

RESETTLEMENT OF THE BALAKOT TOWN – PROBLEMS AND PROSPECTS

Ph. D. Dissertation



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**Dedicated to all those people who suffered from
Earthquake – 2005, and still living in fabricated &
damaged houses in the red zone of the Balakot town and
looking for a prosperous future.**

APPROVAL SHEET

This research thesis completed under the supervision of Prof. Dr Amir Nawaz Khan, Department of Geography, Urban and Regional Planning, University of Peshawar (Pakistan) as a partial fulfilment of Ph. D. degree in Geography is approved.

Title

Resettlement of the Balakot Town – Problems and Prospects

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ABSTRACT

Resettlement is one of the risk reduction measures in the field of disaster management. The Government of Pakistan has worked out a plan of resettlement of the Balakot town to mitigate the risk of earthquake hazard. In post-earthquake scenario, residents of the Balakot town interacted with the changed physical and economic environment. The line agencies of the Government guided this interaction of environmental adaptation or resettlement processes through laws, regulations, incentives, and penalties as providing: new site for Balakot town at Bakryal; declaring old Balakot town in red zone; discouraging developmental activities in the old Balakot town; and formulated the future plans for old and new Balakot towns. The process of resettlement of Balakot town has been directly affected by some important factors such as: the perception of the residents of Balakot town about hazards; economic opportunities; centrality; and hazardous site of the old Balakot town; planned site of the new Balakot town; distance between the new and old Balakot towns; location of the new Balakot town; economic opportunities at new Balakot town; justice and equity in the resettlement policy; and obstructions which are delaying the project.

The old Balakot town was a hub of political, social and economic activities while the new site at Bakryal is supposed to have good infrastructure facilities. The interacting physical and economic environment for the residents of the old Balakot town was quite complex and uncertain as these influencing factors and resettlement policy of the government offers both hopes and worries. They are hopeful about safe and sound life in the new Balakot town but worried about their businesses and social status which they are enjoying in the old Balakot town. Thus, problems are created by this uncertainty on one hand and prospects due to new opportunities on other hand. In the present study, the resettlement problems of uncertainty and prospects due to opportunities have been studied through site and situation analysis as it covers all the interacting situation of environmental adaptation or resettlement processes. The uncertain situation of

resettlement of the Balakot town has been elaborated in the form of site and situation. The site of the old Balakot town is hazardous while the situation is convenient, while on the other hand the site of new Balakot town is feasible but the situation is not encouraging. The second important aspect is the totally different perception of the two major stakeholders i.e. the Government and citizens of the Balakot about the opportunities & risks for the old and new Balakot towns, respectively. It is well known fact that ultimately, the successful resettlement of the Balakot town would be dependent upon citizen's perception. The site and situation factors have been analysed both for the old and new Balakot towns to formalise their existing and future physical and economic status. The response of the residents of Balakot while interacting with the current physical and economic environment has been studied and problems have been identified that create uncertainty about the future of the old and new Balakot towns.

This study is aimed at identification of the problems of uncertainty and future prospects of the resettlement of Balakot. On the basis of this study a tool has been developed. The basic components of this tool are: policy of the resettlement, site and situation of both old and new Balakot towns. Each of the three aspects has six major steps: major variables, existing conditions, problems, proposed solutions, testing response and modification & finalization. In this tool, major variables are further divided into minor factors for which the desired and actual response of the residents of Balakot has been analysed for the purpose of problem identification. After identifying the problems, the measures to resolve these problems in post disaster scenario have been suggested. These measures are based on the available resources to streamline the resettlement process and achieve the desired response. To standardise the mechanism, these measures are also tested against the response of the residents of Balakot. The final output of the study is in the form of a tool which provides a standardised mechanism for desired development. This tool can be applied with some modifications to other resettlement processes as well in future.

List of Contents

S. No.	Headings	Page No.
	Approval Sheet	iii
	Acknowledgement	iv
	Abstract	v
	List of Contents	viii
	List of Acronyms	xvi
	List of Tables	xix
	List of Figures	xxiii
	List of Maps	xxiv
1	Introduction	1
1.1	Introduction	2
1.2	Study Area	6
1.3	Scope of the Study	16
1.4	Justification of the Study	18
1.5	Limitations of the Study	20
1.6	Organization of the Thesis	20
2	Literature Review and Theoretical Frame Work	21
2.1	Introduction	22
2.2	Basic Concepts and Definitions	23
2.2.1	Building Code	23
2.2.2	Centrality	23
2.2.3	Disaster	23
2.2.4	Disaster Management	24
2.2.5	Earthquake	24
2.2.6	Environment	25
2.2.7	Hazard	25
2.2.8	Household	26
2.2.9	Location	26
2.2.10	Public Awareness	26
2.2.11	Public Services and Utilities	26
2.2.12	Red Zone	27
2.2.13	Resettlement	27

2.2.14	Rural Area	29
2.2.15	Site of the Settlement	29
2.2.16	Situation of the Settlement	29
2.2.17	Urban Area	29
2.2.18	Urban Basic Activities	29
2.2.19	Urban Economic Base	30
2.2.20	Urban Non-Basic Activities	30
2.3	Disaster Management in Pakistan	30
2.4	Earthquake – 2005	34
2.5	ERRA’s Urban Development Strategy	39
2.6	Site and Situation	42
2.7	Resettlement	55
2.8	Indices of Human Development, Disaster Risk and Environment	64
2.9	Conclusion	68
3	Research Methodology	70
3.1	Introduction	71
3.2	Research Problem	71
3.3	Purpose	72
3.4	Research Question	72
3.5	Hypothesis	72
3.6	Objectives	72
3.7	Research Methods	73
3.7.1	Primary Data Collection	74
3.7.1.1	Land Use Survey	74
3.7.1.2	Employment Structure Survey	74
3.7.1.3	Field Observations	75
3.7.1.4	First Stage Questionnaire Survey & Focus Group Discussion	75
3.7.1.4	Second Stage Questionnaire Survey & Focus Group Discussion	76
3.7.2	Secondary Data Collection	77
3.7.3	Data Analysis	77
3.7.4	Evolution of Resettlement Tool	78
3.8	Universe of the Study	79
3.9	Conclusion	80

4	Sites of the Old and New Balakot Towns	93
4.1	Introduction	94
4.2	Site of the Old Balakot Town	94
4.2.1	Site Vulnerability to hazards	95
4.2.1.1	Earthquake	96
4.2.1.2	Floods	98
4.2.1.3	Landslides	110
4.2.1.4	Hail Storm, Snowfall and Windstorm	115
4.2.1.5	Drought	115
4.2.1.6	Fire	117
4.2.2	Services	117
4.2.2.1	Shelters	118
4.2.2.2	Education	120
4.2.2.3	Health	121
4.2.2.4	Transportation	121
4.2.2.5	Telecommunication and Postal Service	122
4.2.2.6	Emergency Response Services	122
4.2.2.7	Government Offices	123
4.2.2.8	Civic Infrastructure and Sanitation	123
4.2.2.9	Recreation	123
4.2.3	Civic Utilities	125
4.2.3.1	Water Supply	126
4.2.3.2	Natural Gas	126
4.2.3.3	Electricity	126
4.3	Site of the New Balakot Town	127
4.3.1	Master Plan of the New Balakot Town	128
4.3.2	Utilities and Services	132
4.3.3	Site Vulnerability to Hazards	134
4.4	Comparison of the Sites of Old and New Balakot Towns	135
4.5	Conclusion	135
5	Situation of the Old and New Balakot Towns	137
5.1	Introduction	138
5.2	Situation of the Old Balakot Town	139

5.2.1	Basic Activities	140
5.2.1.1	Commercial Activities	146
5.2.1.2	Administrative Activities	148
5.2.1.3	Political Activities	152
5.2.1.4	Social and Cultural Activities	152
5.2.1.5	Non-Government Organizations (NGOs)	153
5.2.1.6	Manufacturing Activities	154
5.2.1.7	Agriculture Activities	154
5.2.1.8	Surrounding Productive Land	155
5.2.1.9	Centre of the Valley	155
5.2.2	Relative Location	155
5.2.3	Centrality of the Old Balakot Town	158
5.2.4	Non-Basic Activities	165
5.3	Situation of the New Balakot Town	166
5.3.1	Basic Activities	168
5.3.1.1	Administrative Activities	169
5.3.1.2	Political Activities	169
5.3.1.3	Social & Cultural Activities	169
5.3.1.4	Commercial Activities	170
5.3.1.5	Manufacturing Activities	170
5.3.1.6	Surrounding Productive Land	170
5.3.2	Relative Location	170
5.3.3	Centrality of the New Balakot Town	171
5.3.4	Non-Basic Activities	172
5.4	Comparison of the Situation of Old and New Balakot Towns	172
5.5	Conclusion	173
6	Identification and Solutions of the Problems of Resettlement	175
6.1	Introduction	176
6.2	Identification of Problems of Resettlement	177
6.2. 1	Perception about Hazards	178
6.2.2	Perception about the Resettlement Process	194
6.2.3	Commercial Activities	195
6.2.4	Shelter/Residence	198

6.2.5	Employment	198
6.2.6	Property Ownership	213
6.2.7	Agriculture Activities	214
6.2.8	Feudal System	215
6.2.9	Administrative Activities	215
6.2.10	Political, Social and Cultural Activities	216
6.2.11	Non-Government Organizations (NGOs)	216
6.2.12	Manufacturing Activities	217
6.2.13	Level of the Civic Services	217
6.2.14	Level of the Civic Utilities	220
6.2.15	Living Standards	222
6.2.16	Government's Policy of the Resettlement	224
6.2.17	Community Awareness	225
6.2.18	Social Setup	225
6.2.19	Religious Institutions	230
6.2.20	Emotional Attachment	231
6.2.21	Valley Entity	232
6.2.22	Distance between the old and new Balakot Towns	233
6.2.23	Relative Location of the Old Balakot Town	233
6.2.24	Relative Location of the New Balakot Town	235
6.2.25	Centrality of the Old Balakot Town	235
6.2.26	Centrality of the New Balakot Town	235
6.3	Solution of the Problems of Resettlement	237
6.3.1	Awareness Programmes	239
6.3.2	Confidence Building Measures	240
6.3.3	Participatory Approach	243
6.3.4	Multi-Sectorial Approach	243
6.3.4.1	Economic	244
6.3.4.2	Social	246
6.3.5	Decreasing the level of Utilities and Services in the Old Balakot Town	247
6.3.6	Increasing the level of Utilities and Services in New Balakot Town	247
6.3.7	Shifting of Administrative Activities	248

6.3.8	Changing and Merging the Political Boundaries	250
6.3.9	Discouraging Commercial Activities in the Old Balakot Town	250
6.3.10	Discouraging Residence in the Old Balakot Town	254
6.3.11	Decreasing the Centrality of the Old Balakot Town	254
6.3.12	Projecting the Centrality of the New Balakot Town	256
6.3.13	New Site of the Tehsil Headquarters	256
6.3.14	Manufacturing Activities in the New Balakot Town	257
6.3.15	Restoration of the Agriculture's Livelihoods in the New Balakot Town	257
6.3.17	Declaring the Old Balakot Area as a National Park	259
6.3.18	Changing the Compensation Strategy	259
6.4	Conclusion	262
7	Evolution and Standardisation of the Resettlement Tool	263
7.1	Introduction	264
7.2	Analysis of the Site of old Balakot Town	265
7.3	Analysis of the Site of new Balakot Town	267
7.4	Comparison of the Sites of old and new Balakot towns	268
7.5	Analysis of the Situation of old Balakot Town	269
7.6	Analysis of the Situation of new Balakot Town	272
7.7	Comparison of the Situations of old and new Balakot towns	273
7.8	Perception of the affected Community about Hazards	274
7.9	Government's Policy of the Resettlement	275
7.10	Perception of the affected Community about Resettlement Process	277
7.11	Identification of the Problems of Resettlement	278
7.12	Proposing Solutions for the Problems of Resettlement	280
7.13	Testing of the Proposed Solutions	282
7.14	Modification and Finalizing the Solutions	283
7.15	A Model Tool for the Process of Resettlement	284
7.16	Conclusion	302
8	Findings, Recommendations and Conclusion of the Study	304
8.1	Introduction	305
8.2	Findings of the Study	306
8.2.1	Major Findings of the Study	306

8.2.1.1	Site of the old Balakot Town	306
8.2.1.2	Site of the new Balakot town	307
8.2.1.3	Situation of the Old Balakot Town	307
8.2.1.4	Situation of the New Balakot Town	308
8.2.1.5	People's Perception about Hazards	309
8.2.1.6	Perception about Government's Policy of the Resettlement	310
8.2.1.7	A Model Tool for the Process of Resettlement	311
8.2.2	Secondary Findings of the Study	312
8.2.2.1	Vulnerability to Earthquake of the old Balakot town	312
8.2.2.2	Vulnerability to Flash Floods of the old Balakot town	313
8.2.2.3	Vulnerability to Landslides of the old Balakot town	314
8.2.2.4	Vulnerability to Hydro-meteorological Hazards of the old Balakot town	314
8.2.2.5	Vulnerability to Drought and Fire of the old Balakot town	314
8.2.2.6	Vulnerability to Hazards of the new Balakot town	315
8.2.2.7	Shelters at the old Balakot town	315
8.2.2.8	Residence in the Old Balakot Town	316
8.2.2.9	Education Services at the old Balakot town	316
8.3.2.10	Health Services at the old Balakot town	316
8.2.2.11	Transport Services at the old Balakot town	316
8.2.2.12	Telecommunication and Postal Services at the old Balakot town	317
8.2.2.13	Emergency Response Services at the old Balakot town	317
8.2.2.14	Administrative Services at the old Balakot town	317
8.2.2.15	Administrative Activities at the new Balakot town	318
8.2.2.16	Shifting of the Administrative Activities	318
8.2.2.17	Services at the new Balakot town	318
8.2.2.18	Civic Infrastructure and Sanitation at the old Balakot town	319
8.2.2.19	Recreation Facilities at the old Balakot town	319
8.2.2.20	Civic Utilities at the old Balakot town	319
8.2.2.21	Civic Utilities at the new Balakot town	320
8.2.2.22	Living Standards at the old Balakot town	320
8.2.2.23	Commercial Activities at the old Balakot town	320
8.2.2.24	Commercial Activities at the new Balakot town	322

8.2.2.25	Political, Social and Cultural Activities at the old Balakot town	322
8.2.2.26	Political, Social and Cultural Activities at the new Balakot town	323
8.2.2.27	Social Setup at the new Balakot town	323
8.2.2.28	Religious and Emotional Sentiments	323
8.2.2.29	Non-Government Organizations (NGOs) Activities at the old Balakot town	324
8.2.2.30	Manufacturing Activities at the old Balakot town	325
8.2.2.31	Manufacturing Activities at the new Balakot town	325
8.2.2.32	Agriculture Activities at the old Balakot town	325
8.2.2.33	Surrounding Productive Land of the old Balakot town	326
8.2.2.34	Surrounding Productive Land of the new Balakot town	326
8.2.2.35	Property Ownership and Feudal System	326
8.2.2.36	The Entity of the Valley and location of the old Balakot town	327
8.2.2.37	New Site of Tehsil Balakot	327
8.2.2.38	Relative Location of the new Balakot town	327
8.2.2.39	Distance Between the old and new Balakot towns	327
8.2.2.40	Centrality of the old Balakot town	329
8.2.2.41	Centrality of the new Balakot town	330
8.2.2.42	Non-Basic Activities at the old Balakot town	330
8.2.2.43	Non-Basic Activities at the new Balakot town	331
8.3	Recommendations of the Study	331
8.4	Conclusion of the Study	337
	Reference	340
	Annexure – I Questionnaire for the Household (1st Phase)	352
	Annexure – II Questionnaire for the Commercial Unit (1st Phase)	358
	Annexure – III Questionnaire for the Manufacturing Unit (1st Phase)	362
	Annexure – IV Questionnaire for the Visitor/Customer (1st Phase)	367
	Annexure – V Questionnaire of the Proposed Solutions (2nd Phase)	371

List of Acronyms

S. No.	Acronyms	Words
1	ADB	African Development Bank
2	ADB	Asian Development Bank
3	ADPC	Asian Disaster Preparedness Center
4	AJK	Azad Jammu and Kashmir
5	APP	Associated Press of Pakistan
6	APs	Affected Persons
7	BASIN	Building Advisory Service and Information Network
8	BBC	British Broadcasting Corporation
9	CBOs	Community Based Organizations
10	CDCC	Caribbean Development and Cooperation Committee
11	CPRs	Common Property Resources
12	CRPRID	Centre for Research on Poverty Reduction and Income Distribution
13	CSD	UN Commission on Sustainable Development
14	DDMAs	District Disaster Management Authorities
15	DEFRA	Government Department for Environment, Food and Rural Affairs
16	DERA	Drought Emergency Relief Assistance
17	DMCs	Developing Member Countries
18	<i>dpmp</i> -GTZ	Disaster Preparedness and Management Project -German Technical Cooperation Agency
19	DRI	Disaster Risk Index
20	DRUs	District Reconstruction Units
21	EAs	Executing Agencies
22	EM-DAT	Emergency Events Database
23	ERC	Emergency Relief Cell
24	ERRA	Earthquake Reconstruction and Rehabilitation Authority
25	ESI	Environmental Sustainability Index
26	FEMA	United States Federal Emergency Management Agency
27	FFC	Federal Flood Commission
28	FGDs	Focus Group Discussions
29	GBHP	Ghazi-Barotha Hydropower Project

30	GDI	Gender-Related Development Index
31	GEM	Gender Empowerment Measure
32	GIS	Geographic Information Systems
33	GOP	Government of Pakistan
34	GSP	Geological Survey of Pakistan
35	HAZUS	Hazards U.S.
36	HDI	Human Development Index
37	HFT	Himalayan Frontal Thrust
38	HKS	Hazara Kashmir Syntaxes
39	HPI	Human Poverty Index
40	HTS	Hazara Thrust System
41	ICIMOD	International Centre for Integrated Mountain Development
42	IFC	International Finance Corporation
43	IKSZ	Indus Kohistan Seismic Zone
44	INGOs	International Non-Governmental Organizations
45	LAA	Land Acquisition Act
46	LAC	Land Acquisition Collector
47	LPG	Liquid Petroleum Gas
48	MBT	Main Boundary Thrust
49	MDGs	Millennium Development Goals
50	MGD	Million Gallan per Day
51	MKT	Main Karakoram Thrust
52	MMT	Main Mantle Thrust
53	NA	National Assembly
54	NADRA	National Database and Registration Authority
55	NDMA	National Disaster Management Agency
56	NDMC	National Disaster Management Commission
57	NEC	National Economic Council
58	NESPAK	National Engineering Services Pakistan
59	NGOs	Non-Government Organizations
60	NRP	National Resettlement Policy
61	NSIDC	National Snow and Ice Data Centre
62	PA	Provincial Assembly
63	PDMA	Provincial Disaster Management Authorities

64	PDMCs	Provincial Disaster Management Commissions
65	PDR	People's Democratic Republic
66	PERRA	Provincial Earthquake Reconstruction and Rehabilitation Agency
67	PESCO	Peshawar Electric Supply Corporation
68	PRC	People's Republic of China
69	QALY	A quality-adjusted life year
70	RP	Resettlement Plans
71	RRM	Risks and Reconstruction Model
72	SERRA	State Earthquake Reconstruction and Rehabilitation Agency
73	SOPAC	South Pacific Applied Geoscience Commission
74	SPSS	Statistical Product and Service Solutions
75	SRSP	Sarhad Rural Support Programme
76	SUPARCO	Space and Upper Atmosphere Research Commission
77	TDP	Tarbela Dam Project
78	TDRO	Tarbela Dam Resettlement Organisation
79	TMA	Tehsil Municipal Administration
80	ToRs	Term of References
81	UN	United Nations
82	UNDP	United Nations Development Programme
83	UNDRO	United Nations Disaster Relief Organization
84	UNEP	United Nations Environment Programme
85	UNISDR	United Nations International Strategy for Disaster Reduction
86	US	United State
87	WAPDA	Water and Power Development Authority
88	WB	World Bank
89	WCDs	World Commission on Dams
90	WMO	World Meteorological Organization
91	WSSD	World Summit on Sustainable Development

List of Tables

S. No.	Title	Page No.
1.1	Basic Facts and Figures of the Balakot Tehsil	7
1.2	Union Council Wise Population and Household Number of the Tehsil Balakot	8
1.3	Mean Monthly Temperature and Rainfall (2009) of the Balakot Town	9
1.4	Number of Households in the Red Zone of Balakot Town	15
2.1	Preliminary Estimate of Total Losses and Reconstruction Costs	38
3.1	Household Survey of the Red Zone of Balakot Town	81
3.2	Commercial Survey of the Red Zone of Balakot Town	84
3.3	Visitors/Customers Survey of the Red Zone of Balakot Town	86
3.4	Landownership Status in Household Survey of the Red Zone of Balakot Town	87
3.5	Landowner Response in the Red Zone of Balakot Town	88
3.6	Gender and Age Wise Distribution of the Respondents	89
3.7	Education Wise Distribution of the Respondents	91
4.1	Daily Rainfall at Balakot, 1992 (mm)	103
4.2	Daily Rainfall at Balakot, 1993 (mm)	105
4.3	Daily Rainfall at Balakot, 2010 (mm)	107
4.4	Mean Monthly Rainfall at Balakot (mm)	116
4.5	Number of Households in the Red Zone of the old Balakot Town	118
4.6	Plot Size of Households in the old Balakot Town	120
4.7	Education facilities in the old Balakot Town	121
4.8	Education facilities in the old Balakot Town	125
4.9	Proposed sites of new Balakot Town	127
4.10	Proposed Land Uses in New Balakot Town	129
4.11	Proposed Residential Plot Sizes in New Balakot Town	132
5.1	Livelihoods Structure of the Old Balakot Town	141
5.2	Livelihoods Structure of the Old Balakot Town	142
5.3	Commercial Activities in the Old Balakot (Red-Zone)	147
5.4	Type of Commercial Activities in the Bazaar of Old Balakot Town	147
5.5	Overall Visiting Customers' Nature in the Bazaar of Old Balakot Town	149

5.6	Visiting Customers' Nature in the Bazaar of Old Balakot Town	150
5.7	Tenure/Ownership of the Commercial Land in Old Balakot Town	152
5.8	Belief on the Separate Identity of the Valley of River Kunhar	153
5.9	Union Council Wise Population of the Tehsil Balakot	159
5.10	Purpose of Visit to the Old Balakot Town	160
5.11	Major Purchasing/Service Utilized in the Old Balakot Town	160
5.12	Visit Routine of the Visitors/Customers in the Old Balakot Town	161
5.13	Time-Period of the Visit of the Visitors/Customers in the Old Balakot Town	161
5.14	Major Attraction of the Visitors/Customers in the Old Balakot Town	162
5.15	Fulfilment of the Business Needs in the Old Balakot Town	162
5.16	General Business Share of All Items (Valley vs. Outside)	163
5.17	Business Share of All Items (Valley vs. Balakot Town)	163
5.18	Proposed Economic Activities in the New Balakot Town	168
6.1	Location at the time of Earthquake – 2005	179
6.2	Perception about the Earthquake - 2005 and the Red Zone Area	180
6.3	Vulnerability to the Sites of old and new Balakot Towns	185
6.4	Perception about Risk Reduction Measures	190
6.5	Knowledge about the Process of Resettlement	196
6.6	Reason for Living in the old Balakot Town	198
6.7	Residence Choice	200
6.8	Factors Affecting the Present and Future Residence	202
6.9	Perception about the Process of Resettlement	204
6.10	Nature of Commercial Activities in the Old Balakot Town	205
6.11	Number of Shifted Business Activity from the Old Balakot Town	206
6.12	Vulnerability Relationship with Business Activities	206
6.13	Livelihoods Relationship with the Resettlement Process	207
6.14	Family Strength and Housing Conditions	209
6.15	Comparison of the Vulnerability	210
6.16	Status of the Permanent Houses Availability	211
6.17	Number of Earners in the Family	211
6.18	Earthquake Effects on the Livelihoods	212

6.19	Property Ownership and Agriculture Land Size (<i>Kanal</i>)	213
6.20	Property Ownership and Commercial Land Size	214
6.21	Agriculture Activity and Household Needs	214
6.22	Household's Response about Health and Telecommunication Services	218
6.23	Businessmen's Response about Utility and Services	218
6.24	Visitors/Customers' Response about Utility and Services	219
6.25	Visitors/Customers' Response about Education Services in old Balakot Town	219
6.26	Visitors/Customers' Response about Health Services in old Balakot Town	220
6.27	Satisfaction with Water Availability	221
6.28	Hygienic Condition of the Latrine System	221
6.29	Source of Fuel	222
6.30	Electricity and Water Availability in Different Type of Houses	222
6.31	Household's Response about Security and Accessibility	223
6.32	Businessmen's Response about Accessibility or Movement Problems	223
6.33	Satisfaction Level about Living Standard	224
6.34	Response about Resettlement Process	226
6.35	Response about Compensation of Losses	228
6.36	Response about Social Setup	229
6.37	Response about Religious Sentiment	230
6.38	Visitors/Customers' Response about Religious Sentiment	231
6.39	Response about Emotional Sentiment	231
6.40	Response about Emotional Sentiment	231
6.41	Belief/Comment on the Separate Identity of the Valley	233
6.42	Management of Property and Business from new Balakot Town	234
6.43	Business/Living Outside of Old Balakot Town	235
6.44	Needs Satisfaction from Livelihoods	236
6.45	Willingness in Shifting to the new Balakot Town	237
6.46	Willingness in Shifting to the old Balakot Town	237
6.47	Emergency Response Management	240
6.48	Strategy for Government's Forced Resettlement	241

6.49	Multi Stakeholders Substitution Strategy	245
6.50	New Land Resettlement	246
6.51	Preferences for Neighbourhood in new Balakot	247
6.52	Preferences for old Balakot town (deteriorated level of U & S)	248
6.53	Preferences to new Balakot town (high level of U & S)	248
6.54	Effects of Shifting of Administrative Activities on Business	249
6.55	Preferences of Visit after Shifting of Administrative Activities	250
6.56	Effects of the Resettlement of Balakot on Business	251
6.57	Preferences for Business Opportunity at Different Location	252
6.58	Continuation of Commercial Activities in the old Balakot town	253
6.59	Commercial Land in new Balakot town	254
6.60	Strategy of Residential Plot in the new Balakot town	255
6.61	Residence near Agriculture Activities	255
6.62	Choice of Visit for Administrative and Commercial Activities	257
6.63	Agriculture Fertile Land (Substitution)	258
6.64	New Land Resettlement	258
6.65	Compensation is Conditional with Resettlement in new Balakot Town	260
6.66	Resettlement in Case of Full Compensation	260
7.1	Major Variables of the Site, Situation and Resettlement Policy	285
7.2	Existing Conditions of the Site, Situation and Resettlement Policy	286
7.3	Problems Identification of the Resettlement Process	292
7.4	Proposed Solutions for the Resettlement Process	297
7.5	Testing of the Proposed Solutions	299
7.6	Modification and Finalization of the Proposed Solutions	300

List of Figures

S. No.	Title	Page No.
1.1	Balakot Town	3
1.2	Climograph of the Balakot Town	10
2.1	Site and Situation of a Town	43
2.2	HDI Calculation	66
4.1	River Kunhar Valley near Balakot	101
4.2	River Kunhar near Balakot	101
4.3	Shrine of the Syed Ahmad Shaheed at bank of River Kunhar	102
4.4	Monthly Rainfall at Balakot, 1992	104
4.5	Monthly Rainfall at Balakot, 1993	107
4.6	Monthly Rainfall at Balakot, 1993	108
4.7	Unplanned Developments on Steep Slopes	112
4.8	Fabricated Shelters	115
4.8	Mean Monthly Rainfall at Balakot	116
4.9	Govt. High School, Balakot	122
4.10	TMA Office, Balakot	124
4.11	TMA Office, Balakot	124
4.12	Unpaved Streets in Union Council Garlat	125
4.13	Master plan of the new Balakot town	131
4.14	Land Uses in the new Balakot town	131
4.14	Sewerage System in the new Balakot town	133
7.1	Tool of Resettlement	303

List of Maps

S. No.	Title	Page No.
1.1	Location Map of the Study Area	7
1.2	Red Zone Area of the Balakot Town	17
4.1	Seismic Hazards Zones of Pakistan	97
4.2	Micro-Seismic Hazards Map of Balakot	99
4.3	Drainage Basin of the River Kunhar	100
4.4	Flood Hazard Vulnerability of the old Balakot Town	109
4.5	Landslides Inventory of Earthquake – 2005	111
4.6	Landslide Hazard Risk Map of Earthquake – 2005 Affected Area	112
4.7	Landslide Hazards Vulnerability of the Old Balakot Town	113
4.8	Landslide Hazards Vulnerability of the Old Balakot Town	114
4.9	Proposed sites of the new Balakot Town	128
4.10	The Peripheries of the new Balakot Town	130
4.11	Contour Map of the Surroundings of the new Balakot Town	134
5.1	Landuse in the Old Balakot Town	145
5.2	Location of the Old Balakot Town in the Valley of River Kunhar	156
5.3	Relative Location of the Old Balakot Town	157
5.4	Population Distribution (Major Settlement) in Tehsil Balakot	164
5.5	Union Council Wise Population Distribution in Tehsil Balakot	165
5.6	Location Map of the new Balakot Town	168
5.7	Location Map of the new Balakot Town	171

Chapter 1

Introduction

1.1 Introduction

In 21st century, the frequency and intensity of natural disasters is increasing with alarming rates. This century has been marked by devastating disasters (Nlukerjee, 1971 and EM-DAT, 2008). Unlike other natural hazards, earthquake results in heavy damages because it strikes man and his property very suddenly and rapidly without providing any lead time (Mitchell, 1976). However, looking from the historical point of view, disasters also have very important aspect of providing an important opportunity for development. Disasters generally attract assistance and often generate a willingness to cope with the causes of the disaster or their symptoms. These positive aspects could be used to stimulate long-term disaster mitigation and development (BASIN, 1995). Among hazards the reductions measures, change of location is one of the most difficult and complicated option most particularly in case of urban resettlement (Zaman, 1991). Most often, post disaster resettlement as a hazard reduction policy has been unsuccessful (Smith, 1991 and Khan, 1993b). It has been a fact that many times instead of reducing vulnerability of the community, it has exacerbated the social disruption of the community involved (Khan, 1993a). However, through understanding the interacting environment of the community and proper orientation of the problems, the processes of resettlement can also be made a success story (Smith, 1991).

The town of Balakot is situated at the merge of two fault systems (GSP, 2006). Consequently it was completely destroyed by the massive Kashmir earthquake on October 8, 2005 (Fig. 1.1) (BBC NEWS, 2007). This site has been declared as red zone (NESPAK, 2007). As a result, the government of Pakistan has decided to abandon the old Balakot town and launched a project of Rs. 12 billion (approximately US\$ 200 million) to rebuild a new modern Balakot town at Bakryal. This site is 22 km south of the old Balakot town, and 15 km north of Mansehra (APP, 2007). The old Balakot town has been a hub of social,

political, administrative and economic activities not only for the residents of Balakot but also for the whole of the surrounding region (CRPRID, 2006). After the earthquake, a number of NGOs established their offices in the old Balakot town which has further enhanced the centrality of the town (GOP, 2007c). A well-established plan for the new Balakot town at Bakryal has been prepared by National Engineering Services Pakistan (NESPAK). The site of Bakryal is much far away from the parent town and it seems very unlikely to become a centre for administrative, political, social and economic activities which are essential for its future growth and sustainability. Looking at this scenario, the overall physical and economic environment for the residents of Balakot appears quite confusing. The well thought plan for the new Balakot town provides them hopes and opportunities for better living conditions and incentives on the one hand and risks of losing their central economic, administrative, political and social status in the region, on the other.



Figure 1.1 Balakot Town
Source: BBC News, 2007

Resettlement is one of the environmental adaptations for reducing the risk of disasters. The government has worked out a plan of resettlement of the Balakot town to mitigate the risk of earthquake disaster. In post-earthquake scenario, residents of the Balakot town interact with the changed physical and economic environment. The government authorities guided this interaction of environmental adaptation or resettlement processes through laws, regulation, incentives, and penalties as providing: new site for Balakot town at Bakryal; declaring old Balakot town in red zone; discouraging developmental activities in the old Balakot town; and formulated the future plans for old and new Balakot towns. The resettlement process of the Balakot town seems directly affected by some important factors such as: the perception of hazards of residents of the Balakot town; economic opportunities at the old Balakot town; centrality of the old Balakot town; hazardous site of the old Balakot town; planned site of the new Balakot town; distance of the new Balakot town from the old one town; location of the new Balakot town; economic opportunities at new Balakot town; standard of justice and equity of the government authorities; and delaying tactics of the whole project. The interacting physical and economic environment for the residents of the Balakot town is quite complex and uncertain as these influencing factors and government guidance give hopes and worries. There are problems created by this uncertainty and prospects due to new opportunities. In the present study, the resettlement problems of uncertainty and prospects due to opportunities will be studied through site and situation analysis as it covers all the interacting situation of environmental adaptation or resettlement processes. The uncertain situation of resettlement of the Balakot town can be elaborated in the form of site and situation as on the one hand site of the old Balakot town is hazardous while the situation is convenient, while on the other hand the site of new Balakot town is feasible while the situation is not encouraging. The site and situation factors have been analysed both for old

and new Balakot town to formalise their existing and future physical and economic status. The response of the residents of Balakot while interacting with the current physical and economic environment has been studied to find out those problems which create uncertainty for the future of the old and new Balakot town. Furthermore, this study has developed a tool to standardise the desired response for the problems of resettlement of Balakot town.

It is pertinent to mention here that the location and growth of a settlement are always dependent upon its site and situation. The character of any town can be derived from the study of site and situation (Carter, 1988). Site refers to “the piece of land on which something is located” (or is to be located) while situation refers to “the general state of things; the combination of circumstances at a given time” (Webster's Dictionary, 2007). The site is the actual place where people decide to locate their settlement. The site embraces the precise features of the terrain on which a settlement is to be built and over which it spreads. It comprises of the variables: relief, geology, water supply, nature of the river, hazard vulnerability, defence, building material (stone or wood), fertility of land, fuel supply, slope aspect, flat surface and natural resources etc. The growth of that settlement then depends upon its situation which incorporates the surrounding physical, economic and cultural condition over a much wider area around the settlement. The situation is more dynamic as it may have physical, economic or cultural implication and change over period of time significantly. The situation is some time described as nodality and functions of cities. It can be measured in economic terms as it not only emphasises on the relation of accessibility and availability of natural resources, but also gives equal importance to the surrounding environment and human character because site and situation are modified by human actions particularly in large cities (Dickinson, 1948 and Geographyfieldwork, 2008).

1.2 Study Area

Balakot is situated at the bank of river Kunhar in the lower reaches of Himalayan Ranges. The altitude ranges from 3,220 feet at Balakot to 17,390 feet at Mt. Malika Parbat. The geographical location is $34^{\circ}31'26.2''$ - $34^{\circ}33'42.6''$ N latitude and $73^{\circ}20'26.8''$ - $73^{\circ}22'7.9''$ E longitude (GSP, 1961) (Map 1.1). In 1830, the famous battle between the Muslim fighters (Syed Ahmed Shaheed and Shah Ismail Shaheed) and the spiteful Sikhs took place on this site of Balakot town. The entire valley of river Kunhar is part of tehsil Balakot which included Kaghan valley as well (Table 1.1). The valley is picturesquely spellbinding and popular for its lush green pastures. The population of pre-earthquake Balakot town was 11351 in 1998 with 2.2% annual growth rate. Administratively Balakot is tehsil headquarter of one of tehsil of district Mansehra comprising of 12 Union Councils with a total population of 2,14,630 (GOP, 2000) (Table 1.2). The town of Balakot is a gateway to country's most picturesque Kaghan Valley. The landscape of the area is marked with high mountains, lush green forests, meadows, lakes, beautiful streams and river. Due to its geographical and administrative placement, the town has remained a hub of social and economic activities round the year in general, and in summer in particular. In addition to the prevailing natural resource base of the area, tourism has contributed substantially to the generation of economic activity and well-being of the people. Before earthquake 2005, every year thousands of local and foreign tourists stayed and passed through the town, generated business and employment opportunities for the residents of the town. To take care of the growing needs of locals and tourists, the town had developed diverse business opportunities including a market place of around 500 shops, hotels, restaurants, vendors and transport facilities. Thus, in comparison to the surrounding and remote areas of the rest of the valley, the inhabitants of Balakot were economically better off (CRPRID, 2006 and Watson, 1907).

Map 1.1
Location Map of the Study Area

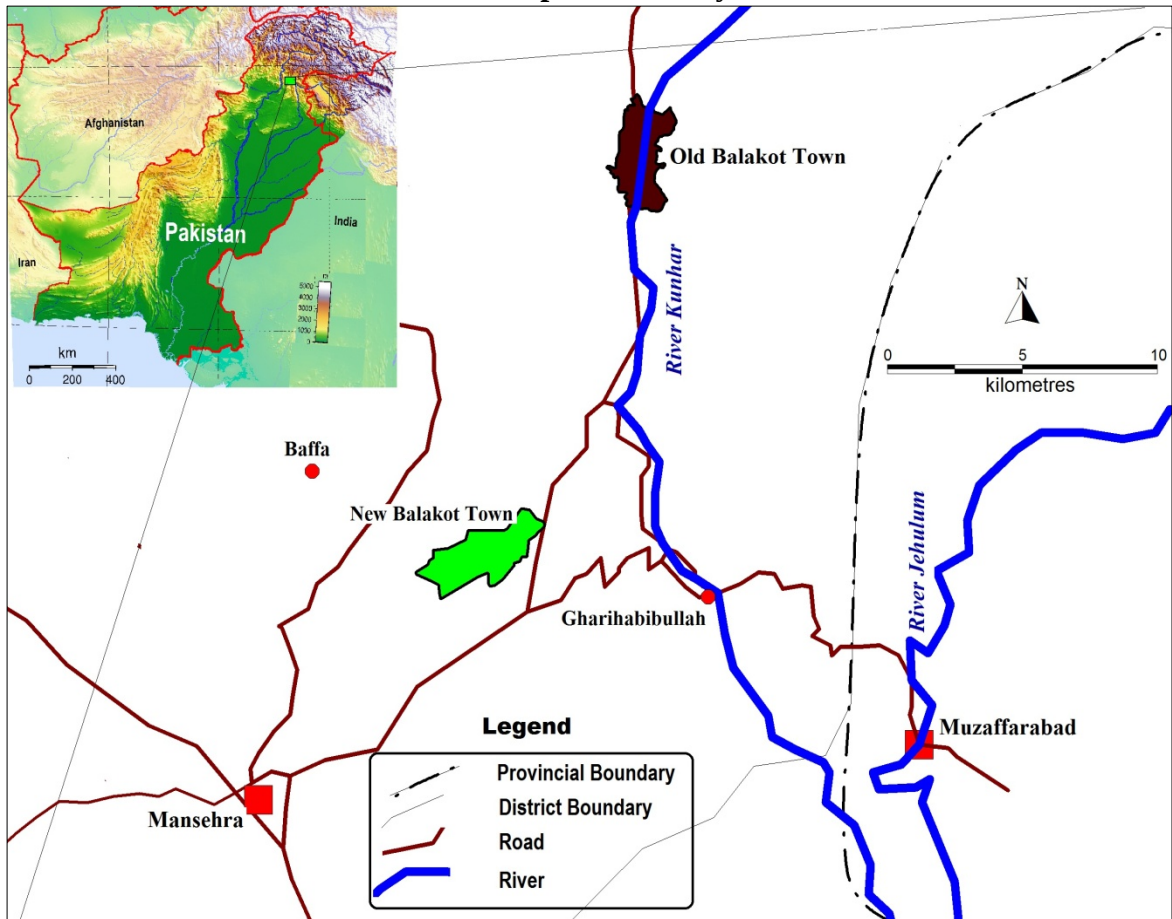


Table 1.1
Basic Facts and Figures of the Balakot Tehsil

S. No.	Headings	Facts and Figures
1	Date of creation of Tehsil.	1 st September 1985
2	Date of creation of Sub Division	1 st July 1993
3	Date of creation of TMA Balakot	15 th September 2001
4	Total Area	557,803 Acres
5	Total cultivable land	35,115 Acres
6	Total Non-cultivable land	522,688 Acres

Continued

7	Total irrigated land	7,079 Acres
8	Total non-irrigated land	28,036
9	No. of Union Councils	12
10	No. of Kanungo Circles	02
11	No. of Patwar Circles	16
12	No. of Police Stations	03
13	No. of Police Posts.	2

Source: GOP 2000

Table 1.2

Union Council Wise Population and Household Number of the Tehsil Balakot

S. No.	Name of Union Council	Population (Person)	Households (Number)
1.	Kaghan	22,548	2949
2.	Mohandari	22,567	3045
3.	Kawai	13781	1952
4.	Ghanool	20,274	1928
5.	Hangrai	18,252	2458
6.	Satbani	15,949	2336
7.	Balakot	19,255	2777
8.	Garlat	18,466	2608
9.	Shohal Mazullah	13,277	1925
10.	Telhatta	13,112	1908
11.	Ghari Habibullah	19,306	2013
12.	Karnol	17,806	2700
Total		2,14,630	30,357

Source: GOP 2000

The climate of the area is highland type where winter is and summer is warm. The northern part of the valley of river Kunhar has high altitudes areas. As a result, winter is extremely cold in and it receives heavy snowfall while summer is pleasantly cold. The valley of river Kunhar has two major seasons of summer and winter. June and July are the hottest months of the year with 34° C mean maximum temperature. January is the coldest month of the year with 3.5° C mean minimum temperatures (Table 1.3 and Fig. 1.2). In middle and lower part of the valley of river Kunhar has two cropping seasons of ‘Kharif’ and ‘Rabi’ while in northern part of the valley has one cropping season. The important crops are maize, rice, wheat, peas and seasonal vegetables. The valley has very favourable climate for vegetables and fruit. Variety of fruits like peaches, plums and pears are grown in the valley.

Table 1.3
Mean Monthly Temperature and Rainfall (2009) of the Balakot Town

Months of the Year	Max. Temp. (C⁰)	Min. Tem. (C⁰)	Rainfall (mm)
January	15.6	3.6	102.1
February	16.5	5.2	156.4
March	21.4	8.4	69.1
April	24.8	11.7	159
May	31.8	17.5	58.8
June	33.4	19.4	81
July	34.8	21	126.4
August	32.1	21.1	223
September	31.7	16.6	56.8
October	28.3	10.9	5.1
November	22	5.1	32.2
December	17.6	3.1	16

Source: GOP, 2010g

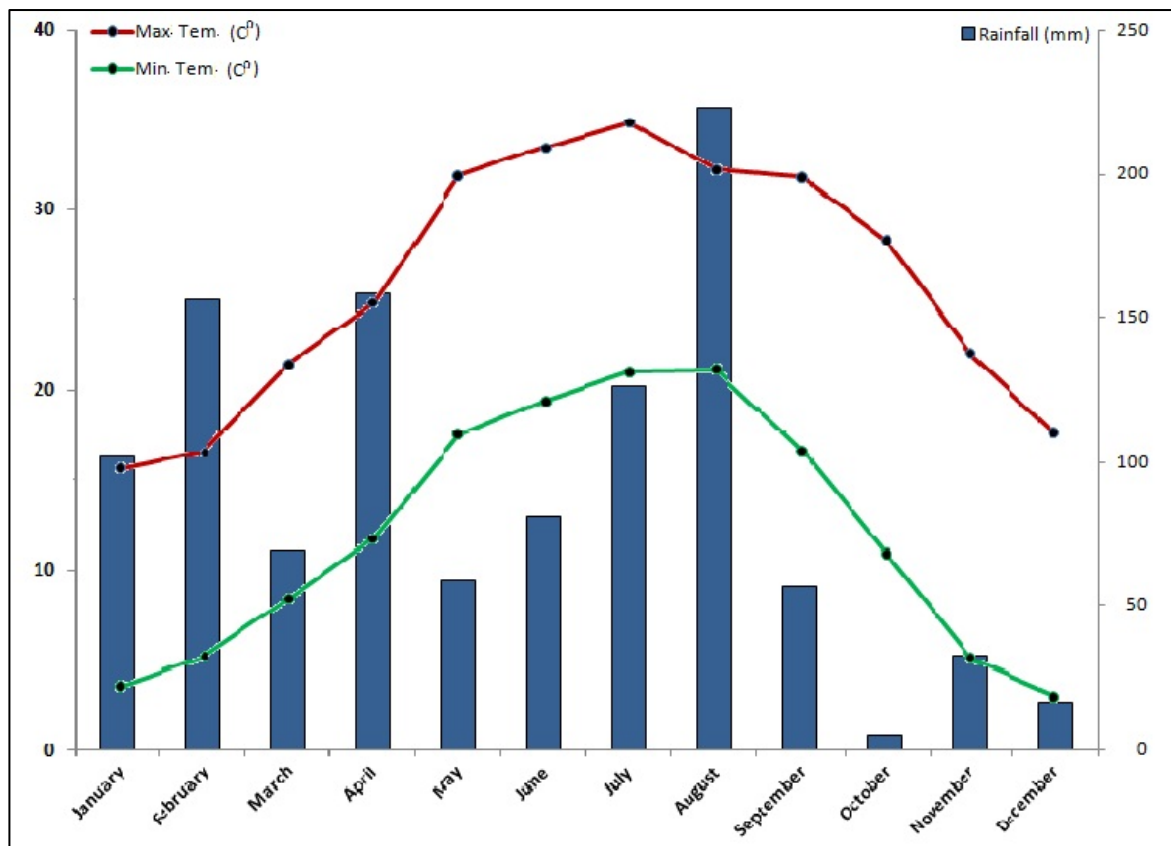


Figure 1.2 Climograph of the Balakot Town
Source: GOP, 2010g

In the northern part of Pakistan, all earthquakes are caused due to presence of convergent plate boundaries. The Indian plate is moving northward at a rate of about 4 cm/year and colliding with Eurasian plate. Himalaya, Karakoram, Pamir, and Hindukush which are the highest mountain ranges of the world are formed as a result of this collision (Sercombe et al. 1998 and Mona Lisa et al. 2004, 2009). The major thrust faults such as the Main Karakoram thrust, (MKT), Main Mantle Thrust (MMT), Main Boundary Thrust (MBT) and Himalayan Frontal Thrust (HFT) are produced by this north and northeast directed compression. Jhelum, Thakot, Puran and Raikot are transpressional features included strike slip faults (Nakata et al. 1991). Armbruster et al. (1978) conducted micro-seismic survey in this region during 1973–1974 in which they recognized a wedge-shaped northwest directional structure. This structure was named as the Indus Kohistan Seismic Zone (IKSZ). Later on, between the MKS and the MMT a 100 Km long and 50 Km wide

feature was confirmed. In this IKSZ, horizontal upper surface is towards south-west while dipping lower surface is towards north-east. Two different seismic zones are identified by Ni et al. in 1991. This identification was based on relocation of hypo-centres. The first shallow zone is present from the surface to a depth of 8 km. The second mid-crustal zone is identified at depth of 12 to 25 km which is more pronounced. A decollement surface is considered at the upper limit (at a depth of about 12 km). This is the region where the sediments and meta-sediments are separated from the basement.

On October 8, 2005 at 8:50:38 a.m. an earthquake of 7.6 magnitude struck the northern areas of Pakistan. In the history of Pakistan, it was the most devastating natural disaster. The Earthquake – 2005 affected five districts of Khyber Pakhtunkhwa and four districts of AJK. Approximately 30,000 sq. Km area was affected by this Earthquake – 2005. More than 2,000 aftershocks were recorded after the Earthquake – 2005. The magnitude of these aftershocks was ranging 5.0 to 6.0 on the Richter scale. The epicentre located at $34^{\circ} 29' 35''$ N latitude and $73^{\circ} 37' 44''$ E longitude which was approximately 19 km NE of Muzaffarabad (AJK) and 95 km N-NE of Islamabad (Pakistan). The earthquake occurred along the Balakot–Bagh offshoot of the Main Boundary Thrust at a depth of 5-25 km (Hussain and Yeats, 2006). It was caused by faulting under the stress field. In this region, two active fault systems are present. The first one in southeast to northwest direction goes across Muzaffarabad to Balakot. The second fault system in northward direction goes across Gari Habibullah to the valley of river Kunhar. The Muzaffarabad fault started from the north of Muzaffarabad and extended to Balakot (from north-northwest to south-southeast direction) covering 20 Km area. Overall, Muzaffarabad fault is over 30 Km long fault segment. Several sharp stream offsets near Balakot clearly suggest that this fault is characterized by a right-lateral strike slip motion together with a westward thrusting. This fault bifurcated north westward and sharp lineaments with strike

slip components of faulting along the branches are found in places. The rupture of the fault into branches is related to strong ground motions which caused severe earthquake's damages. These two fault systems combine at around Balakot. The merging of two fault systems creates a complicated geological structure and looks like a wedge. The higher side of this wedge is formed of red-purple shale into highland area. In northern side of the wedge on high-raised mount, the town of Balakot is located (Nakatai and Kumahara, 2006).

It is one of the worst earthquake affected towns in the episode of October 8, 2008. The approximate total population of Balakot in 2005 was 250,000. It has been estimated that out of its total population, 200,000 people were affected by this disaster. Almost 90 per cent of the houses in Balakot have collapsed with a heavy rate of casualties. Even amongst the remaining houses in the area, not a single house is safe for dwelling purpose (CRPRID, 2006). It has been observed that besides many other causes ground shaking, severe slope destabilization, physical infrastructures breakdown, liquefaction, poor construction material and structural design are amongst the important causes for destruction and huge death toll in the area (Baig, 2006).

Along with fault line from Muzaffarabad to Balakot a landslide belt is present. Geologically, this region in general and Muzaffarabad fault in particular has the Palaeocene rock layer right above on the surface. The rocks are composed of limestone and calcareous shale. It is well weathered by geomorphic agents particularly of running and underground (GSP, 2004). All along this fault line, massive landslides occurred which were started about 1 km distance from NE of Muzaffarabad along the west steep slopes of mountainside. Most common mass wasting were cone-shaped piles of white/grey debris. Due to of segregation of minerals, these cones of debris have three different layers of colours (white, light grey and grey from the top to the toe) (Konagai et al., 2005).

In the affected five districts of Khyber Pakhtunkhwa and four districts of AJK, 73,338 people were killed and 128,309 were injured by Earthquake – 2005. More than 600,000 houses, 6,298 educational institutions and 782 health institutes were damaged or destroyed in Khyber Pakhtunkhwa and AJK. In AJK and Khyber Pakhtunkhwa about 84 % and 36 % of the total housing stock was damaged or destroyed respectively. Housing in rural areas was severally destroyed or damaged (almost 90 % of the total). In the Earthquake - 2005 affected areas, the impacts of these damages were not limited to public buildings and private housing. The whole infrastructure of social services, livelihoods and businesses were extensively devastated. Cities like Muzaffarabad, Rawlakot, Bagh and Mansehra were severally were devastated while Balakot was completely demolished. Approximately 6 billion U.S. Dollars was estimated the overall cost of relief and reconstruction. The private housing has the top share in damages.

Total area of Tehsil Balakot is 225910 Hectares out of which cultivable land is 14221 Hectares. The people living in this region are usually dependent on livestock for their livelihood and because of the earthquake about 20,000 livestock have been killed and thus have the people been deprived of their earning. About 500 Poultry Farms were tumbledown and the major business of the area has also come to an end. Similarly, about 52,022 Acres of land is under the Forest in upper and lower Kaghan valley. There are large numbers of mines such as charcoal, grayfite, peridot, soapstone, ceramic materials, marble stone, ruby, neelam in Kaghan valley (GOP, 2007a).

The old Balakot town is located on an active fault line. The intensive geotechnical and seismic micro-zonation study of the old Balakot town and peripheral region was carried out and earthquake hazard vulnerability map was prepared by NESPAK (A consultant of Earthquake Reconstruction and Rehabilitation Authority). Based on the studies carried out and looking at the future seismic activities and earthquake hazard

vulnerability of the old Balakot town, the government declared the old Balakot town site in red zone and abandoned it for residential purposes. The government decided to take this opportunity and build Balakot on a new site with organized modern urban facilities (GOP, 2006b). For the resettlement of the old Balakot town the government of Pakistan launched the project of the new Balakot town on 12th May 2007 at Bakryal. NESPAK has been assigned for the new Balakot project. The new Balakot town will be spread over an area of 1,425 Acres (11,400 *Kanals*). It has been proposed that the new town will have all modern facilities. It has the capacity to expand in three different directions. In next 25 years, it will accommodate 2.5 million people. It will have well planned infrastructure of roads, schools, mosques, hospitals and other important services. This project was supposed to complete in three-year. The town is proposed to develop with garden city concept. It will have lush green areas in the periphery and will be covered with pine trees (APP, 2007 and Defence, 2007). According to NESPAK, majority of the people of old Balakot town will shift their residence and businesses to the new Balakot town. The pre-earthquake employment structure which was based on hotel industry is supposed to be changed by 50 % in the new Balakot town (NESPAK, 2007).

The red zone area of the Balakot town is a collective term for the area of five union councils i.e. Balakot, Garlat, Ghoonal, Sathbani and Kewai. The boundary lines were drawn based on fault lines or seismic activities. More than 99 % of the selected area of the red zone is comprised of Balakot, Garlat and Ghoonal union councils, which made a large single contiguous unit. These three union councils also had more than 99 % of the total population share of the red zone. The Sathbani and Kewai union councils had less than 1 % share of the total population and area (Table 1.4 and Map 1.2). These areas and households of these two union councils were isolated from main Balakot town and most importantly, its residents could be easily resettled in other areas of these union councils.

The bazaar of Balakot town was an important feature of the red zone as it had more than 1500 shops, a number of offices, banks etc. which attracted huge population from the whole tehsil and thus used to increase the daytime population.

Table 1.4
Number of Households in the Red Zone of Balakot Town

S. No.	Union Council	Mohalla	Households
1	Balakot	Bagh Baliani	20
2		Bajori	65
3		Baliani	98
4		Bazzar Baliani	27
5		Dhodhiari	45
6		Grid Baliani	20
7		Jalora	55
8		Kach Bali	11
9		Kali Mitti	36
10		Kharian	50
11		Khawaja Khaili	140
12		Kohistan More	63
13		Lehari	51
14		Lower Bamphora	76
15		Lower Pori	23
16		Lughmani	79
17		Mangli	248
18		Nawaz Abad	21
19		Podina Baila	53
20		Pori	47
21		Rehmat Abad	23
22		Shah Ismailabad	41
23		Single Poi	48
24		Takkia Lehari	13
25		Titwal	64
26		Upper Bamphora	64
27		Upper Pori	9

Continued

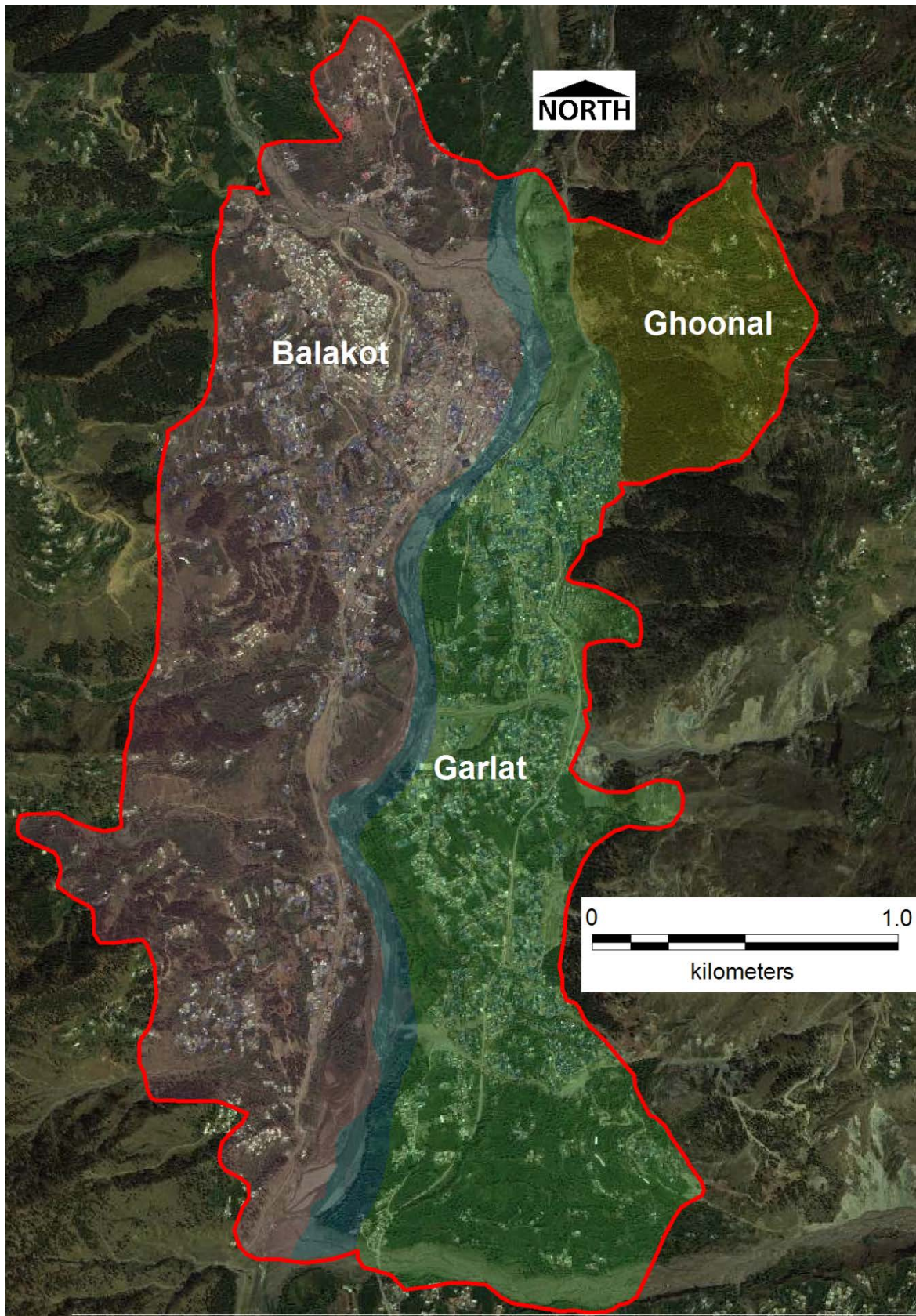
1	Garlat	Mandi	81
2		Narah	192
3		Qadarabad	165
4		Upper Garlat	176
5		Upper Narah	353
6		Pandi	270
7		Lower Narah	258
8		Kawas	165
9		Bailla Garlat	144
10		Deri Narah	272
11		Deri	145
12		Gribabad	149
13		Habibabad	129
14		Ganjkal	127
1	Ghanool	Jabba Ghanool	128
1	Sathbani	Sathbani	29
1	Kewai	Kewai	5
G. Total			4278

Source: NESPAK, 2009

1.3 Scope of the Study

Pakistan is a developing country with diverse physiographic, hydrological and meteorological conditions. The economy is agro-based and at the take-off stage of industrialization. Extreme weather events are becoming more frequent and severe worldwide than ever experienced in the past and Pakistan is no exception to it. Drought, river & flash floods, rain & windstorms, melting of glaciers, cold & heat waves, temperature fluctuations, desertification and above all changes and variability in the monsoon and western depression pattern cause huge damages to life and property particularly in the past three decades (Khan, 2004).

Map 1.2
Red Zone Area of the Balakot Town



The mitigation measures for these hazards have always been a big burden on our poor economy. Resettlement always needs more attention and proper planning than any other measure. The present study is privileged provided new dimension for analysis of the resettlement process. The interaction of Man with his physical and economic environment for reducing the risk of disasters has been elaborated. While interacting with the changed physical and economic environment certain, problems are created due to risk and opportunities in adaptations. These problems have been identified and solutions have been given from the opportunities of the development. To streamline the resettlement process of the Balakot town certain, measures have been recommended for line agencies. The final output of the study in form of a tool has provided a standardised mechanism for the desired development. This tool can be easily applied to all other resettlement processes with certain modifications. The study has not only provided guidelines for proper planning and efficient utilization of resources for the resettlement of Balakot town but also has enhanced the knowledge and research base in the subject.

1.4 Justification of the Study

Pakistan is one of the most hazard prone countries in Asia. A series of natural and human induced disasters threaten the sustainable economic growth of the country by causing severe shocks. To mention a few the Earthquake – 2005, flash floods of 2008 and Floods – 2010 are top of the list. With exception of earthquake, most of these hazards are seasonal in nature. High priority hazards of Pakistan in terms of their frequency and scale of impact include; flooding, earthquakes, droughts, , wind storms, desertification and landslides. These hazards have been causing widespread damages and losses in the country (GOP, 2007b and Khan, 2006a & b). In Pakistan, the ad hoc policy approach for the mitigation of these hazards is in practice. The main source and focus of all mitigation activities are national and international donor agencies. To streamline this whole process

of rehabilitation with development, proper planning in right direction is needed. Resettlement is one of the measures of mitigation for disaster risk reduction, which is more complicated in nature as the affected community willingness is more important than other issues (Khan, 1993a & b). Same is the case of the Balakot town resettlement which needs proper streamlining to achieve the desired results. The old Balakot town was a hub of political, social and economic activities while the new site at Bakryal is supposed to have good infrastructure facilities. The residents of Balakot do not want to lose their important political, social and well off economic status in the region. The line agencies are handling the problems through administrative measures which do not address the root causes instead it has exacerbated the existing problems of resettlement. The residents of the Balakot town are uncertain about the future of new and old Balakot towns because the site is hazardous while situation is convenient at old Balakot town and vice versa, i.e. the site is feasible while situation is not encouraging in the new Balakot town. The second important aspect is that both the government and the citizens of Balakot perceive opportunities and risks for the old and new Balakot towns very differently and it is well known fact that the successful resettlement of the Balakot town is dependent upon citizen's perception.

The site and situation variables are the prime factors for the establishment of a settlement and for its future growth and prosperity. These variables have been analysed in post-earthquake disaster situation of the old and new Balakot towns. The perception of the residents of Balakot town about their physical and economic environment has been studied which helped in identifying the problems leading to uncertainty. On the bases of the existing opportunities and streamlining of the resettlement process, the possible solutions to these problems have been suggested. A tool has been developed in which all the aspects of the study have been incorporated. This tool is not only helpful for the resettlement of

the Balakot town but also applicable to all other resettlement processes with certain modifications.

1.5 Limitations of the Study

Though the research has been well organized and guided however, still the following are some important limitations being faced during the research:

- ◆ The resettlement of the Balakot town is an on-going and sensitive project, consequently, all the government line agencies were very conscious about data sharing at this stage.
- ◆ Detailed scientific data for hazards risk assessment were either not available or not shared due to the sensitivity of the nature of the data.
- ◆ The NGOs were the implementer of the ERRRA's developmental projects in the study area but no proper record of their activities, organogram, job opportunities or evaluation mechanism etc. was available.
- ◆ The non-availability of the high resolution temporal imageries or aerial photographs of the Balakot and surrounding areas due to lack of sufficient funds.

1.6 Organization of the Thesis

The entire study is consisted of eight chapters. The first chapter deals with the introduction of the study. The second chapter describes literature review and theoretical frame-work of the study. The research methodology of the study has been explained in the third chapter. The fourth chapter evaluate the sites of both old and new Balakot towns. The fifth chapter looks into the situation of old and new Balakot towns. The response of the residents of Balakot about their present physical and economic environment has been studied in the sixth chapter. The tool evolution and standardisation for the desired response is elaborated in chapter seven. Findings, recommendations and conclusion of the study are given in the final chapter.

Chapter 2

Literature Review and Theoretical Frame Work

2.1 Introduction

Disaster management is an emerging subject and gaining importance day by day as disasters and their impacts are increasing rapidly with time. Resettlement no matter pre or post disaster is one of the most difficult options in the disaster risk reduction measures. To understand and explain the resettlement process in general and the resettlement process of Balakot town in particular, the literature review and theoretical framework for this study is divided into seven sections. These sections are: basic concepts and definitions, disaster management in Pakistan, Earthquake - 2005, ERRA's urban resettlement policy, site and situation, resettlement, and indices. The basic concepts and definitions explain most of the terms used in this research study for better understanding with main focus on disaster management. The evolution and current status of disaster management in Pakistan is explained in the next section. The section Earthquake - 2005 elaborates the causes, damages, reconstruction and risk reduction strategies of the Earthquake - 2005.

The resettlement process of Balakot is carried out under ERRA's urban resettlement policy, which is explained in detail in the section on ERRA's urban resettlement policy. The section on site and situation deals with the explanation of the concepts in geography, modifications for urban economic base and centrality studies. The section on the resettlement starts with different theories and typologies for risk management and then focuses on concept and problems associated with the resettlement process. Furthermore in the same section, findings of the global case studies are elaborated. Details of Tarbela Dam resettlement and other case studies from Pakistan are given at the end of this section. One of the important outcomes of this study is the resettlement tool for which different indices are studied with main focus on their construction, limitations and relation with disaster management. The conclusion of the chapter is given at the end of the chapter.

2.2 Basic Concepts and Definitions

2.2.1 Building Code

Building codes are the rules and regulations to insure human safety and welfare. The design, construction, materials, change and use of any building and/or structure are controlled through these rules and regulations. It includes both technical and functional standards (GOP, 2007c and GOP, 2010a).

2.2.2 Centrality

Centrality refers to the quality, state, or fact of being central, centre position or the tendency to remain at or near the centre (Webster's Dictionary, 2010 and The American Heritage Dictionary of the English Language, 2000). Centrality is the degree to which a place serves its surrounding area, and this can be gauged only in terms of the goods and services offered (Pacione, 2009).

2.2.3 Disaster

The dictionary meaning of the term disaster is Sudden or great is misfortune/calamity. Webster's dictionary definition incorporate the physical damages: "A sudden calamitous event producing great material damage, loss and disaster" (Webster's Dictionary, 2010). Form and Nosow, extended the definition range towards social life as "disaster is a condition in which established social life of a community or other type of social organization abruptly ceases to operate" (Form and Nosow, 1958). In 1962, Cisin and Clark in their definition focus on community activities as "disaster is an event or series of events which seriously disrupt normal activities" (Cisin and Clark, 1962). Beach in 1967 defined it as "disaster refers to relatively sudden and violent disturbances in the life of one or more persons, caused by some agents or event over which those involved have little or no control" (Beach, 1967). O' Keefe and Westgate in 1976 for the first

time introduce the interaction concept between environment and human in their definition: “disaster is the interface between an extreme physical phenomenon and vulnerable human population” (O` Keefe and Westgate, 1977). Focusing on damages and incorporate all sort of damages natural disaster can be defined as: “natural disaster is an extreme natural event which affects man and his environment causing physical, ecological and / or socio-economic damages etc.” (UNDRO and UNEP, 1977). “A disaster is either a natural or man-made hazard which has come to fruition, resulting in an event of substantial extent causing significant physical damage or destruction, loss of life, or drastic change to the natural environment. Disasters are classified by source of origin either a natural or an anthropogenic. The Encarta define it in quantitative scale as “a natural hazard becomes a natural disaster when it affects people, causing more than 10 deaths, injuring more than 100 people, and/or causing US\$16,000,000 of damage” (Encarta, 2009).

