

Examination of Women's Exposure Levels to Disasters Using the Sendai Framework for Disaster Risk Reduction

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ABSTRACT: Creating community resilience is deemed essential to reduce the severity of negative impacts resulting from disasters and thereby prevent loss of life. One of the most effective ways to enhance resilience is to identify vulnerable points. It is crucial not to overlook which parts of the community are more vulnerable and which are more resilient. Consequently, addressing gender inequality through the concept of social gender equality is important. Enhancing the resilience of individuals identified as vulnerable (women, children, the elderly, and the disabled) regarding disasters and ensuring the sustainability of this resilience is critical. However, operationalizing resilience frameworks is not easy due to their dynamic nature. Therefore, a comprehensive social resilience method needs to be developed. Such a method, customized for the specific resilience traits of each context, can ensure that resilience assessments are uniform across various regions. For example, the action plan implemented within the Sendai Framework can be developed and sustained with a gender equality perspective aimed at strengthening vulnerable structures (women, children, etc.) across all geographies. Disasters are seen as more related to and significant in terms of societal perspectives on gender, rather than just biological (male-female) sex. In light of all this, this study aims to explore the relationship between the Sendai Framework for Disaster Risk Reduction (2015-2030) and gender equality. Through a literature review, it seeks to highlight the importance of generating disaggregated data during disaster preparedness and adapting emergency tools and practices to meet gender-specific needs. The analysis will focus on how gender considerations can be better integrated into disaster risk reduction efforts, aligning with the Sendai Framework's goals of inclusivity and resilience. As a result, it is observed that women and girls are much more affected compared to men.

KEYWORDS: Disaster Management; Sendai Framework; Gender; Women; Vulnerability

1. INTRODUCTION

The earth has been the scene of many destructive activities that threaten the existence of humanity, starting from its formation until it took its current shape. Landslides, floods, earthquakes, avalanches, wars, industrial accidents and epidemics, which occur almost every day in different geographies of the world, cause large-scale losses of life and property. According to their sources, these destructive events are divided into two as natural and human-made disasters. Natural disasters were occurring long before humanity existed on earth, and they will probably continue to exist as long as the Earth stands. Every disaster affects social order and human life in physical, economic and sociological aspects. Disasters such as earthquakes, floods, hurricanes, storms, forest fires, volcanic eruptions and landslides are of natural origin. However, people also suffer from psychological and sociological devastation. Millions of people lost their lives and billions of dollars of economic damage occurred due to disasters in the last century alone, which served as a factor hindering development at national and global levels. The United Nations (UN) defines disaster as follows: “a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts” (UN, 2009). In addition, disasters are defined by the World Health Organization as emergency events that occur instantly and reduce the quality of life of individuals or society, preventing them from performing basic life activities (Keeney, 2004). The frequency, severity and intensity of natural disasters have increased in the world recently and reached alarming levels. In the last 20 years, 1.3 million people lost their lives, and 4.4 billion people were injured, became disabled or lost their homes (UNISDR, 2018). Damages caused by disasters are multidimensional. Beyond human losses, disasters pose a serious risk to global development. Disasters destroy the environment and ecosystem by damaging the physical environment and infrastructure, create indirect negative effects on services and products, and can lead to economic crises and political and social turmoil.

Scientific research on disasters shows that whether a hazard becomes a disaster is directly related to the fragility and capacity levels of societies. Likewise, research reveals that there are differences in the ways men and women are affected by, experience, and respond to disasters. It is observed that more women and girls lose their lives and are more negatively affected by disasters than men. For example, 90% of the 140 thousand people who died in the cyclone that occurred in Bangladesh in 1991 were women. Similarly, during the heat wave in Europe in 2003, female deaths were higher than male deaths. The majority of those affected by Hurricane Katrina were poor African-American women and children. As a result of the earthquake and tsunami that occurred in the Indian Ocean in 2004 and affected 12 countries, 70% to 80% of those who died in various regions of India, Sri Lanka and Indonesia were women. In some regions, female deaths were four times that of males (Oxfam International, 2005). However, the specific knowledge and skills possessed by women make them an effective human resource that can actively contribute to every stage of disaster risk management process. In this context, the importance of effective disaster risk management that includes a gender perspective is increasingly emphasized by individuals, institutions and international organizations working in the field of disasters. Gender is a concept that expresses the social and cultural definition of women and men and the social roles attributed to them. This concept is used as an instrument to understand society better. One of the aims of this conceptualization is to examine and comprehend power relations between men and women and question inequalities.

In order to address gender-based grievances of women in disasters, to raise awareness on how to benefit more from women's capacities and skills in the context of disasters, and to ensure that public policies are shaped in this direction, more scientific studies are needed in this field. In this context, examining women's experiences of disasters in more detail in different countries and cultural contexts, in other words, giving more attention to the voices of women in various parts of the world regarding disasters, is of great importance in making disaster risk management more effective and efficient on a global scale.

