurrence of Disasters (Months)											
		J	F	M	A	M	J	J	A	S	O	N	D
1	Storm/Heavy Rain						x	x	x				
2	Earthquake												
3	Drought					x	x	x					

The most vulnerable sections to disasters

Vulnerable Sections	Rains	Flood	Drought	Heat Stroke	Ranking	Remarks
Ali Abad	x	x			1	<i>The population in these areas are very impoverished</i>

Disaster and their Characteristics	Major Impacts
Heavy rains: Occur during monsoon season that starts from June and lasts until end of August. The severity of inundation depends upon downpour	<ul style="list-style-type: none"> • High probability of falling walls and structures and impending danger of casualties • Accumulated rain water becomes breeding ground for malaria • Unbearable financial loss
Earthquake: Earthquake is quick onset disaster creating havoc in population	<ul style="list-style-type: none"> • Potential risk to human lives
Drought: drought occurs during the months of May-July when drinking water becomes scarce commodity	<ul style="list-style-type: none"> • Use of un-hygienic water results in outbreak of diarrhea diseases • Economic loss on maintaining health • Grain prices become very dear

6.4.2 Vulnerability Assessment

Emergency Rescue Activity: Water inundates in houses and people are restricted to either use their roofs or seek some shelter at the Jamait Khana or with their relatives in other safer areas of Hyderabad.

The community has its trained volunteer base and they play very effective role in rescue activity once the disaster hits the community.

Food and Water: Water becomes precious commodity especially in rain/flood disaster period because tap water can not be used as it gets mixed with sewerage water and gets contaminated. The houses remain inundated for many days after disaster therefore the situation worsens for them and they have to rely on relief food.

Health and Environment: Stagnant water serves as breeding ground for mosquitoes and diseases like malaria and gastro erupts and spreads very quickly. People have no option but to drain out rain water from their houses in the streets. The rain water mixes with sewerage water and conditions worsens more.

Production: Women in few of the households are engaged in labour. The rain water inundates houses and remains for more than a week therefore the economic activity comes to a standstill.

Infrastructure: The houses are already in dilapidated condition and vulnerable against disaster conditions. The houses get more cracks after the stagnant water hit them severely. The walls and roofs and other housing infrastructure severely damaged by the rain/flood disaster.

Government schools are used for providing the community shelters which remain close for educational activities for a longer period of time.

6.4.3 Capacity Assessment

There is one Jamat Khana (religious place) and a school which can be used as rescue places for the communities in low lying areas. The volunteer potential in the communities is available which can be further strengthened through training and capacity building.

Specific Problems and Recommended Measures

Problem	Recommended Measure
<ul style="list-style-type: none">• Drainage system Overflow in case of heavy rains	<ul style="list-style-type: none">• Sewerage pumping system be improved and addition pumping stations should be established
<ul style="list-style-type: none">• Outbreak of epidemics	<ul style="list-style-type: none">• Community awareness program and training of volunteers on providing first aid and pre and post disaster hygiene education
<ul style="list-style-type: none">• Destruction of infrastructure	<ul style="list-style-type: none">• Survey of old and weak infrastructure• Raising community awareness in constructing seismic proof buildings

6.5 Case Study: Union Council 2

The UC 2 of Sub District Latifabad is mainly comprised on block A, B, C, D, Katchi Abadi Muslim Rajput and Katchi Abadi Mehmood Abad. UC boundaries connected in south east with UC 4 and 5 while in west connected with Sub District Qasim Abad, however in south west connected with UC-1 of Latifabad.

The overall population of UC is 32,474, there is no Basic health unit from Govt Health Department, one Hillal Ahmer Cardiac Hospital exist for heart patients. Govt education status is very poor only one Govt Primary school exists there.



An aerial view of Union Council 2

A mixture of ethnic groups and multilingual community live there. Block D of the UC is highly flood prone area of Sub District Latifabad where existed Pumping station from Water and Sanitation Authority, unable to discharged drainage water of UC 2 and other 2 connected UCs

4 and 5 efficiently and recurrently. In the last rain flood water level in block D of UC is 5.5 feet, and retained up to 7 days. Throughout housing structure is Cemented and RCC and most of streets is Cemented and paved.

Mukhtiar colony and Kachi Abadi Muslim Rajput near Pumping station is slum semi-structured area and unpaved street existed there. The people in Mukhtiar and Muslim Rajput colony are most vulnerable to flood and rain related disasters as poor community which is always in a condition of seeking help for rescue and relief while through out D block is most Vulnerable to flood. There is no safest place in entire block D, the only safest place near the D block is Public School in UC 1 of Latifabad which was used in last Hydro meteorological disaster.

