

Amendments in Town & Country Planning Legislations for safety in Natural Hazard Zones of India

By:
Ved Mittal, Former Consultant UNDP
Former Chief Architect & Town Planner
U.P. Development Authorities



Facts about INDIA

Area :	3,287,263 sq km
States :	28
Union Territories :	7
Population :	1,027 Million
Urban Population :	27.80%
Rural Population :	72.20%
No. of towns and cities :	5,161
No. of villages :	580,000

Table - 1
Summary of Census 2001 Districts having substantial Multi-hazard Risk Areas
Districts having substantial multi-hazard prone area

E.Q. and Flood	172
Cyclonic wind and Flood	6
E.Q., Cyclonic wind and Flood	46
E.Q. and Cyclonic wind	17

CITIES AT RISK FROM NATURAL HAZARDS

Disaster risk to cities is increasing, because

- > Rapidly increasing population density
- > Increasing building density
- > Increasing taller construction
- > City spreading in less suitable areas
- > Increasingly rapid transport systems.
 - Raised highways
 - Flyovers

Techno-Legal Regime

Background

- > In 1994, in view of YOKOHAMA Strategy for Safer World, MoUD, Gol constituted an Expert Group:
 - o To identify Vulnerable areas
 - o To prepare Vulnerability Atlas
 - o To suggest Techno-legal Regime

An Overview-in the context of Post Earthquakes

- o Uttarkashi in 1991
- o Latur in 1993
- o Bhuj in 2001
- o MHA Gol in 2004 constituted a Committee of Experts with six Engineers and six Architect /Planners who recommended the Model amendments in Town Planning Legislative frame work

Techno-Legal Regime

- Recommendations of Expert Committee as contained in Vol.-I are basically for large cities (MUNICIPAL CORPORATIONS)
- On the initiative of Dr A S Arya, National Seismic Advisor, simplified recommendations were framed for medium and small towns (Municipal Councils and Nagar Panchayats) as vol. IA and vol. IB by the same Committee
- Similarly, for safety in development and construction on the fringe areas of the cities and along the traffic corridors and rural areas the guidelines were prepared for Zila Panchayats, Block Panchayats and Village Panchayats
- The above two recommendations were ratified by the same Committee and sent to MHA for appropriate directions to the various States and UTs

Techno-Legal Regime

Objective

To ensure safety against Natural Hazards, especially Earthquakes and Land slides in hill areas besides safety against floods and cyclones, in planning and development of all the settlements and construction of every type of buildings and structures

Strategy

To incorporate legal provisions in Town and Country Planning legislations including Land use zoning regulations, Development control regulations and building bye-laws

Assessment and Analysis

Available provisions as per recommendations of Expert Committee MoHUPA assigned the task to BMTPC to organize one day Technical workshops in States /UTs, completed in 20 states and 4 UTs

Lessons Learnt

Most States/UTs except MP and TN have not amended their Acts
NE States have initiated the process
Some States have issued Admin Orders to include BIS codes in Bye laws
8 States and 2 UTs have to be approached
Strong need for Advocacy

➤ Town Planning Legislation in India- Review

- **Most States/UTs have TP Legislations except Arunachal Pradesh, Sikkim and A&N Islands, Lakshadweep**
- **Gaps and Suggestive Measures**
 - **Most of the States/UTs do not have any provision for safety against natural hazards in their TP Legislation or Building Bye-laws**

Initiatives identified to prevent large losses of life and property in future disasters:

As a follow up of the Yokohama Declaration, earlier the Ministry of Urban Affairs and Employment had identified the following areas having a bearing on housing and related infrastructure, where initiatives were needed:

- **Identification of areas which are vulnerable** (Cyclone, Earthquake, Land slide, Flood, Tsunami)
- **A techno-legal regime for propagation and enforcement** (Regulations)
- **A programme for strengthening the existing housing stock** (Retrofitting)

Techno-Legal Regime

Actions Required

- Amending the Town & Country Planning Act to include consideration of Natural Disaster
- Amending Master Plan & Development Area Rules & Regulations to take into account the Hazard Proneness in Land Use Zoning.
- Amending the Building Byelaws of Local Bodies to enforce Earthquake Resistant Designs & Construction of Buildings including the Extensions/Modifications in the existing buildings.

