

## The Socio-Cultural Effects of Flooding in Bayelsa State: A Case Study of Southern Ijaw Local Government Area

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Doi:10.5901/mjss.2014.v5n27p1443

### Abstract

Flood has been the most devastating natural disaster in the world which has often impacted negatively on the socio-cultural organization of human societies. In Nigeria, flood has been reported to affect and displace more people than any other disaster. It also causes more damage to property. Flood disasters are been perilous to people, communities and institutions. Recently, Nigeria, especially the Niger Delta area was affected by flooding chasing most inhabitants away from their socio-cultural and economic heritage. While Bayelsa State was recorded as one of the worst affected, the case of Southern Ijaw LGA was most lamentable. The study examined the socio-cultural effects of flooding in Bayelsa State: A case study of Southern Ijaw LGA. In this study, a descriptive survey design was used. Systems theory was adopted as theoretical framework for the study. A combination of cluster and purposive sampling techniques were adopted while the instruments of questionnaire, interview schedules and focus group discussion were utilized. The sample population for the study was three hundred and eighty six (n = 386). The study revealed that the people of Southern Ijaw were devastated by 2012 flooding and their socio-cultural heritage was severely affected. Specific socio-cultural effects of flooding on the people of Southern Ijaw Local Government Area include amongst others; displacement of communities, rendering families homeless, disruption of business activities and vulnerability to various forms of crimes, etc.

**Keywords:** Flood, socio-cultural, disaster, displacement, adjustment.

### 1. Introduction

Natural disasters have continued to plague human beings with an increasing speed in the 21st century. They have shaped, modified human social, cultural, political, religious and economic organizations. Sheets and Grayson (1979:6) noted that very few researchers had paid significant attention to the potential socio-cultural effects of the natural hazards such as volcanic tephra, earthquake, flooding among others whose occurrences were apparent in many societies. The current situation is radically different. In recent years, studies stressing the impacts of natural disasters on societies have increased dramatically, although majority of these are still authored or inspired by Natural scientists and Astronomers rather than social scientists (Torrance and Grattan 2002).

Natural disasters have become so common place that they hardly receive passing notice on the news unless there have been a large number of casualties. Volcanoes, mudslides, tsunami and especially flooding are just a few of the ways nature strikes on a daily basis, leaving behind destruction and heartache. Humans have learned to prepare for the possibility of tornadoes, earthquakes, hurricanes and wild fires, but no amount of preparation can lessen the impact that natural disasters have on every aspect of society (Ratiff, 2013).

Ratiff (2013) succinctly stated that the biggest visible effect of natural disasters is the physical ruin they leave behind. Homes, vehicles and personal possessions are often destroyed within a short period of time, leaving families homeless and shutting some businesses down, permanently. Tornadoes destroy structures at whim, earthquakes can cause structural damage that might not be apparent at first glance, and tsunamis and floods sweep homes off their foundations. The emotional toll of natural disasters is much more devastating i.e the death of a loved one, displacement of the whole, separating friends and neighbours, in extreme case.

Furthermore, Macionis and Plummer (2008) opined that it seems these natural disasters are increasing. For instance, in the 1950s there were 20 great world catastrophies; in the 1970s there were 47; and by the 1990s there were 86. In 1998-99 alone, over 120,000 people were killed in such natural disasters- floods, earthquakes, fires, cyclones. In India, a cyclone in 1998 in Gujarat caused some 10,000 deaths. There are no signs of this trend slowing down in the twenty-first century (Brown and Assadourian, 2001).

Nigeria has been one of the most hit by flood in Africa continent. In 2010 for example, flooding affected Sokoto in a

village called Kagara with the inhabitants of the village having their village and homes including their crops and storage food completely destroyed. Other places where the flood also affected were; Isa, Kebbe, Sokoto-North, Sokoto South, Rabah, Binji, Goronyo, Silame, Shagari, while about 50 villages were submerged, more than 130,000 people were displaced. (Etuonovbe, 2011).

According to Etuonovbe (2011) flooding in the South-West and North Central, has affected places like Ibadan, Lagos, Kwara, Kogi, etc. In Lagos, flooding which left many homes swamped with the resultant loss of property and human lives at Ikorodu axis, with property estimated at several millions of Naira destroyed in many communities. The case was worst in Kogi state as about 90 communities particularly in Lokoja, Ibaji, and Kogi LGA were sacked by the raging flood which displaced over 500,000 people. In some areas, farmlands were left out in flood disasters in Nigeria. In 2010, over 15 communities and farm plantations worth millions of naira were submerged by flooding in Shonga District, Edu Local Government Area. The flood also took over 500 hectare farms of cassava, rice, guinea corn and maize crops as well as livestock which include sheep, goats and cattle. The recent flooding in Nigeria, affected at least a community in the different Geo-political zones leaving millions displaced, many death and thousands of livelihood swept away.