2.2.4 Disaster Management

“Disaster Management is to anticipate future situations and requirements, thus ensuring the application of effective and co-ordinate counter-measures. It is an applied science which analysed risk of disasters and seeks systematic methods of emergency management” (UNISDR, 2002 & 2009).

2.2.5 Earthquake

When the energy abruptly released in the lithosphere of the Earth due to tectonic movements or volcanic activity it generated different types of seismic waves which caused sudden motion or vibration in the earth. The destructive earthquakes are mostly associated with tectonic movements (Donald and David, 2009).

2.2.6 **Environment**

The surroundings of an object is called environment. The natural environment has very comprehensive range which includes all biotic and abiotic components of the Earth. The built environment encompasses the Man constructed surroundings which include the whole physical infrastructure. Environment has strong influence on human activities and vice versa Man is denominator or modifier of the environment (Encarta, 2009 and GOP, 2010a).

2.2.7 **Hazard**

“A Hazard is a perceived natural event which threatens both life and property” (Whittow, 1979). “Natural Hazard is a danger brought about by a degree of exposure to an environmental agent for which the community is not totally prepared” (Crozier, 1982). In other words, hazard is a physical/environmental event or human activity which has potential to cause damages to life, property or environment (GOP, 2010a and Anderson, 2006).

Classification of Natural Hazards: Based on different criteria Natural Hazards can be variously classified. These criteria are based on such parameters as magnitude, velocity, duration, death toll, and financial cost etc. Natural hazards have two major groups i.e. Geo-hazards and Hydro-meteorological hazards. The most important and workable classification is based on the mode of operation of hazards. According to this classification natural hazards can be divided into two major categories:

- i. Terrestrial Hazards are those hazards which occur within the earth.
- ii. Extra-terrestrial hazards are those which originate outside the limit of the earth, perhaps in space, but cause harm to mankind, like falling of meteorites.

Terrestrial hazards can again be divided into three Categories:

- a. Exogenic are those hazards which operate on the earth. Exogenic hazards can be further subdivided into: Atmospheric, Hydrospheric and Lithospheric hazards
- b. Endogenic are those hazards which originate inside the earth. For instance volcanic eruption and earthquake etc.
- c. Biotic hazards are those which are caused by living organisms like plants, animals and mankind. The hazards caused as a result of human action are called anthropogenic hazards or man induced hazards (Khan, 1992).

2.2.8 Household

According to population census organization of Pakistan, a household must have common kitchen and economic interests residing under one roof (GOP, 2000 & 2010a).

2.2.9 Location

“Location is a position or point in physical space that something occupies on the Earth's surface or area in the Solar System, or mankind physically reachable universe”. In geography and disaster management, our focus is on the earth surface or Geo-spatial (Pidwirny, 2006).

2.2.10 Public Awareness

In disaster management, the public awareness means to inform and enhance the level of knowledge of general public about risk and mechanism through which they could reduce their exposure to hazards (GOP, 2010a and ADPC, 2008).

2.2.11 Public Services and Utilities

All states have the responsibility to provide some basic services to its citizens to perform smoothly and efficiently their day to day activities. Public services include health, education, transportation, telecommunication, security etc. These services are provided through Government agencies or private public partnership. The

public utilities have the same nature like public services. However, it is direct paid services in which the public directly use the utilities like electricity, natural gas, water, sewage and telephone etc. and made rational payment to each agency (Chavez, 2006).

2.2.12 **Red Zone**

Red zone is the area of tehsil Balakot, which is seismically active and has high vulnerability for earthquake. It spread over the area of five union councils i.e. Balakot, Garlat, Ghoonal, Sathbani and Kewai. More than 99 % of its area and population is comprised of three union councils Balakot, Garlat and Ghoonal, which made a single contiguous unit. The whole areas of all three union councils are called red zone of Balakot town. The Government of Pakistan has decided to resettle its residents in the new Balakot town and abandoned the old Balakot town for residential purposes (GOP, 2007c & d).

2.2.13 **Resettlement**

All measures of rehabilitation and compensation to mitigate the adverse impacts of relocation are called resettlement. Resettlement always adversely affected the property, livelihoods, social & economic capital and organization. Resettlement is a process in which man along with his property, livelihoods, social & economic capital and organization are relocated with least disturbed (GOP, 2007c).

Involuntary Resettlement: The Involuntary Resettlement is that one in which the willingness of the affected persons does not involve. The involved population in this case is rather forced through an instrument of law to do so (GOP, 2002 and ADB, 2003).

Voluntary Resettlement: The willingness to pursue new opportunities, even from circumstances of involuntary resettlement, is called voluntary resettlement (ADB, 2003).

Planned Resettlement: Those state owned resettlement in which people are relocated for achieving a development. This development may be in form of construction of a dam, new township, industrial suburb or de-concentration of thickly populated urban areas etc. (Evrard and Goudineau, 2004).

Spontaneous/Unplanned Resettlement: The spontaneous and unplanned voluntary move of people from hazardous site to new site after disaster is called spontaneous/unplanned resettlement (Smith, 1991).

Linear Resettlement: Linear resettlement is mainly associated with project's acquisition of land having linear patterns e.g. highways, railways, canals and power transmission lines. The linear project, normally, may have minimal impact on any single landholder and compensation is characterized by a large number of small payments for the temporary loss of assets such as standing crops. If well designed, linear projects can easily avoid or minimize the demolition of permanent structures (WB, 2001).

Site-specific Resettlement: Site-specific resettlement is associated with discrete, nonlinear projects or man-made disaster such as factories, ports, highway interchanges, hotels, commercial plantations, bomb blast, building collapse etc. In this resettlement process the land acquisition encompass a fixed area. Communities threatened with displacement at some future date often prefer to remain in place until resettlement is absolutely necessary (WB, 2001).

2.2.14 Rural Area

According to Pakistan Census Organization, The areas having administrative setup of Union Council are called rural areas (GOP, 2000). In Britain, rural area is defined on the market served population. A rural has less than twenty six per cent of its total population living in a market town. The market town at least has street market function (DEFRA, 2010).

2.2.15 Site of the Settlement

The physical land on which a settlement is built is called the site (Bowen and Pallister, 2006).

2.2.16 Situation of the Settlement

The situation of a settlement is its location in relation to the surrounding area (Bowen and Pallister, 2006).

2.2.17 Urban Area

According to Pakistan Census organization, the urban is places with Municipal Corporation, Town Committee or Cantonment (GOP, 2000). In USA, this definition of urban area is based on population density. The urban area must have population density of 386 per square kilometre in core area and at least 193 per square kilometre in surrounding areas (UN, 2010).

2.2.18 Urban Basic Activities

The basic activities are those which bring money into the city. It is city building activities which bring purchasing power from outside into the community. A city is supported by non-local demands and its life depends upon it. The basic activities are manufacturing, wholesaling, multinational and regional services (Mayer and Kohn, 1964 and Murphy, 1966).

2.2.19 Urban Economic Base

The urban economic base is the study of all basic and non-basic activities. The basic activities include all goods and services that are available by outside community of a town/city. While the non-basic includes all commercial activities and services that are utilized within town/city. All the activities referred to are considered basic in that they bring money into the community. In contrast are those activities whose goods and services are consumed within the confines of the urban area and, consequently, do not bring outside money into the community. The urban economic base identifies the nature of functions that perform a city for its life and growth (Mayer and Kohn, 1964 and Murphy, 1966).

2.2.20 Urban Non-Basic Activities

The nature of local serving demands activities, which cater the needs of local inhabitants are called non-basic. These activities simply involve an exchange of money which basic efforts have already brought into the city. Retailing, local services and food shops are good examples of non-basic activities (Mayer and Kohn, 1964 and Murphy, 1966).

2.3 Disaster Management in Pakistan

In last decade, disaster management has gained importance worldwide as natural hazards are increasing in frequency and intensity. Poorest of the poor nations are highly vulnerable to all hazards; they suffered heavily from losses and setbacks of disasters. Developing countries are not only exposed to natural hazards due to their geographical location but also due to their poor livelihoods. Natural disasters have direct and indirect effects. During and after a disaster people lose their homes, their belongings, and the very basis of their livelihood is form of direct effects. The vulnerability is directly link with the social,

economic and political conditions. The low income class has least access to resources. As a result, vulnerability of this class is much higher than middle and upper classes. In case of disaster, low income class are suffered heavily than other two classes. Beside these losses they have very few resources and/or assets to recover from the effects of disaster. This situation leads to marginalization of the community. The net result is disruption of the community which ultimately leads to economic instability. This regional economic instability transferred to national level which struck back the economic development. Similarly, emergency response and relief needs additional funds. The difference of capacities, skills and funds is clearly visible in developed and developing nations. The developed nations normally possess the resilient character for disasters while disasters are the major cause of mortality and morbidity in developing countries (Cuny, 1983; Khan, 1992; Alexander, 2002; GTZ, 2009; and Collins, 2009).

Pakistan has diversified physiographic conditions. This diversity is blessing of Allah which provides numerous natural resources and scenic beauty. The diverse physiography hosted a number of natural hazards. However, we have very fragile socio-economic conditions. These fragile socio-economic conditions and diverse physiography is the main cause of our vulnerability. Pakistan has been facing anthropogenic, complex, biological, geo and hydro-meteorological hazards since from first day of independence. The crisis of Internally Displaced Persons (IDPs) in 1947, 1971 and 2009 are examples of anthropogenic disasters. The wars with India in 1948, 1965, 1971 and 2002 are those complex disasters which not only destroyed the economy and stun the development but also change the course of history of this young nation. Pakistan has been victim of epidemic disease at number of time. Pakistan has long history of natural disasters. Before 1971, floods were frequent phenomena in East Pakistan. The northern and western areas of Pakistan are seismically very active and experience large earthquakes frequently. Among

these natural disasters the Earthquake – 2005 and Floods – 2010 are at top of the list (WB, 1993; GOP, 2007b, e & f; and Khan, 2010).

Before 2005, disaster management in Pakistan was purely on ad hoc basis. Floods were more frequent and devastated so there were flood control programme. Emergency Relief Cell (ERC) and Federal Flood Commission (FFC) were established which prepared a draft National Disaster Plan in 1974. However, it was never implemented. All sort of relief and rehabilitation activities were carried out under Civil Defence Act – 1952 and National Calamities Act – 1958. The National Economic Council (NEC) prepared five years plans since 1957 up to 2003. However, disaster management was never integrated in these five year plans. In Ten-Year Perspective Development Plan (2001-2011) focus was only given to Millennium Development Goals (MDGs). In different plan hazard specific projects of environment, natural resources, drought and floods were launched with INGOs/donors support programme (GOP, 2007e & 2010c & d and Khan, 1993a & 2004).

Prior to Earthquake – 2005, the disaster management activities was undertaking across the country by the assistance of institutional donors, INGOs, and local organizations. Pakistan is member of many regional and international organizations which play an important role in strengthening the disaster management in Pakistan. The UNDP in 2004 proposed National Disaster Management Agency (NDMA) within the structure of the Emergency Relief Cell. On October 24, 2005, the ERRA was established by Government of Pakistan to rebuild the Earthquake – 2005 affected areas. The provincial and state governments established Provincial Earthquake Reconstruction & Rehabilitation Agency (PERRA) and State Earthquake Reconstruction & Rehabilitation Agency (SERRA). Similarly, District Reconstruction Units (DRUs) in each of the affected districts were established. The Provincial and State Governments have created (GOP, 2010d and Shaikh, 2010).

The National Disaster Management Act, 2010 was promulgated on December 11, 2010, which comes into force on the August 17, 2007. National Disaster Management Commission is established which has the responsibility for laying down the policies, plans and guidelines for disaster management. National disaster management policy has been approved on February 23, 2013. The Federal Government established National Disaster Management Authority (NDMA) under the Act. The National Authority is consisted of members and headed by the Director General as its Chairperson. The Federal Government has appointed the Director General of the National Authority. The National Authority has the functions of executing, co-ordinating and monitoring organization for disaster management. The National Disaster Management Authority has the responsibility to formulate procedures for the minimum standards of relief and recovery.

Like the federal Government, the provincial Government also established the Provincial Disaster Management Commissions. The National Authority, Provincial Authority or District Authority is authorized for the requisition of resources, provisions, vehicles etc. by order in writing for rescue operation etc. There is well defined mechanism of payment for requisition or compensation and dispute solution. District Disaster Management Authority has been established by each provincial Government for every district. The Act, 2010 also suggest a national Disaster Response force of volunteers and National Institute of Disaster Management (NIDM). The Disaster Management Act - 2010 provide indemnity to all authorities and its employees.

The Earthquake Reconstruction and Rehabilitation Authority Act, 2011 was passed on March 14, 2011 which comes into force on the July 01, 2007. It has given the mandate to work in the affected areas by Earthquake -2005. There shall be established the Earthquake Reconstruction and Rehabilitation Council. According to the Act, the ERRA has the responsibilities to complete all its projects of recovery. However, no specific time

frame was suggested in this Act. Similar indemnity of Disaster Management Act – 2010 has been provided to ERRA's programmes and employees. The regular budget should be audited through Auditor General of Pakistan (GOP, 2010h, 2011).

2.4 Earthquake - 2005

Pakistan is located in seismically very active region. The major earthquakes occurred in this region are Kutch Earthquake – 1819, Mach Earthquake – 1931, Quetta Earthquake – 1935, Makran Earthquake – 1945, Pattan Earthquake – 1974 and Earthquake – 2005. In the northern part of Pakistan, all earthquakes are caused due to presence of convergent plate boundaries. The Indian plate is moving northward at a rate of about 40 mm/year and colliding with Eurasian plate. Himalaya, Karakoram, Pamir, and Hindukush which are the highest mountain ranges of the world are formed as a result of this collision (Sercombe et al. 1998 and Mona Lisa et al. 2004, 2009).

The major thrust faults such as the Main Karakoram thrust, (MKT), Main Mantle Thrust (MMT), Main Boundary Thrust (MBT) and Himalayan Frontal Thrust (HFT) are produced by this north and northeast directed compression. Jhelum, Thakot, Puran and Raikot are transpressional features included strike slip faults (Nakata et al. 1991). Armbruster et al. (1978) conducted micro-seismic survey in this area during 1973–1974. They explore a wedge-shaped structure in northwest direction. This structure was named as the Indus Kohistan Seismic Zone (IKSZ). Later on, between the MKS and the MMT a 100 Km long and 50 Km wide feature was confirmed. In this IKSZ, horizontal upper surface is towards south-west while dipping lower surface is towards north-east. Two different seismic zones are identified by Ni et al. in 1991. This identification was based on relocation of hypo-centres. The first shallow zone is present from the surface to a depth of 8 km. The second mid-crustal zone is identified at depth of 12 to 25 km which is more pronounced. A decollement surface is considered at the upper boundary (at a depth of

about 12 km). This is the region where the sediments and meta-sediments are separated from the basement.

On October 8, 2005 at 8:50:38 a.m. an earthquake of 7.6 magnitude struck the northern areas of Pakistan. In the history of Pakistan, it was the most devastating natural disaster. The Earthquake – 2005 affected five districts of Khyber Pakhtunkhwa and four districts of AJK. Approximately 30,000 sq. Km area was affected by this Earthquake – 2005. More than 2,000 aftershocks were recorded after the Earthquake – 2005. The magnitude of these aftershocks was ranging five to six on the Richter scale. The epicentre located at 34° 29' 35" north latitude and 73° 37' 44" east longitude. This point is approximately at distance of 19 km NE of Muzaffarabad (AJK) and 95 km N-NE of country's capital Islamabad. The earthquake occurred along the Balakot–Bagh offshoot of the Main Boundary Thrust at a depth of 5-25 km (Hussain and Yeats, 2006). It was caused by faulting under the stress field.

In this region, two active fault systems are present. The first one in southeast to northwest direction goes across Muzaffarabad to Balakot. The second fault system in northward direction goes across Gari Habibullah to the valley of river Kunhar. The Muzaffarabad fault started from the north of Muzaffarabad and extended to Balakot (from north-northwest to south-southeast direction) covering 20 Km area. Overall, Muzaffarabad fault is over 30 Km long fault segment. Several sharp stream offsets near Balakot clearly suggest that this fault is characterized by a right-lateral strike slip motion together with a westward thrusting. This fault bifurcated north westward and sharp lineaments with strike slip components of faulting along the branches are found in places. The rupture of the fault into branches is related to strong ground motions which caused severe earthquake's damages. These two fault systems combine at around Balakot. The merging of two fault systems creates a complicated geological structure and looks like a wedge. The higher side

of this wedge is formed of red-purple shale into highland area. In northern side of the wedge on high-raised mount, the town of Balakot is located (Nakatai and Kumahara, 2006).

It is one of the worst earthquake affected towns in the episode of October 8, 2008. The approximate total population of Balakot in 2005 was 250,000. It has been estimated that out of its total population, 200,000 people were affected by this disaster. Almost 90 per cent of the houses in Balakot have collapsed with a heavy rate of casualties. Even amongst the remaining houses in the area, not a single house is safe for dwelling purpose (CRPRID, 2006). It has been observed that besides many other causes ground shaking, intensive slope destabilization, structural breakdown, liquefaction, poor construction material and architecture layout are amongst the important factors for devastation and huge death toll in the area (Baig, 2006).

Along with fault line from Muzaffarabad to Balakot a landslide belt is present. Geologically, this region in general and Muzaffarabad fault in particular has the Palaeocene rock layer right above on the surface. The rocks are composed of limestone and calcareous shale. It is well weathered by geomorphic agents particularly of running and underground (GSP, 2004). All along this fault line, massive landslides occurred which were started about 1 km distance from NE of Muzaffarabad along the west steep slopes of mountainside. Most common mass wasting were cone-shaped piles of white/grey debris. Due to of segregation of minerals, these cones of debris have three different layers of colours (white, light grey and grey from the top to the toe) (Konagai et al., 2005).

The major caused of this complete devastation was foundation in soil. The roofs of mostly buildings were made of concrete material with reinforced concrete structures and walls were made from cement sand blocks. Complete devastation of buildings was observed due to slope failure. In area of stable slopes, partial collapse of buildings were

observed with similar building's material and structure (Aydan, 2006; Bukhari et al., 2006; and Petley et al., 2006).

Geomorphological study of the area revealed that near Balakot town and its surrounding most of the material is deposited by fluvial and glacial processes. As a result, the deposited material is of heterogeneous nature. This material provided poor foundation for all buildings. Structural design, concrete material, RCC and sand blocks were some of the factors that affect the collapse of a building. However, foundation in soil and slope stabilization plays a vital role in recognizing the damages. In both towns of Muzaffarabad and Balakot heavy destructions were associated with terraces and poor foundation in soil. Comparatively, least damages were observed on plain surface and firm soil foundation (Aydan, 2006; Bukhari et al., 2006; Petley et al., 2006; and Marui et al., 2006).

In the affected five districts of Khyber Pakhtunkhwa and four districts of AJK, 73,338 people were killed and 128,309 were injured by Earthquake – 2005. More than 600,000 houses, 6,298 educational institutions and 782 health institutes were damaged or destroyed in Khyber Pakhtunkhwa and AJK. In AJK and Khyber Pakhtunkhwa about 84 % and 36 % of the total housing stock was devastated respectively. Housing in rural areas was severally destroyed or damaged (almost 90 % of the total). In the Earthquake - 2005 affected areas, the impacts of these damages were not limited to public buildings and private housing. The infrastructure of utilities and services was totally devastated. The infrastructure of poultry farm was also totally destroyed. Consequently, the livelihoods of the community were severely affected. Cities like Muzaffarabad, Rawlakot, Bagh and Mansehra were severally were devastated while Balakot was completely demolished. Approximately 6 billion U.S. Dollars was estimated the overall cost of relief and reconstruction. The private housing has the top share in damages (Table 2.1) (GOP, 2007a and ADB & WB, 2005).

Total area of Tehsil Balakot is 225910 Hectares out of which cultivable land is 14221 Hectares. The people living in this region are usually dependent on livestock for their livelihood and because of the earthquake about 20,000 livestock have been killed and thus have the people been deprived of their earning. About 500 Poultry Farms were tumbledown and the major business of the area has also come to an end. Similarly, about 52,022 Acres of land is under the Forest in upper and lower Kaghan valley. There are large numbers of mines such as charcoal, grayfite, peridot, soapstone, ceramic materials, marble stone, ruby, neelam in Kaghan valley (GOP, 2007a).

Table 2.1
Assessment of Preliminary Damages and Cost of Recovery

Sector Wise	Direct Damage (Rs. M)	Indirect Losses (Rs. M)	Reconstruction (US\$ M)	Reconstruction (Rs. M)	%age of Total
Social Infrastructure Cost					
Private Housing	61,220	7,218	92,160	1552	44
Health	7,114	1,378	18,012	303	9
Education	19,920	4,133	28,057	472	13
Environment	12		8,985	151	4
Public administration	2,971	687	4,254	72	2
Physical Infrastructure					
Transport	20,165	4,061	24,699	416	12
WATSON	1,165		1,900	32	1
Irrigation	324		623	10	0
Energy, power and fuel	744	1,561	2,377	40	1

Economic Sectors					
Agriculture and livestock	12,933	6,770	17,846	300	9
Industry and Services	8,578	8,379	9,178	155	4
Total	135,146	34,187	208,091	3,503	100
Azad Jammu and Kashmir	76,375	17,671	116,625	1,963	56
Khyber Pakhtunkhwa	58,771	16,516	91,467	1,540	44
Public Assets	48,131	12,175	82,187	1,384	39
Private Assets	87,015	22,012	125,904	2,120	61
Urban Areas	26,490	13,675	46,163	777	22

Source: GOP, 2005

2.5 ERRA's Urban Development Strategy

The ERRA has sectors wise programme strategy for the recovery. These sectors were comprised of almost all physical, social and economic infrastructure of the region. The fundamental sector of recovery programme was housing sector. Rural and urban programmes were sub-sections of housing sector. The resettlement of the Balakot town has been carried out under the ERRA's urban programme. Under urban program, four towns of Balakot in the Khyber Pakhtunkhwa, Muzaffarabad, Bagh and Rawalakot in the AJK, were to be developed within municipal limits. The theme of urban recovery was "to build back better planned cities under the shared vision". The urban recovery included all activities of restoration, rehabilitation and reconstruction. Certainly, the development of new towns of Rawalakot in the AJK and Balakot in the Khyber Pakhtunkhwa were part of this urban recovery programme (GOP, 2005).

All the owners of damaged/destroyed houses were paid Rs.175,000 for financial assistance. This programme of financial assistance included the residents of Rawalakot in the AJK and Balakot in the Khyber Pakhtunkhwa. However, commercial property was excluded from this scheme compensation. In case of acquisition of commercial land during recovery and/or town planning, compensations were paid to the owners of commercial property. Based on micro-seismic assessment, the old Balakot town was decided to relocate near Bakryal. According to the policy of resettlement of Balakot, the residential and non-residential lands were treated differently. The land ownership may be lost due to execution of township planning, located in the red zone areas or by landslides (GOP, 2005, 2006a&b & 2007c).

Consultants were hired for master planning of each of the urban programmes. The consultants prepared town planning reports. These reports incorporated all developmental activities in sequential order. The developmental activities included: temporary shelters, restoration of basic infrastructure, relocation of the affected population, infrastructure in the new townships and other civic utilities (GOP, 2007c).

All urban development activities were carried out under the shared vision. After development, how these cities should look like is termed as the shared vision. All reconstruction activities were carried out under the basic theme of “to build back better planned cities”. The major objectives of the program that guided towards the shared vision of a city were: to rebuild and enhanced the level of functionality than pre-earthquake conditions; to provide well developed civic utilities and services with cost-benefit vision; and rebuilding of physical infrastructure and social infrastructure of the city with resilient characteristics. The urban rebuilding process was carried out under twelve key stages. These phases were not necessarily consecutive activities. These phases have dependent urgencies and often phased out after one another. Significant overlap was also observed in

these stages. For purposes of implementation of township plan, each of these phases has its own supplementary plan. The main components of the Balakot resettlement policy were:

- i. Owner of the property of relocated plot of 7-Marlas or less will be allotted 7-Marla plot.
- ii. Owner of the property of relocated plot between 7 to 10-Marlas will be allotted 10-Marla plot.
- iii. Owner of the property of relocated plot between 11 to 15-Marlas will be allotted 15-Marla plot.
- iv. Owner of the property of relocated plot of 16 Marla and above will be allotted 1-Kanal plot.
- v. In the old Balakot town the owners will retain the ownership of residential land. The restriction was made that it will not be used for living purposes (GOP, 2006b & 2007c).

The fundamental guidelines for resettlement of commercial land were as follows:

- i. Justified land will be allotted to commercial land owners or they will be compensated in term of money.
- ii. Joint ownership of commercial property will be maintained in the resettlement.
- iii. In the old Balakot, Owners of commercial property will retain the ownership of commercial property. Justified land will be allotted to commercial land owners in the new Balakot.
- iv. In Muzaffarabad AJK, the resettlement has two aspects. If the property is utilized the State the owners of the property will be reimbursed on the basis of estimation of land on market prices. In case of relocation the owner of the land will waive his / her possession of the land.

- v. The compensation policy of the old Balakot town is applicable to all land property located in the Highly Hazardous Zones (GOP, 2006b & 2007c).

2.6 Site and Situation

Site and situation of a settlement are the basic factors for the location and growth of a settlement. The study of site and situation provides the basic information for understanding the characteristics of a settlement. The terrain on which a settlement is to be built and over which it spreads is called site of the settlement. The major variables of the site are: relief, geology, water supply, nature of the river, hazard vulnerability, defence, building material (stone or wood), fertility of land, fuel supply, slope aspect, flat surface and natural resources etc. Situation incorporates the surrounding physical, economic and cultural condition over a much wider area around the settlement (Fig. 2.10). The situation factors control the functions of the settlement and thus controls the growth of that settlement. The situation is more dynamic as it change over period of time significantly and may have physical, economic or cultural implication. For a city, the situation is described as nodality and functions of that city. Situation can be measured in economic terms. It emphasises the relation of accessibility and availability of natural resources of a city and equal importance to the surrounding environment and human character. However, human actions modified the site and situation particularly in large cities (Dickinson, 1948; Carter, 1988; and Geographyfieldwork, 2008).

The traditional system of studying urban economic functions begins by measuring the livelihood structure. It determines the number of people employed in the city and tabulates them in such categories as trade, manufacturing, and government. This classification is based not on any characteristic of space relationships but rather on type of service performed. Space relationship based concept is that the cities develop in response to demands from other places (Mayer and Kohn, 1964).

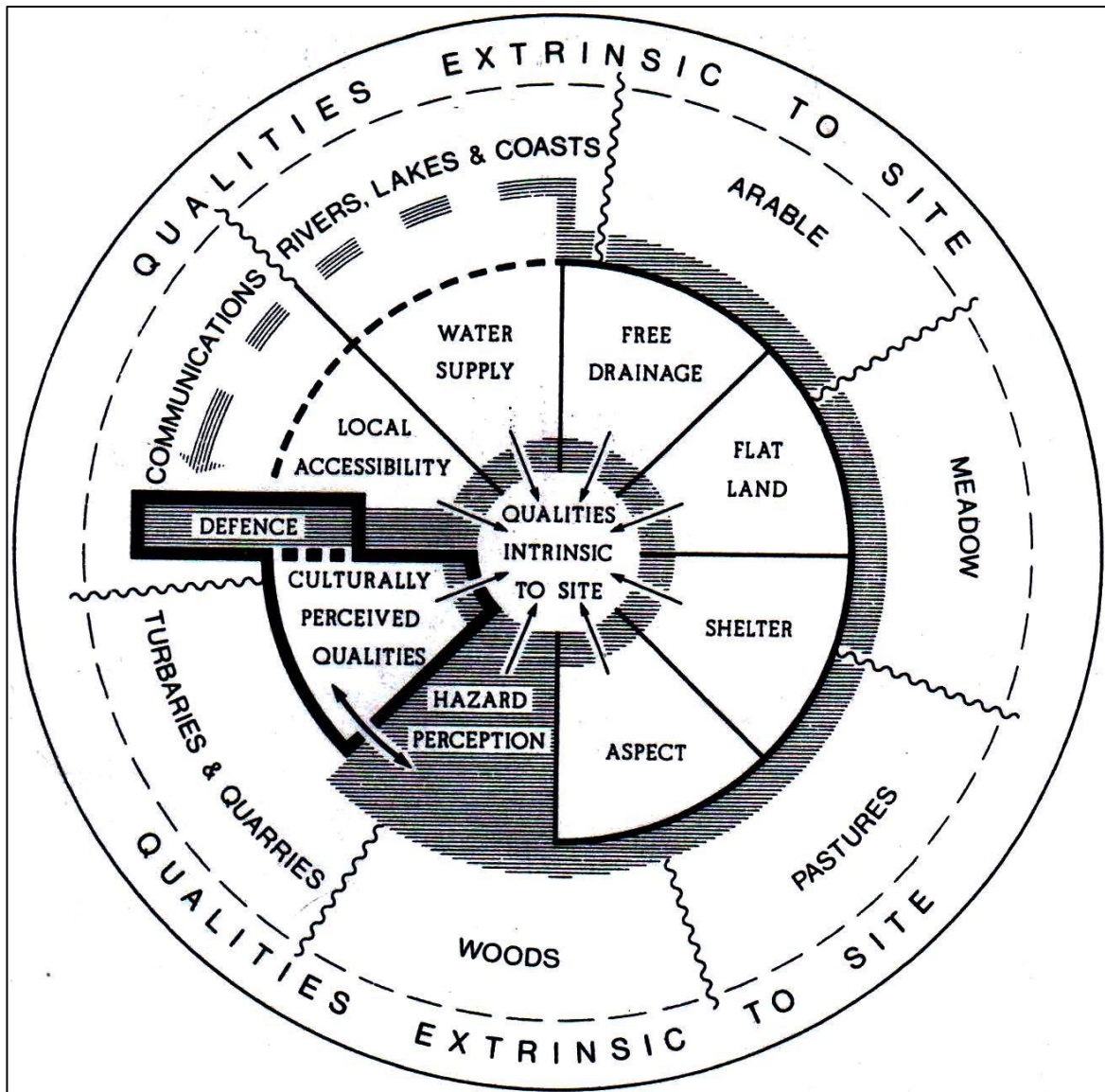


Figure 2.10 Site and Situation of a Town
Source: Roberts, K. 1987

Jefferson in 1939 described this concept as “cities do not grow up of themselves; countryside set them up to do tasks that must be performed in central places”. No cities exist independently as a city serves other areas which are market region of that city. In turn, the region serves the city. This interconnection between city and region are one type of spatial relationship. This spatial relationship between city and region is measured through study of city’s sphere of influence, centrality of the city, functions of the city, dependency of the region on at city for goods & services, and regional activities/functions. The strongest tie between city and region is the economic life of a city. The non-local

demands supported the economic efforts in a city. In turn the city has need for local services, and thus a second urban function is discernible which caters to the needs of local inhabitants. The difference between these two economic efforts is of fundamental importance, because the former constitutes the city's economic foundation and the city's life depends upon it. It brings money into the city and is termed "basic." By contrast, the second category (serving local demands) is termed "non-basic" and simply involves an exchange of money which basic efforts have already brought in (Jefferson, 1939).

The concept of a city's economic dichotomy has been recognized in literature often using different terminology such as primary, urban growth, external, supporting for "basic," and secondary, service, internal for "non-basic." The first expression of the idea appears to be that of Auroousseau, in 1921. The first urban analysis explicitly to identify a city's economic dualism was the New York Regional Planning Committee's Regional Survey of New York and its Environs by Frederick L. Olmsted published in 1927. The concept was described in terms of "primary" and "ancillary," In subsequent years the concept received attention in different disciplines where scholars refined the theory or added new concepts (Mayer and Kohn, 1964).

The first geographer to apply this idea to a specific city was Hartshorne in 1936. He studied Minneapolis St. Paul. According to Hartshorne, a part of manufacturing in every industrial city produces only for local consumption and that the most meaningful map of a manufacturing region would locate concentrations of industry producing over and above local demands. He mapped industrial wage earners for all cities with over 10,000 populations, subtracting from each cities total of industrial wage earners a factor of 10 per cent of the population. The assumption was that 1,000 wage earners in manufacturing would be required to meet the needs of a city of 10,000 people. Hartshorne subsequently concluded that this factor was too high and probably should have been 8 per cent.

Nevertheless his study was a pioneer effort of measure what is herein termed "basic" effort, applying it to a single type of endeavour manufacturing. The research staff of Fortune magazine used advance methodology for analysis of the economic functions of Oskaloosa, Iowa. By measuring the balance of payments between Oskaloosa and the rest of the world, they arrived at a distinction between the city's payments to local creditors and to non-local creditors (Hartshorne, 1936).

In 1939, Hoyt suggested new terminology: urban growth for basic and urban service for non-basic. For measuring basic activity, he outlined the six steps methodology. In 1942 Harold McCarty expanded the concept to apply to regional economies as well as community economies. He described basic and non-basic activities in relation to occupational pyramid. J.H. Jones (1944) introduced the idea in national planning for Britain's post war reconstruction of damaged cities that city planners should give priority to basic activities. Robert E. Dickinson (1948) pointed out the need for more urban analyses in terms of this economic dichotomy and suggested that analyses of cities could be based on this approach.

The centre of interest of Urban Geography, as of all Geography, is man, and the reciprocal relationships between man, his works, and the earth (Mayer, 1951). "It is well known that towns have an extraordinary power of growth. This appears to be due to the relationship between the primary occupations and secondary occupations of townsfolk" (Aurousseau, 1921). It is axiomatic that location can only be understood through functions; what town does, or did in the past, determines its location and controls its growth. Economic activity can be broken down into two types. The first one is that which meets non-local demand and contribute to national economy is basic or city forming activity while the second one which meets the local demands and does not contribute to national economy is non-basic or city serving activity (Carter, 1988). A great variety of

criteria may be used to delimit service areas. The number tends to increase with city size and resulting complexity of services. The most widely measurement unit is employment. The easy and convenient method determining the urban economic base for small and medium cities is local economic survey and base study through questioner or partly on sampling basis (Murphy, 1966 and Hartshorne, 1932).

On the bases of relationships between basic and non-basic employment future trends in each activity and population can be estimated (Weimer and Hoyt, 1939). To understand the urban growth particularly the population growth in the area, it is necessary to understand the local economy. The stable and strong economy supports the population growth while the poor economy even in the specific region of a Metropolitan area shows decline in the population. For urban or regional economic analysis the economic base technique is the oldest, simplest and most widely used technique (Mayer and Kohn, 1964 and Murphy, 1966).

An analysis of the city's relations to its surrounding area brings a better understanding of the city itself. The outlining of service areas can be a step toward delimiting the area of dominance i.e. the city's tributary area. Normally, each city forms the core of a larger area which it dominates. With distance outward from the core, the domination tends to weaken, and eventually the influence of some competing urban centre exceeds that of the city under consideration. In other words, every urban function has specified city outside distance limit up to which it draw customers for that specific service/good. Certainly, this influence of function is different for different activates for each of city. The overall influence for different functions is called the city's spheres of influence (Mayer and Kohn, 1964; Murphy, 1966; and Andrews, 1953).

The sphere of influence is the area which the city dominates in a general way. The area of dominance is analysed and it was found to consist of a number of single-feature

nodal regions: the commuting area, the city newspaper circulation area, retail and wholesale trading areas, and many others-even such areas as those from which people come to the city's annual music festival. Some of these regions extend far beyond the boundary of the city's overall area of dominance; others fall short of that boundary. Some represent a daily movement; others, a much less frequent interaction between a city and its surrounding areas. The combination of influences diminishes with distance from the city until a divide is reached beyond which the combined influences of the various services operating from some competing urban centre are greater than the waning aggregate of which the first city is the core. The single-feature regional boundaries that may be drawn around a city outline a series of contiguous areas, and the area of dominance of the city. In addition to these contiguous areas, the city has more limited and spotty connections that may be countrywide or even worldwide. For example, manufactured products may reach worldwide markets, and raw materials needed for the city's factories may come from half way round the globe. Similarly, a port may import goods for several widely separated urban centres far in the interior of the country and may export goods originating in cities hundreds of miles inland. These non-contiguous points of connection are by no means unimportant to a city and form nodal regions with the city as the core. A great variety of criteria may be used to delimit service areas. The number tends to increase with city size and the resulting complexity of services (Mayer and Kohn, 1964 and Murphy, 1966).

The choice of criteria on which to base service areas for studying a particular city depends on several factors. One is the nature of the city and its region. Thus for a small city in a farming district, the areas from which people come to buy farm machinery to market their livestock or from which they truck wheat to the local elevator may be of special interest. Yet for many cities these criteria are of little significance. For the average city there are several other considerations. The interest may be in just one type of activity,

such as newspaper circulation, or in one group of activities, such as wholesaling. The objective is more general, to present as best one may the major facets of acuity's influence over or interconnections with the countryside. The most important indicator of the extent of influence of one type of city is not necessarily the most important for a city of a different type, and since the information readily available in one city may not be obtainable in another. At best, then, the selection of criteria remains a subjective problem (Mayer and Kohn, 1964 and Murphy, 1966).

Reilly in 1929 studies the type of service area of retail trade. However, his primary concern was not in out, lining service areas so as to work out the degree of interdependence between a central city and subsidiary centres through enunciating and attempting to verify his Law of Retail Gravitation. This law is derived from comparison of business gravity force of two cities on smaller third one. It is assumed that the distances are measured along the most direct improved highway. The general formula for the law of retail gravitation is expressed as follows:

$$\frac{B_a}{B_b} = \left(\frac{P_a}{P_b} \right) \left(\frac{D_b}{D_a} \right)^2$$

(where B_a replaces the F in actual formula and here consider as the business of City A; B_b replaces the F in actual formula and here consider as the business of City B; P_a is the population of city A, P_b is the population of City B; D_a and D_b is the distance of City A and City B from third town respectively).

The formula tells us about the location of the breaking point between any two cities. The breaking point is defined where the influence and/or dominance of business activities of one city started and diluted of second city. According to the formula procedure, first estimate the position of the breaking point between two cities and then checks it with the formula. The simple method of breaking point is the relationship of all three population and their relative distances. The break point is marked on main road or highway in relation to population size and distance covered between two cities. This approximating is a sort of

median of various intercity service area boundaries. The range of such boundaries is relatively small for small urban centres, so the approximation is correspondingly simple. However, with larger cities having at an approximate line is correspondingly difficult. Approximations based on single factor or combination of factors in one large factor could delimit the city's tributary area. Park and Newcomb (1933) used a combination of newspaper circulation for delimiting the sphere of influence. They draw a line connecting the outermost places taking 50 per cent or more of their metropolitan newspapers from Chicago has opposed to competing centres. Thus outlined an area of dominance of Chicago based on metropolitan newspaper circulation.

The basic and non-basic nature of activities in a city was studied by Murphy in 1966. He used production workers and total employees method. Manufacturing is changing the form of materials for making them more useful or more valuable. It is basic activity which provides base for other business activities particularly in industrial cities. Business activities in the city can be divided retailing of goods, handling of finance insurance, real estate, rendering of services, wholesaling of goods, and governmental business. To determine the basic activities ratio/number in a city he finds out value added by manufacture, number of establishments, the manufacturing ratio, and the location quotient methods. In production workers and total employees method, employment data of all employees and production workers is obtained of each and every manufacturing establishment.

The data on production workers have generally been considered of more value in studying the location and volume of manufacturing than data on all employees. Factors as automation and computerization argue in favour of total employees are the better measure as the proportion of non-production workers had grown significantly. The value added by production method is for equating the relative economic importance of production among

trades and a region. The value added by manufacture for one city is the volume of manufacturing activity comparatively of the second city in the region. Number of establishments is a measure of manufacturing activity. Based on this calculation the average size of producing units (production workers per establishment) is determined which will lead to the average volume of manufacturing activity (Murphy, 1966).

Ohlson (1945) and Jones (1953) used manufactures census data for the manufacturing ratio. Manufacturing ratio is the percentage that employment in manufacturing in a city makes up of the cumulative occupation in the town in industries, retail and wholesaling, and professional services. The manufacturing ratio purports to show by a single number the relative importance of manufacturing in a city. As might be expected, the highest ratios are for small, specialized manufacturing cities. Often, industrial satellites to which workers commute form the central city and sub urban centres that for one reason or another are notably non-manufacturing in their specialization. The location quotient method is to measure the extent to which a type of manufacturing is concentrated in an area. The location quotient expresses the degree of this concentration. The idea is one that is by no means restricted to manufacturing but can be used to measure concentration in any kind of distribution. The location quotient is a measure of relative importance rather than of absolute importance (Ohlson, 1945 and Jones, 1953).

All those activities which exported goods and services and/or bring customers to the community/city are consisted of urban economic base. All the activities referred to are considered basic in that they bring money into the community. They have been referred to as the community's 'breadwinners'. In contrast are those activities whose goods and services are consumed within the confines of the urban area and, consequently, of not bring outside money into the community. They are supported by the basic activities but are themselves referred to as non-basic (Murphy, 1966).

The urban economic base concept first expression has been seen in Frederick L. Olmstead letter of February 12, 1921. The Hoyt in 1939 further developed the economic base idea and the urban economic base concept. Hoyt advanced the idea of a mathematical relationship between basic and non-basic employment. Pointing out that the ratio varied from city to city and suggesting the value of the basic non-basic ratio in analysing the economic condition of a city and of discerning economic trends in the city. He described a technique of analysis, which was consisted of estimation of the proportion of basic employment to non-basic employment, estimation of ratio of population to employment, estimation of the future trend in each segment of the base and calculation of the total employment and total future population on the basis of trends in basic employment (Hoyt, 1939).

Economic survey and base study is a method of determining the urban economic base through a local economic survey and base study. Interviews or questionnaires partly on a sampling basis and sometime combination of the two were used to determine the percentage of sales or other business that brings money into the city and the proportion that is local. This information is obtained for manufactured goods sold; for wholesale and retail sales; for receipts from hotels, theatres, tourist homes, garages, gas stations, and other services; for units of government and for educational institutions; and even for the business represented by bank deposits, loans, and insurance policies. In each instance, these percentages are applied to total employment figures for each line of activity to obtain a separation of basic and non-basic employment (Hoyt, 1939).

Significant Enterprises Approach is significant variables study of the economy. The base of this method is that it is unnecessary to survey the complete base, that there are a few “significant enterprises,” an adequate study of which tells what is happening to the community’s economic base as a whole. Through concentrating on these, one could

greatly reduce the work of a survey. However, the subjective aspects of this approach are obvious. The significant enterprise approach does not deal with all economic activities so it cannot result in ratios of basic activity to non-basic activity and to population. Similarly, the minimum requirements approach is technique that suggested a minimum percentage of the labour force of an urban area is required in each sector of the area's economy to maintain the viability of the urban area. Employment beyond this minimum requirement is called "excess employment." The minimum requirement closely approximates the non-basic needs of the urban area, and the excess employment is essentially export or basic (Murphy, 1966 and Blumenfeld, 1955).

The Christaller's (1933) central place theory tries to explain the size and spacing of settlements in the physical world. The basic concept is that human settlements follow the natural principle of order which is centralization and this can be determined by their functions as markets. It is obvious that the number of small towns is greater than cities and larger cities are fewer in a region. Similarly, large cities performed high class and huge variety of functions while small towns have few and small scale functions. With growth in size of the settlements the distance between them is also increasing i.e. hamlets are usually found in clusters, while towns are located away from each other. The range and number of settlement functions are increasing with an increase in size. Similarly, increases in size of a settlement also increase the number of higher order services i.e. a greater amount of specialty found in the facilities. As result, people are eager to travel longer distance to attain this advanced level of the goods and facilities (more durable, valuable and variable). He proposed that a triangular/hexagonal lattice is the most efficient pattern which does not overlay each other and have easy accessibility among all settlements (Losch, 1940; Murphy, 1966; Davies, 1970; and Hagget, 1972).

Christaller work was based on the premise that a certain amount of productive land supports an urban central or central place, which exists because of the necessity of providing goods and services for a complementary area. The basic element of a central place, according to Christaller, is that such a place be a source of goods and services for an area larger than itself. The whole scheme involves relations with immediately surrounding areas. An industry using raw materials from outside the local area, for example, and shipping all its products to another locality is not classed as a central service, and an urban centre dominated by such an industry or industries might have very little importance as a central place. It follows that though one city may be considerably larger than another it is less important as a central place (Murphy, 1966 and Hagget, 1972).

The central-place functions that a centre performs tend to be more complex the larger the centre. With minor exceptions each higher level of central place performs all functions available in smaller central places and additional, more centralized functions as well. Thus the city normally provides, in addition to all the types of services available in the various levels of smaller centres, such relatively complex services as wholesale activity, modernized retailing, stock exchange, and modernized medical facilities. In each case it is the complexity of the services rather than the population of a centre that determines its rank as a central place. In central-place studies, the concepts of threshold population and range of a good are useful. Threshold population has been defined "as the minimum population size of an urban centre which will support an urban function" (Hagget, 1972). Thus in certain localities barber shops may be rare in villages with less than 300 inhabitants. This, therefore, marks the approximate threshold population for barber shops in the locality. The range of a good marks out the zone or tributary area around a central place from which persons travel to the centre to purchase the good (service or merchandise) offered at the place. Theoretically, the upper boundary of this range is the

extreme limits of a product sale. Beyond this limit, the price of the good is too high for it to be sold, either because the distance results in too high a price or because of the greater proximity of consumers to an alternate centre (Murphy, 1966). In study of settlement location and size over space needs centrality analysis of a settlement. Centrality analysis has a number of methods and techniques. Most of the methods measure the nodality rather than centrality.

Davies (1967) emphasized on a method which facilitate cross-spatial and cross temporal comparisons. His method was applicable to any region where size of settlement and its location over space is required to analyse. He found close rank correlation coefficients between virtually all of them. He concluded that “for many broad scales of enquiry general indices from census data are just as suitable criteria for measurements of hierarchic rank importance as other more specific types of functional indices”. The weighted index method is easily applicable to all centrality analysis where business data of retailing, wholesaling and manufacturing is available. The important aspect of this method is focusing on the objectivity of centrality (Lane, 1966; Bennison, 1978 and Gibson and Worden1981).

2.7 Resettlement

To reduce the impact of disasters various types of actions are taken by individuals, community and decision makers before, during and after the disasters. This whole process of actions is called environmental adaptation. The hazard reduction measures or environmental adaptation is product of the following five interconnected and sequential filtering stages (Burton, et al 1978; Smith and Tabin, 1979; Norton, 1980; Khan 1992 & 1993a):

- i. Assessment and appraisal for interconnected and sequential filtering stages.

- ii. Consideration of the alternative adjustments available for the reduction of hazard effects.
- iii. Evaluation of these alternative adjustments and strategies in terms of their suitability for the environmental setting.
- iv. Technical feasibility, economic efficiency and social conformity.
- v. Chooses none, one or a combination of appropriate adjustments.

This process of adaptation is influenced by perception of hazard, range of alternatives available, perception of commendable technology, economic efficiency and linkage with their fellow humans (White, 1964). The public authorities and governments has vital role in adapting hazard reduction policies in three different areas (Burton, et al 1978):

- i. Providing laws, regulation, incentives, and penalties, to guide the choices of individuals and community.
- ii. Making decisions concerning resources and deploying technological adjustments.
- iii. Dispensing hazard adjustment services, including standard of justice and equity in relation to loss from natural hazards.

For hazard reduction measures numerous typologies of adjustments have been offered in which a wide range of choices is available (Burton, et al, 1968; Burton and May, 1972; Kates, 1970; Arey and Bauman, 1971; Mileti, 1980; Sewell and Foster, 1976; Sorensen and White, 1980; Khan 1992 & 1993a). These choices can be summed up into three major categories: accept the losses or adjust the losses accruing from natural hazards either by bearing or sharing; reduce the losses either by modifying the events, or modifying the human use, or emergency measures; choose to change either the location (resettlement) or land use system (Khan, 1992). Bearing the loss and do nothing towards the solution of natural hazard problems is the most practised policy in developing

countries (Sewell and Foster, 1976). The compensatory policy did not reduce the loss of hazards but lifts burden from individuals (victims) and shared by society at large. This response is post disaster in nature (O'Keefe and Westgate, 1977). The relief and rehabilitation assistance in the form of cash, food, medical and reconstruction (Norton, 1980) has two aspects: it is very necessary and helpful for poor communities on the one hand and it increase and encourage development in hazard prone areas on the other (White, 1964; Amin-ul-Islam, 1971; Smith and Tobin, 1979).

To contain and control or prevent the consequences of hazards through engineering protection measures is also the most popular method in developed countries (White and Haas, 1975; Burton, et al 1978; Erley and Kockelman, 1981). However these are options difficult for developing countries as these are very costly (Sewell and Foster, 1976). Land use management and resettlement is seems to be effective hazard reduction option, however in developing countries there are serious problem in its implication due to lack of required infrastructure (White and Haas, 1975; Burton et al 1978; Erley and Kockelman, 1981). The second important issue with the land use management and resettlement in developing countries is the failure of these countries to tackle the problems of displaced hazard-hit communities. The problems of the displaced people exacerbate because of delaying tactics and organizational deficiencies of the government (Zaman, 1991 and Blaikie, et al., 2004).

Pakistan is no exception in such cases. Most of the hazard reduction programmes based on such policies have been unsuccessful because of lack of proper implementation, reliance on single policy instrument, no linkage between hazard management and development, lack of applied social sciences research, failure to understand the causes of the problem, inadequate administrative setup and organizational weaknesses (Khan, 1992 & 1993a).

Resettlement as instrument of hazard reduction programme is used for the entire process of relocation and rehabilitation. Resettlement can be divided into two categories i.e. involuntary and voluntary resettlement. The involuntary resettlement is that one in which the willingness of the affected persons does not involve. The involved population in this case is rather forced through an instrument of law to do so (GOP, 2002 and ADB, 2003). While on the other hand, willingness to pursue new opportunities, even from circumstances of involuntary resettlement, is called voluntary resettlement (ADB, 2003). It is pertinent to mention here that the resettlement process has to ensure equal rights to all vulnerable groups (White, 1964 and Batra and Chaudhry, 2005).

The issues pertaining to resettlement are very complex in nature and mostly inter-linked with each other. Most often the person who is associated with the resettlement organization may not observe or perceive any defect in the process. Similarly he may not be able to get a proper perspective, or if he does, he is not free to express his opinion. The person from outside does not have the right perception because of very limited access to documentary evidence. Also such a person may not have professional capabilities to interpret data even if he can get it (Wehrwein, 1942).

Internationally, resettlement has a common problem of "losses". These losses are purely weighted in terms of loss of physical assets. Most of the resettlement process uses cash compensation strategies. This strategy is always based on compensation of physical losses only. Livelihoods are always ignored in compensation. However, different livelihoods recovery programmes are launched after each resettlement. These programmes have less effectiveness as they targeted low wage jobs. A different location has different capacities of jobs while projects' programmes always look to similar nature of jobs at different location. As a result, extended unemployment is most common observation after each resettlement process (World Bank, 1993). Cernea, (1997) in his Risks and

Reconstruction Model (RRM) identifies eight risks in involuntary resettlement: landlessness, joblessness, homelessness, marginalization, increased morbidity and mortality, food insecurity, loss of access to common property resources, and social disarticulation. The World Bank policy on Resettlement, in principle offers broad protections for affected people which are true only theoretically. In practice, however, the Bank's history of compliance with this policy is marked by total failure (Clark, 2001).

Risk Reconstruction Model (RRM) identifies eight risks as being largely responsible for causing economic and social impacts on affected people. Despite growing evidence that these risks are present in projects, not all aspects of this model can be traced into the involuntary resettlement policies of donor agencies (ADB and the World Bank). The model has not been comprehensively used in resettlement planning and implementation. These eight risks can be placed into two groups: economic risks and social risks. Landlessness, joblessness, homelessness, and food insecurity are fall under economic risks. In many projects, the severity of impact on incomes due to land acquisition is not well identified. Farming provides livelihood benefits that are inadequately captured in surveys. Often there is no control over quantity and quality of replacement land. Smaller, unsuitable plots are often given as compensation. Absolute "landlessness" is not the only issue; impoverishment often results from small, unsuitable, uneconomic plots being given as compensation (ADB, 1998 & ADB, 2003).

In the People's Republic of China (PRC), impacts are wider when "land readjustment" is done affecting host populations as well. Both in the PRC and India, land is generally scarce; hence, any attempt to provide replacement land is fraught with challenges. Locally available agronomic expertise is rarely co-opted for this work by resettlement planners. Although identified in general terms, the quality of the data is often

poor to adequately characterize employment losses and to develop appropriate strategies (ADB, 1998).

The financial and human resources budgeted in the Resettlement Process are inadequate. Assessment of self-employment and business incomes is weak and therefore compensation is poor, e.g., India–highways and the PRC projects. This again is not just a question of total “joblessness”. There are often degrees of impact—unsustainable jobs, job training not suited to needs, low skills among rural people that make them unemployable in urban settings. Support is lacking for unemployed affected persons (APs) after civil works are completed as documented in the PRC and Indian case studies. Responsibility for job creation and training are not clearly assigned, nor are they addressed from the outset (ADB, 1998).

Planning standards to adequately measure and value replacement of homes and structures is weak. Compensation is often insufficient to replace homes. Housing provided by government is generally poorly located and planned, and lack infrastructure. Where cash is paid, insufficient compensation can result in homes that are worse. Those opting to self-relocate lack the know-how to buy a plot, design a home, purchase appropriate materials, and hire qualified builders. Again this is not just a question of absolute “homelessness” but shows there are different degrees of this risk. The surveys and Resettlement Plans (RPs) prepared on the basis of those data do not adequately address the risk of food insecurity in most projects. Monitoring reports do not effectively capture the incidence of this risk. This is a poverty issue and needs greater focus in resettlement planning and implementation. An example where an analysis was carried out to identify strategies to ensure food security was the Nam-The UN 2 project in the Lao People’s Democratic Republic (PDR). In the PRC projects where the smaller and/or poor quality

plots may have been given as compensation, APs may not be able to produce enough food and may lack opportunities for off-farm employment (ADB, 1998 & ADB, 2003).

Four social risks are Marginalization, increase morbidity/mortality, access to Common Property Resources (CPRs), and social disarticulation. There are many instances where consultation has been inadequate or even absent. Efforts made to support social organization have not been promising (Cambodia Highway Project). Monitoring is weak and even where they are good, no follow-up action is taken. APs are rarely given the opportunity to approve RPs. Morbidity/mortality is common especially in irrigation projects where water-borne diseases occur. Malaria, intestinal parasites, poor quality of drinking water, difficulty of access to health services have all occurred in projects. Health issues are not adequately addressed in RPs. The weakness starts with the poor understanding of the role of CPRs, which then leads to inadequate planning of strategies, to provide appropriate responses. Communities are usually unable to provide leadership in this area. Social Disarticulation is common in projects where groups of people are dispersed to different areas during resettlement, thereby breaking traditional family and social links and support systems. This often happens in rural areas where replacement land is scarce. In practice, however, these economic risks are not always absolute in the sense that APs get no land, no jobs, and no homes; and suffer from absolute lack of food (ADB, 1998).

Relative impoverishment is caused by inadequate compensation and resettlement assistance (land given as compensation, employment opportunities, quality of housing, and income restoration strategies). Projects provide ample evidence of this. Essentially, RRM does not address all causes of poor resettlement. Displacement adversely affects people in three ways: (i) livelihoods, (ii) shelter, and (iii) social and community integrity. This is a direct result of poor allocation of resources (management and financial) for resettlement

planning and implementation. Official level commitment to ensuring that these resources are made available can only occur if national legislation and policies are clear on this issue. That will require political commitment at the highest level (ADB, 1998 & ADB, 2003).

The empirical data from projects show that the two broad categories of risks also deserve serious attention. First, legal and policy risks which mean the absences or vague legislative framework and/or weak political will to handle the involuntary resettlement. Second risk is related with implementation body or organization. Improper capacities of finance, skills, knowledge and human resources etc. increase the risk of failure of resettlement process. ADB has been working continuously with Developing Member Countries (DMCs) since 1998 to try and improve national policy frameworks for involuntary resettlement but success has been mixed. In only two countries was ADB instrumental in getting a clearly stated policy approved by governments of Sri Lanka and the Lao People's Democratic Republic (PDR). Follow-up progress in introducing necessary legislation has been slow. This is due to weak commitment at the political level. The Lao PDR and Viet Nam have also adopted lesser policy instruments. Commitment supported by essential legal and organizational frameworks is a key step to improving the livelihoods of affected people (ADB, 1998).

Planned and involuntary resettlement after natural disasters has been a major policy instrument in post-disaster scenario in many developing countries over the past few decades. The experience of involuntary resettlement of 1990s Manjil earthquake in Iran revealed that the displaced families face difficult socioeconomic challenges after resettlement. Most obvious issues were related to livelihoods particularly of vulnerable group (Badri et al., 2006). Northern Part of Flores Island in Indonesia was hit by earthquake and tsunami disaster in 1992, which killed 1,712 people. Indonesian

government prohibits living in tsunami prone site of affected area and constructed resettlement sites for those who were forced to move out from their original location. Many people moved back to the original location where construction is still prohibited. In the resettlement site 94% of housing is occupied. Those who continue to live in the resettlement site were mostly those who do not have a land at original location at present. The reason was not they fear for tsunami but they do not have a place to live in at old site (Norio et al., 2003).

Post-disaster resettlement success or failure is determined by crucial issues like site, layout, and housing. Turkey, Iran, Peru and many other countries fail to address these issues and led to unsuccessful stories of resettlement. In Guatemala, despite insufficiencies in design and material inputs the voluntary and spontaneous post-disaster resettlement has underscored the importance of popular participation for successful resettlement (Smith, 1991). Similarly in 1966 earthquake, the city of Gediz (Turkey) was totally destroyed. Due to geological instability of the original site, the government decided to build a new Gediz four kilometres south of the old site. New Gediz was a well-planned city. However, situation for business was not really encouraging. The response of the residents of former Gediz towards these risks and opportunities led towards an undesirable situation for the government the situation is that as new Gediz city is used for residential purposes only where as people retain their businesses in the old city (Mitchell, 1976).

Components of a resettlement action plan are identification of project impacts and affected population, assistance benefits and development opportunities, legal framework, resettlement assistance and livelihood, budget and implementation schedule, organizational responsibilities, consultation and participation, grievance redress, and monitoring & evaluation. Identification of project impacts and affected population is

carried out through mapping, survey, record of affected properties, socioeconomic studies, analysis of investigations, and consultation with affected people problems (IFC, 2002)

In Pakistan, the only law applicable to resettlement is the Land Acquisition Act (LAA) 1894. This act, however, does not address livelihood issues of the displaced people (Sadiq, 2007). The act was used for the affected persons of Tarbela Dam with previous resettlement experience of large number of refugees from India at the time of partition as well as that of Mangla Dam. However, the affected population were never satisfied with the process of resettlements (WCD, 2000).

National Resettlement Policy (NRP) was tabulated in which the physical losses along with livelihoods were protected. The NRP ensured the right of affected population to claims the losses of physical assets, jobs and even common property resources. It was planned that it will be launched through an ordinance which will be supplementary to existing laws like LAA etc. and will not supersede it (GOP, 2002). The present resettlement and rehabilitation project policies are based on ad hoc mechanism because the government neither have any clear, coherent, specific policy nor adopted the NRP. Consequently there are agitations and litigations everywhere (Sadiq, 2007).

Resettlement of the affected population of Tarbela Dam Project (TDP) was carried under the LLA of 1894. This decision was taken in a high level meeting which was preside by President of Pakistan on May, 1967. It was clear that resettlement of the affected population of TDP was at least level of priority as they adopted an act that was drafted almost century ago. Certainly, this act of LLA could not fulfil the needs of 1960s decade. As a result, the affected population was dislocated without any proper planning for their restoration and rehabilitation (WAPDA-TDP, 1997 and WCD, 2000).

The electric hydro power generation has been started from 19XXX. The dam serves as water reservoir and barrage as well. However, resettlement of the affected population of

TDP is still active issue in courts and at community level. The major cause of this long dispute is the absence of proper legal framework. Initially, the elite and political class gained extra-benefits from TDP in form of land and cash compensation. However, the middle class suffered heavily as their businesses and livelihoods were not compensated. The worst section was low income and tribal people, those who could not registered their claims due to legal or awareness problems. The second issue was the resettlement of relocated population. Those resettled in Khyber Pakhtunkhwa and Punjab faced the social and environmental adaptation problems while those resettled in Sindh faced the hostile community reaction as well. The need for a new national resettlement policy should be based on greater participation of the affected community in planning and design (Tariq, 1993; WCD, 2000 and GOP, 1991).

2.8 Indices of Human Development, Disaster Risk and Environment

Internationally different indices and devices used standardized variables which are convenient to calculate, interpret or apply but having some limitations. Human Development Index (HDI) used variables of average life years, adult literacy ratio, total enrolment and GDP per capita (Anand et al., 1994). Gender-Related Development Index (GDI) is based on variables of averages of male and female life years; male and female adult literacy ratio; total male and female enrolment; male and female earnings ratio (Anand et al., 1995). Gender Empowerment Measure (GEM) has the variables of male and female ratio of political, judiciary, administrative, managerial, professional, vocational and earning income (Anand et al., 1995). Human Poverty Index HPI 1 (for Developing Countries) used the variables of health for estimation of age of 40, literacy ratio of age above 20, clean drinking water and underweight children ratio. Similarly, Human Poverty Index HPI 2 (for Developed Countries) used the variables of health for estimation of age

of 60, ratio of learning of practical knowledge , percentile value of poverty in term of population and employment opportunities (Anand et al., 1997).

Human Development Report is based on these five human development indices. The way it is constructed is very simple to understand e.g. HDI (Fig. 2.11). It has three basic components: a long healthy life, knowledge and standard of living. For each of the component, one or two indicators is selected which is converted to an index that is used for all nations of the world. For example a long healthy life indicator is measures through life expectancy at birth which is calculated by formula:

$$\text{Life Expentancy Index} = \frac{\text{Actual Value} - \text{Minim.Value}}{\text{Max.Value} - \text{Minim.Value}}$$

The calculated value is a ratio which on scale from 0 to 1. Similarly, other two indices are calculated and average of these three indices is the final HDI index value for that particular country/nation. This HDI value provides a general picture of a country/nation and it is dependent only on three variables. Cultural and regional variation, qualitative and quantitative approach differences, and high achievements on one variable scale are some factors that could influence or manipulate the HDI index (Anand and Amartya, 1994).

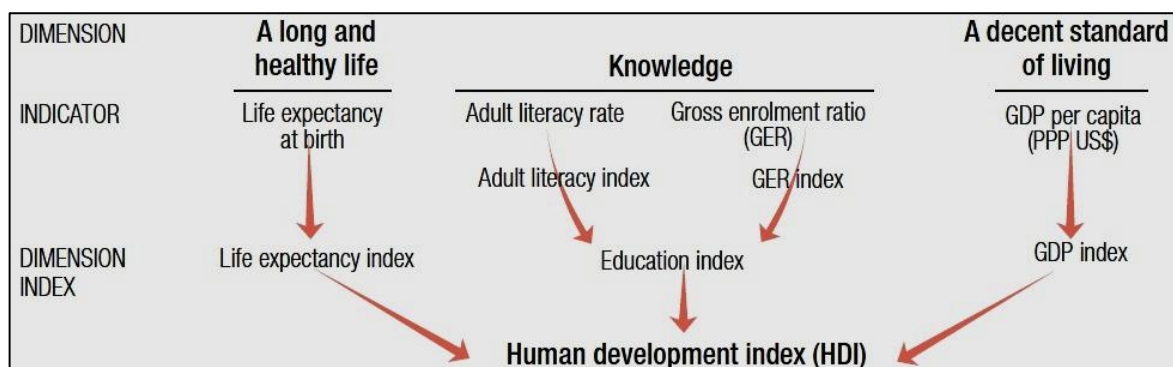


Figure 2.11 HDI Calculation
Source: Anand & Amartya, 1994

A quality-adjusted life year (QALY) is a tool of assessment of health conditions. It assesses health conditions and intervention through a simple questionnaire which has nominal, ordinal and ratio scale values. The different services and facilities of health

provided in a hospital or home are assessed in values forms which reflect the health conditions and ultimately the life expectancy. Year-wise five variables of assessment have individual scale value which combine at the end of each scale. The best health care year has the value of one. Each of one has three value on a scale e.g. No, Some and Extreme. The combined impact on a scale is from 1 to 0 or even below zero. The variables took in accounts were mobility, pain/discomfort, self-care, anxiety/depression and usual activities (Phillips and Thompson, 2001).

Disaster Risk Index (DRI) is a tool which provides opportunity to understand and estimate the risk of natural hazards worldwide. It includes only three hazards of earthquake, tropical cyclones and floods. In this tool, the data input level is a country either it is large like China, India, USA etc. or small like Caribbean islands. The basic yardstick of the risk assessment is vulnerability and exposure of human lives to these three hazards. It further identifies those factors which contribute to vulnerability and exposure of human lives to earthquake, tropical cyclones and floods. Twenty six variables are used for vulnerability assessment which is grouped into eight major headings (UNDP, 2004).

The DRI is a first attempt to assess the global risk of natural hazards. Although, methodologically it is not probabilistic in nature rather it account the past disaster events. However, detail of those factors which could leads to vulnerability is mentioned in detail. The details of these twenty six variables of vulnerability factors are not specific to any hazards rather very general in nature. The most important aspect of this tool is providing an opportunity to collect data about risk assessment at country level and interpret this data in form of risk. It provides country wise detail of these three hazards in comparative manner. The tool is more accurate when the country size is small or single hazard dominate the region or country. Certainly, the DRI is based for future tools of risk assessment (UNDP, 2004).

A web based access multi-hazard disaster risk model was built. In this model of multi-hazards risk assessment different hazards data is available. Data is available for earthquake, tropical cyclone, flood and drought. However, the representation of data and risk assessment is uni-hazard based rather than multi-hazards. This DRI is more focus on assigning a value of a hazard to a country rather to calculate the probability of disaster. This multi-hazards risk indices provides opportunity for planners, investor and world leaders to understand the risk of earthquake, tropical cyclone, flood and drought associated with a region or country. It is basically a decision support tool (UNDP, 2004).