UC 2 is the part of Unit 2 and as it was mention earlier that units are well planned. The houses are well build structurally as well as architecturally. The streets are paved. The underground piped lines are provided. The problem which is facing by the residents is that by the passage of time the level of houses is going down while the streets are going up. In rainy days as the flow of water is more and as the area is the most low lying so water accumulated in the streets. The worst example appears in monsoon, when boats ere sailed on streets of Latifabad. The pumping station was not working because as the level of the pumping stations is also low so water was also inside the pumping station.

As compared to the UC 2, other UCs **13, 14** which are not the part of the planned units, facing more problems because people don't have the basic infrastructure like, gas, communication, and sewerage and drainage system. The worst example is Gheera Abadi.

Assessment Results of UC 2

6.5.1. Hazard Assessment

The communities were involved in mapping exercises to identify potential hazards and vulnerable sections of the population. The community in union council 2 identified following hazards in the area:

- Heavy rains and Storm
- Flood
- Earthquake
- Drought/Heat Stroke

These hazards were identified as potential hazards in the union council 2. Heavy rains take a severe form when every street is inundated by water and since D block of the areas of union council are most low lying therefore the residents suffer heavily: financially and socially.

S#	Type of Disaster	Potential Occurrence of Disasters (Months)											
		J	F	M	A	M	J	J	A	S	O	N	D
1	Storm/Heavy Rain							x	x	x			
2	Flood						x	x	x	x			
3	Heat Stroke/Drought				x	x	x	x	x	x			
4	Earthquake												

The most vulnerable Blocks/Area to disasters in UC2

Vulnerable Blocks/Area	Rains	Flood	E.Quake	Heat Stroke/ Drought	Ran king	Remarks
Block D	x	x		x	1	<i>Most Vulnerable flood Prone Areas because it exist in most low laying area within Latifabad Sub District. and also outlet Pumping drain station of UC 4 &5 in Block D of UC 2.</i>
Block C	x	x		x		
Block B	x	x		x		
Mukhtiar Colony	x	x	x	x		
Muslim Rajput Colony	x	x	x	x		
Mehmood Abad	x	x	x	x	2	
Block A	x	x	x	x		

Disaster and their Characteristics	Main Impacts
Heavy rains: Occur during monsoon season that starts from June and lasts until end of August. The severity of inundation depends upon downpour	<ul style="list-style-type: none"> • Stagnant rain water becomes breeding ground for Water borne diseases • Probability of falling walls and impending danger of casualties • Drainage water also mixes up with rain water • Diseases outbreak • Huge financial loss
Floods: The floods occur due to canal breaches. However since last many years there is continuous shortage of water therefore the downstream water flow is quite low	<ul style="list-style-type: none"> • Housing infrastructure at great risk • Drainage water also mixes up with rain water • Outbreak of Diseases • Huge financial loss
Earthquake: Earthquake is quick onset disaster creating havoc in population. In 2002 the city was hit by the earthquake resulting few casualties and infrastructure damaged severely	<ul style="list-style-type: none"> • High rise buildings and old infrastructure may damage resulting loss of economy as well as potential risk of human lives • Business activity likely to be severely hit and disrupted
Drought/Heat Stroke: drought occurs during the months of May-July when drinking water becomes scarce commodity as all reservoirs start to dry up. Atmospheric Temperature is very high in month of April-August	<ul style="list-style-type: none"> • Use of un-hygienic water results in outbreak of diarrhea diseases • Economic loss on maintaining health • Price hike due to low agricultural productivity • Sunstroke is very common even death toll high because of high temp.i.e.45 °F

6.5.2 Vulnerability Assessment

Emergency Rescue Activity: Like in any union council also in UC 2 there is no ferry/boat service for emergency situations. Water inundates in houses and people are restricted to either

use their roofs or seek some shelter with their relatives in other safer areas of Hyderabad or even they shift temporarily to other places of the city. Loud speakers are used in all the mosques of the union council to call people for prayers. Very few mosques have standby power supply system (generator, battery) to support speakers to function in case of power failure in case of emergencies.

In UC 2 block D there is only one safest place near their area is Public School on the boundary of UC 1. In Public School, hostel rooms available where resident of block D were shifted for 2 weeks during last rain disaster. The rain flood disaster hit the area to a great extent for the first time in 2006 monsoon season therefore the disaster situation exposed vulnerability of existing institutional arrangements.

Food and Water: Drinking Water becomes precious commodity especially in rain/flood disaster period because tap water can not be used as gets mixed with sewerage water and gets contaminated. As the household kitchen could not be used by the communities therefore the situation worsens for them and they have to rely on relief food. Few of the community members (rich) having alternative houses migrate temporarily or they stay with their relatives in other cities. Most of the families prefer to remain around due to fear of theft of household articles.

Health and Environment: Stagnant water serves as breeding ground for mosquitoes and waterborne diseases like malaria and gastroenteritis erupts and spreads very quickly. The union council administration has to rely on sub-district (*Tehsil*) administration for water disposal. The rain water mixes with sewerage water and conditions worsens more.

