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APPRAISAL OF THE ROLE OF COMMUNITY PARTICIPATION IN FLOOD RISK MANAGEMENT IN KOGI STATE

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ABSTRACT

In Nigeria, flooding is a major annual disaster that is becoming more severe in recent time due to the effect of climate change and other related factors. This study aimed at identifying the roles of community participation in flood risk management in Kogi state. The study was conducted using eighteen communities from the nine LGAs that annually experience flooding in Kogi state. The LGAs include Lokoja, Ajaokuta, Ibaji, Idah, Ofu, Bassa, IgalamelaOdolu and Kogi. Six hundred and ten (610) respondents were selected using Sample Size Table of Research Advisor (2006). The study used questionnaire and FGD in collecting data. The analysis of the study was through the use of tables, percentages, narrative analysis and verbatim quotations. The findings revealed that flood vulnerable communities irrespective of urban or rural settings participates at different levels of participation in flood risk management. The findings also revealed that 71.4% of respondents in rural communities participate through self-mobilization while 30% of respondents in urban communities participate in giving information to authorities. The respondents' level of involvement in flood risk management also differsas 63.3% of urban respondents and 43.2% of rural respondents indicated involvement in flood risk management. The study also discovered that 83.5% communities participate in preparedness, response and recovery, while 40% of urban communities participate in all stages of flood risk management. Majority of urban communities 70.4% and 51.6% of rural communities play the roles of early warning information, organize flood management committee, blockage of flood possible areas, cleaning drainages and waterways, organize for relief materials, evacuating and camping of flood affected victims and psychosocial support to victims. Finally, the study recommends encouragement of community members to participate in all stages,functional medium between the flood vulnerable communities and environmental management agencies to enhance the involvement of communities in flood risk management, train members on the best method for improved responsibilities, because these communities have developed their management strategies using local methodologies, address the issue of early warning, train members on management skills and improve on the livelihood of the flood vulnerable communities. By this, there will be effective flood risk management in Kogi state and Nigeria In general.

Key Words: *Community, Participation, Flood Risk, Management, Flood Vulnerable.*

INTRODUCTION

Flood event like other natural hazards has become a major environmental challenge across the globe. In many regions flooding has become more intense and frequent as climate change impacts continue to affect precipitation intensity, duration and frequency (Parry *et al.,* 2007). Flooding is one of the most destructive types of natural disaster that strikes humans and their livelihoods around the world. In 2011 alone, 106 million people were affected by floods all over the world, and most of these victims come from Asian countries whose populations are exposed to recurrent flooding (UNISDR, 2012).There is a general

increase in the trend of climate-related disasters since year 2000 (UNISDR, 2013).

Over the years, the Nigerian Government and International donor agencies like UNICEF, UN and EU as well as non-governmental organizations have committed a lot of resources to flood disaster management in the country. However, much progress has not been made in the areas of flood disaster risk reduction, recovery and community resilience (Jinadu, 2015).Public participation in decision-making concerning flood prevention and protection is needed, both to improve the quality and the implementation of the decisions, and to give the public the opportunity to express its concerns and to enable authorities to take due account of such concerns (EU Water Directors, 2003).

The first responders to disaster in any community are community institutions like Community Based Organizations (CBOs), Faith Based Organizations (FBOs), and Non- Governmental Organizations (NGOs). The effort of this community emergency management structure is complemented by Emergency Management Volunteers (EMV) and if more resources are needed, SEMA and NEMA can bring in additional resources (NDMF, 2010). In the analysis by Few *et al*. (2005), it suggested that improving coping response of the communities is the key to thesuccess of reducing flood risk. In this connection, restoring the natural functions of rivers and floodplains, planning and management practices, involving the local communities in the river basin management, capacity development of the local institutions are found to be effective measures of sustainable flood management. The rationale for community involvement or community-based activities is because community-based activities (and community-based organizations) are deeply rooted in the society and culture of an area, they enable people to express their real needs and priorities, allowing problems to be defined correctly and responsive measures to be designed and implemented (Twigg, 1999). Twigg also argues that existence of community-based organizations allow people to respond to emergencies rapidly, efficiently and fairly, and therefore available community resources (even it is small in amount) will be used economically.

