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ENVIRONMENTAL MANAGEMENT AND NATURAL DISASTERS
MITIGATION: MIDDLE EASTERN
GENDER PERSPECTIVE

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ENVIRONMENTAL MANAGEMENT AND NATURAL DISASTERS MITIGATION: MIDDLE EASTERN GENDER PERSPECTIVE

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Natural resources in the region

The Middle East region extends from the Arabian Gulf at the East to the Atlantic Ocean at the West. It extends over Africa and Asia (see figure 1). The region is suffering increasing number of natural disasters from drought, flash floods, earthquakes, land sliding, desertification, floods and the implications of escalating high temperate due to climate change. Wars are increasing the frequencies of natural disasters. Due to increasing population and improper management of the very limited water resources, the region is suffering from scarce fresh water in comparison with the massive population growth and escalating urbanization and the need for expanding extensive agriculture (see figures 2 – 2.5).

In addition, the region is practicing an increasing food security gap between agriculture, livestock, fish and marine productivity and the steadily increasing population demands and the high desertification rates. Other countries govern almost all the surface water resources across the geographical borders, which create political unrest between upstream and downstream users.

Oil-rich gulf countries manage to desalinate seawater to meet their escalating water needs. They also rely on ground water in most of the remote human settlements. Countries like Egypt, Lebanon, Syria, Iraq, and Sudan rely basically on river water passing by their territory and originating from neighboring countries with smaller rain fed areas and ground water irrigated lands. Other countries in the region as Jordan, Libya, Tunisia, Algeria and Morocco are rain fed and depend on surface and ground water as much as it is available. Women are the most hit by the stress of limited water quantity and quality. Even in urban cities where water distribution systems are supplying most houses, the low water pressure in the system as a result of limited supply extends the working household hours to late night in order for modern washing machines, bath heaters to be able to function at higher water pressure at night.

The region encompasses variable topographic features varying from plane deserts to mountains to river valleys. Mountainous regions and their adjacent valleys suffer from unpredicted flash floods, which create massive soil erosion, land sliding and destruction to any human settlements established in their natural conduits. Flash floods can happen once every 25 to 50 years. People may forget all about it during the long periods of drought.

Prolonged dry seasons due to climate change created a great loss of the forest and the natural green cover in addition to the tree cutting to agriculture development and urban settlements as currently practiced in Syria, Lebanon and Morocco. This loss of green cover has led to noticeable desertification and loss of fertile soil to the sea and rivers increasing the impacts of floods created by the rainy season.

Dry weather also increases forest fires with losses in human properties as well as biodiversity. The loss of green cover also enhances the rainwater velocity leading to severe flood flushing power with more destruction, loss of property and land fertility. Desertification also impacts on livestock rearing reducing the economic asset women usually depend upon in needy days.

Earthquakes are also known in the region and their implications are very severe as the building and planning codes did not integrate this type of natural disasters since they are not very frequent and tend to be forgotten. Tornados and typhoons are not common in the region as the climate tends to be more settled with little variability throughout the year. Volcanoes are not recorded.

Natural disasters managing councils are present in some countries of the region but their role needs to be more vitalized and integrated in the countries' policies to ensure maximum preventive and preparedness actions. Women participation in those councils is near to nil. Consequently more men and women involvement at both the governmental and non-governmental levels is needed to ensure minimum implications.

Informing the communities about the statistics of natural disasters and their more vulnerable areas is important for the mitigation measures to be adopted by the community. Information dissemination will help the government to secure their urban, agriculture planning and proper land use.

Informing the women in the community about the risks and the devastating implications of neglecting the government precautions in their communities could insure avoiding the majority of those natural disasters consequences.

Gender issues in the Arab region

Women in the region are climbing the ladders of education, participation in planning, execution, and evaluation of different development projects. They are also increasing in numbers as professional engineers, medical doctors, service providers as well as decision makers in different governmental and non-governmental organizations. Although their presence in the cabinet of ministers, parliament, advisory political councils, administrative local councils is still very low, nevertheless they managed to increase their acceptance by the people at the communities level in the different countries of the region.