Production: Women in most of the households of the union council are engaged in home for house hold activity while male were engaged out of home in different business activities on minor local level. As rain water inundates houses and remains area for more than a week so for socio-economic conditions were worsen and very poor.

Infrastructure: The main disposal drainage system is very old about 40 years and executed by Water and Sanitation Authority. The drainage disposals based on Suction pumps which depend on electricity which was failure always after rain in the city. While drainage water of UC 4 and 5 also drain from pumping station of UC2. So for the out let of drainage is not sufficient to drain sewerage water smoothly. However the walls and roofs and other housing infrastructure were severely damaged by the rain/flood disaster.

Government schools and Public school were used for providing the community shelters which remain close for educational activities for a longer period of time during last disaster.

6.5.3 Capacity Assessment

There is one Cardiac Hospital and one primary school. The volunteer potential in the communities is available which can be mobilized through training and capacity building. The local government system requires further strengthening and mobilizing to acquire disaster resilience capacity through software and hardware support.

6.5.4. Concerned Problems and Recommended Measures

Problem	Recommended Measure
<ul style="list-style-type: none"> • Drainage system overflow in case of heavy rains and choking of drainage pipe in routine, or break down of electricity 	<ul style="list-style-type: none"> • Sewerage pumping system be improved and addition pumping stations should be established or separate the drainage system of UC4 and 5 from UC2 Drainage system.
<ul style="list-style-type: none"> • Outbreak of epidemics 	<ul style="list-style-type: none"> • Community awareness program and training of volunteers on providing first aid • Well equipped dispensary should be established and vaccination provided after and before out break of epidemic
<ul style="list-style-type: none"> • Destruction of infrastructure and house hold utensils 	<ul style="list-style-type: none"> • Survey of old and weak infrastructure • Community awareness raising in constructing seismic and damp proof buildings. • Early warning center develop to inform and warn community regarding disaster.
<ul style="list-style-type: none"> • Weak embankments of river Indus 	<ul style="list-style-type: none"> • Advocating the problem with line department and lining of embankments
<ul style="list-style-type: none"> • Lack of Drinking Water 	<ul style="list-style-type: none"> • Develop Filter plants for Drinking water on safest place of locality or develop mound for Drinking water point.
<ul style="list-style-type: none"> • Transportation/conveyance 	<ul style="list-style-type: none"> • After disaster transportation is main problem so Boats should be provide in flood prone area

7. Conclusion and Recommendations

The recent heavy rains have exposed the vulnerability of the city against these disasters. The main challenge is to rectify sewage and drainage system of entire city especially low lying areas of the city. As indicated by the people there is likeliness of other disasters to occur in future like earthquake and breaches in canal/river banks which may pose a considerable threat to the dwellers. The summary of disaster events and potential hazards reflects that such disasters may happen in future. Despite the fact that the area under study is prone to recurring disasters, no preparedness strategy has yet been developed. Therefore through PROMISE there is an opportunity to design such a coping capacity of at-risk communities.

Communities believe that strong livelihood base is necessary against disasters and a comparative response capacity is measured by the available livelihood strategies and resources profile. Communities of most of the study area are provided with limited choices of livelihoods (as most of the communities of research area are depending on industrial labour), which make them helpless in living within limited options.

The issue of disaster risk reduction needs to be taken up at both policy and community level. At community level some pilot projects could be developed which demonstrate the value of disaster preparedness, additionally, disaster prone communities need to be mobilized for a rights-based

activism to secure their rights to lives and livelihoods. At policy level there is a need to undertake target-oriented advocacy by incorporating disaster coping strategies in development planning.

With the establishment of district assemblies under Devolution Plan it needs to be realized that the scope of linking disaster management with overall development planning at district level has been increased. According to the Local Bodies Ordinance 2001 it has become mandatory for each district government to develop a five-year plan for the district. Taking this legal provision as an entry point it could be lobbied that the element of disaster management should be linked with five year development planning and priority should be given to disaster-prone communities and areas in annual resource allocation at district, tehsil and union council level.

Below are some specific suggestions:

- Disaster management in research areas should be linked with the process of annual development planning within the ambit of district assembly. Floods, droughts, earthquakes should not be viewed as transitory and isolated events rather they should be looked at as pending issues of development and governance. Thus, this calls for gearing up line departments to attend to these issues on long-term basis.
- Water and habitat insecurities need to be addressed prominently as these are basic elements, which constitute a livelihood.
- The proposed disaster preparedness strategy may also include health and awareness raising services to disaster prone communities as these two vital components substantially contribute in risk reduction process.
- The dwellings, hamlets and villages which are situated in the low lying areas of Hyderabad city (mostly in Latifabad sub district) are the most frequent subject to the periodical disasters. The structure and placement of houses, non-availability of disaster-resistant physical infrastructure and remoteness comes into alliance to constitute the physical vulnerability of communities at large.
- The recent floods (2006) in Hyderabad occurred solely because of the inadequate sewage system, which has caused huge losses to human misery and infrastructure. Few people also lost their lives. Therefore some structural and non structural coping mechanisms need to be adopted. Some of the measures needed to be taken include:
 - The existing sewage system is inadequate to cater growing population need as outlet drains are narrow and not capable to drain out enough sewage water than required. Whereas the additional pumping stations need to be constructed and Government needs to focus and address this issue at macro (city) level
 - In the disaster period outbreak of epidemics is a common thing. The community awareness program and training of volunteers on providing first aid should be the priority of the project. Government should focus to strengthen its vaccination system
 - A detailed survey of weak infrastructure is required to be done. A joint survey by AKPBS, Pakistan and Local Government may help identify the intensity of the problem. A building code for seismic proof buildings be established and apex development

