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Assessment of Socio-Economic Vulnerabilities among Urban Migrants in South-East Delhi, India

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Abstract. The association between vulnerability and its indicators physical, social, economic and health among poor migrants was examined through primary field survey using structured questionnaire. Five regions namely Abul Fazal, Batla House, Noor Nagar, Okhla Vihar and Zakir Nagar were purposively selected since these areas have high concentration of poor urban migrants. For evaluation of Composite Vulnerability Indices in South-east Delhi, we followed relative approach used by UNDP for developing HDI on an inter-country basis. To verify relationship between vulnerability and its variables, Karl Pearson's two tailed correlation was performed and it was found that there exists statistically significant positive and strong correlation among indicators of vulnerability. The results of our study showed Okhla Vihar and Zakir Nagar highly vulnerable and Abul Fazal, Batla House and Noor Nagar relatively less vulnerable. Hence all regions require priority for socio-economic development. CVI has proved significant tool for measuring relative vulnerability in the region.

Keywords: Vulnerabilities, Socio-economic, urban migrants, health, South-east Delhi, India

Introduction

The concept of Vulnerability has been studied by various scholars in different contexts (Cutter 2006; Menoni et al. 2012). Most of the scholars have used vulnerability in terms of physical vulnerability and social vulnerability (Adger et al. 2004; Birkmann 2006; Cutter 1996; European Commission 2011; Lee 2013; Tate et al. 2011). Physical vulnerability takes into account the probability of exposure to risk associated with natural disaster. Various scholars have used this term for studying environmental and climate change. Social vulnerability,

on the other hand, has been assessed by considering social inequalities such as poverty, poor health facilities, low socio economic status, low educational level, poor public infrastructure and poor living standards (Lee 2013; Cutter 1996; Cutter et al. 2003; Adger et al. 2004). Physical vulnerability caused by natural disaster is a sudden process whereas social vulnerability is a continuous process arises due to poverty and negligence towards the vulnerable group. Physical, economic, social and health conditions determine people's level of vulnerability and their capacity to cope up with it. Hence, counteracting social vulnerability requires tackling its root causes such as poverty, unemployment, inadequate access to resources, lack of basic amenities and facilities and unhygienic and unsecure environment, etc.

India's urban population has increased from 285 million in 2001 to 377 million in 2011 (Census of India, 2001 & 2011). By 2021, the urban population of India is projected to increase to 432 million, with more than 60 per cent of the population residing in urban areas. According to the 2011 Census, 309 million persons were reported as migrants in India which constituted about 30 per cent of the total population of the country. In a developing country like India low agricultural income, agricultural unemployment and underemployment are considered basic factors pushing the migrants towards prosperous or dynamic areas with greater job opportunities. Non availability of alternative sources of income (non-agricultural activities) in rural areas is also important factor for migration. In addition to this, the existence of the joint family system and laws of inheritance, which do not permit the division of property, may also force many young men to move out to cities in search of jobs. Better employment opportunities in the cities, higher wages, better working conditions and facilities and amenities, etc. act as pull factors attracting migrants to an area (European Commission, 2000; Parkins 2010; Rasool et al. 2012).

The Population of Delhi according to the 2011 census stands at about 16 million, making it the 18th most populated state in India. It is estimated that nearly half of Delhi's population resides in urban poor habitations. Delhi ranked first in terms of proportion of in-migrants and is the second largest destination in India, after Mumbai where 10.5 per cent of the total population is migrants. It is

estimated that approximately 0.5 million people migrate to Delhi every year; of which majority are poor and come in search of work. Delhi witnessed drastic growth spatially, in population and infrastructure development in the process of becoming a world class city accompanied by expansion in employment opportunities. Increasing prospects of finding a job in Delhi attracted a large number of migrants to the city, especially since 1980s. Although the migrants might be happy in getting employment and higher wages in the cities but one thing is clear that they are falling from the pot into the frying pan. They are more likely to live in unhygienic environment and work in areas having potential hazards. Their poverty, apathy and misery remain the same and they are exposed to various vulnerabilities. In this paper we have made an attempt to analysis the socio-economic and health vulnerabilities of the urban migrants of South East Delhi.

