GENDER AND MOBILITY - EVERYDAY MOBILITY DURING CHANGING GENDER RELATIONS

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Abstract

Mobility is embedded in the existing gender relations of our society, whereby both the biological sex and social gender are significant. Taking the gender perspective into consideration in mobility research means broaching this aspect through data collection and data analysis and evaluation. A broadened gender concept has been developed in connection with mobility studies and has been relied upon for analysing the designs of the major German mobility surveys. It has been possible to ascertain that although gender aspects such as looking after, caring for and accompanying children and dependents have been included, they have been hitherto accorded only little consideration in the analyses and publications. Against this background, the data on "Mobilität in Deutschland" [Mobility in Germany] (MID 2008) are analysed and evaluated in line with gender mainstreaming.

1. Outline of the problem

Mobility and transport behaviour are embedded in the existing social structures and gender relations of our society. Commuting to work, going shopping, and accompanying children or older people determine our daily activities. There are always men and women, children and old people, persons with reduced mobility, people from a migrant background who cover such distances, i.e. people with a biological sex and a social gender.

Taking the gender perspective into consideration in mobility research means discussing gender relations (through specific data collection and data analysis and evaluation), whilst carrying out an exchange of views and focusing on different living situations, lifestyles and strategies for coping with everyday life, which are no longer tied exclusively to biological sex or traditional gender roles.

Mobility surveys (observations or interviews) are carried out in traffic planning to gauge transport behaviour, whereby in addition to individual mobility behaviour, determinants and subjective reasons of the behaviour are examined. Mobility and transport surveys yield socio-demographic information about people and households as well as the way they travel (e.g. whether they have a driving licence or a car, travelling purpose, and mode of transport used).

Mobility surveys in the form of household interviews in municipalities and regions are often geared to what is known as Kontiv® design (household forms, individual forms, road protocols). Although the biological sex is broached as a

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matter of course in all major studies as well as in municipal mobility surveys, as are gender aspects (e.g. looking after, caring for and accompanying children and dependents), these aspects have hitherto been given only insufficient consideration in analyses, evaluations and publications.
Criteria for gender-sensitive mobility surveys must consequently be developed as well as suggestions on how to modify and supplement the traditional survey designs and how to develop their evaluation and interpretation; the ultimately aim being to contribute to greater gender fairness in mobility research.
A successful implementation of gender mainstreaming in the transport sector is a quality feature of planning and policy and indispensable for the development of more concrete approaches, particularly at a time of ever greater differentiation of household structures and lifestyles.

2. Concepts and indicators with gender aspects

2.1 Gender

Gender means not looking at "women" or "men" stereotypically, but considering people in terms of their difference and diversity (Table 1). No one is only male or only female, but we live in a world which is decisively shaped by the attribution of gender roles. Through the use of the concept "gender," the sexes and their relations are brought more into the foreground, the social differences or roles are described, and social differences or roles that men and women have in our society depending on their social situation or their role are described.

Table 1. The concept of gender

The term gender...
… refers to the economic, social and cultural attributes and opportunities associated with being male or female. In nearly all societies men and women differ in respect to their activities, access to and control of resources, and participation in decision-making processes. The definition of gender – what it means to be male or female – varies between cultures and changes over time.
(Source: EU Guide on Gender Mainstreaming 2005 / EQUAL Programme)

2.2 Gender Mainstreaming – definitions

Gender Mainstreaming is aimed at gender equality and entails that due account of the gender issue is taken from the outset in all plans and decisions, regulations or laws that could have a different effect on men and women, since there is no gender-neutral reality.
The gender perspective implies that men and women, but also children/young people, persons with reduced mobility, the elderly, people with a migrant background have different living conditions and opportunities in society. They all develop specific interests and needs owing to specific gender, social, or ethnic and cultural socialisation and different living situations. They are affected differently by social processes and their repercussions.

Thus broadened, the concept of gender includes the aforementioned gender groups, whereby differentiation would still be made each time in accordance with sex and age. The broadened concept of gender comprises also the physical environment structures, i.e. the concept of **settlement structure.** The living conditions of the population vary depending not only on the regional context but also on sex, i.e. the situation of men and women differs between core cities, surrounding districts, rural areas and/or the countryside (varying availability of public transport, different types and proximity of infrastructure and facilities, remoteness of locations of everyday life).

2.3 Indicators with reference to gender[3]

Indicators indicate something. The starting point for developing indicators is expressly or implicitly the definition of an objective, towards which reality is supposed to veer. Consequently, the development of indicator systems is not unbiased.
Transport or mobility is (still) not an issue in the case of indicator systems with a gender reference in an international context, but the first steps have been taken in the national context, whereby the gender index and the federal equality atlas are significant.
The United Nations Development Programme (UNDP) publishes a report on human development every year in which the Human Development Index (**HDI**), is calculated and, since 1995, the Gender-related Development Index (**GDI)**[4] as well. At the national level, the numerous indicator systems relating to "sustainability" should be mentioned first and foremost. These are intended to help guide the necessary processes towards sustainable development on the basis of the Agenda 21.
The **national sustainability strategy** "Prospects for Germany: Our strategy for sustainable development" presents 21 indicator subjects (as per the 2008 progress report). These indicators fall under four areas. Under quality of life, the indicator subject "mobility" with the sustainability postulate "secure mobility – preserve the environment" is however presented only through indicators such as goods or passenger transport intensity or the share of rail transport in freight forwarding.
The **Gender Index**[5] is an instrument that is supposed to indicate and present equal but also unequal opportunities between the sexes and to make them comparable between the regions. It is the first nationwide measuring instrument for the regional comparison of equal treatment of men and women. The relative deviations of the values for men and women are calculated for 19 indicators for education, employment and participation. The Gender Index is the average value of these 19 relative gender differences.[6] Based on the spatial information system, the continuous spatial planning observation of the Federal Institute for Research on Building, Urban Affairs and Spatial Development (known by the German initials BBSR), the regional living conditions of men and women in these three areas (education, employment and participation) were compiled and assessed in the Gender Index for the first time in a comprehensive, systematic and exhaustive manner nationwide. The aim is to make the complex circumstances of gender equality visible and in so doing to illustrate the central

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3 For more details, cf. KRAUSE, 2011.

4 Its significance is based on the same variables as for the HDI. The Gender Empowerment Measure (GEM) stands for the strengthening of the role of women and the promotion of participation in the political and social decision-making processes.

5 www.gender-index.de

6 This formula for calculating the Gender Index is based on the Swedish Jäm Index (also known as the Gender Equality Index). Statistical tests support the Gender Index as a suitable measuring instrument of regional equal treatment of men and women.

fields of activity for more equality of opportunity in the different regions (cf. www.gender-index.de). Mobility and transport have not been an issue (hitherto) however.
The atlas of equal treatment of men and women in Germany (**Equality Atlas)** is an initial localisation of the equality situation per federal state in Germany on the basis of 30 indicators. Of interest for the research topic is the category of the living environment with two indicators: "older people in single-persons households" and "life expectancy." Both indicators show clear, specific gender differences (BMFSFJ, 2009).
The regular consideration of key figures from the mobility area – such as consideration of the purpose of mobility or the attainability of different objectives from the gender perspective – could help to demonstrate equal opportunity or gender differences based on social conditions, attitudes and habits. The regular surveys of the population's mobility behaviour provide a good data basis.

3. Nationwide surveys on the mobility behaviour of the German population

The three nationwide surveys on the mobility behaviour of the population in Germany are "Mobilität in Deutschland" (MID) [Mobility in Germany], "Mobilität in Städten" (SrV) [Mobility in the Cities] and the "Deutsche Mobilitätspanel" (MOP) [German Mobility Panel]. These surveys also serve as empirical (calibration) bases for traffic models and thus for the overall urban or regional traffic plans.
"Mobilität in Deutschland" (MID) [Mobility in Germany] is the nationwide survey[7] on mobility behaviour. Activities outside the home and the mobility of all persons living in the household among selected samples of households were gauged on a reference date by means of a standardised questionnaire. The first nationwide comprehensive survey of the population's mobility behaviour was carried out in 1976 under the Continuous Survey on Mobility Behaviour (known by the German acronym KONTIV), which has been repeated, with a similar design each time, in 1982 and 1989. In 2002, the study was conducted as a nationwide project for the first time under the name of Mobilität in Deutschland (MiD) [Mobility in Germany]. In connection with MiD 2008, a survey was conducted over 12 months in 25,000 households with 62,000 people. Other municipalities were involved as more regions were included. The types of settlement of the Federal Office for Building and Regional Planning (known by the German initial BBR) are taken into consideration for the analysis and evaluation (cf. MEYER/ MILBERT et al., 2007). Unlike MiD 2002, the nationality (reference to migrant background) is no longer asked in Mid2008.
The "**System repräsentativer Verkehrsbefragungen" (SrV)** [Representative Survey System] collects data on the everyday mobility of people on the basis of household surveys in cities. The SrV was developed at the Technical University of Dresden (TU Dresden) for gathering data on urban passenger transport in the German Democratic Republic. The first such household survey was conducted in 1972. Pursuant to the SrV, data for midweek days (Tuesday to Thursday) were collected. The SrV results are analysed and evaluated for the participating city (random sample of at least 1,000 people per city) and abstracted for various city sizes. The principals are the municipalities, states and transport companies. The scope of the SrV 2008 study covered 76 cities, municipalities and administrative districts on the territory of the Federal Republic of Germany.

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[7] In household surveys on mobility behaviour, the activities outside the home and the mobility of all persons living in the household among selected samples of households are generally gauged on a reference date by means of a standardised questionnaire. As a general rule, data and information are collected on mobility behaviour during work days and Sundays. The survey unit is the household, i.e. the survey documents are sent to the household address for all household members. The unit of investigation is the individual person.

The "**Deutsche Mobilitätspanel" (MOP)** [German Mobility Panel] is a longitudinal study on mobility behaviour conducted as a panel. The persons from the same household are questioned once a year about their mobility behaviour over a total of three years. The participants (all members of the household aged 10 and over) are asked each time in autumn to keep a travel diary for one week. The random sample consists of about 1,500 people (750 households) every year, two thirds of whom are "repeat participants" in the survey, and the other third is recruited newly for the panel.
Explicit "gender questions" have scarcely been broached in the mobility research up to now. There is of course a series of studies, which show time and again, that men and women move differently outside of the home (use of mode of transport, purpose of the trip, etc.). Thus, such indicators as vehicle availability, driving licence possession, choice of means of transport, and purpose of the trip are analysed and evaluated from a specific gender perspective and often also by age group. A differentiation between sex and gender has hardly been made hitherto.
The nationwide "Mobilität in Deutschland" (MID) [Mobility in Germany] will be examined closely in the context of this study.

4. Gender aspects in mobility in Germany – Basis for a gender balanced analysis and evaluation

Participation in society is a precondition to equal opportunities, irrespective of a person's sex. This is determined essentially by mobility opportunities as well, whereby easy access to the places of residence, work, care, education and cultural institutions is important. That the mobility of men and women differs can be seen in all phases of life. Only a differentiated analysis of mobility behaviour from a gender perspective can provide a realistic picture of the societal, social and spatial conditions for mobility (cf. STIEWE/ KELP-SIEKMANN, 2010).

The formation of reference groups (known as gender groups, e.g. older people, people living alone, persons with reduced mobility, people in family households, people with a migrant background) is based on the premise that the mobility and transport behaviour of these groups is "homogeneous" owing to certain attendant conditions and similar needs. The concept of reference groups was derived from the designations of phase of life (MiD), lifestyle/mobility style and household types (MiD), traffic sociological groups (SrV) as well as studies on the mobility behaviour of behaviourally homogenous groups, or on the living situation or the mobility behaviour of women. Common criteria for the formation of such groups are occupational activity (position in the work force), position in the occupation, sex, age, vehicle availability, and the presence of children in the household (cf. HOLZ-RAU, 1990).
Significant indicators for the formation of reference groups from the gender perspective and in reference to mobility behaviour were developed on the basis of a comprehensive literature research (Figure 1). The central factors for determining the mobility behaviour of gender groups turned out to be the social situation (single, single parent, partner), occupational activity and the presence of children in the household (care, accompanying mobility). Other significant factors are age, sex, phase of life, household type, economic status, vehicle availability and region type.[8]

[8] This structural typing by the BBSR breaks Germany down into three region types and nine district types, according to population density as well as the central function of the core cities of the regions (MEYER/ MILBERT et al., 2007).