authority - HDA (Hyderabad Development Authority) should take effective measures to regulate these codes. The community should also be trained in adopting seismic and flood resistant housing techniques

- Water security was the first foremost issue emerged in the vulnerability context alongwith habitat and work security. Community water filters are required by the community to be established at flood safe places
- Since the community is mostly unaware about the coping mechanisms therefore a comprehensive capacity building training program is required to be designed to cater emergency challenges.
- There is considerable volunteerism spirit available in the communities however a thoroughgoing social mobilization process is required to facilitate to form disaster preparedness and management committees. Later on they should be registered as community citizen boards (CCBs). The capacity of these CCBs should be enhanced and strengthened so that they could mobilize public resources in support of community projects aimed at reducing community vulnerabilities against disasters
- Sewage water and rain water disposal be treated and managed separately so as rainwater can be harvested for future use
- Technical capacity of community organizations, masons, school teachers may be enhanced to deal with disaster risk reduction and preparedness issues
- The programmes require focusing on local institutional development, capacity building, and implementation of preparedness activities at neighbourhood or city levels. The program should include strengthening of livelihoods and implementation of small scale mitigation schemes to be identified through local prioritization process
- The community is not much aware about the disaster risks and vulnerabilities as well as basic strategies to deal with the disasters, specific trainings in the areas of response would be needed; e.g. search and rescue, first aid, evacuation, camp management and relief distribution
- Technical capacity of district and municipal officials in hazard prone areas enhanced on disaster risk reduction and preparedness
- Tripartite (Government, Citizenry and Civil Society) dialogues and working group at community level for mainstreaming and development planning should be established
- An emergency operation centre at the Taluka level should be established; and the community organizations will be trained to develop local early warning systems
- Considering the importance of media in awareness raising and education of communities and stakeholders, the project team will establish closer liaison and partnerships with electronic and print media.
 - o Provide information to communities about the precautionary measures they can take to avoid the loss of life and property from hazards.
 - o Highlight the need for involvement of communities in disaster preparedness activities;

- Inform the public with timely and factual information about the extent of the disaster, the losses caused and the current situation of the hazard
- Advise the public about actions to be taken during the emergency period in order to avoid further losses; e.g. evacuation, areas they should not go to, water purification techniques
- Highlight the need for application of minimum standards to ensure that the minimum needs of disaster survivors in terms of water sanitation, shelter, food, environmental health are met.
- Encourage NGO participation in disaster risk management activities aimed at reducing vulnerability of at-risk-communities and individuals. In specific terms NGO's will be encouraged to participate in training, public education, damage assessment, rehabilitation and construction projects in disaster stricken areas.
- Review the existing building codes, revise and finalize the building codes if necessary and involve in consultation with the city officials Hyderabad Development Authority for wider information;
- Hold workshops with relevant stakeholders (local political leaders, local government departments, NGOs, community groups, civil society organizations) to share the results of risk assessment and to identify strategies for vulnerability reduction; also identify social, technical and financial resources that are locally available to reduce vulnerabilities and mitigate hazards;
- Organize drills at the district/municipal levels with participation of all emergency response agencies;
- Small structural mitigation schemes implemented in most vulnerable villages and towns
- Hold stakeholders consultations including members of vulnerable communities, sectoral representatives, NGOs, technical experts (masons, researchers, engineers) to identify small scale mitigation schemes for implementation in most vulnerable villages and towns; This will be done considering local capacities in mind;
- Prioritize and implement mitigation schemes based upon an analysis of resources available at local level

Annex-A

HOUSEHOLD QUESTIONNAIRE

Date: _____

PO Details

PO Name _____
Regional Office _____
District Office _____
Field Unit _____

Location Details

Province Name _____
District Name _____
Tehsil Name _____
UC Name _____
Village Name _____

Enumerator Name _____

Respondent _____

Head of Household _____

Father Name _____

NIC # _____

Detail _____ Address _____ of _____ Household

1. General Household Information

	Name	Rel. with HH Head	Sex	Age	Literacy	Education		Work Status	Residence Status
						Status	Attainment		
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									

NOTE.