Hazards U.S. (HAZUS) is a tool of earthquake risk assessment developed by the United States Federal Emergency Management Agency (FEMA). GIS provides a platform for disaster risk assessment. In first stage, it was used in HAZUS for earthquake risk assessment and later on in wind and flood (coastal and riverine) hazards. These tools are available at FEMA website for general public also. It helps the FEMA to make preparedness plans at household, community and regional. It has information and methodology for general purposes at household level and as well as advance professional level also for disaster risk assessment (UNDP, 2004).

The Economic Commission for Latin America and the Caribbean/Caribbean Development and Cooperation Committee (ECLAC/ CDCC) work out a method in which combined vulnerability to natural hazards particularly wind, hurricanes and earthquake are estimated in form of index (UN, 2010). In climate change impacts index and water poverty index are developed to assess the impacts of climate change and availability of clean water to different communities. World Summit on Sustainable Development (WSSD) in Johannesburg formulated 19 social, 20 environmental, 14 economic and 8 institutional indicators for sustainable development. The UN Commission on Sustainable Development (CSD) look after the situation over more than 200 countries. Each of the indicators group

is assessed through a global index e.g. Environmental Sustainability Index (ESI) (UNDP, 2004).

2.9 Conclusion

The basic concepts and definitions of the terminology cover most of the basic terms used in this study. These definitions provide the background and theme of usage of these terms. It also explains the new terms particularly in disaster management. Pakistan, right from first day of its independence has been suffered by anthropogenic, hydro-meteorological and geo-hazards. However, the system of disaster management was never proactive rather it was always reactive. Relief was the main focus of activities of the disaster management. After Earthquake – 2005, comprehensive approach in disaster management was adopted. ERRA was established for the rehabilitation and reconstruction of the area affected by Earthquake – 2005. Disaster Management Act – 2010 was passed which provided a platform for the establishment of NDMC, NDMA, PDMCs, PDMA, FDMA, DDMA and other relevant organizations.

The causes and impacts of the Earthquake – 2005 was studied in detail particularly in the Balakot region. The ERRA's Urban Development Strategy was mainly focused in the study of remedial measures of the effects of Earthquake – 2005. The resettlement of the Balakot town is carried out under this strategy. The process of resettlement can be portrayed in the site and situation analysis. The study of site and situation shows that the variables of site and situation in a developed settlement are reshaped in the form of vulnerability to hazards, civic utilities & services, basic and non-basic activities. The study of the process of resettlement in context of risk reduction measure highlighted the problems associated with this option of risk reduction and relationship with site and situation of a settlement. The study of the indices of human development, environment and

risk assessment shows that each and every index has some limitation and room for improvement.

Chapter 3

Research Methodology

3.1 Introduction

The study is focused on the identification of the problems of uncertainty and future prospects of the resettlement of Balakot town in order to streamline the resettlement process. The site and situation factors were analysed for problems identification and solutions were proposed for streamlining the resettlement process. Based on this study, a tool was developed that should be applicable to other resettlement processes with certain modifications. In beginning, the research problem of the study is elaborated which is followed by research purpose, question and hypothesis. Five objectives of the study are given which are aimed at achieving the purpose of the study. The research methodology section is further subdivided in subsections of primary data collection, secondary data collection, data analysis and evolution of the resettlement tool. The subsection of primary data collection has five subheadings: land use survey, employment structure survey, field observations, first stage questionnaire survey & focus group discussion and second stage questionnaire survey & focus group discussion. The nature and sources of secondary data are discussed in second subsection of research methodology. The data analysis elaborate all major steps of data input, analysis, output and presentation required for different statistical, geospatial and cartographic techniques. In last subsection of the research methodology, all important steps are mentioned in sequential order. The universe of the study elaborates the premises of the study. The study area, its mechanism, surrounding areas impacts and/or relation and particularly the red zone of the Balakot is defined. The sampling techniques and size for all primary data collection surveys are well explained for high standard of accuracy.

3.2 Research Problem

Balakot was a central place for its surrounding area and famous tourist's resort. The Earthquake – 2005 totally destroyed the town of Balakot and the government decided to

abandon the present town for dwelling purposes. The foundation of new Balakot town has been laid out to replace the old Balakot town. However the people are still living in shelter and partially damaged houses in the old Balakot town. Most of this development is taking place in private sector. The residents of Balakot town are uncertain about the future of old and new Balakot towns. They are not clear that whether or not the resettlement is optimal.

3.3 Purpose

The main purpose of the study is to identify the problems of uncertainty and future prospects of the resettlement of Balakot.

3.4 Research Question

Why the residents of the Balakot town are uncertain about the future of new and old Balakot towns?

3.5 Hypothesis

- i. The future of the old Balakot town is uncertain because the site is hazardous while the situation is convenient.
- ii. The site is feasible while situation is not encouraging in the new Balakot town, which creates uncertainty about the future of new Balakot town.
- iii. The successful resettlement of the Balakot town is dependent upon citizen's perception.
- iv. The government and the citizen of Balakot perceive opportunities and risks for the old and new Balakot towns very differently.

3.6 Objectives

To achieve the purpose the study is focused on the following objectives:

- i. To study the site of old and new Balakot towns.
- ii. To evaluate the situation of old and new Balakot towns.

- iii. To assess the response of the residents of Balakot about its present physical and economic environment.
- iv. To identify the problems and future prospects of the resettlement process.
- v. To develop a tool for the resettlement process.

3.7 Research Methods

The site and situation variables are the prime factors for the establishment of a settlement and for its future growth and prosperity. These variables are analysed in post-earthquake disaster situation of the old and new Balakot towns. The perception of the residents of Balakot town about their physical and economic environment was studied which helped in identifying the problems leading to uncertainty. On the bases of the existing opportunities and streamlining of the resettlement process, the possible solutions to these problems were suggested. A tool was developed in which all the aspects of the study were incorporated. The basic components of this tool were major variables, minor factors, actual response, desired response, problem identified, proposed solutions and testing response. In this tool, major variables were further divided into minor factors for which the desired and actual response of the residents of Balakot are analysed for the problems identification. The measures to solve these problems in post disaster scenario were suggested from the available resources to streamline the resettlement process and achieve the desired response. To standardise the mechanism, the measures were tested against the response of the residents of Balakot.

The site analysis variables were selected from site factors of hazard vulnerability, water supply, slope aspect, natural resources, relief, geology, defence, building material (stone or wood), fertility of land, fuel supply, flat surface, accessibility and natural resources etc. Similarly, the situation analysis variables were based on present and future potential of employment with particular reference to their basic and non-basic character.

The questionnaire surveys at two different stages were conducted. In the first stage, all those expected aspects of the response of the residents of Balakot town about the variables of site and situation were assessed. After initial data analysis, the problem and future prospect areas were identified. A tool for the desired response was developed to interpret the data precisely. In second stage of questionnaire survey, the desired response was assessed with these new variables. The variables' selection, formalisation and analysis were linked to all previous standardised indices.

3.7.1 Primary Data Collection

Primary data was collected in five different surveys. The first four surveys of land use, employment structure, field observations and first stage questionnaire & focus group discussion were carried out simultaneously as per need of the site and situation variables. The second stage questionnaire survey & focus group discussion was conducted after initial data analysis. The details of these surveys are given in the following lines.

3.7.1.1 Land Use Survey

To identify and assess different activities in the old Balakot town, land use survey on a base map (scale of R. F. 1:200) had been carried out. The base map was prepared from the Quick Bird Satellite image and Google Earth images. In this survey main focus was on manufacturing, public services and commercial activities of the old Balakot town. For manufacturing unit, nature of activity, employment and product sale details had been recorded. In case of public service land use the nature of the service has been recorded. Similarly, in commercial land use survey, number of units, type of activity, building material and employment details had been recorded.

3.7.1.2 Employment Structure Survey

To find out economic base of the old Balakot the assessment of nature of activity as basic or non-basic, number of employment opportunity and sum up effects on the local economy

were conducted. For the basic and non-basic activities, their employment structure data had been collected from relevant units of manufacturing, public services and commercial activities through interviews, field observations and questionnaires. In case of commercial activities, the questionnaire survey was carried out. In this questionnaire survey, the nature of commercial activity, tenure of unit, visiting customers, employments and unit size were found out. On basis of land use survey, the commercial activities units were calculated and grouped according to their nature of function. On basis of commercial activities number, the stratified sampling technique was used for questionnaire survey.

3.7.1.3 Field Observations

The physical and economic aspects of the surrounding environment of Balakot town had been recorded in field observation survey. For this purpose, a systematic strategy for each variable of site and situation had been adopted. In this survey a base map of the study area, GPS tool, video camera and other necessary electronic accessories along with manual recording methods had been used. For some variables it was the sole method of data collection i.e. civic utilities & services, slope stability assessment, number of person employed in commercial unit etc. while in other variables it was complimented by interview or focus group discussion.

3.7.1.4 First Stage Questionnaire Survey & Focus Group Discussion

The questionnaires survey for site & situation variables analysis and resettlement problems identification has been carried out. The focus group discussion method had been practised almost in every cross section of the different communities i.e. agriculture land owners, agriculture & commercial land owners, households, tenants, shop owners, customers, government servants, daily wagers, labours, political activists, hotel owners and visitors. Important aspects/features of the questionnaires are the followings:

- General information of the respondent: his/her name, permanent & present address, age, sex, educational qualification, family members and employment.
- Perception of the residents of the Balakot town about hazards, vulnerabilities, civic utilities, services and resettlement process.
- Detailed information about household, family size, income structure, civic utilities, services, building structure, property, tenure, facilities etc.
- Commercial activity nature, employment structure and sales.
- Public Offices and their services; NGOs offices and their employment structure; and manufacturing type and their employment structure.
- Living standard in old Balakot.
- Perception about new Balakot town particularly living standards, employment opportunity and site vulnerability.
- Visitors number, nature, purpose, and perception about resettlement process.
- Problems associated with employment, civic utilities & services, living standards, land ownership, family disintegration, social adjustment, emotional attachment, vulnerability to hazards etc. in the old and new Balakot town

3.7.1.4 Second Stage Questionnaire Survey & Focus Group Discussion

To mainstream the resettlement process, solutions for the problems of resettlement were proposed on the basis of site and situation analysis. These solutions are connected with the modification of policy, civic utilities & services provision, new incentives at new Balakot town and certainly participatory approach to be followed. To assess the validity of these solutions, second stage questionnaire survey & focus group discussion were carried out. New variables for the response testing were developed in which every aspect of the proposed solution were highlighted. Based on the response of residents of Balakot about the solutions, certain necessary changes have been made in the proposed solutions.

3.7.2 Secondary Data Collection

The pre and post-earthquake conditions data about physical environment, vulnerability to natural disaster vulnerability, population, land uses, land values, housing, water & sanitation, health, education, compensation, voters list, transportation, activities of non-governmental organizations (NGOs) and political administration were collected from census department, revenue and estate collector office Mansehra, District and Tehsil Nazim Offices, Town Committee, Union Councils, ERRA, PERRA, NESPAK, Election Commission of Pakistan, Topographic Sheet, Google Earth's Data, Metrological Department Of Pakistan, NGOs Offices, SUPARCO, Geological Survey of Pakistan, Sarhad Rural Support Programme, Internet and Research Publications.

3.7.3 Data Analysis

The primary and secondary data collected from documentary and field study were analysed through cartographic, statistical and geospatial techniques. For this purpose Macromedia Free Hand 10 (Digital Cartography Software), SPSS 16 (Statistical Analysis Software) and Map-Info 10 (Geographic Information Software) were used. The data was presented in the form of text, tables, graphs, diagrams, charts and maps. The major steps of the data analysis were:

- Creating database in SPSS 16 for questionnaires
- Creating database in Map-Info 10 for geo-spatial analysis
- Correcting and digitizing raster database in Adobe Photoshop 8 and Free Hand 10
- Enlisting and creating tables for site and situation variables
- Data tabulation, graphs, crosstab and statistical analysis
- Geospatial analysis for different variables of site and situation
- Multi-hazard vulnerability and risk assessment for old Balakot town

- Interpretation of the site and situation variables
- Comparison of the site and situation variables with desired (standard) response
- Identification of the problems of resettlement
- Proposing solution for the problems of resettlement
- Testing of the solutions
- Modification in the solution
- Evolution of the tool

3.7.4 Evolution of Resettlement Tool

The process of resettlement is really complex and dynamic one. To control this complexity and utilize the dynamic attribute, this new approach of site and situation variables analysis for the resettlement process has been studied. Based on this study, the resettlement tool has been developed which streamline the resettlement process. The major steps in the evolution of resettlement tool were:

- Site and situation variable analysis for a settlement
- Identification of major factors of site and situation in a developed settlement
- Splitting of these major factors into subset of variables
- Analysis and comparison of these variables for old and new Balakot town
- Enlisting of desired (standard) response and/or situation for each variable
- Comparison of the actual and desired response
- Problems identification against each variable
- Proposing solution from existing resources or scenario of resettlement of Balakot town
- Testing of the solution against the resident response
- Modification in solutions
- Finalizing the tool

3.8 Universe of the Study

After the Earthquake – 2005, the Government decided to abandon some areas for residential purposes based on fault lines and/or future seismic activities. This area was called red zones of the Balakot town. The red zone area of the Balakot town was a collective term for the area of five union councils i.e. Balakot, Garlat, Ghoonal, Sathbani and Kewai. Balakot, Garlat and Ghoonal union councils had more than 99 % of the total population and area share of the red zone. The Sathbani and Kewai union councils had less than 1 % share of the total population and area. These areas and households of these two union councils were isolated from main Balakot town and most importantly, their residents could be easily resettled in other areas of these union councils. To properly understand the problems and opportunities that could streamline the resettlement process of the Balakot town the site and situation variables were studied through field observation, questionnaires, and focus group discussion method were adopted. Households, shopkeepers, office head, households head and manufacturing unit were basic units of data collection. The data was collected through questionnaire survey from households, shopkeepers, offices, visitors and customers. Stratified sampling method was adopted for household and commercial activity survey while random sampling method was applied for visitors and customers survey.

In red zone of the Balakot there were 4244 household, in which 1050 household were surveyed from all 42 mohalla with 25.3 % of sample size from each mohalla. In second phase of household survey, 64 respondents were selected from all mohalla (Table 3.1). Similarly, there were 1500 shops, offices, banks etc. in the red zone area out of which 1437 shops were in the bazaar of Balakot town. Based on activities nature, 300 shops were surveyed from 21 different categories with 23.5 % of sample size. In second phase of commercial survey, 60 respondents were selected from all commercial activities groups

(Table 3.2). Random sampling method was applied for visitors and customers and 100 respondents were surveyed in first phase survey while 50 respondents were surveyed in second phase survey (Table 3.3). In second phase questionnaire survey, 64, 60, 50 and 40 respondents from household, commercial, visitors/customers and land owners were selected, respectively. The selection of the respondents was based on first phase survey, (Table 3.4 and 3.5). Gender, age and education wise distribution of the respondents against their permanent address are given in Table 3.5 and 3.6.

3.9 Conclusion

The research methodology of the study has sequential order of research problem, purpose, research question, hypothesis, objectives, method and universe of the study. The research method is based on the analysis of site and situation variables for identification of problem of resettlement of the Balakot town. The land use survey, employment structure survey, field observations, questionnaire survey & focus group discussion were the tool for primary data collection. Based on primary and secondary data, the interactive physical and socioeconomic environment of the residents of Balakot was assessed for identification of problems of resettlement and opportunities that could streamline the resettlement process. Statistical, geospatial and cartographic techniques were applied during data analysis. To standardise the proposed solutions, it was tested against the response of the residents of Balakot in second phase of questionnaire survey. Evolution of the resettlement tool was the last phase of research methodology. In this phase, comparison of the site and situation variables of the two sites was made, problems were identified, solutions were proposed, solutions were then tested and at the end, solutions were finalized for resettlement of the Balakot town in this tool. At the end, method of a generalized tool of resettlement was discussed.

Table 3.1
Household Survey of the Red Zone of Balakot Town

S. No.	Union Council	Mohalla	Frequency	Questionnaire	% of Total	Sample Size %	2 nd Phase Questionnaire
1	Ghanool	Ghanool	128	46	4.4	35.9	3
2	Balakot	Bagh Baliani	20	5	0.5	25.0	1
3		Bajori	65	19	1.8	29.2	1
4		Baliani	98	29	2.8	29.6	1
5		Bazaar Baliani	27	7	0.7	25.9	1
6		Dhodhiari	45	13	1.2	28.9	1
7		Grid Baliani	20	5	0.5	25.0	1
8		Jalora	55	16	1.5	29.1	1
9		Kach Bali	11	3	0.3	27.3	1
10		Kali Mitti	36	9	0.9	25.0	1
11		Khairan	50	13	1.2	26.0	1
12		Khwaja Khaili	140	43	4.1	30.7	2
13		Kohistan More	63	10	1	15.9	1
14		Lehari	51	13	1.2	25.5	1

Continued

15		Lower Bampura	76	20	1.9	26.3	1
16		Lower Pori	23	6	0.6	26.1	1
17		Lughmani	79	20	1.9	25.3	1
18		Mangli	248	69	6.6	27.8	2
19		Nawaz Abad	21	5	0.5	23.8	1
20		Podina Baila	53	14	1.3	26.4	2
21		Pori	47	14	1.3	29.8	1
22		Rehmat Abad	23	4	0.4	17.4	1
23		Shah Ismailabad	41	12	1.1	29.3	1
24		Single Poi	48	14	1.3	29.2	1
25		Takkia Lehari	13	3	0.3	23.1	1
26		Titwal	64	19	1.8	29.7	1
27		Upper Bampora	64	17	1.6	26.6	1
28		Upper Pori	9	2	0.2	22.2	1
29		Mandi	81	18	1.7	22.2	1

Continued

30	Garlat	Narah	192	44	4.2	22.9	2
31		Qadarabad	165	39	3.7	23.6	2
32		Upper Garlat	176	42	4	23.9	2
33		Upper Narah	353	80	7.6	22.7	4
34		Pandi	270	59	5.6	21.9	3
35		Lower Narah	258	60	5.7	23.3	3
36		Kawas	165	36	3.4	21.8	2
37		Bailla Garlat	144	29	2.8	20.1	2
38		Deri Narah	272	66	6.3	24.3	3
39		Deri	145	32	3	22.1	2
40		Gribabad	149	34	3.2	22.8	2
41		Habibabad	129	30	2.9	23.3	2
42		Ganjkal	127	31	3	24.4	1
Total			4244	1050	100	1061.1	64
Average						25.3	

Source: NESPAK, 2007 and Field Data, 2010

Table 3.2
Commercial Survey of the Red Zone of Balakot Town

S. No.	Type	Frequency	Questionnaire	% of Total	Sample Size %	2 nd Phase Questionnaire
1	General store	450	91	30.3	20.2	9
2	Miscellaneous Activity	285	50	16.7	17.5	15
3	Cloths	100	21	7	21.0	5
4	Restaurant	65	14	4.7	21.5	1
5	Barber	65	14	4.7	21.5	3
6	Electronics	60	14	4.7	23.3	2
7	Shoes	65	14	4.7	21.5	2
8	Toys	60	14	4.7	23.3	4
9	Tailors	60	13	4.3	21.7	2
10	Vegetables	45	13	4.3	28.9	5
11	Hawkers	35	9	3	25.7	2

Continued

12	LPG	35	7	2.3	20.0	1
13	Butchers	13	4	1.3	30.8	1
14	Gifts	20	4	1.3	20.0	1
15	Medical Stores	20	4	1.3	20.0	1
16	Sweets & Bakers	16	3	1	18.8	1
17	Hardware	14	3	1	21.4	1
18	Hoteling	7	2	0.7	28.6	1
19	Jewellery	10	2	0.7	20.0	1
20	Bank	5	2	0.7	40.0	1
21	Furniture	7	2	0.7	28.6	1
Total		1437	300	100	494.4	60
Average					23.5	

Source: NESPAK, 2007 and Field Data, 2010

Table 3.3
Visitors/Customers Survey of the Red Zone of Balakot Town

S. No.	Destination	1 st Phase Questionnaire	2 nd Phase Questionnaire
1	Outside District Mansehra	10	5
2	District Mansehra	1	1
3	Valley	62	29
4	Balakot	10	5
5	Garlat	13	7
6	Ghanool	4	3
Total		100	50

Source: Field Data, 2010

Table 3.4
Landownership Status in Household Survey of the Red Zone of Balakot Town

	Land Size (Kanal)	Commercial land size								Total
		Half Bazaar	¼ Bazaar	2-4 Markets	1 Market	5-10 Shops	2-4 Shops	1 Shop	Nil	
Agriculture	1-5	0	0	2	2	3.0	1.0	23	466	497
	6-10	0	0	1	1	0.0	0.0	2	46	50
	11-20	0	0	0	0	0.0	0.0	1	20	21
	21-40	0	0	1	0	0.0	0.0	0	5	6
	Above 40	1	1	3	0	0.0	0.0	0	3	8
	Nil	0	0	1	1	1.0	2.0	34	429	468
Total		1	1	8	4	4.0	3.0	60	969	1050

Source: Field Data, 2010

Table 3.5
Landowner Response in the Red Zone of Balakot Town

	Land Size (Kanal)	Commercial land size								Total
		½ Bazaar	¼ Bazaar	2-4 Markets	1 Market	5-10 Shops	2-4 Shops	1 Shop	Nil	
Agriculture	1-5	0	0	2	2.0	3.0	1	0	0	8
	6-10	0	0	1	1.0	0.0	0	0	10	12
	11-20	0	0	0	0.0	0.0	0	1	2	3
	21-40	0	0	1	0.0	0.0	0	0	4	5
	Above 40	1	1	3	0.0	0.0	0	0	3	8
	Nil	0	0	1	1.0	1.0	1	0	0	4
Total		1	1	8	4.0	4.0	2	1	19	40

Source: Field Data, 2010

Table 3.6
Gender and Age Wise Distribution of the Respondents

Household								
	Gender			Age				
Permanent Residence	Male	Female	Total	Below 16	16 – 30	31 – 60	Above 60	Total
Outside District Mansehra	14	0	14	1	0	13	0	14
District Mansehra	19	1	20	2	0	18	0	20
Valley	13	0	13	0	0	13	0	13
Balakot	374	16	390	2	57	327	4	390
Garlat	535	32	567	4	103	455	5	567
Ghanool	43	3	46	1	5	40	0	46
Total	998	52	1050	10	165	866	9	1050
Commercial								
Outside District Mansehra	35	0	35	2	15	16	2	35
District Mansehra	33	0	33	3	13	15	2	33

Continued

Valley	32	0	32	2	14	14	2	32
Balakot	139	1	140	3	67	68	2	140
Garlat	55	0	55	3	26	24	2	55
Ghanool	5	0	5	0	3	2	0	5
Total	299	1	300	13	138	139	10	300
Visitors/Customers								
Outside District Mansehra	9	1	10	0	7	2	1	10
District Mansehra	1	0	1	0	0	1	0	1
Valley	61	1	62	6	18	32	6	62
Balakot	8	2	10	6	0	4	0	10
Garlat	13	0	13	5	3	5	0	13
Ghanool	4	0	4	0	2	2	0	4
Total	96	4	100	17	30	46	7	100

Source: Field Data, 2010

Table 3.7
Education Wise Distribution of the Respondents

Household						
	Education					
Permanent Residence	Illiterate	Primary	SSC	Higher	Religious	Total
Outside District Mansehra	2	7	3	1	1	14
District Mansehra	1	10	6	2	1	20
Valley	2	1	4	4	2	13
Balakot	38	110	116	81	45	390
Garlat	65	174	162	108	58	567
Ghanool	6	14	12	9	5	46
Total	114	316	303	205	112	1050
Commercial						
Outside District Mansehra	1	7	11	13	3	35
District Mansehra	1	3	11	12	6	33

Continued

Valley	2	1	12	14	3	32
Balakot	1	15	49	61	14	140
Garlat	0	8	19	22	6	55
Ghanool	0	5	0	0	0	5
Total	5	39	102	122	32	300
Visitors/Customers						
Outside District Mansehra	0	2	7	0	1	10
District Mansehra	0	1	0	0	0	1
Valley	4	37	5	12	4	62
Balakot	0	10	0	0	0	10
Garlat	0	9	2	0	2	13
Ghanool	0	2	2	0	0	4
Total	4	61	16	12	7	100

Source: Field Data, 2010

Chapter 4

Sites of the Old and New Balakot Towns

4.1 Introduction

The variables of a site have fundamental importance in establishing a new settlement. These variables provide the base for utilities & services and vulnerability to hazards in a developed settlement. The Earthquake – 2005, totally damaged the utilities & services infrastructure in the old Balakot town and this site is declared as red-zone. The new Balakot town is proposed at Bakryal for the residents of old Balakot town. The analysis of the variables of the sites of both old and new Balakot towns provides a real picture in which the residents of Balakot interact with the physical environment. Provision of utilities & services and vulnerability to hazards is the product of this interaction of the residents of Balakot town and site variables. The variables of the sites of old and new Balakot towns are studied under three major categories: utilities, services and vulnerability to hazards. In first section, the status of utilities, services and vulnerability to hazards in the old Balakot town is analysed with particular reference to pre and post Earthquake – 2005 situation. Each component of utilities, services and vulnerability is further divided into sub categories. In next section, site of the new Balakot town is elaborated in the same passion. At the end, a comparison is made between utilities, services and vulnerability to hazards of old and new Balakot towns.

4.2 Site of the Old Balakot Town

The old Balakot town is a well-established settlement and its site variables of relief, geology, water supply, nature of the river, hazard vulnerability, defence, building material (stone or wood), fertility of land, fuel supply, slope aspect, flat surface and natural resources etc. have been modified by human activities with the passage of time. Historically, Balakot has strategically important location. A pass to Kashmir valley located close to the Balakot town has also a suitable situation for crossing the river Kunhar. The central location in the valley makes Balakot easily accessible for residents of the whole of

Kunhar valley. The old Balakot town is situated on a gentle slope. Before Earthquake – 2005, the favourable site factors boom its growth and provision of utility & services. The people of old Balakot were well off and the standard of utility & services was very good as compared to its surrounding areas. After Earthquake – 2005, the whole infrastructure was destroyed. The site factor of hazards vulnerability, particularly the earthquake has dominated all the other factors. Although, the other site factors are still favourable for growth and provision of utility & services in old Balakot but the Government has declared this site as red zone. As a result, the standard of utility & services in the old Balakot town has declined. The present condition and assessment of site factors is of prime importance for successful resettlement process as it is one of the major influencing factors for the residents of Balakot about resettlement decision. The site factors in form of vulnerability to hazards, services and utilities in details are discussed below.

4.2.1 Site Vulnerability to Hazards

The old Balakot site and its surrounding (red zone) have been prone to variety of hazards of different intensity. Before Earthquake – 2005, the residents of Balakot and its surrounding had adapted themselves with risk of these hazards. However, the Earthquake – 2005 changed the scenario and the risk of earthquake hazard is now beyond the capacity of the residents of the area. The second important problem is flood, which is frequent hazard and causes damages to lives and property. The commercial area and agriculture land are particularly exposed to the risk of floods. Similarly, the steep slopes and easily erodible rocks in the surrounding area and along the river channel are prone to landslide hazard. The Earthquake – 2005 intensified the landslide hazard vulnerability. Likewise, the altitudinal and latitudinal subtropical location of the old Balakot town makes it vulnerable for cloud bursting, hail, snowfall, wind and thunder storm hazards. The vulnerability of these hazards has been dramatically increased with Earthquake – 2005.

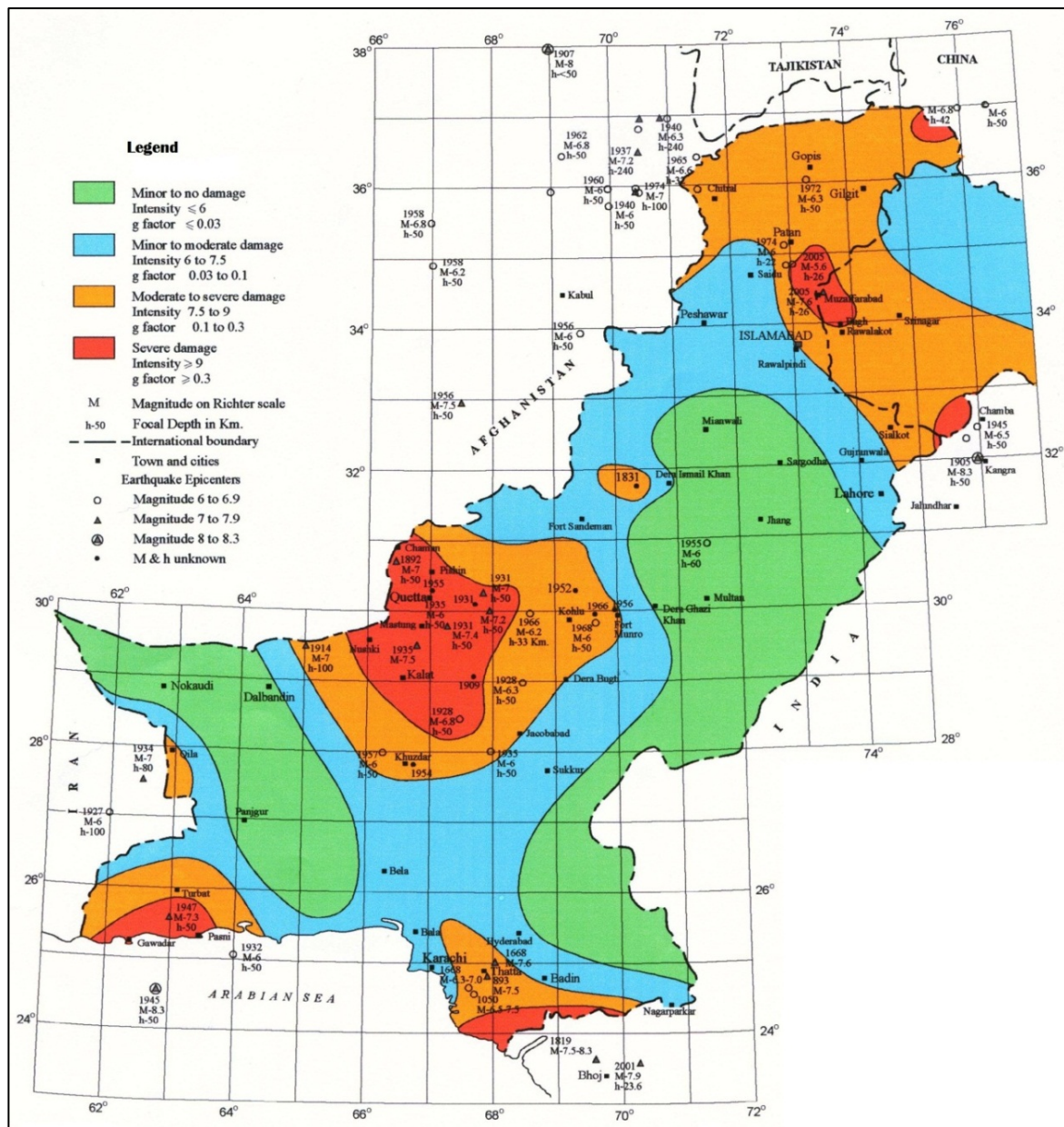
The small torrents and springs are water source for majority of the residents in red zone. Change in water extraction methods and increase in utilization due to population growth and change in living style pressurized the scarce resources of water which increase the drought hazard vulnerability. The year 2006 was the worst for drought hazard as aquifers were shaken due to Earthquake – 2005. The fire hazard vulnerability has been increased after Earthquake – 2005 due to fragile shelter material and loose electricity fitting. The detail assessment of each hazard has been given below:

4.2.1.1 Earthquake

- i. Seismological Setup: Armbruster et al. (1978) conducted micro-seismic survey in this area during 1973–1974 in which they recognized a wedge-shaped northwest directional structure. This structure was named as the Indus Kohistan Seismic Zone (IKSZ). Later on, between the MKS and the MMT a 100 Km long and 50 Km wide feature was confirmed. In this IKSZ, horizontal upper surface is towards south-west while dipping lower surface is towards north-east. Two different seismic zones are identified by Ni et al. in 1991. This identification was based on relocation of hypocentres. The first shallow zone is present from the surface to a depth of 8 km. The second mid-crustal zone is identified at depth of 12 to 25 km which is more pronounced. A decollement surface is considered at the upper limit (at a depth of about 12 km). This is the region where the sediments and meta-sediments are separated from the basement. The two fault systems (Murree & Muzaffarabad; and Panjal & Garhi Habibullah faults) combine at around Balakot and make up a wedge. Balakot is located in IKSZ at the northern top of wedge which is formed by HKS and the MMT faults. Muzaffarabad fault have several sharp stream offsets near Balakot, clearly suggests that this fault is characterized with a right-lateral strike slip motion together with a westward thrusting. This fault bifurcates north westward and

sharp lineaments with strike slip components of faulting along the branches are found in places. Splitting of faults proposed the direction of their break that is closely related with surface seismic waves and consequential earthquake destruction (Nakatai & Kumahara, 2006). The Geological Survey of Pakistan categorized the old Balakot town in severe damage intensity region (Map 4.1).

Map 4.1
Seismic Hazards Zones of Pakistan



Source: GSP, 2006

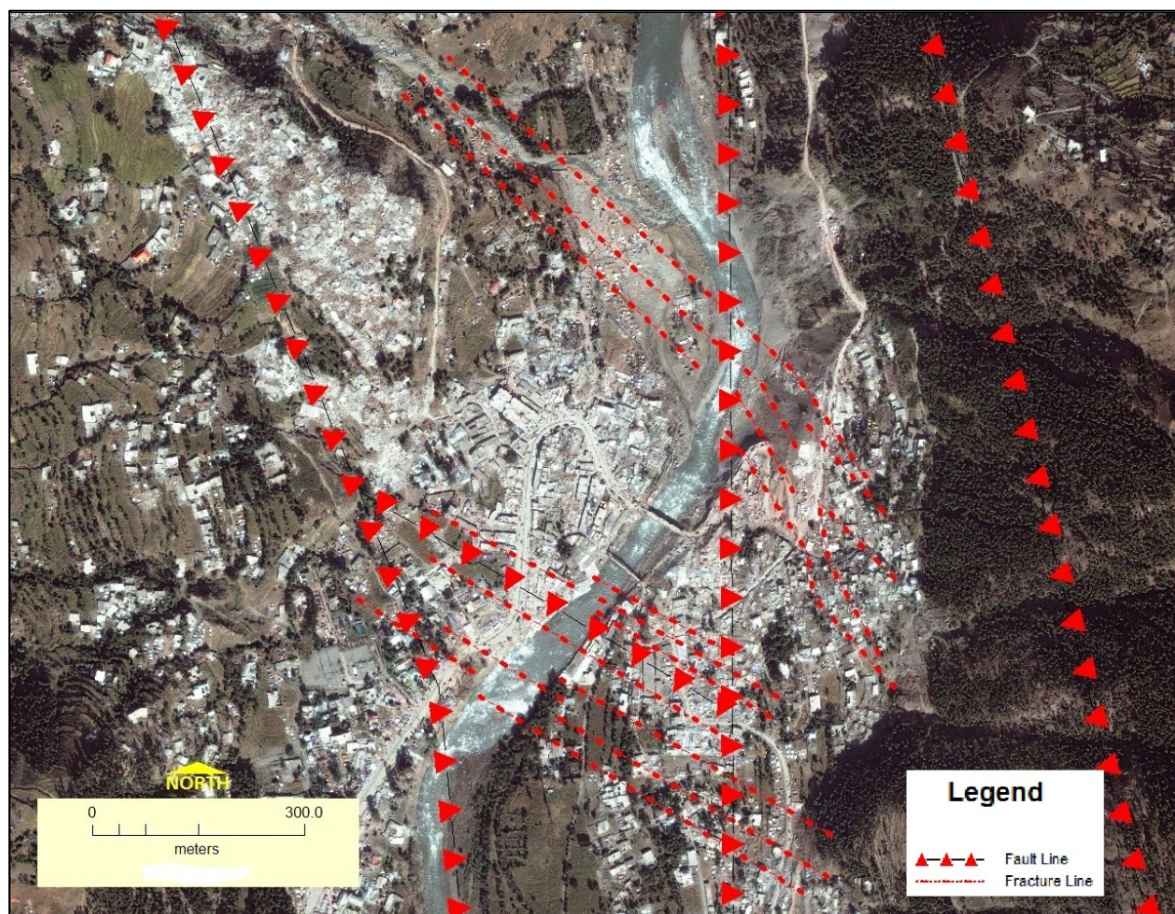
- ii. October 8, 2005 Earthquake: Balakot was one of the worst earthquake affected towns in the episode of October 8, 2005. The total population of Balakot in 2005 was about 250,000. It has been estimated that out of its total population, 200,000 (80 %) were affected by this disaster. It is because of the fact that almost 90 % of the houses in Balakot were collapsed with a heavy rate of casualties. Even amongst the remaining houses in the area, not a single house was safe for dwelling purpose (CRPRID, 2006). It has been observed that besides many other causes ground trembling, slope destabilization, building downfall, liquefaction, poor construction material and architecture design are amongst the important causes for devastation and huge death toll in the AJK and Khyber Pakhtunkhwa (Baig, 2006).
- iii. Micro-Seismic Study: The old Balakot town is located on an active fault line. The intensive geotechnical and seismic micro-zonation study of the old Balakot town and peripheral region was carried out by NESPAK (A consultant of ERRA) and micro-seismic hazard map was prepared. Two fault systems merged here and form a net of four major and twenty small fractures lines. These fractures net are highly vulnerable for seismic activities and risk of earthquake disaster is very high. Based on the studies carried out and looking at the future seismic activities and earthquake hazard vulnerability of the old Balakot town, the government declared the old Balakot town site as red zone and abandoned it for residential purposes. The government decided to take this opportunity and build Balakot on a new site with organized and planned modern urban facilities (Map 2) (GOP, 2006b).

4.2.1.2 Floods

The old Balakot is located in middle of river Kunhar valley and the river is passed right in middle of red zone of the Balakot. The river Kunhar flows from north to south-east and drains into river Jhelum. The total length of the river Kunhar is 165 Km. The geomorphic

analysis of the river Kunhar shows that it has elongated oval shape drainage basin with area of 2706 Sq. Km. The valley is characterised by steep slopes with maximum altitude of 5075 Metre and minimum of 632 Metre (Map 4.3). The elongated oval shape of the drainage basin and steep slopes are the indicators of flash floods. In flash floods, duration of rainfall and contours height or height from river is very important. The river Kunhar has deep gorge, however at Balakot the contours are very gentle which shows the gentle slope from the river. Near Balakot comparatively, the river Kunhar has more active flood plain area than elsewhere in the valley. This active flood plain area is at maximum of one metre height and extensively used for agriculture purposes (Fig. 4.1). This area is exposed to low flash floods. The good example is 2010 floods which severely damaged the standing crops in this area.

Map 4.2
Micro-Seismic Hazards Map of Balakot



Source: Modified from NESPAK, 2007

The shrine of Syed Ahmad Shaheed, number of buildings and other infrastructure on both sides of the river are at three metre height. Similarly, the bridge, market and some residential units are just at five metre height. Here the width of the river ranges from 80 to 150 metre (Fig. 4.2). The flash flood of 1992 and 1993 severely damaged the shrine, bazaar area and residential area on both sides of the river.

Map 4.3
Drainage Basin of the River Kunhar

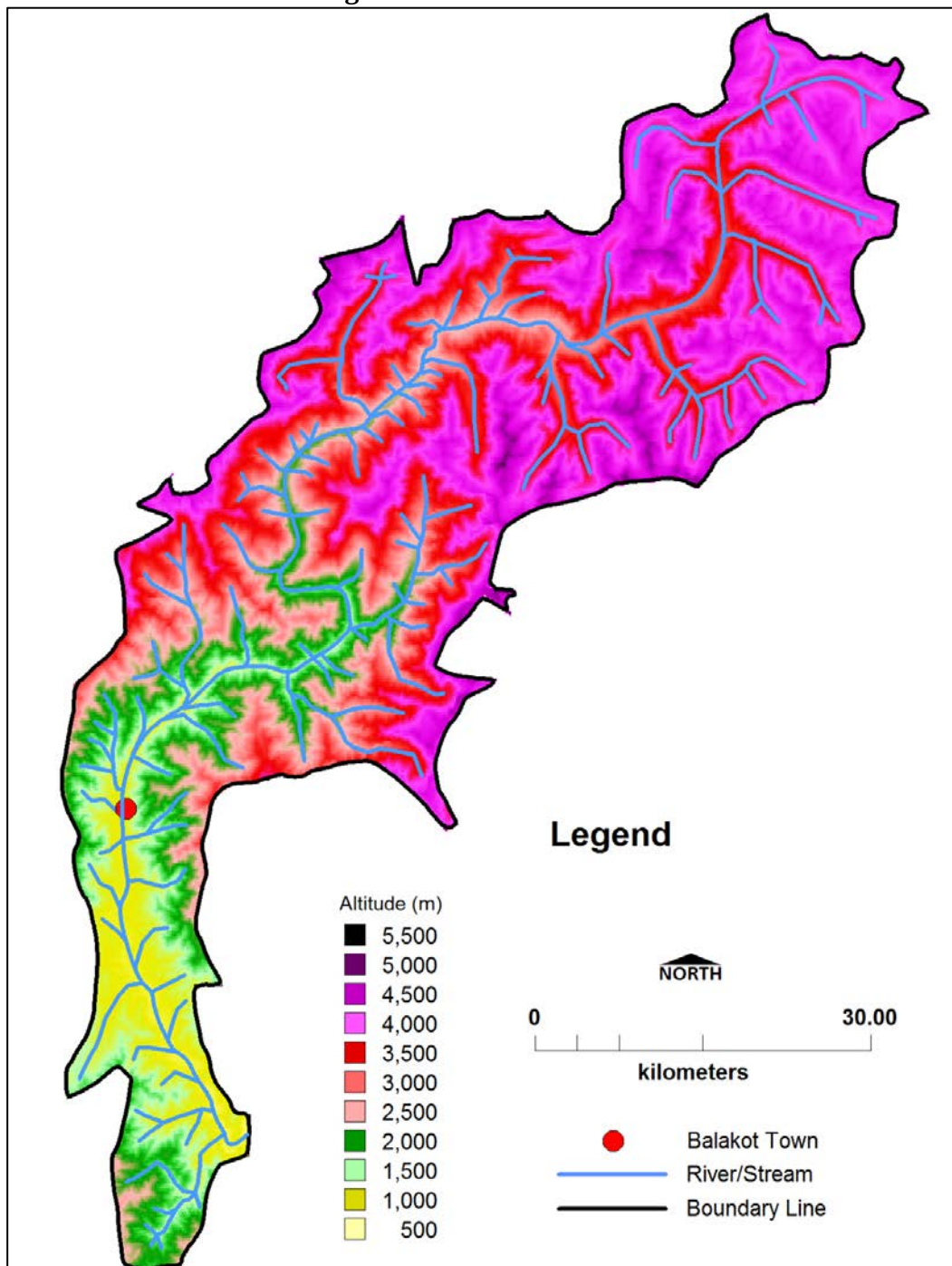




Figure 4.1 River Kunhar Valley near Balakot



Figure 4.2 River Kunhar near Balakot

- i. Vulnerability Assessment for Flash Floods: The old Balakot town particularly the bazaar area is highly vulnerable to the flash floods. The available variables for flash

flood vulnerability assessment are flood level, duration of rainfall, damages caused by flood, and elements at risk. The interrelationship of these variables provides platform for flash flood vulnerability assessment. The flash flood 1992 was one of the disastrous flash floods in the recent history of Balakot. The level of water rose up to six metre and causing severe damages to lives and property. The shrine of the Syed Ahmad Shaheed was destroyed (Fig. 4.3). Many houses and poultry farms located in low lying areas were also destroyed. More property losses were recorded in bazaar area where water reached up to one metre height. The predominant activities in this area are baking, vegetable shops and general retail stores which were totally collapsed by this flood.



Figure 4.3 Shrine of the Syed Ahmad Shaheed at bank of River Kunhar

The major cause was heavy rainfall in short period of time. In months of July and August, there was heavy monsoon rainfall. This event was followed by an episode of high rainfall (273mm) in September. (Table 4.1 and Fig. 4.4). The same

year such continues episode of heavy rainfall in the region caused high flash flood in the river Kunhar. Next year, 173.4 mm of rainfall was recorded during July 22 – 25, 1993. This flash flood also caused severe damages to property as the whole region was under recovery process from last year flood (Table 4.2 and Fig. 4.5). Similarly, twice in year 2010 more than 250 mm rainfall was recoded on February 06 – 09 and July 27 – 30. This flash flood caused damages to property on eastern side of the river and standing crops in the active flood plain area (Table 4.3 and Fig. 4.6). On basis of floods damages, level of flood water, rainfall data, contours, height from river base and elements at risk the flood hazard vulnerability map is prepared (Map 4.4).

Table 4.1
Daily Rainfall at Balakot, 1992 (mm)

D/M	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	4.7	0	26.2	0	14.1	0	0	0	0	0
2	0	0	0	0	0	0	7.6	0	41.3	0	0	0
3	0	5.8	0	0	5.6	0	4.1	40.4	35.3	20.2	0	0
4	1.3	0	0	4.3	0	3.7	1.2	0	1	15.8	0	3.6
5	0.5	0	0	0	33.8	0	0	0	0	0	0	0
6	0	5	3	13.3	0	0	0	2	0	0	0	0
7	3	22.7	0	7.5	0	0	0	0	0	4.5	0	0
8	17.2	5.9	0	0	0	0	0	13.2	1.6	Tr	0	0
9	0	0	0	0	0	2.6	5	15.9	91.7	0	0	0
10	21	0	1.4	15.5	0	0	38	22	181.2	0	0	0
11	5.4	0	11.8	Tr	0	0	10	0	0	1	0	0
12	0.5	0	11.3	0	0	0	5	0	0.6	0	0	8.3
13	0	49	25	0	0	0	15.6	0	0	0	0	0.2
14	0	0	11.4	0	0	0	87.8	0	0	0	0	0
15	1.7	0	0	0	0	0	6.4	0	0	0	0	0
16	0	0	0	0	1.3	0	0	59	0	0	0	0
17	0	0	0	0.3	19.3	0	8.7	25	0	0	0	0
18	0	0	0	11.6	0	0	1	3	2.1	0	0	0
19	0	0	0	0	0	0	9.8	8.2	0	21.8	0	0
20	0	0	18.2	6.6	0	0	0	0	0	0	44.4	0
21	0	0	31.7	15	0	Tr	0	0	0	0	0	0

22	0	0	10.4	9	Tr	11.2	0.3	11.8	0	0	0.6	0
23	0	0	39.4	0	0	2.6	0	0	0	0	0	0
24	28.9	0	13.2	0	0	1.4	71.5	0	0	0	0	0
25	27.4	0	5.4	0	0	0	0	0	0	0	0	1.7
26	13.9	0	25.6	0	0	0	0	1.4	0	0	0	0
27	34.2	0	38	0	5.2	0	3.6	2.4	0	0	0	0
28	13.8	0	0.5	0	0	0	0	34.4	0	0	0	0
29	11.8	12.8	6.5	0	17.8	2.2	0	3.4	0	0	0	0
30	58.8	Tr	7	0	2.7	0	45.4	0	0	0	0	2
31	15.9	0	0	0	0	0	Tr	0	0	0		10.1
Total	255.3	101.2	264.5	83.1	111.9	23.7	335.1	242.1	354.8	63.3	45	25.9

Source: GOP, 2010 (Pakistan Meteorological Department)

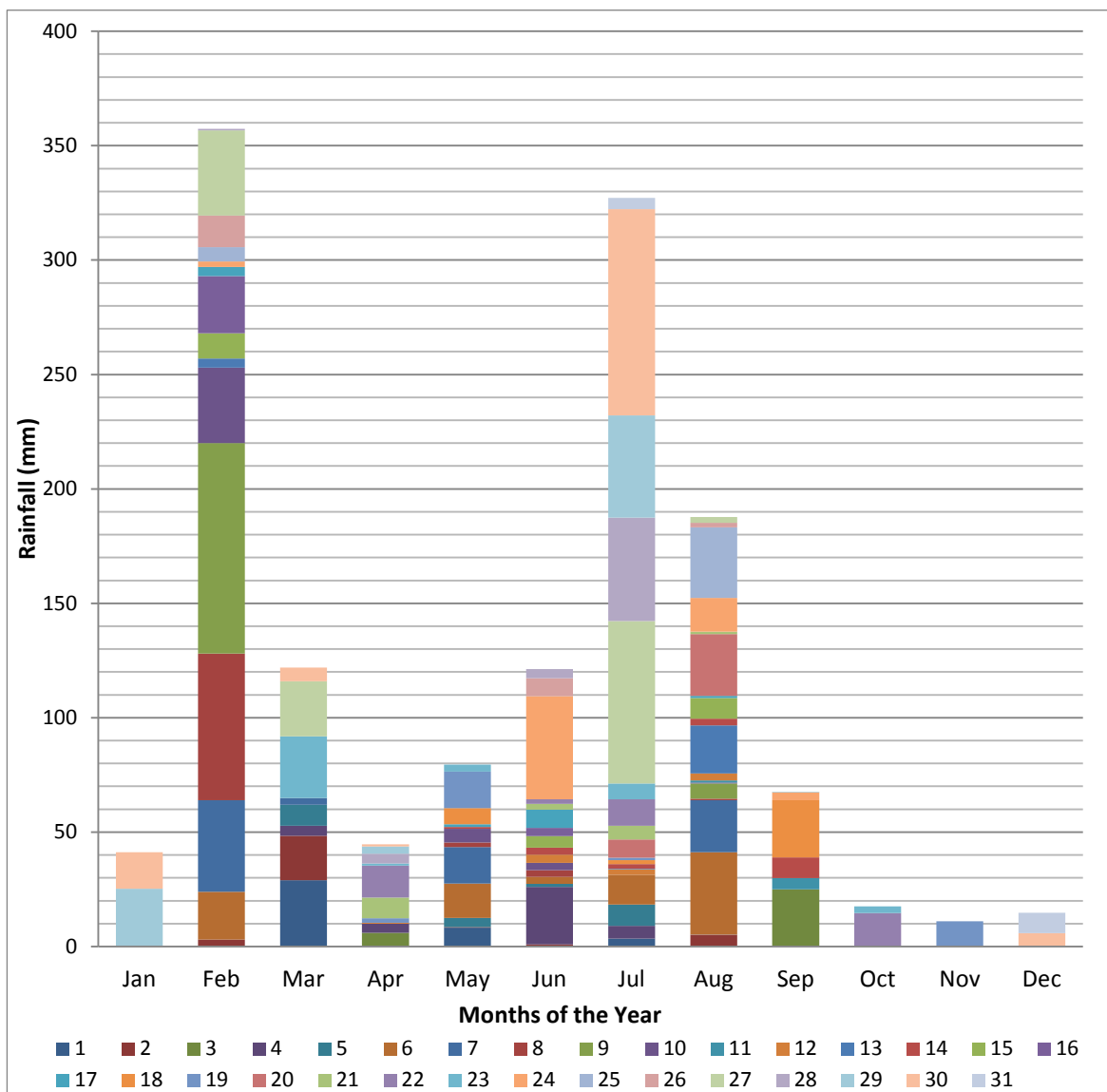


Figure 4.4 Monthly Rainfall at Balakot, 1992

Source: GOP, 2010 (Pakistan Meteorological Department)

Table 4.2
Daily Rainfall at Balakot, 1993 (mm)

D/M	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	24.9	0	0	0	0	18.4	0	0	5.9	0	0	0
2	3.4	0	0	0.4	7	0	29	1.7	57.7	0	0	0
3	11.7	0	0	0	0	0	0	0	11.7	0	0	0
4	0	0	23	0	0	0	26	0	11.6	0	0	0
5	0	0	0	0	0	0	10	0	0	0	1	0
6	21	0	2.9	0	0	0	0	1.1	0	5.1	40	0
7	3.5	0	0	0	0	0	0	2	1.4	2.4	7.4	0
8	3.5	0	0	0	0	0	36	0	0	0	3.6	0
9	0	0	0	3.7	18.2	0	21.9	0	0	11.8	1.6	0
10	0	0	0	0	2.6	0	22.8	13.2	0	0	0	0
11	6	0	40	2	1	0	1.8	0	4	0	0	0
12	10.8	0	62.8	0	0	0	0.7	3.4	1	0	0	0
13	0	0	28.6	0	0	0	0	0	0	0	0	0
14	0	0	6.3	8.1	0	21.6	0	0	1	0	0	0
15	0	0	9.3	8.4	4	11.3	20.7	0	0	0	0	0
16	4	10	0	8.9	12.2	16.4	20	0	0	0	0	0
17	28	45.7	0	0	0	0	9.7	10.2	0	0	0	0
18	0	2.3	0	0	30.8	5	5	0	0	0	6.9	0
19	0	0	0	0	0	4.3	0	0	0	0	0	0
20	0	1.3	0	0	0	0	0	0	0	0	0	0
21	0.6	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	20.9	0	0	0	0	0
23	0	0	42.4	0	0	0	83.3	0	0	0	0	0
24	0	0	34	0	0	11.5	26	0	4.7	0	0	0
25	0	16.6	13.3	0	0	15.4	46.6	35.2	0	0	0	0
26	0	25.5	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	2.2	0	0	0
29	0		0	0	0	0	0	0	0	0	0	0
30	0		0	0	7	0	0	0	0	0	0	0
31	0		1.8		1		11	0		0		0
Total	117.4	101.4	264.4	31.5	83.8	103.9	391.4	66.8	101.2	19.3	60.5	0.0

Source: GOP, 2010 (Pakistan Meteorological Department)

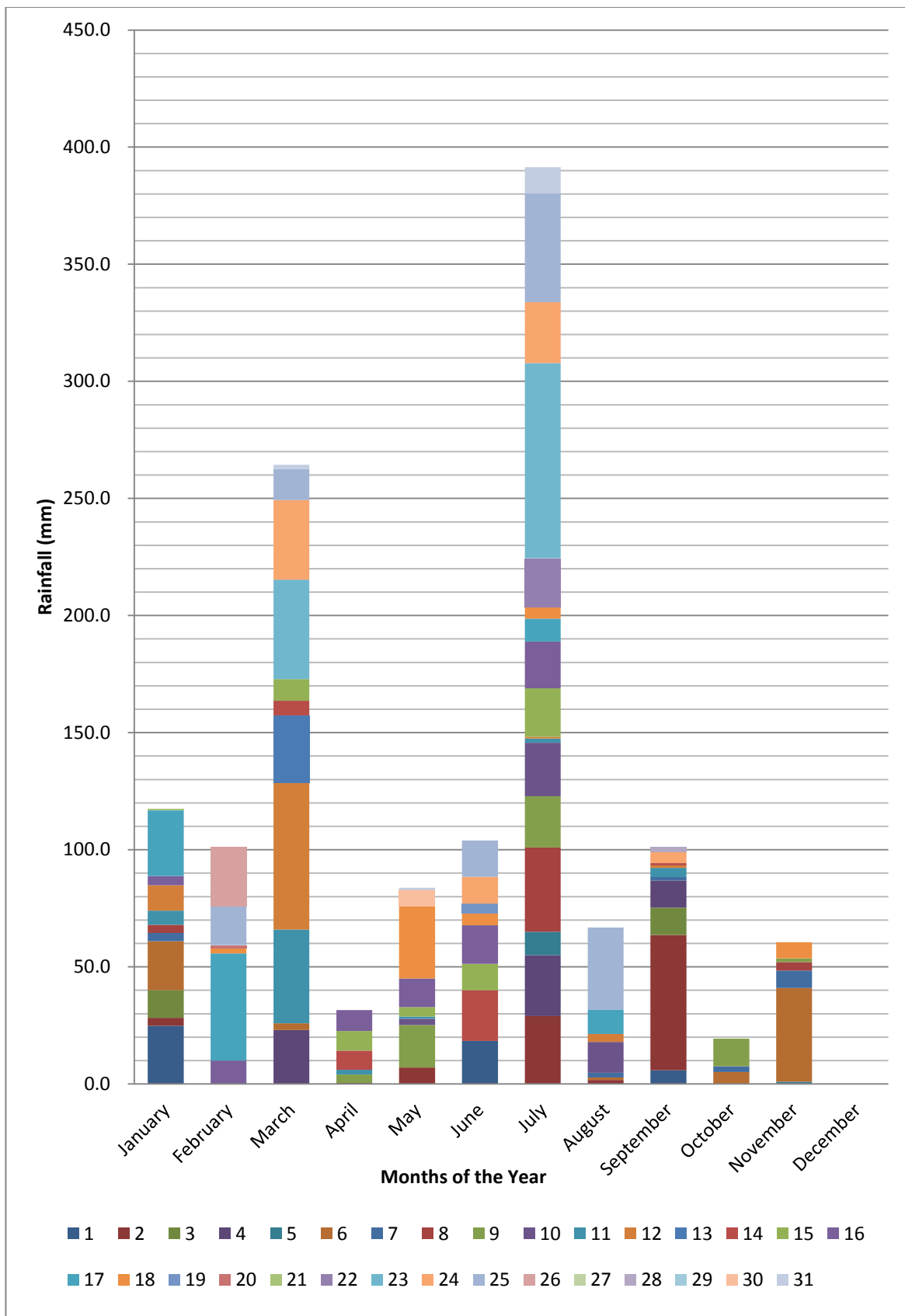


Figure 4.5 Monthly Rainfall at Balakot, 1993
Source: GOP, 2010 (Pakistan Meteorological Department)

Table 4.3
Daily Rainfall at Balakot, 2010 (mm)

D/ M	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	29	0	8.3	0	3.4	0	0	0	0	0
2	0	3	19.4	0	0.2	1	0	5	0	0	0	0
3	0	0	0	6	0	0	0	0	25	0	0	0
4	0.2	0	4.4	4	0	25.1	5.6	0.2	0	0	0	0
5	0	0	9.1	0	4	1.3	9.4	0	0	0	0	0
6	0	21	0	0	15	3	13	36	0	0	0	0
7	0	40	3	0	16	0	0	22.8	0	0	0	0
8	0	64	0	0	2	3	0	0.6	0	0	0	0
9	0	92	0	0	0	0	0	6.6	0	0	0	0
10	0	33	0	0	6	3.2	0	0.4	0	0	0	0
11	0	0	0	0	0	0	0	1	4.9	0	0	0
12	0	0	0	0.4	0	3.6	2.4	3	0	0	0	0
13	0	4	0	0	trace	0	0.2	21	0	0	0	0
14	0	0	0	0	0.8	3	2	3	9	0	0	0
15	0	11	0	0	0	5	0	9	0	0	0	0
16	0	25	0	0	0	3.6	0	trace	0	0	0	0
17	0	4	0	0	1.2	8	0	1	0	0	0	0
18	0	0	0	trace	7	0	1.8	0	25	0	0	0
19	0	0	0	2	16	0	1	0	0	0	11	0
20	0	0	0	0	0	0	8	27	0	0	0	0
21	0	0	0	9	0	2.6	6	1	0	0	0	0
22	0	0	0	14	0	2	11.5	0	0	14.6	0	0
23	0	0	27	0.9	3	0	7	0	0	3	0	0
24	0	2.4	0	0	0	45	0	14.8	3.5	0	0	0
25	0	6.3	0	0	0	0	0	30.8	0	0	0	0
26	0	13.8	0	0	0	7.8	0	2	0	0	0	0
27	0	37.2	24	0	0	0	71	2.5	0	0	0	0
28	0	0.7	0	4.2	0	4	45.2	0	0	0	0	0
29	25	0	0	3.2	0	0	44.6	0	0.3	0	0	0
30	16	0	6	1	0	0	90.1	0	0	0	0	5.8
31	0	0	0		0		5	0		0		9
Total	41.2	357.4	121.9	44.7	79.5	121.2	327.2	187.7	67.7	17.6	11.0	14.8

Source: GOP, 2010 (Pakistan Meteorological Department)

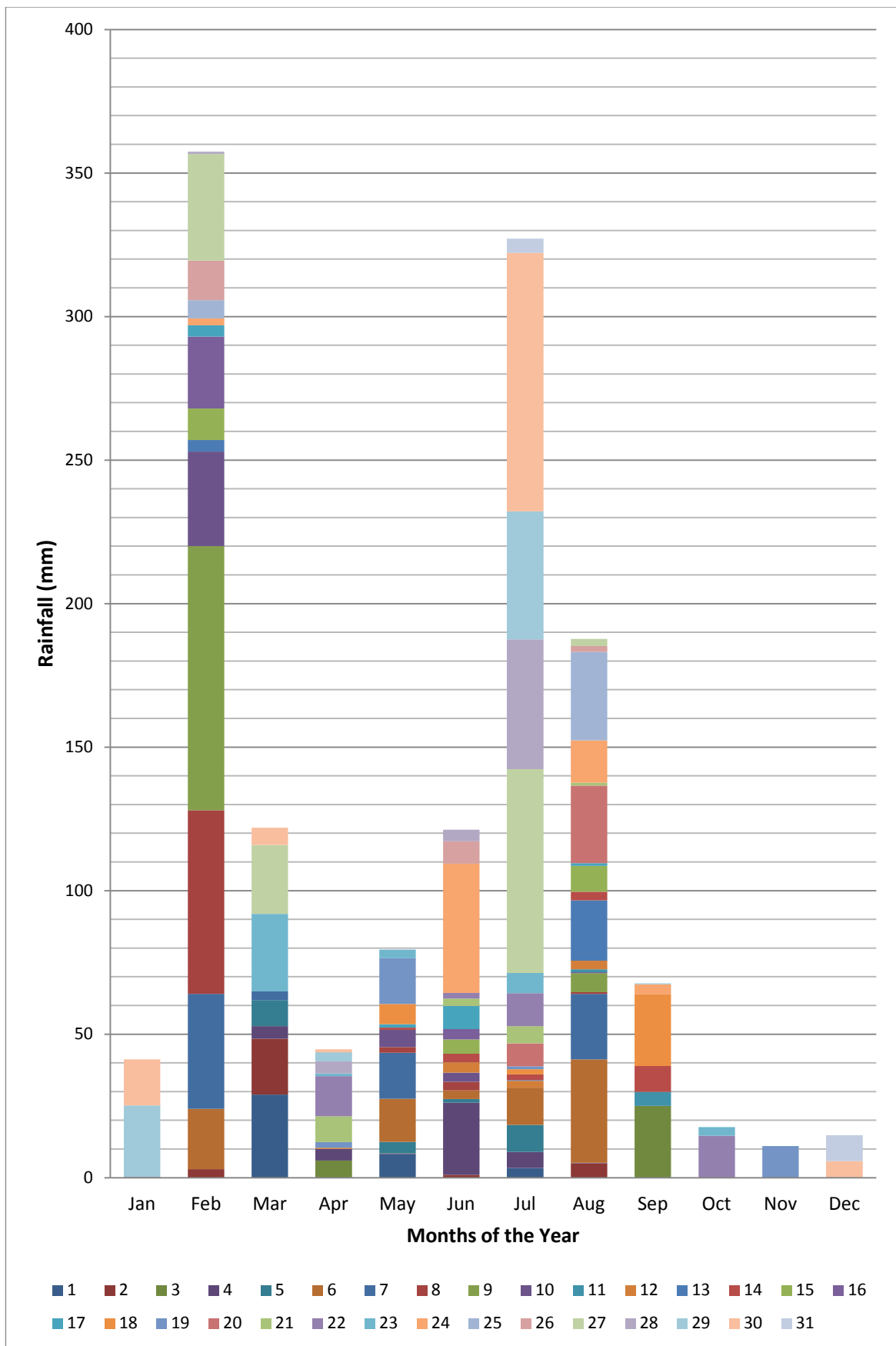
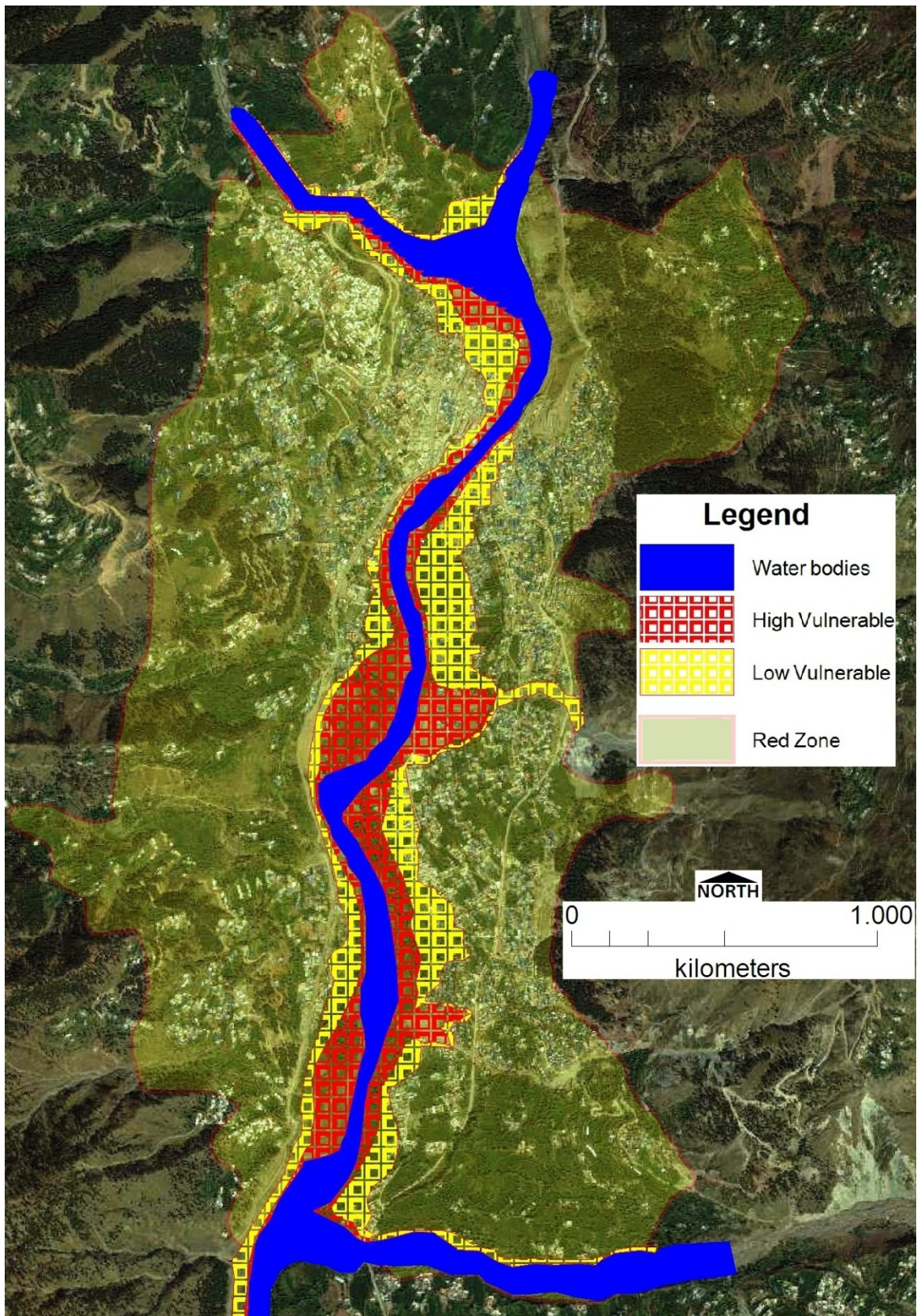


Figure 4.6 Monthly Rainfall at Balakot, 2010
Source: GOP, 2010 (Pakistan Meteorological Department)

Map 4.4
Flood Hazard Vulnerability of the old Balakot Town



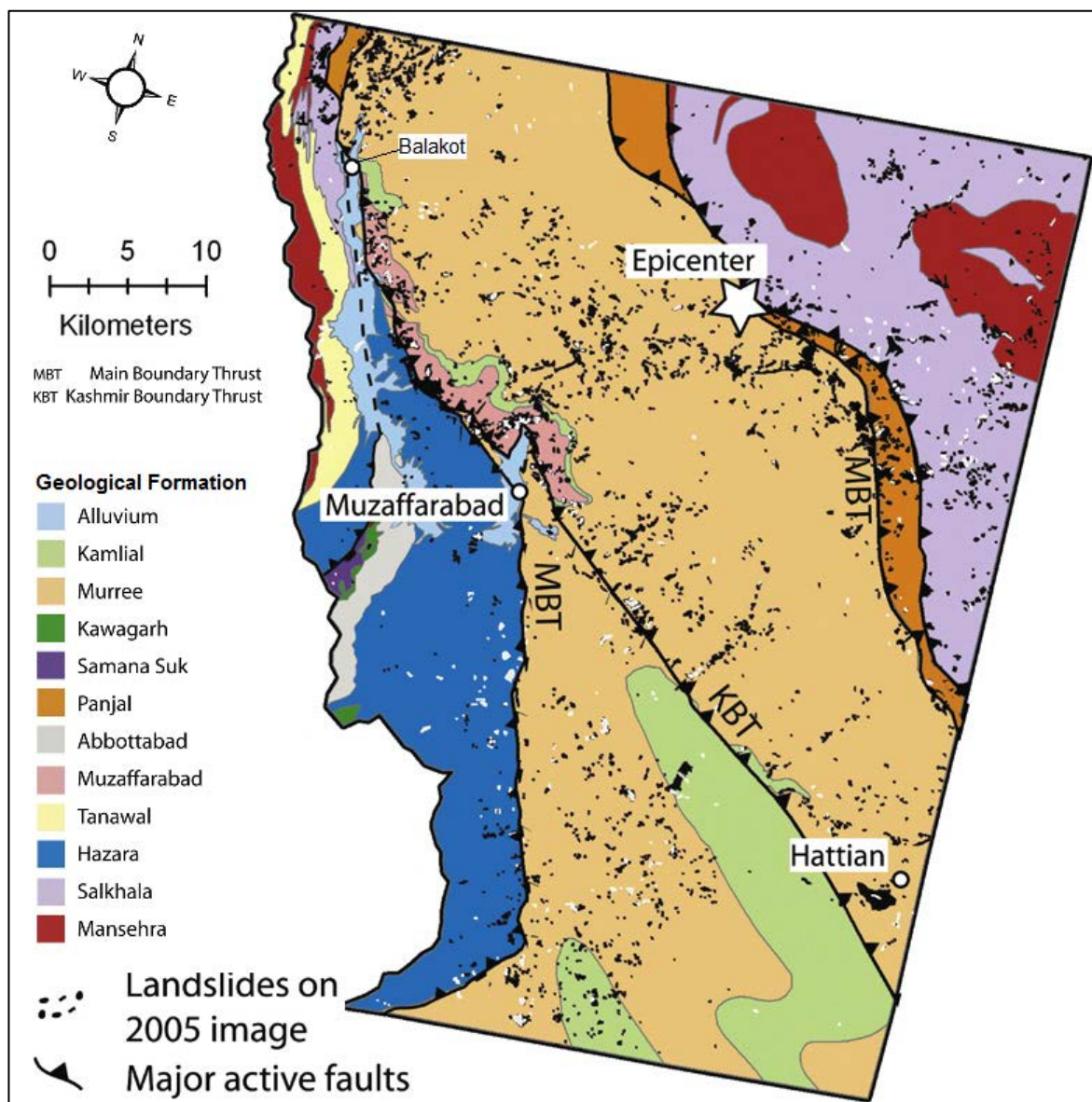
4.2.1.3 Landslides

The Earthquake – 2005 caused a number of landslides in the AJK and Khyber Pakhtunkhwa region. Most of the landslides were occurred along with fault line particularly high intensity landslides were associated with fault rapture. Along this fault line from Muzaffarabad to Balakot, utilities and services infrastructure was heavily damaged. Roads, telecommunication system, rural housing was top of the list of these damages. Number of landslide inventories of the Earthquake – 2005 has been prepared from satellite imageries analysis which shows the number, intensity and density of the landslides events (Sato et al, 2006; Zaré et al, 2009; and Kamp et al, 2008). In the earthquake affected area of 55 by 51 km, the total numbers of 2,424 landslides were identified. Almost 80% (1,925) of the landslides were small (< 0.5 ha), 12% of the total (292) were of medium size (0.5 – 1 ha) and 8% of the total (207) were large size (> 1 ha) (Sato et al, 2006). Kamp and his colleagues (2008) prepared a landslide inventory map of the Earthquake – 2005 affected area (Map 4.5). Considering the geological and seismological aspects of region in detail they developed a landslide hazards risk map of the region (Map 4.6). Balakot is located on active faults and the surrounding region has complex geology. The eastern part particularly along the fault line is highly vulnerable for landslide hazard (Kamp et al, 2008).