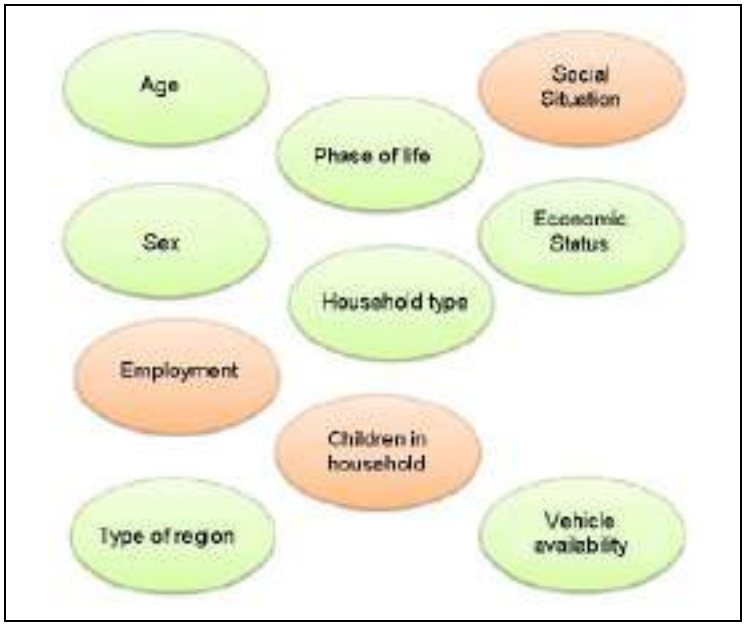

Figure 1. Indicators for the formation of the reference groups

The following reference groups with gender reference ensue: Children and young people, people with a migrant background, persons with reduced mobility and people in specific situations of life.
In what follows, the mobility behaviour of the reference group "people in specific situations of life" will be analysed from MID 2008 data as a first step:

- Single parents (1 adult and at least 1 child under 18)
- Single-person households (people aged up to 64)
- Family households (2 adults and at least 1 child under 18)
- Elderly people (aged 65 and over)

The observations are each time differentiated by gender.
The group of people living alone is, as expected, characterised by a very high percentage of women (88%); the average age is 42.2. More than one fourth (26%) of the households in this group has no car.
The group of elderly people stands out with 55% women, which is explained by the higher life expectancy of women. Almost a quarter of this group too has no car.
Only 2.4% of family households have no car; 38% of the households have a car, and 50% have a vehicle. At 40.00 years of age, people from family households have the lowest average age among the reference groups. Apart from the group of elderly people aged 65 and over, the group of people living alone has the highest average age (46.6). An examination of the age group shows that 58% of men living alone are concentrated in the 30 to 59 age bracket, while a relatively balanced distribution among all age groups can be observed for women. The number of households without a vehicle among people living alone is 29%.

5. Differences in mobility behaviour – Some results from the "Mobilität in Deutschland" [Mobility in Germany] survey

With regard to the differences in living situation in terms of gender, ethnic group, origin and socialisation, there is a perceptible tendency towards harmonisation in many areas. However, women are as before at a structural disadvantage in many social areas, in particular as regards income, working conditions or assets. In addition, irrespective of their occupational activity, they are sill responsible for the most part of household tasks such as bringing up the children, caring for dependents, housekeeping, etc. They need to move about more in order to carry out these tasks and consequently their mobility is different from that of men. Women go about more often on foot or by public transport.

Statistics show that mothers, for instance make 4.3 trips per day, compared to the overall average of only 3.4 trips per day in Germany (MiD 2008). An increase in occupational activity by women – especially mothers – does not however lead to equality between the sexes, but in doubling the workload for women whilst conditions tend to remain pretty much the same for men. On the other hand, there are no significant differences up to the age of 30 – if only gender is taken into account, irrespective of the living situation.

Some selected results of the analysis and evaluations of the MiD are discussed below (all persons aged 18 and over are taken into consideration).

5.1 Driving licence possession

A key precondition to mobility is a driving licence (Figure 2). Overall, 93% of men and 83% of women have a driving licence. The number of people with a driving licence has continued to grow in recent years. If the growing number of driving licences is considered specifically in terms of age groups, however, a slightly declining trend is perceptible among young adults: 87% of women and 85% of men have a driving licence, making this the only age group in which the number of women with a driving licence is higher than that of men. Women in all age groups are catching up in driving licence possession; however only 49% of women aged over 74 have a driving licence.

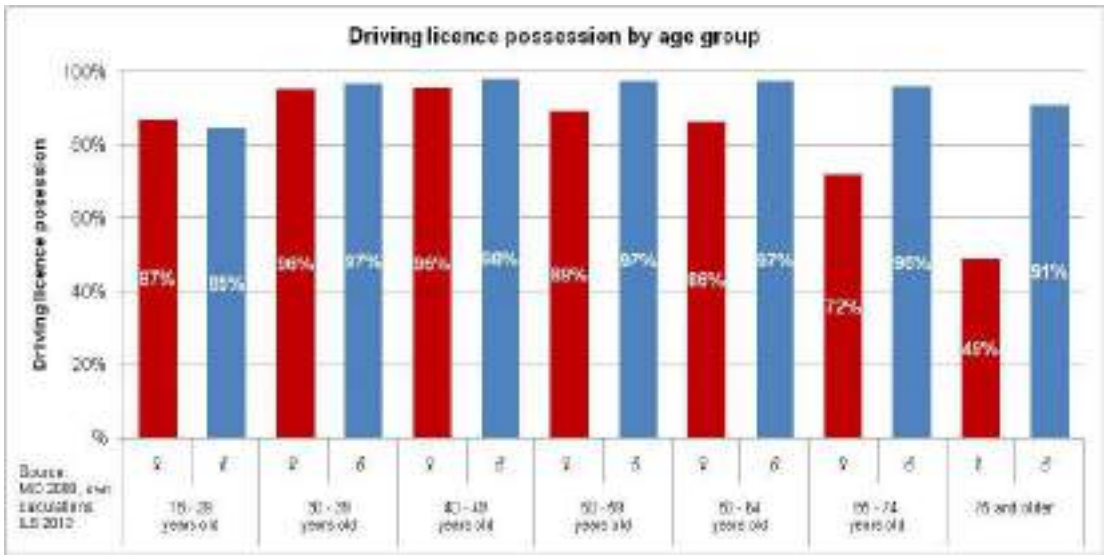

Figure 2: Driving licence possession by age group

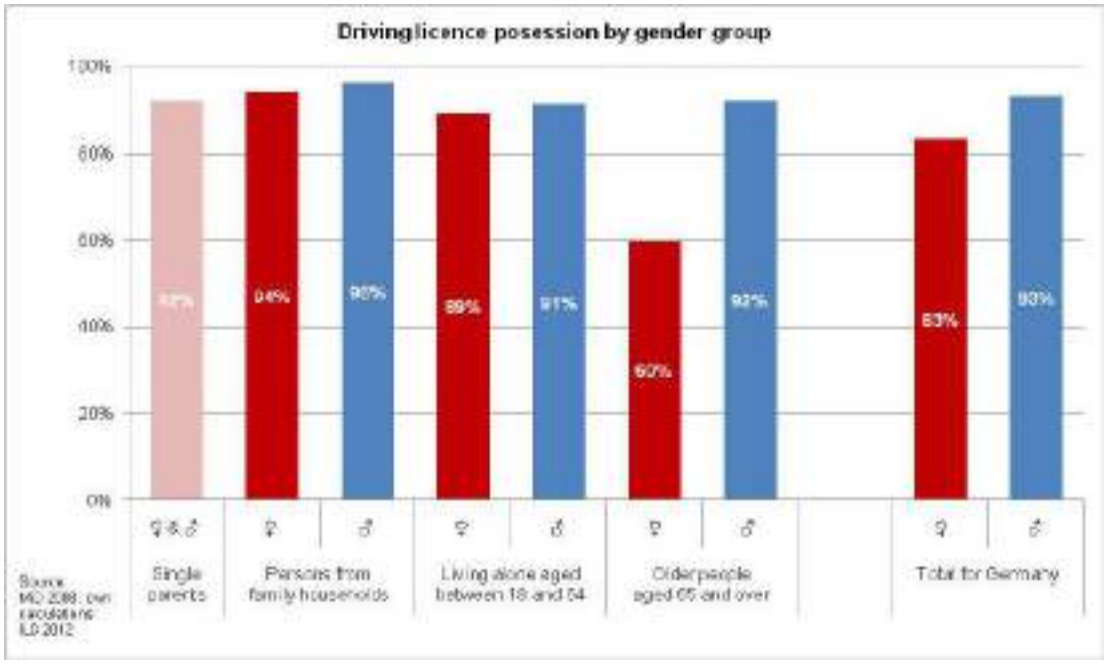

Figure 3: Driving licence possession by gender group[9]

Differences in driving licence possession are clearly evident depending on the living situation (Figure 3). Family households have the highest level of driving licence

9 There were (seven) overlapping cases between the group of elderly people and single parents as well as between elderly people and people from family households (210 cases). The cases concerned were assigned to the group of elderly people.

possession (men and women alike). Similarly, 92% of single parents[10] (88% women) have a driving licence (above average, therefore).

5.2 Vehicle availability

Apart from a driving licence, a decisive factor for mobility behaviour is the availability of a vehicle (Figures 4 & 5). Young women have a driving licence more often than men in the same age group, but they have less often a vehicle available. Overall, 83% of the men but only 72% of the women indicate that they can have a vehicle at their disposal at all times. That possession of a driving licence is not necessarily accompanied by vehicle availability can be seen in the group of young adults in particular. Across all age groups, men tend to have a vehicle at their disposal more than women. If women can avail themselves of a car, they are often not the owners of the "available vehicle." This is explained by the fact that the owner of the vehicle (especially of the first vehicle) is often the man. It can be assumed that women will have to forego the use of the vehicle more often, if there are more people than vehicles available in the household.

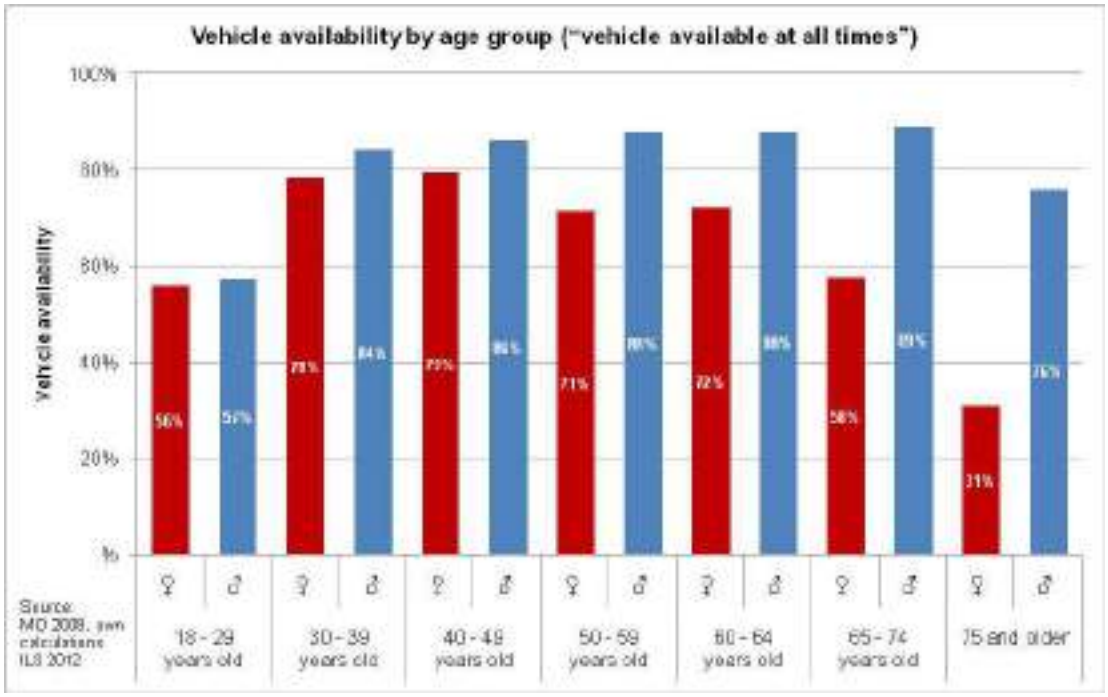

Figure 4: Vehicle availability by age group

[10] Since the proportion of men among single parents is only 12% (54 of the respondents), no gender-differentiated presentation was provided.