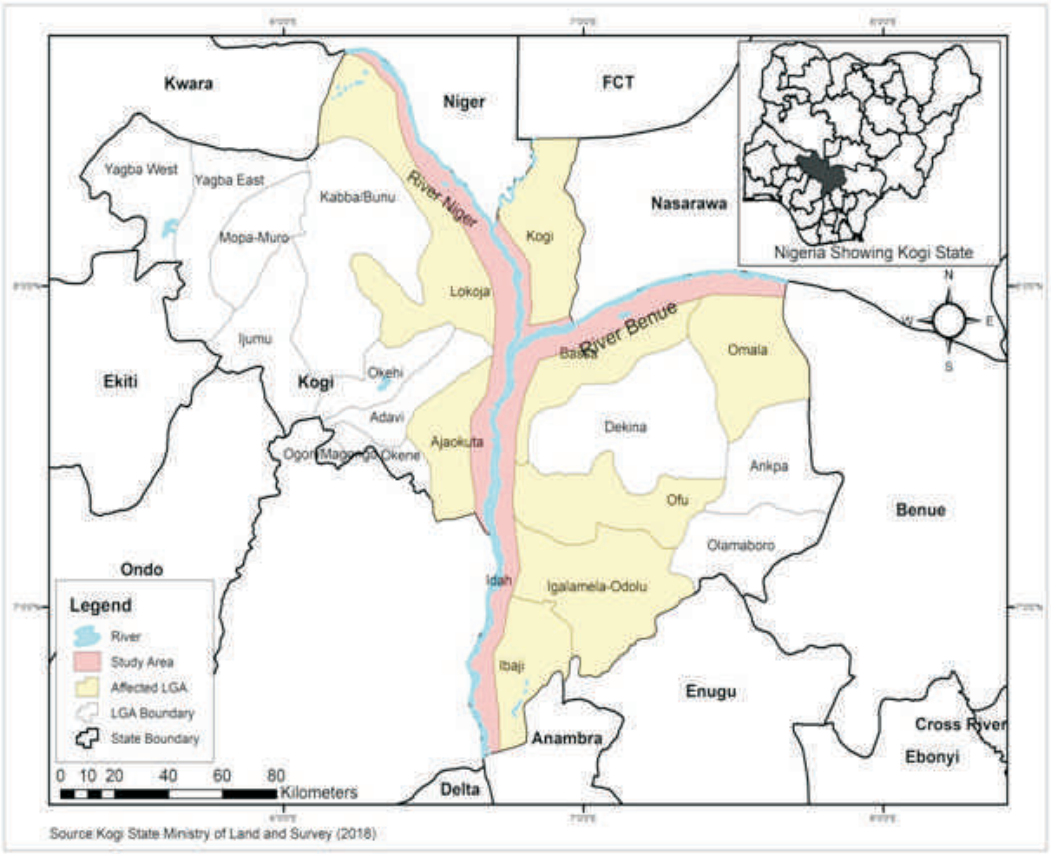
Several studies have been conducted across Nigeria on flood and flood management. The research conducted includes studies in Anambra (Kingsley et al, 2013), (Jinadu, 2015), (Obeta2014), (Odedeji et al. 2012, research in Kaduna (Augustine et al. 2015), and those studies in Kogi state (Liman *et al.* 2015), Aderoju *et al.* (2014) and Anunobi 2014), others are Kelly 2001, ADPC,2007 and WMO 2008.Best practice places stress on co-operation and community participation. It has become apparent that top-down approaches to disaster risk management, ignoring the local capacities and resources failed to address the specific local needs of vulnerable communities. In response to the limitations of this top-down methodology, the community-based disaster management is seen as an alternative approach (ADPC, 2007). Community participation becomes fundamental and essential for each stage of the management, that is, preparedness for, response to and recovery from flood disasters (World Meteorological Organization (WMO), 2008).