Twenty percent of the world's earthquakes with a magnitude above six occur in Japan. The most important feature of Japan is that, although it frequently encounters natural disasters, it is one of the countries that suffers the least losses due to its developed culture of taking precautions against risks. Despite this, Japan suffered great losses in the earthquakes and tsunamis that occurred in Kobe in 1995 and Sendai in 2011. Following these painful experiences, Japan increased its efforts to pioneer disaster risk reduction initiatives internationally and took new measures to prevent disaster damages nationally. To put it more clearly, the importance of the gender element in terms of effective disaster management has recently been increasingly emphasized internationally and is included in international and national disaster-related strategy documents. The United Nations plays a leading role in this field. In the "Hyogo Framework Action Plan" dated January 2005, which is one of the main international reference documents in the field of disaster relief, it has been stated that measures to be taken to make societies and nations more resilient to the effects of disasters "should include a gender perspective in all disaster risk management policy and decision-making processes – including risk analysis, early warning, information management and education", and national platforms have undertaken the responsibility of developing these commitments at national level. This point is highlighted in Hyogo's follow-up, "Sendai Framework for Disaster Risk Reduction Document". References to the Sendai decisions in the context of the effects of disasters on sustainable development are also included in the UN Millennium Development Goals (UN, 2010). In particular, it is known that efforts to mainstream gender in legislation related to disaster risk management are insufficient. Therefore, in this study through a literature review, the relationship between Sendai Framework for Disaster Risk Reduction (2015-2030) and gender equality is discussed, and an effort is made to create disaggregated data during disaster preparation and to adapt emergency tools and applications to gender-based needs.

2. EFFECTS OF NATURAL DISASTERS ON GENDER

Natural disasters are events that cause serious destruction in the physical environment where people live and deeply affect social structures. Disasters such as earthquakes, floods, hurricanes and droughts deeply shake the economic, social and cultural fabric of societies. However, their effects are not limited to physical destruction. Natural disasters also deepen gender inequalities and unravel different impacts on women, men, children and marginalized groups.

The relationship between the concepts of gender and disaster stems from the fact that both concepts are social phenomena and their foundations are in the social system or societal structure. Natural disasters are local and social processes that occur on the basis of global political, economic and social factors. Research conducted in various parts of the world reveals that women and men are affected by natural disasters and environmental crises in various ways and that they cope with the individual and social consequences of these events differently. Studies also provide important information about the different roles and activities of women and men in disaster management and risk reduction efforts. An examination of these findings display that women have a different position in coping with disasters and are more vulnerable due to their social roles. The several negative impacts caused by disasters (for example, disruption of normal life, difficulty accessing resources, and feelings of insecurity and anxiety) pose challenges for the entire society. These negative effects are felt more severely in unprepared and unprotected groups whose access to information and resources is more limited. However, it has also been observed that women are effective actors and make significant contributions to disaster management with their various skills, knowledge and characteristics. Therefore, it is a common belief among disaster specialists that gender relations are an important element to consider in this context.

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In the international literature, various factors that increase women's vulnerability in disasters and emergencies are mentioned. One of the theories explaining these factors is the biological theory, which emphasizes the innate characteristics of male and female individuals and explains the differences between these two genders based on physical characteristics. In other words, the biological theory posits that gender differences are largely the result of inherent biological distinctions. This theory says that men are, more or less, physically stronger than women. During natural calamities, physical endurance and strength might be a significant basis for survival. During earthquakes, flood events, or hurricanes, for instance, specific activities such as moving with great speed, not getting trapped, or managing to pass through dangers depend much on the physical strength that is essential to survival. Correlated with biological theory, these physical tasks are quite successfully dealt with by men. Further, the biological theory also shows females' biological attributes, like fertility, being linked with their gender roles. Pregnancy and fertility conditions may make them a bit more vulnerable in the course of natural disasters - requiring extra medical attention or limited in mobility. In fact, the theory would suggest that men and women recover differently from disasters. For instance, a disposition among women towards continued long-term caregiving roles may be made to shoulder more responsibilities for themselves and their families in recovery efforts.

Whereas the dislocation of social order recurs in times of natural disasters, it comes in tandem with the biological theory argument that women are much weaker, thus making them more vulnerable to gender-based violence amidst communal shelters or amidst the din of chaotic post-disaster scenes. While biological theory might posit women, by nature of their physical 'fragility', to be more vulnerable to security hazards in post-disaster situations, this perspective has the potential effect of undermining broader social and structural causes of gender inequality, resting on a form of proprietorship over biology that ignores the complex socio-cultural dynamics involved.