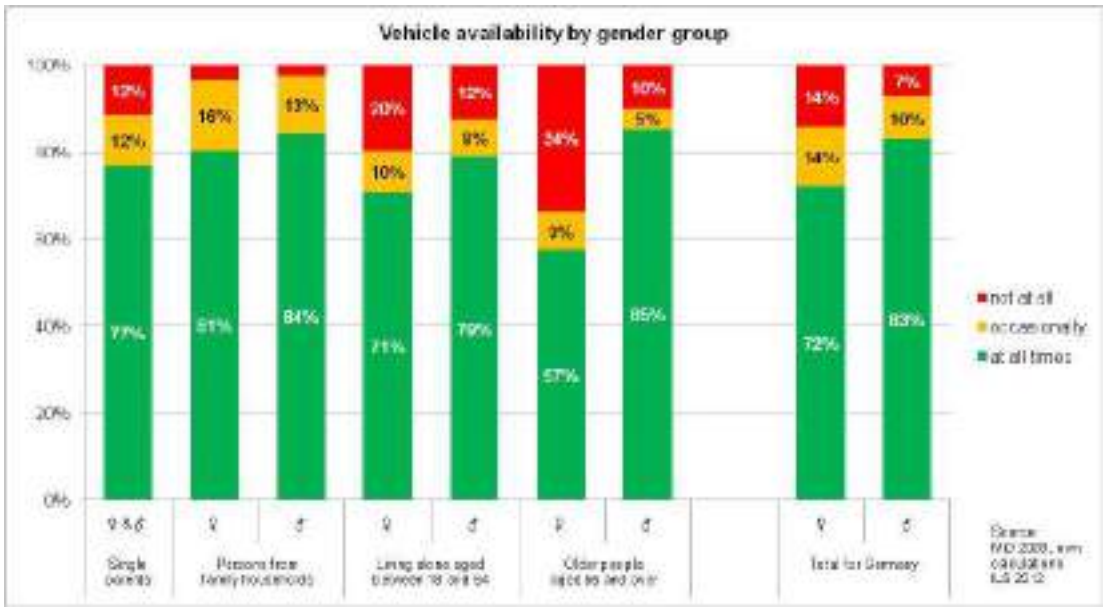

Figure 5: Vehicle availability by gender group

If income is considered in the equation, then more than half of low-income households do not own a vehicle nor can avail themselves of one. These are mostly pensioner households or households without children. Single parents constitute an exception, because in spite of their low income, they often do have a vehicle at their disposal, so as to be able to meet their multiple mobility needs and pressures. It becomes evident, therefore, that unlimited access to a vehicle is not the rule, and that there are clear cut differences depending on age and the respective living situation.

5.3 Use of means of transport

Women get about on foot decidedly more than men; this can be seen in all age groups as well as in all the different living situations (Figure 6). There is scarcely any difference between the sexes perceptible when it comes to use of public transport. Only older women clearly use public transport more often than men, which can be attributed to the fact that fewer of them have a driving licence. Most trips with the vehicle are undertaken by men from family households. It can be said overall, that the car is the means of transport used most often up to old age, and that men tend to get about by car more often than women. The use of the car is in large measure also determined by vehicle availability. If a vehicle is available, it will be used.

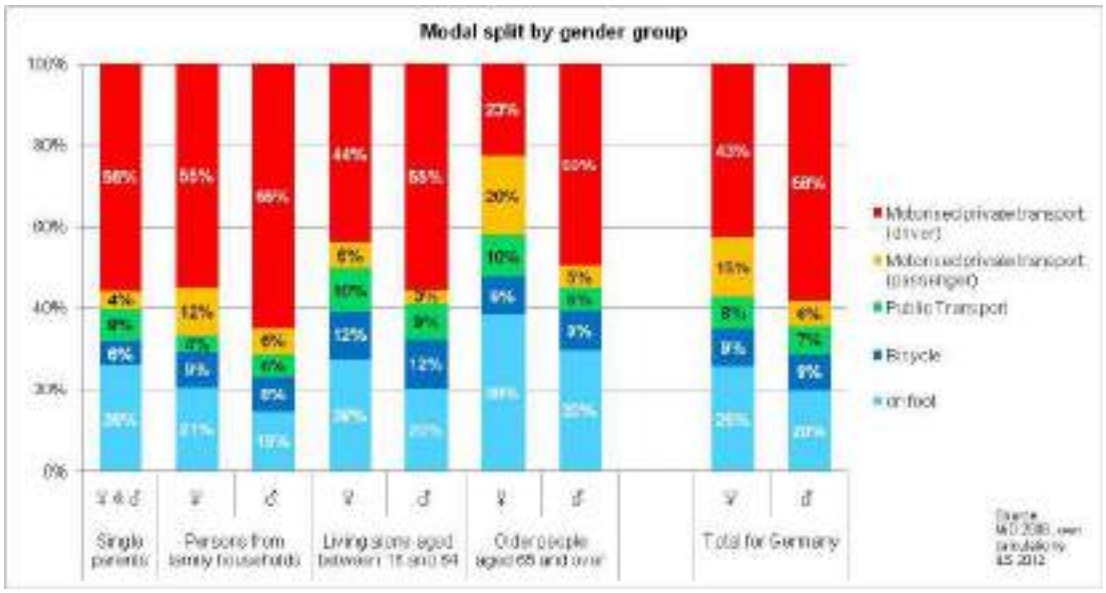

Figure 6: Modal Split by gender group

5.4 Mobility purposes

Clear differences between the sexes and in respect of the living situation can be gauged when considering the mobility purposes, where age plays a decisive role as well (Figure 7). Thus, the proportion of accompanying trips by single parents and women from family households (18% or 20%) is clearly higher than in the other groups. The number of shopping trips by women from family households (23%) is also higher than that by men (15%). At the same time, the proportion of commuting to and from work and business trips by women is clearly smaller than by men of the same group. This points to a traditional division of labour, in spite of the increasing occupational activity among women. Mobility for leisure time activities has the smallest share in the group of women from households, with 28% of all trips.

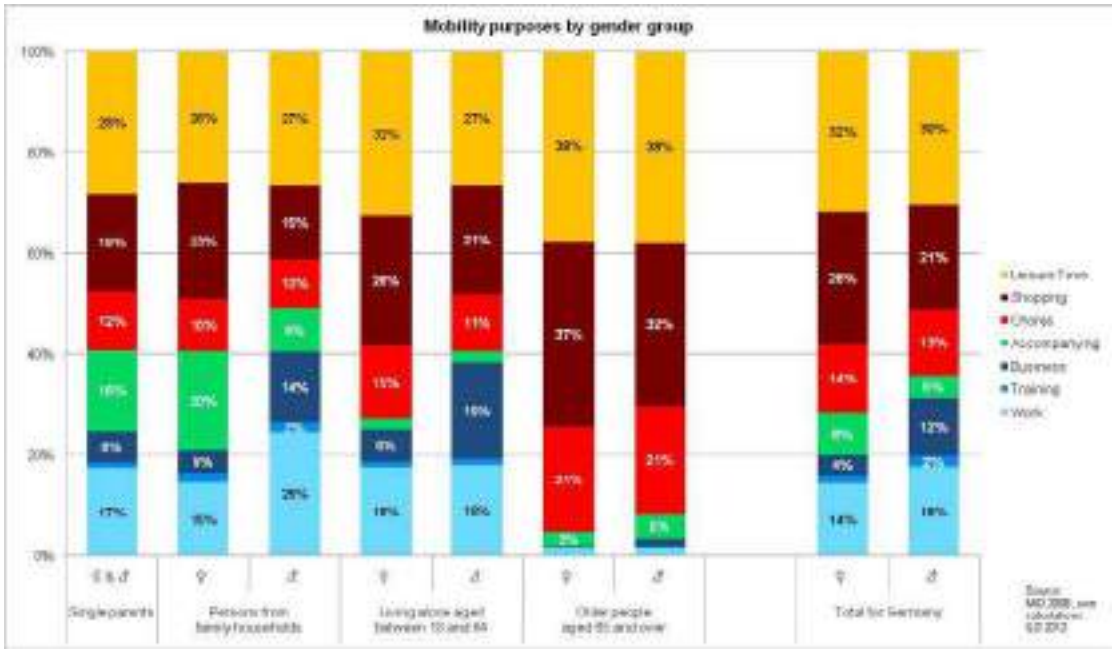

Figure 7: Mobility purposes by gender group

5.4.1 Accompanying trips

Accompanying trips (accompanying as the main mobility purpose) are trips where a person accompanies other people. The main purpose is not one's own objective, but the accompaniment – and thus the objective – of the person who is accompanied. An altogether typical accompanying trip by mothers is taking children to the kindergarten. A typical accompanying trip by children, on the other hand, is accompanying their mothers when they do the shopping. The main mobility purpose of younger children in particular is in large measure to accompany adults.
Single parents and women from family households tend particularly to accompany other persons, accounting for 16.1% or 19.9% of all trips. For younger people, people living alone and elderly people, accompanying as a "main mobility purpose" plays only a subordinate role. This does not mean, however, that they are always alone on the road, but that they have the same "objective" together with others.

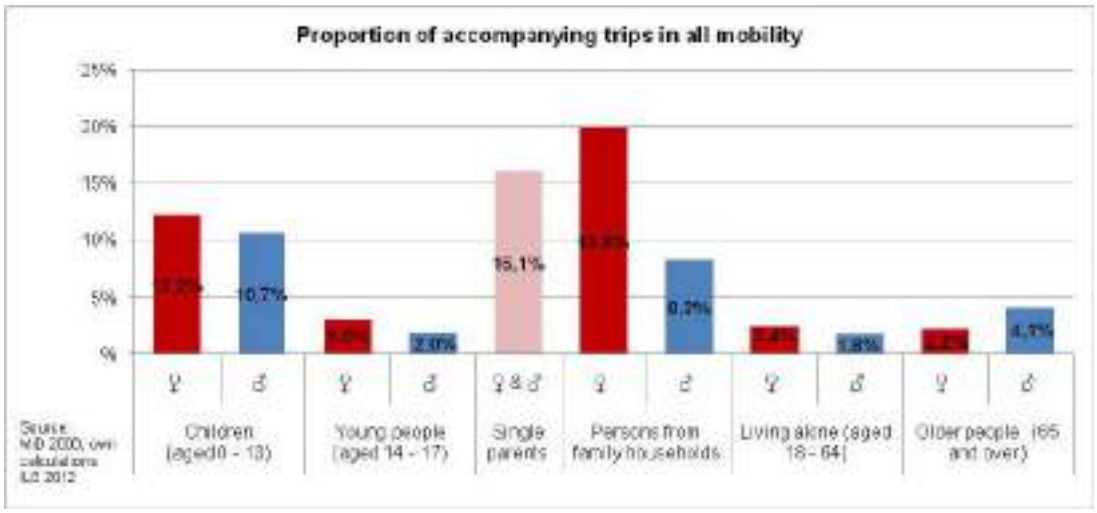

Figure 8: Proportion of accompanying trips in all mobility

5.4.2 Commuting to and from work

When considering the use of the main means of transport for commuting to and from work, the car turns out to be the most widely used means for the groups. It turns out, however, that women use the car, including the work vehicle, less than men. Apart from the elderly people – only a small segment of whom are still working—women living alone use the car the least. They cover nearly 40% of such commuting with environmentally friendly means of transport, compared with only 24% for men from family households.