NAME: Do not list guests, visitors etc. Start with the respondent.

RELATIONSHIP WITH HH HEAD: Head= 0, Spouse= 1, Son/ Daughter (Unmarried) = 2, Son/ Daughter (Married) = 3, Father/Mother =4, Brother/Sister=5, Other Relative=6, Servant=7, Non Relative =8

SEX: Male = 0; Female = 1

LITERACY: Illiterate = 0; Literate = 1 (Literate is defined as a person who can read a newspaper and write his/her name in any language)

EDU. STATUS: Never Attended an Educational Institution = 0; **Not** Attending an Educational Institution Presently = 1; Attending/Enrolled in an Educational Institution Presently = 2

EDU. ATTAINMENT: Specify Class No. from 1 to 16 for those who are either currently enrolled or have been enrolled in an educational institution in the past. For those who have been previously enrolled, assign any number from 1 to 16 according to the last grade passed. For currently enrolled, assign any number from 1 to 16 according to their present grade. Write 0 for Katchi class. Write X for those who have never been enrolled in an educational institution.

WORK STATUS: Not Working = 0; HH Work = 1; Own Farming = 2; Farm Labor = 3; Off-Farm Labor = 4; Service/Job = 5; Business = 6; Other = 7. Write X for those who are part of the HH and are away from home for purposes other than a short visit (recreation, attending a marriage ceremony or a social function, etc.)

RESIDENCE STATUS: At Home = 0, Away From Home = 1, Working within Pakistan = 2, Working Abroad = 3

2. Household Income and Expenditure

2.1 HH Food Consumption (Weekly)			2.2 HH Expenditure (yearly)		2.3 HH Income (Yearly)	
Items	Quantity (Kgs)	Value (Rs)	Items	Value (Rs)	Items	Value (Rs)
Wheat			Food		Crops	
Rice			Clothing		Livestock	
Millets			Housing		Business	
Maize			Health Care		Service	
Pulses			Education		Labour	
Vegetables			Social Functions		Pension	
Fruits			Transport		Rents	
Beef			Remittances		Remittances	
Mutton			Other Expenses		Gift/Cash	
Poultry					Other	
Fish						
Eggs (No.)						
Milk						
Sugar						
Fats/Oils						

HH Consumption: Write the amount for each item (in Kilograms), except for eggs (write number of eggs) consumed on a weekly basis by all members of the household.

HH Expenditure: Write last year's (12 months preceding the survey) expenditure in each case. For food expenditure, use the data collected on weekly food consumption (3.1) and multiply it by the average price of each food item (in the village) and convert it to 12 months. The average price at the village level should be collected in the village questionnaire first. Then add 10-15 percent (for cost of beverages, cooking, etc.) to the calculated amount to get the total food expenditure.

HH Income: Write last year's (12 months preceding the survey) income in each case. Income from crops, livestock and business must exclude expenses or costs. A rule of thumb for the cost of crops is to assume that it is 35-40 percent of the value of all crops (total output multiplied by the village price). For livestock, the allowance can range from 30-40 percent of the total value of output (milk and eggs). For business the allowance can range from 30-40 percent of the revenue (per month or per year).

3. Major Constraints/Problems

Problem	Men	Women	Problem	Men	Women
Educational Attainment	<input type="checkbox"/>	<input type="checkbox"/>	Health care	<input type="checkbox"/>	<input type="checkbox"/>
Water Supply	<input type="checkbox"/>	<input type="checkbox"/>	Drainage	<input type="checkbox"/>	<input type="checkbox"/>
Street Pavement	<input type="checkbox"/>	<input type="checkbox"/>	Transport	<input type="checkbox"/>	<input type="checkbox"/>
Fuel Supply	<input type="checkbox"/>	<input type="checkbox"/>	Electricity	<input type="checkbox"/>	<input type="checkbox"/>
Poverty (low Income)	<input type="checkbox"/>	<input type="checkbox"/>	Jobs/Employment	<input type="checkbox"/>	<input type="checkbox"/>
Savings	<input type="checkbox"/>	<input type="checkbox"/>	Access to Credit	<input type="checkbox"/>	<input type="checkbox"/>
Social Cohesion	<input type="checkbox"/>	<input type="checkbox"/>	Organization	<input type="checkbox"/>	<input type="checkbox"/>

Note: Rank each problem from 0 to 3, where 0=no problem (or not sure); 1=slight problem; 2=serious problem; and 3=very serious problem.