LEGAL SUPPORT FOR PLANNED DEVELOPMENT GROWTH OF URBAN AREAS

. Central Legislation/Guidelines

- **Model Town and Country Planning Act, 1960**
- **Model Regional Town Planning And Development Law, 1985,**
- **Urban Development Plans Formulation and Implementation Guidelines ,1996**

Legal Provisions

- Requisite amendments in the TCP ACTS
- 1st Step: Definitions (to be included)
 - Natural Hazards
 - Natural Hazards Prone Areas
 - Natural Disaster
 - Mitigation
- 2nd Step: Identification of natural hazard prone areas
- 3rd Step: Provision for regulations of land use zoning
- 4th Step: Provision for regulations of DCR/Bye-Laws

Recommendations for Amendment in Town & Country Planning Act , 1960

Definitions under Section 2

- Natural Hazards
 - _ Natural Hazards Prone Areas
 - _ Natural Disaster
 - _ Mitigation

Section 4:Function and Power of The Board

- 4(2)(a) direct the preparation of Development plans *keeping in view the natural hazard proneness of the area* by local Planning authorities

Section 11 :Function and power of Local Planning Authorities

- 11 a) an existing Land Use Map *indicating hazard proneness of the area*
- 11 b) an interim development Plan *keeping in view the regulations for land Use zoning for Natural Hazard Prone Areas*
- 11 c) a Comprehensive development *keeping in view the Regulations for Land Use Zoning for natural hazard prone Areas*

Section 18 Interim Development Plans

- 18 (2) (a) indicate broadly the manner in which the planning authority proposes that land in such area should be used *keeping in view the natural hazard proneness of the area*

Section 19 Comprehensive Development Plan

- 19 (2) The Comprehensive Development Plan *keeping in view the natural hazard proneness of the area* shall-

Section 20 : Development Plan prepared prior to the application of this act to be deemed development Plan under this act

Development Plan prepared prior to the application of this act to be deemed Development Plan under this act –If any local authority has been declared as a planning authority for a planning area and a local authority has prepared a development plan for the planning area before the application of this act to that area , the development plan already prepared may be deemed to be a development plan under Section 18 or section 19 of this Act.

However , when such plans are implemented due care should be taken while formulating the projects based on such plans to follow *the regulations pertaining to land Use Zoning and necessary protection measures prescribed by the Regulations*

Section 29 Prohibition of Development without payment of Development charges and without permission

Sub Section 29 (2) following to be added at the end after the word regulations *including Development control, Building Regulation/ Byelaws for Natural hazard prone areas*

Similarly following suitably be added in para 2 of 29 (2) *complying with development control , building regulations/ byelaws for natural hazard prone areas*

Section 73 Power to make regulations

73 (e) any other matter which has to be or may be prescribed by rules under Section 72 (l) , *Development Control and Building Regulations/ Byelaws for Natural Hazard Prone Areas*

73 (f) any other matter which has to be or may be prescribed by regulation *including regulation for Land Use zoning for natural Hazard Prone Areas*

RECOMMENDATIONS

FOR

**LANDUSE ZONING
REGULATIONS**

Classification of urban land uses is based upon the requirements of the various plans. Levels in land use classification shown under:

Level I	For Perspective Plans
Level II	For Development Plans
Level III	For Layouts of Projects/Schemes

LAND USE ZONING

- > Zoning regulations are legal tools for guiding the use of land and protection of public health, welfare and safety.
- > Such regulations also include provisions for the use of premises /property and limitations upon shape, size and type of buildings that are constructed or occupy the land. Further, these provide both horizontal as well as vertical use of land.

LAND USE ZONING..contd.

- These regulations also improve the quality of life in urban centres For instance in flood zones, the land use may be parks, playground & gardens while restricting any building activity in such vulnerable areas.
- Life line structures should also be protected likewise while either proposing land uses or otherwise.

APPLICABILITY

Areas planned under :

**State Perspective Plan/Regional Plan
Development Plan (Master Plan/Zonal Development Plan)**

While formulating Perspective Plan/Regional Plan, Development Plan (Master Plan/Zonal Development Plan) for any notified area, the proposals should indicate:

- i) Natural hazard prone areas with the type and extent of likely hazards,

AREAS NOT COVERED UNDER MASTER PLAN

- In such areas where there are no Master Plans or Development Plans, general guidelines & recommendations on natural disaster mitigation should be issued to the various local bodies, *Municipalities and Town Area Committees and Panchayats to enable them to take these into consideration while siting various projects and deciding on construction of buildings etc.*
- Technical help may be required by some of the local bodies in implementation of the recommendations and for interpretation of the guidelines.