Figure 9: Main means of transport for commuting to and from work by gender group

5.5 Proportion of trips, travel times and distances

Clear differences come to the fore among the reference groups in the central mobility parameters “mobile on reference day,” proportion of trips, daily travel time and distance covered (Figure 9). The number of daily trips between men and women scarcely differs, but clear differences do emerge depending on the living situation. Thus, single parents account for the largest number of trips per day (4.2), whereas older women account for only 2.6 trips. 95.5% of single parents were en route on the reference day, and account for the longest travel time with about 100 minutes per day. The average distance covered (10 km) is clearly shorter than that covered by men from family households (16 km per trip). The daily routine of single parents, but also of women from family households is characterised by a variety of trips for care and accompanying purposes, often made on foot, and considerably time consuming. Elderly women have the lowest mobility rate: 20% of them were not at all on the road on the reference day; they make 2.6 trips per day of average, and are en route for ca. 64 minutes, while they make a large portion of such trips on foot.

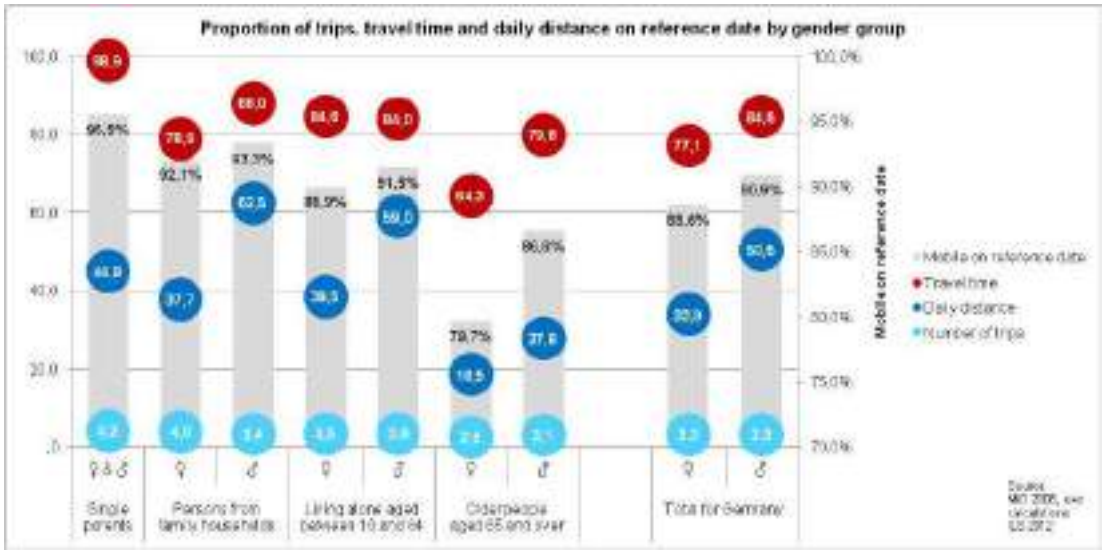

Figure 10: Proportion of trips, travel time, daily distance on reference date as well as number of mobile persons by gender group

6. Conclusion

The analysis of the design of major mobility surveys has shown that whereas gender aspects have been duly included in various surveys, they have hitherto been broached only to a limited extent in evaluations and publications.

Analyses and evaluations of the available data show that there are differences in the mobility premises and behaviour between the sexes.

More measures are therefore needed to restore equality between the sexes, whereby a key precondition is to make the status quo visible and to analyse and evaluate the available survey data in terms of gender mainstreaming.

Gender equality cannot be achieved without taking migration aspects into account. With gender mainstreaming the focus is turned to these structural differences, but at the same time the different needs, interests and requirements of men and women are sharpened within the groups (depending on the living situation). The social position, age, but also ethnic background come into focus. This requires that corresponding data be collected as well. For instance, there has been little knowledge (and hardly any data) available hitherto about the mobility behaviour of people with a migrant background. The current ILS research project entitled "Mobility of people with a migrant background and social discrimination through unequal mobility opportunities" can provide the first leads.
Even though the federal government, the states and municipalities in Germany are required to implement gender mainstreaming and thus gender monitoring, there are few gender indicators on the mobility front and data analysed in terms of gender mainstreaming.
Nationwide surveys such as "Mobilität in Deutschland" (MiD) [Mobility in Germany], "System repräsentativer Verkehrsbefragungen" (SrV) [Representative Mobility Survey System] and "Deutsche Mobilitätspanel" (MOP) [German Mobility Panel], but also mobility surveys conducted at the municipal or district level, already offer a sound data basis differentiated according to gender for gender monitoring, which can also be used for planning purposes.

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REGULATORY MEASURES TO REDUCE LOCAL RISKS AND VULNERABILITIES IN PLANNING DECISIONS

Pınar Ertan[1]

Abstract

During the past decade, tools and frameworks for global disaster risk management have shifted the priorities from emergency management to pre-disaster risk management, which demand new tasks from urban planning. Safety and resilience at local, national and global levels became a shared accountability which brings in a prominent role to the planning discipline in reducing local seismic vulnerabilities via defining a local mitigation strategy. The international frameworks of pre-disaster approach bearing proactive strategies could not be easily and conveniently internalized and improved by the developing countries.

Local seismic attributes as primary indicators for urban risk management highlighted that the requirement of constituting a common language of mitigation should be clustered at the local level and linked to the international framework at the upper scale. The urgent requirement of a local mitigation strategy, which is self-organized and less dependent on current politics could provide a safety ground for urban risk management extended to the national level.

In the local context, the so-called Disasters Law, the Development Law and Act on Regeneration of Disaster Prone Areas do not provide the necessary concern and means for safety in urban planning and have no aspiration to devise appropriate tools for mitigation. The role of city planners', who could mainstream a holistic approach and facilitate community participation in decision-making processes, is hardly apparent in legislation. The constraints and possibilities in urban mitigation planning methodology provides a new area of progress which defines new objectives and roles for planning as risk mitigation and the planner as an actor accountable to utilize local, national and global capacities in mitigation. In mitigation planning, the legitimacy of the planning method and the planner is neither challengeable nor coercive but should be developed over a new ethics for the affected communities and local initiatives. The emergent requirement of building local capacity to be integrated with the national mitigation strategy is examined through the case of disaster mitigation plan Fatih district in Istanbul.

The local capacities, vulnerabilities, and the ‘risk sectors’ in the district, the regulatory measures to develop a mitigation plan, the obstacles to be integrated into the current policy structure and international frameworks will be explored via empirical data of the Fatih District. This reasons challenging the utilization of local capacity in mitigation including technical, organizational and political failures and defects are to be taken into account to build up new connections to the global framework through spatial and non-spatial terms of risk reduction.

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Keywords: Risk reduction, mitigation planning, local capacity, urban planning, local seismic attributes, vulnerability

1. Introduction

1.1 The Definitions of Risk

Risk is a peculiar and intermediary state between security and destruction where the perception of threatening risks determines thought and action (Adam, Beck, Van Loon, 2000).

For many years, evaluating risk as "destruction", promoted actuarial methods of rationalist approach, has reduced risk in to the probability of loss through accepting a certain level of loss at the beginning (Adam, Beck, Van Loon, 2000). Post-disaster approach prevailing relief and rehabilitation was the product for this claim failed by the last decade. Social dimensions of risk embedded in natural disasters and socio-technical capacity to adopt in to a new system shock was ignored and tragic consequences was faced in worldwide 1999 events. Risks as complexities both alter and interact community and create different levels in 'the willingness to accept risk' related to the difference in between dangers and risks (Luhmann, 1993). Whether dangers are externalities that are uncontrollable, initial definitions in rationalist approach refer to risks are controllable by decision making but in urban systems, risks and dangers evolve in to each other creating a level of uncertainty The uncertainty refers to relative levels of perception, ignorance or speculations in communities. Today even security might have connotations in other forms of risk as 'socially constructed phenomenon' (Beck, 1999). The dynamic structure of risks grown out of unintended consequences in transnational or global scales, hypothetical assumptions and irreversible interventions built up a wide gray area to search new ethical ground for reducing risks. Mitigation is an initial step to that, 'precaution through prevention' (Beck, 2006) rather than compensating risks; was a new strategy adopted to reduce risks at all levels for everyone. Further, how to build mitigative capacities is still a legitimate question for communities to call for new technologies of deciphering urban risks and developing new socio-technical capacities for prevention culture (UNISDR, 2005).

Moving from industrial society to information society, cities on the edge of transforming, growing or contracting as a result of deindustrialization had a major effect on change in population trends and urbanization. Urban risks and vulnerabilities pooled in cities through accelerated geographical concentration of population and productive capacities in limited areas (Balamir, 2009) which are rather pervasive in developing countries. ‘The modern approach to foresee and control the future consequences of human action’ was shifted to mitigate risks which were ‘unintended consequences of radicalized modernization’ (Beck, 1999). Modern risks or man-made hybrids are situated in a combination of natural hazards and urban risks constituting natural disasters which were aggregated in a way that the impacts of externalities: natural hazards and internal factors of urban system: urban risks are became uncertain to be separated distinctly. The uncertainty at first level is related to the inadequacy of socio-technical capacities which construct the ability to discriminate between externalities and internal factors to build proactive capacities.

At second level, uncertainty stands with a territorial ambiguity as a result of time and space compression and distantiation create the potential of contagious risks. In other words mystery hides in the problem: Do we know urban systems adequately to diagnose risk generating factors and emergencies to build consciousness and capacity?

1.2 Conflicting Perspectives in Risk Reduction

Under the shadow of seismic risks and other natural hazards, Turkey is inadequate in diagnosing uncertainty or building capacity and got far behind to integrate in to international framework. Failure causes are wide range drawbacks on legal, institutional and political processes that Turkey has been faced up. On contrary, the more emphasis given to institutional or legal failures confronting the development of a national mitigation act, the more it becomes hard to enlighten the major flaw to constitute local mitigation strategy while international framework mainstreams the ways of developing a mitigation strategy drawing away from post-disaster paradigm since 1990s.

For developing countries, difficulties to cope with global framework and internalize general principles are quite clear. As social aspects of risk and social differences in local communities are primary factors differentiating the measures in mitigation capacity. As well as, local seismic attributes are primary indicators of natural disasters reveal the significance of starting from a local strategy then built up on it. Global platform for risk reduction and mitigation mentoring to affected countries offer homogeneous principles and actions that could not be easily internalized by developing countries. A bottom-up strategy with a multi-disciplinary framework is required to cling to global framework. Developing incremental and case by case strategy through local praxis; global framework would be rich in risk definitions, emergency scenarios, mitigative measures improving the terminology on global risk sectors as an alternative way to adapt in to emergence.

International platforms under UN determined the primary roles in building an epistemological and theoretical framework parallel to post-disaster approach of emergency management and relief. The turning point for adopting pre-disaster strategy of risk reduction and mitigation has started since 1990 when UN declared that natural events were global threats and a new body: International Decade for Natural Disaster Reduction-IDNDR should be assigned. The worldwide 1999 earthquakes also claimed that the former paradigm could not go any longer and a new approach for risk reduction must be held. Later on, the Yokohoma Strategy (1994) and the Kobe Conference (2005) constructed a common language for developing prevention culture through prioritizing risk reduction, integrating risk reduction in to national, sectoral plans and defining participatory methods as an apparatus for learning programs and capacity building. The transformation period from reactive to proactive state had changed global initiative of identifying risk in quantitative loss scenarios in to a broader concept: 'risk as a socially constructed phenomenon' also shaping society (Beck, 1999).