4. Health Status (Last One Year)

Disease Name	No. of Persons Affected During last one year		Affected Age group		
	Male	Female	0-1	2-5	6+
Hepatitis (A)					
TB					
Dysentery					
Diarrhea					
Malaria					
Typhoid					
Other					

5. Child Mortality

Mother's	Children Born Alive	Children Died (Last 1 Year)
----------	---------------------	-----------------------------

Age	(Last 1 Year)	During Delivery	Less Than 1 Month Old	1-12 Months Old	1-5 Years Old

6. Maternal Mortality (Last 3 years)

Age group	Number
Less than 15	
15-20	
20-25	
25-30	
30-35	
35+	

7. Household Assets

Assets	Number	Values (Rs.)
Land (acres)		
Trees		
Livestock		
Poultry		
Tractor		
Thresher		
Cart/Trolley		
Tubewell/Pump		
Shop/Business		
Other Assets		

Assets	Number	Values (Rs.)
House		
Other Structure		
Motorcycle		
Bicycle		
Sewing Machine		
TV/Radio		
Savings (cash, etc)		
Loans Given		
Jewellery		

Note: Write number for each asset where applicable and in each case write the value in Rupees of the asset and the time of survey according to the respondent's estimate.

8. Assets Purchased/Sold During Last 1 Year

Assets Purchased (Rs.)			
Item	Source of Financing		
	Loan	Cash/Saving	Gift
Land (acres)			
Trees			
Livestock			

Assets Sold (Rs.)		
Item	Reason	
	To Meet Expenditure	To Repay Loans
Land (acres)		
Trees		
Livestock		

Poultry			
Tractor			
Thresher			
Cart/Trolley			
Tubewell/Pump			
Shop/Business			
House			
Other Structure			
Motorcycle			
Bicycle			
Sewing Machine			
TV/Radio			
Jewellery			
Other			

Poultry			
Tractor			
Thresher			
Cart/Trolley			
Tubewell/Pump			
Shop/Business			
House			
Other Structure			
Motorcycle			
Bicycle			
Sewing Machine			
TV/Radio			
Jewellery			
Other			

9. Loans (Rs.)

Loans Taken by Source in Last 1 Year (Rs.)		
Source	Amount Taken	Amount Owed (Outstanding)
Friends/Relatives		
Shopkeepers		
Banks		
Government		
Others		
Community Org.		
(a)First Time		
(b)Second Time		

Loan Utilization in Last 1 Year (Rs.)	
Item	Amount Spent (Rs.)
Land	
Livestock	
Machinery	
Farm Inputs	
Business	
Housing	
Consumption	
Social Functions	
Health Care	
Education	
Repay Loans	
Health Care	

10. Housing Facilities

House Structure

Fuel/Energy

- Pucca
 Katcha
 Pucca&Katcha
 Rooms (No.)

Water Supply

- Piped
 Canal
 Well
 Other

Latrine

- Inside
 Outside

Drainage

- Yes
 No

Electricity

- Yes
 NO
 Gas
 Wood
 Kerosene
 Other

11. CO Loans

11.1 CO Member Since _____ (months)

11.2 CO Saving (Rs.) _____

11.3 CO Loans: (No.) _____

11.4 Loan Amount (Rs.) (1st Loan) _____ (2nd Loan) _____ (3rd Loan)

11.5 Overdue (Rs.) _____ Overdue (Months) _____ Reasons:

11.6 Training: Yes / No

11.7 Loan Default: Yes / No

11.8 Labour given for CPI: Yes / No

12. CO Meetings

12.1 Frequency of CO Meetings

More than once a week

Weekly

Bi-weekly

Monthly

Once every 2-4 Months

Rarely

12.2 Participation in CO Meetings (if irregular, also fill 10.3)

Regular

Irregular

12.3 If Irregular, specify reasons

12.3.1 _____

12.3.2 _____

12.3.3 _____

13. Mode of Selection of Office Bearers

Nomination

Election

14. Mode of Decision-making

Unilateral	<input type="checkbox"/>
By Majority	<input type="checkbox"/>
By Unanimity	<input type="checkbox"/>

15. CO Benefits

Benefit		Men	Women	Benefits			Men
Women							
Credit (loans)	<input type="checkbox"/>	<input type="checkbox"/>		Skills	<input type="checkbox"/>	<input type="checkbox"/>	
Village Infrastructure	<input type="checkbox"/>	<input type="checkbox"/>		Personal Empowerment		<input type="checkbox"/>	<input type="checkbox"/>
Social Cohesion		<input type="checkbox"/>	<input type="checkbox"/>	Access to Public Services		<input type="checkbox"/>	<input type="checkbox"/>
Access to Technology	<input type="checkbox"/>	<input type="checkbox"/>		Access to Markets	<input type="checkbox"/>	<input type="checkbox"/>	
Conflict Resolution	<input type="checkbox"/>	<input type="checkbox"/>		Improved Natural Resources	___		

Note: Rank each benefit from 0 to 3, where 0=no benefit (or not sure); 1=slight benefit; 2=significant benefit; and 3=very significant benefit.