The social function theory, which is based on gender roles, supplements the biological theory. It gives depth to concepts such as patriarchy and social class-areas that biological theory alone cannot reach. According to this theory, gender roles are not inherently biological but instead have been socially built by past social environments and the education received by a person throughout time. The basis of social role theory is that gender stereotypes are not inherited but instead gained through social relations in the course of time. In this perspective, the major cause of gender stereotypes is found in the behavioral patterns generated within the social environment. The social role assigned to women and men, in this view, leads to discrepancy in impacts during disasters and in post-disaster periods. Women are often assigned with the duty of caring for family dependents such as children, aged, and sick. Whereas men are placed in the economic providers. Natural disasters may fall more heavily on women because of certain roles that society has placed on them. Such as if the women are homemakers and child caregivers, they may face more difficulties in attempting to evacuate or get to safety. Social theory also points out that events of disaster amplify pre-existing inequalities between genders. This often results in women being left socially and economically disadvantaged, as they usually remain excluded from important decision-making levels in relief and reconstruction processes after disasters. Moreover, gender roles can make it hard for working women to access various work opportunities and may impede their post-disaster economic recovery, thereby sustaining or increasing gender inequality through time.

In addition, social theory suggests that one of the outcomes of the breakdown of social order caused by natural disasters is an increase in the incidence of gender-based violence. Women and girls may also become more vulnerable to violence in these processes and thereafter, as social structures weaken. For instance, sexual violence and harassment often increases in temporary shelters. In conjunction with increased levels of gender inequalities, these might place women in states of high insecurity. Social theory emphasizes that people think about and act upon risks according to the way society is organized. Women in some cultures are socialized to only take on specific, invisible public space or productive work outside the home, thereby fostering beliefs that women must remain inside the home during disasters. This would lower their potential to flee or seek safety from the disaster. Women, men, and other genders often use different strategies and resilience mechanisms for disasters. For example, women, because of their more ascribed care-giving role, may be fundamental in the faster recovery of family and community. They may also begin taking part actively in the building of social solidarity networks and start reconstruction jobs. However, when such roles are thought of as a natural continuation of responsibilities expected from women, rather than being framed within the parameters of gender equality, they can perpetuate existing inequalities between men and women. Moreover, disaster victims are often from the poor, marginalized groups struggling with gender-based inequalities. Due to the unfavorable economic and social position in society, women and girls are often more vulnerable to disasters.

This is where an examination of these theories with an intersectional perspective comes into play for in-depth insight into problems women face during disasters globally. Intersectionality is all about various disasters impact groups of different levels. It would include marginalized groups such as women, minorities based on race, the elderly, those with disabilities, and those living in poverty. At times, socioeconomic adversity, shelter from weak to strong construction, and resource availability are what make all the difference between resilience and catastrophe when trying to determine how persons respond to and recover from such events. Therefore, intersectionality offers a broader framework that is useful for describing how various intersecting identities create differences in individuals' disaster experiences through the layered disadvantages experienced by some groups. There are issues concerning access to emergency services, shelter, food, and medical care after disasters like earthquakes; in many respects,

these depend on one's intersecting identities. Women from minority or low-income groups may especially encounter major barriers when seeking aid, health care, and other types of support. In this context, considerations of nationality, discrimination, or limited mobility may altogether drastically reduce their direct access to relief, thus intensifying the challenges faced during post-disaster recovery. These challenges also bring into focus the need to appreciate how race, class, gender, and ability intersect in ways that confer implications on the accessibility and efficiency of disaster response services.

The other reason for women's disadvantages in disaster situations is a lack of education. One of the worst impacts of natural disasters is on education systems, and this affects girls' education more. School destruction or disruption of education after the disaster may further discourage girls from going into schools. Once the girls are out of the stream of education, they miss social and economic opportunities in their later lives, further perpetuating inequalities based on gender. In this respect, disaster risk and hazard awareness are an important factor in improving the coping capability of women. Furthermore, it shows that in disaster contexts, women are more vulnerable than men as a result of lack of access to resources emanating from not having enough education and poverty. According to research, in case of drought, for instance, it is always the case that women first try to satisfy their spouses and children, leading to an increase in vulnerability status (Hamidazada, Cruz & Yokomatsu, 2019). Thus, lack of access to education, coupled with poverty, are considered as driving forces that make women highly vulnerable in disaster contexts.

Apparently, disaster education is important in developing a disaster-resilient society. General aims of disaster education include increasing resilience in persons and communities from all types of disasters and developing their effectiveness in the stages of prevention, response, and recovery. Training like this may help to form more realistic risk perceptions and obtain information about appropriate safety behaviors. Disaster education provided specifically for women will significantly increase their resilience to disasters. Studies conducted in countries with high disaster risk levels, such as Japan, have shown that there is a direct link between the level of education provided and children's risk reduction measures. Information about taking preventive measures for all members of the society and being constantly prepared for disasters can form the building blocks of a disaster-sensitive society. Today, disaster education should be seen as a stage of increasing children's level of resilience and improving knowledge sharing (Torani et al., 2019).