The core objective of this study is to appraise respondents perception of flood risk management, while the specific objectives are to identifythe stages of participation of flood vulnerable communities, identify flood vulnerable communities level of participation in flood management, also to identify the major roles flood vulnerable communities play in flood risk management andlastly, to identify the challenges of community participation in flood risk management. The study only focused on the nine LGAs that are usually experience flooding in Kogi state.

THE STUDY AREA

Kogi state is in the central region of Nigeria, located on the latitude 7° 30´N and longitude 6° 42´E with a total land area of 29,833km2. Kogi state share boundary with Federal Capital territory (Nigeria) to the North,

Nassarawa state to the Northeast, Benue state to the South, Enugu state to the Southeast, Anambra state to the south, Edo state to the Southwest, Ondo and Ekiti to the West, Niger state to the North and Kwara to the Northwest. It is popularly called the confluence state because of the confluence of River Niger and River Benue at its capital Lokoja. The land rises from about 300 metres along the Niger-Benue confluence, to the height of between 600 metres above sea level. Agbaja plateau, which ranges from 335 to 336 metres above sea level, and the much higher Okoroagbo hills at Ogidi in Ijumu Local Government Area are some of the predominant of land forms of the state. The state is drained by the Niger and Benue rivers and their tributaries. The two major rivers in Nigeria (Rivers Niger and Benue) flowed through several communities in nine Local Government Areas in Kogi state (Ibaji, Idah, Igalamela-Odolu, Ofu, Ajaokuta, Bassa, Omala, Lokoja and Kogi) (Figure 1). These rivers annually overflow its banks to flood the communities (SEMA, 2012). Kogi state has a mean temperature range between 240C to 340C with a relative humidity of 70% in dry months and 90% in wet months. The general rainfall is undulating. The state has an annual rainfall of between 1,100mm and 1,300mm between April to October. Kogi state has a population of 3,595,789 according to 2006 population census which was the 24th in the ranking of most populous state in Nigeria (NPC, 2006). Agriculture is the main concern of the economy. Mineral resources in the state include; coal, limestone, iron, petroleum and tin. The state is the home of the largest iron and steel industry in Nigeria known as Ajaokuta Steel Company Limited, one of the largest cement factories in Africa, Dangote Cement, Obajana.



Source: Kogi State Ministry of Lands and Survey

Figure1: The Riverine Areas and the Most Flood Prone LGAs in Kogi State

METHODOLOGY

Reconnaissance survey was carried out to help acquire the necessary materials like maps, documented materials as well as information from SEMA, LEMC and communities. Structured questionnaires were administered to purposively sampled respondents from the flood affected communities in the nine Local Government Areas because of their experience in flooding events and Focus Group Discussions (FGD) was held with major key players in flood risk management in the sampled communities, especially officials of community based organizations that organize flood management activities. The data collected from structured questionnaires was analysed using percentages, while the data from FGD was transcribed, interpreted through narrative analysis.

RESULTS AND DISCUSSIONS

Table 1: Distribution of Respondents according to Stage of Participation in Flood Risk Management.

Community Stage of Participation	Response		Location		
			Urban	Rural	
	Preparedness	F	51	35	
		%	21.3	9.5	
	Response	F	51	25	
		%	29.2	6.8	
	Recovery	F	23	1	
		%	9.6	0.3	
	All of the above	F	96	309	
		%	40.0	83.5	
	Total	F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

Community Stage of Participation in Flood Risk Management

Table 1 shows the stages at which flood vulnerable communities engage in flood risks management. 83.5% respondents from rural communities like Ajaokuta native Village Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda indicated participation in all stages of flood risk management in their area, 9.5% indicated involvement in preparedness stage, 6.8% involvement in response stage, while, only 0.3% of the respondents from rural communities reported engagement in recovery stage of flood risk management. The major reason for rural communities' involvement in all the stages is self-commitment to protection from flooding. It also show that majority of the respondents from urban communities (40%) Cantonment, Adankolo, Nataco, Koton-Karfe Onyedega and Itobe reported participation at all stages of flood management. While 29.2% and 21.3% indicated involvement in only response and preparedness stages (table 1).