Hazard Mapping & Assessment

Question related with Social Maps

1 کونسی آفتوں سے آپکے محلے / وارڈ کو سب سے زیادہ خطرات درپیش ہو سکتے

ہیں؟

آفتوں کی تفصیلات	نمبر شمار
	1
	2
	3
	4
	5

2. محلے / وارڈ میں کونسی بنیادی سہولتیں باآسانی میسر ہیں جو کہ کسی آفت کی

صورت میں استعمال ہو سکتی ہیں؟

نمبر شمار	دستیاب سہولتوں کی تفصیل	نمبر شمار	دستیاب سہولتوں کی تفصیل
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

3. محلے میں کونسی جگہ یا گھر ہے جس کو آفت کی صورت میں زیادہ خطرہ ہو سکتا ہے؟ ☆
4. محلے یا وارڈ کے کونسے بنیادی سہولت کے مرکز یا مقام آفت یا خطرات سے دو چار ہو سکتے ہیں؟ ⊗
5. محلے میں کونسے افراد سب سے زیادہ با آسانی متاثر ہو سکتے ہیں؟ ↓
6. محلے میں کونسے گھر سب سے زیادہ پسماندہ ہیں؟ ▲
7. محلے میں کونسے گھر سب سے زیادہ خوشحال ہیں؟ □
8. محلے میں موجود محفوظ پناہ گاہ کونسی ہے جو بوقت ضرورت استعمال کی جا سکتی ہے؟ ⊖

Seasonal Disaster Calender

موسمی آفات کا کیلینڈر

Dec	Nov	Oct	Sep	Aug	July	June	May	April	Mar	Feb	Jan	آفات کی تفصیل	نمبر
												طوفانی بادوباراں / بارشیں	1
												سیلاب - طغیانی	2
													3
													4
													5
													6
													7

JC NO _____ Taluka Latifabad

Most vulnerable wards / blocks in the UC

UC کی سب سے زیادہ خطرے سے دوچار ہونے والے وارڈ یا بلاک

نمبر	وارڈ یا بلاک	گھر شماری	غریب گھرانے	غریب کی شرح تناسب	بادوباراں یا طوفانی بارش	سیلاب یا طغیانی
1						
2						
3						
4						
5						
6						
7						
8						
9						