The landslide hazard assessment is based on number of variables. For landslide hazards assessment of the old Balakot town and its surroundings some important variables such as fault lines (fractures), geology, water (moisture), slope (contours), human infrastructure, vegetation cover and previous record of landslides in the area were considered. The river Kunhar passes almost in the middle of the red zone and thus has developed short drainage systems. In built up area the nature of rocks and/or soil and drainage system are less susceptible to landslide hazards. The prime factors for landslides

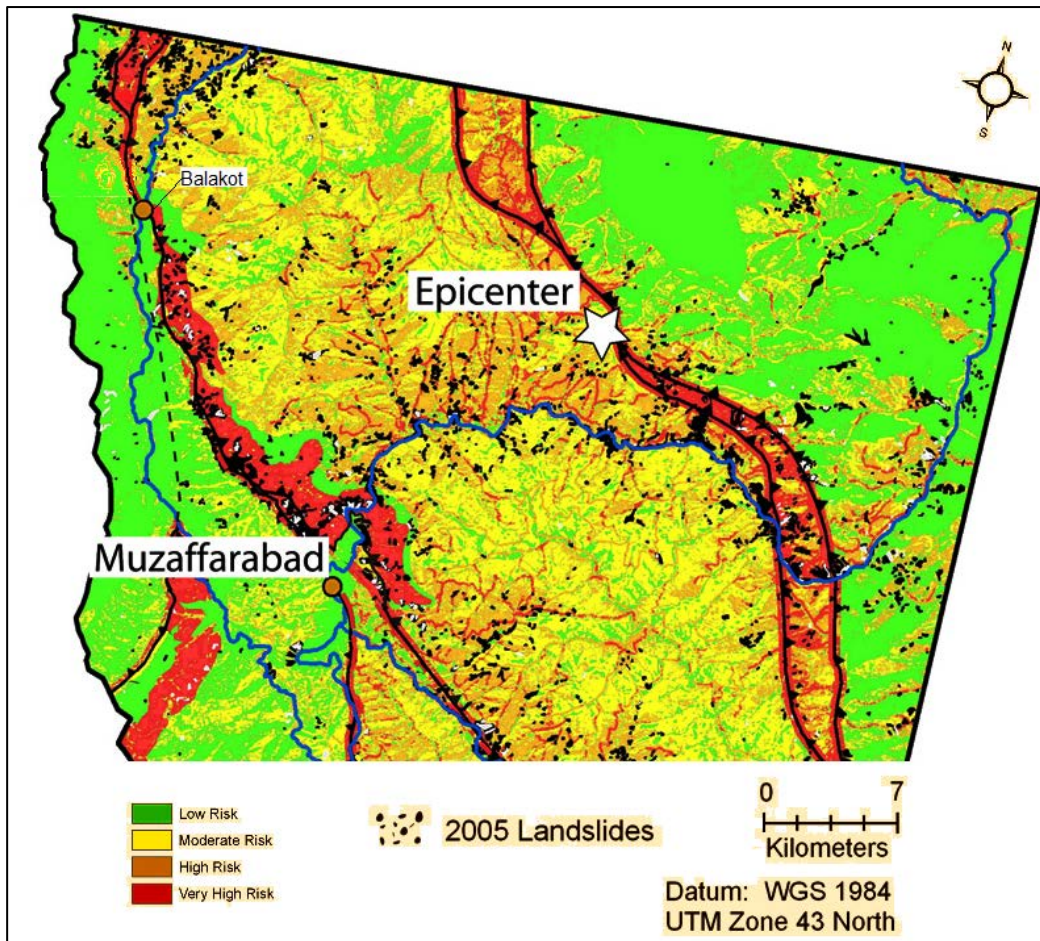
susceptibility in the area are: the vertical cuttings along river, stream and roads sides, surface fractures of faults on eastern side of the river Kunhar, high slope angle, pediment plain area of streams, water or moisture availability along river and stream sides, and unplanned human development activities (Fig. 4.7 and Map 4.7). Most of the area was covered by vegetation because steep slopes were not suitable for agriculture practices. All these important variables are analysed and consequently a landslide hazards vulnerability map is prepared (Map 4.8).

Map 4.5
Landslides Inventory of Earthquake – 2005



Source: Kamp et al, 2008

Map 4.6
Landslide Hazard Risk Map of Earthquake – 2005 Affected Area

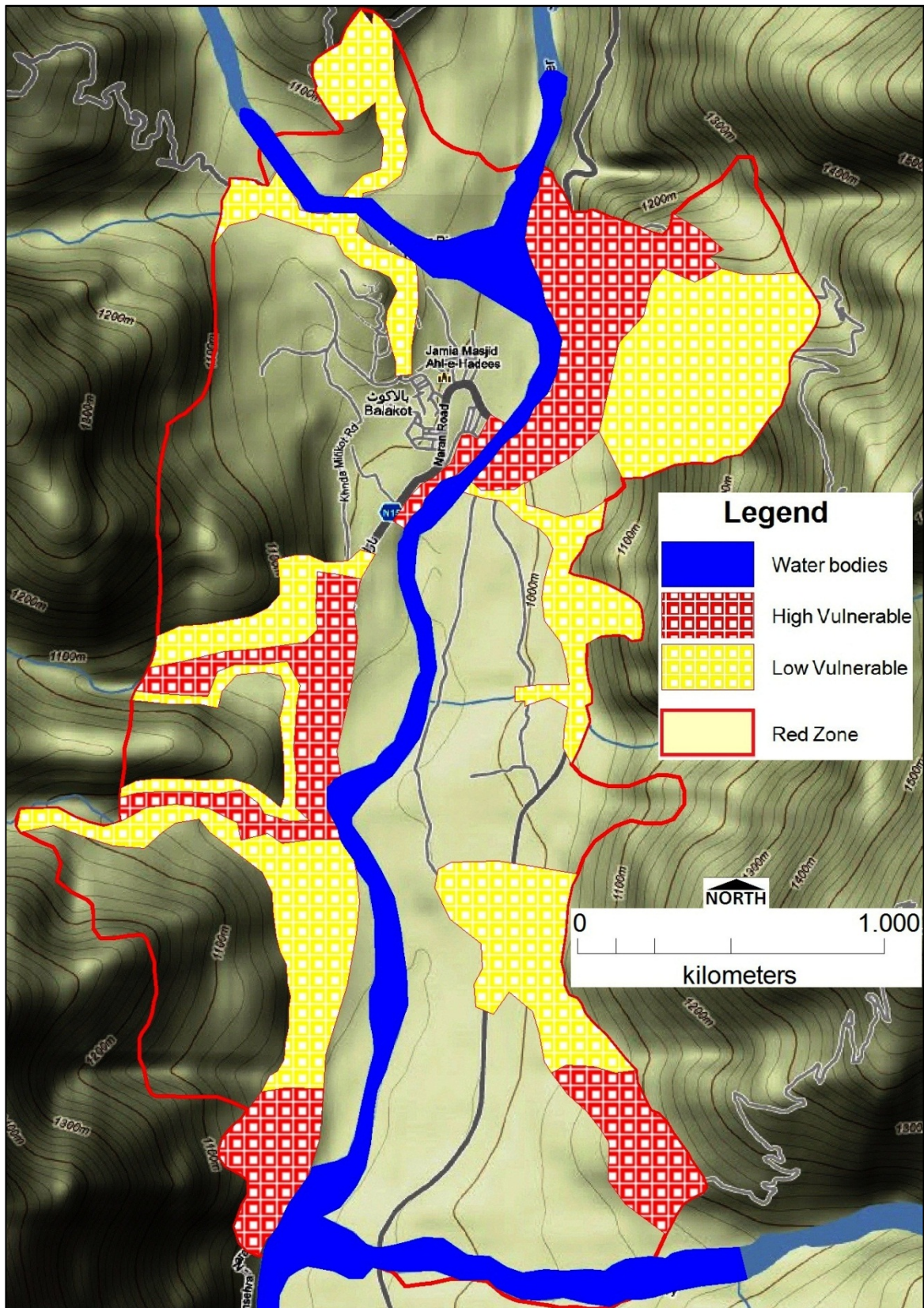


Source: Kamp et al, 2008



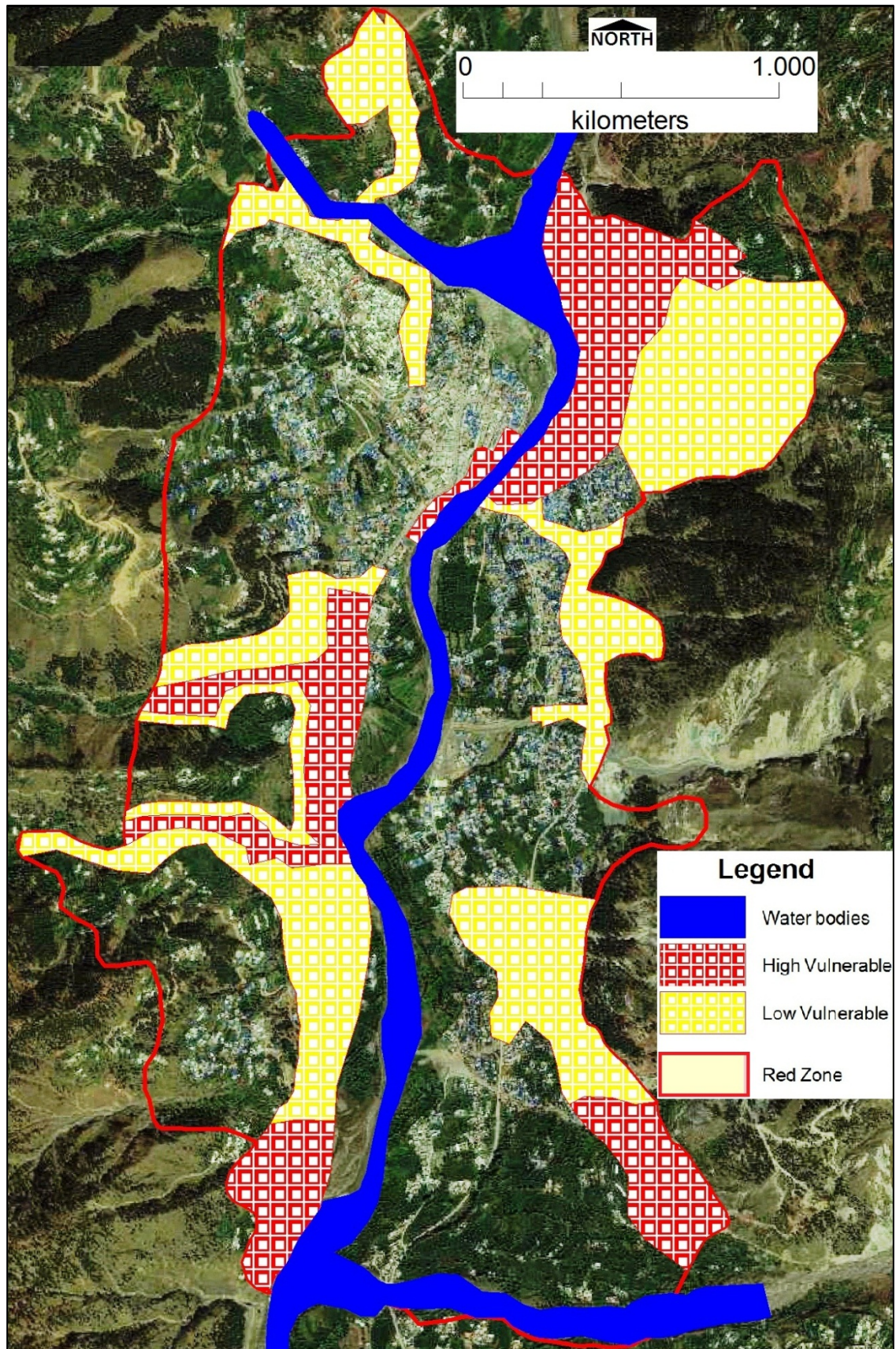
Figure 4.7 Unplanned Developments on Steep Slopes

Map 4.7
Landslide Hazards Vulnerability of the Old Balakot Town



Source: Based on Google Earth Terrain Imageries

Map 4.8
Landslide Hazards Vulnerability of the Old Balakot Town



Source: Based on Google Earth Imageries

4.2.1.4 Hail Storm, Snowfall and Windstorm

Hails are more frequent while snowfall is occasional phenomena in the old Balakot area. Historically, Hails, Snowfall and Windstorm were of low profile hazards as its impacts were limited to standing crops. The Earthquake – 2005 dramatically changed the vulnerabilities of the people to these hazards. The changes in buildings materials or fabricated shelters are highly vulnerable to these hazards. Frequent windstorms every year recorded few injuries and comparatively small property damages. Similar results for hails and snowfall has been recorded. The snowfall in December, 2010 and January, 2011 was more than 10 inches each time and caused damages to fabricated shelters with flat roof (Fig. 4.8).



Figure 4.8 Fabricated Shelters

4.2.1.5 Drought

The major source of water for the residents of the Balakot and its surrounding were river Kunhar, tributary streams and springs. For drinking purposes mainly the springs and streams water is used by the municipality and/or community. The water of river Kunhar

and associated streams are used for agriculture purpose. Like other mountainous areas this region was also facing the problem of clean water availability. The severity of the problem was particularly felt in the early summer months each year. Severe drought conditions were recorded after Earthquake – 2005. The rainfall recorded in the year 2006 was comparably very high but due to shaken and fracture aquifers conditions it hardly fulfil the needs of the residents of old Balakot town. In the upcoming year 2007 the rainfall was much smaller than expected which intensify the already existed drought conditions (table 4.4 & Fig.4.8).

Table 4.4
Mean Monthly Rainfall at Balakot (mm)

Y/ M	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006	196.0	126.0	110.2	101.0	69.0	70.0	597.0	596.0	106.0	32.0	93.0	188.0
2007	3.0	125.0	194.0	39.0	101.0	175.9	230.4	229.0	66.0	6.0	9.0	34.2
2010	41.2	357.4	121.9	44.7	79.5	121.2	327.2	187.7	67.7	17.6	11.0	14.8

Source: GOP, 2010 (Pakistan Meteorological Department)

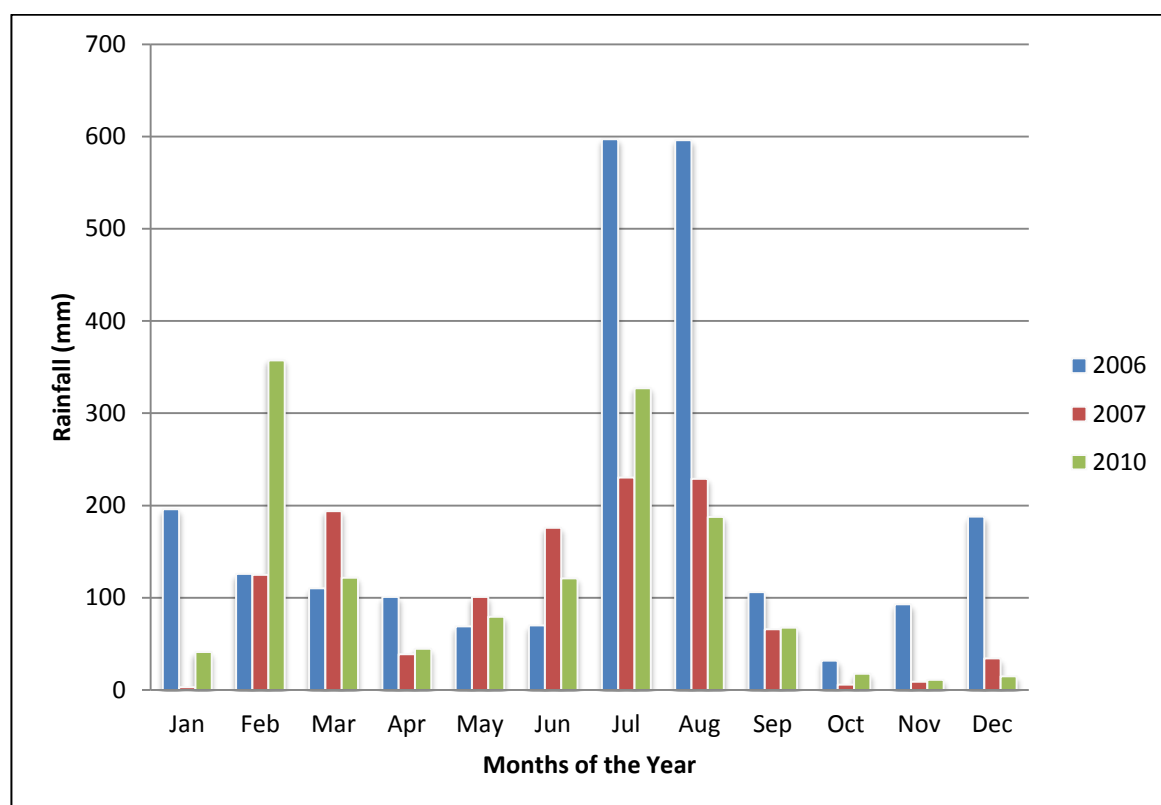


Figure 4.8 Mean Monthly Rainfall at Balakot
Source: GOP, 2010 (Pakistan Meteorological Department)

4.2.1.6 Fire

The fabricated shelters were more vulnerable to fire hazards as there were loose electricity fitting, small kitchen size and the volatile fuel sources. The vulnerability to fire hazards was much higher in bazaar area where shops were attached with each other and there has been no fire extinguisher in any shop. Few cases of fire were recorded, mostly in residential area which caused damages to property at low scale.

4.2.2 Services

The old Balakot town before and after Earthquake – 2005 provided high hierarchical services to surrounding areas. These services not only fulfil the local demand but also offer services to visitors from valley and/or outside the valley. The important aspects of these services were their nature, variety and high class. In this section the site related services are discussed in detail while the situation related services like commercial activities are discussed in upcoming chapter. The site related services are shelter, education, health, transportation, roads and streets, telecommunication, postal service, police, emergency response, government offices, recreation, sewerage system, sanitation and waste disposal. These services are based on site variables which are modified with time in urban environment. The Earthquake – 2005 had very severe impacts on services structure of the old Balakot town. The services of shelter, education, health, transportation, postal service, police, emergency response, government offices and recreation were totally destroyed and immediately started in fabricated shelters after Earthquake – 2005. The infrastructure facilities like roads, streets, bridges, telecommunication, sewerage, sanitation and waste disposal system were also severely damaged, however its restoration took time and some services are still far behind the standards. Each of the services detail is given as follows:

4.2.2.1 Shelters

The red zone comprises 97 % of the total area and population of union council Balakot and Garlat. According to 1998 census the population of union council Balakot was 19,255 with 2777 households and the population of union council Garlat was 18,466 with 2608 households. The Earthquake – 2005 almost destroyed 95% of the total buildings. The affected population was immediately settled in fabricated shelters. In year 2006, there were 3850 total residential units mostly of fabricated shelters in red zone area (NESPAK, 2007). In year 2008, this number increases to 4278 residential units. Almost 95 % (4244) of the total residential units in the red zone area were in these two union councils of Balakot and Garlat (Table 4.5). After Earthquake – 2005, the household size in both union councils was decreased from 7 persons per household in 1998 to 6.5 persons per household in 2008 (NESPAK, 2009 and SRSP, 2009). In these two years (2006 – 2008), the household number was increased from 3850 to 4278 due to development in private sector. The plot sizes of the residential units were varied from 2 Marlas to 6 *Kanals*. In union council Balakot 84 % of the total plot sizes were up to 10 Marlas (Table 4.6). This trend was predominant in whole red zone area of the old Balakot town (NESPAK, 2009). The pre and post Earthquake – 2005 facilities in these shelters are unmatched as these fabricated shelters are of small size with limited facilities.

Table 4.5
Number of Households in the Red Zone of the old Balakot Town

S. No.	Union Council	Mohalla	Number of Households
1	Balakot	Bagh Baliani	20
2		Bajori	65
3		Baliani	98
4		Bazzar Baliani	27
5		Dhodhiari	45

Continued

6		Grid Baliani	20
7		Jalora	55
8		Kach Bali	11
9		Kali Mitti	36
10		Kharian	50
11		Khawaja Khaili	140
12		Kohistan More	63
13		Lehari	51
14		Lower Bamphora	76
15		Lower Pori	23
16		Lughmani	79
17		Mangli	248
18		Nawaz Abad	21
19		Podina Baila	53
20		Pori	47
21		Rehmat Abad	23
22		Shah Ismailabad	41
23		Single Poi	48
24		Takkia Lehari	13
25		Titwal	64
26		Upper Bamphora	64
27		Upper Pori	9
1		Mandi	81
2		Narah	192
3		Qadarabad	165
4		Upper Garlat	176
5	Garlat	Upper Narah	353
6		Pandi	270
7		Lower Narah	258
8		Kawas	165

Continued

9		Bailla Garlat	144
10		Deri Narah	272
11		Deri	145
12		Gribabad	149
13		Habibabad	129
14		Ganjkal	127
1	Ghoonal	Jabba Ghoonal	128
2	Sathbani	Sathbani	29
3	Kewai	Kewai	5
Total			4278

Source: NESPAK, 2009 and SRSP, 2009

Table 4.6
Plot Size of Households in the old Balakot Town

S. No.	Plot Size	Frequency	Percentage Share
1.	Below 5 Marlas	534	35.84
2.	6 - 10 Marlas	723	48.52
3.	11-15 Marlas	137	9.19
4.	16 – 20 Marlas	90	6.04
5.	Above 1 Kanal	6	0.40
Total		1490	100

Source: NESPAK, 2009

4.2.2.2 Education

Education was one of the most important services in old Balakot. After the Earthquake – 2005 the education sector which was severely damaged restored very quickly. The private sector schools had been recovered and fully functional with all facilities. The government or public sector schools are restored in fabricated shelters. Conditions of these schools deteriorated rapidly with time as due to red zone limitations these schools were still in

fabricated shelters. The important aspect of the education services in old Balakot town was that its quality was far better in the region. The girls' higher secondary school and private public schools has number of outside students particularly in union council Balakot. Overall there is no significant change in number of schools although enrolment was affected immediately after Earthquake – 2005. Presently (2010), it is as it was before Earthquake – 2005 (Table 4.7 & Fig. 4.9).

Table 4.7
Education facilities in the old Balakot Town

S. No.	Category of School	Frequency
1.	Girls Primary School	7
2.	Boys Primary School	6
3.	Maktab School	11
4.	Girls Middle School	2
5.	Boys Middle School	2
6.	Boys High School	1
7.	Girls Higher Secondary School	1
8.	Private Public Schools	11
Total		41

Source: Field observation, 2010

4.2.2.3 Health

The tehsil headquarter hospital of old Balakot town was totally destroyed in Earthquake – 2005. It was rebuilt with more advance facilities of surgery at the same location. This hospital along with one dispensary and two maternity homes provide services to local as well as to surrounding areas.

4.2.2.4 Transportation

The old Balakot town was a nodal place. Traffic of all surrounding areas was controlled from old Balakot town as regional main *adda* was here. Number of facilities like public

transport, rent a car, rent a jeep/four wheel, ambulance and small wagons were also available.



Figure 4.9 Govt. High School, Balakot

4.2.2.5 Telecommunication and Postal Service

Land line phone, fax, mobile phone, landline internet and wireless internet facilities were available in old Balakot town. With growing demand the quality of services of these facilities were enhanced. One post office and two other courier company services were available in old Balakot town.

4.2.2.6 Emergency Response Services

After Earthquake – 2005, the emergency response centre was established at Tehsil Municipal Officer (TMO) office, Balakot. This centre was equipped with trained staff, fire fighting, search & rescue and medical first aid equipment (Fig. 4.10). This service of

emergency response was efficiently drilled not only in Balakot municipality but emergencies response of the surrounding areas as well.

4.2.2.7 Government Offices

The old Balakot town was tehsil headquarter and number of government offices of judiciary and administration were there. These offices were visited by a number of people daily from the whole tehsil of Balakot. This function of tehsil headquarter is of fundamental importance for business and growth of Balakot town. The judicial complex, TMA office, office of the Deputy Superintendent of Police, Banks, Electricity Supply main offices etc. are few examples of these services. Police provides the security and maintain law and order in the area which is fundamental need of all human beings. Similarly, the judiciary, TMA office, Banks, and Peshawar Electric Supply Corporation (PESCO) provide their services for whole tehsil population.

4.2.2.8 Civic Infrastructure and Sanitation

Roads, streets, sanitation, sewerage, and waste disposal system are those amenities the provision of which was responsibility of TMA office. All these services structures were severely damaged by Earthquake – 2005. Initially the sanitation conditions were improved by NGOs in 2006. However, due to red zone limitations the roads, streets, sewerage and waste disposal system were untouched. This make life horrible in old Balakot region and civil protest started against lacking of these facilities (Fig. 4.12). In 2008, ERRRA started improving these services with reasonable amount of funds (Table 4.8).

4.2.2.9 Recreation

Balakot was tourists' spot and there were number of recreational facilities particularly in private sector. Small hotel parks, saints' shrines and schools playgrounds. The important aspect of all of these facilities was scenic view of the river Kunhar and pleasant weather conditions of old Balakot town. The Earthquake – 2005 had less impact on these facilities.



Figure 4.10 TMA Office, Balakot



Figure 4.11 TMA Office, Balakot



Figure 4.12 Unpaved Streets in Union Council Garlat

Table 4.8
Infrastructure Facilities in the old Balakot Town

S. No.	Infrastructure Services	Cost (Rs. Million)
1	Water Supply Network	53
2	Sewage Treatment	5
3	Roads	116
4	Streets / Drains	55
Total		229

Source: ERR, 2010

4.2.3 Civic Utilities

Before Earthquake – 2005, union council Balakot was privileged in provision of civic utilities. The municipality water supply network was well established and electricity was available for all sorts of activities. Mostly, the residents used the Liquid Petroleum Gas

(LPG) for fuel purposes. In surrounding areas the water supply was also in pipes but management was almost on community or private bases. The fuel source was mainly forest wood and LPG was used randomly. These utilities were very important as in winter season in northern part of the valley people were also directly or indirectly dependent on these utilities. The Earthquake – 2005 totally damaged this utilities network. The level of utilities in 2010 was still at restoration stage not at recovery and as result the residents were facing enormous problems for civic utilities.

4.2.3.1 Water Supply

Water was supplied through four methods in old Balakot area. First and most extensively used method was spring or stream water collection. In this method the water was directly collected in a tank through a pipe or a small storage was built on collection point and distributed through pipes. In southern part of red zone where soil permit digging to underground water, tube well and hand pumps were also used. For agriculture purposes stream water was diverted in pipes for irrigation or possible any one of the above mentioned three methods. The Earthquake – 2005 totally destroyed the water supply network mostly by damaging the pipe network or by changed aquifers. The present water supply schemes are far behind the standards and residents had severe problem of fresh water supply.

4.2.3.2 Natural Gas

The natural gas supply before and after Earthquake – 2005 was dependent on private sector. Therefor availability of natural gas was lesser concern but the kitchen space and fabricated shelters of kitchen was major adaptation problem.

4.2.3.3 Electricity

After Earthquake – 2005 electricity supply was immediately restored and available in all part of the red zone. The major concern was loose fitting in fabricated shelters. Very few

houses have proper electric wiring system. This loose fitting of electricity has increased the vulnerability to fire hazards.

4.3 Site of the New Balakot Town

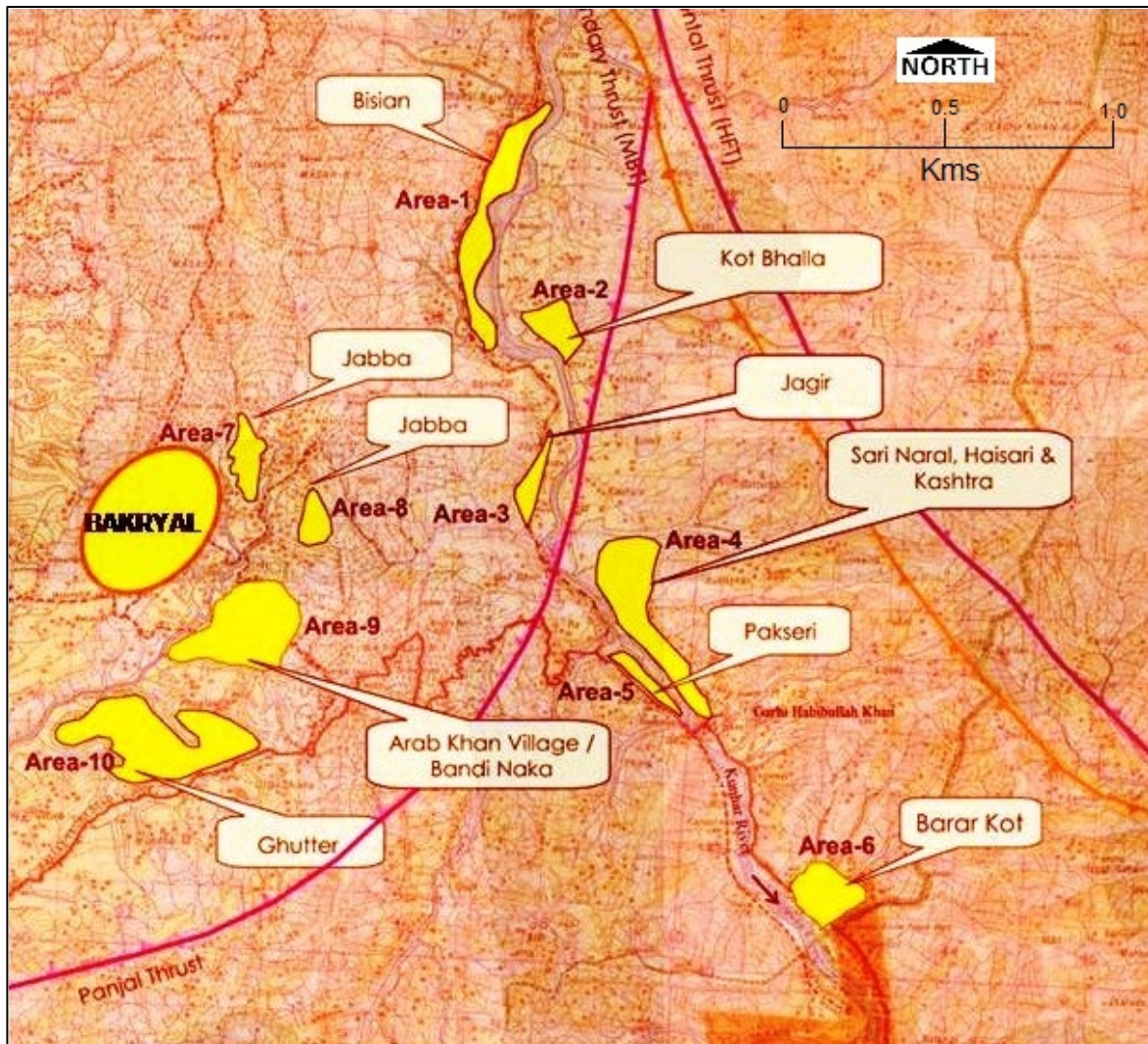
The site of the new Balakot town is located at distance of 23 Km from the old Balakot town and just 11 Km away from Mansehra city. After Earthquake – 2005, ERRA hired the services of NESPAK for site selection and master plan development of new Balakot town. NESPAK identified 11 sites all in tehsil Balakot area for new Balakot town. Bakryal, the site for new Balakot town was selected purely on criteria of large area availability (Table 4.9 & Map 4.9). The site of Bakryal has huge expansion capacity with low seismic vulnerability. The contours are comparatively gentle so the landslide hazard vulnerability is very low. Most of the area has drainage towards river Siran (a tributary of river Indus). The new town has only one major issue and that is of water supply. A number of schools, health centres, mosques, community centres and parks are under construction. The access road along with other small roads and streets are also under construction.

Table 4.9
Proposed sites of new Balakot Town

S. No.	Proposed Sites Area	Area (Hectares)
1.	Bisian	44
2.	Kot Bhalla	14
3.	Jagir	12
4.	Sari Naran	30
5.	Pakseri	7
6.	Barar Kot	15
7.	Jabba	10
8.	Jabba	10
9.	Arab Khan & Bandi Naka	40
10.	Ghutter	67
11.	Bakryal	506

Source: NESPAK, 2007

Map 4.9
Proposed sites of the new Balakot Town



Source: NESPAK, 2007

4.3.1 Master Plan of the New Balakot Town

NESPAK has carried out transportation, topography, reliefs, slope analysis, geotechnical, geological, environmental, and hydrological technical studies of the site of new Balakot town. After detail studies and designing the NESPAK has developed a master plan for the new Balakot town (Map 4.10 and Fig 4.13). This master plan is based on the following principles:

- a. Development of a growth pole through this new township.
- b. Creating an environmentally sustainable and seismically safe atmosphere.

- c. Providing functionally safe neighbourhoods.
- d. Making amenities and facilities accessible to all residents.
- e. Designing a town as per topography so that it is economically viable in execution and functioning.
- f. Based on community requirements and life style.
- g. A contemporary model town.

Initially in 2006, the total area of the site was planned 1250 Acres (10000 *Kanals*). However, during geological study the granite rocks along with other minerals were explored in government forest area. As a result, this area was abandoned for residential purposes and new peripheral area was included in the master plan. The present master plan consisted of area of 1,425 acres (11,400 *Kanals*) that will be developed in two phases (Fig. 4.14). Initially, the project compilation time was three years but due to land settlement issues it was delayed. Presently, the developmental works is being in progress that will be completed at the end of 2011. In New Balakot town, the total area has been divided in six major land uses. Almost 87 % area of the total area has been consisted of three major land uses i.e. residential, parks/green and roads/streets area (Table 4.10). The new Balakot town has been established with a vision that it will be expanded in three different directions i.e. south, east and west. It will have the capacity to house 2.5 million people in the next 25 years. The expansion areas available in these three different directions are 1600, 1400 and 1500 Hectares.

Table 4.10
Proposed Land Uses in New Balakot Town

S. No.	Land Use	Percentage Area
1	Residential	33
2	Commercial	4
3	Public Buildings	7

Continued

4	Parks/Green	23
5	Graveyard	2
6	Roads/Streets	31

Source: NESPAK, 2007

Map 4.10
The Peripheries of the new Balakot Town



Source: NESPAK, 2007

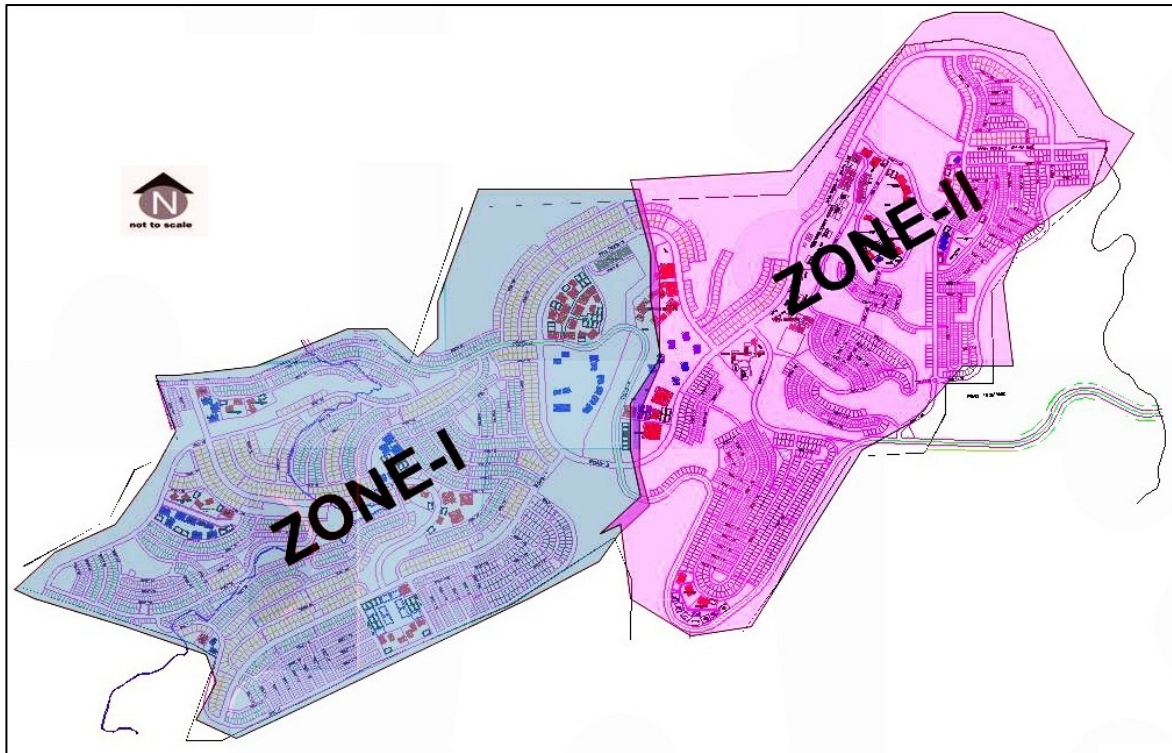


Figure 4.13 Master plan of the new Balakot town
Source: NESPAK, 2007



Figure 4.14 Land Uses in the new Balakot town
Source: NESPAK, 2007

4.3.2 Utilities and Services

The new Balakot town has been established with the state of art town planning concept i.e. green town planning. In the master plan, accessibility (roads & streets) has the second largest portion of 31% of the total area while the greenery and parks on third with 23% of the total area. The parks & green areas consisted of small public parks and green areas within commercial areas, play grounds and preservation of forest as central park. The residential area has the largest portion of 33% of the total area. The residential area has been divided into three major categories of plot sizes with major share of 10 and 7 Marla plots (Table 4.11). The public buildings has the share of 7% of the total area. This 7% consisted of educational institutions, health facilities and civic centres. The educational institutions has the level of primary schools, secondary schools, degree colleges, vocational and training institutes with the total number of 19 institutions. the health facilities included one town hospital and two basic health units. The civic centre has the types of religious buildings, civic centre auditorium and library function halls. the proposed religious building has one markazi mosque, central mosques and ten mohallah mosques. the share of commercial activity area is 4 % with the central, neighborhood and sub – neighborhood level facilities.

Table 4.11
Proposed Residential Plot Sizes in New Balakot Town

S. No.	Plot Size	Frequency
1	7 Marla	1444
2	10 Marla	2052
3	20 Marla	504
Total		4000

Source: NESPAK, 2007

For drinking and household use the new Balakot town has two water collecting sumps: first one in south from river Siran tributaries and second one in eastern side from river kunhar tributaries. Water from these sumps has to be transported to main water reservoir, comparatively at more height so that the whole town can be served. These water collecting sumps has limited capacity while its own surrounding needs and utilizations will be increased with the passage of time. Hence, there is ultimate plan of water supply to new Balakot town from river Siran and river Kunhar.

Contoure (slope) based sewage treatment facilities has been proposed in the new Balakot town. Initially, the new Balakot town has two sewerage collections points with capacities of 1 and 1.25 million gallon per day (MGD). The ultimate sewerage treatment collecting points are in north western and south western sides with respectively, 4.5 MGD and 9.5 MGD capacities (Fig. 4.15).

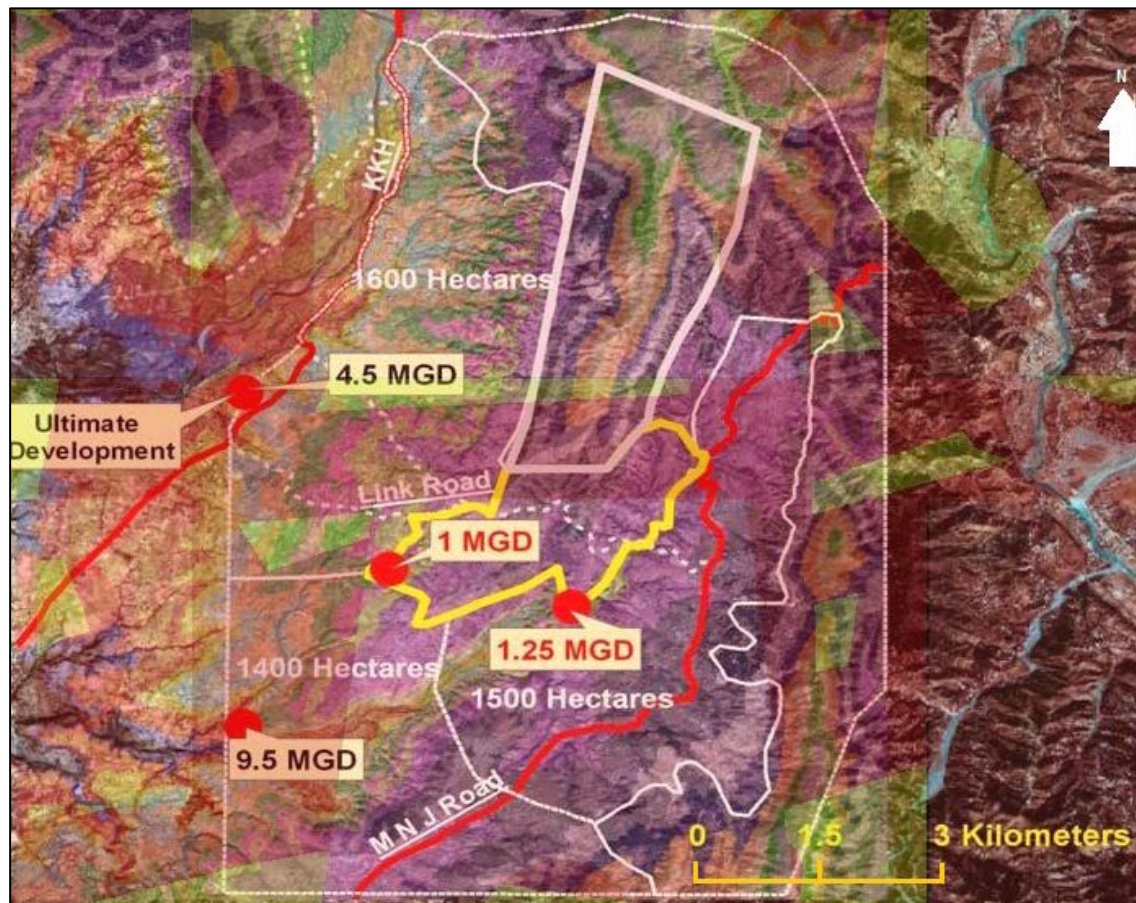
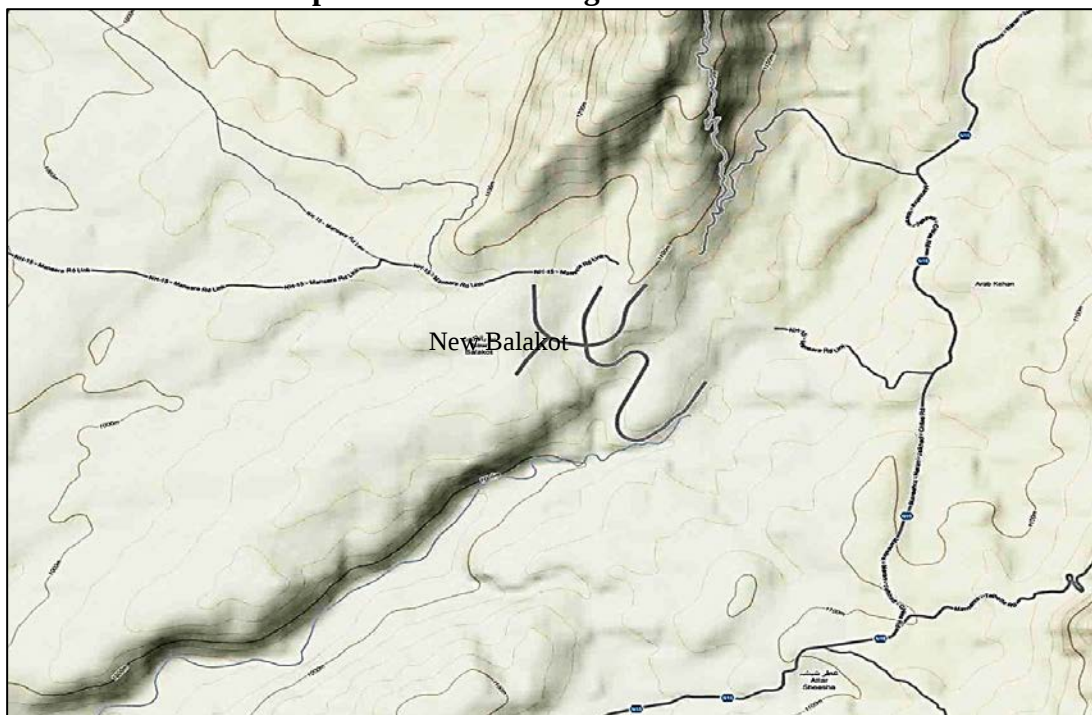


Figure 4.14 Sewerage System in the new Balakot town
Source: NESPAK, 2007

4.3.3 Site Vulnerability to Hazards

The new Balakot town has been located in area where no major fault line is present with gentle slope. This site lies almost in between river Kunhar and river Siran. As compared to the old Balakot town, this new site is less vulnerable to earthquake, flash floods, landslides and fire hazards. The NESPAK carried out detail geological and seismological study of the site of new Balakot town and regarded this new site as very low vulnerability area for earthquake and landslides. Ensuring the building codes in construction of all buildings and stabilizing the slope and soil with proper planned roads and streets network further reduces the earthquake and landslide vulnerability. The new Balakot town lies in area, which has very limited drainage area with gentle slope (Map 4.11). The gentle slope and proper drainage system has remarkably reduced the flash flood vulnerabilities. The fire hazards vulnerability is to be reduced with easy accessibility for emergency respondents and building material. Overall, the site of new Balakot town has very low hazards vulnerability as compare to surrounding area and urban centres in the region.

Map 4.11
Contour Map of the Surroundings of the new Balakot Town



Source: Google Earth, 2010

4.4 Comparison of the Sites of Old and New Balakot Towns

The old Balakot town was an urban centre while its surrounding areas had the characteristics of rural area. The basic characteristics of the site variables were the same such as water availability, plain surface, fertile agriculture land, vulnerability to hazards and natural resources etc. However, the residents of the Balakot town utilized these resources and modified in form of utilities & services and vulnerability to hazards. The Earthquake – 2005 changed the nature of site variables. The residents of the Balakot before Earthquake – 2005 were enjoying comparatively high-class utilities & services. The area was prone to flood hazard but structural vulnerability was comparatively very low due to buildings structures and accessibility. After Earthquake – 2005, the scenario has been changed and the vulnerability of earthquake and flood hazards increased. The structural vulnerability for a number of hazards has increased as the fabricated shelters have very low capacity of resistance to hazards. The utilities and services infrastructure was damaged severely and restored with very low quality.

The new Balakot town has been planned with modern concepts of growth pole and green city. Before site selection and structural planning a detailed geological and seismic study were carried out to ensure low vulnerability to hazards. The standard of utilities and services in the new Balakot town will be the same as any modern town in Pakistan. Comparatively, the site of new Balakot town has much better utilities and services infrastructures than the old Balakot town. The old Balakot town site was hazardous and declared as red zone while the new Balakot town site has very low vulnerability to hazards.

4.5 Conclusion

The basic variables of site are modified in shape of utilities, services and vulnerability to hazards in developed settlements. The utilities, services and vulnerability to hazards at the

site of old Balakot town have been changed after Earthquake – 2005. Before Earthquake – 2005, the old Balakot town and its surrounding was an attractive urban centre and enjoyed high-class utilities, services. After Earthquake – 2005, this site of old Balakot town was declared as red zone. The totally damaged infrastructure was restored on temporary bases. Comparatively, the life standard in old Balakot town was much lower than pre-Earthquake – 2005.

The new Balakot town was proposed for the residents of old Balakot town at Bakryal. The new Balakot town is a well-planned modern urban centre. This town has very low vulnerability to hazards and is facilitated with modern utilities & services infrastructure. The old Balakot town was blessed with clean natural water supply while in the new Balakot town, the water supply facility is based on outside water collecting sumps. Comparatively, the new Balakot town is offering advanced and facilitated utilities & services infrastructure with very low vulnerability to hazards while the old Balakot town site is hazardous with low utilities & services infrastructure.

Chapter 5

Situation of the Old and New Balakot Towns

5.1 Introduction

The situations of the new and old Balakot towns are nodality and functions of these towns. The situations of the new and old Balakot towns are measured in economic terms. The physical, economic or cultural implications change the situation rapidly. The surrounding physical, economic and cultural conditions over a much wider area around the old and new Balakot towns are determinants of the situation of both new and old Balakot towns. This situation factors control the functions of the new and old Balakot towns and thus control the growth of these settlements. The situation of the old Balakot town has changed mainly due to of economic implications after Earthquake – 2005, while the surrounding physical and cultural environment of the old Balakot town has remained unchanged. The Earthquake – 2005 totally damaged the basic activities infrastructure, which ultimately changed the growth potential and centrality of the old Balakot town. This situation is further altered by declaring the old Balakot town as red-zone. However, the rapid restoration of economic activities and performing the central functions of tehsil headquarters in old Balakot town strengthen the situation of the old Balakot town.

To analyse the situation of both old and new Balakot towns, this chapter is divided into four major themes: basic activities, relative location, centrality of the old Balakot town and non-basic activities. The basic activities incorporate all those aspects of economic activities that support the growth of old or new Balakot town. Similarly, the study of non-basic activities of the old and new Balakot towns provide the level of functions performed for the residents of the towns. The interrelationship of basic and non-basic activities is carried out for future growth and current economic status of the town. The relative location is one of the major variables of the situation analysis that affects the potential growth and decides the nature or functions of old and new Balakot towns. The centrality analyses shows the dependency of the region on old and new Balakot towns for

higher functions that are performed by these towns and ultimately support the growth and prosperity. At the end, the situation comparison of the old and new Balakot towns is made to identify the areas that support the growth and future sustainability of these towns.

5.2 Situation of the Old Balakot Town

Before Earthquake – 2005, the old Balakot town was a tehsil headquarter. It is centrally located in the valley of river Kunhar and thus became a tourists resort. It provided high-class goods & services and was the centre of social & political activities. These activities and fertile surrounding land provided that situation for old Balakot town, which highly supported the growth and prosperity of this town. The overall supportive business environment provided more economic opportunities and thus made the living standards of the residents very high. After Earthquake – 2005, for rehabilitation purposes the damaged economic infrastructure, particularly the commercial activities were restored very quickly. Similarly, very few tehsil headquarters functions were shifted from red zone area. As a result the number of visitors was least affected and so on the commercial activities. The establishment of NGOs offices further enhanced this situation. The whole tehsil residents rushed towards the old Balakot town for jobs, commercial activities, relief assistance, civil dispute resolutions, social and political activities. The function as a tourists resort is slowly but certainly restored in recent years as new hotels and restaurants are constructed.

The situation of old Balakot town before and after the Earthquake – 2005 is studied under the headings of basic and non-basic activities, relative location, and centrality of the old Balakot town. The nature of commercial activities in old Balakot town was different as there were few manufacturing activities and the rest of the basic and non-basic activities were almost mixed. The major differentiation between basic and non-basic were the type of customers they dealt and the level of function they performed. The other basic activities like administrative, political, social, cultural, non-government organization,

manufacturing, agriculture, surrounding productive land, and central location in the valley are discussed in detail in pre and post Earthquake – 2005 scenario. The relative location of the old Balakot town is elaborated with focus on accessibility, population distribution and tourism. The centrality analysis of the old Balakot town is based on the type and level of commercial functions performed by the old Balakot town. The non-basic activities structure particularly of retailing business is described in detail at the end of this section.

5.2.1 Basic Activities

The basic or town forming activities in old Balakot town were commercial, administrative, manufacturing, political social & cultural, non-government organization, agriculture, central location in the valley and surrounding productive land. The first two basic activities were of prime importance in the old Balakot town as the number and level of these activities were much higher than any activities in the old Balakot town. There were very few manufacturing units in the old Balakot town. The old Balakot town is located on the bank of river Kunhar in middle of river's valley. This central location made old Balakot town easily accessible for surrounding population. Similarly, the river Kunhar provided fertile agriculture land and suitable environment for poultry farms and horticulture. The shrines of Shah Ismail Shaheed and Syed Ahmad Shaheed are in the old Balakot town, which attract visitors from all over the country. After Earthquake – 2005, the establishment of NGOs and relief activities offices in old Balakot town increase the number of visitors and thus boom its commercial activities.

After Earthquake – 2005, the NESPAK carried out comprehensive landuse and livelihood survey. The red zone covered the total area of 1450 acres of the three union councils i.e. Balakot, Garlat and Ghanool. The landuse comprised of residential, commercial, public buildings, educational institutions, graveyard, mosques, vegetation and

the river Kunhar (Map 5.1). The livelihoods can be divided into commercial, skilled & unskilled labour, agriculture and government services (Table 5.1).

To understand the type, number and level of commercial activities in old Balakot town a detail landuse survey was carried out in the main bazaar area of the Balakot. Similarly, the agriculture, manufacturing, and other basic activities were studied through methods of field observations, questionnaire and FGDs. The red zone of the Balakot was composed of urban and rural areas. Almost 90% of the total respondents were engaged in agriculture and business activities. More than 10% of the respondents were engaged in Government and private services while very few respondents were engaged in manufacturing activities. Almost 50% of the respondents had agriculture as their major livelihood. The agriculture activities were mainly practiced in the union councils of Garlat and Ghanool. The 40% of the respondents were engaged in business activities. The union council Balakot was major shareholder of the business activities. However, the union council Garlat those mohalla which were near to bazaar area, had also distinctive proportion of population engaged in the business activities (Table 5.2).

Table 5.1
Livelihoods Structure of the Old Balakot Town

S. No.	Type of Activity	Frequency	Percentage
1.	Government Servant	496	10.63
2.	Livestock/Agriculture	154	3.30
3.	Private employment	483	10.35
4.	Self/Shops	969	20.76
5.	Skilled Labour	2222	47.61
6.	Tourism	45	0.96
7.	Unskilled	298	6.39
Total		4667	100

Source: NESPAK, 2007

Table 5.2
Livelihoods Structure of the Old Balakot Town

		Major Livelihoods of the family							
S. No.	Resident Address	Agriculture	Business	Govt. service	Private Service	Manufacturing	Ag. & Bu.	Other	Total
	Ghanool	35	9	1	1	0	0	0	46
	Bagh Baliani	3	2	0	0	0	0	0	5
	Bajori	0	19	0	0	0	0	0	19
	Baliani	1	27	0	1	0	0	0	29
	Bazaar Baliani	0	7	0	0	0	0	0	7
	Dhodhiari	5	3	2	3	0	0	0	13
	Grid Baliani	0	5	0	0	0	0	0	5
	Jalora	1	0	3	8	0	4	0	16
	Kach Bali	0	3	0	0	0	0	0	3
	Kali Mitti	7	2	0	0	0	0	0	9
	Khairan	1	11	0	1	0	0	0	13
	Khwaja Khaili	0	43	0	0	0	0	0	43

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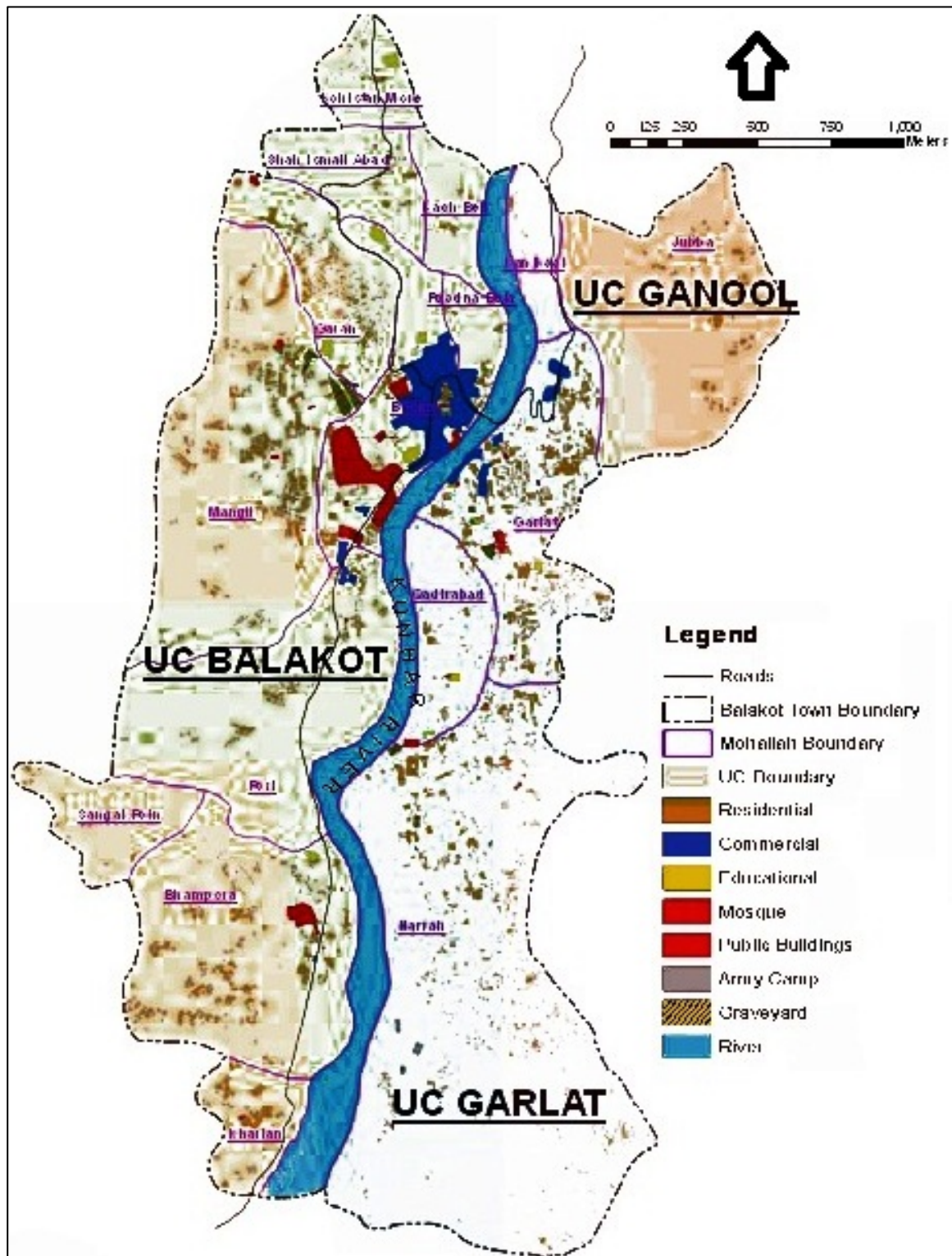
	Kohistan More	2	7	0	1	0	0	0	10
	Lehari	3	10	0	0	0	0	0	13
	Lower Bampura	1	19	0	0	0	0	0	20
	Lower Pori	0	6	0	0	0	0	0	6
	Lughmani	0	20	0	0	0	0	0	20
	Mangli	6	63	0	0	0	0	0	69
	Nawaz Abad	0	5	0	0	0	0	0	5
	Podina Baila	0	10	4	0	0	0	0	14
	Pori	2	0	2	9	0	0	1	14
	Rehmat Abad	0	4	0	0	0	0	0	4
	Shah Ismailabad	6	6	0	0	0	0	0	12
	Single Poi	1	7	0	6	0	0	0	14
	Takkia Lehari	0	3	0	0	0	0	0	3
	Titwal	3	7	7	0	1	0	1	19
	Upper Bampora	2	14	0	1	0	0	0	17

Continued

	Upper Pori	0	2	0	0	0	0	0	2
	Mandi	8	10	0	0	0	0	0	18
	Narah	21	20	1	1	0	0	1	44
	Qadarabad	17	16	2	3	0	0	1	39
	Upper Garlat	27	15	0	0	0	0	0	42
	Upper Narah	69	9	0	2	0	0	0	80
	Pandi	30	12	1	15	1	0	0	59
	Lower Narah	38	1	16	5	0	0	0	60
	Kawas	36	0	0	0	0	0	0	36
	Bailla Garlat	29	0	0	0	0	0	0	29
	Deri Narah	58	4	2	1	0	0	1	66
	Deri	30	2	0	0	0	0	0	32
	Gribabad	21	2	10	0	0	0	1	34
	Habibabad	30	0	0	0	0	0	0	30
	Ganjkal	31	0	0	0	0	0	0	31
Total		524	405	51	58	2	4	6	1050

Source: Field Data, 2010

Landuse in the Old Balakot Town



Source: NESPAK, 2007

5.2.1.1 Commercial Activities

The bazaar area of the old Balakot town was the centre of commercial, administrative, political and social activities. The frequency, scale and level of commercial activities in the old Balakot town were much higher than supportive population of the old Balakot town. Most of the commercial activities attracted the regional or valley population. Before Earthquake – 2005, there was more than 1000 shops were registered with Balakot Bazaar Merchants Association. After Earthquake – 2005 in 2010, the number of shops was increased to 1400 units. Overall, the number of total shops in the red zone was more than 1500 (Table 5.3 & 5.4).