Brand new paradigm of international community also changed the political function. As 'manufactured uncertainty', risks ‘become a major force of political mobilization’ (Beck, 1999) through the promise of security for future's unintended consequences while clouding present political goals and objectives. The more of a technical capacity building risk reduction is changed in to a matter of governance and policy making to provide sustainable development and optimal risk distribution as a primary challenge to risks emerging not only in particular regions but also in sub-regions or trans-regions (UNISDR, 2005). In order to reduce uncertainty of risks, international framework puts forward disaster preparedness in social, spatial and technical dimensions at local and national levels. Encouraging coordination and dialogue in pre-disaster and post-disaster views, is the primary objective through capacity building in terms of political and legislative frameworks, risk assessment, emergency management, educative and knowledge-sharing networks. Especially risk assessment is underlined as pre-condition for mitigation to be incorporated in to urban planning, mainstreaming sustainable development. Adapting into risk environments, requires both technical and administrative capacities but beyond this international community revealing itself through the notion of risk society (Balamir, 2009).

1.3 Mitigation Planning As Necessity

New task introducing a new ethical ground for planner, would be mediating participatory processes, 'relations of definitions' (Beck, 1999) and mitigation planning. Risks solely taken by the decision maker become danger for affected communities who are incapable of deciding or controlling the situation (Luhmann, 1993). Participatory processes are critical to eliminate the representation problem of affected communities as entitled parties have the primary right to participate to decision making processes through mutual accountability and responsibility. 'Delocalized, incalculable and non-compensable' (Beck, 1999) entities, risks are burdens of all human beings as the prior condition for survival. Risks threat everyone equally but definitions of risks may not. In Beck's risk society (1999); 'relations of definitions' refers to power of defining risks in accordance with hidden agendas that could easily change the dimensions of perceiving risk collectively through making some risks visible while making others disappear. Through participation and transparent knowledge sharing processes in hazard identification and risk assessment; planner could provide an ethical ground for risk prevention without any semantic change implies governing classes to depict risk in accordance with their private political interests. Developing democratic, power-free decisions and institutions for mitigation was an updated objective for epistemological communities, governments and planner as an mediator for coordinating all public and private actors at all levels.

Mitigation planning is the efficacious apparatus for planner to mediate national and local levels of participation and technical coordination of hazard identification and risk assessment. Urban mitigation planning is consisted of the main components hazard identification, spatial risk assessment and planning socio-economic and

spatial terms for risk reduction. Identification of hazards delivered by experts such as earth scientists identifying local seismic attributes including active faults, liquefaction,...etc. and then planners transform the data in to development plans to determine the types and levels of risks in underdeveloped and developed lands and decide the conditions for new development areas (Balamir, 2009). In fact risk assessment; evaluating, estimating and prioritizing risks according to vulnerabilities, potential life and material losses covered through scenarios is an available tool for planner to activate actors, coordinate resources and reduce uncertainty in future. Eventhough the know how was ready to be implemented for mitigation, existing administrative and technical capacities at city level may became obsolete and inert to cope with dynamic risk society.

City level is a center and a medium to collect, coordinate, share risk knowledge from lesser administrative units to national organizations. Planner developing her/his adequacy to mediate socio-technical capacities and administrative capacities at all levels through providing accessibility to local communities in developing prevention culture. Participatory processes mainstream community building and raising risk consciousness are essential to construct collective perception of risk that is known, expected and prevented through local community to society. Mitigation Planning is not a paper work but an adaptive behavior for today to minimize future's uncertainty. International community or local communities may have different definitions of risk and different objectives as conservation or sustainable development but "survival of the fittest" hast both partial and global meanings not depended to political power relations but scientific and social adequacy for adaptation which should be accessible to all socio-economic classes under 'involuntary enlightenment' (Beck, 2006).

Planner's role shifting from predictor to mediator is also an adaptive behavior to share responsibility and accountability for unintended consequences for all levels of society. From a realist perspective, planner's adequacy to intervene risks is context-dependent as it is primarily restricted to national legislative measures which may present capabilities and incapabilities in professional praxis. The absence of a compatible legislation and executive institutions for mitigation precisely paralyzes planner to play any role in the face of uncertainty. In Turkey, the dichotomy of international discourse and national discourse on risk reduction is grounded in this kind of paralyzing effect and clearly observed recently. Pre-disaster approach prevailing mitigation is incrementally blocked through political and legislative drawbacks. Planner is armless as her/his functional capacity is eliminated through political constraints for prevention of risks.

1.4 Turkey's View: Drawbacks and Constraints on Mitigation

Urban vulnerabilities engendered by seismicity and flooding hazards in Turkey are historically inherited from location and clustered in buildings. People were settled where water and fertile land was available and trends of urbanization developed according to former risk generating conditions. High population, unauthorized building stock and reinforced concrete technology speeding up the growth of cities

without applying professional engineering services and provision, created unintended consequences and transformed cities in to urban risk pools. A parallel with developing construction practice, risk prevention strategy developed around building stock as retrofitting and post-disaster approach as relief and emergency management formulating the prevention of losses after disasters happened (Balamir, 2009). To make matters worse, natural disasters were perceived as fatalistic externalities and life losses are accepted as the minimum level of risk by certain parts of society.

Turkey is exposed to seismic activity as located on Eurasian Geological Plate including North Anatolian Fault from east-west ax, East Anatolian Fault and Western Graben Complex at the Aegean Sea. Recent major earthquakes happened in between 1903-1999; at Adapazarı, Gölcük, Yalova and Bolu-Düzce; more than 100.000 people died, 150.000 people injured and 420.000 buildings were suffered significant damage (AFAD, 2009). Last major earthquake was happened at Van in 2011 with a magnitude of 7,2 in which tragic consequences and disaster management failures are observed as most of the lower class population has been still living in aid tents or containers and exposed to secondary hazards such as tent fires and lost their lives. Notwithstanding relief and disaster management failures, another conflict in resource management was declared as Compulsory Earthquake Insurance Fund necessary to reconstruct buildings after disaster was spent for road construction, social security expenditure and government debts, formerly by national government (Alp, 2011). It is crystal clear that there is an underestimation of risk and organizational ignorance in variable circumstances which produces intolerable unintended consequences, secondary risks and system faults that are even duplicating and worsening disaster impacts.

In Turkey, the definition of risk and risk perception is shaped under the general apprehension; "Earthquakes don't kill people, buildings do." Mitigative measures are applied through retrofitting of buildings and building codes could only be revised in 2007 as Earthquake Design Code. Risk knowledge produced by civil engineers and geologists and risk assessment concentrated on failures in building stock. Shortly, city level risks were reduced in to building stock risks. However cities as urban risk pools and complex systems, involve variant conflicts related to land use planning, scarcity of land and green areas, high population concentration, inadequate infrastructure and so on which could not be handled solely through retrofitting and building stock oriented approaches.

1999 events triggered a new structuring under Earthquake Board of the Prime Ministry; Disaster Affairs referring to Disasters Law (7269) established to develop disaster resistant buildings and monitor seismic activities; Development Law (3194) includes decisions related to disaster risk reduction and development such as Regulations on Construction in Natural Disaster-prone Areas but merely focused on post-disaster activities. As an encouraging step, Disaster Affairs provided that developing multi-hazard maps by local governments and assigned responsibilities for municipalities but regional or sectoral plans for mitigation is still off the agenda. National strategy for mitigation was about to be developed in 1989 when

International Decade for Disaster Reduction was declared. National Committee established under the Ministry of Public Works and Settlement to develop national action plan for risk reduction (Ertan, 2009). National Plan assigned to State Planning Organization (DPT), partially applied and implementation was interrupted by shift in the political wind alluding the problem of non institutionalization of mitigation which should be above politics in practice. National Earthquake Council (2000) and Earthquake Information Council (2009) under Disaster Affairs were two distinct models indicate different conflicts. National Earthquake Council (UDK) was established by the purpose of scientific mentoring and formed of multi-disciplinary members from academia but unfortunately abolished in 2007 for the basis of being functionless. Earthquake Information Council (DDK) involves the representatives of related ministries, research institutes and a minority of five academic member selected by the Prime Minister. In institutional arena, the ground of the action for legitimation is shifted from academia to central government. Denying, transparent participatory process of defining our own risk may rise another danger of comprising powerful actors who 'maximize risks for others and minimize risks for themselves' (Beck, 2006). Risk definitions should be represented via broader sectors and participation of independent actors such as academia and NGOs. As Beck asserts that 'even the most restrained and moderate objectivist account of risk implications involves a hidden politics, ethics and morality' (Beck, 2006) but at least defined political interests could be eluded from ethical ground for mitigation. National Mitigation Act and Mitigation Fund should be established to provide a necessity area to steer lesser administrative units and develop a holistic approach.

An obtrusive drawback for mitigation in terms of legislative framework was Act on Regeneration of Disaster Prone Areas which was actually a secondary disaster in case of local communities who have no legal support to object or counteract to compulsory regeneration activities. Urban regeneration is implemented as a mitigative action to redesign disaster prone areas. The process composed of reconstruction and construction of reserve areas for new settlements through expropriation by Housing Development Administration (TOKİ) under the Prime Ministry by transferring all the rights of planning and design. Local communities' counterclaims could get a stay of execution by the court and entitled parties indebted to government, were as if penalized with hard payment conditions. Not depending on any other legislation, Act on Regeneration of Disaster Prone Areas presupposes the denial of significant acts on military areas, sea fronts, historical and conservation areas, fields and olive orchards Local communities should own the rights of protest and bargain in large scale urban decisions such as regeneration. Otherwise, monopolistic tendencies and center-local tensions generate social risks and parallel hegemonic spaces impeding policy learning stages and the diffusion of prevention culture for all levels of society.

Mitigation is a new borne area for Turkey captured by post-disaster strategies, engineering concepts and risks on building stock. Despite the post-disaster approaches as reconstruction, rehabilitation and relocating of settlements at city level, risk reveals in more complicated and socially constructed versions such as

dangerous land use in social facilities located on the top floor of gas or LPG stations or historical districts on landslide areas. A comprehensive approach to combine post-disaster and pre-disaster stage is necessary in both fundamental law and legislative framework. A risk definition coping to social vulnerabilities such as lower socio-economic classes have to be considered in legislation. Mitigation both implemented to former legislations and compelled to be exclusively structured as a legislation should be developed and internalized by all actors at all levels in the form of shared responsibilities and accountabilities. The broader feasibility of mitigation allows discarding of short and long-term conflicts and costs that emerge in post-disaster period while providing more space for planner to play his/her role. For the sake of political dependencies and institutional inadequacies, Turkey is maladjusted to new policy on risk reduction that claims to protect natural resources, communities and cultural values. Post-disaster view as relief-based institutions and experts, symbolize a narrow paradigm that oversimplifies urban risks and invites more vulnerabilities and losses in future. As a powerful tool and a technical capacity, mitigation planning integrating hazard identification and risk assessment should be sustained and improved by local governments like a primary step to provide resilience for stratified urban risks evolving at city and duplicating the impacts of natural disasters as it was happened in Istanbul.

2. Analysis

2.1 Istanbul Fatih District As An Urban Risk Pool

Istanbul, an urban risk pool of geographical, historical, structural, infrastructural and social constraints evolved through the historical development. Fatih District at the Historical Peninsula, at the center of the Metropolitan Area harbors all the conflicts originated from its central layout and functional relations. The Historical Peninsula or Old City separated by city walls is situated at Çatalca Peninsula including the entire area; Haliç, Beyoğlu and the Bosphorus at east, the Marmara Sea, three other districts at west (Zeytinburnu, Eyüp, Bayrampaşa), laid upon the west boundary with Bulgaria (Ertan, 2009). Through the history hosting to Greek, Roman civilizations and Ottoman Empire, the district preserves the significance as a center of culture and business. Small industry and wholesales functions contradict and endanger historical structures. Therefore Fatih District is a contextual priority including various challenging attributes for planners and an inclusive prototype for containing all the general problems and constraints that Istanbul is still facing with.

Figure 1. Fatih District and The Historical Peninsula (Google Maps 2012).

The Historical Peninsula is defined as 1st Degree Earthquake Zone (Ministry of Public Works and Settlement, Disaster Affairs Earthquake Zone Map) and Fatih District is evaluated in first ten hazardous settlements.