Material and Methods

The study was carried out in Okhla region of South-east Delhi, India. Five areas namely Abul Fazal, Batla House, Noor Nagar, Okhla Vihar and Zakir Nagar (Figure 1) were purposively selected since they are characterized by high concentration of migrated urban poor. Impoverished population areas were identified within these localities and from each selected locality, 30 vulnerable urban poor migrants' households were randomly selected. In this way, a total of 150 respondents were selected for in-depth study. The data for this study was collected through field work. Structured questionnaire was used for the collection of primary data with the household being the unit of analysis. The questionnaire used in the survey was open ended with the goal of collecting qualitative information. This was collected with an aid of an interview schedule which was administrated to the household heads. Interviews were conducted in persons as handouts. Sufficient care was taken to make the questionnaire communicable to the respondents. The collected data then tabulated and analyzed. This field work was carried out during May and June, 2013.

For the evaluation of Composite Vulnerability Indices in S-E Delhi, we followed the relative approach used by UNDP for developing HDI on an inter-country

basis (UNDP, 1990 & 1992). The analytical approach essential for operationalising Composite Vulnerability Indices in the form of CVI is characterized by its four propositions of Physical Vulnerability Index (PVI), Social Vulnerability Index (SVI), Economic Vulnerability Index (EVI) and Health Vulnerability index (HVI)

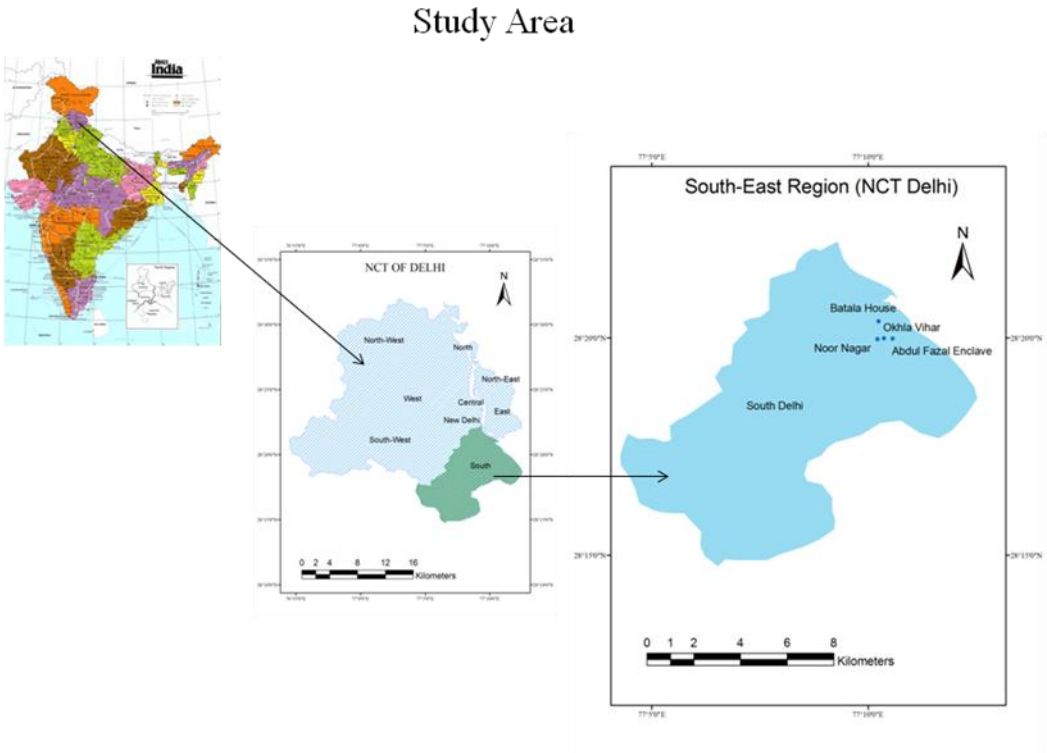

Figure 1. Map showing the location of the study region

The CVI, the exposition of the relative approach to evaluate the relative vulnerabilities status of a given set of entities is presented below:

Let CVI_{ij} be the index for the i^{th} component of CVI related to the jth entity and let X_{ij} be the value of the variable representing the i^{th} component of CVI related to the j^{th} entity. Then the index for the i^{th} component of CVI of the j^{th} entity can be calculated as follows:

$$VI_{ijk} = \frac{X_{ijk} - \min_k X_{ijk}}{\max_k X_{ijk} - \min_k X_{ijk}} \text{---------(1)}$$

Where

i=Variables(1,2,3,.....,I)

j=Components(1,2,3,.....,J)

k=Blocks(1,2,3,.....,K)

The numerator in (1) measures the extent by which the j[th] entity did better in the i[th] component of CVI as compared to the entity showing the worst performance in that component, and the denominator indicates the range (i.e. the difference between the maximum and the minimum values of the variable representing a given component), which is a simple statistical measure of total variation present in the variable representing the i[th] component of CVI. The denominator, in fact, serves as a scale by which the extent of the better performance of the j[th] entity in the i[th] component is evaluated. Having calculated the CVI_{ij} for all the components (i = 1,2,. . .,I) and all the sample entities (j = 1,2,. . .,J), the composite index, which measures the overall performance of a given entity (CVIij), can be calculated as a weighted average of all the component indices [CVI_{ij} (i = 1,2,. . .,I)].That is:

$$CVI_{jk} = \frac{\sum_{i=1}^{I} a_{ij} VI_{ijk}}{I} \text{---------(2)}$$

Where

j=1,2,3,.....,J and

k=1,2,3,.....,K

The a_{ij} in (2) denotes the weight assigned to the i[th] component of CVI of the j[th] entity and has the property that: $a_{1j} + \ldots + a_{Ij} = 1$. If a_{ij} is identical for all i and j and is equal to 1, it means that equal weights is being assumed.

Each of the four component indices of CVI can be based on one or more variable(s) reflecting the state of affairs in a given dimension. When there are two or more variables to represent a given component of CVI, the index for that component

can be formed again by taking either the simple or the weighted average of the individual indices of the representative variables. The choice of the variables to represent the different components of CVI is influenced inter alia by their relevance and capacity to represent a given component, availability of data, and the level at which CVI is constructed.

Rationale for Selection of Variables

A composite index has a number of factors, which are averaged to form a product representative of summary measure. In this study, the composite statistics is used to rank regions by level of vulnerability in selected indicators. The following indicators are used in the estimation of these four composite indices for assessment of vulnerability:

- physical vulnerability indicators: flimsy house, fuel used for cooking food, solid waste disposal, occupational hazards and drainage system;
- social vulnerability indicators: illiterate people, houses with more than three persons sleeping per room, children out of school, elderly population and dependency ratio;
- economic vulnerability indicators: migration of people for economic reasons, irregular employment and very low income;
- health vulnerability indicators: non-availability of safe drinking water, inadequate sanitation facilities, chronic diseases and children immunization.

Proper shelter is a must for a healthy life because it enhances the performance of the residents in their domestic and economic activities. The absence of proper cooking fuel can lead to various health problems. The use of firewood and kerosene for cooking is unsafe and hazardous. It leads to indoor pollution which results into much health related problems like respiratory problems. Improper solid waste disposal makes the people vulnerable to infectious diseases and leads to contamination of the soil, water and surrounding environment. Occupational hazards expose the work environment with various infectious diseases, accidents, exposure to noxious chemicals, respiratory problem, eye problem, cancer and psychic problem associated with shifting work and emotional stress. Urban

environment get significantly altered in the absence of proper drainage system. It has severe impact on the health of people living nearby.