After Earthquake – 2005, most of the business activities were started in the fabricated shelters. However, a reasonable number of shops were still made of concrete material particularly in commercial plazas. The fabricated material shops were single floor with almost of similar size. Few old plazas like *Madina* and *Shah Alam* which survived the Earthquake – 2005 were extensively used for commercial activities. There was a ban on new construction from the Government. However, new plazas like *New Walid*, *Akbar* and *Sohorab* were constructed recently to fulfil the increasing needs of the commercial businesses. The nature of commercial activities was diversified and fulfils the needs of not only the local residents but also of the whole valley. The difference in size of shops particularly in the shops of Plazas made difficult to calculate the exact number of all commercial units. However, all sizes of shops were fitted in three basic categories of small, medium and large size. With this modification, the numbers of different commercial activities were determined through land use survey (Table 5.4).

The types of commercial activities in the bazaar of the old Balakot town were: restaurants, hotels, butchers, toys, medical stores, liquid petroleum gas (LPG), furniture, barber, sweets, bakery, shoes, cloths, vegetables, general stores, tailors, banks and hawkers

etc. The General Stores, LPG, Barber, Tailors and Toys shops were in high number. The different levels of each activity were recorded. The nature of the visitors/customers was categorized into three type i.e. local, valley, and outside of the valley or tourists. Each of the commercial activity has different number of the visitors/customers of the local, valley, and tourists (Table 5.5 and 5.6).

Considering all activities and number of units equal important, the average share of the visitors/customers of the local, valley, and tourists were 25%, 65%, and 10% respectively (Table 5.5 and 5.6). The tenure of almost 90 % of the shops was on rent based. According to Balakot Bazaar Merchants Association, the two third of the total shopkeepers were from Balakot (Red-Zone Area). Among the remaining one third of the total shopkeepers, 40% were Afghani, 30% were from tehsil Balakot and 30% were from district Mansehra. Most of the shops were on rent and few were of owned by shopkeepers themselves (Table 5.7).

Table 5.3
Commercial Activities in the Old Balakot (Red-Zone)

S. No.	Type	Frequency
1	Shops	1500
2	Hotels & Restaurants	45
3	Rooms for visitors	400

Source: NESPAK, 2007

Table 5.4
Type of Commercial Activities in the Bazaar of Old Balakot Town

S. No.	Type	Frequency
1	Butcher	13
2	Toys	60
3	Medical Stores	20
4	LPG	35
5	Furniture	7
6	Barber	65

Continued

7	Banks	5
8	Sweets & Bakers	16
9	Tailors	60
10	Cloths	100
11	Hawkers	35
12	Vegetables	45
13	Shoes	65
14	Jewellery	10
15	Electronics	60
16	Gifts	20
17	Hardware	14
18	Restaurants	65
19	Hotels	7
20	General stores	450
21	Miscellaneous Activity	285
Total		1437

Source: Field Data, 2010

5.2.1.2 Administrative Activities

The old Balakot town is tehsil headquarter of the tehsil Balakot. All administrative offices like judiciary, bars of law, tehsil municipal officer (TMO), national database and registration authority (NADRA), police, agriculture officer, forest officer, school & literacy and Pakistan meteorological observatory were in the old Balakot town (Map 5.2). These offices performed different administrative functions, which directly attract the whole tehsil population towards the old Balakot town. The police and judiciary were of prime importance as daily hundreds of people visit these offices for number of cases. Similarly, the forest office was also among one of the busiest offices as forest play a vital role in the livelihoods of the residents of the valley. After Earthquake – 2005, a large number of people visited the TMA and NADRA offices for their rehabilitation claims. Similarly, the rush in judiciary offices was increased in civil courts for different civil cases and claims of rehabilitations.

Table 5.5
Overall Visiting Customers' Nature in the Bazaar of Old Balakot Town

S. No.	Type	> 95% local	95% local & 05% Visitors	75% local & 25% Visitors	50% local & 50% Visitors	25% local & 75% Visitors	05% local & 95% Visitors	> 95% Visitors	Total
1	Hoteling	0	0	0	0	0	0	2	2
2	Restaurant	0	0	0	0	0	0	14	14
3	Jewellery	0	0	0	0	2	0	0	2
4	Barber	0	0	0	14	0	0	0	14
5	Cloths	0	0	0	0	21	0	0	21
6	Electronics	0	0	0	0	14	0	0	14
7	General store	10	8	16	29	28	0	0	91
8	Shoes	0	0	0	0	14	0	0	14
9	Toys	0	0	0	0	0	14	0	14
10	Sweets & Bakers	0	0	0	3	0	0	0	3
11	Butchers	0	0	0	4	0	0	0	4
12	Bank	0	0	0	2	0	0	0	2
13	Tailors	0	0	0	0	13	0	0	13
14	Gifts	0	0	0	0	0	0	4	4

Continued

15	Furniture	0	0	0	2	0	0	0	2
16	Hardware	0	0	0	0	3	0	0	3
17	LPG	0	0	0	7	0	0	0	7
18	Medical Stores	0	0	0	4	0	0	0	4
19	Hawkers	0	0	7	0	2	0	0	9
20	Vegetables	0	0	12	0	1	0	0	13
21	Mis. Activity	2	2	7	0	37	2	0	50
	Total	12	10	42	65	135	16	20	300

Source: Field Data, 2010

Table 5.6
Visiting Customers' Nature in the Bazaar of Old Balakot Town

S. No.	Type	> 95% valley	95% valley & 05% outside	75% valley & 25% outside	50% valley & 50% outside	25% valley & 75% outside	05% valley & 95% outside	> 95% outside	Total
1	Hoteling	0	0	0	0	0	0	2	2
2	Restaurant	0	0	6	8	0	0	0	14
3	Jewellery	0	0	2	0	0	0	0	2
4	Barber	14	0	0	0	0	0	0	14
5	Cloths	21	0	0	0	0	0	0	21

Continued

6	Electronics	0	14	0	0	0	0	0	14
7	General store	83	1	1	2	2	2	0	91
8	Shoes	0	0	14	0	0	0	0	14
9	Toys	0	0	13	0	0	1	0	14
10	Sweets & Bakers	0	3	0	0	0	0	0	3
11	Butchers	4	0	0	0	0	0	0	4
12	Bank	2	0	0	0	0	0	0	2
13	Tailors	13	0	0	0	0	0	0	13
14	Gifts	0	0	0	0	4	0	0	4
15	Furniture	2	0	0	0	0	0	0	2
16	Hardware	3	0	0	0	0	0	0	3
17	LPG	7	0	0	0	0	0	0	7
18	Medical Stores	0	4	0	0	0	0	0	4
19	Hawkers	9	0	0	0	0	0	0	9
20	Vegetables	13	0	0	0	0	0	0	13
21	Mis. Activity	24	11	4	5	4	2	0	50
	Total	195	33	40	15	10	5	2	300

Source: Field Data, 2010

Table 5.7
Tenure/Ownership of the Commercial Land in Old Balakot Town

Permanent Resident Location	Owner	Rented	Ajara	Tenant	Other	Total
Outside District Mansehra	0	35	0	0	0	35
District Mansehra	0	31	0	0	2	33
Valley	1	30	0	0	1	32
Balakot	2	126	11	0	1	140
Garlat	2	51	1	1	0	55
Ghanool	0	5	0	0	0	5
Total	5	278	12	1	4	300

Source: Field Data, 2010

5.2.1.3 Political Activities

The offices of Nazims of Tehsil Municipality and Union Council were in the old Balakot town, which attract all the local political activities into the town. Beside this, the bazaar hosted all the functions and gathering of political activities. The political gatherings for two seats of Provincial Assembly (PA) and one seat of National Assembly (NA) were held here in the old Balakot. These political activities in the old Balakot town attract people from the whole tehsil of Balakot.

5.2.1.4 Social and Cultural Activities

The old Balakot town was the centre of social and cultural activities of the whole valley. The shrines of Shah Ismail Shaheed and Syed Ahmad Shaheed attracted not only people from the valley but also from all over the country. The valley residents are divided into tribes and sub tribes. Each of the tribes has their own customs and taboos for their pride. The bazaar of old Balakot Town was most suitable place for their gatherings and exhibitions. Beside this, the commercial activities, dealing manners, dresses, functions, fashion and general behaviour of the public of the valley was reflected in the bazaar. The

strong sense of the valley identity was present among the residents of the valley (Table 5.8). This sense of the separate identity of the valley further strengthened the role and centrality of the old Balakot Town.

Table 5.8

Belief on the Separate Identity of the Valley of River Kunhar

		Yes	No	Total
Permanent Residence	Outside District Mansehra	42	17	59
	District Mansehra	44	10	54
	Valley	94	13	107
	Balakot	513	27	540
	Garlat	621	14	635
	Ghanool	55	0	55
Total		1369	81	1450

Source: Field Data, 2010

5.2.1.5 Non-Government Organizations (NGOs)

After Earthquake – 2005, a number of NGOs started their relief and recovery activities in the affected area. The old Balakot town was the centre of all their relief and recovery activities. It was one of the worst affected towns and second, it was central focal point for all of the activities in the affected areas of the valley. Most of the NGOs have their operational or regional offices in the old Balakot town with their main offices in the Ghazikot Township, Mansehra. The total numbers of the NGOs offices those who worked or working in the tehsil Balakot was 65 in year 2010. A number of people visited these offices for relief & recovery goods. Similarly, these offices provided employment opportunities for the residents of the valley. These offices brought investment into the valley in form employment opportunities and utilized the services of the area.

5.2.1.6 Manufacturing Activities

The frequency, types and scale of manufacturing activities in the old Balakot town were very small. Two types of manufacturing units i.e. woodcutting & furniture machines and cement block factories were present in the area. Cement blocks factories were absolutely for the local consumption. The woodcutting & furniture machines provided material for constructions and furniture. The market of furniture items was the whole valley. Two Cement Blocks Factories has provided maximum fifteen employment opportunities for the residents of the old Balakot town. The four woodcutting & furniture machines had the capacity of ten to fourteen persons.

5.2.1.7 Agriculture Activities

The agriculture activity has ranked second in the basic activities in the old Balakot town. It has two important aspects: first, the valley of river Kunhar provides fertile land for agriculture; second, the climate is feasible for poultry farming. Before Earthquake – 2005, the fertile land of the valley of river Kunhar was extensively used for farming and thus contributes a reasonable share to the local economy. There were two big (more than thousand capacity) and two small (lesser than five hundreds capacity) poultry farms.

The Earthquake – 2005 severely damaged the irrigation pipe system and destroyed the poultry farms. After Earthquake – 2005, the agriculture sector and poultry farms were re-established under livelihoods recovery programme. Presently in 2010, the agriculture sector products are increased due to support from NGOs in technical as well as in material (fertilizers, seeds, machinery etc.). The number of poultry farming units has been increased up to five; however, the overall capacity was lesser than the pre-earthquake situation. Comparatively, the agriculture activities has very small share than commercial activities but certainly very important as it provide additional support to the local economy.

5.2.1.8 Surrounding Productive Land

The river Kunhar valley is fertile and scenic. In the valley of river Kunhar, the old Balakot town is the only major urban centre and few major settlement or villages with large population. In the rural area, the forest ranching and agriculture is widely practiced livelihoods. Poultry and livestock farming was other important livelihood in the valley. The second important sector of the income was tourism, which was limited to hotels and summer season. The residents of the valley brought their agricultural products to the central market, which was the old Balakot town. Similarly, the needs of tourism or hoteling were fulfilled from this central market. The old Balakot town provides high-class goods and services to its surrounding area. The products and dependent population of the catchment area support the growth and development of the old Balakot town.

5.2.1.9 Centre of the Valley

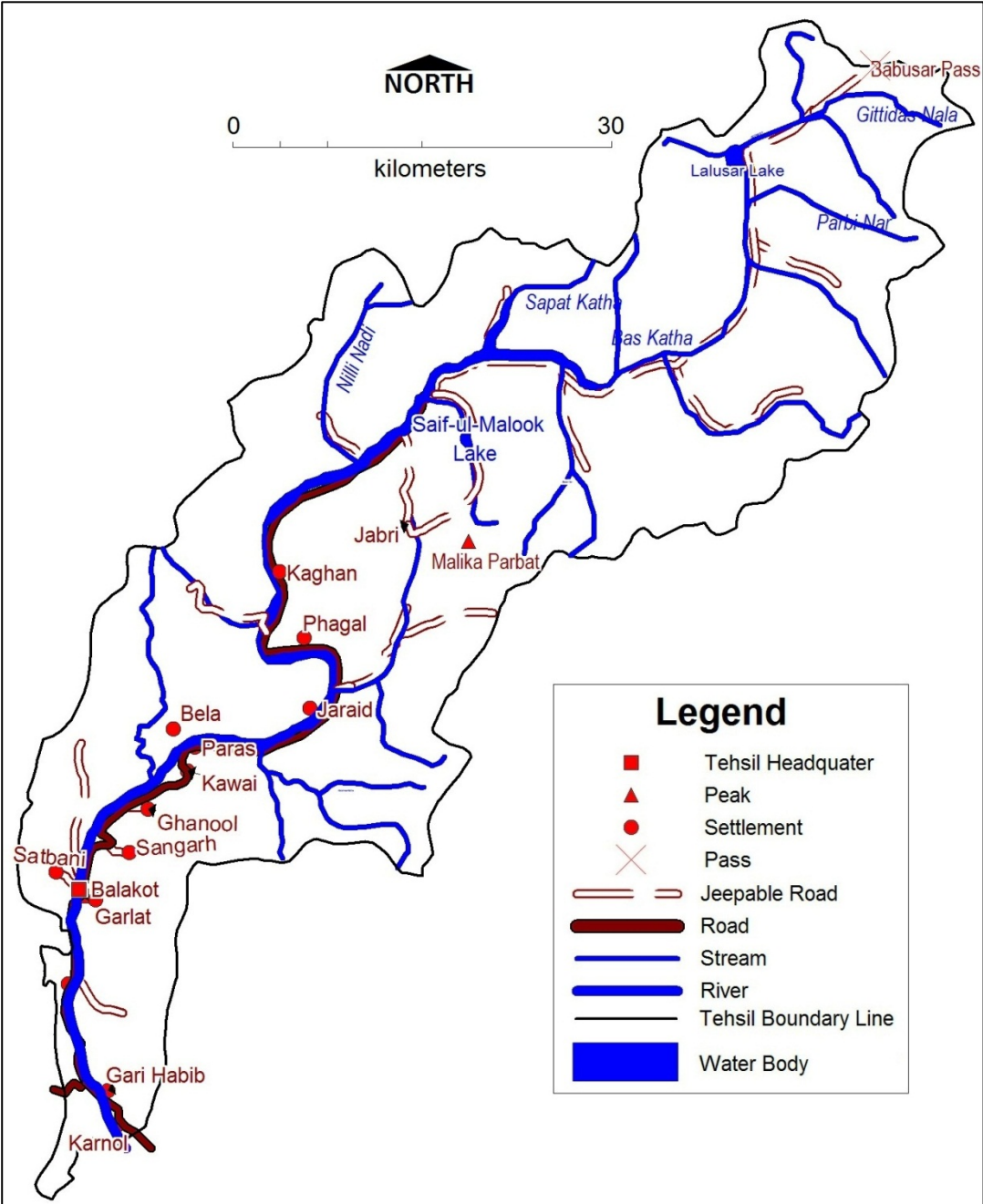
Geographically, the old Balakot town is located in centre of the valley of river Kunhar (Map 5.2). This central location made the old Balakot town as nodal point for all tourist destinations like Kaghan, Naran, Shobra etc. From the old Balakot town roads are distributed in three different directions towards these tourist destinations. Tourism is major source of income for the residents of valley. All supportive activities for tourism were carried out in the old Balakot town. The central location in the valley and nodality of the old Balakot town made easily accessible for the whole valley and particularly for the surrounding villages. This easy accessibility made old Balakot town as central market where surrounding people trade their local products.

5.2.2 Relative Location

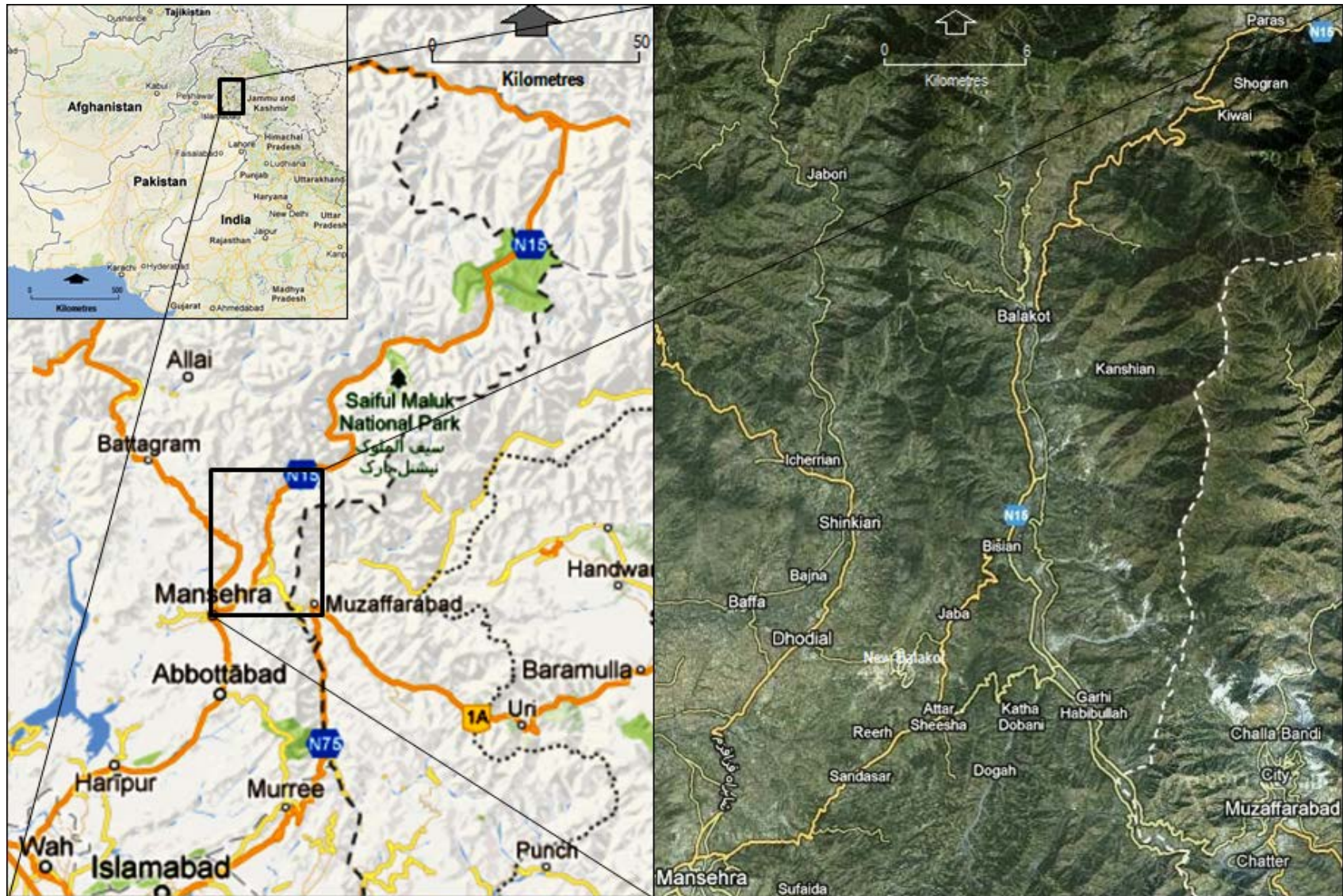
The location of old Balakot town is strategically very important. In north of the old Balakot town, the famous tourist destinations like Kaghan, Naran and Shobre are located. The old Balakot town is gateway to these beautiful tourists' points. Historically, old

Balakot town was a crossing point to the northern areas of Azad Kashmir, which is located in the east of old Balakot town. Recently, the old Balakot town gain importance due to proposed link road to Karakorum Highway, which is located in the west of old Balakot town. The important aspect of this development was impact on the perception of the residents of Balakot about its importance. In focus group discussions, the majority of the residents believed that old Balakot town would be central hub of the nodality (Map 5.3).

Map 5.2
Location of the Old Balakot Town in the Valley of River Kunhar



Map 5.3
Relative Location of the Old Balakot Town



5.2.3 Centrality of the Old Balakot Town

The tehsil Balakot is almost comprised on the area of the valley of river Kunhar. The tehsil Balakot has twelve union councils and two major town centres i.e. Balakot and Gari Habibullah. The old Balakot town is located in the centre of the valley while the Gari Habibullah is located in the bottom of the valley. According to 1998 census, the tehsil Balakot has total population of 2,14,630 persons. All major settlements are located on the bank of river Kunhar (Map 5.4). The major portion of the population was living in the rural area and distributed in linear pattern. The union council wise population distribution shows that old Balakot town served more than 70% of the tehsil total population (Table 5.9 and Map 5.5). In the valley, old Balakot town was sole centre that provides huge variety and high class of services to surrounding area particularly the commercial activities. The old Balakot town was the only centre, which provided market for the trading of goods and services. There were no wholesaling activities in the whole region except in the bazaar of the old Balakot town. This absolute situation of wholesaling activities directly affected the retailing activities in all eight union councils (Table 5.10).

The number, variety and high class of the services and commercial activities in the old Balakot town dominated the whole economy of the region. Ultimately, the dependency of market services on the old Balakot town was increased. The visitors and/customers response were very important for assessment of the centrality of old Balakot town. The main purpose of the visit was business and administrative activities. More than 50% respondents' purpose was business, 20% were for administrative and rest of total were for office, political/social, education, health, recreational and religious activities (Table 5.10). Major purchasing/service utilized in the old Balakot town were general stores and offices by visitors (Table 5.11). The visitors from valley and red zone prefer daily visit and stay for more than two hours while the routine of visitors from outside of the valley was

occasional and their stay was for an hour or night stay (Table 5.12 and 5.13). Major attraction for visitors/customers of the valley and red zone in the old Balakot town was shopping and administrative services while visitors from outside of valley recognized it as recreational activity (Table 5.14).

The old Balakot town serves as central place for its surrounding area, the residents of red zone were well satisfied for fulfilment of their business needs in the old Balakot town. On other hand, residents of the valley have mixed response of partial and well satisfied, as the higher administrative and business functions were not available in the old Balakot town (Table 5.15). The important response for centrality assessment was the total business share of the old Balakot town with comparison of local (valley) and outside of the valley. More than 75% respondents fulfil their needs from old Balakot town while 10% from other local markets in the valley and almost 10 % from outside the valley (Table 5.16 and 5.17). The response of the visitors/customers shows that old Balakot town is central place of business, administrative, socio-political activities and it has no comparison with any of other settlement in the valley regarding its centrality.

Table 5.9
Union Council Wise Population of the Tehsil Balakot

S. No.	Name of Union Council	Population (Person)
1.	Kaghan	22,548
2.	Mohandari	22,567
3.	Kawai	13781
4.	Ghanool	20,274
5.	Hangrai	18,252
6.	Satbani	15,949
7.	Balakot	19,255
8.	Garlat	18,466
9.	Shohal Mazullah	13,277
10.	Telhatta	13,112
11.	Ghari Habibullah	19,306
12.	Karnol	17,806
Total		2,14,630

Source: GOP, 1999

Table 5.10

Purpose of Visit to the Old Balakot Town

Resident Address/Location	Business	Office	Administrative	Political/Social	Education	Health	Recreational	Religious	Total
Outside District Mansehra	0	0	0	0	0	0	9	1	10
District Mansehra	0	0	0	0	0	0	1	0	1
Valley	36	1	18	2	1	4	0	0	62
Balakot	7	0	0	0	3	0	0	0	10
Garlat	5	3	4	0	0	1	0	0	13
Ghanool	1	2	0	0	0	1	0	0	4
Total	49	6	22	2	4	6	10	1	100

Source: Field Data, 2010

Table 5.11

Major Purchasing/Service Utilized in the Old Balakot Town

Resident Address/Location	Hoteling	Restaurant	Cloths	Electronics	G. Store	Office	Bank	Workshop	Other	Total
Outside District Mansehra	2	8	0	0	0	0	0	0	0	10
District Mansehra	0	1	0	0	0	0	0	0	0	1
Valley	0	0	2	0	33	8	2	1	16	62
Balakot	0	0	0	1	5	0	0	0	4	10
Garlat	0	0	0	0	6	6	0	0	1	13
Ghanool	0	0	0	0	1	2	0	0	1	4
Total	2	9	2	1	45	16	2	1	22	100

Source: Field Data, 2010

Table 5.12

Visit Routine of the Visitors/Customers in the Old Balakot Town

Resident Address	Daily	2 – 4 /Week	One /Week	One /Month	Occasionally	Seasonally	Total
Outside District Mansehra	0	0	0	0	4	6	10
District Mansehra	0	0	0	0	0	1	1
Valley	24	17	11	8	2	0	62
Balakot	9	0	0	1	0	0	10
Garlat	13	0	0	0	0	0	13
Ghanool	4	0	0	0	0	0	4
Total	50	17	11	9	6	7	100

Source: Field Data, 2010

Table 5.13

Time-Period of the Visit of the Visitors/Customers in the Old Balakot Town

Resident Address	Less than an hour	1 – 2 hour	More than 2 hours	24 hours	More than a day	Total
Outside District Mansehra	0	0	4	1	5	10
District Mansehra	0	0	1	0	0	1
Valley	3	2	57	0	0	62
Balakot	0	0	10	0	0	10
Garlat	0	0	13	0	0	13
Ghanool	0	0	4	0	0	4
Total	3	2	89	1	5	100

Source: Field Data, 2010

Table 5.14

Major Attraction of the Visitors/Customers in the Old Balakot Town

Resident Address	Shopping	Services	Political/Social	Recreational	Religious	Total
Outside District Mansehra	0	0	0	8	2	10
District Mansehra	0	0	0	0	1	1
Valley	36	21	5	0	0	62
Balakot	7	3	0	0	0	10
Garlat	5	5	3	0	0	13
Ghanool	1	3	0	0	0	4
Total	49	32	8	8	3	100

Source: Field Data, 2010

Table 5.15

Fulfilment of the Business Needs in the Old Balakot Town

Resident Address	No	Partial	Yes	Surplus	Total
Outside District Mansehra	4	5	1	0	10
District Mansehra	0	1	0	0	1
Valley	0	19	39	4	62
Balakot	0	0	0	10	10
Garlat	0	0	0	13	13
Ghanool	0	0	0	4	4
Total	4	25	40	31	100

Source: Field Data, 2010

Table 5.16

General Business Share of All Items (Valley vs. Outside)

Resident Address	> 95% valley	95% valley & 05% outside	75% valley & 25% outside	50% valley & 50% outside	25% valley & 75% outside	05% valley & 95% outside	> 95% outside	Total
Outside District Mansehra	0	0	0	0	0	3	7	10
District Mansehra	0	0	0	0	0	0	1	1
Valley	24	21	6	7	4	0	0	62
Balakot	10	0	0	0	0	0	0	10
Garlat	13	0	0	0	0	0	0	13
Ghanool	4	0	0	0	0	0	0	4
Total	51	21	6	7	4	3	8	100

Source: Field Data, 2010

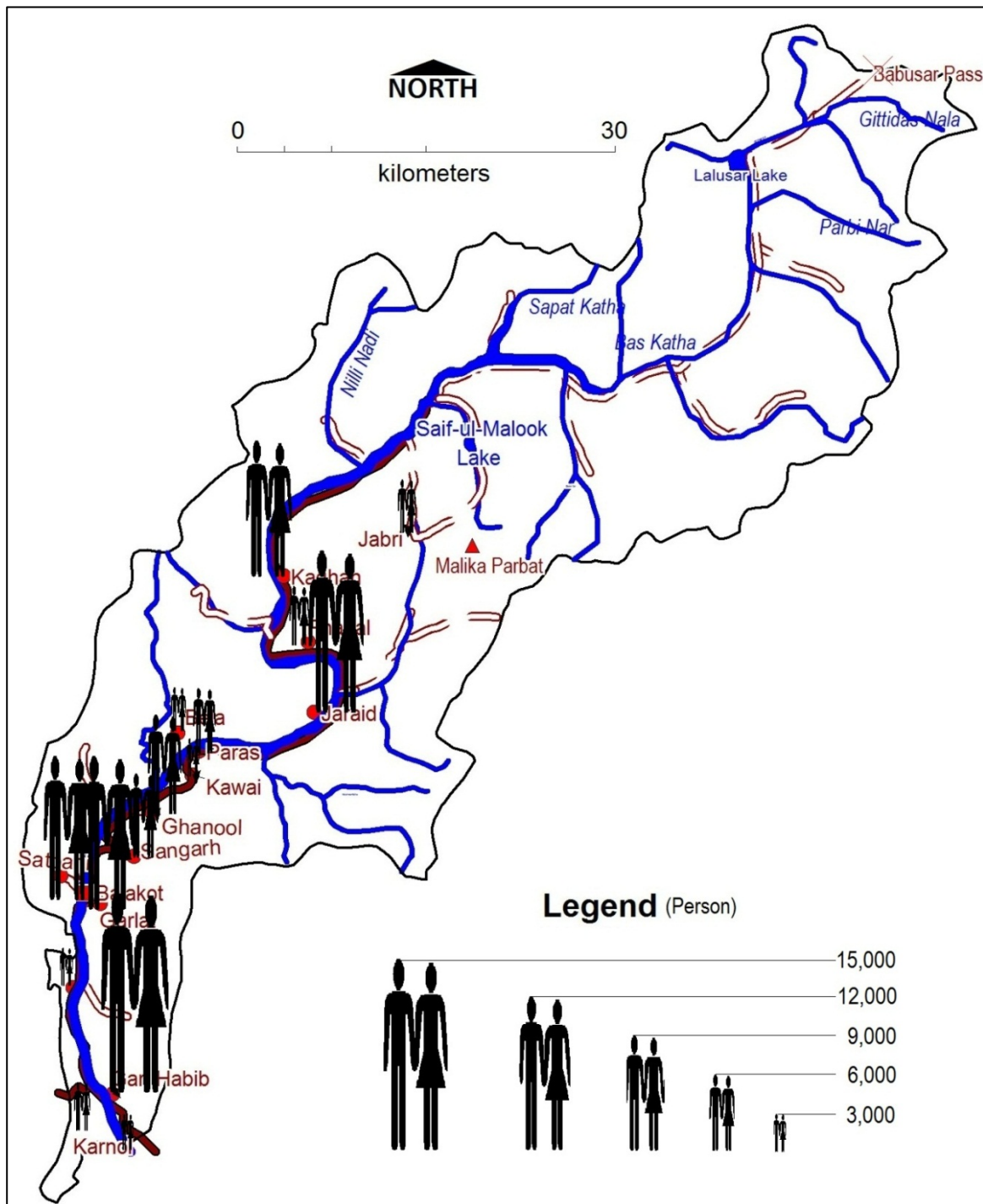
Table 5.17

Business Share of All Items (Valley vs. Balakot Town)

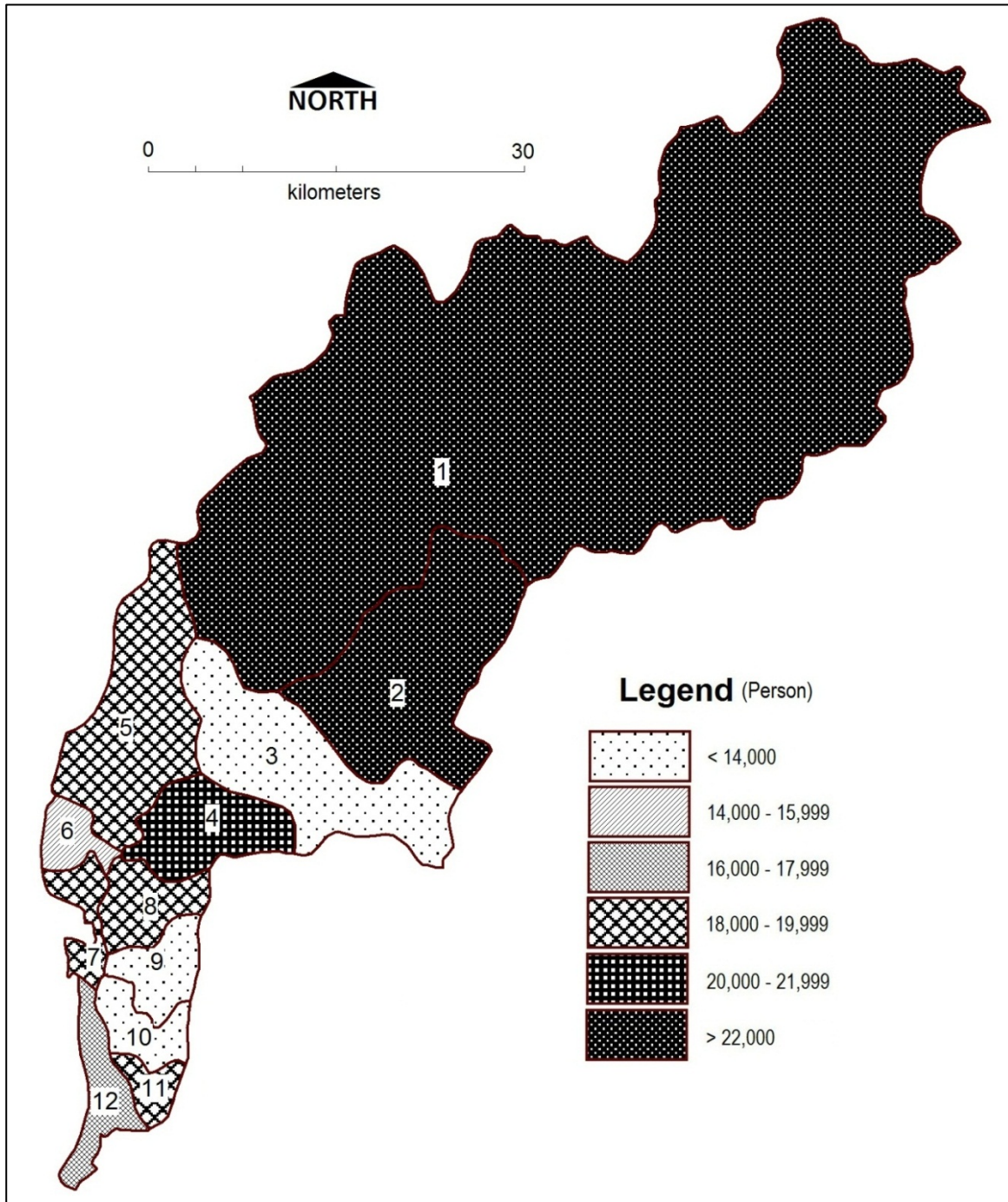
Resident Address	> 95% local	95% local & 05% Balakot	75% local & 25% Balakot	50% local & 50% Balakot	25% local & 75% Balakot	05% local & 95% Balakot	> 95% Balakot	Total
Outside District Mansehra	10	0	0	0	0	0	0	10
District Mansehra	1	0	0	0	0	0	0	1
Valley	0	2	3	3	11	39	4	62
Balakot	0	0	0	0	0	0	10	10
Garlat	0	0	0	0	0	0	13	13
Ghanool	0	0	0	0	0	0	4	4
Total	11	2	3	3	11	39	31	100

Source: Field Data, 2010

Map 5.4
Population Distribution (Major Settlement) in Tehsil Balakot



Map 5.5
Union Council Wise Population Distribution in Tehsil Balakot



5.2.4 Non-Basic Activities

The major non-basic activities in the old Balakot town were retailing and few services. Less than hundred retailing shops of general stores, bread's baking, vegetables and milk were present outside of the main bazaar of the old Balakot town. Rest of the retailing and

services activities were carried out in the main bazaar area. According to 1998 census, the union council Balakot has more than 9% of the total tehsil population while the area included in the red zone has 18% of the tehsil total population. The area served by the old Balakot town of the eight union councils has more than 70% of the total valley (tehsil Balakot) population. The red zone area has 20% share of the total valley population. Certainly, there are limited retailing activities in each of the eight union councils, which drop its dependency ratio from old Balakot town from 80% share to 75%. It means that total business activities in old Balakot town support 25% red zone population while 75% is for peripheral areas. The cumulative response about the share of business and nature of customers for different commercial activities has the same percentage (Table 5.5). So, the 25% of the total commercial activities and services of the old Balakot town is considered as non-basic.

5.3 Situation of the New Balakot Town

The proposed new Balakot town is located at the south-western edge of the valley of river Kunhar. In the western part of the new Balakot town, a large portion is located outside of the tehsil Balakot boundary line. The link road to Karakorum Highway and Hazara University is under construction, which would increase its nodality (Map 5.6). The developmental work is under progress in the new Balakot town and infrastructure facilities like roads, streets, sewerage, sanitation, public buildings etc. are developing with encouraging speed. The new Balakot town has been planned for millions of population. The well-planned site and easy accessibility for the residents of Hazara University, Mansehra and Gari Habibullah towns made it very attractive as residential suburb town. Presently, the basic and non-basic activities structure is unclear and mainly dependent on political and administrative decisions. However, the NESPAK proposed the structure of economic activities in which the tehsil headquarters function will be shifted to new

Balakot town (Table 5.18). The relative location and productive surrounding land of the new Balakot provides situation that certainly support the growth and development of this new town. However, to replace or decrease the importance the old Balakot is uncertain.

The basic activities in the new Balakot town can be divided into five major types i.e. administrative, political, social & cultural, commercial and manufacturing activities. The administrative and political activities will decide the fate of the new town. In case of higher order of these activities, higher would be its development and growth. The social and cultural activities would take time to flourish. In case of the new Balakot town, it will be very difficult to replace or replicate the old Balakot town for the valley distinctive characteristics and religious attachment with old Balakot town. The present situation of the new Balakot town for commercial activities is not encouraging particularly in the presence of the commercial markets of Mansehra and Gari Habibullah in its near surrounding. For commercial activities, it has to be dependent on local market. Currently, the new Balakot town has no major manufacturing activities but its survival is linked with manufacturing sector. The other situation factors like surrounding productive land, relative location and centrality of the new Balakot town along with non-basic activities are discussed in the following.

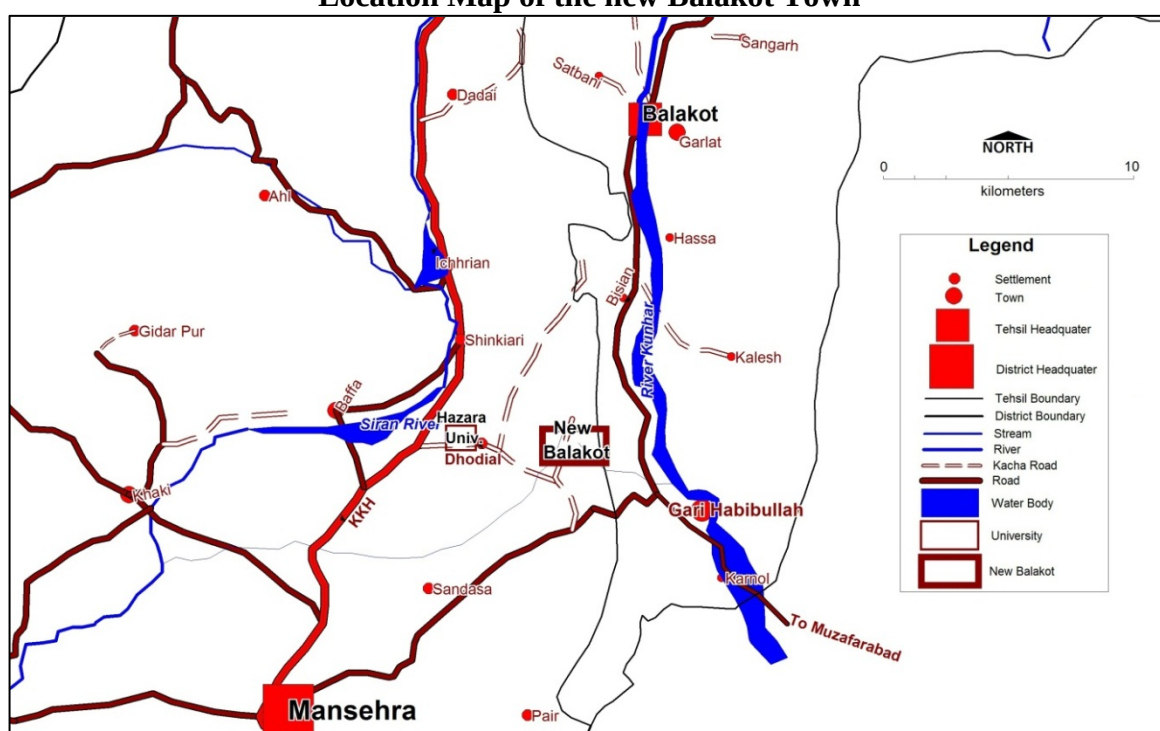
Table 5.18
Proposed Economic Activities in the New Balakot Town

S. No.	Type of Activity	Frequency	Percentage
1.	Govt. Services	520	12.35
2.	Industry	9	0.21
3.	Livestock/farming	110	2.61
4.	Private business	1432	34.02
5.	Private service	281	6.68

6.	Professionals	14	0.33
7.	Trained labour	1156	27.46
8.	Not mentioned	687	16.32
Total		4209	100.00

Source: NESPAK, 2007

Map 5.6
Location Map of the new Balakot Town



5.3.1 Basic Activities

The master plan of the new Balakot town is mainly focused on residential activities with advance infrastructure facilities. These well-planned residential facilities are considered as growth pole magnet. To support its growth and development, the tehsil headquarter will be shifted to new Balakot town, which will also attract the political activities of the region to this new site. Initially, the nature of commercial activities will be non-basic and with passage of time, the new Balakot town will support the market facility for all its

surrounding areas. The manufacturing activities has very low share in proposed economic activities structure of the new Balakot town. However, it has very suitable environment for the manufacturing activities. The new Balakot town is planned on large area and its surroundings have agriculture productive land, which will support its market activities in near future. The basic activities of the new Balakot town are discussed under the headings of administrative, political, social & cultural, commercial, manufacturing activities and surrounding productive land.

5.3.1.1 Administrative Activities

The new Balakot town will host the tehsil headquarters activities along with other regional offices like forest and agriculture etc. The travelling distance from northern union councils will compel all visitors to stay or take rest in the new Balakot town which will ultimately boom the commercial activities particularly hoteling and restaurants.

5.3.1.2 Political Activities

The political activities are directly related with the administrative functions of a town and residential facilities. Higher the function and facility will definitely attract higher political activities. Political meetings and gatherings always support the local economy in form hoteling, restaurants and other related commercial activities.

5.3.1.3 Social & Cultural Activities

The social & cultural activities in the new Balakot town will reflect the residents' customs, habits, taboos, religion, emotions, art, music and their history. This will be very important character as the old Balakot town residents has their own identity of the valley with strong social and cultural setup. This new town also provides opportunity for changes which may be reflected in the social & cultural activities of the new Balakot town.

5.3.1.4 Commercial Activities

The master plan of new Balakot town shows that commercial activities are distributed in neighbourhoods and there is no single large central business district. This type of arrangement will clearly support the non-basic nature of commercial activities for local consumptions. However, the administrative activities and supportive productive land in surroundings will enhance the market capacity for trade and wholesaling.

5.3.1.5 Manufacturing Activities

The small-scale manufacturing activities are present in the new Balakot town. Mostly, to support the construction and developmental requirements of this new town. The manufacturing sector includes woodcutting & furniture machines, cement block factories etc. The new Balakot town is ideal place for furniture industry as forest wood, skill labour and easy accessibility for surrounding towns.

5.3.1.6 Surrounding Productive Land

The surrounding area of the new Balakot town has agriculture productive land with rural economy. Presently, these areas are dependent for their trade & market activities on Mansehra and Gari Habibullah. The new Balakot town will provide goods and services to these areas on the one hand and low cost (travelling distance) market facility on the other. This will have positive effects on the agro based rural economy.

5.3.2 Relative Location

One of the most important prospect aspects of the new Balakot town is its relative location. In north of new Balakot town is forestland with natural beauty. In east, link road to two important valleys i.e. Kashmir Valley and Kunhar Valley which are very famous for tourism. The Hazar University and Karakorum Highway are located in the near west of the new Balakot town. The district capital and large town of Mansehra is located in the south of the new Balakot town. The new Balakot town is located in the centre of

Mansehra, Hazara University and Gari Habibullah, which are in dire need of residential suburb. The second aspect of this location is nodality of the new Balakot town, which provides direct link between Karakorum Highway and Kashmir Valley. Similarly, this nodal network provides easy accessibility for the residents of the valley of river Kunhar to Karakorum Highway and Hazara University (Map 5.7).

Map 5.7
Relative Location of the new Balakot Town



5.3.3 Centrality of the New Balakot Town

The new Balakot town is located in centre of major towns, which will directly restrict its trade and market capacity. However, the residential activities and productive land in surroundings will provide limited opportunities for market and trade activities. The

administrative and political activities will further enhance the centrality of the new Balakot town. In term of commercial activities, it is very difficult to replace or replicate the old Balakot town. However, this new town has importance in regional or district perspective.

5.3.4 Non-Basic Activities

Initially, the non-basic sector of commercial activities is very important as its number, variety and order (class hierarchy) will attract the residents. The residential plots or property dealing will be the far most important commercial activity, which will decide the future growth and development of this new town. The commercial activities are divided in neighbourhoods, which directly support the non-basic activities. The higher hierarchy of non-basic activities will attract the high-class residents of the district Mansehra and Hazara University. In long run, it will definitely attract customers from the region for these services.

5.4 Comparison of the Situation of Old and New Balakot Towns

The old Balakot town is located in the centre of the valley of river Kunhar. It was a hub of commercial, political, social and administrative activities. The town was distinctive from its surroundings due to a number of higher hierarchies of functions. It was nodal point and all transportation networks particularly towards famous tourists' destinations were distributed from here. The whole valley products were traded in the market of the old Balakot town. The large number, variety and high order of commercial activities along with different services provided strong basic activities structure that enhanced its growth and development. The overall situation of the old Balakot town was so encouraging that after Earthquake – 2005, its economy was rapidly rehabilitated and got stronger day by day.

The new Balakot town was well-planned town with modern planning concept of green cities. It is situated in the middle of major towns, which made it more attractive for the residents of these towns. This new town links two major valleys and two major highways. The present scenario of the development of this town is solely dependent on residential activities of the high-class, which is the immediate requirement of the residents of its surrounding towns. The transfer of administrative activities to the new Balakot town will certainly boom its economy. However, it seems to be very difficult to replace or replicate the old Balakot functions, particularly of commercial and social. Comparatively, the old Balakot town has very encouraging situation and strong basic activities structure that support its growth and development. The new Balakot town has very prospect future in the region as a modern green town. However, for the resettlement its situation was far behind than that of the old Balakot town.

5.5 Conclusion

The surrounding physical, economic and cultural conditions over a much wider area around the old Balakot town were stable, feasible and more centric towards the old Balakot town. The old Balakot town enjoyed its position as sole central place for the whole valley of river Kunhar. These unique conditions strengthen the situation of the old Balakot town. After Earthquake – 2005, this prosperous situation enabled the old Balakot town to quickly rehabilitate its economic structure. The old Balakot town has a huge market area, which provided goods, high-class services and market for trade to the surrounding areas. The major livelihood in the valley of river Kunhar was tourism and agriculture. Both of the activities were supported by the old Balakot town. The central location made easily accessible market for the surrounding agro based economy. Network of the roads are distributed towards famous tourists' destinations from the old Balakot

town which made it as nodal point. The administrative, political, religious, NGOs offices, social and cultural activities further enhance the situation of the old Balakot town.

The new Balakot town has been designed to replace or replicate the old Balakot town with modern planning concepts. The situation of the new Balakot town makes it as attractive suburb for residential purposes. The transfer of administrative functions will certainly boom its basic economy. However, in presence of major towns or nuclei like Mansehra, Gari Habibiullah and Hazara University, it is very difficult to flourish its own market functions or perform central functions of a major town. For the residents of the old Balakot town, it was an opportunity in terms of economic activities, which they will avail in the same spirit. However, to provide economic, social and political environment like the old Balakot town, it was far behind the required level. Comparatively, the old Balakot town has well established economic, social and political environment. This new town has the capacity to grow with time but certainly not to cater the needs of the residents of the old Balakot town. The new Balakot town certainly will serve as a hub for social and political activities of the elite class of the region.

Chapter 6

Identification and Solutions of the Problems of Resettlement

6.1 Introduction

This chapter is divided into two major sections i.e. identification of the problems of resettlement and their solutions. Each section is further divided into sub-sections. The identification of the problems of resettlement of the Balakot town is based on the site and situation analysis. This analysis shows the problems associated with perception about hazards, resettlement process, shelter/residence, employment opportunities at the new and old Balakot town, property ownership, agriculture activities, feudal system, administrative activities, political, social & cultural activities, non-government organization, manufacturing activities, level of the services & utilities, living standard, government's resettlement policy, community awareness, social setup, religious institutions, emotional attachment, valley entity, belief on the separate identity of valley, distance between the old and new Balakot towns, relative location of the old and new Balakot town and centrality of the old and new Balakot town.

These problems of resettlements have two major categories. The first one is associated with the site and situation analysis of the old Balakot town where problems encourage while opportunities discourage the resettlement process of the Balakot town. On the other hand, the problems at new Balakot town discourage while opportunities encourage the resettlement process. Based on these problems of resettlement of the Balakot town, solutions are proposed from the site and situation of the old and new Balakot town. These solution, basically use the site and situation variables along with resettlement policy in such way that it discourage residential and business activities at the old Balakot town and encourage the residential, agriculture, commercial and manufacturing activities at the new Balakot town. This situation will lead to a successful resettlement of the Balakot town.

6.2 Identification of Problems of Resettlement

The post-Earthquake – 2005 scenario of the old Balakot town was totally different, which was the result of change in the various factors of site and situation. The Government policy of the resettlement and the site and situation of the new Balakot town were not quite enough to encourage the residents of the old Balakot town to shift their residence and livelihoods from the old Balakot town to the new Balakot town. There are a number of opportunities of businesses at the old Balakot town while almost negligible such opportunities of business or employments exist at the new Balakot town. This situation has created a major hurdle in the process of resettlement of the Balakot town. It is a combination of a number of factors particularly the situation factors of the old Balakot town i.e. central location in the valley of river Kunhar, fertile land, nodality, tehsil headquarters and central resort of tourism. The feudal system, division of the community into different groups/classes, distance between the old and new Balakot town, location of the new Balakot town, inappropriate resettlement policy, social and political structure, are some other factors that add to the problems of resettlement of the Balakot town.

The identification of the problems of resettlement is elaborated under the headings of shelter/residence, employment opportunities, property ownership, agriculture activities, feudal system, administrative activities, political, social and cultural activities, non-government organization, manufacturing activities, level of the services, level of the utilities, living standards, government's resettlement policy, community awareness, social setup, religious institutions, emotional attachment, valley entity, belief in the separate identity of valley, distance between old and new Balakot towns, relative location of the old Balakot town, relative location of the new Balakot town, centrality of the old Balakot town, and centrality of the new Balakot town. These problems can be grouped into two major classes i.e. opportunities at the old Balakot town particularly of business and lack of

interest in the new Balakot town. These opportunities at old Balakot town and lack of business opportunities at new Balakot town are perceived differently by different groups of the community. The small landholders and lower working class look at the resettlement as an opportunity to change their socioeconomic condition. The business class was more worried about their future livelihoods while the elite or big landowners resist this resettlement process as their economic and social interests were at stake.

6.2.1 Perception about Hazards

The Earthquake – 2005 not only destroyed the buildings, infrastructure, and affected thousands of population but also changed the perception of the people about hazards particularly of earthquake. Most of the respondents were in the region at the time of occurrence of the Earthquake – 2005. They witnessed all the mortality and morbidity caused by the Earthquake – 2005. They also knew that the Earthquake – 2005 destroyed and damaged all sort of buildings including mosque, shrines and other religious institutions. However, only very few buildings withstand whose have reinforced concrete structure (Table No. 6.1). Due to effects of the Earthquake – 2005 and post-earthquake recovery activities, the residents are well aware that earthquake has strong relation with fault lines and that the old Balakot town is located on the fault lines. Almost one fourth of the total respondents were of the view that it was Act of God and nothing to do with fault lines. Similarly, one fifth of the total respondents consider it as curse of God as it brought destruction and morbidity for them. The residents were well aware that the old Balakot town is located in the red zone which the Government has abandoned for residential purposes (Table No. 6.2).

The response about the vulnerability of the sites of the old and new Balakot towns is based on the knowledge which they gain through interaction with line agencies and awareness programmes. Most of the residents have the view that the old Balakot town has

high vulnerability to earthquake. The response of the residents living on the banks of river Kunhar and commercial sector also included flood as second hazard. Similarly, most of the villages of Garlat and few of the Balakot union council considered landslides as major threat for their assets. Most of the respondents have the view that the new Balakot town has low vulnerability to any hazard (Table No. 6.3). Most of the residents, businessmen and the visitors think that risk reduction measures are necessary or mandatory for minimizing the damages of disasters particularly of the earthquake (Table No. 6.4).

Table 6.1
Location at the time of Earthquake – 2005

Households					
Age	Home	Outdoor	Out of the region	Other	Total
Below 16	0	1	1	8	10
16 - 30	14	121	20	10	165
31 - 60	74	641	100	51	866
Above 60	4	5	0	0	9
Total	92	768	121	69	1050
Gender	Home	Outdoor	Out of the region	Other	Total
Male	59	758	116	65	998
Female	33	10	5	4	52
Total	92	768	121	69	1050
Commercial					
Age	Home	Outdoor	Out of the region	Other	Total
Below 16	0	8	2	3	13
16 - 30	0	91	13	34	138
31 - 60	1	101	5	32	139
Above 60	0	7	0	3	10
Total	1	207	20	72	300
Gender	Home	Outdoor	Out of the region	Other	Total
Male	1	206	20	72	299
Female	0	1	0	0	1
Total	1	207	20	72	300

Source: Field Data, 2010

Table 6.2
Perception about the Earthquake - 2005 and the Red Zone Area

Households										
S. No.	Resident Address	Cause of the Earthquake – 2005						Knowledge about the Red Zone		
		Not Known	Act of God	Curse of God	Fault Lines	Other	Total	Yes	No	Total
1	Ghanool	0	12	12	22	0	46	46	0	46
2	Bagh Baliani	0	2	0	3	0	5	5	0	5
3	Bajori	0	6	6	7	0	19	19	0	19
4	Baliani	0	6	5	18	0	29	29	0	29
5	Bazaar Baliani	0	2	2	3	0	7	7	0	7
6	Dhodhiari	0	5	2	6	0	13	13	0	13
7	Grid Baliani	0	2	1	2	0	5	5	0	5
8	Jalora	0	1	1	14	0	16	16	0	16
9	Kach Bali	0	1	1	1	0	3	3	0	3
10	Kali Mitti	0	3	1	5	0	9	9	0	9

Continued

11	Khairan	0	3	4	6	0	13	13	0	13
12	Khwaja Khaili	0	9	8	26	0	43	42	1	43
13	Kohistan More	1	1	1	7	0	10	9	1	10
14	Lehari	0	5	2	6	0	13	13	0	13
15	Lower Bampura	0	7	5	8	0	20	20	0	20
16	Lower Pori	0	1	0	5	0	6	6	0	6
17	Lughmani	0	5	4	11	0	20	20	0	20
18	Mangli	0	13	15	41	0	69	68	1	69
19	Nawaz Abad	0	2	1	2	0	5	5	0	5
20	Podina Baila	0	4	4	6	0	14	14	0	14
21	Pori	0	3	4	7	0	14	14	0	14
22	Rehmat Abad	0	1	0	3	0	4	4	0	4
23	Shah Ismailabad	0	3	2	7	0	12	12	0	12
24	Single Poi	0	4	3	7	0	14	14	0	14

Continued

25	Takkia Lehari	0	1	1	1	0	3	3	0	3
26	Titwal	0	3	4	12	0	19	19	0	19
27	Upper Bampora	0	3	5	9	0	17	17	0	17
28	Upper Pori	0	1	0	1	0	2	2	0	2
29	Mandi	1	1	4	12	0	18	18	0	18
30	Narah	0	8	8	28	0	44	44	0	44
31	Qadarabad	1	6	7	25	0	39	37	2	39
32	Upper Garlat	0	9	3	30	0	42	41	1	42
33	Upper Narah	0	18	17	45	0	80	79	1	80
34	Pandi	0	13	8	38	0	59	59	0	59
35	Lower Narah	0	12	12	36	0	60	60	0	60
36	Kawas	0	9	6	20	1	36	35	1	36
37	Bailla Garlat	0	5	6	18	0	29	29	0	29
38	Deri Narah	0	16	12	38	0	66	66	0	66

Continued

39	Deri	1	6	5	19	1	32	29	3	32
40	Gribabad	0	8	5	21	0	34	34	0	34
41	Habibabad	0	9	6	15	0	30	30	0	30
42	Ganjkal	0	6	6	19	0	31	31	0	31
Total		4	235	199	610	2	1050	1039	11	1050
Commercial										
S. No.	Resident Address	Cause of the Earthquake – 2005						Knowledge about the Red Zone		
		Not Known	Act of God	Curse of God	Fault Lines	Other	Total	Yes	No	Total
1	Outside District Mansehra	2	5	3	25	0	35	33	2	35
2	District Mansehra	0	2	9	22	0	33	32	1	33
3	Valley	0	0	7	25	0	32	32	0	32
4	Balakot	1	3	20	115	1	140	139	1	140
5	Garlat	2	4	5	44	0	55	53	2	55

Continued

6	Ghanool	0	0	0	4	1	5	5	0	5
Total		5	14	44	235	2	300	294	6	300
Customers & Visitors										
S. No.	Resident Address	Cause of the Earthquake – 2005						Knowledge about the Red Zone		
		Not Known	Act of God	Curse of God	Fault Lines	Other	Total	Yes	No	Total
1	Outside District Mansehra	1	4	1	4	0	10	10	0	10
2	District Mansehra	0	0	0	1	0	1	1	0	1
3	Valley	11	8	5	37	1	62	54	8	62
4	Balakot	0	0	0	10	0	10	10	0	10
5	Garlat	1	1	2	9	0	13	13	0	13
6	Ghanool	0	2	0	2	0	4	4	0	4
Total		13	15	8	63	1	100	92	8	100

Source: Field Data, 2010

Table 6.3
Vulnerability to the Sites of old and new Balakot Towns

Households												
S. No.	Resident Address	old Balakot town						new Balakot town				
		Not Known	Low	Medium	High	Other	Total	Not Known	Low	High	Other	Total
1	Ghanool	0	0	7	39	0	46	5	41	0	0	46
2	Bagh Baliani	0	0	1	4	0	5	2	3	0	0	5
3	Bajori	0	2	2	15	0	19	0	19	0	0	19
4	Baliani	0	1	1	27	0	29	3	26	0	0	29
5	Bazaar Baliani	0	0	0	7	0	7	0	7	0	0	7
6	Dhodhiari	0	1	1	11	0	13	0	13	0	0	13
7	Grid Baliani	0	0	0	5	0	5	1	4	0	0	5
8	Jalora	0	0	2	14	0	16	2	14	0	0	16
9	Kach Bali	0	0	0	3	0	3	0	3	0	0	3
10	Kali Mitti	0	1	1	7	0	9	1	8	0	0	9
11	Khairan	0	0	2	11	0	13	1	12	0	0	13

Continued

12	Khwaja Khaili	0	2	4	37	0	43	9	34	0	0	43
13	Kohistan More	1	0	1	8	0	10	2	8	0	0	10
14	Lehari	0	2	0	11	0	13	2	11	0	0	13
15	Lower Bampura	0	0	1	19	0	20	2	18	0	0	20
16	Lower Pori	0	1	1	4	0	6	1	5	0	0	6
17	Lughmani	0	1	0	19	0	20	3	17	0	0	20
18	Mangli	0	2	4	63	0	69	5	64	0	0	69
19	Nawaz Abad	0	0	0	5	0	5	0	5	0	0	5
20	Podina Baila	0	1	1	12	0	14	0	14	0	0	14
21	Pori	0	1	1	12	0	14	1	13	0	0	14
22	Rehmat Abad	0	1	2	1	0	4	0	4	0	0	4
23	Shah Ismailabad	0	0	2	10	0	12	2	10	0	0	12
24	Single Poi	0	0	1	13	0	14	0	14	0	0	14
25	Takkia Lehari	0	0	0	3	0	3	0	3	0	0	3

Continued

26	Titwal	0	1	3	15	0	19	1	18	0	0	19
27	Upper Bampora	0	1	1	15	0	17	2	15	0	0	17
28	Upper Pori	0	2	0	0	0	2	0	2	0	0	2
29	Mandi	0	0	1	17	0	18	3	15	0	0	18
30	Narah	0	4	1	39	0	44	3	41	0	0	44
31	Qadarabad	2	1	3	33	0	39	3	36	0	0	39
32	Upper Garlat	0	1	2	39	0	42	2	39	1	0	42
33	Upper Narah	1	5	5	69	0	80	9	70	1	0	80
34	Pandi	0	2	4	53	0	59	4	55	0	0	59
35	Lower Narah	0	2	4	54	0	60	5	55	0	0	60
36	Kawas	0	2	3	30	1	36	1	34	0	1	36
37	Bailla Garlat	0	1	3	25	0	29	0	29	0	0	29
38	Deri Narah	0	3	5	58	0	66	2	64	0	0	66
39	Deri	1	1	3	26	1	32	2	29	0	1	32

Continued

40	Gribabad	0	1	3	30	0	34	0	34	0	0	34
41	Habibabad	0	2	2	26	0	30	4	26	0	0	30
42	Ganjkal	0	1	3	27	0	31	0	31	0	0	31
Total		5	46	81	916	2	1050	83	963	2	2	1050
Commercial												
S. No.	Resident Address	old Balakot town						new Balakot town				
		Not Known	Low	Medium	High	Other	Total	Not Known	Low	Medium	High	Total
1	Outside District Mansehra	2	1	0	32	0	35	4	29	1	1	35
2	District Mansehra	0	1	1	31	0	33	2	30	1	0	33
3	Valley	0	0	0	32	0	32	0	32	0	0	32
4	Balakot	2	0	1	137	0	140	7	131	2	0	140
5	Garlat	3	0	0	52	0	55	2	52	1	0	55
6	Ghanool	1	0	0	4	0	5	1	4	0	0	5
Total		8	2	2	288	0	300	8	278	5	1	300

Continued

Customers & Visitors												
S. No.	Resident Address	old Balakot town						new Balakot town				
		Not Known	Low	Medium	High	Other	Total	Not Known	Low	Medium	High	Total
1	Outside District Mansehra	0	0	0	9	1	10	0	9	0	1	10
2	District Mansehra	0	0	0	1	0	1	0	1	0	0	1
3	Valley	11	1	0	49	1	62	9	50	1	2	62
4	Balakot	0	0	0	10	0	10	0	10	0	0	10
5	Garlat	0	0	2	11	0	13	0	11	2	0	13
6	Ghanool	0	0	0	4	0	4	0	4	0	0	4
Total		11	1	2	84	2	100	9	85	3	3	100

Source: Field Data, 2010

Table 6.4
Perception about Risk Reduction Measures

Households							
S. No.	Resident Address	Not known	Waste of time	Necessary	Mandatory	Other	Total
1	Ghanool	1	1	21	23	0	46
2	Bagh Baliani	0	0	2	3	0	5
3	Bajori	0	2	5	12	0	19
4	Baliani	0	0	21	8	0	29
5	Bazaar Baliani	0	0	6	1	0	7
6	Dhodhiari	0	0	5	8	0	13
7	Grid Baliani	0	0	3	2	0	5
8	Jalora	0	0	5	11	0	16
9	Kach Bali	0	0	2	1	0	3
10	Kali Mitti	0	0	3	6	0	9
11	Khairan	0	0	9	4	0	13
12	Khwaja Khaili	0	0	19	24	0	43
13	Kohistan More	0	0	5	4	1	10
14	Lehari	0	2	9	2	0	13

Continued

15	Lower Bampura	0	1	7	12	0	20
16	Lower Pori	0	0	2	4	0	6
17	Lughmani	0	1	5	14	0	20
18	Mangli	0	4	29	36	0	69
19	Nawaz Abad	0	0	1	4	0	5
20	Podina Baila	0	1	7	6	0	14
21	Pori	0	0	7	7	0	14
22	Rehmat Abad	0	0	1	3	0	4
23	Shah Ismailabad	0	0	3	9	0	12
24	Single Poi	0	0	9	5	0	14
25	Takkia Lehari	0	0	1	2	0	3
26	Titwal	0	0	10	9	0	19
27	Upper Bampora	1	1	8	7	0	17
28	Upper Pori	0	1	0	1	0	2
29	Mandi	0	1	9	8	0	18
30	Narah	0	0	20	24	0	44

Continued

31	Qadarabad	1	2	17	19	0	39	
32	Upper Garlat	2	0	23	17	0	42	
33	Upper Narah	0	2	34	44	0	80	
34	Pandi	0	0	34	25	0	59	
35	Lower Narah	0	2	30	28	0	60	
36	Kawas	1	0	20	15	0	36	
37	Bailla Garlat	0	0	13	16	0	29	
38	Deri Narah	0	0	24	42	0	66	
39	Deri	1	0	23	7	1	32	
40	Gribabad	0	3	10	21	0	34	
41	Habibabad	0	4	14	12	0	30	
42	Ganjkal	0	0	14	17	0	31	
Total		7	28	490	523	2	1050	
Commercial								
S. No.	Residence Address	Not known	Not Sure	Waste of time	Necessary	Mandatory	Other	Total
1	Outside District Mansehra	3	1	1	13	16	1	35

Continued

2	District Mansehra	2	0	1	8	22	0	33
3	Valley	0	1	0	8	23	0	32
4	Balakot	3	5	0	19	109	4	140
5	Garlat	2	0	0	21	32	0	55
6	Ghanool	1	0	0	0	4	0	5
Total		11	7	2	69	206	5	300
Customers & Visitors								
S. No.	Residence Address	Not known	Not Sure	Waste of time	Necessary	Mandatory	Total	
1	Outside District Mansehra	0	0	1	0	9	10	
2	District Mansehra	0	0	0	0	1	1	
3	Valley	5	4	2	1	50	62	
4	Balakot	0	0	0	0	10	10	
5	Garlat	0	0	0	2	11	13	
6	Ghanool	0	0	0	0	4	4	
Total		5	4	3	3	85	100	

Source: Field Data, 2010

6.2.2 Perception about the Resettlement Process

One of the fundamental factors that affect the resettlement process is perception of the residents of old Balakot town about resettlement process. The residents of the old Balakot town perceive this situation as opportunity for development. Certainly, acceptance of the risk is dependent on the economic opportunities. The residents of the old Balakot town were well aware of the fact that the Government's policy of the resettlement for the old Balakot town covered only the residential sector. Similarly, the commercial sector is also well informed that there will be no protection for their livelihoods in case of the resettlement. The response of the customers and visitors shows that mostly visitors of outside of the valley were not updated about the Government's policy of the resettlement. The response of these three groups i.e. residents, commercial and customers/visitors show that they have good knowledge about the new Balakot town and the red zone (Table 6.5).