IDENTIFICATION OF NATURAL HAZARD PRONE AREAS

EARTHQUAKE PRONE AREAS :-

- Macro Seismic Zones III, IV & V
- Area liable to liquefaction have greater risk.
- Those hilly areas which are identified to have poor slope stability conditions and where landslides could be triggered by earthquake or where due to prior saturated conditions, mud flow could be initiated by earthquakes and where avalanches could be triggered by earthquake will be specially risk prone.
- Special risky areas have to be determined specifically for the planning area under consideration through special studies to be carried out by geologists and geo-technical engineers.

CYCLONE PRONE AREAS

- Cyclone prone areas:- those areas likely to be subjected to heavy rain induced floods or to flooding by sea-water under the conditions of storm surge, are specially risky.
- Areas under those where special risk have to be identified by special contour survey of the planning area under consideration and study of the past flooding and storm surge history of the area. Survey of India or locally appointed survey teams, and by reference to the Central Water Commission, Government of India and the department of the State or U.T dealing with the floods.

FLOOD PRONE AREAS

- The flood prone areas in river plains (unprotected and protected by bunds) are indicated in the Flood Atlas of India prepared by the Central Water Commission and reproduced on larger scale in the state wise maps in the Vulnerability Atlas of India.
- Besides, other areas can be flooded under conditions of heavy intensity rains, inundation in depressions, backflow in drains, inadequate drainage, failure of protection works, etc.
- Have to be identified through local contour survey and study of the flood history of the planning area (Survey of India or local survey teams, and by reference to the Central Water Commission and the departments of the state or U.T dealing with the floods).

LANDSLIDE PRONE AREAS

- The susceptibility of the various areas to landslide varies from very low to very high. Landslide zoning naturally requires mapping on large scale. Normally medium scale of 1:25000 is at least chosen.

APPROACH FOR LAND USE ZONING

ALTERNATIVES

- Leaving the area unprotected* : In this case it will be necessary to specify Land Use Zoning for various development purposes
- Using protection methods* : for the areas as a whole or in the construction of buildings, structures & infrastructure facilities to cater for the hazard intensities likely in the planning area.
- It will be appropriate to priorities buildings, structures & infrastructures in terms of their importance from the point of view of impact of damage on the socio-economic structure of the society.

PRIORITISATION

In regard to Land Use Zoning, different types of buildings and utility services are grouped under three priorities as indicated below.

Priority 1. Defence installation, industries, public utilities, life line structures like hospitals, electricity installations, water supply, telephone exchange, aerodromes and railway stations; commercial centres, libraries, other buildings or installations with contents of high economic value.

Priority 2. Public and Semi Public institutions, Government offices, and residential areas.

Priority 3. Parks, play grounds, wood lands, gardens, green belts, and recreational areas.

REGULATION FOR LAND USE ZONING

- Installations and Buildings of Priority 1** to be located above the levels corresponding to a 100 year flood or the maximum observed flood levels whichever higher.
- Buildings of Priority 2** to be located outside the 25 year flood or a 10 year rainfall contour, provided that the buildings if constructed between the 10 and 25 year contours should have either high plinth level above 25 year flood mark or constructed on columns or stilts, with ground area left for the unimportant uses;
- Activities of Priority 3** viz. play grounds, gardens and parks etc. can be located in areas vulnerable to frequent floods.

PLANNING IN HILL AREAS

In order to ensure environmentally sound development of hill towns, the following restrictions and conditions may be proposed for future activities.

- An integrated development plan may be prepared taking into consideration environmental and other relevant factors including ecologically sensitive areas, hazard prone areas, drainage channels, steep slopes and fertile land.

- Where cutting of hill slope in an area causes ecological damage and slope instability in adjacent areas, such cuttings shall not be undertaken unless appropriate measures are taken to avoid or prevent such damages.
- No construction should be ordinarily undertaken in areas having slope above 30° or areas which fall in landslide hazard zones or areas falling on the spring lines and first order streams identified by the State Government on the basis of available scientific evidence.
- Construction may be permitted in areas with slope between 10° to 30° or spring recharge areas or old landslide zones with such restrictions as the competent authority may decide.

Thank You