In addition, women who cannot make decisions and engage in activities on their own in their social environments, are also negatively affected by disasters such as floods and landslides due to the lack of traditionally learned basic skills such as swimming or tree climbing. In addition, women, who have less physical strength than men due to biological differences, can only develop their muscle structure at a low level because they are usually busy with household chores that do not require strength, which, in turn, puts them at a disadvantage as surviving disasters mostly requires physical strength.

Natural disasters often lead to economic devastation, making existing inequalities between genders even more significant. Women often work in low-income and insecure jobs, as a result of which they become economically more vulnerable in the post-disaster period. To top it all, the increase in domestic workload and childcare responsibilities makes it difficult for women to participate in the workforce, jeopardizing their economic independence.

In addition, gender-based differences in access to healthcare are observed during and after disasters. Women have more difficulty accessing healthcare during disasters due to their special health needs such as pregnancy and childbirth. Additionally, the increased risk of sexual violence and abuse in post-disaster temporary shelters threatens the safety of women and girls. According to Marxist theory, women live in a male-dominated order in social areas. This type of setting reduces women's resilience during disaster processes. Women experience serious problems as post-disaster relief activities are also carried out from a male perspective. When international disaster examples are examined, it is seen that the special needs of women are ignored in the distribution of health aid materials. In particular, although underwear and sanitary materials necessary to prevent unwanted pregnancies should be distributed in a personalized and needs-oriented manner, in most cases differences between ages and physical characteristics are ignored and the same items are distributed to all individuals from a masculine perspective (Walia, 2015).

Women are forced to live with strangers in relief camps, with limited opportunities and lack of privacy, and they experience these difficulties more intensely, especially during pregnancy or breastfeeding. Women with high privacy concerns have difficulty meeting their personal cleaning and hygiene needs in relief camps, which negatively affects women's physical health (Walia, 2015). Research on post-disaster mental health problems indicates that women and girls are more susceptible to emotional disorders and stress than men and boys. When demographic analyzes of individuals suffering from psychological disorders on a global scale are examined, it is seen that women receive treatment more frequently than men. According to Mental Health Foundation (2016) data, while approximately 9% of men worldwide receive psychological treatment, this rate is approximately 15% for women. Such data reveal that women are more psychologically sensitive than men and are more negatively affected by disasters. Women become more emotionally sensitive during birth, pregnancy and menstruation. For example, more attention needs to be paid to mental health due to emotional sensitivity shaped by maternal motivation in the postpartum period (Shooshtari, Abedi, Bahrami, & Samouei, 2018).

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Systems arbitrarily created within the patriarchal order in various countries give men unfair dominance over women. Crimes such as emotional and physical violence, harassment, rape, intimidation, threats and insults can be easily committed by legitimizing social behavior patterns. It is seen that such crimes are frequently committed in post-disaster periods. For example, on December 26, 2004, a 9.1 magnitude undersea earthquake struck Indonesia at 07:59 local time. The subsequent 9-meter tsunami waves killed approximately 225,000 people and caused 815 million US dollars of damage in Indonesia, Sri Lanka, India, Maldives and Thailand (Britannica, 2020). The surveys conducted with women in the disaster areas show that cases of sexual harassment and gang rape of women and girls were reported about 10 days after the disaster. Additionally, it was stated that women and girls were unable to report them to the authorities due to fear of physical violence and death threats. Women and girls who lost their fathers or husbands became more vulnerable to such threats. It is also reported that women suffered from lack of privacy in temporarily allocated tents or containers. Women, whose rights to privacy and confidentiality as stated in Article 12 of the Universal Declaration of Human Rights (UN, 2025) were not fully ensured, reported that they did not feel safe at all (Gokhale, 2008).

Women experience security-related problems not only in natural but also in man-made disasters. According to United Nations reports, approximately 35% of women worldwide are exposed to physical or sexual violence. These are the most common forms of violence faced by women. Additionally, 38% of femicides are committed by the people women consider closest (WHO, 2013). One of the main examples proving this situation is the findings provided by the research conducted in a displaced persons camp in Northern Uganda. This research, conducted with women who had to live in camps as a result of war and mass migration, two types of man-made disasters, emphasized that the sexual violence that women experience from their husbands is eight times more than that from strangers. While 41% of women who were subjected to sexual violence stated that they were forced to have sexual intercourse by their husbands, 5% reported that they were raped by a stranger. These figures show that, in addition to external dangers, threats from the immediate environment are also important (IFRC, 2012). Women, individuals with low social status, and the elderly are among the groups directly associated with psychological distress after the 1989 Australian earthquake. Similarly, the results of surveys conducted with children affected by the Great Hanshin Earthquake in 1995 have shown that girls are more affected by traumas and that being a woman is a high-risk factor for psychological distress (WHO, 2002).