Being literate is prerequisite for the upliftment and progress of the society. Illiterate people are unaware of their rights, trapped into various social evils and couldn't get out of their pity and miserable conditions. It limits their opportunities to take part in the community at an equal platform. Hence it makes them vulnerable group in society. More people in a single dwelling have negative impact on them. They faces problems in their privacy, hygiene, sleep, family relationship and children's education, causes depression, anxiety and stress (Reynolds 2005).Being literate is not sufficient in itself. Children are the future of the society, nation and world. They should be encouraged to complete their school education. It creates awareness and improves the social structure of the society. Elderly population is considered dependent population. There are more prevalence of chronic conditions such as diabetes and hypertension among them and they are also economically dependent on their children. Hence for poor urban migrant it becomes more difficult to support their elderly parents along with their family. Dependency ratio is the ratio of dependent people to the number of people in working age. The dependent part is usually those under the age of 15 and over the age of 64.They places a lot of economic pressure on the working class population and hence considered the most vulnerable members of the society.

Unemployment, underemployment and irregular employment in origin areas pushes people to big cities or metropolitan areas in search of employment. This makes them financial necessitate and the only option left with them is to live at the terms of city. They have to compromise with the basic amenities like living condition, health, and food. This makes them vulnerable and they are compelled to work and live in unsophisticated environment. Irregular employment causes insecurity and financial problems which may lead to various social evil and crime. The bad consequences for individual employees extend out to bad effects on families and communities. Low income characteristically means poor nutrition, poor housing, elementary or no education, little or no medical care. (Epstein 1961) .Deprivation from education is considered root cause of crime, economic

and social backwardness. Hence they are trapped in vicious circle of poverty which makes them the most vulnerable group of society.

An adequate supply of easily accessible potable water is central to household welfare and a prerequisite to good hygiene and sanitation. Many health problems are linked to water quality, availability, ease of access and provision of disposal. Sanitation is a critical health related environmental factor. Type of sanitary determines the health condition of the people. Poor sanitary condition and poor water quality leads to illnesses as diarrhea and many other water born disease among children, adult and old people and also effect the life expectancy of the people. Disease is an abnormal condition to a human body it effect the lifestyle and personality of a person. It helps in assessing the urban environment and health facilities of a region. Child health is a key component of health standards in a community. It helps in assessing the health status of a population.

Result and Discussion

The variation and relative performance of Vulnerability and its component indices (PVI, SVI, EVI and HVI) are presented in Table 1, 2, 3 & 4. Okhla Vihar ranks first in physical vulnerability. It is vulnerable in all the indicators of physical vulnerability except occupational hazards since most of the population in this region is indulged in housekeeping services and as vendors. Okhla Vihar is followed by Zakir Nagar and Abul Fazal regions having high vulnerability (See Table 1). Improper solid waste disposal, filmsy houses and fuel used in kitchen made Zakir Nagar physically vulnerable while improper solid waste disposal and occupational hazards are primarily responsible for high physical vulnerability in Abul Fazal. The reasons attributed to high physical vulnerability in these regions are the poor housing facility with improper drainage and waste disposal system. Poor housing condition are observed in terms of structure, size, shape and building materials. It was observed that the houses of these urban migrants were old and cramped. They were unsystematically built. There were no proper wiring and drainage systems in their houses. This makes them prone to various risks and hazards. There exist no proper facilities of waste disposal. The sanitation facility is also worst where a single latrine is being used by large

number of people without proper flushing. Even some of the respondent defecate outdoor which leads to degradation of environment and exposure to diseases. No proper drainage system was seen in these areas therefore during rainy seasons, these areas become breeding ground for various life taking mosquitoes, spreading dengue. Apart from this, use of unsafe cooking methods like using fuel woods and stove cause various health problems like respiratory, lungs and eyes problems particularly among women and children. Most of the sampled population is dependent on firewood or gas stove for cooking. A significant number of the sampled population suffers from occupational hazards. They were indulged in daily wage manual labor and rickshaw pulling which makes them high in physical vulnerability.