بارش سے زیادہ تاثر R-1

بارش سے کم تاثر R-2

سیلاب سے زیادہ تاثر F-1

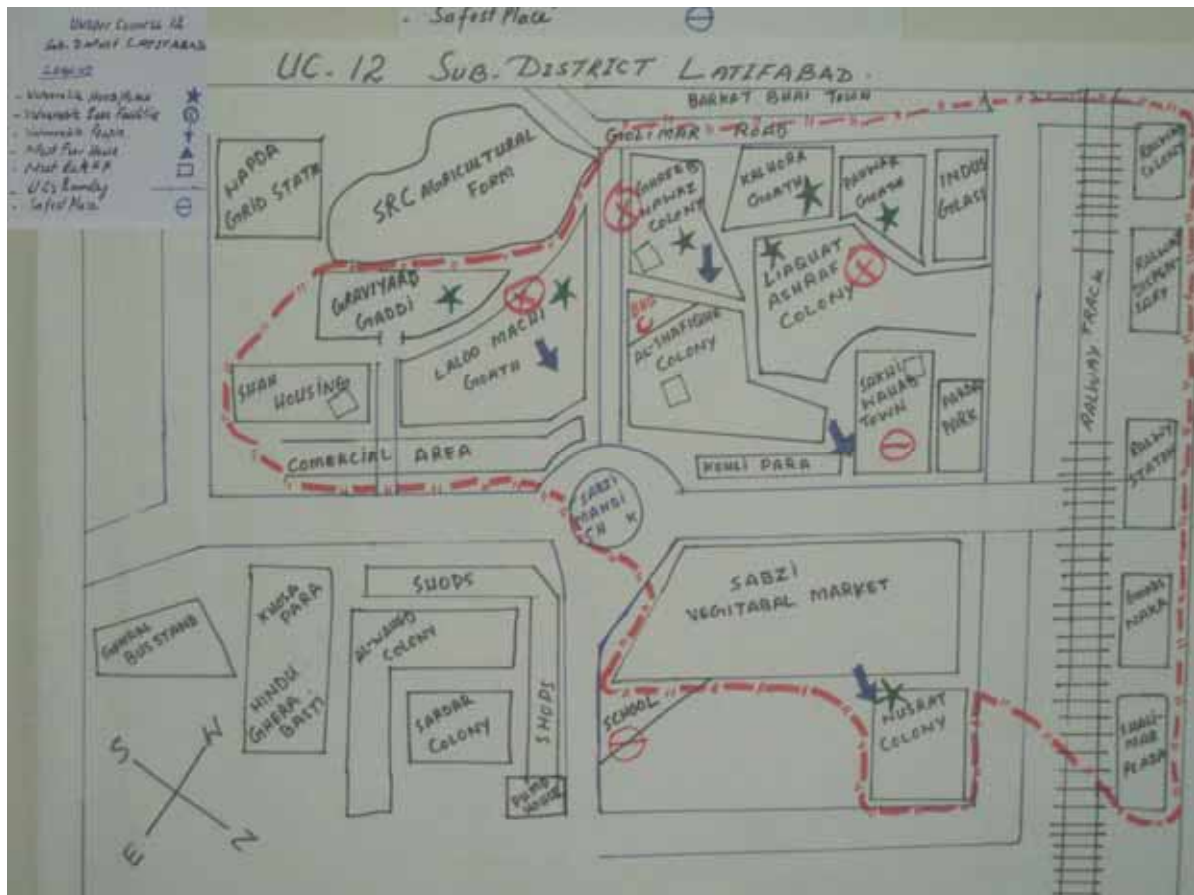
سیلاب سے کم تاثر F-2

Concerned problems &
recommended measures

آفات سے وابستہ مسئلہ اور
ان کے حل کی تدابیر

تدابیر	آفات سے وابستہ دشواریاں	نمبر

Annex-B (Union Council 12)



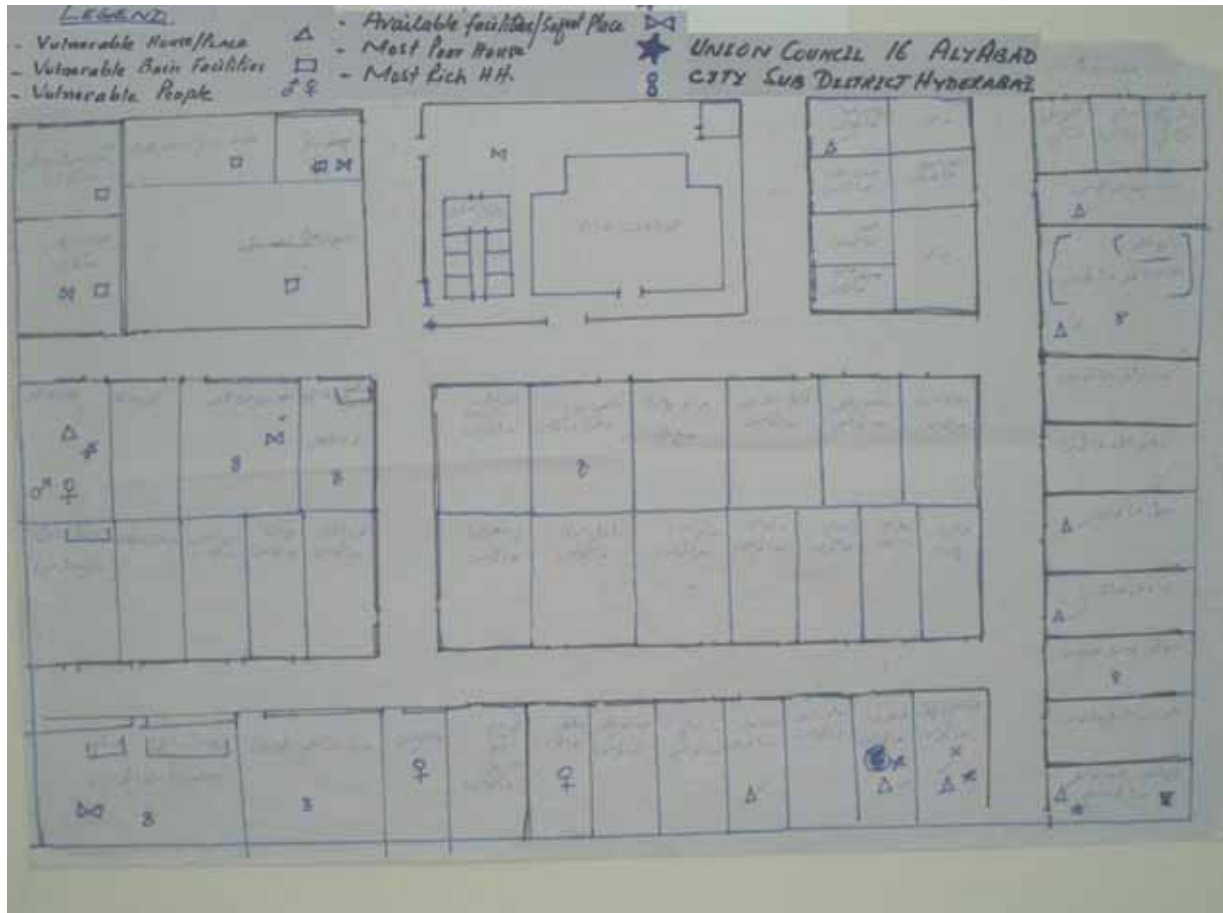
Annex-C (Union Council 13)



Annex-D (Union Council 14)



Annex-E (Union Council 16)



Union Council 2