Although the number of studies with gendered data is not yet sufficient, studies examining the pre- and post-disaster periods show that women and men have different vulnerabilities in the face of disasters that occur in various parts of the world and that they are affected by disasters in different ways. These studies also reveal that women and men are affected differently by processes such as survival, loss of life, injury, trauma and recovery in disasters. It is indicated that biological, familial, social and cultural needs and priorities show variance at different stages of disasters. Among the findings of these studies are that women are more vulnerable in post-disaster periods and that there are inequalities between genders in terms of access to limited resources.

Additionally, it is emphasized that women's skills, contributions and participation differ in the post-disaster period, especially in the reconstruction and organization of life. Therefore, the view that gender-sensitive approaches enable the process to be understood better and to take more effective action both in the pre- and post-disaster periods is gaining ground. Neumayer and Plümper's (2007) study on disasters in 141 countries revealed that women and children are 14 times more at risk of death than men. It has been determined that gender differences in deaths can be directly related to the economic and social rights of women. There is no information on the gender distribution of those who lost their lives or were affected in these earthquakes. That in itself represents a significant lacuna for our country. Collection and analysis of data that are gender-disaggregated form an integral part of any efficient disaster management. As far as the review of national disaster legislation of Türkiye is concerned, it was established that only two out of 17 legal regulations mentioned gender. This gap suggests that gender perspectives need to be integrated much more systematically in disaster management policies and data collection efforts in Türkiye. Specific numerical data regarding the gender distribution of those affected by disasters can only be derived from official institutions, such as AFAD and TÜİK, or detailed post-disaster research. While academic papers may sometimes analyze the psychological and physiological impacts of disasters in light of gender roles, they seldom provide accurate, quantitative information. This calls, therefore, for the collection and analysis of detailed data in order to clearly ascertain the gender-specific impacts of disasters.

3. DOCUMENTS ON INTERNATIONAL DISASTER MANAGEMENT AND SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION

To make a better analysis of the plan of the Sendai Declaration, previously conducted studies in this field need to be reviewed. The "Yokohama Strategy Document" developed in 1994 was the first one as an action plan to make the world safer. It is, therefore, important to note that the document points out the importance of developing sustainable development plans, the identification of disaster risks, making the necessary definitions to eliminate regional and global risks, the determination of priority plans, and outlining the scope of action plans. With its decision numbered 58/214, The United Nations General Assembly adopted on 23 December 2003 the Yokohama Strategy Document, which forms the basis of the "Hyogo Framework for Action". This document identifies the following five specific objectives for disaster risk reduction:

- i. The Yokohama Strategy Document and Action Plan includes obtaining and reporting results in order to develop a guiding framework for disaster reduction for the 21st century.

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- ii. In order to identify weaknesses of the Johannesburg Sustainable Development Plan and ensure that its provisions on risk assessment and disaster management are implemented, specific activities need to be defined.
- iii. As set out in the relevant provisions of the Johannesburg Implementation Plan, it is essential to communicate the reliability and availability of disaster-related information to disaster management agencies and the public in potential disaster areas.
- iv. In order to further reduce the effects of disasters, it is needed to share good practices and lessons learned and to identify gaps and challenges, if any, within the scope of sustainable development.
- v. Action should be taken to raise awareness about the importance of disaster mitigation policies and to facilitate and promote the implementation of these policies.

Hyogo Framework Action Plan was created according to the priority areas determined based on the Yokohama Strategy Document. The Hyogo Framework Action Plan covers a ten-year planning process. This plan is based on the idea of making the world more resilient to disasters through disaster mitigation strategies. The approach set out in the Yokohama Strategy Document has thus been upgraded to concrete actions and priorities with the Hyogo Framework Action Plan (Macit, 2019: 179-180).

The understanding that gender is a fundamental and complementary element of an effective disaster management and disaster risk reduction strategy has been reflected on international efforts and basic documents. United Nations, which is a leading actor in this field, has integrated the concept of gender as a central element in its studies aiming to create disaster-resilient societies. The disaster risk reduction campaign which was implemented with the initiative of the UN in 1995 underlined “the key role of women in preventing disasters”.

Within the scope of the Hyogo Framework Action Plan (2005-2015), strategic goals for reducing disaster damages can be grouped under three main headings. First, focusing on disaster risk prevention, mitigation and reduction, it is important that the measures to be taken against disasters are more integrated with sustainable development plans and targets of strategies at all levels. The second strategic goal is to organize, strengthen and develop activities aimed at increasing the working styles, capacities and resilience of non-governmental organizations (NGOs) against disasters. The third strategic goal is the inclusion of the risk reduction approaches contained by the protocols for the design and implementation of emergency readiness, disaster response and recovery programs of communities affected by disasters.