Batla House and Noor Nagar are comparatively better in Physical vulnerability. These regions have better housing with better drainage system, waste disposal system and cooking methods. Noor Nagar is least vulnerable but it has the maximum number of population suffering from occupational hazards. Here most of the sampled population is indulged in industrial activities and they work in unsafe and hazardous environment. Relative status of vulnerability in Batla House is better than Noor Nagar but the fuel used by the respondents here creats pollution and makes them exposed to health problems.

High concentration of social vulnerability was found in Okhla Vihar. Zakir Nagar, Abul Fazal and Batla House were found to have medium social vulnerability. Noor Nagar experienced low status of social vulnerability (Table 2). In Okhla Vihar one room is shared by more than three people. This creates congestion, disturbance and hindrance in the privacy of the people living in that room. Most of the sampled households here do not send their children to school. The parents are not aware of the importance of education and even those who understand are tied because of the poor economic conditions. They believe in adding more members to their family. Children are considered assets to the households. According to them more working members in their family will contribute more in their total household income. Hence high population growth can be seen in these regions which lead to higher dependency ratio, larger family size and population working under 14 years of age.

Table1. Physical vulnerability among urban migrants in South-east Delhi, India

Regions	Households having flimsy house		Household using fuel wood/gas stove for cooking		Household disposing solid waste improperly		People suffering from occupational hazards		Households having no drainage system		Physical vulnerability	
	%	Index	%	Index	%	Index	%	Index	%	Index	Index	Rank
Zakir Nagar	83.0	0.5	90.0	0.8	97.0	1	30.5	0.34	47.0	0.5	0.6	2
Abul Fazal	80.0	0.3	77.0	0.2	83.0	0.4	32.1	0.4	40.0	0.3	0.2	4
Okhla Vihar	93.0	1	97.0	1	97.0	1	29.8	0.31	60.0	1	0.9	1
Noor Nagar	73.0	0	73.0	0	77.0	0.2	50.8	1	32.0	0	0.3	3
Batla House	77.0	0.2	77.0	0.2	73.0	0	20.0	0	37.0	0.2	0.1	5

Source: Based on field survey (2013)

Table 2. Social vulnerability among urban migrants in South-east Delhi, India

Region	Illiterate people		More than three persons living in a room		Children not going school		Elderly population		Households having higher dependency ratio		Population working under 14 years of age		Social Vulnerability	
	%	Index	%	Index	%	Index	%	Index	%	Index	%	Index	Index	Rank
Zakir Nagar	42.0	0.9	63.0	0.3	40.9	0.74	2.8	0	67.0	0.2	16.0	0.6	0.46	4
Abul Fazal	27.4	0.5	73.0	0.6	39.6	0.68	6.1	1	73.0	0.4	14.3	0.4	0.6	2
Okhla Vihar	37.3	0.8	87.0	1	47.1	1	4.9	0.6	87.0	1	19.6	1	0.9	1
Noor Nagar	8.7	0	50.0	0	23.5	0	3.0	0.06	67.0	0.2	10.6	0	0.04	5
Batla House	44.8	1	67.0	0.5	34.0	0.4	5.9	0.9	63.0	0	13.4	0.3	0.52	3

Source: Based on field survey (2013)

In Zakir Nagar, illiteracy is the main reason accounted for making this area vulnerable. High percentage of people is illiterate and moreover they are not even letting their children to go to school. Those children who are not attending schools are recruited in the army of labour. High proportion of elderly population in Abul Fazal has resulted in high dependency ratio and sharing one room by more persons. High dependency ratio over other indicators may be attributed to medium social vulnerability of this area. Illiteracy of the people and large share

of elderly population in Batla House are mainly responsible for medium social vulnerability. High dependency ratio in Noor Nagar is the prime factor for social vulnerability.