In Egypt, Lebanon, Syria, Tunisia and Jordan for example, women's contribution to development is getting more and more recognized. They also get the political support of the first ladies in those countries. Saudi women are now involved in trade and business utilizing

the Internet and telecommunication technologies which suits their secluded culture and traditions. Saudi women are now participating in postgraduate, graduate and undergraduate female education at the female segregated universities. They are also handling services; banking and medical care centers for the Saudi women. Figures (3-3.6 and 4-4.19) show a general picture about women education and the infrastructure they have in the region's different countries. Figures (5-5.10), which indicates female participation in the working power is usually based on paid workers, but women's contribution is much higher if the non paid workforce is accounted for especially in the agricultural sector and the family private sector.

Women's power in controlling the family decisions should not be neglected although men in the region, due to cultural stereotypes and stigmas, may not admit this role. Women in the region are playing a very strong and dependable role in case of natural emergencies as well as their daily life chores. The problem lies in the mass media and community perceptions, which used to hinder publishing those heroic roles and giving them the chance to be identified. The media always portray men as heroes and saviors. Women surviving roles in securing, water, food, medical care, and shelter during and after the disaster are rarely focused upon. In spite of that, women have never felt that they should neglect those prime roles because they are not valued or appreciated. On the contrary they always seek ways to improve their performance. Involving more women in the mass media created a growing tendency to focus on those never mentioned roles.

Television camerawomen, and female program producers in the Egyptian television currently give a lot of attention to what men and women do in any situation analyses in drama and melodrama broadcasted over the media. Emergencies due to natural or manmade disasters are no exception. Gender balanced role analysis seems to satisfy most of the audiences in Egypt. The Egyptian TV production is highly accepted in almost all countries in the region. The gender-balanced perception is now conveyed to other Middle East countries.

Women as managers of natural resources

Historical inscriptions record the region women living in the desert and mountains prephery to be managing for survival in case of limited food, safe drinking water, and safe temporary shelter as a result of drought, flash floods, and other natural disasters. Through stories told from mother to daughter they learned how to conserve food, keep water in leather and pottery containers, grow plants, which conserve water in their tissues for animals to feed on and which don't need to drink water. They also respected the natural biodiversity of their surrounding environment. Their conservative means of survival did not create any garbage and solid waste problem because everything was derived from nature and returned to nature.

Changing patterns of life due to petroleum discovery and increasing the community wealth and status of education have helped them to adopt new imported styles of life and women have tended to forget those conserving techniques. Efforts now are towards informing women and men in the region that adopting new styles of life does not mean neglecting conservative attitudes. The rich and poor countries in the region with respect to agriculture, industry, services and trade now adopt conservation methodologies and approaches. Even

new technology development integrates conservative energy, water, and raw materials consumption.

Currently Middle East women's knowledge of sustainable styles of life is increasing due to their more education and exposure to the outer world through the variable mass media channels. Information dissemination by television, Internet, and radios facilitated the transfer of massive information to women under any cultural or social barriers. Increasing the number of women having access to television and radio helped most of the illiterate women to learn new ideas on how to conserve water resources, ensure food security and clean energy sources and to gain new skills for income generation to alleviate their poverty. Yet there is still a dire need to secure those resources for many women in the region especially with the increasing economic sanctions, wars and increasing population and urbanization, desertification and uneven distribution of wealth between people of different social status in the community.

Exposure to increasing environmental pollutants in urban and rural areas is an added burden on most women's productive and reproductive health. Women participation in agriculture come up to 75% of the total agriculture load as in Egypt and several agriculture economy based countries. Exposure to agro-chemicals is one of the areas seldom mentioned or given any consideration to inform the farmers regarding their occupational health and safety or the proper management of those chemicals. Female farmers get exposed to those chemicals while weeds removal, pest control by removing infected leaves, and during harvesting sprayed crops, vegetables and fruits as the safe period between spraying and harvesting may not be observed.

Living with those daily stresses does not leave much for those women to think of preparedness actions. Yet talking to groups of those women in different countries reveals always how interested they are to adopt any measures set to secure their families health and safety.