Taking these strategic goals into account, it is seen that actions to reduce disaster risks in advance are integrated into planning activities. As a result, the Hyogo Collaboration Framework has been an important initiating instrument for raising public and institutional awareness, building political commitment, and continuously evolving actions with a wide range of stakeholders at all levels. In addition, the Hyogo Framework Action Plan is the first medium where the issues of data processing and using these data by making them storable with developing information and communication technologies are discussed. Hyogo Framework Program also includes priorities determined in line with Yokohama strategic goals. These action priorities can be listed under five main headings:

- i. Highlighting national and local priorities for disaster risk reduction and establishing a strong institutional baseline for the implementation of these priorities.
- ii. Identifying, evaluating and monitoring disaster risks and developing early warning systems.
- iii. Using knowledge, innovation and education to create a culture of safety and response to disasters at all levels.
- iv. Identifying and reducing the underlying risk factors of disasters.
- v. Strengthening disaster readiness to ensure effective response to disasters at all levels of society (Macit, 2019: 180-181).

Considering these priority targets determined based on the results of the review of the Yokohama Strategy, it can be seen that, Hyogo Framework Action Plan participants have determined the expected outputs for the goal of reducing disaster damages in the world as “significant reduction in the lives and social, economic and environmental assets of communities and countries as a result of disaster damages.” These outputs were aimed to be realized between 2005-2015. As is obvious, the Yokohama Strategy Paper and the Hyogo Framework Action Plan form the basis of the Sendai Declaration. Activities to reduce disaster damages carried out within the scope of the Hyogo Framework Action Plan may explain the decreasing trend in all disaster damages between 2005 and 2015. As a result of the actions taken to reduce disaster damages in the last decade, the effects of disasters began to decrease, and it is possible to reduce disaster damages more effectively with on-site risk reduction strategies. In this context, the Sendai Declaration Plan was created to reduce disaster risks on-site, and this plan was envisaged to cover a fifteen-year period.

Sendai Cooperation Protocol, created under the auspices of the United Nations, and the “Sendai Framework of Action” declaration, consisting of a total of five items, can be evaluated as a whole that includes more comprehensive and long-term action plans than the Hyogo Framework programme. This framework includes planning activities to produce on-site risk mitigation policies based on past experiences. The aims of the Sendai Declaration Program include carrying forward the last ten-year targets achieved by the Hyogo Framework Action Plan to a longer-term phase that will last for the next fifteen years. The achievements, experiences and results obtained with the Hyogo Framework Action Plan show that longer-term and effective planning is aimed with the Sendai Declaration Program. In order to achieve these goals, it is important to demonstrate more effective leadership, to insist on determined policies, and to adopt a holistic approach to disaster risks at the national level. As a result of the Hyogo

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Framework Action Plan, it was understood that determining only policies is not sufficient for the success of the targets and that these determined policies and planning activities must be continued until the results are achieved. In this context, the expected outcome of the Sendai Declaration Plan is overall disaster risk reduction. More specifically, it has been developed to ensure a significant reduction in losses of lives, livelihoods, as well as preserving the health, economic, physical, social, cultural and environmental assets of individuals, societies and countries (UNISDR, 2015).

Four main priorities were identified in the Sendai Declaration Plan. These priorities are as follows:

- i. Understanding disaster risks,
- ii. Strengthening management to cope with disaster risks,
- iii. Making investments in disaster risk reduction for rapid return (recovery) from disasters,
- iv. Improving disaster readiness to better carry out effective response, reconstruction, recovery and rescue activities.

These priorities briefly summarize the steps that need to be taken, as well as the expected and targeted goals.

Priority 1: Disaster risk management should be based on understanding disaster risks, weaknesses and fragile aspects, potential damages to capacity, people and assets, disaster characteristics and all environmental dimensions. Such information can be used for risk assessment, prevention, mitigation, readiness and response.

Priority 2: Preventing and mitigating disaster risks at national, regional and global scales has colossal importance considering the four basic principles of disaster management, namely readiness, response, recovery and restoration. This process supports collaboration and partnership.

Priority 3: It is important to direct public and private sector investments with structural and non-structural measures to prevent and reduce disaster risk. It is also necessary to improve the economic, social, health and cultural resilience of individuals, communities, countries, assets and the environment and to combat disasters.

With the growth of disaster risks, disaster preparedness, taking precautions against foreseen events, and developing effective response and rescue capacities at all levels have gained importance. Recovery, restoration and reconstruction phases, including disaster risk reduction and integration with development plans, provide an important opportunity to develop better disaster response activities (Macit, 2019: 180).