High economic vulnerability was observed in Okhla Vihar and Zakir Nagar. In Okhla Vihar, people have migrated from backward and poor native regions with main objective of better earning but they were reported of having low income. Low wage is paid to the respondents in Okhla Vihar is the main reason of high vulnerability since they are engaged in low paid occupations, mostly being house keepers and vendors while irregular employment is the basic cause of high vulnerability of Zakir Nagar. In this area the respondents are engaged as daily wage workers. They do the work of rickshaw pulling and labour in construction work. Abul Fazal, Noor Nagar and Batla House are relatively less vulnerable. However, unemployment in Abul Fazal and poor economic background and low income in Noor Nagar and Batla House have been the cause of economic vulnerability (See Table 3).

Table 3. Economic vulnerability among urban migrants in South-east Delhi, India

Region	Migration of people for economic reason		Persons having irregular employment		Households having very low income		Economic Vulnerability	
	%	Index	%	Index	%	Index	Index	Rank
Zakir Nagar	95.0	0.08	75.0	1	67.0	0.6	0.6	2
Abul Fazal	94.2	0	60.3	0.51	63.0	0.5	0.3	3
Okhla Vihar	100	1	57.4	0.5	76.0	1	0.8	1
Noor Nagar	94.5	0.05	55.9	0.4	50.0	0	0.2	4
Batla House	94.4	0.03	40.0	0	57.0	0.3	0.1	5

Source: Based on field survey (2013)

Okhla Vihar and Zakir Nagar were identified as highly vulnerable areas in health. Absence of basic civic amenities such as safe and adequate water supply, sewerage facility, proper sanitation and access to nearby health facilities have been held responsible for high vulnerability. Almost all the population purchase drinking water. Due to their poor economic conditions they are not able to afford water filtering system. This makes them utilize unsafe water for drinking. High percentage of people is suffering from chronic diseases. Poor environment

conditions and improper drainage system creates water logging problem. This leads to unhygienic living atmosphere and makes vulnerable to various health hazards. Unawareness and poor conditions leads to lack in childcare. High no. of children not fully immunized. Abul Fazal, Noor Nagar and Batla House were categorized as low vulnerability areas. Low immunization of children in Abul Fazal, prevalence of chronic diseases in Noor Nagar and non-availability of safe drinking water in Batla House are accounted for health vulnerability in these areas (Table 4).

Table 4. Health vulnerability among urban migrants in South-east Delhi, India

Regions	Households not having safe drinking water supply		Households having improper sanitation facility		Households not having access to health care facilities		People having chronic diseases		Children not fully immunized		Health Vulnerability	
	%	Index	%	Index	%	Index	%	Index	%	Index	Index	Rank
Zakir Nagar	93	0.6	92	0.6	40	0.4	1.8	0.84	72	0.1	0.6	2
Abul Fazal	87	0	83	0	33	0.2	0.2	0	94	1	0.2	5
Okhla Vihar	97	1	97	1	60	1	1.7	0.79	88	0.8	0.9	1
Noor Nagar	87	0	83	0	27	0	2.1	1	78	0.4	0.3	4
Batla House	93	0.6	87	0.3	37	0.3	1.5	0.7	68	0	0.4	3

Source: Based on field survey (2013)

To access the relationship between CVI and its four components, i.e., physical vulnerability, social vulnerability, economic vulnerability and health vulnerability, Karl Pearson's two tailed correlation has been derived. The result shows that CVI and its components are positively and significantly correlated except social vulnerability (Table 5). Field survey revealed that vulnerability in the sampled areas are due to poor household environmental conditions, low economic status and lack of basic amenities and facilities like safe drinking water, sanitation, access to health care facilities. The respondent reported that they do not have proper water storage facility and the water is kept in open

buckets and container sometimes for many days. Water storing becomes necessary during the summer months because of its scarcity.