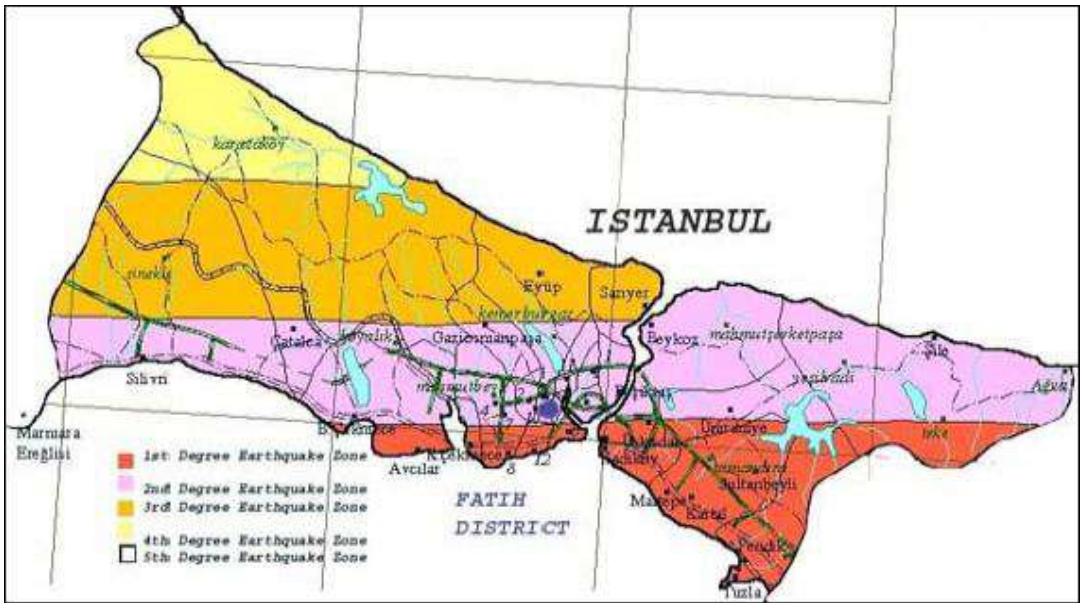


Figure 2. Seismic Zones In Marmara Region (AFAD, 2012).

2.2 A Method for Identifying Local Seismic Attributes

Natural hazards in the district are inherited from the interaction of terrain shape and hazardous geological formations to form various seismic attributes. The first step of

mitigation planning for the district is hazard identification to define, classify, represent and synthesize natural hazards to determine local seismic attributes.

Table 1. The Determination of Local Seismic Attributes in Multi-Hazard Map

[1]Available Data on Potential Natural Hazards	[2]Spatial Categorization of Hazard Areas			[3]Local Seismic Attributes
Seismicity	TERRAIN HAZARDS	LOCAL GEOLOGICAL ATTRIBUTES	HYDROLOGIC HAZARDS	**Multi-Hazard Zoning**
Landslide	Slope	Seismic Geological Formations	Watercourses	2 Hazard Combinations **(axb)**
Earthquake Faults	Liquefaction	Variations in High Peak Ground Acceleration-PGA	Water basin	3 Hazard Combinations **(axbxc)**
Liquefaction	Landslide		Tsunami	4 Hazard Combinations **(axbxcxd)**
	Artificial Fills			5 Hazard Combinations **(axbxcxdxe)**
	Alluvial Grounds			

Potential hazards are determined as distinct hazard potentials such as seismicity, landslide, liquefaction and earthquake faults with 150 m impact area. Natural hazards are categorized under three subtitles. Terrain Hazards are formed out of terrain character with high slope (20-38%) on coastal areas and lower in the mid like a great calix. (90 m to 10 m of altitude) Landslide areas on sharp slopes and soft ground attributed in liquefaction areas and alluvial grounds are the areas with high seismicity just as infill areas (>20% slope) concentrated at coastal parts (Ertan, 2009).

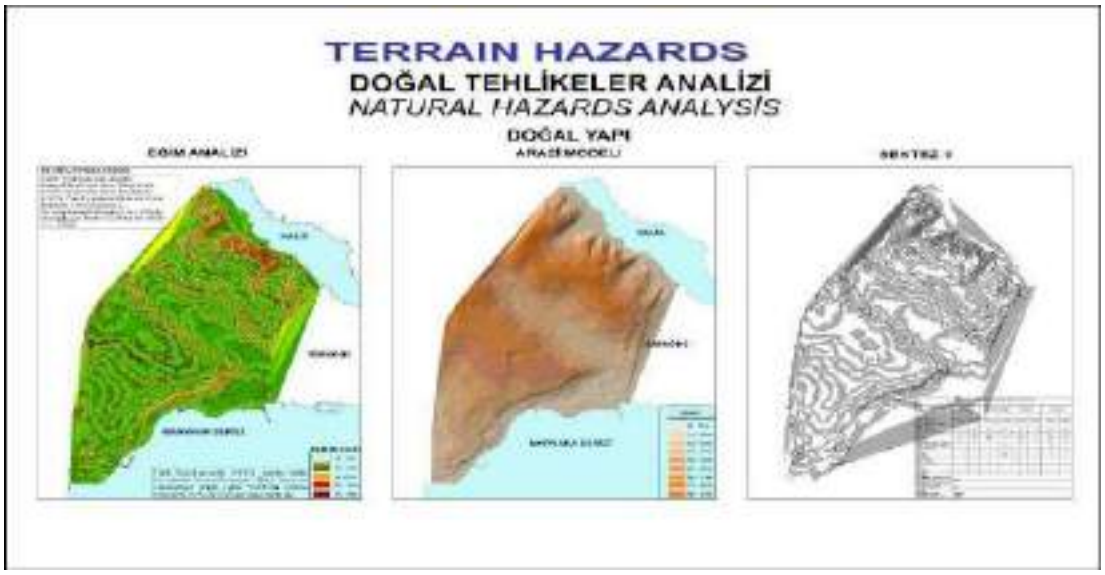


Figure 3. Natural Hazards: Slope Analysis and Terrain Model (Ertan, 2009).

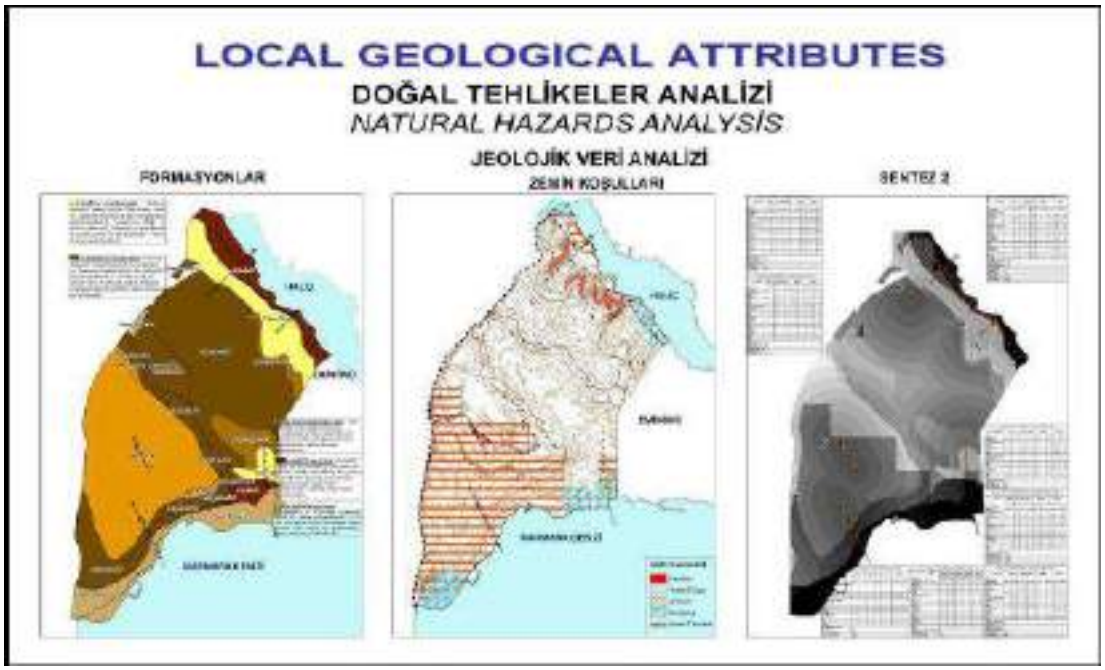


Figure 4. Local Geological Attributes: Geologic Formations and Geologic Data Analysis (Ertan, 2009).

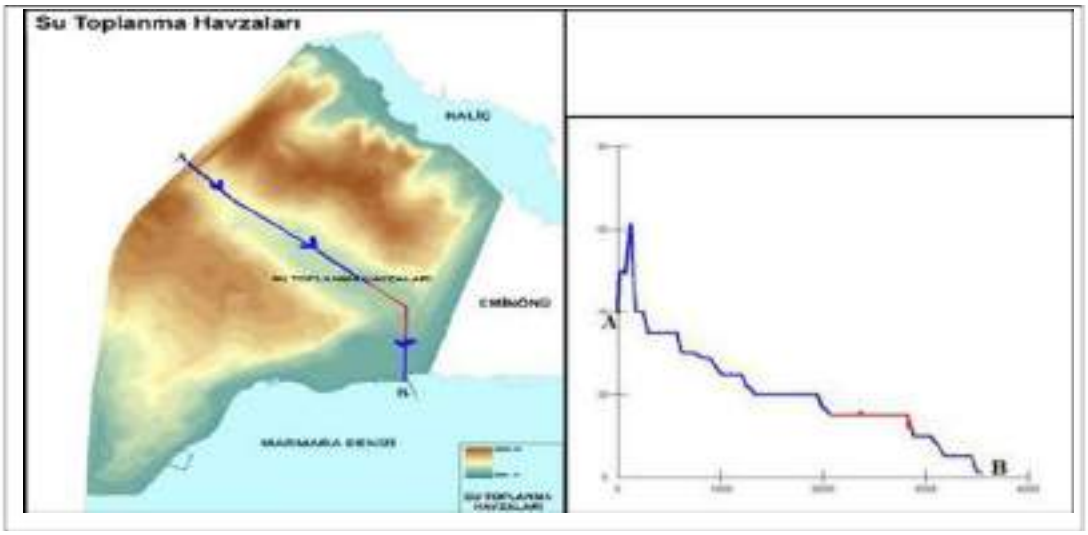


Figure 5. Hydrologic Attributes: Water Basin Model and the Profile of Water Flow (Ertan, 2009).

Local Geological Attributes include fine grained geological formations hazardous for construction and high PGA areas (Peak Ground Acceleration-PGA), seismically active areas with a high value of earthquake acceleration on the ground. In third place, Hydrologic Attributes referring to water basin form of the terrain morphology, tsunami area and old watercourse areas located in the mid of the district laid under the busy street ax holding infrastructure problems and flood hazard.

After natural hazards are examined distinctly, local seismic attributes are determined in accordance with their interactions to each other. Through the areal superimposition of natural hazards in ARCGIS 9.0 program, it is observed that natural hazards form combinations in 2,3,4,5 groups (Table.1) which determined the first level of priority and a ground map for further analyses. In order to evaluate hazards comprehensively and model a form of relationship, hazard combinations are observed and a multi-hazard map showing the most hazardous areas with 5 combinations to lesser are projected in Figure. 5 from dark red to light. In order to select most hazardous combinations a qualitative observation is required as two hazard combinations such as landslide and earthquake fault could generate more powerful impact in terms of their interaction.