In presence of this high level of awareness about red zone of the old Balakot town, the response about living, business and visit to the old Balakot town shows few of the fundamental problems of the resettlement. Most of the respondents of commercial, visitors and residents think that the economic opportunities and business is the basic reason for living, business and visits to the old Balakot town. Almost half of the residents has the view that they have no option rather than to live here in the red zone area of the old Balakot town (Table 6.6). Similar response is observed for future choices of residence, business and visits to the old Balakot town. Half of the residence has preference for living in the old Balakot town and almost half are in favour of shifting to the new Balakot town. The response of the business community and visitors are one sided and they prefer the old Balakot town for business and their visits (Table 6.7).

The business community is against the resettlement process and prefer the old Balakot town for living and businesses as they have no alternative options. Similarly, the

visitors are suffered by the resettlement of old Balakot town due to travelling cost and business interests. However, there is good number of people whom economic interests are least suffered and they prefer for the new Balakot town (Table 6.8). The overall perception about on-going process of the resettlement of the old Balakot town is similar in nature of the previous responses. Most of respondents of the business and visitors/customers think that resettlement is not possible. Half of the residents are in favour of the resettlement while almost half think that it may not be happened. However, the number is increased in favour of resettlement when tested against the Government commitments for the process of resettlement. Half of the residence believes that resettlement is eminent and Government will force them to move from the old Balakot town. Almost, half of the business community have also similar believe that either other people prefer or not Government will force them to move from the old Balakot town. Similar response is observed from the visitors of the old Balakot town (Table 6.9).

6.2.3 Commercial Activities

The bazar of the old Balakot own was a hub for commercial activities for the whole valley. After the Earthquake – 2005, all families were suffered from economic constrains particularly the business community of the old Balakot town as there was no rehabilitation activities for this specific sector. However, due to high feasible business environment this was the sector which starts their activities by self-help based and restored the business boom of the old Balakot town. Mostly agree that business partially fulfil their need which was indeed very positive response from this suffered community. Low profile commercial activities like butchers, hawkers etc. were not satisfied from their business activities. The high profile commercial activities particularly for outside visitors are fully satisfied form their business in the old Balakot town (Table 6.10).

Table 6.5
Knowledge about the Process of Resettlement

Households									
Residence Address	Govt. resettlement policy			New Balakot town			Red Zone		
	Yes	No	Total	Yes	No	Total	Yes	No	Total
Outside District Mansehra	9	5	14	12	2	14	14	0	14
District Mansehra	19	1	20	20	0	20	19	1	20
Valley	9	4	13	13	0	13	13	0	13
Balakot	306	84	390	381	9	390	387	3	390
Garlat	448	119	567	551	16	567	560	7	567
Ghanool	35	11	46	45	1	46	46	0	46
Total	826	224	1050	1022	28	1050	1039	11	1050
Commercial									
Residence Address	Govt. Resettlement Policy			New Balakot Town			Knowledge about Red Zone		
	Yes	No	Total	Yes	No	Total	Yes	No	Total
Outside District Mansehra	33	2	35	33	2	35	33	2	35

Continued

District Mansehra	32	1	33	32	1	33	32	1	33
Valley	32	0	32	32	0	32	32	0	32
Balakot	139	1	140	139	1	140	139	1	140
Garlat	53	2	55	53	2	55	53	2	55
Ghanool	5	0	5	5	0	5	5	0	5
Total	294	6	300	294	6	300	294	6	300
Households									
Gender	Govt. Resettlement Policy			New Balakot Town			Knowledge about Red Zone		
	Yes	No	Total	Yes	No	Total	Yes	No	Total
Male	797	201	998	975	23	998	990	8	998
Female	29	23	52	47	5	52	49	3	52
Total	826	224	1050	1022	28	1050	1039	11	1050

Source: Field Data, 2010

Table 6.6
Reason for Living in the old Balakot Town

Reason for Living in the Old Balakot Town								
Households								
Permanent Resident	Economic	Family	Emotional/Religious	Social	Compel	Nothing	Other	Total
Outside District Mansehra	0	0	0	0	4	6	4	14
District Mansehra	3	2	0	0	5	7	3	20
Valley	0	1	0	0	5	5	2	13
Balakot	103	8	10	3	259	6	1	390
Garlat	390	36	8	3	126	4	0	567
Ghanool	34	4	0	0	8	0	0	46
Total	530	51	18	6	407	28	10	1050
Commercial								
Permanent Residence	Economic	Family	Emotional/Religious	Social	Compel	Other	Total	
Outside District Mansehra	34	0	0	0	0	1	35	
District Mansehra	33	0	0	0	0	0	33	
Valley	31	0	0	0	1	0	32	

Continued

Balakot	130	1	1	1	7	0	140		
Garlat	47	1	0	0	7	0	55		
Ghanool	5	0	0	0	0	0	5		
Total	280	2	1	1	15	1	300		
Customers & Visitors									
Permanent Resident	Economic	Family	Emotional/Religious	Social	Agriculture	Compel	Nothing	Other	Total
Outside District Mansehra	0	0	2	0	0	0	8	0	10
District Mansehra	0	0	0	0	0	0	1	0	1
Valley	53	0	0	6	0	0	0	3	62
Balakot	5	3	0	0	2	0	0	0	10
Garlat	5	3	0	0	3	2	0	0	13
Ghanool	2	0	1	0	0	1	0	0	4
Total	65	6	3	6	5	3	9	3	100

Source: Field Data, 2010

Table 6.7
Choices of the Residence

Households							
Permanent Residence	Continue living in the old Balakot town				Shifting to the new Balakot town		
	Yes	No	Not sure	Total	Yes	No	Total
Outside District Mansehra	0	11	3	14	14	0	14
District Mansehra	4	13	3	20	16	4	20
Valley	1	10	2	13	12	1	13
Balakot	124	265	1	390	279	111	390
Garlat	429	130	8	567	201	366	567
Ghanool	38	8	0	46	12	34	46
Total	596	437	17	1050	534	516	1050
Commercial							
Permanent Residence	Continue living in the old Balakot town				Shifting to the new Balakot town		
	Yes	No	Not sure	Total	Yes	No	Total
Outside District Mansehra	34	0	1	35	9	271	280
District Mansehra	33	0	0	33	1	1	2

Continued

Valley	31	1	0	32	1	0	1
Balakot	131	7	2	140	0	1	1
Garlat	47	7	1	55	15	0	15
Ghanool	5	0	0	5	0	1	1
Total	281	15	4	300	26	274	300
Customers & Visitors							
Permanent Residence	Continue visit to the old Balakot town				Shifting to the new Balakot town		
	Yes	No	Not sure	Total	Yes	No	Total
Outside District Mansehra	8	1	1	10	1	9	10
District Mansehra	0	0	1	1	0	1	1
Valley	51	0	11	62	1	61	62
Balakot	8	0	2	10	0	10	10
Garlat	13	0	0	13	1	12	13
Ghanool	4	0	0	4	0	4	4
Total	84	1	15	100	3	97	100

Source: Field Data, 2010

Table 6.8
Factors Affecting the Present and Future Residence

Reason for living in old Balakot town	Continue living in the old Balakot town				Shifting to the new Balakot town		
	Yes	No	Not sure	Total	Yes	No	Total
Economic/Business	530	0	0	530	69	461	530
Family	42	0	9	51	15	36	51
Emotional/Religious	18	0	0	18	5	13	18
Social	6	0	0	6	0	6	6
Compel	0	407	0	407	407	0	407
Nothing	0	28	0	28	28	0	28
Other	0	2	8	10	10	0	10
Total	596	437	17	1050	534	516	1050
Reason for living in old Balakot town	Continue living in the old Balakot town				Shifting to the new Balakot town		
	Yes	No	Not sure	Total	Yes	No	Total
Economic/Business	280	0	0	280	9	271	280
Family	0	0	2	2	1	1	2
Emotional/Religious	0	0	1	1	1	0	1

Continued

Social	1	0	0	1	0	1	1
Compel	0	15	0	15	15	0	15
Nothing	0	0	0	0	0	0	0
Other	0	0	1	1	0	1	1
Total	281	15	4	300	26	274	300
Reason for visiting/business in old Balakot town	Continue visiting/business in the old Balakot town				Shifting visiting/business to the new Balakot town		
	Yes	No	Not sure	Total	Yes	No	Total
Economic/Business	56	0	9	65	1	64	65
Family	6	0	0	6	0	6	6
Emotional/Religious	3	0	0	3	0	3	3
Social	3	0	3	6	0	6	6
Agriculture land	4	0	1	5	0	5	5
Compel	3	0	0	3	1	2	3
Nothing	6	1	2	9	1	8	9
Other	3	0	0	3	0	3	3
Total	84	1	15	100	3	97	100

Source: Field Data, 2010

Table 6.9
Perception about the Process of Resettlement

Households						
Gender	Other people shifting to new Balakot town			Govt. will force you to shift to new Balakot town		
	Yes	No	Total	Yes	No	Total
Male	528	470	998	526	472	998
Female	15	37	52	15	37	52
Total	543	507	1050	541	509	1050
Commercial						
Gender	Other people shifting to new Balakot town			Govt. will force you shift to new Balakot town		
	Yes	No	Total	Yes	No	Total
Male	44	255	299	165	134	299
Female	0	1	1	0	1	1
Total	44	256	300	165	135	300
Visitors/Customers						
Gender	Other people shifting to new Balakot town			Govt. will force you shift to new Balakot town		
	Yes	No	Total	Yes	No	Total
Male	27	69	96	40	56	96
Female	2	2	4	2	2	4
Total	29	71	100	42	58	100

Source: Field Data, 2010

Initially after Earthquake - 2005, most of the business community were willing to shift their businesses to the new Balakot town (Table 6.11). However, circumstances were changed after announcement of the Government policy of the resettlement which has nothing for the business community. As a result, the attitude of the business community of the old Balakot town was changed towards the process of resettlement (Table 6.9). Interesting response from the customers/visitors of the old Balakot town was observed that they were full satisfied from business services of the area (Table 6.12). The response of the residents according to their major livelihood of the family shows that business is the major hurdle in the resettlement not only of the business community but also of the families whose major dependency was on agriculture activities. According to the business community response, the lack of protection for commercial activities in the Government's the policy of resettlement was the major hurdle (Table 6.13).

Table 6.10
Nature of Commercial Activities in the Old Balakot Town

S. No.	Type of commercial activity	Business fulfil your needs				
		No	Partial	Yes	Surplus	Total
1	Hoteling	0	2	0	0	2
2	Restaurant	0	14	0	0	14
3	Jewellery	0	2	0	0	2
4	Barber	0	10	1	3	14
5	Cloths	0	21	0	0	21
6	Electronics	0	13	0	1	14
7	General store	0	80	7	4	91
8	Shoes	0	14	0	0	14
9	Toys	0	9	2	3	14
10	Sweets & Bakers	0	3	0	0	3
11	Butchers	1	2	1	0	4
12	Bank	1	1	0	0	2
13	Tailors	0	13	0	0	13

Continued

14	Gifts	0	4	0	0	4
15	Furniture	0	2	0	0	2
16	Hardware	0	3	0	0	3
17	LPG	0	7	0	0	7
18	Medical Stores	0	4	0	0	4
19	Hawkers	6	3	0	0	9
20	Vegetables	9	4	0	0	13
21	Miscellaneous	0	44	4	2	50
22	Total	17	255	15	13	300

Source: Field Data, 2010

Table 6.11
Number of Shifted Business Activity from the Old Balakot Town

S. No.	Name of the Town/City	Frequency
1	Abbottabad	2
2	Bakryal	571
3	Balakot	8
4	Mansehra	12
5	Rawalpindi	2
Total		595

Source: NESPAK, 2010

Table 6.12
Vulnerability Relationship with Business Activities

Comparison of existing bazaar vulnerability to old one	Satisfaction with post disaster business activities		
	Yes	No	Total
Not known	11	0	11
Not sure	3	0	3
Lesser	2	0	2
Greater	82	2	84
Total	98	2	100

Source: Field Data, 2010

Table 6.13
Livelihoods Relationship with the Resettlement Process

	Households							
Major Livelihood of the Family	Major hurdle in shifting							
	Business	Family	Social	lack of Govt. policy	Agriculture land	Nothing	Other	Total
Agriculture	429	31	16		0	48	0	524
Business	101	2	3		0	299	0	405
Govt. service	0	11	0		1	32	7	51
Private Service	0	7	1		1	48	1	58
Manufacturing	0	0	0		0	2	0	2
Agriculture & Business	0	0	4		0	0	0	4
Other	0	0	0		0	6	0	6
Total	530	51	24	0	2	435	8	1050
Commercial								
Agriculture	1	0	0	0		0	0	1
Business	204	2	2	71		15	1	295
Govt. Service	0	0	0	1		0	0	1
Private Service	1	0	0	0		0	0	1
Ag. & Bu.	0	0	0	2		0	0	2
Total	206	2	2	74	0	15	1	300

Source: Field Data, 2010

6.2.4 Shelter/Residence

The Earthquake – 2005 totally destroyed the houses in the old Balakot town. More than 90% of the population is living in the fabricated houses. Two rooms, one kitchen and one latrine are common structure of these houses. All of the houses have electricity, mostly in loose fitting network. According to field survey, most of families have the sizes of 3 – 5 or 6 – 10 persons. Looking to the size of family and space of fabricated houses, the living space for a family is very small. This compliant is reflected in most of the responses of the households while comparing existing house space with the old one (Table 6.14). Presently, very few families are living in *Pacca* or repaired houses while mostly living in the fabricated houses. Either it is fabricated or repaired houses, the common response is that these houses has high vulnerability for all hazards. Mostly the commercial units' structures are also fabricated and they have the same complain (Table 6.15). The residents are well aware of the fact that the old Balakot town is abandoned for residential purposes. Very few families repaired or restarted the construction of their houses. Most of the families are suffered from economic constrains after Earthquake – 2005 and reluctant to invest in red zone (Table 6.16).

6.2.5 Employment

The Earthquake – 2005 totally damaged the commercial infrastructure. However, the residents started their business in fabricated and repaired shops immediately after Earthquake – 2005. Agriculture sector was also affected by the Earthquake – 2005 for temporary or short period. The respondents of household and commercial shows that most of the families have one, few have two and very few have three earners. The field data revealed that the agriculture and business are well in boom in the old Balakot town. Most of the families are directly dependent on these two sectors of the economy (Table 6.17 & 6.18).

Table 6.14
Family Strength and Housing Conditions

Number of family members	Number of Room				Comparison of the existing house's capacity with old one					Satisfaction with living space available		
	1-2	3-4	> 4	Total	Greater	Equal	Smaller	Much Smaller	Total	Yes	No	Total
2	17	1	0	18	0	0	12	6	18	0	18	18
3-5	677	28	7	712	3	9	622	78	712	12	700	712
6-10	289	13	9	311	0	1	183	127	311	1	310	311
> 10	4	1	4	9	0	0	8	1	9	0	9	9
Total	987	43	20	1050	3	10	825	212	1050	13	1037	1050

Source: Field Data, 2010

Table 6.15
Comparison of the Vulnerability

Households						
Type of House	Not known	Not sure	Lesser	Equal	Greater	Total
Fabricated	30	19	25	14	932	1020
Pacca	2	2	0	0	16	20
Semi Pacca	0	0	0	1	7	8
Kacha	0	0	0	0	1	1
Other	0	0	0	0	1	1
Total	32	21	25	15	957	1050
Commercial						
Type of Construction	Not known	Not sure	Lesser	Equal	Greater	Total
Fabricated	1	3	2	3	179	188
Pacca	0	0	0	63	17	80
Semi Pacca	0	0	0	0	9	9
Kacha	0	0	0	0	4	4
Other	14	5	0	0	0	19
Total	15	8	2	66	209	300

Source: Field Data, 2010

Table 6.16
Status of the Permanent Houses Availability

Tenure/Ownership of the house	Permanent house availability						
	Already started	Repaired the old one	Economic Constrains	Red-Zone location	c & d	Other	Total
Owner	10	23	260	362	320	10	985
Rent free	0	0	12	9	14	0	35
Rented	0	0	6	9	10	1	26
Other	0	0	0	2	1	1	4
Total	10	23	278	382	345	12	1050

Source: Field Data, 2010

Table 6.17
Number of Earners in the Family

Number of family members	Households					Commercial				
	1	2	3	> 3	Total	1	2	3	> 3	Total
2	17	1	0	0	18	10	2	0	0	12
3-5	689	19	4	0	712	187	11	2	1	201
6-10	291	11	9	0	311	73	6	3	0	82
> 10	5	0	0	4	9	3	1	0	1	5
Total	1002	31	13	4	1050	273	20	5	2	300

Source: Field Data, 2010

Table 6.18
Earthquake Effects on the Livelihoods

Major Livelihoods of the family	Not Affected	Temporarily Affected	Seriously Damaged	Totally Damaged	Total
Agriculture	35	460	10	19	524
Business	5	272	34	94	405
Govt. service	3	47	0	1	51
Private Service	2	52	2	2	58
Manufacturing	0	2	0	0	2
Ag. & Bu.	0	0	4	0	4
Other	0	5	0	1	6
Total	45	838	50	117	1050

Source: Field Data, 2010

6.2.6 Property Ownership

Property ownership is very important factor in the resettlement of the Balakot town. The elite business class and property holders of the old Balakot town not only control the businesses of the old Balakot town but also the social and political scenario of this town. However, the Government's resettlement policy did not cover the agriculture and business sectors. As result, this influential class re-established the businesses in the old Balakot town and thus increases the dependency of lower and middle class on the old Balakot town for their employments. More than half of the respondents of households have some agriculture property. However, almost half and dozen families have more than twenty *kanal* lands. Certainly, there are few families which has more than forty *Kanal* lands (Table 6.19). This system of landlordism is more prominent in the commercial property ownership. One of the families has the ownership of almost half of the bazaar area of the old Balakot town and overall, more than three fourth of the bazaar is the property of four families. Less the one of the fourth of bazaar is shared by rest of the landowners (Table 6.20).

Table 6.19

Property Ownership and Agriculture Land Size (*Kanal*)

Type of Tenure/Ownership	1-5	6-10	11-20	21-40	> 40	Nil	Total
Owner	497	50	21	6	8	0	582
Rented	0	0	0	0	0	4	4
<i>Ajara</i>	0	0	0	0	0	27	27
Tenant	0	0	0	0	0	10	10
Lease	0	0	0	0	0	11	11
Other	0	0	0	0	0	416	416
Total	497	50	21	6	8	468	1050

Source: Field Data, 2010

Table 6.20

Property Ownership and Commercial Land Size

Type of Tenure/Ownership	Owner	Rented	Ajara	Tenant	Other	Total
½ bazaar	1	0	0	0	0	1
¼ bazaar	1	0	0	0	0	1
2-4 markets	8	0	0	0	0	8
1 market	4	0	0	0	0	4
5-10 shops	4	0	0	0	0	4
2-4 shops	3	0	0	0	0	3
1 shop	60	0	0	0	0	60
Nil	0	295	76	77	521	969
Total	81	295	76	77	521	1050

Source: Field Data, 2010

6.2.7 Agriculture Activities

The old Balakot town and its surrounding has limited but fertile agriculture land. The agriculture activities are practiced and production is locally consumed. The dependency on agriculture and its share in economy is limited as compared with businesses in the old Balakot town. More than half of the population practiced the agriculture activities but few of them are satisfied with fulfilling of their needs. There are few families which has no land and working in agriculture sector. The response is worse from that section about satisfaction for household needs from agriculture livelihoods (Table 6.21).

Table 6.21

Agriculture Activity and Household Needs

Tenure/Ownership of the agriculture land	Agriculture productions fulfil your needs				
	No	Partial	Yes	Surplus	Total
Owner	497	50	23	12	582
Rented	4	0	0	0	4

Ajara	27	0	0	0	27
Tenant	10	0	0	0	10
Lease	11	0	0	0	11
Other	416	0	0	0	416
Total	965	50	23	12	1050

Source: Field Data, 2010

6.2.8 Feudal System

The residents of the Balakot town are well off from its surrounding regions. The major cause of this status is their businesses. However, the whole region and particularly the old Balakot town have the characteristics of feudal system which is clear from the share of land ownership. These feudal characteristics are more visible in political setup. The first unit of political collation is ethnic group representation like *Swati* and *Gujars* etc. In second stage, the area is politically represented by families as their share of seats in *Nazims*, MPAs and MNAs. This feudal system has strong role in the resettlement of the Balakot town. Apparently, the resettlement has some serious hurdles from this elite class as their economic, political and social interests are affected by this process of resettlement.

6.2.9 Administrative Activities

The old Balakot town is tehsil headquarter of the tehsil Balakot. All administrative activities like offices of the executives of different departments, police and judiciary etc. are the in old Balakot town. The most important offices are the police and Judiciary. These two offices along with other administrative activities of education, health, NADRA, TMO, tourism and head offices of NGOs play vital role in high influx of visitors for visiting these offices in the old Balakot town. Certainly, these administrative activities are centripetal forces for the business activities in the old Balakot town. After Earthquake –

2005, the influx of visitors for administrative activities has been increased. They are now not only visiting for normal administrative activities but also for registration, compensation and legal advisory services.

6.2.10 Political, Social and Cultural Activities

The old Balakot town is the centre for the residents of the valley of river Kunhar for political, social and cultural activities. Political offices and meetings of the political groups of the local as well as of regional groups are held in the old Balakot town. The offices of tehsil *Nazim* and TMO are the hub of political activities while the bazaar of the old Balakot town provides extra advantages for upholding of political meetings. The old Balakot town has the shrines of Shah Ismail Shaheed and Syed Ahmad Shaheed which increases the prestige of this town. Holding meetings in the old Balakot town is symbol of social status in the valley. Similarly, the old Balakot town is hub of all cultural activities and festivals of the valley. The visitors' influx is increased during any political, social or cultural activities. As result, the businesses of the old Balakot town increases and ultimately the centrality of old Balakot town is increased.

6.2.11 Non-Government Organizations (NGOs)

Prior to the Earthquake – 2005, there were very few NGOs offices which represented the social, cultural and particularly the business class. After Earthquake – 2005, the development sector offices flooded the old Balakot town. In early response phase, all activities were controlled from the old Balakot town. Later on in the relief phase, it was again hub of all relief activities. Presently in recover phase, most of the offices are in the old Balakot town. The most obvious result of these NGOs offices is the increased number of visitors and improvement in the utilities & services of the old Balakot town. The overall result of these NGOs offices is the enhancement of the centrality of the old Balakot town.

6.2.12 Manufacturing Activities

In the whole region of the red zone of the old Balakot town, there are very few manufacturing units of wood cutting, furniture, bricks making and tailoring. Only the tailoring activities provide its services to local as well as to surrounding region. The rest of the manufacturing activities hardly fulfil the needs of the old Balakot town. Similarly, the number of employment opportunities is limited in these units and small portion of labour work there. The overall impacts of the manufacturing on the centrality of the old Balakot town are minor one.

6.2.13 Level of the Civic Services

The health, education and telecommunication services were severely damaged by the Earthquake – 2005. After Earthquake – 2005, these services were restored on priority basis. Education and health services were started on same location in fabricated structures. These services are continued in the same fabricated structures till to date. The health facilities are more enhanced through provision of advance equipment and facilities. The education services remain on same status in the public sector. However, in private sector, the education services are recovered. Most of the households were satisfied from health and telecommunication services (Table 6.22). The utilities of the old Balakot town are services for the residents of outside of the town area. The business community response about the utilities and services at the old Balakot town is a mix type. As most of the respondent think that these services could be easily improved which will directly support their business activities (Table 6.23). Similarly, the visitors/customers response particularly the visitors outside of the valley shows that these services need to be improved (Table 6.24).

The main reason of these responses is the lack of interest of the Government's line agencies in the reconstruction of infrastructure due to red zone area. The residents of the

old Balakot town are compelled to utilize the services of the present education facilities. The visitors/customer response shows that few of the residents of outside of the red zone are utilizing the education services of the old Balakot town. However, greater numbers of the respondents of the visitors/customer believe that the education services in the old Balakot town are still better than its surrounding regions (Table 6.25). The health services in the old Balakot town for visitors/customers are satisfactory. High number of the respondents has high dependency (25 -75 %) on the health services of the old Balakot town (Table 6.26).

Table 6.22

Household's Response about Health and Telecommunication Services

Level of Response	Satisfaction with Health Services			Satisfaction with Telecommunication Services		
	Yes	No	Total	Yes	No	Total
Household Head	767	118	885	821	64	885
Earner	99	16	115	108	7	115
Dependent	42	8	50	46	4	50
Total	908	142	1050	975	75	1050

Source: Field Data, 2010

Table 6.23

Businessmen's Response about Utility and Services

Level of Response	Yes	No	Total
Household Head	91	168	259
Earner	13	20	33
Dependent	3	5	8
Total	107	193	300

Source: Field Data, 2010

Table 6.24

Visitors/Customers' Response about Utility and Services

Permanent Resident Address	Yes	No	Total
Outside District Mansehra	3	7	10
District Mansehra	0	1	1
Valley	46	16	62
Balakot	4	6	10
Garlat	8	5	13
Ghanool	4	0	4
Total	65	35	100

Source: Field Data, 2010

Table 6.25

Visitors/Customers' Response about Education Services in old Balakot Town

Resident Address	Level of Satisfaction			Level of Utilization		
	Yes	No	Total	Yes	No	Total
Outside District Mansehra	5	5	10	0	10	10
District Mansehra	0	1	1	0	1	1
Valley	52	10	62	7	55	62
Balakot	5	5	10	4	6	10
Garlat	10	3	13	2	11	13
Ghanool	4	0	4	1	3	4
Total	76	24	100	14	86	100

Source: Field Data, 2010

Table 6.26

Visitors/Customers' Response about Health Services in old Balakot Town

Resident Address	Outside District Mansehra	District Mansehra	Valley	Balakot	Garlat	Ghanool	Total
Level of Satisfaction							
Yes	6	0	56	7	11	4	84
No	4	1	6	3	2	0	16
Total	10	1	62	10	13	4	100
Level of Dependency							
< 5%	10	1	3	0	0	0	14
5 - 25%	0	0	7	0	0	1	8
25 - 50%	0	0	32	0	1	1	34
50 - 75%	0	0	20	6	7	1	34
100%	0	0	0	4	5	1	10
Total	10	1	62	10	13	4	100

Source: Field Data, 2010

6.2.14 Level of the Civic Utilities

The old Balakot town had well network of paved street & roads and infrastructure of utilities which was totally damaged by the Earthquake – 2005. It was restored by community, Government's line agencies and NGOs. Most of the clean water availability is ensured through public health department of the old Balakot town. Besides this, hand pumps and spring tanks are constructed by NGOs. The residents of the old Balakot town mostly use the public health department water of null-pipe. Few households are using hand pumps and very few households are using electric machines. Similarly, very few households use water from sump tanks on spring. Most of the residents are satisfied with public health department water of null-pipe. While the hand pump water user are not satisfied with water quality and availability (Table 6.27).

Latrines were available in all houses either fabricated or *Pacca* houses. Most of the residents are satisfied with the hygienic conditions of these latrines (Table 6.28). Source of fuel used in the houses are LPG cylinder, electricity, wood, coal etc. Almost half of the respondents are using LPG cylinder while half of the residents are using wood as fuel in their houses (Table 6.28). In bazaar area of the old Balakot town, the water and electricity are available in different form as the need is different in each type of commercial activities. The important aspect of the response is the satisfaction with water availability from almost all respondents of different commercial activities (Table 6.30).

Table 6.27
Satisfaction with Water Availability

Source of Water	Yes	No	Total
No	0	1	1
Null-pipe	877	24	901
Hand Pump	3	68	71
Well	1	33	34
Electric Machine	39	0	39
Other	1	3	4
Total	921	129	1050

Source: Field Data, 2010

Table 6.28
Hygienic Condition of the Latrine System

Latrine availability	Yes	No	Total
Yes	921	128	1049
No	0	1	1
Total	921	129	1050

Source: Field Data, 2010

Table 6.29
Source of Fuel

Type	Frequency	Per cent
LPG cylinder	501	48
Electricity	20	2
Wood	518	49
Coal	3	0
Other	8	1
Total	1050	100

Source: Field Data, 2010

Table 6.30
Electricity and Water Availability in Different Type of Houses

	Type of Construction					
	Fabricated	Pacca	Semi Pacca	Kacha	Other	Total
Electricity availability						
No	7	0	6	4	3	20
Loose Fitting	177	56	3	0	16	252
Pipe Fitting	4	24	0	0	0	28
Total	188	80	9	4	19	300
Water availability						
No	5	1	2	0	1	9
Null-pipe	10	5	5	4	3	27
Electric Machine	10	6	0	0	0	16
Other	163	68	2	0	15	248
Total	188	80	9	4	19	300

Source: Field Data, 2010

6.2.15 Living Standards

Traditionally, the people of the valley of river Kunhar in general and specifically in the old Balakot town always enjoyed a peaceful environment. There is a unanimous response from the both gender of the residents of old Balakot town that they are satisfaction with security situation. Due to red zone area there is very limited infrastructure development activities in the old Balakot town from the Government's line agencies. As result, the residents feel little bit accessibility or movement problems (Table 6.31). After Earthquake

– 2005, the infrastructure of the transportation is not properly developed which is reflected in the response of business community as some of the respondent feel somewhat difficulties in the accessibility or movement (Table 6.32). The response about overall living standard level in the old Balakot town is not encouraging. More than half of the respondents of the household and commercial sector think that the overall living standards are not satisfactory in the old Balakot town. From visitors/customers respondents, half of the respondents think that level of the living standards is satisfactory (Table 6.33).

Table 6.31

Household's Response about Security and Accessibility					
	Satisfaction with security	Accessibility or movement problems			
Gender	Yes	Yes	Somewhat	No	Total
Male	998	28	118	852	998
Female	52	3	6	43	52
Total	1050	31	124	895	1050

Source: Field Data, 2010

Table 6.32

Businessmen's Response about Accessibility or Movement Problems

Gender	Yes	Somewhat	No	Total
Male	36	79	184	299
Female	0	0	1	1
Total	36	79	185	300

Source: Field Data, 2010

Table 6.33
Satisfaction Level about Living Standard

Permanent Resident Address							
	Outside District Mansehra	District Mansehra	Valley	Balakot	Garlat	Ghanool	Total
Households							
Yes	3	6	3	128	131	11	282
No	11	14	10	262	436	35	768
Total	14	20	13	390	567	46	1050
Commercial							
Yes	11	10	10	79	19	1	130
No	24	23	22	61	36	4	170
Total	35	33	32	140	55	5	300
Visitors/Customers							
Yes	1	0	32	5	10	3	51
No	9	1	30	5	3	1	49
Total	10	1	62	10	13	4	100

Source: Field Data, 2010

6.2.16 Government's Policy of the Resettlement

The response about the Government's policy of the resettlement shows that the compensation strategy and lack of support for business or livelihoods are major shortcomings of this policy. The response of the household shows that almost half of the population think that business is major hurdle in their resettlement. The tenants have their major concern of justice during the process of resettlement. The response of the business community is harsh about the Government's policy of the resettlement. Almost, the whole community think that resettlement has serious issues and top of the list is business opportunities in the old Balakot town. The response of the visitors/customers is a mix type as half of the respondents think that resettlement is possible in present circumstances while half of the respondents think that business concern must be included in the policy of resettlement (Table 6.34).

Compensation is the main element of the Government's policy of the resettlement in the form of cash or land in the new Balakot town. All the residents knew that only the land of houses and shops will be compensated in the resettlement. Although, there is coverage for commercial land substitution but practically no such a land is entitled for this purpose and the landowners of commercial property are well aware of this fact. They already received the partial payment in the form of cash for damaged houses. Most of the respondents agree that somewhat compensation has been paid (Table 6.35).

6.2.17 Community Awareness

The community of the old Balakot town is well aware of the fact that this area is in the red zone where residence is abandoned. Most of them had also good knowledge of the policy of resettlement. However, there is a segment of rural population particularly in union council Garlat which had limited knowledge of the resettlement process. The residents of the Balakot town have accepted the high risk of earthquake for their economic interests or livelihoods. In case of unsuccessful resettlement, this area of the old Balakot town is exposed for another catastrophe as vulnerability has been increased tremendously after the Earthquake – 2005.

6.2.18 Social Setup

The old Balakot town social setup is based on feudal, ethnic and business community values. The business and landlords community resist the resettlement as their interests are suffered seriously. However, there are groups of low income or public services which in dire need of change. The low income residents welcome the resettlement as an economic opportunity while the public service group is more conscious about site vulnerability of the old Balakot town. Most of the respondents from all three types of households, commercial and visitors/customers are accepting that resettlement will change the social setup. However, they are not in mode of accepting it (Table 6.36).

Table 6.34
Response about Resettlement Process

Households							
Major hurdle in shifting	Major concern about new Balakot town						
	Not possible	Justice	Employment	Business	Social status	Nothing	Total
Business	12	51	8	459	0	0	530
Family	6	2	0	0	43	0	51
Social attachment	2	6	0	0	16	0	24
Agriculture land	2	0	0	0	0	0	2
Nothing	12	24	0	0	0	399	435
Other	1	4	0	0	2	1	8
Total	35	87	8	459	61	400	1050
Commercial							
Major hurdle in shifting	Major concern about new Balakot town						
	Not possible	Justice	Employment	Business	Social status	Nothing	Total
Business	0	23	4	179	0	0	206
Family	0	0	0	0	2	0	2

Continued

Social attachment	0	0	0	0	2	0	2
Agriculture land	64	10	0	0	0	0	74
Nothing	0	0	0	0	0	15	15
Other	0	0	0	0	0	1	1
Total	64	33	4	179	4	16	300
Visitors/Customers							
Major hurdle in shifting	Major concern about new Balakot town						
	Not possible	Justice	Employment	Business	Social status	Nothing	Total
Travelling cost	3	15	2	0	0	0	20
Social attachment	0	4	0	0	0	2	6
Both	3	27	12	8	7	0	57
lack of Govt. policy	0	0	1	0	7	0	8
Other	0	2	0	0	0	7	9
Total	6	48	15	8	14	9	100

Source: Field Data, 2010

Table 6.35
Response about Compensation of Losses

Permanent Resident Address	Households				Commercial		
	Yes	No	Up to some extend	Total	No	Up to some extend	Total
Outside District Mansehra	11	1	2	14	33	2	35
District Mansehra	11	2	7	20	33	0	33
Valley	7	0	6	13	31	1	32
Balakot	6	8	376	390	19	121	140
Garlat	5	2	560	567	11	44	55
Ghanool	0	0	46	46	1	4	5
Total	40	13	997	1050	128	172	300

Source: Field Data, 2010

Table 6.36

Response about Social Setup

Households							
Satisfaction with present social setup	Social setup in new Balakot town				Acceptance of the new social setup in new Balakot town		
	Present	Changed	Not known	Total	Yes	No	Total
Yes	5	900	138	1043	69	974	1043
No	0	5	2	7	1	6	7
Total	5	905	140	1050	70	980	1050
Commercial							
Satisfaction with present social setup	Social setup in new Balakot town				Acceptance of the new social setup in new Balakot town		
	Present	Changed	Not known	Total	Yes	No	Total
Yes	11	277	3	291	14	277	291
No	6	0	3	9	9	0	9
Total	17	277	6	300	23	277	300
Visitors/Customers							
Satisfaction with present social setup	Social setup in new Balakot town				Acceptance of the new social setup in new Balakot town		
	Present	Changed	Not known	Total	Yes	No	Total
Yes	15	50	35	100	18	82	100
No	0	0	0	0	0	0	0
Total	15	50	35	100	18	82	100

Source: Field Data, 2010

6.2.19 Religious Institutions

The shrines of Shah Ismail Shaheed and Syed Ahmad Shaheed give religious prestige to the old Balakot town. Certainly the Earthquake – 2005 changed this religious prestige of the old Balakot town. This change is also reflected in the perception about hazards. However, more than half of the respondents of households and commercial sectors have strong religious sentiments with the old Balakot town which has impacts on their resettlement decision (Table 6.37). Opposite nature of response is observed from the local and outside of the valley visitors/customers. However, most of the respondents' shows less religious sentiments with the old Balakot town (Table 6.38).

Table 6.37

Response about Religious Sentiment

Households							
Gender	Religious attachment with old Balakot town			Religious attachment effect shifting decision			
	Yes	No	Total	Yes	No	Partial	Total
Male	562	436	998	481	436	81	998
Female	41	11	52	35	11	6	52
Total	603	447	1050	516	447	87	1050
Commercial							
Old Balakot religious importance	Religious attachment with old Balakot town			Religious attachment effect shifting decision			
	Yes	No	Total	Yes	No	Partial	Total
Yes	180	85	265	122	85	58	265
No	0	35	35	0	35	0	35
Total	180	120	300	122	120	58	300

Source: Field Data, 2010

Table 6.38

Visitors/Customers' Response about Religious Sentiment

Old Balakot religious importance	Religious attachment with old Balakot town		
	Yes	No	Total
Yes	14	75	89
No	0	11	11
Total	14	86	100

Source: Field Data, 2010

6.2.20 Emotional Attachment

The old Balakot town is the birthplace of more than three fourth of total respondents of households, commercial and visitors/customers. As result their emotional attachment with the old Balakot town is obvious. The response of the respondents of households and commercial shows that more than half of the total population think that this emotional sentiment will affect their decision of resettlement (Table 6.39 & 6.40).

Table 6.39

Response about Emotional Sentiment

Households				
Emotional attachment with old Balakot town	Emotional attachment effect shifting decision			
	Yes	No	Partial	Total
Birth place	63	24	8	95
Forefather were here	80	46	16	142
Both	409	261	105	775
Working place	7	26	2	35
Other	0	2	1	3
Total	559	359	132	1050
Commercial				
Emotional attachment with old Balakot town	Emotional attachment effect shifting decision			
	Yes	No	Partial	Total
Birth place	11	0	0	11
Forefather were here	23	5	0	28

Continued

Both	126	38	0	164
Working place	0	28	0	28
Other	0	69	0	69
Total	160	140	0	300

Source: Field Data, 2010

Table 6.40

Response about Emotional Sentiment

Resident Address	Emotional attachment with old Balakot town		
	Birth place	Forefather were here	Total
Outside District Mansehra	0	10	10
District Mansehra	0	1	1
Valley	58	4	62
Balakot	8	2	10
Garlat	9	4	13
Ghanool	2	2	4
Total	77	23	100

Source: Field Data, 2010

6.2.21 Valley Entity

The old Balakot town is not only geographic centre of the valley of river Kunhar but also centre of their social, political, economic and cultural activities. There is strong belief on the separate identity of the valley among the whole population. The response of the all three sections of households, commercial and visitors/customers shows that more than three fourth of total respondents of each section belief on the separate identity of the valley of river Kunhar. The new Balakot town is located on the south-west edge of the tehsil Balakot. This area of the new Balakot town located out of the valley area. This sentiment of the valley will certainly affect the whole resettlement process particularly of shifting of tehsil headquarters to the new Balakot town (Table 6.41)

Table 6.41

Belief/Comment on the Separate Identity of the Valley

Permanent Resident Address	Households			Commercial			Visitors/Customers		
	Yes	No	Total	Yes	No	Total	Yes	No	Total
Outside District Mansehra	11	3	14	24	11	35	7	3	10
District Mansehra	12	8	20	31	2	33	1	0	1
Valley	9	4	13	26	6	32	59	3	62
Balakot	365	25	390	138	2	140	10	0	10
Garlat	553	14	567	55	0	55	13	0	13
Ghanool	46	0	46	5	0	5	4	0	4
Total	996	54	1050	279	21	300	94	6	100

Source: Field Data, 2010

6.2.22 Distance between the old and new Balakot Towns

According to the Government's resettlement policy, the residents of the old Balakot town will offer residential plots in the new Balakot town. Rest of their property including agriculture land and business will remain intact in the old Balakot town. The new Balakot town located at the distance of almost 22 Km from the old Balakot town. More than three fourth of the total respondents of households and commercial think that they will not be able to manage their property or business form the new Balakot town. Similarly, the visitors/customers response shows that they will not be able to visit the new Balakot town for business etc. (Table 6.42).

6.2.23 Relative Location of the Old Balakot Town

The historic and strategic importance of the old Balakot town, nodal point for famous tourist destinations like Kaghan, Naran and Shobre and proposed link road to Karakorum Highway make the relative location of the old Balakot town very attractive. All these aspects change the perception of the residents and business community about the resettlement. It has also impacts on the visitors/customers perception about resettlement as

shifting of administrative activities will affects their travelling costs and business activities.

Table 6.42
Management of Property and Business from new Balakot Town

Resident Address	Management of property from new Balakot town			
	Yes	No	Not sure	Total
Outside District Mansehra	12	1	1	14
District Mansehra	15	5	0	20
Valley	10	3	0	13
Balakot	46	339	5	390
Garlat	42	490	35	567
Ghanool	2	43	1	46
Total	127	881	42	1050
Resident Address	Management of business from new Balakot town			
	Yes	No	Not sure	Total
Outside District Mansehra	14	9	12	35
District Mansehra	12	7	14	33
Valley	1	15	16	32
Balakot	12	116	12	140
Garlat	10	39	6	55
Ghanool	0	5	0	5
Total	49	191	60	300
Resident Address	Management of visit/business in new Balakot town			
	Yes	No	Not sure	Total
Outside District Mansehra	0	0	10	10
District Mansehra	0	0	1	1
Valley	10	48	4	62
Balakot	1	9	0	10
Garlat	0	13	0	13
Ghanool	0	4	0	4
Total	11	74	15	100

Source: Field Data, 2010

6.2.24 Relative Location of the New Balakot Town

The new Balakot town has central location for Mansehra town, Hazara University, Gari Habibullah and the old Balakot town. This relative location makes the new Balakot town very attractive as a satellite town for residential purposes. The travelling distance and high residential facilities will attract the elite class of these towns. This situation will create hurdles for the resettlement. As low income population of the old Balakot town will feel difficult to survive particularly the business class.

6.2.25 Centrality of the Old Balakot Town

The old Balakot town is a central place for its surrounding area. It provides its administrative, political, social, economic and cultural services to its surrounding areas. This dependency of the surrounding areas on the old Balakot town is reflected in their responses. Most the household prefer to live in the peripheries of the old Balakot town rather than in the new Balakot town. Similarly, most the commercial respondents think that their business will flourish in the peripheries of the old Balakot town rather than in the new Balakot town. The visitors/customer response about their visit and business shows the absolute dependency of on the old Balakot town (Table 6.43). The visitors/customer response about their satisfaction with present livelihoods shows that it will be indeed difficult for them to visit or business in the new Balakot town (Table 6.44).

Table 6.43

Business/Living Outside of Old Balakot Town

Permanent Resident Address	Households				
	Peripheries of Balakot	new Balakot town	Other town/city	Other	Total
Outside District Mansehra	2	9	2	1	14
District Mansehra	6	10	3	1	20
Valley	3	9	0	1	13
Balakot	355	34	1	0	390

Continued

Garlat	544	20	3	0	567
Ghanool	46	0	0	0	46
Total	956	82	9	3	1050
Commercial					
Outside District Mansehra	10	14	6	5	35
District Mansehra	7	12	9	5	33
Valley	16	1	11	4	32
Balakot	122	12	0	6	140
Garlat	42	10	0	3	55
Ghanool	5	0	0	0	5
Total	202	49	26	23	300
Visitors/Customers					
Outside District Mansehra	7	0	2	1	10
District Mansehra	1	0	0	0	1
Valley	60	0	1	1	62
Balakot	10	0	0	0	10
Garlat	13	0	0	0	13
Ghanool	4	0	0	0	4
Total	95	0	3	2	100

Source: Field Data, 2010

Table 6.44

Needs Satisfaction from Livelihoods

Resident Address	No	Partial	Yes	Surplus	Total
Outside District Mansehra	4	5	1	0	10
District Mansehra	0	1	0	0	1
Valley	0	19	39	4	62
Balakot	0	0	0	10	10
Garlat	0	0	0	13	13
Ghanool	0	0	0	4	4
Total	4	25	40	31	100

Source: Field Data, 2010

6.2.26 Centrality of the New Balakot Town

After the Earthquake – 2005, more than 90 % of the residents were ready for shifting to the new Balakot town according to NESPAK survey for willingness of the residents to shift their residence (Table 6.45). This willingness reflects the future of the new Balakot town where almost all of the residential plots will be owned by the residences of the old Balakot town. There are less than 10% of the total respondents which shows their interest in the old Balakot town (Table 6.46). This ownership will certainly boom the property business in this area as the new Balakot town is central residential hub for Mansehra town, Hazara University, Gari Habibullah and the old Balakot town.

Table 6.45

Willingness in Shifting to the new Balakot Town

Response of Correspondence	Frequency	Percentage
Willing	3934	93.47
Not Willing	152	3.61
Indifferent	123	2.92
Total	4209	100.00

Source: NESPAK, 2010

Table 6.46

Willingness in Shifting to the old Balakot Town

Response of Correspondence	Frequency	Percentage
Willing	133	88
Other Place	19	12
Total	152	100

Source: NESPAK, 2010

6.3 Solution of the Problems of Resettlement

In the old Balakot town, there are four major stakeholders at community level i.e. elite, business, public servant and low income class. The elite class comprises of landowners of agriculture and commercial land which has more than 40 kanal agriculture land or more

than two commercial markets. The business class has well established business and most often with some agriculture land as well. The public servant class has well reputed public service and/or some agriculture land in the old Balakot town. The low income class is consisted of labours working in shops and hotels, peasants, private services and low profile businesses. Each of the stakeholders has different problems associated with the resettlement of the Balakot town. Based on their problems solutions are proposed to achieve proper resettlement of the Balakot town. These solutions are based on site and situation factors of the old and new Balakot towns. The main theme of the solutions is to enhance the site and situation factors of the new Balakot town that attract the residents of the old Balakot town. Similarly, discouraging and lessening the impact of those factors which enhance the site and situation importance of the old Balakot town. Based on multi stakeholder approach different solutions are proposed for different groups and these solutions are tested against selected respondents from each group. Based on their responses modification has been made in the proposed solutions.

The solutions of the problems of resettlement are explained under the headings of awareness programmes, confidence building measures, participatory approach, multi-sectorial approach, decreasing the level of utilities and services in the old Balakot town, increasing the level of utilities and services in the new Balakot town, shifting of administrative activities, changing and merging the political boundaries, discouraging commercial activities in the old Balakot town, discouraging residence in the old Balakot town, decreasing the centrality of the old Balakot town, projecting the centrality of the new Balakot town, new tehsil site, manufacturing activities in the new Balakot town, restoration of the livelihoods in the new Balakot town, agriculture landholders, declaring the old Balakot area as national park, and changing the compensation strategy.

The major steps for the solutions are changes in the resettlement policy, discouraging residential and commercial activities at the old Balakot town, encouraging manufacturing activities at the new Balakot town and new land resettlement. The public service group and lower class of the community of the old Balakot town has fewer reservations on the resettlement of the Balakot town which can be easily incorporated through participatory approach. The business class needs business and opportunities of employments at the new Balakot town. The elite class of the old Balakot town which has major share in the commercial and agriculture land needs comprehensive strategy for their compensation.

6.3.1 Awareness Programmes

Most of the residents of the old Balakot town are well aware of the causes and impacts of the earthquake and red zone of the Balakot town. However, the risk of all hazards particularly of an earthquake is pursued as an uncertain and unpredictable event. There is essential need of scientifically sound awareness programmes that must highlight the importance of emergency response management and risks of the site of the old Balakot town. In awareness programmes, the presentation of the risk of the new and old Balakot towns will certainly help the resettlement process. The awareness activities should be followed by emergency response management. The community preparedness activities like plan preparation, training and drills will increase their capacities for disasters. It will also alarm them that they are living in hazardous site. The response of the residents about the awareness programme and particularly of emergency response management is very positive (Table 6.47).

Table 6.47

Emergency Response Management

Permanent Resident Address	Yes	No	Up to some extend	Total
District Mansehra	3	0	0	3
Valley	1	0	0	1
Balakot	24	2	1	27
Garlat	27	2	1	30
Ghanool	3	0	0	3
Total	58	4	2	64

Source: Field Data, 2010

6.3.2 Confidence Building Measures

Based on the Government's policy of the resettlement, one of the proposed solutions is either forced or voluntarily resettlement after allotment of the plots in the new Balakot town. The response of different section about this measure was very harsh. The response of the targeted groups of landowners of agriculture and commercial, different types of commercial activities and visitors/customers shows that more than three of fourth of total respondents will resist the process of forced resettlement due to different reasons. The landowners of agriculture and commercial land will resist as it will be difficult for them to manage their land from the new Balakot town. Similarly, the business class has same reservation and strategy. However, the low income class which is almost more than half of the total population has no strategy for this measure or in other words they are going to accept the situation. Similarly, the commercial activities like general stores, restaurants, hawkers etc. has least reservation on forced resettlement as their activities are lesser suffer than any other commercial type of activity. The visitors/customers has strong reservation on forced resettlement as their travelling costs will be certainly increased (Table 6.48).

This situation needs confident building measures to ensure maximum participation in resettlement from all sections of the affected community. These measures are based on

changes in present approaches. The first step is participatory approach in which solutions are asked from all sections of the community. All stakeholders need proper attention particularly the elite class which has strong influence on the whole community perception and attitude. The low income class or willing class for resettlement should be allotted plots in first phase to increase pressure on business class. The business class must be insured that they will be compensated either in one form or in other and here is no future of commercial activities in the old Balakot town.

Table 6.48

Strategy for Government's Forced Resettlement

Resident Address	Agitation	Litigation	Both	Not sure	Total
District Mansehra	0	0	0	3	3
Valley	0	0	0	1	1
Balakot	1	0	10	16	27
Garlat	0	1	11	18	30
Ghanool	0	0	2	1	3
Total	1	1	23	39	64
Agriculture land size (Kanal)	Agitation	Litigation	Both	Not sure	Total
1-5	0	0	5	3	8
6-10	3	0	9	0	12
11-20	0	3	0	0	3
21-40	2	2	1	0	5
Above 40	1	2	5	0	8
Nil	0	0	2	2	4
Total	6	7	22	5	40
Commercial land size	Agitation	Litigation	Both	Not sure	Total
½ bazaar	0	0	1	0	1
¼ bazaar	0	0	1	0	1
2-4 markets	0	0	8	0	8
1 market	0	0	4	0	4
5-10 shops	0	0	0	4	4

Continued

2-4 shops	0	0	1	1	2
1 shop	0	1	0	0	1
Nil	6	6	7	0	19
Total	6	7	22	5	40
Type of commercial activity	Agitation	Litigation	Both	Not sure	Total
Hoteling	0	0	0	1	1
Restaurant	0	0	1	0	1
Jewellery	0	0	1	0	1
Barber	1	0	2	0	3
Cloths	1	1	3	0	5
Electronics	0	0	2	0	2
General store	0	0	6	3	9
Shoes	0	0	2	0	2
Toys	1	0	3	0	4
Sweets & Bakers	0	1	0	0	1
Butchers	0	0	1	0	1
Bank	0	0	1	0	1
Tailors	0	0	2	0	2
Gifts	0	0	1	0	1
Furniture	0	0	1	0	1
Hardware	0	0	1	0	1
LPG	0	0	1	0	1
Medical Stores	0	0	1	0	1
Hawkers	0	0	1	1	2
Vegetables	0	0	5	0	5
Miscellaneous Activity	1	1	11	2	15
Total	4	3	46	7	60
Permanent Resident Address	Agitation	Litigation	Both	Not sure	Total
Outside District Mansehra	0	2	0	3	5
District Mansehra	0	0	0	1	1
Valley	5	6	15	3	29

Continued

Balakot	0	0	5	0	5
Garlat	0	0	7	0	7
Ghanool	0	0	3	0	3
Total	5	8	30	7	50

Source: Field Data, 2010

6.3.3 Participatory Approach

The initial willingness of more than 90% of the total population of the old Balakot town to participate in the resettlement is link with the compensation and justified share in new Balakot town. The first step and also demand of the residents of the old Balakot town is the improvement of existing infrastructure and overall living standard in the old Balakot town till the implementation of last phase of the resettlement. Second step is practical timeframe sharing for different stakeholders. Proposing more dynamic compensation strategy and involving all stakeholders in the resettlement process. Sharing of entitlements of all stakeholders and limitations of the resettlement so that the whole process should look transparent and fair. Declaring that the minimum standard for participation will be the community based organization of all stakeholders.

6.3.4 Multi-Sectorial Approach

The four major stakeholders from community of the old Balakot town i.e. elite, business, public servant and low income class have different reservations on the process of resettlement. The last two classes of public servants and low income which has more than half of the total population share are ready for the resettlement of the Balakot town. They just need proper attention through participatory approach. However, the elite and business class needs multi stakeholders approach in which their maximum losses are compensated. The economic interests and their social status of these two classes will be affected by the resettlement of the Balakot town. The proposed solutions of multi stakeholder are based on economic and social compensation strategies.

6.3.4.1 Economic

The economic compensation strategy is based on principle that maximum economic interests should be incorporated in the resettlement of the Balakot town. The commercial land has indeed very high market value and the owners have strong social and political influence on the resettlement process. Similarly, the business activities in the old Balakot town have central role in the economy of the valley of river Kunhar and socioeconomic status of the residents. The proposed solutions are based on incorporating these economic aspects. The basic principle is the substitution of commercial land with agriculture land and businesses with employments. Certainly, this process or strategy needs new land resettlement. The targeted groups of landowners and business community are asked about these proposed solutions. Less than 15 % of the respondents of the landowners of commercial and agriculture are disagreed with substitution of commercial land with agriculture. Almost half of the respondents have not decided and more than 35 % are in favour of this substitution of commercial land with agriculture land. The most important aspects are the response of major shareholders as they are not totally disagrees with these solutions. The businesses substitution with employment has mixed response. The well established and directly dependent businesses on the site of old Balakot town like gift shops, wholesalers, big general stores etc. are against this proposal. The small retailers and other small enterprises are not against this proposal while the small business holders are in favour of this proposal (Table 6.49). For this substitution a new land resettlement is required. Most of the commercial landowners are in favour of new land resettlement and their major option is plots in the new Balakot town (Table 6.50).

Table 6.49

Multi Stakeholders Substitution Strategy

Commercial Land Value Substituted with Agriculture Land				
Commercial land size	Opt for	No substitution	Not decided	Total
½ bazaar	0	0	1	1
¼ bazaar	0	1	0	1
2-4 markets	6	2	0	8
1 market	4	0	0	4
5-10 shops	3	1	0	4
2-4 shops	2	0	0	2
1 shop	0	1	0	1
Nil	0	0	19	19
Total	15	5	20	40
Commercial Land Value Substituted with Agriculture Land				
Agriculture land size (Kanal)	Opt for	No substitution	Not decided	Total
1-5	7	1	0	8
6-10	2	0	10	12
11-20	0	1	2	3
21-40	1	0	4	5
Above 40	2	2	4	8
Nil	3	1	0	4
Total	15	5	20	40
Business Substitution with Employment				
Type of commercial activity	Opt for	No substitution	Not Decided	Total
Hoteling	1	0	0	1
Restaurant	0	1	0	1
Jewellery	0	0	1	1
Barber	0	3	0	3
Cloths	0	3	2	5
Electronics	0	1	1	2
General store	2	4	3	9
Shoes	0	1	1	2

Continued

Toys	0	3	1	4
Sweets & Bakers	0	0	1	1
Butchers	0	1	0	1
Bank	0	0	1	1
Tailors	0	1	1	2
Gifts	0	1	0	1
Furniture	0	1	0	1
Hardware	0	1	0	1
LPG	0	1	0	1
Medical Stores	0	0	1	1
Hawkers	0	0	2	2
Vegetables	0	5	0	5
Miscellaneous Activity	1	9	5	15
Total	4	36	20	60

Source: Field Data, 2010

Table 6.50
New Land Resettlement

Commercial land size	Yes	No	Total
½ bazaar	0	1	1
¼ bazaar	0	1	1
2-4 markets	3	5	8
1 market	4	0	4
5-10 shops	3	1	4
2-4 shops	2	0	2
1 shop	0	1	1
Nil	15	4	19
Total	27	13	40

Source: Field Data, 2010

6.3.4.2 Social

Ethnic background, religious attachment, emotional attachment and socioeconomic condition are reflected in the social status and/or attachment with the old Balakot town.

The data analysis revealed that social status is main concern of landowners and elite class

of the old Balakot town. Although, it indeed very difficult to maintain similar social value in the new Balakot town. However, similar neighbourhood will provide an opportunity to practice the old social values and customs. A good number of the respondents are in favour of old neighbourhood while very few disagree with this option (Table 6.51).

Table 6.51
Preferences for Neighbourhood in new Balakot

Permanent Resident Address	Same	Change	Not Decided	Total
District Mansehra	0	0	3	3
Valley	0	0	1	1
Balakot	9	1	17	27
Garlat	11	3	16	30
Ghanool	1	1	1	3
Total	21	5	38	64

Source: Field Data, 2010

6.3.5 Decreasing the level of Utilities and Services in the Old Balakot Town

Utilities and services play a vital role in the development of a site and work as centripetal force for a centre place. The utilities and services are affected by Earthquake – 2005. However, to discourage further development and ultimately residence at the old Balakot town the level of utilities and services particularly of public sector must be decreased. The residents of the old Balakot town are well aware of the fact that lack of public sector interest will make this town a slum. Most of the residence has the policy to wait and see and they are not sure of their future residence at the old Balakot town (Table 6.52).

6.3.6 Increasing the level of Utilities and Services in New Balakot Town

The high level of utilities and services in the new Balakot town work as centrifugal force for the old Balakot town. The response of the respondents about the new Balakot town is not encouraging. Most of the respondents are not interested in the new Balakot town for

residential purposes. However, they look the scenario as an economic opportunity for future property business (Table 6.53).

Table 6.52

Preferences for old Balakot town (deteriorated level of U & S)

Resident Address	Residence	Shifting	Not Decided	Total
District Mansehra	0	0	3	3
Valley	0	0	1	1
Balakot	11	4	12	27
Garlat	11	6	13	30
Ghanool	2	1	0	3
Total	24	11	29	64

Source: Field Data, 2010

Table 6.53

Preferences to new Balakot town (high level of U & S)

Resident Address	Residence	Residence & Business	No shifting	Other	Total
District Mansehra	0	0	3	0	3
Valley	0	0	1	0	1
Balakot	3	3	21	0	27
Garlat	3	1	24	2	30
Ghanool	0	0	3	0	3
Total	6	4	52	2	64

Source: Field Data, 2010

6.3.7 Shifting of Administrative Activities

Administration activities are centripetal force for the old Balakot town. To decrease the centrality of the old Balakot town administrative activities needs to be shifted from here to somewhere else. Almost three fourth of total respondents thinks that shifting of administrative activities will affect their business. This response is a good tool for one of the solutions to pressurize and discourage businesses in the old Balakot town (Table 6.54).

Similarly, the response of the visitors/customers shows that their number of visits will fall tremendously which will lead to decline of business activities in the old Balakot town (Table 6.55).

Table 6.54
Effects of Shifting of Administrative Activities on Business

Type of commercial activity	Not much	20% - 30%	30% - 50%	> 50%	Total
Hoteling	0	0	0	1	1
Restaurant	0	0	0	1	1
Jewellery	0	0	0	1	1
Barber	0	3	0	0	3
Cloths	2	0	3	0	5
Electronics	0	0	2	0	2
General store	2	2	2	3	9
Shoes	0	0	1	1	2
Toys	4	0	0	0	4
Sweets & Bakers	0	0	1	0	1
Butchers	1	0	0	0	1
Bank	0	0	0	1	1
Tailors	0	2	0	0	2
Gifts	1	0	0	0	1
Furniture	1	0	0	0	1
Hardware	0	0	1	0	1
LPG	1	0	0	0	1
Medical Stores	0	1	0	0	1
Hawkers	0	1	1	0	2
Vegetables	2	2	1	0	5
Miscellaneous Activity	2	4	4	5	15
Total	16	15	16	13	60

Source: Field Data, 2010

Table 6.55

Preferences of Visit after Shifting of Administrative Activities

Resident Address	No need	Occasional	Not sure	Total
Outside District Mansehra	0	5	0	5
District Mansehra	0	1	0	1
Valley	2	13	14	29
Balakot	0	5	0	5
Garlat	1	4	2	7
Ghanool	0	1	2	3
Total	3	29	18	50

Source: Field Data, 2010

6.3.8 Changing and Merging the Political Boundaries

The location of the new Balakot town is at the edge of tehsil boundary and comparatively near to Mansehra, Gari Habibullah and Hazara University than the old Balakot town. In presence of strong entity of the valley of river Kunhar make the new Balakot town least attractive for the residents of old Balakot town and also for the residents of the whole valley. The change and merging of the political and administrative boundaries in such way that the residents of the valley of river Kunhar gets maximum benefits will certainly shift the interest of the residents in the new Balakot town. Inclusion of the whole new Balakot area in the tehsil Balakot and deletion of the southern union councils from the tehsil Balakot are some feasible option for political and administrative boundaries shifting and merging.

6.3.9 Discouraging Commercial Activities in the Old Balakot Town

One of the major hurdles for the appropriate resettlement of the Balakot town is commercial activities in the old Balakot town. The commercial activities need to be discouraged as it not only provides employment for the residents of the old Balakot town but also attract lower class residents in its surroundings. Most of the business community think that resettlement will affect their businesses (Table 6.56). In case of resettlement,

more than half of the business community is unsure about their future which is a good opportunity for measures to be taken for discouraging the commercial activities (Table 6.57). Without proper strategy or compensation the business community of the old Balakot town will resist the process and will continue their businesses despite of lost as they will have no option (Table 6.58). However, business at the new Balakot town in form of compensation is an attractive option for them as most of the respondents do not reject this idea (Table 6.59).

Table 6.56
Effects of the Resettlement of Balakot on Business

Commercial activity	Not much	20% - 30%	30% - 50%	> 50%	Total
Hoteling	0	0	0	1	1
Restaurant	0	1	0	0	1
Jewellery	0	0	0	1	1
Barber	0	3	0	0	3
Cloths	1	1	3	0	5
Electronics	0	1	1	0	2
General store	2	2	2	3	9
Shoes	0	0	1	1	2
Toys	3	0	1	0	4
Sweets & Bakers	0	0	1	0	1
Butchers	1	0	0	0	1
Bank	0	0	0	1	1
Tailors	0	1	1	0	2
Gifts	1	0	0	0	1
Furniture	1	0	0	0	1
Hardware	0	0	1	0	1
LPG	1	0	0	0	1
Medical Stores	0	1	0	0	1

Continued

Hawkers	0	1	1	0	2
Vegetables	2	2	1	0	5
Misc. Activity	2	3	7	3	15
Total	14	16	20	10	60

Source: Field Data, 2010

Table 6.57

Preferences for Business Opportunity at Different Location

Commercial activity	Opt for	No substitution	Not Decided	Total
Hoteling	1	0	0	1
Restaurant	0	0	1	1
Jewellery	1	0	0	1
Barber	0	0	3	3
Cloths	0	1	4	5
Electronics	0	0	2	2
General store	3	2	4	9
Shoes	1	0	1	2
Toys	0	3	1	4
Sweets & Bakers	0	0	1	1
Butchers	0	1	0	1
Bank	1	0	0	1
Tailors	0	0	2	2
Gifts	0	1	0	1
Furniture	0	1	0	1
Hardware	0	0	1	1
LPG	0	1	0	1
Medical Stores	0	0	1	1
Hawkers	0	0	2	2
Vegetables	0	2	3	5
Miscellaneous Activity	3	2	10	15
Total	10	14	36	60

Source: Field Data, 2010

Table 6.58
Continuation of Commercial Activities in the old Balakot town

Type of commercial activity	Yes	No	Not sure	Total
Hoteling	0	1	0	1
Restaurant	1	0	0	1
Jewellery	1	0	0	1
Barber	3	0	0	3
Cloths	5	0	0	5
Electronics	2	0	0	2
General store	6	1	2	9
Shoes	2	0	0	2
Toys	4	0	0	4
Sweets & Bakers	1	0	0	1
Butchers	1	0	0	1
Bank	1	0	0	1
Tailors	2	0	0	2
Gifts	1	0	0	1
Furniture	1	0	0	1
Hardware	1	0	0	1
LPG	1	0	0	1
Medical Stores	1	0	0	1
Hawkers	1	0	1	2
Vegetables	5	0	0	5
Miscellaneous Activity	13	1	1	15
Total	53	3	4	60

Source: Field Data, 2010

Table 6.59

Commercial Land in new Balakot town

Commercial land size	Opt for	No substitution	Not decided	Total
Half bazaar	0	0	1	1
¼ bazaar	0	1	0	1
2-4 markets	3	2	3	8
1 market	4	0	0	4
5-10 shops	3	1	0	4
2-4 shops	2	0	0	2
1 shop	0	1	0	1
Nil	0	0	19	19
Total	12	5	23	40

Source: Field Data, 2010

6.3.10 Discouraging Residence in the Old Balakot Town

The resettlement of the Balakot town has no proper strategy for abandoning the site of old Balakot town for residential purposes. Most of the residents perceive the opportunity of the residence at the new Balakot town as an economic incentive. They had a plan of selling this residential plot at the new Balakot town (Table 6.60). To discourage residence at the old Balakot town, this opportunity of plot at new Balakot town must be accomplished with resettlement. The agriculture sector has clear division based on the landownership as small landholders' needs residence near with agriculture land while large landholders did not so. This situation leads to a new land resettlement (Table 6.61).

Table 6.60

Strategy of Residential Plot in the new Balakot town

Permanent Resident Address	Construction of a house	Sell up	Other	Total
District Mansehra	0	3	0	3
Valley	0	1	0	1
Balakot	3	24	0	27
Garlat	2	27	1	30
Ghanool	0	3	0	3
Total	5	58	1	64

Source: Field Data, 2010

Table 6.61

Residence near Agriculture Activities

Agriculture land size (Kanal)	Yes	No	Total
1-5	8	0	8
6-10	10	2	12
11-20	2	1	3
21-40	1	4	5
Above 40	0	8	8
Nil	4	0	4
Total	25	15	40

Source: Field Data, 2010

6.3.11 Decreasing the Centrality of the Old Balakot Town

The old Balakot town is a central place for its surrounding areas. The centrality of the old Balakot is directly dependent on the business volume, level of activities & services, central location, nodal hub, administrative, social, and political activities. To decrease the centrality of the old Balakot town, measure should be taken to discourage these activities in the old Balakot town. These measures like shifting of administrative activities, decreasing the level of utilities & services, banning political meetings, discouraging the visitors to stay here in the old Balakot town, providing new opportunity of business at new sites, and decreasing the nodality in form of bypass roads to northern Kaghan and Naran

valleys will definitely affect the centrality of the old Balakot town. These measures will pressurize the business community to shift their business or to opt for alternative livelihoods. The basic theme of all these measures should be the decentralization of the central functions performed by the old Balakot town.