Table 2: Distribution of Respondents according to Community Levels of Participation in Flood Risk Management

Level of Community Participation	Response		Location		
			Urban	Rural	
	Passive Participation	F	40	32	
		%	16.7	8.3	
	Participation in information giving	F	72	12	
		%	30.0	3.2	
	Participation by consultation	F	21	3	
		%	8.8	0.8	
	Participation for material incentives	F	49	59	
		%	20.4	15.9	
	Self-mobilisation	F	58	264	
		%	24.2	71.4	
	Total	F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

Community Level of Participation in Flood Risk Management

Table 2 gives a picture of the respondents level of participation in flood risk management. This shows the different levels of participation between the urban and rural communities. It revealed that majority of the respondents (71.4%) in rural communities such as Ajaokuta native Village Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda indicated self-mobilisation, 15.9% supports participation for material incentives, 8.6% indicated passive participation and 3.2% participation in giving information The major reasons for self-mobilisation was lack of the presence of environmental management agencies for intervention in flood disaster management in rural communities It further revealed that respondents in the urban communities (30%) indicated to participate in information giving, 24.2% participate through self mobilization, 20.4% indicated for material incentives, 16.7%for passive participation, while, 8.8% participate by consultation. The agencies tend to gather information from members of flood vulnerable communities and also engage some in labor like drainage and waterways cleaning.

Majority of the respondents participate in flood risk management through self-mobilisation as indicated in Ajaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda rural communities and some urban communities. Most of these communities develop different mechanisms in the management of flood disaster because of long period living in the area and experience of flood disaster in their communities. The finding is line with Pretty, (1995) self mobilization strategy where people participate by taking initiatives independently of any external institutions to solve their problems.

Table 3: Distributions of Respondents according to Community' Role in Flood Risk Management

Community Roles in Flood Risk Management	Response		Location Urban	Rural	
	Early warning information to community members	F	2	37	
		%	0.8	10.0	
	Organizing flood management committees	F	1	28	
		%	0.4	7.6	
	Blockage of flood possible areas	F	2	37	
		%	0.8	10.0	
	Cleaning of drainage and waterways	F	29	0	
		%	12.1	0.0	
	Organizing of relief materials and food	F	3	77	
		%	1.3	20.8	
	Evacuation and camping of flood affected victims	F	24	0	
		%	10.0	0.0	
	Psycho-social support to victims	F	10	0	
		%	4.2	0.0	
	Total	F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

Community Roles in Flood Risk Management

Having effective techniques and tools in flood response measures allows reducing damage to property and repair costs (Ahern, 2011; Liao, 2012). Table 8 shows that both urban and rural communities play numerous activities in ensuring flood risk management in their various communities. It revealed that majority of respondents in urban communities (70.4%) such as Cantonment, Adankolo, Nataco, Koton-KarfeOnyedega and Itobe reported engagement in all the enlisted roles, other 12.1% indicated cleaning of drainage and waterways, while, 10% of the urban respondents involve in evacuation and camping of flood affected victims (table 3). For rural communities, most of the respondents (51.6%) reported engagement in all the enlisted roles, 20.8% reported the community role as organizing of relief materials, but, 10% of the respondents not engagement in clearing of drainage and waterways, evacuation and camping of flood affected victims and psycho-social support to victims of flood in their various communities. The flood vulnerable communities achieved these benefits through community based organizations.

Ajaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda rural communities mostly engage in early warning information, organize flood management committees, blockage of flood possible areas and organizing of relief materials. While majority of urban respondents engage in cleaning of drainage and waterways, evacuation and camping of flood affected victims.

Quotations of comments from some participants on the role of communities are quoted below:

> "Community through CBDs and Committees organizes members for labors such as sand bag fillings of flood entrance areas, clearing of drainages and water ways in preparation for flood." "The community informs members about flood preparedness through town-criers in the community" "Community generates resource by tasking members of the community for financial and material contributions in preparation for flood"Kaka Ibrahim – Adogo

The findings revealed the flood response activities of communities through CBOs/committees as evacuation of flood affected residents and their properties to a safe harbor in neighbours, provide them with food and clothing within the period of the disaster. While in severe cases the entire community residents move to live with relatives in other communities.