According to these determined priorities, it is understood that the Sendai Declaration Plan aims to reduce disaster risks as well as to ensure readiness for disasters for the next fifteen years. Disaster management in the classical sense consists of four stages known as mitigation, readiness, response, and recovery. If we consider these stages, it is envisaged that the mitigation phase will start with the recovery and reconstruction processes. At this stage, while mitigation activities and renovation works are carried out, disaster mitigation plans should also be taken into consideration. In disaster mitigation activities, records kept in databases with the help of information technologies should be used.

The link between disaster risk management and gender was established at the Fourth World Conference on Women held in Beijing in 1995. In the Beijing+5 Declaration in 2000, the necessity of including the gender dimension in the disaster risk management process was emphasized (Işık et al., 2015). Sendai Framework for Disaster Risk Reduction (2015-2030), which came into force following the Hyogo Action Plan (2002-2015), reveals that women, children and vulnerable groups suffer disproportionately from disasters, and it pays special attention to the position and role of these groups. The Sendai Framework states that risk prevention policies should be determined to include these groups. Within the scope of the guidelines, it is emphasized that people disproportionately affected by disasters - especially the most impoverished - should be empowered, and inclusive, accessible and equitable participation should be ensured. In this context, gender, age, disability and cultural perspectives should be included in all policies and practices, women and youth leadership should be encouraged, and special attention should be paid to the organized volunteer efforts of citizens.

The Sendai Framework sees the rescue, recovery and pre-disaster reconstruction phases as an opportunity for better construction. This framework emphasizes the need for women and people with disabilities to lead these processes and to adopt egalitarian and accessible approaches to gender issues. It is stated that the following is required to achieve this goal: (i) creating unbundled data in the disaster preparation process, (ii) adapting emergency instruments and practices to gender-based needs, (iii) empowering women and girls by ensuring their participation in all risk management processes, and (iv) taking capacity-building measures to secure alternative livelihoods in post-disaster period.

The Sendai Framework is a more positive step compared to the Hyogo Action Plan, which devoted a more limited focus to gender issues, but it also has some aspects that need improvement. Although consistency with sustainable development goals is highlighted within the scope of the guidelines, the lack of specific emphasis on the goal of gender equality has been criticized. Moreover, failure to adopt a rights-oriented approach in terms of concrete implementation tools, the inadequacy of indicators in terms of climate change and gender, and in particular, failure to foresee indicators that go to the roots of discrimination and enable different categories to be considered together are other areas of criticism (Zaidi & Fordham, 2020).

Given that disasters further deepen existing inequalities, policies and practices aimed at protecting women from disaster risks and improving their resilience should not exclude other causes of discrimination such as poverty, old age, disability and

immigration. It is important to establish correlations between these factors and take measures for the people and groups most exposed to social exclusion.

4. CONCLUSION

Natural disasters not only cause physical destruction, but also deepen gender inequalities. Women bear more of the economic, health, and safety burdens resulting from disasters than men. There is, thus, an urgent need for restructuring disaster management policies from the perspective of gender and with the full participation of women in such decision-making mechanisms. In sum, fostering gender equality reduces the severity of disasters and furthers the ways toward a more equitable and sustainable world. Therefore, it is high time that disaster management strategies are modified to incorporate a gender perspective into the policies, so that they become all-inclusive for women and other subordinated groups of society before and during the disaster, and after the disaster. Such policies will have to actively involve and encourage the participation of women in every process of disaster management, so as to reduce the risk associated with each gender. In addition, training programs should be conducted to increase awareness about gender equality among both genders. Disaster preparedness and response should address gender equality and empower women for leadership roles. Additionally, projects to facilitate economic and social empowerment of women should be developed under post-disaster rehabilitation. And finally, comprehensive collection of data and research is required for a better understanding of the gender-based outcomes that exist in the post-disaster period. Above all, it has to be closely monitored and evaluated with regard to efforts of reducing gender-based inequalities, as the data collated will contribute in refining policies of disaster management from a perspective of gender equality. Absence of all these will make it unrealistic to expect the full benefit of disaster preparedness policy and post-disaster action if gender-specific needs have not been taken into consideration. Disaster management strategies will be effective and inclusive if unique needs of different gender groups are addressed during all phases of disaster preparedness, response, and recovery. A non-inclusive approach may lead to failing to recognize critical vulnerabilities that may reduce the overall effectiveness of disaster policies and interventions. Hence, integration of gender perspectives is quite imperative for attaining equitable and successful results in disaster management.