The role of mass media in most of the region countries does not give the needed emphasis on natural disasters or their management, mitigation or preparedness activities. Women are seldom involved in community training on methods to manage natural disasters that can hit any vulnerable community. As a result they are left to behave according to their survival instincts, which could be heroic or more dangerous and fatal.

Poor men and women are the ones who suffer the most from the implications of natural disasters as they tend to live and produce in those low cost lands neglected by the governmental planning knowing they are vulnerable to natural disasters. Women usually get the severest economic hit due to their restricted mobility. The problem is even aggravated, as the governmental agencies do not spread the word about the risks encountered in those risky areas. In addition, those agencies have no governance to prevent those people from indulging themselves in such dangerous living, as they do not offer the safe alternative.

Lack of maps covering the whole areas of the countries with clear identification of those risky areas could be behind the lack of knowledge in governmental agencies about those

areas. The attached maps showing flash floods and earthquakes vulnerable areas are for the first time to be published in a national newspaper. Due to limited resources most government do not offer the affordable alternatives for poor or limited resources community members to live in a less naturally vulnerable places. Women being the poorest of the poor they find themselves residing in those high-risk areas.

Integration of the natural disasters avoidance and impact minimization is currently practiced through the preparation of the environmental impact assessment for all new projects. Most countries in the region adopt this technique as a valid tool for avoiding the hazardous areas as flash floods passages, prone areas to land sliding, and building dams over river channels to control floods. Through the implementation of engineering design features, natural disasters implications can be minimized if not avoided. This can be achieved during the planning and construction phases of the projects. Both men and women can avoid suffering the loss of their beloved ones, amenities and shelter.

Involving more men and women in natural disasters management through proper planning and adoption of avoidance techniques is vital at all levels of decision making, execution, and evaluation levels of all developed projects specially those for human settlements encompassing economic activities as industry, power generation, army defense, etc.

Problems facing women and men involvement in natural disasters preparedness and their mitigation

Identified areas and regions vulnerable to natural disasters are known to governmental agencies. Ministries of the Interior, meteorological departments are among those governmental agencies that are aware of the probable natural disasters, and their frequencies. Through the set up of the civil defense forces under their control they have preparedness information. Civil defense personnel get their training to face and minimize the devastating impacts of those disasters. The Ministry of Health, the Ministry of Housing, and the Ministry of Supply have their plans in case of disasters.

The problems, which both men and women in any country face towards their active participation in the management and mitigation of natural disasters, could be summarized in the following points:

- Some governmental bodies other than civil defense authorities may not observe mitigation and preparedness measures at the countries' levels while determining different land uses. As a result more women and men could suffer from the severe economic and socio-economic impacts of natural disasters.
- The occurrence of natural disasters at unpredicted times and frequencies makes decision makers as well as community members tend to relax by the increased duration and forget all about it.

- Lack of information dissemination regarding the areas vulnerable to natural disasters is one of the basic causes behind increasing their economic and socio-economic impacts.
- Community members are not informed with the proper preparedness actions they should adopt in case of disasters.
- Women are even less informed about natural disasters, and their management or mitigation. Lack of education, less involvement in development and the decision making process at all domains feeds in women usual unawareness of natural disasters places, mitigation, management or preparedness actions
- Lack of allocated budgets, which can be mobilized to face any unexpected disaster and reduce its tolls on men and women in developing countries, more than developed ones. All measures combating disasters physical damages require extra budgets to be invested to integrate those measures in the construction phases of projects. In case of limited countries resources those measures tend to be forgotten or neglected.
- Mass media channels give the least emphasis on mitigation, management and preparedness actions for natural disasters to be adopted by the community. In turn this will limit the access of illiterate women to information even more than men.

Gender issues in preparedness and relief

In the Middle East culture it is shameful for men not to participate actively in controlling the impacts of natural disasters. Women tend to secure their families household assets, which are basic for their survival after the disaster. Men will try to protect their amenities by starting voluntarily to build dikes, in case of floods warnings, support their houses and rescue those under the rubbles of demolished houses in case of earthquakes. Women children, and the elderly, especially mothers, are helped to move to secure places. Elderly mothers are always given the best care because of all people strong religions believe. After the disaster in the sheltered areas men can get access easier to food, medicine, shelter and water relieves given by donors and governments. Gender differences tend to disappear temporarily during and immediately after the disaster.