Table 5. Correlation among various vulnerabilities of the sampled urban migrants in South-east Delhi, India

Composite Vulnerability	Physical Vulnerability	Social Vulnerability	Economic Vulnerability	Health Vulnerability
	.969**	.805	.957*	.920*

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

During the summer and rainy season, diarrhea, typhoid and gastro-interties occur and all are caused by use of contaminated water. It is observed that though social vulnerability is positively correlated but not statistically significant than other three components. Hence priority should be given in the physical, economic and health areas. It is expected that improvement in these areas will improve the prevailing social vulnerability provided that the awareness regarding importance of education, family planning and change in the attitude towards child labor is accomplished.

Policy Implications

Composite vulnerability index (CVI) ranking implies that Okhla Vihar and Zakir Nagar are most vulnerable regions in all. These regions have CVI of more than 1.5 and were identified as the regions of high vulnerability requiring immediate attention for socio-economic and environmental development. Similarly, Abul Fazal, Batla House and Noor Nagar with CVI less than 1.5 were also identified as priority areas for reducing vulnerability (Table 6). Okhla Vihar is vulnerable in all the indicators chosen for assessing vulnerability whereas Zakir Nagar is more vulnerable in economic, physical and health indicators (Table 7). These regions lack basic civic amenities like safe and adequate drinking water, proper sewage, sanitation facilities, electricity availability, proper infrastructure, access to health and educational facilities. Poverty and low literacy keep them trapped in vicious circle of inequality. Hence to reduce vulnerability in these areas

priority should be focused on poverty alleviation programmes and implement policies for improving educational and health facilities. For improving health conditions in these regions not only access to health care facilities for poor is required but also awareness regarding hygiene, immunization and family planning should be accorded priority. Safe drinking water should be made available and construction of proper sewage and sanitation facilities should be done.

Table 6. Region wise ranking of physical, social, economic, health and composite vulnerability

Regions	Composite Vulnerability	
	Index	Rank
Zakir Nagar	2.3	2
Abul Fazal	1.4	3
Okhla Vihar	3.5	1
Noor Nagar	0.7	5
Batla House	1.12	4

Source: Based on field survey (2013)

Table 7. Priority areas for reducing vulnerability

Region	Physical vulnerability	Social vulnerability	Economic vulnerability	Health vulnerability
Zakir Nagar	√		√	√
Abul Fazal		√	√	
Okhla Vihar	√	√	√	√
Noor Nagar	√			√
Batla House		√		√

Source: Based on field survey (2013)

Abul Fazal, Batla House and Noor Nagar are less vulnerable than Okhla Vihar and Zakir Nagar but they also accord priority in certain thematic areas (See Table 7). Abul Fazal is more vulnerable in social and economic indicators. Illiteracy level is high, more number of children is engaged in work and less number of children is attending school. Economic conditions are poor and irregular employment leads to irregular income. Hence to reduce vulnerability priority should be given to improve education system and to eradicate poverty

among the masses. Provision of free and compulsory education and mid day meals should be provided in schools so that children may be encouraged to learn something of use. To reduce the problem of unemployment policies like MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) which made strides in rural areas of the country should be implemented in urban areas. Batla House showed poor performance in social and health indicators and Noor Nagar in physical and health indicators. Educational and health facilities should be accorded high priority in this region. Noor Nagar requires immediate attention for management of soil waste disposal and occupational hazards. Hence priority should be accorded of providing the respondents with free health insurance and creating awareness for disposing waste in bins. Here Municipal Corporation can play an effective role in managing solid waste disposal. It should be made imperative for the employers to provide their workers with safe and secure environment and the workers should be encouraged to use safety equipments to protect themselves from various exposures.