6.3.12 Projecting the Centrality of the New Balakot Town

The new Balakot town almost located at the centre of district Mansehra. It is a residential satellite town for the whole region and particularly for Mansehra, Gari Habibullah, and Hazara University. This location and activity has the capacity to support a large business activity in the form of non-basic activities. However, this non-basic business activity has good attraction for the business community of the old Balakot town. Linking the central location with future business activities will support the resettlement process.

6.3.13 New Site of the Tehsil Headquarters

New tehsil site is very important issue in the resettlement of the Balakot town. The response of the residents strongly disagrees with the new Balakot town for the new tehsil headquarter (Table 6.62). Most of the respondents are in favour of the surrounding of the old Balakot town which is easily accessible from the whole valley of river Kunhar. Establishment of the new site for tehsil headquarters in the surrounding of the old Balakot town has number of positive aspects: it will be called people choice, entity of the valley of river Kunhar will intact, will split the business volume from the old Balakot town, and will provide new resettlement site for limited population. There is already good study of NESPAK for alternative site of the new Balakot town which may be used for this purpose. Down the stream from the old Balakot town there are number of sites where new tehsil headquarters of the tehsil Balakot can be established.

Table 6.62

Choice of Visit for Administrative and Commercial Activities

Resident Address	new Balakot town	Surrounding of the old Balakot	Gari Habibullah	Other	Total
Outside District Mansehra	2	2	0	1	5
District Mansehra	0	1	0	0	1
Valley	0	27	2	0	29
Balakot	0	5	0	0	5
Garlat	0	6	0	1	7
Ghanool	0	3	0	0	3
Total	2	44	2	2	50

Source: Field Data, 2010

6.3.14 Manufacturing Activities in the New Balakot Town

The site of the new Balakot town is a feasible site for wool spinning industry, wooden industry (furniture), paper mill, dry fruit and fisheries industries, match factory, soft drink industry, poultry and livestock farming. These manufacturing and agriculture activities will provide employment opportunities at the new Balakot town which will attract the lower and middle class of the old Balakot town. It will also create a market where trading and businesses activities will be performed and thus ultimately provide opportunities for the business class of the old Balakot town. The site of the new Balakot town will work like growth pole not only for its surrounding areas but also for the residents of old Balakot town.

6.3.15 Restoration of the Agriculture's Livelihoods in the New Balakot Town

The residents of the old Balakot town are well aware of the situation that the land and soil in the new Balakot town is comparatively well fertile than the land and soil of old Balakot town. This situation is in the favour of the resettlement of the Balakot town. The acceptance of the proposal of agriculture land substitution will provide more dynamic and negotiable environment. Almost three fourth of total respondents of selected group of

landowner are in favour of this substitution and land resettlement also. Along with manufacturing activities at the site of new Balakot town this option of agriculture activities will also provide a chance for maximum compensation of businesses losses (Table 6.63 & 6.64). Looking to the response and structure of the agriculture landowners, the large landholders and small landholders needs different approach. Through comprehensive multi stakeholder strategy the agriculture and business losses should be combined. The elite class of the community should be given compound options of commercial and agriculture land. The business class will have options of business as well as employments for resettlement while the lower class will be dealt with single option of employment or agriculture land.

Table 6.63
Agriculture Fertile Land (Substitution)

Agriculture land size (Kanal)	Opt for	No substitution	Not decided	Total
1-5	6	1	1	8
6-10	10	2	0	12
11-20	1	1	1	3
21-40	3	1	1	5
Above 40	4	2	2	8
Nil	3	1	0	4
Total	27	8	5	40

Source: Field Data, 2010

Table 6.64
New Land Resettlement

Agriculture land size (Kanal)	Yes	No	Total
1-5	6	2	8
6-10	10	2	12
11-20	1	2	3
21-40	3	2	5
Above 40	4	4	8
Nil	3	1	4
Total	27	13	40

Source: Field Data, 2010

6.3.17 Declaring the Old Balakot Area as a National Park

The fundamental principle for the successful resettlement of Balakot town is to discourage the business activities in the old Balakot town and make the new Balakot town more attractive for the residents of the old Balakot town. Almost 99 % of the business activities are carried out in the bazaar area of the old Balakot town. To discourage the business activities in the old Balakot town the contiguous area which are mostly used for residential purposes along with the land in use for public activities should be declared as National Park area. This solution will lead to control the growth and expansion of commercial area. It will also control the use of the old houses for residents of the lower and working class in the future. The ultimate impact will be on the business activities which will force the business community to think about other solutions.

6.3.18 Changing the Compensation Strategy

The present resettlement policy is based on the compensation of residential losses. The residents of the Balakot town will avail the plot option at the new Balakot town but certainly not ready for shifting of their residence. This situation will lead towards total failure of the resettlement of the Balakot town as the residence will continue in the old Balakot town. The important aspect is that the residents of the old Balakot town are also against any conditional resettlement (Table 6.65). However, adopting more flexible and dynamic strategy for compensation of losses particularly of businesses will leads to more acceptable situation. In case of full compensation most of the residents, business community and landlords are in favour of the resettlement (Table 6.66).

Table 6.65

Compensation is Conditional with Resettlement in new Balakot town

Permanent Resident Address	Opt for	Exempt it	Not Decided	Total
District Mansehra	0	0	3	3
Valley	0	0	1	1
Balakot	4	11	12	27
Garlat	6	11	13	30
Ghanool	1	2	0	3
Total	11	24	29	64

Source: Field Data, 2010

Table 6.66

Resettlement in Case of Full Compensation

Permanent Resident Address	Yes	No	Total
District Mansehra	3	0	3
Valley	1	0	1
Balakot	21	6	27
Garlat	24	6	30
Ghanool	2	1	3
Total	51	13	64
Agriculture land size (Kanal)			
1-5	8	0	8
6-10	10	2	12
11-20	3	0	3
21-40	5	0	5
Above 40	5	3	8
Nil	4	0	4
Total	35	5	40
Commercial land size			
½ bazaar	1	0	1
¼ bazaar	1	0	1
2-4 markets	5	3	8

Continued

1 market	3	1	4
5-10 shops	4	0	4
2-4 shops	2	0	2
1 shop	1	0	1
Nil	18	1	19
Total	35	5	40
Type of commercial activity			
Hoteling	1	0	1
Restaurant	1	0	1
Jewellery	1	0	1
Barber	2	1	3
Cloths	5	0	5
Electronics	2	0	2
General store	9	0	9
Shoes	2	0	2
Toys	4	0	4
Sweets & Bakers	1	0	1
Butchers	0	1	1
Bank	1	0	1
Tailors	2	0	2
Gifts	1	0	1
Furniture	1	0	1
Hardware	1	0	1
LPG	1	0	1
Medical Stores	1	0	1
Hawkers	2	0	2
Vegetables	4	1	5
Miscellaneous Activity	14	1	15
Total	56	4	60

Source: Field Data, 2010

6.4 Conclusion

The resettlement of the Balakot town is a complex, compound and dynamic process. The Government's policy of the resettlement is static and frivolous. This policy partially covers the damage losses and provides residential plots to landowners in the new Balakot town. It does not provide any support to commercial activities rather it encouraged commercial activities in the old Balakot town. The site of the old Balakot town is hazardous and living conditions are deteriorated after Earthquake – 2005. The sternest is shelter as the people living and working in fabricated shelters are exposed to a number of hazards and living conditions in these shelters are worsen with passage of time. Similarly, the other civic utilities and services are depreciated after Earthquake – 2005. However, the standard of these civic utilities and services are still far better than its surrounding region. The old Balakot town is the centre of administrative, social, political and commercial activities. These activities attract whole population from all over tehsil Balakot region. The new Balakot town will provide high class residential and civic utilities & services. Comparatively, it has low business opportunities for the residents of the old Balakot town.

The proposed solutions of the problems of resettlement are based on the analysis of site and situation of the old and new Balakot towns. The basic theme of the solution is to decrease the centrality of the old Balakot town and increase business/employment opportunities in the new Balakot town. To decrease the centrality of the old Balakot town concentration of the administrative, social, political and commercial activities should be shifted from the old Balakot town. For this purpose, a number of measures are proposed from site and situation variables analysis. All these solutions target at the problems of resettlements in such a way that the existing problems and opportunities at the both sites of new and old Balakot towns should be streamlined so that the successful resettlement of the Balakot town is achieved. The proposed measures are tested against the residents' response and are further modified.

Chapter 7

Evolution and Standardisation of the Resettlement Tool

7.1 Introduction

Resettlement is a multi-stakeholders, complex and dynamic process. The major stakeholders of any resettlement process are Government, the affected community which has to change its location and host community which has to adjust the migrants. The site and situation of the affected and host communities offer some opportunities and risks which are pursued differently by different groups of a community. The Government's resettlement policy is static in nature and is confined to some legislation. The major factors of site and situation in a developed settlement are reshaped in the form of utilities, services, hazards' risk and employment opportunities. There is temporal change in these modified factors of site and situation which ultimately affects the resettlement process. Change in the resettlement policy or in the mode of operation also leads to change in the resettlement process. This multi stakeholders, complex and dynamic nature of the resettlement make it one of the most difficult options of risk reduction measures. However, with proper orientation and using all factors in favour of resettlement makes it a sustainable and flexible measure.

In this chapter, the summary of the analysis of the factors of the site and situation of the old and new Balakot towns is studied to understand the nature of utilities, services, risk of the hazards and employment opportunities at each site. The comparative study of the site and situation of the old and new Balakot towns provide a true picture of the opportunities and risks at both sites. The Government's resettlement policy of the Balakot town delimits and modifies the interaction of residents of the old Balakot town with these opportunities and risks. The analysis of the perception of residents of the old Balakot town about these opportunities, risk and resettlement policy leads to identification of the problems of resettlement. Solutions are proposed for the resettlement of the Balakot town which are based on the factors of site and situation of the old and new Balakot town and

modification in the resettlement policy. These proposed solutions are tested against the selected groups' response. The proposed solutions are modified after the response of selected groups. At the end, a model tool is evolved in which all these aspects of the resettlement of the Balakot town are incorporated.

7.2 Analysis of the Site of old Balakot Town

The initial settlement of the old Balakot town was started on site variables. The fundamental variables of the site of old Balakot town were relief, geology, water supply, nature of the river, hazard vulnerability, defence, building material (stone or wood), fertility of land, fuel supply, slope aspect, flat surface and natural resources etc. which were modified by human activities with the passage of time. These variables reshape in the form of utilities & services and vulnerability to hazards in a well-developed Balakot town. Before Earthquake – 2005, the old Balakot town was a well-established town and the favourable site factors boom its growth and level of utility & services. The Earthquake – 2005 destroyed the whole infrastructure of the old Balakot town. The residents of Balakot town interact with the change physical environment. The site factors of vulnerability to hazards, particularly the earthquake has dominated all other factors. The Government has declared this site as red zone. As a result, the standard of utility & services in the old Balakot town has been declined.

The site of old Balakot has been prone to earthquake, flood, landslides, hydro-metrological and complex hazards of different intensity. The residents of Balakot have limited capacity for the risk reduction of these hazards. However, they adapted themselves with the risk of these hazards. The high magnitude of Earthquake – 2005 and seismic risk assessment shows that this site has high vulnerability to an earthquake hazard. The level of risk of the earthquake hazard is absolutely beyond the capacities of the residents of old Balakot town. Flash floods in river Kunhar and adjustment streams are frequent and

caused damage to lives and property. The commercial area and agriculture land are particularly exposed to these flash floods. The flash flood 1992 was one of the disastrous flash floods in the recent history of Balakot. In year 1993 and 2010, this region experienced other severe flash floods.

The steep slopes, nature of rocks, moisture availability and frequent earthquakes are those conditions which intensify the risk of landslides in this area. The high magnitude of Earthquake – 2005 and its aftershocks further intensified the landslide hazard vulnerability. The high altitude from sea level and latitudinal subtropical location of the old Balakot town makes vulnerable to hydro-metrological hazards. The hydro-metrological hazards include cloud bursting, hail, snowfall, wind and thunder storm hazards. After Earthquake – 2005, the vulnerability to these hazards has been dramatically increased due to houses/shelter material has been changed.

The small torrents and springs are major water sources in the red zone of the old Balakot town. These scarce resources of water are pressurized due to change in water extraction methods, increase in utilization and population growth which increase the drought hazard vulnerability. The Earthquake – 2005 shaken the aquifers as result the 2006 was worst year for drought hazard. After Earthquake – 2005, the fire hazard vulnerability has been increased due to fragile shelter material and loose electricity fitting.

The site related services are shelter, education, health, transportation, roads and streets, telecommunication, postal service, police, emergency response, government offices, recreation, sewerage system, sanitation and waste disposal. These services are based on site variables which are modified with the passage of time in urban environment. Before Earthquake – 2005, the old Balakot town provided high hierarchical services to surrounding areas. These services not only fulfil the local demand but also offer services to visitors from valley and/or outside the valley. The important aspects of these services

were their nature, variety and high class. After Earthquake – 2005, these services of shelter, education, health, transportation, postal service, police, emergency response, government offices and recreation were totally damaged. Most of these services were started in fabricated shelters. The infrastructure facilities like roads, streets, bridges, telecommunication, sewerage, sanitation and waste disposal system were also severely damaged. Initially, the sanitation conditions were improved by NGOs in 2006. However, due to red zone limitation the roads, streets, sewerage and waste disposal system were untouched. This make life horrible in the old Balakot region and civil protest started against lacking of these facilities.

In 2008, ERRA started improving these services with reasonable amount of funds invested for restoration. These services have been resorted up to some extent but are still far behind the standards of reconstruction. As a result, the residents are facing enormous problems for civic utilities and services. The present condition and assessment of site factors is of prime importance for successful resettlement process as it is one of the major influencing factors for the resident of Balakot about resettlement decision.

7.3 Analysis of the Site of new Balakot Town

The new Balakot town has been proposed at Bakryal. This site of the new Balakot town has been selected purely on criteria of large area availability. The site is at distance of 23 Km from the old Balakot town and just 11 Km from the Mansehra city. NESPAK has carried out transportation, topography, reliefs, slope analysis, geotechnical, geological, environmental, and hydrological technical studies of the site of new Balakot town. After detail studies and designing, NESPAK has developed a master plan for the new Balakot town. This master plan is based on the principles of growth pole through new township; environmentally sustainable and seismically safe atmosphere; safe neighbourhoods; amenities and facilities accessible to all residents; topography based designing; unique life

style and to be a model town. Initially in 2006, the site total area was planned 1250 Acres (10000 *Kanals*). However, during geological study the granite rocks along with other minerals were explored in the Government forest area. As result, this area was abandoned for residential purposes and new peripheral area was included in the master plan. The present master plan consisted of area of 1,425 acres (11,400 *Kanals*) that will be developed in two phases. The project compilation time was three years but due to land settlement issues it was targeted at the end of 2011. However, the developmental works is still in progress.

In New Balakot town, the total area has been divided in six major land uses. The three major landuse i.e. residential, parks/green and roads/streets area consisted of 87 % area of the total area. The site of the new Balakot town has huge expansion capacity in three different directions. It has the capacity of 25,00,000 population to accommodate in next twenty five years . The expansion areas available in these three different directions are 1600, 1400 and 1500 Hectares. The new Balakot town has very low seismic vulnerability. Similarly, the contours are gentle and less moisture/water is available. As result, the vulnerability to landslide hazard is very low. Most of the area has drainage towards the river Siran (a tributary of the river Indus). The water supply may be one of the major issues in the new Balakot town. Number of schools, health centre, mosques, community centres, parks, access road and streets are under construction.

7.4 Comparison of the Sites of old and new Balakot towns

The red zone of the old Balakot town comprises of a urban centre and surrounding rural areas. The basic characteristics of the site variables like water availability, plain surface, fertile agriculture land, vulnerability to hazards, natural resources etc. are almost similar which are modified in form of utilities, services and vulnerability to hazards. The Earthquake – 2005 changed the scenario and vulnerabilities to different hazards increased

particularly to earthquake. The fabricated shelters have very low capacity of resistance. As a result, the structural vulnerability to a number of hazards increased. The infrastructure of the utilities and services restored with very low standard. The upper most, this site of the old Balakot town has high seismic vulnerability which make unsuitable for residential purposes.

The new Balakot town has been planned with modern concepts of growth pole and green city. Before site selection and structural planning, detail geological and seismic study was conducted to ensure the low vulnerability to hazards. It is presumed that the standard of utilities and services in the new Balakot town will be far better than the old Balakot town. Comparatively, the old Balakot town site is hazardous and declared as red zone with inadequate utilities and services. While the site of new Balakot town has very low vulnerabilities to hazards and offers safe & sound living standard.

7.5 Analysis of the Situation of old Balakot Town

The situation of old Balakot town is nodality and functions performed by this town. The physical, economic or cultural implication changed the situation rapidly. The surrounding physical, economic and cultural conditions over a much wider area around the old Balakot towns are determinants of the situation of the old Balakot towns. These factors of situation controlled the functions of old Balakot towns and thus control the growth of the town. Near the Balakot town, there is a suitable situation for crossing the river Kunhar and a pass to Kashmir valley which makes it strategically very important. The old Balakot town has central location in the valley of river Kunhar. This central location makes the old Balakot town easily accessible for the residents of the whole valley of river Kunhar. Comparatively to its surrounding, the old Balakot town is situated on gentle slope. After Earthquake – 2005, the situation of the old Balakot town was changed due to economic implications. While the surrounding physical and cultural environment of the old Balakot

town was almost unchanged. After Earthquake – 2005, the basic infrastructure was totally damaged. As a result, the growth potential and centrality of the old Balakot town were declined. Declaring the old Balakot town as red zone further deteriorated the situation. However, the rapid restoration of economic activities and performing the central functions of tehsil headquarters in the old Balakot town strengthen the situation.

The analysis of the situation of old Balakot town has four major aspects: basic activities, relative location, centrality of the old Balakot town and non-basic activities. All economic activities that support the growth of old Balakot town are included in the framework of basic activities. Similarly, all those functions which are performed for the residents of the old Balakot town are considered in the framework of non-basic activities. The basic or town forming activities in the old Balakot town are commercial, administrative, manufacturing, political social & cultural, non-government organization, agriculture, central location in the valley and surrounding productive land. The first two are of prime importance in the old Balakot town as the number and level of these activities are much higher than any activities in the old Balakot town or in the whole valley. Almost, 40% of the total population is engaged in business activities. The major shareholder of the business activities is the union council Balakot. However, those mohalla which are near to bazaar area of the union council Garlat has also distinctive proportion of the population engaged in business activities. The manufacturing activities has negligible role in the economy of the old Balakot town.

In surrounding of the old Balakot town, there is fertile agriculture land and suitable environment for poultry farms and horticulture. Agriculture is the major livelihood of almost 50% of the total population particularly in the union councils of Garlat and Ghanool. The shrines of Shah Ismail Shaheed and Syed Ahmad Shaheed are in the old Balakot town, which attract visitors from all over the country. After Earthquake – 2005,

the establishment of NGOs and relief activities offices in the old Balakot town increase the number of visitors and thus encourage the commercial activities.

The old Balakot town is located in the centre of the valley and served more than 70% of the tehsil total population. The old Balakot town provides huge variety and high class of services to surrounding areas. The old Balakot town provides market for the trading of goods and services. It is also sole market for the wholesaling activities. The number, variety and high class of the services and commercial activities in the old Balakot town dominated the economy of the whole region. Ultimately, the dependency of market services on the old Balakot town is increased. Major attraction for the visitors/customers of the valley and the red zone was shopping and administrative services. The visitors from outside of the valley recognized it as recreational activity. More than 50% respondents of visitors/customers purpose of the visit was business, 20% were for administrative and rest of total were for office, political/social, education, health, recreational and religious activities. The old Balakot town serve as a central place for its surrounding area. The residents of red zone are well satisfied for fulfilment of the business needs in the old Balakot town. More than 75% respondents of the visitors/customers fulfil their needs from the old Balakot town while 10% from their local market and almost 10 % from outside of the valley. The visitors/customers response shows that the old Balakot town is central place of business, administrative, socio-political activities and it has no comparison with any of other settlement in the valley regarding its centrality.

The major non-basic activities in the old Balakot town are retailing and few services. Less than hundred retailing shops of general stores, bread baking, vegetables and milk are present outside of the main bazaar of the old Balakot town in the red zone area. Rest of retailing and services activities are carried out in the main bazaar area. The red zone area has almost 20% share of the total valley population. The area served by the old Balakot

town of the eight union councils has more than 70% of the total valley (tehsil Balakot) population. There are limited retailing activities in each of the eight union councils, which may be considered about 5% of the total. As result, 25% of the total business activities in the old Balakot town support local population while 75% is for the peripheral areas. Consequently, the 25% of the total commercial activities and services of the old Balakot town is considered as non-basic activities.

7.6 Analysis of the Situation of new Balakot Town

The new Balakot town is located at the south-western edge of the valley of river Kunhar. The large portion in the western part of the new Balakot town is located outside of the tehsil Balakot boundary line. One of the most important aspects of the new Balakot town is its relative location. In the north of the new Balakot town is forestland with natural beauty. In the east, the Kashmir Valley and the valley of river Kunhar are situated. The Hazara University and Karakorum Highway are located in the west of the new Balakot town. The district capital of Mansehra is located in the south of the new Balakot town. The second aspect of this location is nodality of the new Balakot town, which provides direct link among Hazara University, Karakorum Highway, Kashmir Valley and the valley of river Kunhar.

The master plan of the new Balakot town mainly focused on residential activities with advance infrastructure. The work is under progress and infrastructure facilities like roads, streets, sewerage, sanitation, public buildings etc. are developing with encouraging speed. The new Balakot town has been planned for millions of population. The new Balakot town is located in the centre of Mansehra, Hazara University and Gari Habibullah, which are in dire need of residential suburb. The well-planned site and easy accessibility make this new town as residential satellite town for the residents of Mansehra, Hazara University and Gari Habibullah towns. The relative location and productive surrounding

land of the new Balakot provides situation that will support the growth and development of this new town. However, to replace the old Balakot or to decrease its importance is uncertain.

The basic activities in the new Balakot town can be divided into five major types i.e. administrative, political, social & cultural, commercial and manufacturing activities. The administrative and political activities will decide the fate of the new Balakot town. High the order of these activities will boom its development and growth. The social and cultural activities will take time to flourish. It will be very difficult to replace or replicate the old Balakot town in presence of distinctive entity of the valley of river Kunhar and emotional sentiments of the residents with the old Balakot town. In presence of Mansehra and Gari Habibullah towns, it is very difficult for the new Balakot town to flourish their own central market. Presently, the new Balakot town has no plan for manufacturing activities but its future employment opportunities will be based on this sector.

The non-basic sector of commercial activities is very important as its number, variety and order (class hierarchy) will attract the elite residents of the district Mansehra. The property dealing will be important commercial activity. In master plan, the commercial activities are divided in the neighbourhoods, which directly support the non-basic activities. The higher hierarchy of non-basic activities will attract the high-class residents of the district Mansehra and Hazara University.

7.7 Comparison of the Situations of old and new Balakot towns

The old Balakot town is located in the centre of valley of river Kunhar and is a hub of commercial, political, social and administrative activities. The town is distinctive form its surroundings due to number of higher hierarchy of functions. It is nodal point and all transportation networks particularly towards famous tourists' destination are distributed from here. The whole valley products are traded in the market of the old Balakot town.

The large number, variety and high order of commercial activities along with different services provide strong framework of basic activities that enhance its growth and development. The overall situation of the old Balakot town is so encouraging that after Earthquake – 2005, it was rapidly rehabilitated and stronger day by day.

The new Balakot town is well-planned town with modern planning concept of green cities. It is situated in the middle of major towns, which made it more attractive for the residents of these towns. This new town links two major valleys and two major highways. The future scenario of the development of this town is solely dependent on the residential activities of high class, which is the immediate requirement of the residents of its surrounding towns. The transfer of administrative activities in the new Balakot town will certainly boom its economy. However, it seems to be very difficult to replace or replicate the old Balakot functions particularly of commercial and social activities. Comparatively, the old Balakot town has very encouraging situation and strong basic economy structure that support its growth and development. The new Balakot town has very prosperous future in the region as a modern green town. However, for the resettlement of the old Balakot town its situation is far behind than the old Balakot town.

7.8 Perception of the affected Community about Hazards

The Earthquake – 2005 has changed the perception of the people of the old Balakot town about hazards particularly of earthquake. Most of the people were in the region at time of occurrence of the Earthquake – 2005. They witnessed all the mortality and morbidity caused by the Earthquake – 2005. They are aware of the fact that the Earthquake – 2005 destroyed all sort of buildings including mosque, shrines and other religious institutions. Only very few buildings withstand whose have reinforced concrete structure. Due to awareness programmes, the residents of the old Balakot town are well aware of the fact that Earthquake – 2005 was caused by fault lines and the old Balakot town is located on

seismically active fault lines. Few of the respondents were of the view that it was act of God and nothing to do with fault lines. Similarly, very few consider it as curse of God as it brought destruction and morbidity for them.

The residents are well aware that old Balakot town is located in the red zone which the Government has abandoned for residential purposes. The perception about the vulnerability of the sites of old and new Balakot towns is based on the knowledge which they gain through interaction with line agencies, awareness programme and intra-community discussions. Most of the residents have the view that the old Balakot town has high vulnerability to earthquake. The response of commercial sector and the residents living on the banks of river Kunhar also included flood as second major hazard. Similarly, most of the villages of Garlat and few of the Balakot union council considered landslides as major threat for their assets. Most of the residents of the old Balakot town think that the new Balakot town has comparatively low vulnerability to any hazard and life will be more safe and sound there. Most of the residents, businessmen and the visitors think that risk reduction measures are mandatory for minimizing the damages of disasters particularly of the earthquake.

7.9 Government's Policy of the Resettlement

The ERRA has sectors wise programme strategy for the recovery. These sectors were comprised of almost all physical, social and economic infrastructure of the region. The fundamental sector of recovery programme was housing sector. Rural and urban programmes were sub-sections of housing sector. The resettlement of the Balakot town has been carried out under the ERRA's urban programme. Under urban program, four towns of Balakot in the Khyber Pakhtunkhwa, Muzaffarabad, Bagh and Rawalakot in the AJK, were to be developed within municipal limits. The theme of urban recovery was to build back better planned cities under the shared vision. The urban recovery included all activities of

restoration, rehabilitation and reconstruction. Certainly, the development of new towns of Rawalakot in the AJK and Balakot in the Khyber Pakhtunkhwa were part of this urban recovery programme.

All the owners of damaged/destroyed houses were paid Rs.175,000 for financial assistance. This programme of financial assistance included the residents of Rawalakot in the AJK and Balakot in the Khyber Pakhtunkhwa. However, commercial property was excluded from this scheme compensation. In case of acquisition of commercial land during recovery and/or town planning, compensations were paid to the owners of commercial property. Based on micro-seismic assessment, the old Balakot town was decided to relocate near Bakryal. According to the policy of resettlement of Balakot, the residential and non-residential lands were treated differently. The land ownership may be lost due to township development, located in red zone areas or lost by mass wasting.

The important components of the Balakot resettlement policy was the entitlement of residential land in the Old Balakot. The residents were entitled for the ownership of residential land in the new Balakot town as well as to continue in the old Balakot town. The entitlement was remain land owners of will continue to own their land. Although, there was a ban on reconstruction of houses particularly on the compensated residential plots in the old Balakot town. However, reconstruction in private sector was observed in the old Balakot town. The second important component of this policy was the entitlement of commercial property in the old Balakot town. All sort of commercial activities were allowed in the old Balakot town except the hoteling. Although, equitable commercial land has to be allotted in the new Balakot town. However, availability of commercial land to all affected commercial land owners is a question mark. The positive aspect of this policy is the flexibility for compensation of commercial land. However, this policy encourages business activities at the old Balakot town. Most important, it is static in nature and

implemented under overall ERRRA's Urban Strategy as a small component. For successful resettlement it needs to be more explanatory and flexible for covering maximum losses of the affected community of the old Balakot town.

7.10 Perception of the affected Community about Resettlement Process

The perception of the residents of old Balakot town about resettlement process has fundamental importance for successful resettlement. The residents of the old Balakot town pursue this situation of resettlement as opportunity for development. However, they accepted the high level of risk at the old Balakot town because of economic opportunities. The residents of the old Balakot town are well aware of the fact that the Government's Resettlement Policy only covers the residential sector. Similarly, the commercial sector is also well informed that there is no protection for their livelihoods in case of resettlement. From customers and visitors respondents, mostly visitors of outside of the valley are not updated with Government's Resettlement Policy. The response of the all three groups i.e. residents, commercial and customers & visitors show that they have good knowledge about the new Balakot town and the red zone of the old Balakot town.

The different stakeholders of the community of the old Balakot town have different concern about the resettlement policy. The response of the household shows that almost half of the population think that business is major hurdle in the resettlement. The tenants have their major concern of justice. Almost, the whole business community think that resettlement has serious issues and top of the list is business opportunities in the old Balakot town. The response of the visitors/customers is mixed type as half of the respondents think that resettlement is possible in present circumstances while half of the respondents think that business concern must be included in the policy of resettlement. Compensation is the main element of the Government's resettlement policy in the form of cash or land in the new Balakot town. All the residents knew that only houses will be

compensated in the policy of resettlement. They already received the partial payment in the form of cash as well. The overall perception about the Government's policy of the resettlement can be summarized that the compensation strategy and lack of support for business are major shortcomings of this policy.

7.11 Identification of the Problems of Resettlement

The basic components for the identification of the problems of resettlement of the Balakot town are: analysis of site and situation of the old and new Balakot town, Government's policy of the resettlement, perception of the residents of the old Balakot town about vulnerability to hazards and resettlement process. The Government's resettlement policy is static and frivolous as this policy partially covers the damages losses and provides residential plots to landowners in the new Balakot town. It does not cover any support for commercial activities rather it encouraged commercial activities in the old Balakot town. The residents of the old Balakot town are not happy with the incentives of Government policy of the resettlement. Similarly, the site and situation of the new Balakot town is also not encouraging to shifts their residence and livelihoods from the old Balakot town to the new Balakot town.

There are a number of opportunities of businesses at the old Balakot town. This is a combination of a number of factors particularly of the situation factors i.e. central location in the valley of river Kunhar, fertile land, nodality, tehsil headquarters and central resort of tourism. The situation in the new Balakot town has negligible opportunities of business or employments at present. This situation leads to the major hurdle of the resettlement of the Balakot town. The feudal system, division of the community into different groups/classes, distance between the old and new Balakot towns, location of the new Balakot town, inappropriate resettlement policy, social and political structure are some others factors that enhance the problems of resettlement.

These problems can be grouped into two major classes i.e. opportunities at the old Balakot town particularly of business and lack of interest in the new Balakot town. These opportunities at old Balakot town and lack of business opportunities at the new Balakot town are perceived differently by different groups of the community. The resettlement is an opportunity to change their socioeconomic condition for the small landholders and working class. The business class is more worried about their future livelihoods while the elite or large landowners resist this process of the resettlement as their economic and social interests are at the stake.

After Earthquake – 2005, the site of the old Balakot town is hazardous and living conditions are deteriorated. The sternest is shelters as people living and working in fabricated shelters are exposed to a number of hazards. The living conditions in these shelters are worse with passage of time. Similarly, the other civic utilities and services are depreciated after Earthquake – 2005. However, the standard of these civic utilities and services are still far better than its surrounding region. The old Balakot town is the centre of administrative, social, political and commercial activities. These activities attract whole population from all over tehsil Balakot region. The new Balakot town provides high class residential and civic utilities & services. Comparatively, it has low business opportunities for the residents of the old Balakot town.

Most of the residents are aware of the fact that the old Balakot town is located in the red zone area. The response about living, business and visit to this red zone area of the old Balakot town shows the fundamental problems of the resettlement. Most of the businessmen, visitors and half of the residents think that economic opportunities and business is the basic reason for living, business and visit to the red zone area of the old Balakot town. Half of the residents, mostly lower and working class of the community have the view that they have no option rather than to live here in the red zone area. Similar

response is observed for choices of residence, business and visits to old Balakot town. Almost half of the residence has preference for living in the old Balakot town and almost half are in favour of shifting to the new Balakot town. The response of the business community and visitors are one sided and they prefer the old Balakot town for business and their visits. The business community is against the resettlement process and prefer the old Balakot town for living and businesses as they have no alternative options. Similarly, the visitors' travelling, business and overall economic interests are suffered by the resettlement of old Balakot town. However, there is good number of people whom economic interests are least suffered and they prefer for new Balakot town. Almost, half of the residents, businessmen and visitors believe that resettlement is eminent and the Government will force them to move from the old Balakot town.

7.12 Proposing Solutions for the Problems of Resettlement

In old Balakot town, there are four major stakeholders from community i.e. elite, business, public servant and low income class. The elite class comprises of landowners of agriculture and commercial land which has more than 40 kanal agriculture land or more than two commercial markets. The business class has well established business and most often with some agriculture land as well. The public servant class has well reputed public service and/or some agriculture land in the old Balakot town. The low income class consisted of labours working in shops and hotels, peasants, private services and low profile businesses. Each of the stakeholders has different problems associated with the resettlement of the Balakot town. Based on these problems of resettlement of the Balakot town, solutions are proposed form site and situation of the old and new Balakot town.

These solutions are basically using the site and situation variables along with resettlement policy in such way that it discourage the residential and business activities at the old Balakot town and encourage the residential, agriculture, commercial and

manufacturing activities at the new Balakot town. This situation will lead to a successful resettlement of the Balakot town. The basic theme of the solution is to decrease the centrality of the old Balakot town and increase business/employment opportunities in the new Balakot town. To decrease the centrality of the old Balakot town, concentration of the administrative, social, political and commercial activities should be shifted from the old Balakot town. For this purpose, number of measures is proposed from the analysis of site and situation variables.

The solutions of the problems of resettlement included the awareness programmes, confidence building measures, participatory approach, multi-sectorial approach, decreasing the level of utilities and services in old Balakot town, increasing the level of utilities and services in the new Balakot town, shifting of administrative activities, changing and merging the political boundaries, discouraging commercial activities in the old Balakot town, discouraging residence in the old Balakot town, decreasing the centrality of the old Balakot town, projecting the centrality of the new Balakot town, new site of tehsil headquarters, manufacturing activities in the new Balakot town, restoration of the livelihoods in the new Balakot town, declaring the old Balakot area as national park, and changing the compensation strategy. The public service group and lower class of the community of the old Balakot town has fewer reservations on the resettlement of the Balakot town which can be easily incorporated through participatory approach. The business class needs business and employment opportunities at the new Balakot town. The elite class of the old Balakot town which has major share in commercial and agriculture land needs comprehensive strategy for their compensation.

The major steps for the solutions are: changes in the resettlement policy, discouraging the residential and commercial activities at the old Balakot town, manufacturing activities at the new Balakot town and new land resettlement. All these

solutions target the problems of resettlements in such a way that the existing problems and opportunities at the both sites of new and old Balakot town should be streamlined so that a successful resettlement of the Balakot town would be possible.

7.13 Testing of the Proposed Solutions

The proposed measures are tested against the selected group responses. These groups are selected on the bases of their importance in proposed solutions. Although, the low income, working class and public servants groups has major share of the population but these groups have least reservation on the resettlement of the Balakot town. As result they are least targeted in the second phase survey. For the residents response testing, 64 respondents are selected randomly from stratified sample of residents' location. The elite class of the old Balakot town are targeted in two different surveys of agriculture landowners and commercial landowners. The selection of the 40 respondents from each group is based on previous survey records. The selection of the 60 respondents from commercial group is based on type of activity and their share in total number of commercial activities. The visitors/customers 40 respondents are randomly selected.

These proposed solutions could be summarized under the headings of modification of policy, civic utilities & services provision, new incentives at the new Balakot town and participatory approach. To assess the validity of these solutions, second stage questionnaire survey & focus group discussion has been carried out. New variables for the response testing are developed in which every aspect of the proposed solution are highlighted. There is consensus among the population of the old Balakot town and visitors/customers that the resettlement policy needs modification to incorporate the losses of the business class. Second issue is the shifting of tehsil headquarters to the surrounding of the old Balakot town which will keep intact the entity of the valley of river Kunhar and minimizing the travelling cost for all of the residents of the valley. The elite class needs

comprehensive compensation strategy. The business class is the trickiest part of the resettlement of the Balakot town. On the one hand they need incentives and compensation but on the other hand they need restrictions for their businesses at the old Balakot town and pressure from the other sectors to move their business from here to the new Balakot town or somewhere else.

7.14 Modification and Finalizing the Solutions

The testing of the responses of different groups about the proposed solution provides new bases for the modification in these proposed solutions. The most important are the multi stakeholder approach and dealing different sections of the same group with multi compensation options which will lead to a successful resettlement. The policy must reflect two way approaches of compensations and restrictions. Presently, there are limited incentives in the form of compensations and not at all any restriction. For successful resettlement of the Balakot town, not only the residential but also commercial activities must be restricted. All the solutions are dependent on each other so there is no room for opting few of them. Certainly, a comprehensive strategy is the basic requirement of all of these proposed solutions.

Change and modification in all solutions is possible but only on the principles of site and situations factors. The basic principle of all modification and finalization of the proposed solution is the impediment of site and situation of the old Balakot town and enhancement of the site and situation of the new Balakot town. The site factors of the both sites of old and new Balakot towns are almost feasible for the resettlement process. Most of the solutions targeted the discouragement of the situation of the old Balakot town particularly the business opportunities and enhancement of the employment opportunities at the new Balakot town.

7.15 A Model Tool for the Process of Resettlement

The model tool is based on the study of resettlement of Balakot town. For successful resettlement of the Balakot town, it is a fundamental fact that the residents of the old Balakot town must have to shift from the old Balakot town to the new Balakot town. During the resettlement process, the residents of the old Balakot town basically look at three different aspects i.e. what are the opportunities at the new Balakot town; what are the risks and opportunities at the old Balakot town; and what will be their overall loss and gain during the process of resettlement. These three basic components i.e. site and situation of the old and new Balakot town and resettlement policy are further divided into six major steps. These steps are:

- a. Analysis of the major variables of resettlement policy, site and situation of the old and new Balakot town (Table 7.1).
- b. Existing conditions of these variables in a well-developed settlement (Table 7.2).
- c. Identification of the problems of resettlement of the Balakot town (Table 7.3).
- d. Proposed solutions for these problems of resettlement, which are based on the site and situation factors (Table 7.4).
- e. Testing of the proposed solutions against selected respondents (Table 7.5).
- f. Modification and finalization of the proposed solutions (Table 7.6).

In first stage the detail of the each step is given then a general model tool layout is presented at the end (Figure 7.1).

Table 7.1

Major Variables of the Site, Situation and Resettlement Policy

Site of the Old and New Balakot Town	relief, geology, water supply, nature of the river, hazard vulnerability, defence, building material, fertility of land, fuel supply, slope aspect, flat surface and natural resources etc.
Situation of the Old and New Balakot Town	Surrounding physical, economic and cultural conditions which support growth and prosperity of a settlement. Relative location Centrality of a settlement Livelihoods Structure: Basic and non-basic activities
Resettlement Policy	Compensation of Rs.175, 000 were provided to each of the owners of damaged houses. The residential land ownership will be intact in hands of the owners. However, it will be used other than residential purposes. A residential plot in the new Balakot town will be provided to the owners of houses in old Balakot town. The ownership of commercial property will intact in hands of the owners in the old Balakot town. This land could be used for any commercial activity except accommodation services based activities. Commercial land will be compensated in form of commercial land in the new Balakot with justified criteria.

Source: Field Data, 2010

Table 7.2

Existing Conditions of the Site, Situation and Resettlement Policy

Site of the Old Balakot Town	<u>Vulnerability to Hazards:</u> The whole infrastructure has been destroyed. This site has high vulnerability to earthquake hazard. The level of risk of the earthquake hazard is absolutely beyond the capacities of the residents of the old Balakot town. Flash flood in river Kunhar and adjustment streams frequently affected the commercial area and agriculture land. Landslides are also common at steep slopes and along the bank of river Kunhar. The high magnitude of Earthquake – 2005 and its aftershocks further intensified the vulnerability to landslide hazard. The hydro-metrological hazards include cloud bursting, hail, snowfall, wind and thunder storm hazards. The Earthquake – 2005 shaken the aquifers as a result, the year 2006 was worst year for drought hazard. The vulnerability to fire hazard has increased due to fabricated shelters and loose electricity fitting. The structural vulnerability for a number of hazards increased as the fabricated shelters has very low capacity of resistance. The site of old Balakot town is declared as red zone. <u>Utilities & Services:</u> The utilities & services and infrastructure facilities like roads, streets, bridges, telecommunication, sewerage, sanitation, waste disposal system, shelter, education, health, transportation, postal service, police, emergency response, government offices and recreation were totally destroyed.
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	Most of these services were started in fabricated shelters. These utilities & services have been resorted up to some extent but are still far behind the standards of reconstruction and as a result, the residents are facing enormous problems of civic utilities and services. The utilities and services infrastructure restored with very low quality. The upper most, this site of the old Balakot town has high seismic vulnerability which make unsuitable for residential purposes.
Site of the New Balakot Town	<u>Vulnerability to Hazards:</u> NESPAK has carried out transportation, topography, reliefs, slope analysis, geotechnical, geological, environmental, and hydrological technical studies of the site of new Balakot town. The new Balakot town has very low seismic vulnerability. The landslide hazard vulnerability is very low. Most of the area drains into river Siran (a tributary of river Indus) which is less vulnerable to flash floods. <u>Utilities & Services:</u> The master plan is based on the principles of growth pole through new township; environmentally sustainable and seismically safe atmosphere; safe neighbourhoods; amenities and facilities accessible to all residents; topography based designing; unique life style and to be a model town. Number of schools, health centre, mosques, community centres, parks, access road and streets are under construction. The water supply may be one of the major issues in the new Balakot town in long run. The site of new Balakot town has very low vulnerabilities to hazards and offers high standard of living.

Situation of the Old Balakot Town	<u>Relative Location:</u> Suitable situation for crossing the Kunhar River and a pass to Kashmir valley makes it strategically very important. All transportation networks of the valley particularly towards famous tourists' destination were distributed from here. <u>Centrality of the Town:</u> The old Balakot town is located in the centre of the valley and served more than 70% of the tehsil total population. The shrines of Shah Ismail Shaheed and Syed Ahmad Shaheed attract visitors from all over the country. In the surrounding of the old Balakot town, there is fertile agriculture land and suitable environment for poultry farms and horticulture. The whole valley products are traded in the market of old Balakot town. <u>Basic Activities:</u> Agriculture is the major livelihood of almost 50% of the total population particularly in the union councils of Garlat and Ghanool. Almost 40% of the total population is engaged in business activities. The major shareholder of the business activities belongs to union council Balakot. The manufacturing activities has negligible share in the economy of the old Balakot town. The establishment of NGOs and relief activities offices in the old Balakot town has increased the number of visitors and thus has encouraged the commercial activities. The old Balakot town provides market for the trading of goods and services and sole market for wholesaling activities. More than 50% respondents among visitors/customers purpose of the visit was business, 20% were for administrative
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and the rest were for office, political/social, education, health, recreational and religious activities.

More than 75% respondents of the visitors/customers fulfil their needs from the old Balakot town while 10% from their local market and almost 10 % from outside of valley.

The visitors/customers response showed that old Balakot town is central place of business, administrative, socio-political activities and it has no comparison with any of other settlement in the valley regarding its centrality.

Non-Basic Activities:

The major non-basic activities in the old Balakot town were retailing and few services.

Less than hundred retailing shops of general stores, bread baking, vegetables and milk were present outside of the main bazaar of old Balakot town in red-zone area.

Rest of retailing and services activities were carried out in main bazaar area.

The red zone area has almost 20% share of the total valley population. The area served by the old Balakot town of the eight union councils has more than 70% of the total valley (tehsil Balakot) population. There are limited retailing activities in each of the eight union councils, which was approximately about 5% of the total. As result, 25% of the total business activities support the population of red zone while 75% is for the peripheral areas. Consequently, the 25% of the total commercial activities and services of the old Balakot town is considered as non-basic activities.

Situation of the New Balakot Town	<u>Relative Location:</u> The new Balakot town located at the south-western edge of the valley of river Kunhar. A vast area in the western part is located outside of the tehsil Balakot boundary line. In north, forestland with natural beauty; in east, the Kashmir Valley and valley of river Kunhar; in west, the Hazara University and Karakorum Highway; and Mansehra is located in south of new Balakot town.
	<u>Centrality of the Town:</u> The town provides direct link to Hazara University, Karakorum Highway, Kashmir Valley and the valley of river. A well-planned site and easy accessibility make this new town as residential satellite town for the residents of Mansehra, Hazara University and Gari Habibullah towns. The relative location and surrounding productive land provides situation that certainly supports the growth and development of this new town. <u>Basic Activities:</u> The administrative and political activities will decide the fate of the new Balakot town. Higher the order of these activities will certainly boom its development and growth. In the presence of Mansehra and Gari Habibullah towns, it is very difficult for the new Balakot town to flourish its own central market. The property dealing will be an important commercial activity. Presently, the new Balakot town has no plan for manufacturing activities but its future employment opportunities are based on this sector.

	<u>Non-Basic Activities:</u> In the master plan, the commercial activities are divided in neighbourhoods, which directly support the non-basic activities. The higher hierarchy of non-basic activities will attract the high-class residents of the district Mansehra and Hazara University.
Resettlement Policy	The positive aspect of this policy is the flexibility for compensation of business activities. The policy covers only landowners' compensations. This policy encourages business activities at the old Balakot town. It is static in nature and implemented under overall ERRRA's Urban Strategy as a small component. It needs to be more explanatory for compensation of commercial lands values or size of commercial plots. After resettlement, the landownership intact with owners in the old Balakot town this situation can be easily exploited. It only restricts the residential activities in old or compensated land. There is no restriction on private sector development. The whole area needs to be treated as a single unit.

Source: Field Data, 2010

Table 7.3

Identification of Problems of the Process of Resettlement

Site of the Old Balakot Town	<u>Perception about Hazards:</u> The perception of the people of the old Balakot town about hazards particularly about earthquake has been changed by the Earthquake – 2005. They are taking the high level of risk at the old Balakot town because of economic opportunities. Most of the residents, businessmen and the visitors think that risk reduction measures are mandatory for minimizing the damages of disasters particularly of the earthquake. <u>Vulnerability to Hazards:</u> The site of the old Balakot town is hazardous and the living conditions have deteriorated but still it is the home of thousands and business centre of the whole valley. The residents are well aware that old Balakot town is located in the red zone which the Government has abandoned for residential purposes. Very few people think that this site is still suitable for living purposes. <u>Utilities & Services:</u> People are living and working in fabricated shelters which are exposed to a number of hazards and the living conditions in these shelters are getting worsening with passage of time. The civic utilities and services are depreciated but the standard is still far better than its surrounding region. <u>Property Ownership:</u> The commercial landownership is limited to few families. Although most of the residents have some agriculture land but most of the land is owned by few landlords.
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	<u>Feudal System:</u> The landlords control almost all of the business and agriculture activities. <u>Social and Political Setup:</u> There are different ethnic groups with respective social identity. Beside these ethnic groups the community is divided into four different classes i.e. elite, public servants, businessmen and low-income working class. Mostly the members of the elite class are from one specific ethnic group. This elite class has strong social and political uphold. <u>Emotional & Religious Sentiments:</u> The residence, businessmen and visitors/customers feel emotional and religious sentiments with the old Balakot town.
Site of the New Balakot Town	Most of the residents of the old Balakot town think that the new Balakot town has comparatively low vulnerability for any hazard and life there will be more safe and sound. The site offers high level of utilities and services for residential purposes. It has very low vulnerability to earthquake and flash floods. The master plan of the new Balakot town ensures sustainable use of the natural resources particularly of the environment.

Situation of the Old Balakot Town	<u>Relative Location:</u> Central location in the valley of river Kunhar make it easily accessible to the whole valley. The visitors consider it as central resort of tourism. <u>Centrality of the Town:</u> The old Balakot town is the centre of administrative, social, political and commercial activities. These activities attract whole population from all over tehsil Balakot region. The nodality for transportation encourages business activities. The visitors consider the present location favourable in terms of travelling costs. <u>Basic Activities:</u> Most of the businessmen, visitors and half of the residents think that economic opportunities and business is the basic reason for living, business and visit to the red-zone area of the old Balakot town. The businessmen are more worried about their future livelihoods. Half of the residents of lower and working class of the community have the view that they have no option rather than to live here in the red-zone area of the old Balakot town. The fertile land, river Kunhar and climate are suitable for agriculture, livestock and poultry farming. The role of non-government organizations supports the business activities. <u>Non-Basic Activities:</u> Most of the non-basic activities are concentrated in old Balakot bazaar area which increases its attraction. <u>Valley Entity:</u> Most of the respondents' believes on the separate entity of the valley. <u>Distance between the old and new Balakot towns:</u> The low income group and business class will not be able to afford travelling cost. Small agriculture landowners have same reservations of travelling cost.
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Situation of the New Balakot Town	<u>Relative Location:</u> It is located at the edge of the valley of river Kunhar. It has central location for Mansehra, Gari Habibullah and Hazara University. <u>Centrality of the Town:</u> It will be nodal hub for transportation. Residential hub of the regional elite class. In the presence of Mansehra and Gari Habibullah, it will be difficult to flourish its own market. <u>Basic Activities:</u> It has very low employment opportunities. Manufacturing, wholesaling or industrial incentives are totally missing in the master plan. Focus is only on high residential facilities. <u>Non-Basic Activities:</u> High class non-basic activities discourage low and middle class residents. <u>Valley Entity:</u> The strong entity of the valley of river Kunhar produces resistance for shifting of administrative activities. It is difficult to replace or replicate the social and political setup of the old Balakot town. <u>Distance between the old and new Balakot towns:</u> Discourage the business and low income class for residential purposes due to travelling costs. The residents of the valley of river Kunhar are also least interested due to travelling costs.
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Resettlement Policy	The low income, small landholders and working class look at the resettlement as an opportunity to change their socioeconomic condition. The low income, small landholders and working class, more than 50 % of the population are in favour of shifting to new Balakot town. The elite or large landowners resist this resettlement process as their economic and social interests are at stake. The commercial sector is also well informed that there is no protection for their livelihoods in case of resettlement. The business community is against the resettlement process and prefer old Balakot town for living and businesses as they have no alternative options. The visitors' travelling, business and overall economic interests are suffered by the resettlement of old Balakot town. Half of the residents, businessmen and visitors believe that resettlement is eminent and Government will force them to move from old Balakot town. The response of the household shows that almost half of the population think that business is the major hurdle in the resettlement. The tenants and working class have their major concern of justice. The residents of the old Balakot town purse this situation of resettlement as opportunity for development.
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Source: Field Data, 2010

Table 7.4

Proposed Solutions for the Resettlement Process

Site of the Old Balakot Town	The awareness programmes for projecting the high risk associated with the site of old Balakot town. Participatory approach for all sections of the community. Targeting low income, working and public servants classes at first priority. Providing full information of all on-going resettlement activities to all sections of the community. Make sure that the residents have full belief in the policy of resettlement. Decreasing the level of utilities and services in old Balakot town. Discouraging the residence in the old Balakot town. Declaring the old Balakot area as national park
Situation of the Old Balakot Town	To decrease the centrality of the old Balakot town concentration of the administrative, social, political and commercial activities should be shifted from the old Balakot town. Shifting of administrative activities in the surrounding of old Balakot town. Discouraging commercial activities in the old Balakot town. Restricting the private development through legislation. Changing the site of the link road of Karakorum Highway and Kashmir valley.

Site of the New Balakot Town	The awareness programmes for projecting the low risk associated with the site of new Balakot town. Increasing the level of utilities and services in new Balakot town. Projecting the new Balakot town for the residence of middle and working class. Multi-sectorial approach for compensations as the site of new Balakot town has a number of options for residence, agriculture, commercial and overall employment opportunities. Providing agriculture land to small landholders. New land resettlement for availing the composite options of the new Balakot town.
Situation of the New Balakot Town	Changing and merging the political boundaries to encompass the new Balakot town in the tehsil Balakot. Projecting the centrality of the new Balakot town as residential satellite town, nodal hub, employments hub and all class residential units. Starting manufacturing units for employment opportunities. Restoration of the small businessmen and small landholders' agriculture livelihoods in the new Balakot town.
Resettlement Policy	Change in the overall resettlement policy in the present guidelines of ERRRA's Urban strategy. Enhancing sectors for compensations particularly the business activities. Ensuring the implementation of proposed solutions through new incentives and restrictions. Prioritizing different groups of the community according to their willingness of resettlement. Restricting all sorts of structural development through legislation in the old Balakot town. Comprehensive and well explained strategy for the compensation of the business and elite class.

Source: Field Data, 2010

Table 7.5
Testing of the Proposed Solutions

Site & Situation of the Old Balakot Town	The residents need clear and coherent policy for residence and business in the old Balakot town. The elite and most of the public servants groups almost abandon the site for residential purposes. The business class is in dire need of compensation strategy. All of the respondents are aware of the fact that shifting of administrative activities will suffer their interests. The situation of the old Balakot town can be easily diluted by providing the surrounding business and administrative nuclei. To avoid litigation and agitation multi stakeholders approach in compensation is required. The residents' socioeconomic and present high risk conditions already restricting the private sector developments but certainly needs policy guidelines. Proposing new tehsil site in surrounding of the old Balakot town to ensure the entity of the valley of river Kunhar.
Site & Situation of the New Balakot Town	The different groups of the community pursue the opportunity of the new Balakot town differently. The elite and public servants groups are ready to shift to the new Balakot town for residential purposes. The business and low income groups have least interest in residence. The employment opportunities needed for attracting the whole affected population. The residents of the valley of river Kunhar are least interested in the visit. The location is least feasible for tehsil headquarter. Establishment of the manufacturing units and property dealers activities are the bases for initial employment opportunities.

Resettlement Policy	There are strong anti-sentiments in the business community for ignoring their interests in the resettlement strategy. The low income, working class and public servants groups almost accepted the modified strategy for the resettlement. Most of the concerns of the elite class are already compensated in the present strategy but certainly need clear strategy. The business class is ready to participate in the resettlement process if their concerns of business are compensated in the strategy. Multi stakeholders approach is the only strategy to achieve successful resettlement. Sector wise details are required in the resettlement policy. Residents are ready to accept restrictions at the old Balakot town while availing the incentives at the new Balakot town. Full losses compensated strategy is acceptable to most of the population.
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Source: Field Data, 2010

Table 7.6
Modification and Finalization of the Proposed Solutions

Site & Situation of the Old Balakot Town	Restrictions on all sorts of developmental activities. Projecting high risk of hazards. Keeping minimum standards in civic utilities and services. Shifting of administrative activities in the periphery of the old Balakot town. Avoiding this site in all regional developmental plans. Declaring as national park and claiming landownership of compensated lands. Restrictions on all sort of residential and commercial activities after resettlement. The compensated land and property should be surrender to the Government. New land resettlement in light of compensations.
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Site & Situation of the New Balakot Town	Changing the administrative and political boundaries for the new Balakot town to be fully part of the tehsil Balakot. Projecting low risk of hazards. Projecting as mandatory residential town for all section of the community of the old Balakot. Proper attention to manufacturing, industrialization and property dealing activities. The residential needs of the elite class of the district Mansehra should be dealt in second phase. All aspects of incentives of surrounding agriculture land, employment opportunities, residential and commercial plots need to be properly utilized.
Resettlement Policy	New flexible and dynamic policy. Prioritizing the different groups in the resettlement process. Make ensure the participatory approach. Multi stakeholders and compensations approach in policy Sector wise detail of implementation. All measures needs legal protection from policy. Two way approach of incentives and restrictions in policy. Dynamic for changes in light of site and situation factors.

Source: Field Data, 2010

7.16 Conclusion

The successful resettlement of the old Balakot town is based on the shifting of the total affected population in the red zone to the new Balakot town. This affected population of the old Balakot town has different ethnic, social, and economic classes. Each class looks at the resettlement of Balakot according to its own interests. The old Balakot town is certainly hazardous but at the same time, it offers enormous business and employment opportunities. On the other hand, the new Balakot town has low risk of hazards but offers negligible employment opportunities. Plots in the new Balakot town are offer only to landowners. Although, the procedure for residential plot is clear but needs more explanation in case of commercial plots. All such problems associated with resettlements of the Balakot are listed against policy, site & situation of the old and new Balakot town. Solutions for resettlement of the Balakot town are proposed for all problems of resettlement. These solutions are tested against the selected group responses and at the end further modified and finalized. This process is converted into a tool of resettlement. This tool has three major components of site & situation of the old Balakot town; site and situation of the new Balakot town; and resettlement policy. These three major components are analysed in six steps. These steps include: general variable description; existing conditions; problems identification; proposed solutions; testing of solutions; and modification & finalizations of the solutions. This tool is elaborated and has six tables. At the end a simplified model tool of resettlement is presented. This tool is applicable to other resettlement processes with certain modifications.

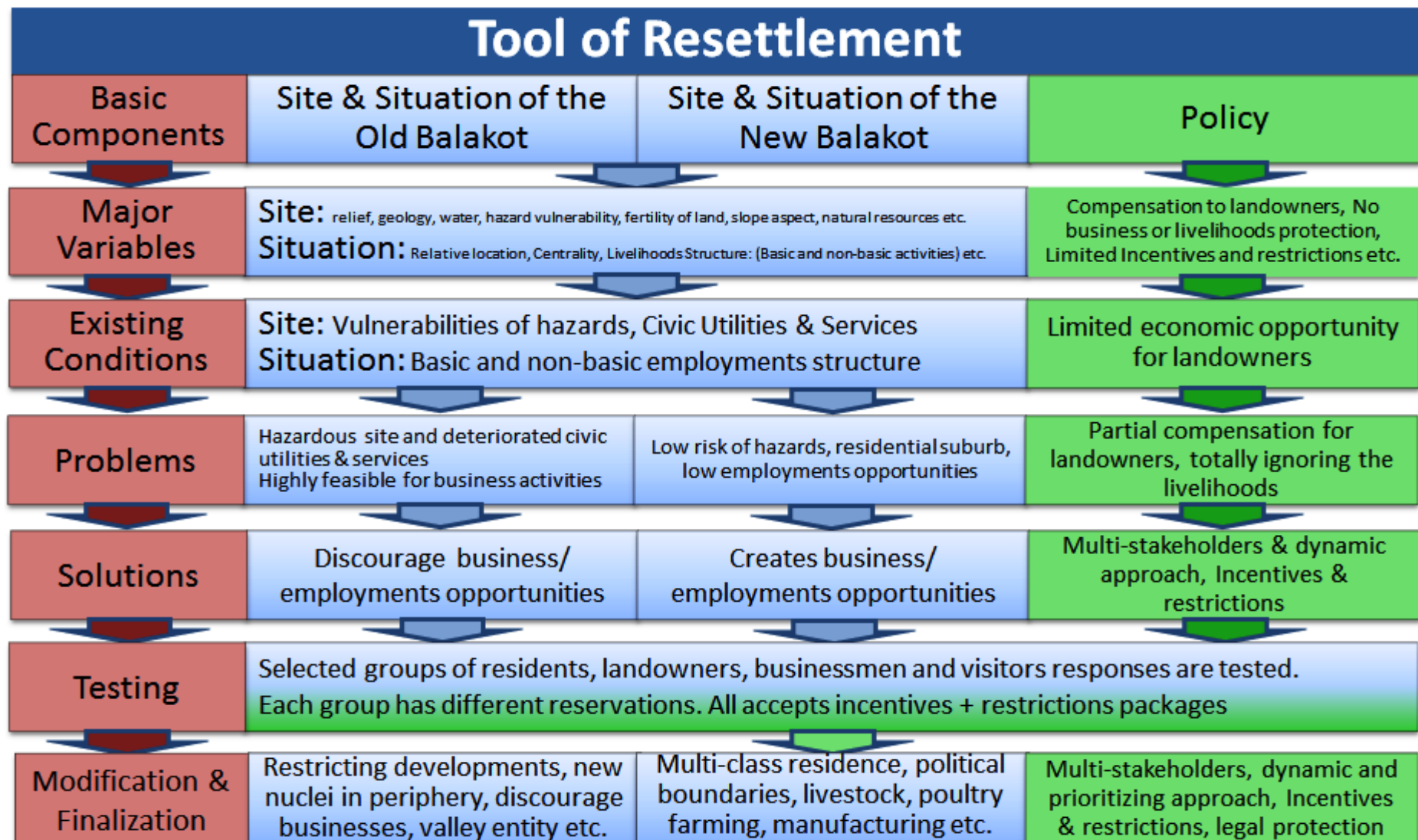


Figure 7.1 Tool of Resettlement (Source: Field Data, 2010)

Chapter 8

Findings, Recommendations and Conclusion of the Study

8.1 Introduction

This chapter deals with the findings, recommendations and conclusion of the study. The study provides solutions about the resettlement policy of the Balakot town. It reveals issues about site and situation of the old Balakot town; site and situation of the new Balakot town and problems of the resettlement and proposed solutions. The detail of the tool of resettlement is also given in the finding section. The recommendations are made on the bases of all those facts and information, which were collected and calculated during the study. Conclusion of the study is given at the end of the chapter.

8.2 Findings of the Study

The research findings include a vast range of issues and information. The main purpose of the study was to identify the problems of uncertainty and future prospects of the resettlement of Balakot. Problems of the resettlement were identified through site and situation analysis of both old and new Balakot towns. The findings of site and situation of the old and new Balakot towns are elaborated in detail. The problems of the resettlement are linked with the site and situation factors and resettlement policy. The major problems are explained in light of these factors. The analysis of perception of the residents about vulnerability to hazards and resettlement policy has fundamental importance for finding the solutions of the resettlement's problems. The proposed solutions of the resettlement's problems are elaborated and the tested response for these solutions is discussed in detail. A tool of resettlement is developed which is based on the resettlement of Balakot town. Findings of the study are discussed under two headings i.e. major findings and secondary findings.

8.2.1 Major Findings of the Study

Major findings of the study are site of the old Balakot town, site of the new Balakot town, situation of the old Balakot town, situation of the new Balakot town, people's perception about hazards, perception of the residents about resettlement and a model tool of resettlement. Detail of the each major finding is given as below:

8.2.1.1 Site of the old Balakot Town

The old Balakot town is a well-established settlement. The basic characteristics of the site variables were the same such as water availability, plain surface, fertile agriculture land, vulnerability to hazards and natural resources etc. However, the residents of the Balakot town utilized these resources and modified in form of utilities & services and vulnerability to hazards. Historically, Balakot has strategically important location. A pass to Kashmir valley located close to the Balakot town has also a suitable situation for crossing the river Kunhar. The central location in the valley makes Balakot easily accessible for the residents of the whole of valley of river Kunhar. The old Balakot town was an urban centre while its surrounding areas had the characteristics of rural area. The old Balakot town is situated on a gentle slope.

The Earthquake – 2005 changed the nature of site variables. The residents of the Balakot before Earthquake – 2005 were enjoying comparatively high-class utilities & services. The area was prone to flood hazard but structural vulnerability was comparatively very low due to buildings structures and accessibility. After Earthquake – 2005, the scenario has been changed and the vulnerability of earthquake and flood hazards increased. The structural vulnerability for a number of hazards has increased as the fabricated shelters have very low capacity of resistance to hazards. The utilities and services infrastructure was damaged severely and restored with very low quality. The old Balakot town site was hazardous and the Government has declared this site as red zone.

8.2.1.2 Site of the new Balakot town

The data revealed that 11 different sites were identified for new Balakot town in whole tehsil Balakot area. Bakryal, the new site for new Balakot town was purely selected on the basis criteria of large area availability. The site is at a distance of 23 Km from old Balakot town and just 11 Km from Mansehra city. The site Bakryal has huge expansion capacity with low seismic vulnerability. The slope is comparatively gentle. Consequently, the landslide hazard vulnerability is very low. Most of the area has drainage towards river Siran (a tributary of river Indus). The new town has only one major issue and that is of water supply. It was found that transportation, topography, relief, slope analysis, geotechnical, geological, environmental, and hydrological technical studies of the site of new Balakot town were carried out by NESPAK. After detailed studies and designing, the NESPAK developed a master plan for the new Balakot town. The master plan consist an area of 1,425 acres (11,400 *Kanals*). The plan revealed that this area would be developed in two phases. Initially, the project completion time was three years but due to land settlement issues it was delayed. Presently, the developmental work is in progress. In new Balakot town, the total area has been divided in to six major land uses. About 87 % area of the total consisted of three major land uses i.e. residential, parks/green and roads/streets area. The new Balakot town has been established with a vision that it will grow in three different directions. It is estimated that it will accommodate 25,00,000 population in next twenty five years.

8.2.1.3 Situation of the Old Balakot Town

The old Balakot town is located in the centre of the valley of river Kunhar. It was a hub of commercial, political, social and administrative activities. The town was distinctive from its surroundings due to a number of higher hierarchies of functions. The old Balakot town enjoyed its position as sole central place for the whole valley of river Kunhar. These

unique conditions strengthen the situation of the old Balakot town. After Earthquake – 2005, this prosperous situation enabled the old Balakot town to quickly rehabilitate its economic structure. Similarly, very few tehsil headquarters functions were shifted from red zone area. As a result the number of visitors was least affected and so on the commercial activities. The establishment of NGOs offices further enhanced this situation. The whole tehsil residents rushed towards the old Balakot town for jobs, commercial activities, relief assistance, civil dispute resolutions, social and political activities.

The function as a tourists resort is slowly but certainly restored in recent years as new hotels and restaurants are constructed. The whole valley products were traded in the market of the old Balakot town. The large number, variety and high order of commercial activities along with different services provided strong basic activities structure that enhanced its growth and development. The major livelihood in the valley of river Kunhar was tourism and agriculture. Both of the activities were supported by the old Balakot town. It was nodal point and all transportation networks particularly towards famous tourists' destinations were distributed from here. The administrative, political, religious, NGOs offices, social and cultural activities further enhance the situation of the old Balakot town.