Once the community settles after the disaster women tend to suffer more the consequences as they can lose their privacy, income generating activity with little mobility to seek other jobs as they are always tied with their families. With men abandoning the family more and more women get to suffer the burden of single headed household responsibilities with no source of money or family support.

With the demolition of schools more girls than boys are forced to drop education, as most probably they will be placed in distant schools, which they cannot easily access. The same applies to health care, as it will be much harder for women to travel long distances with their children or family members to seek medical treatment and preventive care.

Role of governments

Different governmental organizations have important roles in managing natural disasters. Environmental deterioration leading to the occurrence of frequent disasters can be minimized through sustainable development approaches summarized in the following points:

- Adoption of the environmental impact assessment for any new project as a valid legal tool to avoid the impacts of natural disasters.
- Integration of natural resources and environmental management in their policy making through establishing stored water, shelter, and food to be used in case of emergencies hitting certain vulnerable communities.
- Sustainable planning for land use to avoid poor communities use of risky areas as a result of increasing land pricing for safe areas.
- Dedication of risky areas to activities not severely impacted by disasters as forests, green areas and the use of drip irrigation systems to avoid the use of excessive water and enhancement of land sliding.
- Information dissemination regarding the areas of flash floods, sand dunes movement, earthquakes, and land sliding.
- Involving more men and women in the planning and execution of projects related to development, and proper mitigation measures for the devastating impacts of natural disasters.

Role of non-governmental organizations and the civil society

The role of civil society is growing steadily all over the countries of the region. More women are participating in NGOs, as they tend to function away from the cumbersome rules and regulations of the government. Also women can give more to voluntarily work.

Civil society organizations should be empowered by the knowledge of natural disasters management, mitigation and preparedness. Society support for such actions could be deeply rooted and involving to both men and women. Women NGOs can play a very important role in information dissemination to involve more women in disasters preparedness and avoidance measures. They can empower women decision makers to integrate this dimension in their decision-making process as well as lobby for others to support those decisions integrating the environmental dimension in their plans and actions insuring sustainable development.

Through participation in the process of Environmental Impact Assessment public hearings on new development projects, NGOs can pose a pressure to avoid any natural disasters implications by insuring the real integration of mitigation engineering measures to natural disasters implications. NGOs participation in EIAs evaluation can also insure the proper urban planning which avoid risky areas.

The efforts of NGOs can be hindered by lack of information, non-cooperative attitudes of some governmental organizations, as well as lack of resources to disseminate the preparedness information in the society.

Lack of cooperation from the mass media can hinder the NGOs information disseminating roles. In addition reluctance of women to active and positive participation is a great hindrance towards more women information especially in societies where men and women are not actively participating together due to cultural barriers.

Role of international organizations

International UN organizations and donor agencies play a serious key role in empowering women in the region to get involved in several developmental issues and to lead their participating role in sustainable development. Those agencies need to work collaborately in issues like natural disasters management and get this important issue as one of the hot issues to be integrated in all their programs and projects. Although they have raised the awareness about the integration of the gender dimension, yet there is still a lot to be done to integrate both gender and environmental dimensions to insure sustainable development. Sustainable development has to be seen as one of the very mitigating tools to natural disasters.

Conclusions

- Since the old ages, women in the Middle East region have mastered conservation of natural resources and proper management of their environment. Although their role is not properly advocated due to mass media gender bias, yet their role now is getting recognized and more governmental and non-governmental agencies are seeking their participation. Increasing levels of education and involvement in several male dominated professions is increasing their credibility as decision-making partners.
- Women's participation in natural disaster management, mitigation and preparedness is part of proper considerations given by governmental and non-governmental bodies. The different countries of the region give more attention now to natural disasters management, as they tend to be more frequent.
- The role of mass media in giving gender-balanced images about the roles played by different entities in case of disasters is growing and their informative role about preparedness actions is still limited and needs more attention.
- International agencies need to integrate more the natural disaster dimension in their projects and plans implemented in the different countries of the region. Women have to be seriously involved and informed about their needed important role.