The response activities of communities recognized by participants are quoted below:

> "The CFMC organize and evacuate flood affected residents to safer neighbor houses, while those with severe flood cases leave their communities completely on several cases, the committees ensure that the victims are being fed, cloth and given the necessary care from the resources generated during flood preparedness"… Achemu Yakubu – Ejule-ojebe

It was also revealed that urban communities such as Adankolo, Cantonment, Nataco, Koton-Karfe, Onyedega and Itobe has less work to do at preparedness stage of flood risk management. The access of such communities to media and proximity to environmental management agencies make it possible for early warning messages and drainage clearing by both the agencies and communities in flood preparedness. It is confirmed that the agencies go around such urban communities with vehicles and speed boats giving early warning information and also get pay labors to clear drainages and water ways. Though, the communities assist the agencies in the clearing of drainage and water ways in their areas. The findings also revealed that some communities such as Ugwoda, Onyedega and Edeha only get early warning information but do all other activities on their own.

The participants further revealed the recovery activities of flood vulnerable communities as organizing of residents for labor, tasking of residents for financial contributions, repairing of affected roads drainages, school structures, town halls and all public properties using the community labor and available resources. The flood vulnerable communities also achieve their recovery activities through committees.

> "the community based organizations (CBOs) organize community members, task them to raise fund for repairs of flood damaged facilities such as drainages, roads, schools, hospitals, markets and all other buildings used by the public" …Achemu Yakubu – Ejule-ojebe

Table 4: Distribution of Respondents According to Challenges of Participation in Flood Risk Management

Challenges of Community Participation In Flood Risk Management	Response		Location Urban	Rural	
	Lack of early information	F	15	106	
		%	6.3	28.6	
	Lack of management Skill	F	12	0	
		%	5.0	0.0	
	Poverty	F	23	98	
		%	9.6	26.5	
	All of the above	F	190	166	
		%	79.2	4.9	
	Total	F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

Challenges of Community Participation in Flood Risk Management

As reflected in Table 4, majority of the respondents in urban communities (79.2%) indicated that communities are faced with all the enlisted challenges of community participation, 9.6% sees poverty as the challenge, 6.3% are of lack of information as lack while 5% is lack of flood management skills. The case is different for respondents in rural communities, 44.9% agree to all the enlisted challenges, 28.6% of them reported lack of early information, while, 26.5% indicated poverty as challenges of flood risk management. In Ajaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda rural communities, lack of early warning information and poverty was identified to be the major challenges. Dukeshire and Thurlow (2002) support the assertion that rural citizen's feel that there is a lack of access to information about government programme.

Kakumba and Nsingo (2008) also noted that the pathetic socio-economic position of the rural people obstructs them from meaningful participation. This is because the rural population is associated with low levels of education, high illiteracy rates, poor infrastructure and communication means obstructing their civic competence.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The study is about the roles of community participation in flood risk management in Kogi state, Nigeria. The study revealed that flood vulnerable communities have different initiatives in flood management. However, there is variation in flood risk management between the urban and rural communities. 83.5% of rural and 40% of urban respondents indicated participation in all phases of flood management (preparedness, response and recovery). The management activities of the people include; early warning information through town criers, organizing flood management committees, blockage of flood possible areas, cleaning of drainage and waterways, organize relief materials and camping of victims. The findings also show that 70.4% of urban and 51.6% of rural respondents indicated participation in all flood management activities. The study also revealed that majority of respondents (79.2%) urban and (44.9%) rural flood vulnerable communities identified lack of early warning information, lack of management skill and poverty as the block to community participation in flood risk management in Kogi state. As a result of these factors, the people in the flood vulnerable communities could not adequately participate in flood management.

Recommendations

In line with the findings, the following recommendations are made.FEMA and SEMA should encourage members of flood vulnerable communities to participate in all stages of flood risk management.

There should be functional medium between the flood vulnerable communities and environmental management agencies to enhance the involvement of communities in flood risk management.

The flood vulnerable communities use local available resources in playing the various roles in flood management, they should trained on a method for improved responsibilities.

Government should address the issue of early warning, train members on management skills and improve on the livelihood of the flood vulnerable communities.