8.2.1.4 Situation of the New Balakot Town

The proposed new Balakot town is located at the south-western edge of the valley of river Kunhar. The new Balakot town was well-planned town with modern planning concept of green cities. In the western part of the new Balakot town, a large portion is located outside of the tehsil Balakot boundary line. The link road to Karakorum Highway and Hazara University is under construction, which would increase its nodality. The well-planned site and easy accessibility for the residents of Hazara University, Mansehra and Gari Habibullah towns made it very attractive as residential suburb town. The present scenario

of the development of this town is solely dependent on residential activities of the high-class, which is the immediate requirement of the residents of its surrounding towns. The transfer of administrative activities to the new Balakot town will certainly boom its economy. However, in presence of major towns or nuclei like Mansehra, Gari Habibiullah and Hazara University, it is very difficult to flourish its own market functions or perform central functions of a major town. The relative location and productive surrounding land of the new Balakot provides situation that certainly support the growth and development of this new town. However, to replace or decrease the importance the old Balakot is uncertain. For the residents of the old Balakot town, it was an opportunity in terms of economic activities, which they will avail in the same spirit. However, to provide economic, social and political environment like the old Balakot town, it was far behind the required level.

8.2.1.5 People's Perception about Hazards

The analysis of data shows that the Earthquake – 2005 totally changed the perception of the people about hazards particularly earthquake. Most of the respondents were present in the area at the time of occurrence of the Earthquake – 2005 and witnessed all the mortality and morbidity caused by the Earthquake. All sorts of buildings were destroyed including mosque, shrines and other religious institutions. Only very few buildings withstand which were reinforced through concrete structure. The residents are well aware that earthquake has strong relation with fault lines and that old Balakot town is located on fault lines. Few of the respondents were of the view that it was an Act of Allah and it has nothing to do with fault lines. Similarly, very few people considered it as a curse of Allah as it brought destruction and morbidity for them. The residents were well aware that old Balakot town is located in the red zone which the Government has abandoned for residential purposes.

Most of the residents have the view that old Balakot town has high vulnerability to earthquake.

8.2.1.6 Perception about Government's Policy of the Resettlement

The data revealed that one of the fundamental factors that affected the resettlement process was perception of the residents of old Balakot town about resettlement process. It was found that the community of the old Balakot town is well aware of the fact that the area is in red zone which has been abandoned for residence. Most of them also had good knowledge of resettlement policy. There was a segment of rural population particularly in union council Garlat which had limited knowledge of the resettlement process. However, the risk of all hazards particularly of an earthquake was pursued as an uncertain and unpredictable event. The residents of the old Balakot town pursued this situation as opportunity for development. They accepted the high level of risk for economic opportunities. The government's policy of the resettlement for the old Balakot town only covers the residential sector. Although, there was coverage for commercial land substitution but practically no such a land was entitled for this purpose and the landowners of commercial property were aware of this fact. The commercial sector was also well informed that there was no protection for their livelihoods in case of resettlement. Mostly visitors coming from outside of the valley were not updated with Government's policy of the resettlement. The response of the all three groups i.e. residents, commercial and customers & visitors showed that they have good knowledge about the new Balakot town and red zone of the old Balakot town.

The data analysis revealed that mostly people involved in commercial activities, visitors and half of the residents were of the view that the basic reason for living, business and visit to the red-zone area of the old Balakot town was economic and business opportunities. Similarly, half of the residents informed that they have no option of outside

residence so lived here in the red zone area of the old Balakot town. Similar response was observed for future choices of residence, business and visits to old Balakot town. The business community was against the resettlement process and prefer the old Balakot town for living and businesses as they have no alternative options. Similarly, the visitors/customers were least in favour of the resettlement as their travelling cost, business and overall economic interests were suffered by the resettlement of old Balakot town. However, there was good number of people whom economic interests were least suffered and they prefer for the new Balakot town.

The overall perception about on-going resettlement process of the old Balakot town was similar in nature of the previous responses. Half of the residents had believed that resettlement is eminent and Government will force them to move from the old Balakot town. Almost, half of the business community were of the view that either other people prefer or not Government will force them to move from the old Balakot town. A similar response was observed from visitors of the old Balakot town. It was found that the compensation procedure and lack of support for business were major shortcomings of this policy. All the residents knew that only houses will be compensated in the policy of resettlement and they already received the partial payment in the form of cash as well.

8.2.1.7 A Model Tool for the Process of Resettlement

A model tool was developed which was based on the study of resettlement of Balakot town. For a successful resettlement of the Balakot town, it is fundamental fact that the residents of the old Balakot town have to shift from the old Balakot town to the new Balakot town. During the resettlement process, the residents of the old Balakot town were looking to three different aspects i.e. what were the opportunities at the new Balakot town; what were the risks and opportunities at the old Balakot town; and what will be their overall lost and gains during resettlement. These three basic components i.e. site and

situation of the old and new Balakot town and resettlement policy were further divided into six major steps. These steps are: analysis of the major variables of resettlement policy, site and situation of the old and new Balakot town; existing conditions of these variables in a well-developed settlement; identification of the problems of resettlement of the Balakot town; proposed solutions for these problems of resettlement, which were based on the site and situation factors; testing of the proposed solutions against selected respondents; and modification and finalization of the proposed solutions. A general model tool layout was presented in which all these steps were incorporated. This tool will be applicable to all other resettlement processes with some modification.

8.2.2 Secondary Findings of the Study

The secondary findings of the study have vast range and variety, which provided new facts and information about site and situation of the old and new Balakot towns, problems and solutions of the process of resettlement. These findings are discussed as follows:

8.2.2.1 Vulnerability to Earthquake of the old Balakot town

The data revealed that the two fault systems of Murree & Muzaffarabad and Panjal & Garhi Habibullah faults merge at the vicinity of Balakot and make up a wedge. Balakot is located in IKSZ at the northern apex of wedge. Between the MKS and the MMT a 100 Km long and 50 Km wide feature was confirmed. In this IKSZ, horizontal upper surface is towards south-west while dipping lower surface is towards north-east. Two different seismic zones are identified by Ni et al. in 1991. The first shallow zone is present from the surface to a depth of 8 km. The second mid-crustal zone is identified at depth of 12 to 25 km which is more pronounced. Muzaffarabad fault have several sharp stream offsets near Balakot, clearly suggest that this fault is characterized with a right-lateral strike slip motion together with a westward thrusting. This fault bifurcates in the north western direction. Sharp lineaments with strike slip components of faulting along the branches are

found in places. Splitting of faults suggested the direction of their separation that is closely related with surface seismic waves and resulting earthquake destruction. Balakot was one of the worst earthquake affected towns in the episode of October 8, 2005. The old Balakot town is located on an active fault line. The intensive geotechnical and seismic micro-zonation study of the old Balakot town and peripheral region was carried out by NESPAK and micro-seismic hazard map was prepared. The two fault systems merged here form a net of four major and twenty small fractures lines. These fractures net are highly vulnerable to seismic activities. Hence, risk of earthquake disaster in the area is very high. Based on various studies carried out in the area and looking at the future seismic activities and earthquake hazard vulnerability of the old Balakot town, the government declared the old Balakot town site in red zone and abandoned it for residential purposes.

8.2.2.2 Vulnerability to Flash Floods of the old Balakot town

The old Balakot is located in middle of river Kunhar valley and the river passes through middle of red zone of the Balakot. The geomorphic analysis of the river Kunhar shows that it has elongated oval shape drainage basin with area of 2706 Sq. Km. The valley is characterised by steep slopes with maximum altitude of 5075 m and minimum of 632 m. The elongated oval shape of the drainage basin and steep slope are the indicators of flash floods. The river Kunhar near Balakot has comparatively more active flood plain area than elsewhere in the valley. This active flood plain area is at maximum of one metre height and extensively used for agriculture purposes. This area is exposed to mild flash floods. Similarly, the bridge, number of shops and residential units are just at five metre height from the river bed. Here the width of the river ranges from 80 to 150 metres. The flash flood of 1992 and 1993 severely damaged the shrine, bazaar area and residential area on both sides of the river. The old Balakot town particularly the bazaar area is highly vulnerable to flash floods.

8.2.2.3 Vulnerability to Landslides of the old Balakot town

It was found that the Earthquake – 2005 caused huge number of landslides in the region. Most of these landslides were associated with fault line rapture. Balakot is located on active faults and the surrounding region has complex geology. The eastern part particularly along the fault line is highly vulnerable to landslide hazard. In built up area the nature of rocks or soil and drainage system are less susceptible to landslide hazards. Steep slopes and vertical cutting of river, streams and roads are prime factors for landslide hazards in the area while other factors like fault surface fractures in the north-eastern part, susceptible soils of pediment plains in the south and moisture availability along river and streams are other factors.

8.2.2.4 Vulnerability to Hydro-meteorological Hazards of the old Balakot town

The data reveals that hails, snowfall and windstorm were of low profile hazards as its impacts were limited to standing crops. The Earthquake – 2005 dramatically changed the vulnerability to these hazards. The changes in building materials or fabricated shelters are highly vulnerable to these hazards. Hails are more frequent while snowfall is occasional phenomenon in the old Balakot area. Frequent windstorms every year record few injuries and small property damages. Similar results for hails and snowfall were recorded. It was found that snowfall in December, 2010 and January, 2011 was more than 10 inches each time which caused damages due to flat roofs.

8.2.2.5 Vulnerability to Drought and Fire of the old Balakot town

It was found that like other mountainous areas, this region is also facing the problem of clean water availability which is increasing with time as the population increases very rapidly. The severity of the problem is particularly felt in the early summer months each year. Very significant drought conditions have been recorded after the Earthquake – 2005. The rainfall recorded in the year 2006 was comparably very high but due to disturbed and

fractured aquifers conditions it hardly fulfilled the needs of the residents of old Balakot town. In the upcoming year 2007 the rainfall was much smaller than expected which intensified the already existed drought conditions. The fabricated shelters were more vulnerable to fire hazards as there were loose electricity fittings, small kitchen size and the volatile fuel sources. The fire hazards vulnerability was much higher in bazaar area where shops were attached with each other. Few cases of fire have been recorded, mostly in residential area which caused damages to property at low scale.

8.2.2.6 Vulnerability to Hazards of the new Balakot town

It has been observed that the new Balakot town is located in area where no major fault line is present with gentle slope. This site lies almost in between river Kunhar and river Siran. This new site is less vulnerable to earthquake, flash floods, landslides and fire hazards. The new Balakot town lies in area, which has very limited drainage area with gentle slope. The gentle slope and proper drainage system remarkably reduced vulnerability to flash flood. The fire hazards vulnerabilities is to be reduced with high accessibility and better building material. Overall, this new site of Balakot town has very low hazard vulnerability as compared to the surrounding area and urban centres in the region.

8.2.2.7 Shelters at the old Balakot town

The data revealed that the Earthquake – 2005 almost destroyed 95% of the total buildings. More than 90% of the population is living in fabricated houses. Two rooms, one kitchen and one latrine are common structure of these houses. All of the houses have electricity, but mostly in loose fitting network. According to field survey the maximum family size vary between 3 – 5 persons or 6 – 10 persons. The pre and post Earthquake – 2005 facilities in these shelters are unmatched as these fabricated shelters are of small size with limited facilities. Presently, very few families are living in *Pacca* or repaired houses

after the earthquake. Most of the housing lot are either fabricated or repaired area. The data revealed that these houses have high vulnerability to all hazards.

8.2.2.8 Residence in the Old Balakot Town

The data analysis shows that the resettlement of the Balakot town has no proper strategy for abandoning the site of old Balakot town for residential purposes. Most of the residents perceive the opportunity of the residence at the new Balakot town as an economic incentive. They had a plan of selling this residential plot at the new Balakot town.

8.2.2.9 Education Services at the old Balakot town

After the Earthquake – 2005 the education sector, which was severely damaged, has been restored very quickly. The private sector schools have been recovered and fully functional with all facilities. The government or public sector schools are restored in fabricated shelters. The important aspect of the education service in old Balakot town was that its quality was far better in the region. The higher secondary school for girls and private public schools had a number of outside students particularly in union council Balakot. Overall there is no significant change in number of schools although enrolment was affected immediate after Earthquake – 2005.

8.2.2.10 Health Services at the old Balakot town

It was found that the tehsil headquarter hospital of old Balakot town was totally destroyed by the Earthquake – 2005. However, it was rebuilt with more advanced facilities at the same location. This hospital along with one dispensary and two maternity homes provide services to local as well as to the surrounding areas.

8.2.2.11 Transport Services at the old Balakot town

Field studies revealed that the old Balakot town was a nodal point. All traffic of the surrounding areas was controlled by the old Balakot town as the regional main *adda* (Bus

Terminal) was here. A number of facilities like public transport, rent a car, rent a jeep/four wheel, ambulance and small wagons were available.

8.2.2.12 Telecommunication and Postal Services at the old Balakot town

It was found that land line phone, fax, mobile phone, landline internet and wireless internet facilities were available in old Balakot town. With growing demand the quality of services of these facilities were enhanced. One post office and two courier services were available in old Balakot town.

8.2.2.13 Emergency Response Services at the old Balakot town

The data revealed that the emergency response centre was established at Tehsil Municipal Administrator (TMA) office, Balakot. This centre was equipped with trained staff, Fire Fighting, Search & Rescue and Medical First Aid equipment. This service of emergency response was available not only in Balakot municipality but also for surrounding areas emergency response.

8.2.2.14 Administrative Services at the old Balakot town

It was observed that the old Balakot town was tehsil headquarter. All administrative offices like judiciary, bars councils, TMA, NADRA, Police, Agriculture Officer, Forest officer, school & literacy and Pakistan Meteorological Observatory were situated in the old Balakot town. These offices were frequently visited by a number of people every day from the whole tehsil of Balakot. The Police and Judiciary were of prime importance as hundreds of people visited these offices for a number of cases every day. Similarly, the forest office was also amongst one of the busiest offices as forest plays a vital role in the livelihoods of the residents of the valley. This function of tehsil headquarter is of fundamental importance for business and growth of Balakot town. The judicial complex, TMO office, office of the Deputy Superintendent of Police, Banks, Electricity Supply

main offices etc. are few examples of these services. Police provided the security and maintained law and order in the area.

8.2.2.15 Administrative Activities at the new Balakot town

It was found that the new Balakot town will host the tehsil headquarters activities along with other regional offices like forest and agriculture. The travelling distance from northern union councils will compel all visitors to stay or rest in the new Balakot town which will boost the commercial activities particularly hoteling and restaurants.

8.2.2.16 Shifting of the Administrative Activities

The data analysis revealed that the administrative activities are centripetal forces for business activities in old Balakot town. After Earthquake – 2005 the influx for administrative activities has increased. They were not only visiting for normal administrative activities but also for registration, compensation and legal advisory services. Almost three fourth of total respondents think that shifting of administrative activities will affect their business. This response is a good tool for one of the solutions to pressurize and discourage businesses in the old Balakot town.

8.2.2.17 Services at the new Balakot town

The data shows that the new Balakot town has been established with modern town planning concept of green town planning. In the master plan, accessibility (roads & streets) has the second largest portion comprising of 31% of the total area while the green and parks have 23% of the total area. The parks & green areas consisted of small public parks, green areas within commercial areas, play grounds for hockey, foot ball and preservation of forest as central park. The residential area has the largest portion of 33% of the total area. this residential area has been divided into three major categories of plot sizes with major share of 10 and 7 Marla plots. The public buildings have the share of 7% of the total area which include educational institutions, health facilities and civic centres. The health

facilities included one town hospital and two basic health units. The civic centres are comprised of religious buildings, civic centre auditorium and library function halls. the proposed religious building has one markazi mosque, Jumma mosques and ten mohallah mosques. the share of commercial activity area is 4 % with the central, neighborhood and sub – neighborhood level facilities.

8.2.2.18 Civic Infrastructure and Sanitation at the old Balakot town

It was found that roads, streets, sanitation, sewerage, and waste disposal were severely damaged by Earthquake – 2005. Initially the sanitation conditions were improved by NGOs in 2006. However, due to red zone limitation the roads, streets, sewerage and waste disposal system remained untouched. This made life horrible in old Balakot region and civil protest started against lacking of these facilities. In 2008, ERRRA improved these services to a reasonable level.

8.2.2.19 Recreation Facilities at the old Balakot town

It was observed that the Balakot was tourists' spot and there were a number of recreational facilities particularly in private sector, like hotel parks, shrines and schools playgrounds etc. The important aspect of all of these facilities was scenic view of the river Kunhar and pleasant weather conditions of old Balakot town.

8.2.2.20 Civic Utilities at the old Balakot town

It was found that the municipal water supply network was well established and electricity was available for all sorts of activities. Mostly, the residents used the Liquid Petroleum Gas (LPG) for fuel purposes. In the surrounding areas the water supply was also in pipe lines but management was almost on community or private bases. The level of utilities has not been fully recovered; as a result the residents were facing enormous problems of civic utilities.

8.2.2.21 Civic Utilities at the new Balakot town

It was found that the new Balakot town had two water collecting sumps: first one in the south from river Siran tributaries and the second one on an eastern side from river Kunhar tributaries. This water is transported to main water reservoir. These water collecting sumps have potential limited capacity as its own surrounding needs and utilizations will be increased with the passage of time. There is an ultimate plan of water supply to the new Balakot town from river Siran and river Kunhar. Gravity based sewage treatment facilities have been proposed in the new Balakot town. Initially, the new Balakot town has two sewerage collection points with capacities of 1 and 1.25 million gallons per day (MGD). The ultimate sewerage treatment collecting points are in north western and south western sides with 4.5 MGD and 9.5 MGD capacities respectively.

8.2.2.22 Living Standards at the old Balakot town

The data analysis revealed that the people of the valley of river Kunhar in general and the old Balakot town in particular had a peaceful environment. From both gender there was a unanimous satisfactory response regarding security. Due to red zone area there was very limited infrastructure development activities in the old Balakot town by the Government's line agencies. The response about overall living standard level in the old Balakot town was not satisfactory. More than half of the respondents of the household and commercial sector viewed that the overall living standards were not satisfactory in the old Balakot town. From visitors/customers respondents, almost half were of the view that the level of the living standards in the old Balakot town was satisfactory.

8.2.2.23 Commercial Activities at the old Balakot town

It was found that the old Balakot town has been the centre of commercial, administrative, political and social activities. The number, scale and level of commercial activities in the old Balakot town were much higher than its surroundings. Most of the commercial

activities attract the regional or valley population. Before Earthquake – 2005, there was more than 10000 units of shops which were registered with Merchants Association of the Balakot Bazaar. The number of these shops has been increased to 14000 units since 2005. Overall, the number of shops (included unregistered) in the old Balakot town was more than 15000 units.

Most of the shops were made of fabricated shelters. The shops made of fabricated material were 100% single story. Few old plazas like *Madina* and *Shah Alam* survived the Earthquake – 2005 and were extensively used for commercial activities. There was ban from the Government on new construction. However, new plazas like *New Walid*, *Akbar* and *Sohrab* were constructed recently to fulfil the increasing demand of commercial activities. The nature of commercial activities has been diversified to fulfil the needs of local residents as well as of the whole valley. The types of commercial activities in the bazaar of old Balakot town were restaurants, hotels, butchers, toys, medical stores, liquid petroleum gas (LPG), furniture, barbers, sweets, bakery, shoes, cloths, vegetables, general stores, tailors, banks and hawkers etc. Almost all of commercial activities particularly the general stores, LPG, barber, tailors and toys shops had high number. Most of these activities were sufficient for fulfilling the needs of the whole valley.

The nature of the visiting customers was mainly of three types i.e. local, valley, and outside the valley or tourists. Almost 25% were the local customers (Red-Zone Area), 65%, were customers of the valley and 10% were coming from outside the valley. These include also tourists. Almost 90 % of the shops were rented. According to Balakot Bazaar Merchants Association the two third of the total shopkeepers were from Balakot (Red-Zone Area) and the remaining one third of the total were from Tehsil Balakot, Tehsil Mansehra, and Afghani. Among this one third, 40% were Afghani, 30% were from tehsil Balakot and 30% were from district Mansehra residents.

According to the response of the residents, business is the major hurdle in resettlement. However, the response of business community shows that lack of the Government policy of the resettlement for commercial activities was the major hurdle in the resettlement. The customers/visitors of the old Balakot were fully satisfied from the business services of the area. Although, they were well aware of the fact that old Balakot is declared as red zone area.

8.2.2.24 Commercial Activities at the new Balakot town

The data analysis revealed that commercial activities will be distributed in neighbourhoods in the new Balakot town. There will be no central business district in the new Balakot town. This type of arrangement will clearly support the non-basic nature of commercial activities for local consumptions. However, the administrative activities and supportive productive surroundings land will enhance the market capacity for trade and wholesaling.

8.2.2.25 Political, Social and Cultural Activities at the old Balakot town

It was found that the old Balakot town was the centre of political, social and cultural activities for the whole valley. Political offices and meetings of the political groups of the local as well as of the regional groups were held in the old Balakot town. The offices of tehsil *Nazim* and TMA were the hub of political activities while the bazaar of the old Balakot town provides extra advantage of upholding political meetings. The shrines of Shah Ismail Shaheed and Syed Ahmad Shaheed attracted not only people from the valley but also from all over the country.

The valley residents were divided into tribes. Each of the tribes has their own customs and taboos for their own pride. The bazaar of the old Balakot Town was most suitable place for their gatherings and exhibitions. Beside this, the commercial activities, dealing manners, dresses, functions and general behaviour of the public of the valley was reflected in the bazaar. The strong feelings for the entity of valley were present in all

residents of the valley. This sense of the separate identity of the valley further strengthened the centrality of the old Balakot Town.

8.2.2.26 Political, Social and Cultural Activities at the new Balakot town

The analysis revealed that the political activities are directly related with the administrative functions of a town. Higher the function and facility will definitely attract higher political activities. Political meetings and gatherings would support the local economy of the new Balakot town in form of commercial activities. Similarly, the new Balakot town's social & cultural activities will reflect the residents' customs, habits, taboos, religion, emotions, art, music and their history. This new town provides opportunity for change also which may be reflected in the social & cultural activities of the new Balakot town.

8.2.2.27 Social Setup at the new Balakot town

The data analysis shows that the social setup of the old Balakot town is based on feudal, ethnic and business community values. The business and landlords community resist the resettlement as their interests were suffered seriously. However, there were groups of low income or public services which were in dire need of change. The first one of low income class welcomes the resettlement as an economic opportunity. The second class of public service group is more conscious about site vulnerability of the old Balakot town. Most of the respondents from all three types of households, commercial and visitors/customers are accepting that resettlement will change the social setup and they are certainly not in mode of accepting it.

8.2.2.28 Religious and Emotional Sentiments

It was found that the shrines of Shah Ismail Shaheed and Syed Ahmad Shaheed have been giving religious prestige to the old Balakot town. The Earthquake – 2005 certainly changed the religious views about the old Balakot town. This change is reflected in the

perception of the residents about hazards. However, more than half of the respondents of households and commercial sectors have strong religious sentiments with the old Balakot town. Opposite nature response was observed from the visitors/customers, which reveals less religious sentiments with the old Balakot town. It was found that the old Balakot town was birth place of more than three fourth of the total respondents of households, commercial and visitors/customers. As a result their emotional attachment with the old Balakot town was obvious. The response of the households and commercial sectors showed that almost more than half of the total population think that this emotional sentiment will affect their decision of resettlement.

8.2.2.29 Activities of the NGOs at the old Balakot town

It was found that number of NGOs started their relief and recovery works in the affected area after the Earthquake – 2005. The old Balakot Town was the centre of all their relief and recovery activities as it was one of the most worst affected town and it was focal point for the affected population of the valley. Most of the operational or regional offices of the NGOs were in the old Balakot town. The total numbers of NGOs offices those who worked in the tehsil Balakot were reached to sixty-five in the year 2010. A number of people visited these offices for relief & recovery goods. Similarly, these offices provided employment opportunities for the residents of the valley and brought investment into the valley. The most obvious result of these NGOs offices was the increased number of visitors and improvement in the utilities & services of the old Balakot town. The overall result of these NGOs offices was enhancement of the centrality of the old Balakot town.

8.2.2.30 Manufacturing Activities at the old Balakot town

It was observed that the magnitude, type and frequency of manufacturing activities in the old Balakot Town (Red-Zone) were very low. Only two types of manufacturing units i.e. woodcutting & furniture machines and cement block factories were present in the area.

Cement Blocks Factories were absolutely for local consumption while woodcutting & furniture machines supplied material for constructions and furniture. The market of furniture items were the whole valley. Two cement blocks factories had maximum fifteen employment opportunities while the four woodcutting & furniture machines had the capacity of ten to fourteen employment opportunities for the residents of the old Balakot town. The overall impact of the manufacturing on the centrality of the old Balakot town was minor one.

8.2.2.31 Manufacturing Activities at the new Balakot town

The data shows that the small-scale manufacturing activities were present in the new Balakot town to support the construction and development requirements of this new town. The manufacturing sector includes woodcutting & furniture machines, cement block factories etc. The data analysis revealed that the site of the new Balakot town was feasible site for wool spinning industry, wooden industry (furniture), paper mill, dry fruit and fisheries industries, match factory, soft drink industry, poultry and livestock farming. These manufacturing and agriculture activities would provide employment opportunities at the new Balakot town which will attract the lower and middle class of the old Balakot town. The site of new Balakot town will work like growth pole not only for its surrounding areas but also for the residents of old Balakot town.

8.2.2.32 Agriculture Activities at the old Balakot town

The analysis data revealed that the agriculture activities in the old Balakot Town ranked second. The valley of river Kunhar in surrounding of the old Balakot Town had gentle contours and thus provided fertile land for agriculture. The climate and the banks of river Kunhar were feasible for poultry farming. The agriculture activities had very small share in the economy of the old Balakot town. However, it provides additional support to the local economy. The old Balakot town and its surrounding had limited but fertile

agriculture land. The agriculture activities were practiced and production was locally consumed. More than half of the population practiced the agriculture activities but few of them were satisfied. There were few peasant families working in agriculture sector.

8.2.2.33 Surrounding Productive Land of the old Balakot town

It was observed that the surrounding of the old Balakot town was fertile and scenic. In the valley of river Kunhar, the old Balakot town was the only major urban centre. In the rural area, the forest ranching and agriculture activities were widely practiced livelihoods. Poultry and livestock farming were other important livelihoods in the valley. The second important sector of the income was tourism, which was limited to hotels and summer season. The residents of the valley brought their agricultural products to the central market, which was the old Balakot town. Similarly, the needs of tourism or hoteling were fulfilled from this central market. The old Balakot town provided high-class goods and services to its surrounding area. The products and dependent population of the catchment area supported the growth and development of the old Balakot town.

8.2.2.34 Surrounding Productive Land of the new Balakot town

It was observed that the surrounding area of the new Balakot town had agriculture productive land with rural economy. These areas were dependent for their trade & market on Mansehra and Gari Habibullah. The new Balakot town will provide goods and services to these areas on one hand and low cost (travelling distance) market facility on the other. This situation was very feasible for the growth and development of the new Balakot town.

8.2.2.35 Property Ownership and Feudal System

The data analysis shows that property ownership was very important factor of resettlement of the Balakot town. The elite and property holders of the old Balakot town not only control the businesses of the old Balakot town but also the social and political scenario of this town. The Government's policy of the resettlement did not cover the agriculture and

business sectors. As result, this influential class re-established the old Balakot town businesses and thus increases the dependency of lower and middle class on the old Balakot town. More than half of the respondents of households had some agriculture property. However, less than half and dozen families had more than twenty *kanal* lands and there are few families which has more than forty *Kanal* lands. This division of landlordism was also present in the ownership of commercial property. One of the families had the ownership of almost half of the bazaar area of old Balakot town. More than three fourth of the bazaar was the property of four families. Less the one of the fourth of bazaar area was shared by rest of the landowners.

It was found that the residents of the Balakot town were well off from its surrounding regions. The major cause of this well off was their businesses. However, the whole region and particularly the old Balakot town had a feudal characteristic. These feudal characteristics were more visible in political setup where first unit of political collation was the representation of ethnic groups like *Swati* and *Gujars* etc. In second stage, the area was politically represented by families and their share of seats in *Nazims*, MPAs and MNAs. Apparently, the resettlement was seriously affected by this feudal system.

8.2.2.36 The Entity of the Valley and location of the old Balakot town

The data analysis revealed that the old Balakot town was not only geographic centre of the valley of river Kunhar but also of their social, political, economic and cultural activities. The central location made the old Balakot town as nodal point for all tourist destinations like Kaghan, Naran, Shobra etc. From old Balakot town roads network was distributed in three different directions towards these tourist destinations. Tourism was major source of income for the residents of valley. The central location in the valley and nodality of the old Balakot town made easily accessible for the whole valley. Recently, the old Balakot town

gain importance due to proposed link road to Karakorum Highway, which will be located in the west of the old Balakot town. The important aspect of this development was impact on the perception of the residents of Balakot about its importance. In focus group discussions, the majority of the residents believed that old Balakot town would be central hub of nodality. There was strong belief on the separate identity of the valley among the whole population. The response of the all three sections of households, commercial and visitors/customers shown that more than three of fourth of total respondents of each section belief on the separate identity of the valley of river Kunhar. This sentiment of the valley affected the process of resettlement particularly of shifting of tehsil headquarters to the new Balakot town.

8.2.2.37 New Site of Tehsil Balakot

The data analysis revealed that the new tehsil site was very important issue in the resettlement of the Balakot town. The response of the residents strongly disagrees with the new Balakot town for the new tehsil headquarters. Most of the respondents were in favour of the surrounding of the old Balakot town which was easily accessible from the whole valley of river Kunhar.

8.2.2.38 Relative Location of the new Balakot town

The data analysis shows that the new Balakot town was located in the centre of Mansehra, Hazara University and Gari Habibullah, which were in dire need of residential suburb. The new Balakot town provided direct link between Karakorum Highway and Kashmir Valley. Similarly, this nodal network provides easy accessibility for the residents of river Kunhar's valley to Karakorum Highway and Hazara University.

8.2.2.39 Distance Between the old and new Balakot towns

According to the resettlement policy, the residents of the old Balakot town will be offered residential plots in the new Balakot town. Rest of their property including agriculture land

and business will remain intact in the old Balakot town. The new Balakot town located at the distance of 22 Km from the old Balakot town. More than three of fourth of the total respondents of households and commercial has view that they will not be able to manage their property or business form the new Balakot town. Similarly, the visitors/customers responses were of the view that they will not be able to visit the new Balakot town for business etc.

8.2.2.40 Centrality of the old Balakot town

The data analysis revealed that the tehsil Balakot is situated at the valley of river Kunhar. The tehsil Balakot has twelve union councils and two major town centres i.e. Balakot and Gari Habibullah. The old Balakot town is located in the centre of the valley while the Gari Habibullah is located in the bottom of the valley. According to 1998 census, the tehsil Balakot has total population of 2,14,630 persons. All major settlements were located on the bank of river Kunhar. The major portion of the population was living in the rural area and distributed in linear pattern. The population distribution at the union council level revealed that the old Balakot town served more than 70% of the tehsil total population. Comparatively, the old Balakot town was the sole centre that provided a huge variety and high class of services to surrounding area. The old Balakot town was the only centre, which provides market for the trading of goods and services. There was wholesaling activities in the bazaar of old Balakot town. This absolute situation of wholesaling activities directly affected the retailing activities in all eight union council.

The old Balakot town served as a central place for its surrounding area, the residents of red zone were very satisfied as far as fulfilment of the business needs in the old Balakot town are concerned. On other hand, the residents of valley had a mix type of response regarding fulfilment of their needs. The important response for centrality assessment was the total business share of the old Balakot town with comparison of local (valley) and

outside of the valley. More than 75% respondents fulfilled their needs from the old Balakot town while 10% from their local market and almost 10 % from outside of valley. The visitors/customers response showed that the old Balakot town was a central place of business, administrative, socio-political activities and it has no comparison with any of other settlement in the valley regarding its centrality.

8.2.2.41 Centrality of the new Balakot town

The data analysis revealed that the new Balakot town was located in the centre of major towns, which will directly restrict its trade and market capacity. However, the residential activities and the surroundings productive land will enhance market capacity. The administrative and political activities will further enhance the centrality of the new Balakot town. In term of commercial activities, it would be very difficult to replace or replicate the old Balakot town. The NESPAK carried out a survey for willingness of the residents to shift their residence, which showed that more than 90 % of the residents were ready for shifting to the new Balakot town. This willingness reflects the future of the new Balakot town where almost all of the residential plots will be owned by the residences of the old Balakot town. This ownership will certainly boost the property business in this area.

8.2.2.42 Non-Basic Activities at the old Balakot town

It was found that the major non-basic activities in the old Balakot town were retailing and few services. Less than hundred retailing shops of general stores, bread baking, vegetables and milk were present outside of the main bazaar of the old Balakot town. Rest of retailing and services activities were carried out in the main bazaar area. According to 1998 census, the union council Balakot has more than 9% of the total tehsil population while the area included in the red-zone has 18% of the tehsil total population. The red zone area has almost 20% share of the total valley population. There were limited retailing activities in

each of the eight union councils. Based on the cumulative responses about business and population share, it was found that 25% of the total commercial activities and services of the old Balakot town was considered as non-basic.

8.2.2.43 Non-Basic Activities at the new Balakot town

The data analysis shows that the non-basic sector of commercial activities was very important in the new Balakot town. Its number, variety and order (class hierarchy) would attract the residents of the surrounding areas. The residential plots or property dealing will be the far most important commercial activity in start, which will decide the future growth and development of this new town. The commercial activities were divided in neighbourhoods, which will directly support the non-basic activities. The higher hierarchy of non-basic activities will attract the high-class residents of all over district Mansehra.

8.3 Recommendations of the Study

On the basis of the above mentioned findings of the study, following are the recommendations of this study:

- The resettlement of the Balakot has some serious problems and these problems were associated with the policy of resettlement, site & situation of the old and new Balakot towns. These problems need prior attention from all stakeholders particularly from Government's line agencies. A successful resettlement is solely based on the solutions of these problems.
- The site and situation of the old and new Balakot towns provide different opportunities for the residents of the old Balakot town. The opportunities at the old Balakot town discourage the resettlement process vice versa the opportunities at the new Balakot town encourage the resettlement. This should be the basic principle of streamlining the resettlement process of the Balakot.

- The present resettlement policy of the Balakot needs modification to streamline the resettlement process. It is the part and parcel of the ERRA's urban strategy which is more feasible for the onsite recovery of Muzaffarabad and Rawalakot. Hence, the resettlement of the Balakot needs more specific and detailed policy under the same umbrella.
- The policy covers only the residential land compensation. Though it has room to cover the commercial land compensation but not clearly mentioned for the Balakot resettlement. The policy needs to be more compound and dynamic. It has to cover all the losses due to resettlement. The losses of livelihoods must be compensated in the form of employment opportunities. It must have the mechanism for new resettlement and overall compensation.
- There is essential need of scientifically sound awareness programmes that must highlight the importance of emergency response management and risks of the site of old Balakot town. The awareness activities should be followed by emergency response management. The community preparedness activities like plan preparation, training and drills will increase their capacities for disasters. It will also make them aware that they are living in hazardous site. Community awareness about the new Balakot town needs more attention as the residents are totally ignorant about the developmental work in the new Balakot town. Consequently, the residents do not own the new Balakot town which results in the form of hurdles and problems for the resettlement.
- To discourage residence at the old Balakot town, this opportunity of plot at new Balakot town must be accomplish with resettlement. The agriculture sector has clear division based on the landownership as small landholders' needs residence

near with agriculture land while large landholders did not so. This problem could be easily solved through a new land resettlement.

- The findings revealed that utilities and services play a vital role in the development of a site and work as centripetal force for a centre place. The utilities and services are affected by the Earthquake – 2005. However, to discourage further development and ultimately settling at old the Balakot town the level of utilities and services particularly based on public sector need to be discouraged. Such an activities need to be encouraged at the new Balakot town. The residents of the old Balakot town are well aware of the fact that lack of public sector interest will make this town just a slum.
- It was found that the major hurdle for the appropriate resettlement of the Balakot town is commercial activities in the old Balakot town. The commercial activities need to be discouraged as it not only provides employment for the residents of the old Balakot town but also people to come from in its surroundings for the purposes of settling.
- The location of the new Balakot town is at the edge of tehsil boundary and comparatively near to Mansehra, Gari Habibullah and Hazara University than old Balakot town. In the presence of strong entity of the valley of river Kunhar the new Balakot town become least attractive for the residents of the old Balakot town and also for the residents of the whole valley. The change and merging of the political and administrative boundaries in such way that the residents of the valley of river Kunhar gets maximum benefits will certainly shift the interest of the residents in the new Balakot town. Inclusion of the whole new Balakot area in tehsil Balakot and deletion of the southern union councils are some feasible option for political and administrative boundaries shifting and merging.

- The new tehsil headquarters site should be selected in the peripheries of the old Balakot town. Establishment of the new site for tehsil headquarters in the surrounding of old Balakot town has a number of positive aspects. It is because of the fact that it will be people's choice, entity of the valley of river Kunhar will be intact, it will split the business volume from old Balakot town, and will provide new resettlement site for limited people. There is already good study of NESPAK for alternative site of the new Balakot town which may be used for this purpose. From the old Balakot town down the stream there are a number of sites where new tehsil headquarters for Balakot can be established.
- The centrality of the old Balakot is directly dependent on the business volume, level of activities & services, central location, nodal hub, administrative, social, and political activities. To decrease the centrality of the old Balakot town, measures should be taken to discourage these activities in the old Balakot town. These measures like shifting of administrative activities, decreasing the level of utilities & services, banning political meetings, discouraging the visitors to stay here in the old Balakot town, providing new opportunity of business at new sites, and decreasing the nodality in form of bypass roads to northern Kaghan and Naran valleys will definitely affect the centrality of the old Balakot town. These measures will pressurize the business community to shift their business or to opt for alternative livelihoods.
- To discourage the business activities in the old Balakot town the contiguous area which are mostly used for residential purposes along with the land in use for public activities should be declared as National Park area. This solution will lead to control the growth and expansion of commercial area. It will also control the use of the old houses for residents of the lower and working class in the future. The

ultimate impact will be on the business activities which will force the business community to think about other solutions.

- Confident building measures need to be taken to ensure maximum participation in resettlement from all sections of the affected communities. These measures will be based on changes in the present approaches. All stakeholders need proper attention particularly the elite class which has strong influence on the whole community perception and attitude. The low income people who are mostly willing class for resettlement should be allotted plots in first phase to increase pressure on business class. The business class must be insured that they will be compensated either in one form or in other and here is no future of commercial activities in the old Balakot town.
- More than 90% of the total population in the old Balakot town is ready to participate in the resettlement of new Balakot town. However, this participation is link with the compensation and justified share in the new Balakot town. The first step and rightful demand of the residents of the old Balakot town is improvement of the existing infrastructure and overall living standards in the old Balakot town till the implementation of last phase of resettlement. Second step is sharing of practical timeframe with different stakeholders. There is need to propose more dynamic compensation strategy that involves all stakeholders in the resettlement process. Sharing of limitations and entitlements of all stakeholders with community so that whole process should look fair and transparent. Ensuring the participation of all stakeholders at the community level.
- The different stakeholders of the affected community should be dealt with multi stakeholders and participatory approaches. The public servants and low income which has more than half of the total population share are ready for resettlement of

the Balakot town. They just need proper attention through participatory approach. The low income and public servants classes should be given first priority during resettlement which will initiate the resettlement process and pressurize the other stakeholders. However, the elite and business class needs multi stakeholders approach in which their maximum losses are compensated.

- The ethnic background, religious attachment, emotional attachment and socioeconomic condition are reflected in social status and/or attachment with the old Balakot town. It is also clear that social status is main concern of landowners and elite class of the old Balakot town. It indeed very difficult to maintain similar social values in the new Balakot town. However, similar neighbourhood will provide an opportunity to practice the old social values and customs. A good number of the respondents are in favour of old neighbourhood while very few disagree with this option.
- There is basic need of adopting more flexible and dynamic strategy for compensation of losses particularly of business sector. A comprehensive compensation policy of the resettlement will leads to more acceptable situation. In case of full compensation most of the residents, business community and landlords are in favour of resettlement.
- The development of the new Balakot town is under progress. It needs to incorporate the agriculture, livestock, poultry & dairy farming, manufacturing and industrial zones in the master plan to generate new employment opportunities. The farm houses are well suited option for land resettlement, agriculture, livestock, poultry & dairy farming and green town concept.
- Changes in the proposed solutions are possible but it must be based on the site and situation factors. For a successful resettlement of the Balakot town the site and

situation of the old Balakot town needs to be diluted while the site and situation of the new Balakot town should be reinforced through administrative and policy decisions.

- Each of the resettlement process is unique in terms of policy, site and situation of the two different locations. The tool of the resettlement of the old Balakot town is applicable to all resettlement processes with modification in these three fundamental variables.
- Resettlement is one of the most difficult risk reduction measures. The present study of the resettlement of the Balakot town on the one hand improve the existing knowledge but also on the other hand open new dimensions for research.

8.4 Conclusion of the Study

Resettlement is one of the most difficult risk reduction measures in disaster management. The Government has declared the old Balakot town and its surrounding being in red zone. The new site for the Balakot town has been selected at Bakryal. The resettlement of the Balakot town is complex, compound and dynamic process. The government has worked out a plan of resettlement of the Balakot town to mitigate the risk of earthquake hazard. The government authorities guided the resettlement processes through laws, regulations, incentives, and penalties. The residents of the old Balakot are offered residential plots at the new Balakot town. The site of the old Balakot town was hazardous and living conditions were deteriorated after Earthquake – 2005. The sternest was shelters as people living and working in fabricated shelters which were exposed to a number of hazards. The living conditions in these shelters were worsening with the passage of time. Similarly, the other civic utilities and services were depreciated after Earthquake – 2005. However, the standard of these civic utilities and services was still far better than its surrounding region. The old Balakot town was the centre of administrative, social, political and commercial

activities. These activities attracted whole population from all over tehsil Balakot region. The new Balakot town provides high class residential and civic utilities & services. Comparatively, it has low business opportunities for the residents of the old Balakot town.

The successful resettlement of the old Balakot town is based on the shifting of total population in the red zone at the new Balakot town. It was found that the affected population of the old Balakot town has different ethnic, social, and economic classes. Each class looks to the resettlement of Balakot in its own interests. The resettlement process of the Balakot town directly affected by some important factors such as: the perception about hazards; economic opportunities at the old Balakot town; centrality of the old Balakot town; hazardous site of the old Balakot town; planned site of the new Balakot town; distance between old and new Balakot towns; location of the new Balakot town; economic opportunities at new Balakot town; standard of justice and equity of the government authorities; and delaying tactics of the whole project. The problems of the resettlement of the Balakot has three major components i.e. resettlement policy, site & situation of the old and new Balakot towns. The Government's resettlement policy is static and frivolous in nature. This policy partially covers the losses and provides residential plots to landowners in the new Balakot town. It does not provide any support to commercial activities rather it encourages commercial activities in the old Balakot town. The site of the old Balakot town is certainly hazardous but enormous business and employment opportunities were there. Comparatively, the new Balakot town has low risk of hazards but offers limited employment opportunities.

On the basis of findings, solutions for the problems of the resettlement of Balakot were proposed from site and situation variables analysis. The basic theme of the solutions of the resettlement is to decrease the centrality of the old Balakot town and increase business/employment opportunities at the new Balakot town. All these solutions are

aiming at the problems of resettlement in such a way that the existing problems and opportunities at both sites of new and old Balakot town were streamlined to achieve the successful resettlement of the Balakot town. The proposed measures were tested against the residents' response and further modified. This process was converted into a tool of resettlement. This tool has three major components of site & situation of the old Balakot town; site and situation of the new Balakot town; and resettlement policy. At the end a simplified model tool of resettlement was presented. This tool is applicable to other resettlement processes with certain modifications. The site, situation and policy are different for each of resettlement process which is the base for modification. However, the basic parameters of the tool will remain same for each of resettlement process.

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Annexure – I

Questionnaire for the Household (1st Phase)

Ph. D. Research Topic: Resettlement of the Balakot town – Problems and Prospects

General Information

1. Name _____
2. Age a. Below 16 b. 17 – 30 c. 31 – 60 d. Above 60
3. Gender a. Male b. Female
4. Resident Address/Location _____

5. Permanent Address* _____

6. Education a. Illiterate b. Primary c. SSC d. Higher e. Religious
7. Occupation a. Farmer b. Businessman c. Govt. Service
d. Private Service e. Worker/Labour f. Other _____
8. Level of Response a. Household Head b. Earner c. Dependent

Perception about Hazards

9. Where were you at the time of October 08, 2005 Earthquake? a. Home
b. Outdoor c. Out of the region d. Other _____
10. Cause of October 08, 2005 Earthquake a. Not Known b. Act of God
c. Curse of God d. Fault Lines e. Other _____
11. Site (old Balakot) vulnerability for any hazard a. Not Known b. Low
c. Medium d. Highly Vulnerable e. Other _____

Hazard Vulnerability (L for Low, M for Medium and H for High Vulnerability)								
Earthquake	Flood	Landslide	Rainfall	Snowfall	Drought	Storm	Fire	Other

12. Your belief/comments on risk reduction measures a. Not known b. Not Sure c.
Waste of time d. Necessary e. Mandatory f. Other _____

13. Do you know about the Red-Zone a. Yes b. No
14. Site (new Balakot) vulnerability for any hazard a. Not Known b. Low
c. Medium d. Highly Vulnerable e. Other _____

Hazard Vulnerability (L for Low, M for Medium and H for High Vulnerability)								
Earthquake	Flood	Landslide	Rainfall	Snowfall	Drought	Storm	Fire	Other

Household

- | | | | |
|--|-------------------------|----------------------|----------------------|
| 15. Type of House | a. Fabricated | b. <i>Pacc\la</i> | c. <i>Semi Pacca</i> |
| | d. <i>Kacha</i> | e. Other _____ | |
| 16. Number of family members | a. 2 | b. 3-5 | c. 6-10 |
| | d. More than 10 | | |
| 17. Total Earners in the family | a. 1 | b. 2 | c. 3 |
| | d. > 3 | | |
| 18. Major Livelihoods of the family | a. Agriculture | b. Business | c. Service |
| | d. Manufacturing | e. Ag. & Bu. | f. Ag., Man. & Bu. |
| | g. Other _____ | | |
| 19. October 08, 2005 Earthquake effects on the Livelihoods | a. Not Affected | | |
| | b. Temporarily Affected | c. Seriously Damaged | d. Totally Damaged |
| | e. Other _____ | | |
| 20. Number of Room | a. 1-2 | b. 3-4 | c. More than 4 |
| 21. Kitchen space is available | a. Yes | b. No | |
| 22. Tenure/Ownership of the house | a. Owner | | b. Rent free |
| | c. Rented | d. Other _____ | |
| 23. Comparison of the existing house's capacity with old one | a. Greater | | b. Equal |
| | c. Smaller | d. Much Smaller | |
| 24. Are you satisfied with your living space available | a. Yes | | b. No |

25. Permanent house availability a. Already started b. Repaired the old one
 c. Economic constrain d. Red-Zone location e. c & d
 e. Other _____

Services and Utility

26. Electricity availability a. No b. Loose Fitting c. Pipe Fitting
 d. Other _____
27. Water availability a. No b. Null-pipe c. Hand Pump
 d. Well e. Electric Machine f. Other _____
28. Are you satisfied with water availability? a. Yes b. No
29. Latrine availability a. Squat toilet b. Fabricated c. No d. Other _____
30. Do you think the latrine system is hygienic? a. Yes b. No c. Not sure
31. Source of fuel a. LPG cylinder b. Electricity c. Wood
 d. Coal e. Other _____
32. Are you satisfied with education service? a. Yes b. No
33. Are you satisfied with health service? a. Yes b. No
34. Are you satisfied with telecommunication and postal service? a. Yes b. No
35. Do you feel secure? a. Yes b. No
36. Have you any accessibility or movement problems a. Yes b. Somewhat c. No
37. Emergency response mechanism. a. Personal b. Community
 c. Public d. a, b & c e. Other _____
38. Comparison of existing house vulnerability to old one a. Not known b. Not sure
 c. Lesser d. Equal e. Greater
39. Are you satisfied with your living standard a. Yes b. No

Agriculture Land

40. Tenure/Ownership of the agriculture land a. Owner b. Rented c. Ajara
 d. Tenant e. Lease f. Other _____
41. Agriculture land size a. 1-5 Kanal b. 6-10 Kanal c. 11-20 Kanal
 d. 21-40 Kanal e. Above 40 Kanal

42. Agriculture productions fulfil your needs? a. No b. Partial c. Yes
d. Surplus

Commercial Land

43. Tenure/Ownership of the commercial land a. Owner b. Rented
c. Rent free d. Lease e. Other _____
44. Commercial land size a. Half bazaar b. ¼ bazaar c. 2-4 markets
d. 1 market e. 5-10 shops f. 2-4 shops g. 1 shop h. Nil
45. Business fulfils your needs? a. No b. Partial c. Yes d. Surplus

Resettlement

46. Do you know about the Govt. resettlement policy? a. Yes b. No
47. Do you know about new Balakot town? a. Yes b. No
48. Do you think that living here is dangerous (red zone)? a. Yes b. No
49. Reason for living in old Balakot town. a. Economic/Business b. Family
c. Emotional/Religious d. Social e. Agriculture land e. Compel
f. Nothing g. Other _____
50. Would you want to continue your living in old Balakot town? a. Yes
b. No c. Not sure
51. Will you shift to new Balakot town? a. Yes b. No
52. Do you think that other people will shift to new Balakot town? a. Yes b. No
53. Do you think that Govt. will force you shift to new Balakot town? a. Yes b. No
54. Major hurdle in shifting? a. Business b. Family c. Social attachment
d. Agriculture land e. Nothing f. Other _____
55. What is your major concern about new Balakot town? a. Not possible b. Justice c.
Employment d. Business e. Social status f. Living Standards g. Nothing
56. Are you satisfied with present social setup? a. Yes b. No
57. What will be the social setup in new Balakot town? a. Present b. Changed
c. Not known
58. Will you accept the new social setup in new Balakot town? a. Yes b. No

59. Do you think that old Balakot is religiously an important place? a. Yes b. No
60. Have you any religious attachment with old Balakot town? a. Yes b. No
61. Will this religious attachment effect your shifting decision? a. Yes b. No
- c. Partial
62. Your emotional attachment with old Balakot town? a. Birth place
- b. Forefather was here c. Both d. Working place e. Other _____
63. Will this emotional attachment effect on your shifting decision? a. Yes
- b. No b. Partial
64. Where you will prefer to live outside of old Balakot town for better management of your property? a. Peripheries of Balakot b. New Balakot town
- c. Other town/city d. Other _____
65. Would you be able to manage your property from new Balakot town? a. Yes
- b. No c. Not sure
66. Do you have believed on the Valley entity? a. Yes b. No
67. Have the Govt. / NGOs compensated your losses? a. Yes b. No c. Partially

*Kohistan More, Shah Ismailabad, Kach Beli, Kanjkool, Jubba, Garlat, Qadirabad, Narrah, Kharian, Bhampora, Sangal Poin, Pori, Mangli, Billiani, Poodna Bela, Garan, Valley, District Mansehra, Outside District Mansehra

Annexure – II

Questionnaire for the Commercial Unit (1st Phase)

Ph. D. Research Topic: Resettlement of the Balakot town – Problems and Prospects

General Information

1. Name _____
2. Age a. Below 16 b. 17 – 30 c. 31 – 60 d. Above 60
3. Gender a. Male b. Female
4. Resident Address/Location _____

5. Permanent Address _____

6. Education a. Illiterate b. Primary c. SSC d. Higher e. Religious
7. Occupation a. Farmer b. Businessman c. Govt. Service d. Private Service
e. Worker/Labour f. Other _____
8. Level of Response a. Household Head b. Earner c. Dependent
9. Number of family members a. 2 b. 3-5 c. 6-10 d. More than 10
10. Total Earners in the family a. 1 b. 2 c. 3 d. > 3
11. Major Livelihoods of the family a. Agriculture b. Business c. Service
d. Manufacturing e. Ag. & Bu. f. Ag., Man. & Bu. g. Other _____
12. October 08, 2005 Earthquake effects on the Livelihoods a. Not Affected
b. Temporarily Affected c. Seriously Damaged d. Totally Damaged
e. Other _____

Perception about Hazards

13. Where were you at the time of October 08, 2005 Earthquake? a. Home
b. Outdoor c. Out of the region d. Other _____
14. Reason of October 08, 2005 Earthquake a. Not Known b. Act of God
c. Curse of God d. Fault Lines e. Other _____

- [illegible]

18. Site (new Balakot) vulnerability for any hazard a. Not Known b. Not Sure
c. Not Vulnerable d. Possible e. Highly vulnerable f. Other _____

Hazard Vulnerability (L for Low, M for Medium and H for High Vulnerability)								
Earthquake	Flood	Landslide	Rainfall	Snowfall	Drought	Storm	Fire	Other

Page | 358

22. Type of construction a. Fabricated b. *Pacca* c. Semi *Pacca*
d. *Kacha* e. Other _____
23. Comparison of the existing shop vulnerability with old one a. Greater b. Equal c.
Smaller d. Much Smaller
24. Are you satisfied with your business space available a. Yes b. No
25. Business fulfils your needs? a. No b. Partial c. Yes d. Surplus
26. Customers' nature? a. Greater than 95% local b. 95% local & 05% visitors
c. 75% local & 25% visitors d. 50% local & 50% visitors
e. 25% local & 75% visitors e. 05% local & 95% visitors
f. Greater than 95% visitors
27. Visiting customers' nature? a. Greater than 95% valley
b. 95% valley & 05% outside c. 75% valley & 25% outside
d. 50% valley & 50% outside e. 25% valley & 75% outside
e. 05% valley & 95% outside f. Greater than 95% outside
28. Electricity availability a. No b. Loose Fitting c. Pipe Fitting
d. Other _____
29. Water availability a. No b. Non-pipe c. Hand Pump d. Well
e. Electric Machine f. Other _____
30. Are you satisfied with utility and services? a. Yes b. No
31. Have you any accessibility or movement problems a. Yes b. Somewhat
c. No
32. Emergency response mechanism a. Personal b. Community
c. Public d. a, b and c e. Other _____
33. Are you satisfied with your living standard a. No b. Yes

Resettlement

34. Do you know about the govt. resettlement policy? a. Yes b. No
35. Do you know about new Balakot town? a. Yes b. No
36. Do you think that living/business here is dangerous (red zone)? a. Yes b. No

37. Reason for living/business in old Balakot town. a. Economic b. Family
c. Easy access d. Agriculture land e. Compel e. Nothing
f. Other _____
38. Would you want to continue your living/business in old Balakot town? a. Yes
b. No c. Not sure
39. Would you shift your business to new Balakot town? a. Yes b. No
40. Do you think that other people will shift their businesses to new Balakot town?
a. Yes b. No c. Not sure
41. Have the Govt./NGOs compensated your losses? a. Yes b. No
c. Up to some extend
42. Do you think that Govt. will force you shift to new Balakot town?
a. Yes b. No
43. Major hurdle in shifting? a. Business b. Family c. Social attachment
d. Agriculture land e. Nothing f. Lack of Govt. policy
e. Other _____
44. What is your major concern about new Balakot town? a. Not possible
b. Justice c. Employment d. Business e. Social status f. Living Standards
g. Noting
45. Are you satisfied with present social setup? a. Yes b. No
46. What will be the social setup in new Balakot town? a. Present b. Changed
c. Not known
47. Will you accept the new social setup in new Balakot town? a. Yes b. No
48. Do you have believed on the Valley entity? a. Yes b. No
49. Do you think that old Balakot is religiously important place? a. Yes b. No
50. Have you any religious attachment with old Balakot town? a. Yes b. No
51. How much this religious attachment will effect on your shifting decision?
a. Yes b. No b. Partial

52. Your emotional attachment with old Balakot town? a. Birth place
b. Forefather was here c. Both d. Working place
e. Other _____
53. How much this emotional attachment will effect on your shifting decision?
a. Yes b. No b. Partial
54. Where you will prefer to shift your business outside of old Balakot town?
a. Peripheries of Balakot b. New Balakot town c. Other town/city
d. Other _____
55. Would you be able to manage your business in new Balakot town?
a. Yes b. No c. Not sure

Questionnaire for the Manufacturing Unit (1st Phase)

General Information

- ### Perception about Hazards

- Page | 362

- [illegible]

17. Are you know about Red-Zone a. No b. Yes

- [illegible]

23. Number of family members a. 2 b. 2-5 c. 6-10 d. more than 10

24. Comparison of the existing unit vulnerability with old one a. Greater b. Equal c. Smaller d. Much Smaller
25. Are you satisfied with your business? a. No b. Yes
26. Business fulfils your needs? a. No b. Partial c. Yes d. Surplus
27. Product consumption/customers nature? a. Greater than 95% local b. 95% local & 05% visitors c. 75% local & 25% visitors d. 50% local & 50% visitors e. 25% local & 75% visitors f. Greater than 95% visitors
28. Visiting customers' nature? a. Greater than 95% valley b. 95% valley & 05% outside c. 75% valley & 25% outside d. 50% valley & 50% outside e. 25% valley & 75% outside f. Greater than 95% outside
29. Electricity availability a. No b. Lose Fitting c. Pipe Fitting d. Other _____
30. Water availability a. No b. Null-pipe c. Hand Pump d. Well e. Electric Machine f. Other _____
31. Do you satisfied with utility and services? a. Yes b. No
32. Have you any accessibility or movement problems a. No b. Somewhat c. Yes d. Serious
33. Emergency response mechanism a. Personal b. Community c. Public d. a, b and c e. Other
34. Do you satisfied with your living standard a. Yes b. No

Resettlement

35. Do you know about the govt. resettlement policy? a. Yes b. No
36. Do you know about new Balakot town? a. Yes b. No
37. Do you think that living/business here is dangerous (red zone)? a. Yes b. No

- Page | 365

53. Your emotional attachment with old Balakot town? a. Birth place
b. Forefather was here c. Both d. Working place
e. Other _____
54. How much this emotional attachment will effect on your shifting decision?
a. Yes b. No b. Partial
55. Where you will prefer to shift your business outside of old Balakot town?
a. Peripheries of Balakot b. New Balakot town c. Other town/city d. Other

56. Would you be able to manage your business in new Balakot town?
a. Yes b. No c. Not sure

Questionnaire for the Visitor/Customer (1st Phase)

General Information

- ### Perception about Hazards

Hazard Vulnerability (L for Low, M for Medium and H for High Vulnerability)								
Earthquake	Flood	Landslide	Rainfall	Snowfall	Drought	Storm	Fire	Other

12. Your belief/comments on Preparedness, Mitigation and Prevention measures

- a. Not known b. Not Sure c. Waste of time d. Necessary e. Mandatory
f. Other _____

13. Are you know about Red-Zone a. Yes b. No

14. Site (new Balakot) vulnerability for any hazards a. Not Known b. Low
c. Medium d. Highly Vulnerable e. Other _____

Hazard Vulnerability (L for Low, M for Medium and H for High Vulnerability)								
Earthquake	Flood	Landslide	Rainfall	Snowfall	Drought	Storm	Fire	Other

Customer

15. Basic purpose of visit? a. Household/business items purchasing b. Office
c. Administrative services d. Political/Social e. Education
f. Health g. Recreational h. Stop for refreshment i. Religious
j. Other _____

16. Major purchasing/service utilized? a. Hoteling b. Restaurant c. Jewellery
d. Cosmetics e. Cloths f. Electronics g. General store
h. Shoes i. Toys j. Bakery k. Office l. Bank
m. Tailors n. Workshop o. Furniture p. Other _____

17. Visit Routine a. Daily b. 2 – 4 /Week c. One /Week
d. One /Month e. Occasionally f. Seasonally

18. Visit time a. Less than an hour b. 1 – 2 hour c. More than 2 hours
d. 24 hours e. More than a day

19. Major Attraction a. Shopping b. Services c. Political/Social
d. Recreational e. Religious f. Other _____

20. Comparison of the existing vulnerability of the bazaar with old one
a. Greater b. Equal c. Smaller d. Much Smaller
21. Are you satisfied with post disaster business activities? a. Yes b. No
22. Business/level of activities fulfils your needs? a. No b. Partial
c. Yes d. Surplus
23. Purchasing/Services utilized share of all items? a. Greater than 95% valley
b. 95% valley & 05% outside c. 75% valley & 25% outside
d. 50% valley & 50% outside e. 25% valley & 75% outside
e. 05% valley & 95% outside f. Greater than 95% outside
24. Purchasing/Services utilized share of all items? a. Greater than 95% local
b. 95% local & 05% Balakot c. 75% local & 25% Balakot
d. 50% local & 50% Balakot e. 25% local & 75% Balakot
e. 05% local & 95% Balakot f. Greater than 95% Balakot
25. Are you satisfied with education services in Balakot? a. Yes b. No
26. Have you utilized the education services of Balakot? a. Yes b. No
27. Are you satisfied with health services here in Balakot? a. Yes b. No
28. How much you dependent on the health services of Balakot? a. Less than 5%
b. 5 - 25% c. 25 - 50% d. 50 - 75% e. 100%
29. Are you satisfied with utility and services? a. Yes b. No
30. Have you any accessibility problems to Balakot a. Yes b. No
31. Are you satisfied with living standards here in Balakot? a. Yes b. No

Resettlement

32. Do you know about the govt. resettlement policy? a. Yes b. No
33. Do you know about new Balakot town? a. Yes b. No
34. Do you think that visiting/business here is dangerous (red zone)? a. Yes b. No
35. Reason for visiting/business in old Balakot town. a. Economic
b. Official c. Administrative services d. Education/Health
e. Relatives f. Other _____

36. Will you continue your visit/business in old Balakot town? a. Yes
b. No c. Not sure
37. Will you shift your visit/business to new Balakot town? a. Yes b. No
38. Do you think that other people will shift their visit/business to new Balakot town?
a. Yes b. No c. Not sure
39. Do you think that Govt. will shift all services to new Balakot town? a. Yes b. No
40. Major problem for you in shifting? a. Travelling cost b. Social attachment
c. Both d. Other _____
41. What is your major concern about new Balakot town? a. Not possible
b. Justice c. Distance d. Business e. Social f. Other _____
42. Do you satisfied with present social setup? a. Yes b. No
43. What will be the social setup in new Balakot town? a. Present b. Changed
c. Not known
44. Will you accept the new social setup in new Balakot town? a. Yes b. No
45. Do you think that old Balakot is religiously important place? a. Yes b. No
46. Have you any religious attachment with old Balakot town? a. Yes b. No
47. Your emotional attachment with old Balakot town? a. Birth place
b. Forefather was here c. Both d. Working place
e. Social Similarities f. Other _____
48. Do you belief on the separate identity of valley? a. Yes b. No
49. Where you will prefer to visit/business outside of old Balakot town?
a. Peripheries of Balakot b. New Balakot town c. Other town/city
d. Other _____
50. Would you be able to manage your visit/business in new Balakot town?
a. Yes b. No c. Not sure

Annexure – V

Questionnaire of the Proposed Solutions (2nd Phase)

Ph. D. Research Topic: Resettlement of the Balakot town – Problems and Prospects

General Information

1. Name _____
2. Age a. Below 16 b. 17 – 30 c. 31 – 60 d. Above 60
3. Gender a. Male b. Female
4. Resident Address/Location _____

5. Permanent Address _____

6. Education a. Illiterate b. Primary c. SSC d. Higher e. Religious
7. Occupation a. Farmer b. Businessman c. Govt. Service
 d. Private Service e. Worker/Labour f. Other _____
8. Level of Response a. Household Head b. Earner c. Dependent

Household

9. Number of family members a. 2 b. 3-5 c. 6-10 d. More than 10
10. Total Earners in the family a. 1 b. 2 c. 3 d. > 3
11. Major Livelihoods of the family a. Agriculture b. Business
 c Service d. Manufacturing e. Ag. & Bu. f. Ag., Man. & Bu.
 g. Other _____
12. October 08, 2005 Earthquake effects on the Livelihoods a. Not Affected
 b. Temporarily Affected c Seriously Damaged d. Totally Damaged
 e. Other _____
13. Will you vacate the town in case of Early Warning of a hazard
(Earthquake/Flood/Landslide)? a. Yes b. No c. Not sure

14. What will be your strategy for your residential plot in new Balakot town?
- a. Construction of a house b. Sell up c. Not decided
- d. Other _____
15. What will be your shifting preferences to new Balakot town in case of high level of utilities and services there?
- a. Residence b. Residence & Business
- c. No shifting d. Other _____
16. What will be your preferences for neighbourhood in new Balakot town?
- a. Same b. Change c. Not decided
17. What will be your preferences for availing the compensation of damages if it is conditional with resettlement in new Balakot town?
- a. Opt for b. Exempt it
- c. Not decided
18. What will be your residence preferences in old Balakot town in case of deteriorated level of utilities and services here?
- a. Residence b. Shifting c. Not decided

Agriculture & Commercial Land

19. Agriculture land size
- a. 1-5 Kanal b. 6-10 Kanal c. 11-20 Kanal
- d. 21-40 Kanal e. Above 40 Kanal
20. Commercial land size
- a. Half bazaar b. ¼ bazaar c. 2-4 markets
- d. 1 market e. 5-10 shops f. 2-4 shops g. 1 shop h. Nil
21. Will you prefer a new land resettlement?
- a. Yes b. No c. Not sure
22. Would you like residence near agriculture activities?
- a. Yes b. No
- c. Not necessary
23. What will be your preferences in case of substitute fertile agriculture land in surrounding of new Balakot town?
- a. Opt for b. No substitution c. Not decided
24. What will be your preferences in case of substitute commercial land in new Balakot town?
- a. Opt for b. No substitution c. Not decided
25. What will be your preferences in case of commercial land value substituted with agriculture land?
- a. Opt for b. No substitution c. Not decided

Commercial Activities

26. Type of commercial activity a. Hoteling b. Restaurant c. Jewellery
d. Cosmetics e. Cloths f. Electronics g. General store
h. Shoes i. Toys j. Bakery k. Office l. Bank
m. Tailors n. Workshop o. Furniture p. Other _____
27. How much the shifting of administrative activities from old Balakot town will suffer your business? a. Not much b. 20% - 30% c. 30% - 50%
d. More than 50%
28. How much the resettlement of Balakot town will suffer your business?
a. Not much b. 20% - 30% c. 30% - 50% d. More than 50%
29. What will be your preferences in case the Government offer different business opportunity at different location? a. Opt for b. No substitution c. Not decided
30. What will be your preferences in case the Government offer employment opportunity?
a. Opt for b. No substitution c. Not decided
31. Could you continue your business activities somewhere else in case of old Balakot abandoned for commercial activities? a. Yes b. No c. Not sure

Visitor/Customer

32. What will be your preferences of visit in case the Government shift the administrative activities from old Balakot town? a. No need b. Occasional c. Not sure
33. What be your choice of visit for administrative and commercial activities?
a. new Balakot town b. Dispersed in surrounding of old Balakot
c. Gari Habibullah d. Other _____

Resettlement

34. What will be your strategy in case the Government force to vacate the old Balakot town?
a. Agitation b. Litigation c. Both d. Not sure
35. Will you agree with resettlement process in case the Government fully compensate your commercial, residential and agriculture assets in form of substitute land, plots, employment, loans etc. and keep similar neighbourhoods in new Balakot town?
a. Yes b. No