REFERENCES

- 1) Ariyabandu M.M., Wickramasinghe M. (2003) Gender dimensions in disaster management.
- 2) A guide for South Africa. Sri Lanka: ITGD South Africa Publication.
- 3) Britannica. (2020) Encyclopædia Britannica [Online]. Available at: <https://www.britannica.com/event/Indian-Ocean-tsunami-of-2004> (Accessed: 8 July 2025)
- 4) Gokhale, V. (2008) Role of women in disaster management: An analytical study with reference to Indian society. The 14th World Conference on Earthquake Engineering. Beijing. 12-16.
- 5) Hamidazada, M., Cruz, A. M., & Yokomatsu, M. (2019) Vulnerability factors of Afghan rural women to disasters. *International Journal of Disaster Risk Science*, 573-590.
- 6) IFRC. (2012) World disasters report [Online]. Available at: <https://reliefweb.int/sites/reliefweb.int/files/resources/1216800-WDR%2B2012-EN-LR.pdf>. (Accessed: 10 July 2025)
- 7) Işık, Ö., Özer, N., Sayın, N., Mishal, A., Gündoğdu, O., & Özçep, F. (2015) Are women in Türkiye both risks and resources in disaster management. *International Journal of Environmental Research and Public Health*, 12, 5758-5774.
- 8) Keeney, G. B. (2004) Disaster preparedness: What do we do now? *Journal of Midwifery and Women's Health*, 49(4), 2-6.
- 9) Macit, İ. (2019) Bütünleşik afet yönetiminde Sendai çerçeve eylem planının beklenen etkisi. *Artvin Çoruh Üniversitesi Doğal Afetler Uygulama ve Araştırma Merkezi Doğal Afetler ve Çevre Dergisi*, 5(1). 175—186. <https://10.21324/dacd.421564>.
- 10) Mental Health Foundation. (2016) Fundamental facts about mental health. [Online]. Available at: <https://www.mentalhealth.org.uk/statistics/mental-health-statistics-people-seeking-help> (Accessed: 15 July 2025)
- 11) Neumayer, E., & Plümper, T. (2007) The gendered nature of natural disasters: The impact of catastrophic events on the gender gap in life expectancy, 1981–2002. *Annals of the Association of American Geographers*, 97(3). 551-566 <https://doi.org/10.1111/j.1467-8306.2007.00563.x>
- 12) Oxfam International (2005) 2005: Year of disasters [Online]. Available at: <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/129062/bp-2005-year-disasters-011005-en.pdf;jsessionid=B312BF5C1C24664CDCB6A56BBA68FD57?sequence=1> (Accessed: 8 July 2025)
- 13) Shooshtari, S., Abedi, M. R., Bahrami, M., & Samouei, R. (2018) The mental health needs of women in natural disasters: A qualitative study with a preventive approach. *Journal of Family Medicine and Primary Care*, 7(4), 678-683.
- 14) Torani, S. Majd, P. M., Maroufi, S. S., Dowlati, M., & Sheikhi, R. A. (2019) The importance of education on disasters and emergencies: A review article. *Journal of Education and Health Promotion*. 8(1), 85. https://10.4103/jehp.jehp_262_18

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- 15) United Nations (2009) UNISDR terminology on disaster risk reduction (2009) [Online]. Available at: https://www.undp.org/sites/g/files/zskgke326/files/migration/ge/GE_isdr_terminology_2009_eng.pdf (Accessed: 6 July 2025)
- 16) United Nations (2010) Keeping the promise: A forward-looking review to promote an agreed action agenda to achieve the Millennium Development Goals by 2015: Report of the Secretary-General.
- 17) United Nations (2025) Universal Declaration of Human Rights [Online]. Available at: <https://www.un.org/en/about-us/universal-declaration-of-human-rights> (Accessed: 8 July 2025)
- 18) UNISDR (2009). Making disaster risk reduction gender-sensitive policy and practical guidelines. Geneva, UNISDR, UNDP, IUCN.
- 19) UNISDR (2015). Sendai framework for disaster risk reduction 2015–2030 [Online]. Available at: <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>. (Accessed: 18 July 2025)
- 20) UNISDR (2018). Center for research on the epidemiology of disaster [Online]. Available at: <https://www.unisdr.org/we/inform/publications/61119> (Accessed: 18 July 2025)
- 21) Walia, A. (2015). Tot module on gender and disaster management. National Institute of Disaster Management, New Delhi.
- 22) WHO (2002). Gender and health in disasters. [Online]. Available at: https://www.who.int/gender/other_health/genderdisasters.pdf (Accessed: 17 July 2025)
- 23) WHO (2013) Global and regional estimates of violence against women: Prevalence and health effects of intimate partner violence and non-partner sexual violence. [Online]. Available at: <https://iris.who.int/handle/10665/85239> (Accessed: 16 July 2025)
- 24) Wood, W., & Eagly, A. H. (2002) A cross-cultural analysis of the behavior of women and men: Implications for the origins of sex differences. *Psychological Bulletin*, 128(5), 699-727. <https://doi.org/10.1037/0033-2909.128.5.699>
- 25) Zaidi R. Z., & Fordham M. (2021) The missing half of the Sendai framework: gender and women in the implementation of global disaster risk reduction policy. *Progress in Disaster Science*. <https://doi.org/10.1016/j.pdisas.2021.100170>.



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