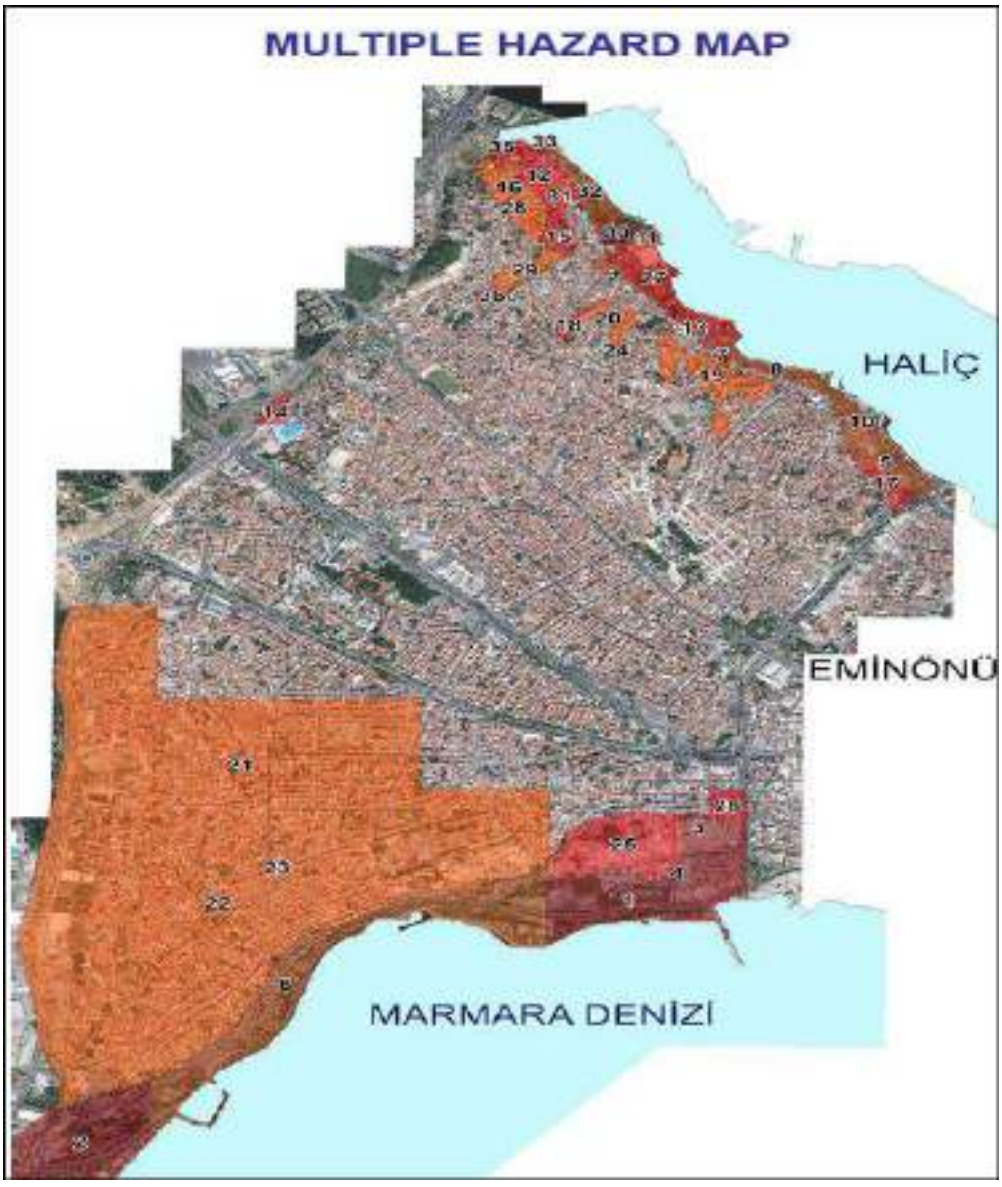


Figure 6. Multi-Hazard Map (Ertan, 2009).

The correlation in between multi-hazard areas and total built area is checked for evaluating total hazard potential of the district. Fortunately, it is observed that natural hazard combinations decrease as total built area (ha) decreases. (Figure. 7)

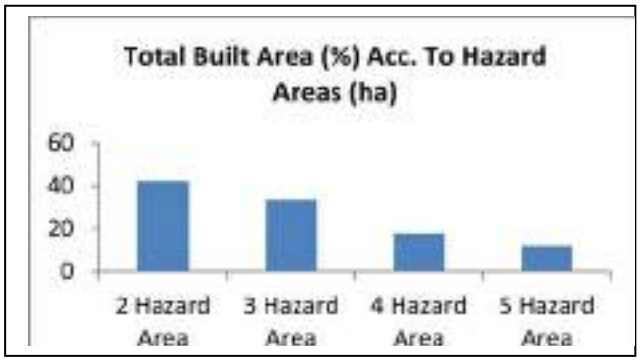


Figure 7 Multi-Hazard Map

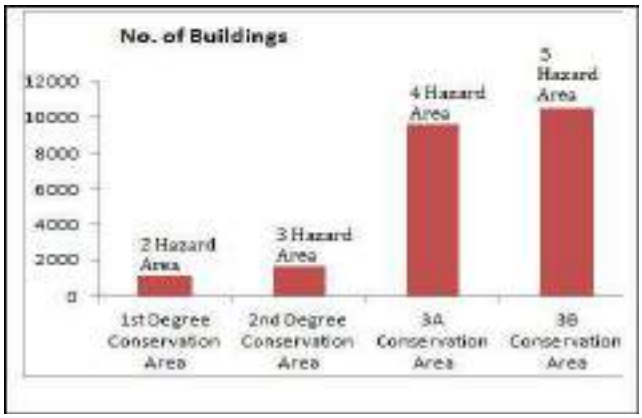
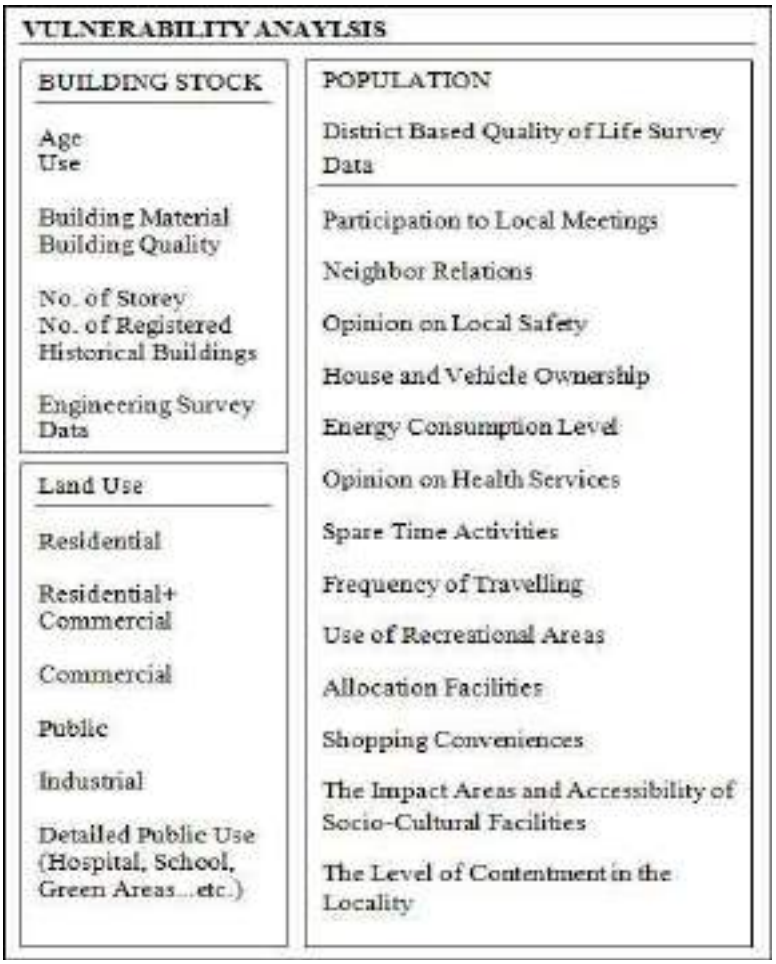


Figure.8 Multi-Hazard Map

It is observed that there is no relational increase in between degrees of conservation areas, hazard areas (ha) and no. of buildings. Hazard combinations decrease as total no. of buildings per conservation area decrease. (Figure.8) After qualitative observation and determining the physical/natural constraints for planner a second constraint is needed to be analyzed: Conservation Areas. By the areal superimposition of Multi-Hazard Map and Conservation Areas the level of allowance to physical intervention and a path for planner is revealed. (Table.4)

Second step involves Vulnerability Analysis bringing out socio-economic input to diagnose social dimensions of local seismic attributes. The socio-economic input embodies building stock, land use and district-based quality of life survey data. In view of physical and legislative constraints social constraints for planner are observed and deciphered. Buildings stock in case of age, material, quality, no. of storey, no. of registered historical buildings, engineering survey data is considered for risks, vulnerabilities and local-historical attributes of site.

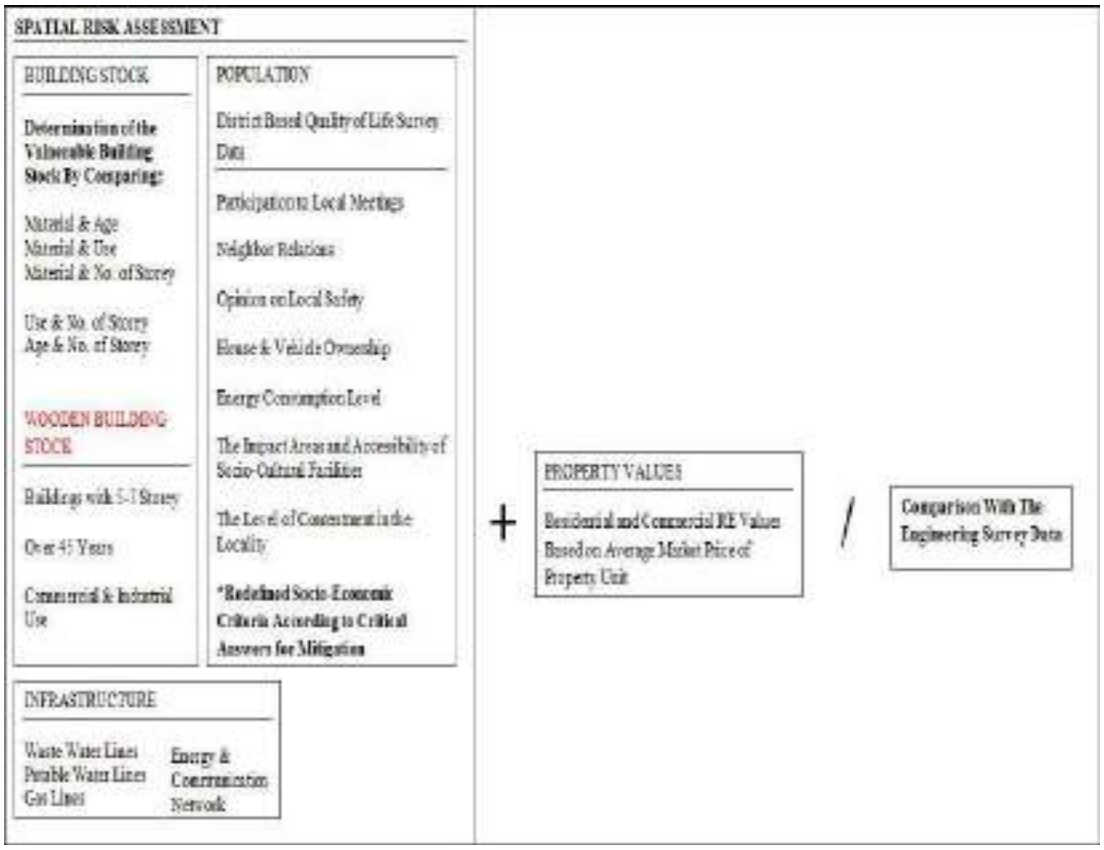
Table 2. Vulnerability Analysis



Land use is checked out to catch connections between risk sectors to residential, residential + commercial, commercial, public, industrial uses and green areas. A detailed public use survey to determine the capacities of emergency centers and public-private use ratio is carried out distinctly. As a significant input, district-based quality of life survey depicts local population to measure vulnerabilities and evaluate the medium for community building.