REFERENCES

Aderoju O. M., Jantiku J., Fagbemiro O. A., Aliyu I., Nwadike B. K., Ajonye S. E. & Salman K. S. (2014), Geospatial Assessment of 2012 Flood Disaster in Kogi State, Nigeria; *IOSR Journal Of Environmental Science, Toxicology And Food Technology (IOSR-JESTFT)* 8(2) 74-84

ADPC (2007) *Based Disaster Risk Management*, http://www.adpc.net/v2007/Programs/CBDRM/Default.asp

Ahern, J. (2011). *From fail-safe to safe-to-fail: Sustainability and resilience in the new urban world.* Landscape and Urban Planning; 100: 341-343.

Anunobi, A.I. (2014), Informal Riverine Settlements and Flood Risk Management: A Study of Lokoja, Nigeria;*Journal of Environment and Earth Science* (Paper), (Online) 4(12)

EU Water Directors. (2003). *Best Practice on Flood Prevention, Protection, and Mitigation*. Brussels. http://ec.europa.eu/environment/water/flood_risk/pdf/flooding_bestpractice.pdf.

Jinadu, A. M. (2015) *The Challenges of Flood Disaster Management in Nigeria*: Center for Disaster Risk Management and Development Studies, FUT, Minna.

Kakumba, U. & Nsingo, S. (2008). Citizen Participation in Local Government and the Process of Rural Development: The Rhetoric and Reality of Uganda. *Journal of Public Administration*. 43(2) 107-123

.

Kelly, D. (2001) 'Community participation in rangeland management: a report for the Rural Industries Research and Development Corporation.' (RIRDC: Barton ACT)

Kingsley, E. and Christopher A. (2013), Impact of Flooding on Riverine Communities: The Experience of Omambala and Other Areas in Anambra State, Nigeria; *Journal of Economics and Sustainable Development* (Online) 4(18)

Liao, K-H. (2012). A Theory on Urban Resilience to Floods: *A basis for alternative planning practices.* Ecology and Society, 17; 48- 62.

Liman, H. M., Ayodele, A. D., Suleiman, Y. M. & Alabi A. A. (2015), Geospatial Analysis of Flood Risk and Disaster Management in Kogi State, Nigeria; *International Journal of Research and Innovations in Earth Science* 2(2)

National Population Commission, NPC (2006): Population census figures for 2OO6. Official gazette, Abuja.

NEMA (2010), *National Disaster Management Framework (NDMF).* Accessed July 14, 2016 <http://www.preventionweb.net/files/21708_nigherianationaldisastermanagementf.pdf

Obeta, M. C. (2009) *Extreme river flood events in Nigeria: A geographical perspective;* Nigerian Journal of Geography and the Environment.; 1:170-179.

Parry, M.L., Canzian, J.P., Vander Linden, P.J. & Hanson, C.E. (eds). (2007) *Climate Change: Impacts, Adaptation and Vulnerability;* Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Retrieved from

https://www.ipcc.ch/publications_and_data/ar4/wg2/en/ch3s3-5-2.html.

Pretty, J.N., (1995) *Participatory learning for sustainable agriculture*. World Development, 23(8): 1247-1263.

SEMA (State Emergency Management Agencies) (2012): Report on flood in Kogi state. Official report, Lokoja.

Twigg, J. (1999). The Age of Accountability Future Community Involvement in Disaster Reduction. *Australian Journal of Emergency Management,* 14(4): 51–58.

UNISDR (United Nations International Strategy for Disaster Reduction), (2011). *Revealing Risk, Redefining Development.* Geneva: UNISDR.

UNISDR (2013) Disaster Statistics: *Latest Infographics*; United Nation Office for Disaster Risk Reduction. Retrieved from: http://www.flickr.com/photos/isdr/sets/7215/

WMO (2008). *Social Aspects and Stakeholders Involvement in Integrated Flood Management*, APFM Technical Document No. 4, Flood Management Policy Series, Associated Programme on Flood Management, World Meteorological Organization, Geneva. http://www.apfm.info/pdf/ifm_social_aspects.pdf