Conclusion

Socio-economic status of migrants is characterized as mainly low income group with low skilled jobs in the unorganized sector and with inadequate education. The respondents were living in unhygienic environment as their houses were not properly ventilated. Heaps of garbage was lying uncollected inside and outside. These households lack drainage and toilet facilities. There was no drinking water facility available in the sampled areas. Most of the respondents purchase water and the quality of this purchased water is also not good. Due to unhygienic environmental conditions and lack of drinking water the respondents are engulfed in various health problems. Vulnerability Index as a policy tool identified not only the regions requiring immediate attention but also the priority areas in which efforts could be made to reduce vulnerability. Okhla Vihar, Zakir Nagar and Abul Fazal require immediate attention for improving socio-economic and health status. In Okhla Vihar and Zakir Nagar priority should be given for improving living conditions, economic and health status.

Socio-economic development should be accorded higher priority in Abul Fazal. Like-wise in Noor Nagar health and living conditions should be accorded higher priority while in Batla House; efforts should be made to improve social and health status. In order to check poor people from migration, the essential pre-conditions seem to be expansion of employment opportunities and also the creation of better living conditions through improved availability of essential heath care and occupational services. Unless the like of the amenities enjoyed by migrants in the cities can be made available in the place of origin, at least partly, if not to the fullest extent, the idea of alleviation of poverty through inducing and sustaining the process of reverse migration will hardly be translated into reality.

References

[1] Adger WN, Brooks N, Bentham G, Agnew M, Eriksenet S. 2004. New indicators of vulnerability and adaptive capacity. In UK Tyndall Centre for Climate Change Research (Technical, Report 7).

[2] Birkmann J. 2006. Measuring vulnerability to natural hazards — towards disaster resilient societies. United Nations University Press.

[3] Census of India. 2001. Office of the Registrar General and Census Commissioner, Ministry of Home affairs, Government of India.

[4] Census of India. 2011. Office of the Registrar General and Census Commissioner, Ministry of Home affairs, Government of India.

[5] Cutter SL. 1996. Vulnerability to environmental hazards. Prog Hum Geogr. 20(4):529–39.

[6] Cutter SL .2006. Hazards, Vulnerability and Environmental Justice. London: Earthscan.

[7] Cutter SL, Boruff BJ, Shirley WL. 2003. Social vulnerability to environmental hazards. Soc Sci. 84(2):242–61.

[8] European Commission (Seventh Framework Programme). 2011. ENSURE: Enhancing Resilience of Communities and Territories Facing Natural and Na-tech Hazards. EU: European FP7 project.

[9] European Commission. 2000. Push and Pull factor of international migration: A comparative report, Luxemburg: European Communities.

[10] Epstein LA. 1961.Some effects of low income on children and their families. Social Security Bulletin.Vol.24 No.2.

[11] Lee YJ. 2013. Social vulnerability indicators as a sustainable planning tool. Environmental Impact Assessment Review. 44 pp 31–42.

[12] Menoni S, Molinari D, Parker D, Balio F, Tapsell S. 2012. Assessing multifaceted vulnerability and resilience in order to design risk –mitigation strategies. Nat Hazards .64: 2057–82.

[13] Parkins NC. 2010. Push and Pull Factors of Migration," American Review of Political Economy 8:2 pp6-24.

[14] Rasool F, Botha CJ and Bisschoff CA. 2012. Push and Pull Factors in Relation to skills shortages in South Africa .Soc Sci. 30 (1):11-20.

[15] Shelter. 2005. Full House? How overcrowded housing affects families, London.www.shelter.org.uk.

[16] Tate E , Burton CG, Berry M, Emrich CT, Cutter SL. 2011. Integrated hazards mapping tool. Trans GIS. 15(5):689–706.

[17] UNDP. 1990. Human Development Report. New York: Oxford University press.

[18] UNDP. 1992. Human Development Report. New York: Oxford University Press.