Spatial Risk Assessment is the third step introducing economic aspects of hazards forming risks which concentrate intensely or distinctly over the district. (Table.3)

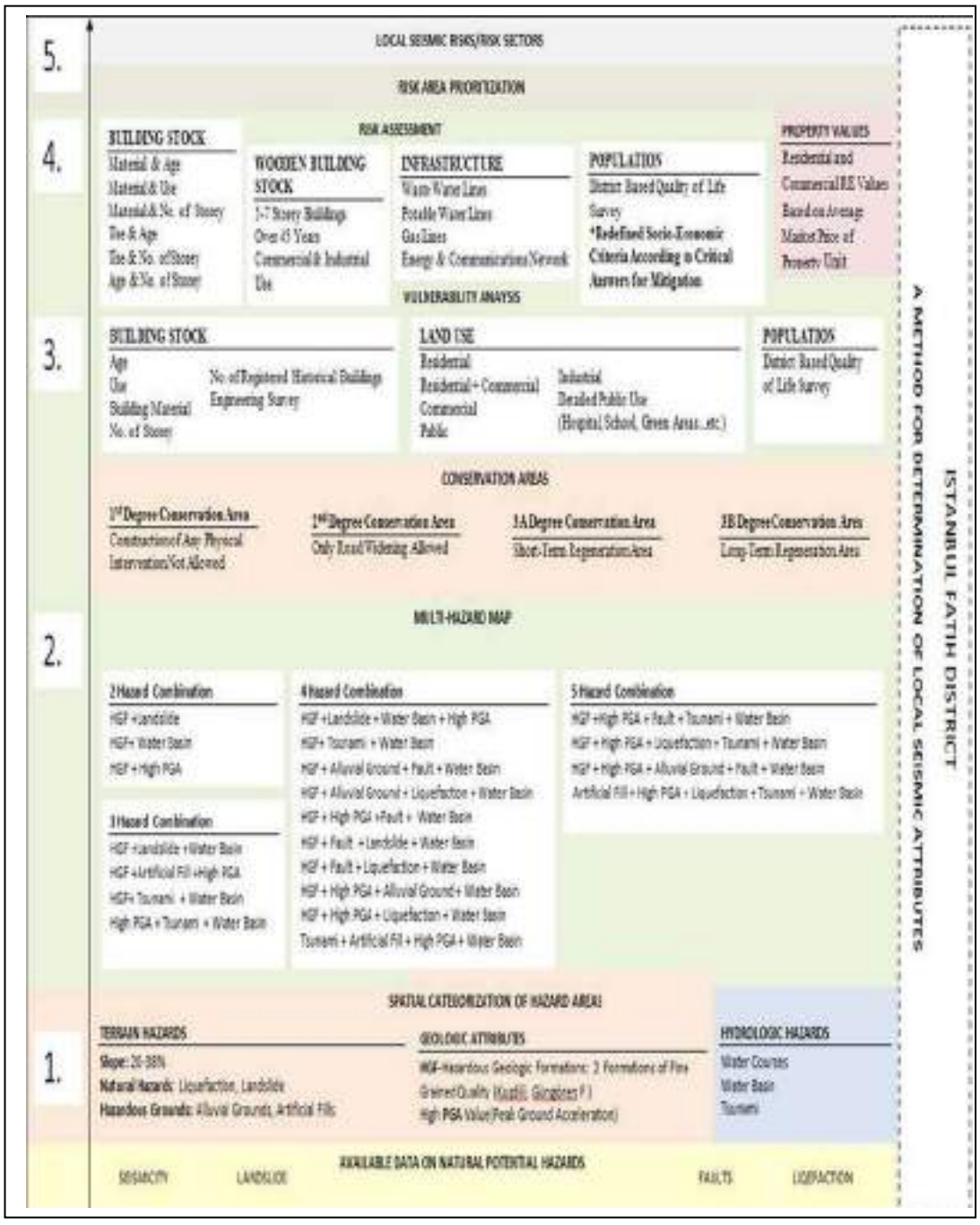
Table 3. Spatial Risk Assessment



Property values projecting residential and commercial real estate values based on average market price per unit of property are integrated to previous vulnerability analysis including building stock, land use and social survey. In order to emphasize local attributes and carry out a dynamic process, criteria for risk assessment was redefined from the marginal or extreme values of the vulnerability analysis which marks risk generating factors as wooden building stock or high level of energy consumption in high risk zones.

In building stock, it was observed that wooden building stock should be examined distinctly; even it is less in amount, hazardous to generate secondary disasters as fires which was general in district's history. Another fine difference is marked as risk-weighted answers achieved from district-based quality of life survey in which yes or no concentration is high at some social survey criteria relatively to others. Therefore, participation to local meetings, neighborhood relations, house and vehicle ownership, energy consumption, accessibility of socio-cultural facilities in impact areas and the level of contentment in the locality are separately examined through spatial risk assessment. Infrastructure as a vulnerable resource and a physical factor to generate secondary disasters such as explosions; gas lines, waste water lines, potable water lines, energy and communication networks are covered in scope of risk assessment.

Table 4. A Method for Determination of Local Seismic Attributes.



Risk Area Prioritization is the last step for determining prior areas for mitigation planning. Combining pre-disaster and post disaster priorities and eliminating short-term impacts of disasters, physical constraints to be eluded in view of emergency management are determined. Emergency measures of local administration are spatially tested for vulnerabilities in road network, availability of designated emergency facilities, temporary accommodation availabilities, emergency storage

requirements and hospital capacities and approximate schools. The capacity adequacy for hospitals and emergency centers designated by metropolitan municipality, temporary accommodation for evacuated communities, road networks for evacuation, school-hospital proximity and earthquake faults-hospitals proximity are the basic criteria proposed for emergency management as a completing step to mitigation planning.

3. Results

According to the findings, Fatih District is exposed to various socio-physical risks and natural hazards likely bear secondary disasters and contagious risks. The emphasis on local seismic areas reveals the way of interaction of hazards are specific to locality. Multi-risk areas determined as a result of multi-level election include common hazardous attributes and risk sectors.

3.1 Old Urban Texture

When multi-hazard zones are monitored, hazardous combinations located at old urban texture are the initial conflict, calls for complementary legislative approach. 1st Degree Conservation Areas contain both 150 m impact area of seismic faults, historical listed buildings and mixed uses as high percentage of health services, education facilities, auto parks, commercial use, manufacturing industry, public use. Old city texture with wooden buildings are the primary problem in case of building stock. Wooden buildings above 45 years/3-5 storey, wooden buildings with industrial and commercial uses, wooden buildings with hazardous uses at periphery and proximate gas lines constitute secondary disaster potential as fires and explosions during disaster. Through narrow road network for 2-3 m, there was a problem of accessibility in emergencies. On contrary, allowance to retrofitting and construction in those areas could invite exploitation of historical and cultural assets. It is required to be ensured by a special Act on Restoration of Historical Buildings and Cultural Assets at Disaster Prone Areas and national fund on mitigation for historical assets.

3.2 Geologic Macroform Risks

Hazardous ground types constitute the basis of local seismic risks. Building stock and green areas located on infill areas, landslide areas, liquefaction areas and hazardous geologic formation with high PGA concentrated on coastal areas and include public use and recreational facilities. Mitigative measures as national early warning systems connecting to global networks, development restriction, height restriction and floor reductions should be implemented to prevent doubling impacts of multi-hazards.

3.3 Building Stock

Building stock vulnerable to seismicity other than wooden buildings are aged (older than 45 years) (Figure.9) and high storey (5-7 storey) buildings (concrete/concrete-masonry/masonry) clustered in 3rd Degree Conservation Areas that allow regeneration. 37% of total stock are adjacent at corner increasing the vulnerability of the area during seismic shocks. Allowance for urban regeneration could be tempting for developing new opportunities by local governments but urban regeneration for the purpose of mitigation is a delicate implementation of participatory processes. public buildings and emergency facilities Demolition of weak buildings, reconstruction, retrofitting and urban regeneration methods should be decided mutually and transparently through dynamic negotiations rather than decisive top down processes.

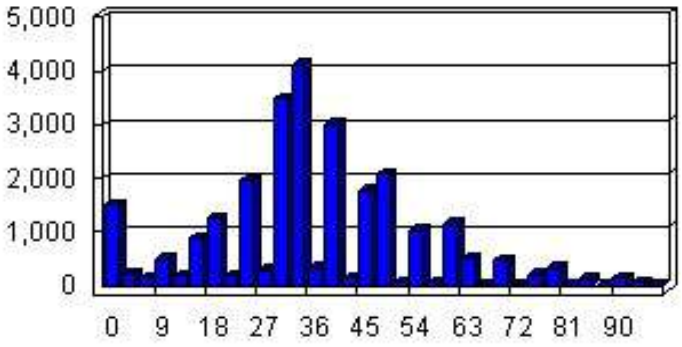


Figure 9. Age of Buildings and No. of Buildings

3.4 Social Inaccessibility

The socio-economic structure is rather depressive as 59% of the local community discard neighborhood relations, 73% discontent with the environment, 66,7% afraid to go after dark and most of the individuals are illiterate. Fatih District is preferred for cheap rents 200-400 TL and real estate values 1000-3000 TL (per unit price) District Disaster Volunteer (MAG) (Ertan, 2009) for disaster management and local community associations as FEBAYDER (Fener Balat Ayvansaray Protection of Tenants' and Property Owners' Rights and Social Collaboration Association) as a counter movement for urban regeneration projects. Social platform for mitigation gathering all small associations could be an innovative step for building community. Social development projects, revenue generating activities for unemployed individuals and women might help for social organization and collaboration. The design of participatory processes should depend upon confidence building between local government and local communities through negotiation and mutual correspondence. Further, socio-cultural programmes increasing the sense of belonging of the neighborhood, educative programmes and training programmes for public officials, trainers and local communities to build awareness, emergency preparedness and collective action for risk reduction.

4. Conclusions

For many years, risk analyses are reduced in to actuarial methods, statistical analyses, high-tech innovations in civil engineering supported by global and local economic programs. Risks and impacts have been evaluated through harm and loss analyses led to oversimplification (Denney, 2009). Social aspects of risks ignored in risk reduction praxis and changing paradigm from relief based post-disaster approach to mitigation determine an obligation for national communities to make their own definitions of risk. Socially determined or distorted risk constructed by information processes, institutional structures, social group behavior and individual responses produce risk consequences which reproduce other risks like a ripple effect. Social amplifications of risk changes the definition of risk through interacting cultural groups to interpret and validate signals, behavioral intentions to tolerate or take actions against risk, engaging in groups or individual actions to accept, ignore, tolerate or change the risk. Therefore it is impossible to define risks solely through engineering data or land use hazards that contain hidden meanings and complex networks of a social medium. Changing definitions of risk also changes the dimension of risk perception (Kasperson R.,Kasperson J., 2005).

In Turkey, the main reason of not internalizing international framework for mitigation is that dimension, reducing risk in to building level rather than city level. Building as a spatial economic vulnerability manufactured risk as an asset exchanged to avoid. Legislative framework also copes to the definition via partial implications of mitigation merely focused on post-disaster strategy in Development Law and Disasters Law. Recently updated, Act on the Regeneration of Disaster Prone Areas define risk as opportunity for redevelopment, creating power actors but increasing social amplifications of risk and social exclusion. Mitigation reveals a new ethical and technical area for policy learning and praxis that are above politics.

Mitigation plan for each risk sector enables to develop horizontal relations organized from locality to global framework on floods, earthquakes and many other natural disasters to develop common risk definitions and parallel mitigative measures. Hazard identification and risk assessment methods projecting multi-hazard maps and distinct hazard maps are essential to evaluate potential damages of hazard as well as their interaction. The collaboration of local governments to according to different risk sectors should be implemented, shared and systematized in to actions by all responsible and accountable actors as NGOs local civil movements, media and stakeholders from public and private sectors. Organizational fear of responsibility in local and national levels should be eliminated through micro-level social learning programmes of community building which successfully integrated to academic education mainstreaming all levels of mitigation plan.

The role of planner and epistemic community are prior to construct a new paradigm for the implementation of mitigative capacity. The dismissal of social amplifications of risk should be provided by developing socio-technical capacities to perceive all dimensions of risk and a broader perspective by the participation of all accountable

stakeholders. Involuntary enlightenment is a new pace for everyone to realize that risk reduction is not a zero-sum game and if not then it would be not the system but us that create new risks : The significant problems we have cannot be solved at the same level of thinking with which we created them. (Einstein)

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