Against this background, literature on the socio-cultural effects of flooding is scanty as well as few or limited empirical studies have been carried out on this devastating phenomenon. Thus, the major thrust of this study is to explore the social and cultural implications of the 2012 flood incidence in Bayelsa State as well as to investigate the resettlement and re-adjustment patterns of the flood victims after the flood incidence in the state.

## 2. Problem Statement

According to Evans (1995) flooding is the most common of all environmental hazards. In Nigeria, flood has been reported to affect and displace more people than any other disaster. It also causes more damages to property. Etuonovbe (2011) clearly stated that at least 20 per cent of the population is at risk from one form of flooding to another. Flood disaster has been perilous to people, communities and institutions. Recently and specifically in 2012, Nigeria, especially in the Niger Delta regions, flooding displaced most inhabitants away from their socio-cultural and economic heritage. It shattered both the built-environment and underdeveloped environment. It claimed many lives, and millions of property got lost due to its occurrence. Flood has not only devastated the people, their property and disrupted business activities, communities and residents but also exposed victims to cholera, diarrhea, malaria, skin infections and other water-borne diseases epidemic. It resulted in the destruction of bridges, roads, houses, infrastructures and farmlands (Baiye, cited in Etuonovbe, 2011; Akinyemi, 1990; Nwaubani, 1991; Edward, 1997). Yet the social and cultural environment of the people displaced after the flood incidence has not been adequately studied and documented sociologically.

Studies have also shown that communications and traffic were interrupted while many land areas were inundated. Also industrial plants and commercial establishments were paralyzed during floods. This led to unemployment due to retrenchment or total collapse of business organizations. The resultant effect is social vices such as crime and violence. Besides, untold hardship was experienced; especially by most vulnerable groups such as women and school children whenever there was flood disaster (Oluduro, 1988; Durotoye, 1999; Folorunsho and Awosika, 2001). This revelation suggests that if the data on flood disasters in Nigeria were to be available, the human mind would not be able to conceive the devastating effects of flooding on man.

Similarly, frequent flooding in the Niger Delta region has resulted to loss of livelihoods in terms of production and other prolonged economic impacts. This has unarguably triggered off mass migration or population displacement. Consequently, displacement from one's home, loss of property and livelihoods, and disruption of business and social affairs can cause continuing stress. The stress of overcoming these losses can be overwhelming and capable of producing lasting psychological impacts which will invariably result to social unrest and social problems (Folorunsho and Awosika, 2001). Thus, the question is that considering the devastating effects of the 2012 ravaging flood across the country: to what extent has the ravaging flood incidence impacted on the social life and cultural practices of the people of the region?

## 3. Analytical Framework: Social Systems Theory

Social systems theory is a sociological theory that provides a way to unify all behavioral patterns of people in a given society and its corresponding environments in a multi-levelled approach. It is interested in many varied relationships in the social world; it emphasizes processes of information and interactions between and among variables (Vandenbergh, 1999). Thus, it is an integrative analytical framework as well as viewing the social world in dynamic terms. In this context however, the word *systems* is used to refer specifically to self regulating systems i.e. they are self-correcting through

feedback.

Laszlo (1972) maintained that self-regulating systems are found in nature, including the physiological systems of our body, in local and global ecosystems, and in climate including human interaction processes and its natural world. The social systems view of this study is based on several fundamental ideas. First, all phenomena can be viewed as a web of relationships among elements or a system. Second, all systems, whether physical, biological, or social, have common patterns, behaviours, and properties that can be understood and used to develop greater insight into the behavior of complex phenomena and to move closer toward a unity of science (Laszlo, 1972). Contributing to this view, Schein (1980) maintained that systems theory from this frame of reference however, is composed of regularly interacting or interrelating groups of activities.

Laszlo (1972) who further explains the new systems view of organized complexity went "one step beyond the Newtonian view of organized simplicity" in reducing the parts from the whole, or in understanding the whole without relation to the parts. The relationship between societies and their environments became recognized as the foremost source of complexity and interdependence. Corroborating this view, Bánáthy (1996) argued along with the founders of the systems society that "the benefit of humankind" is the purpose of science, which has made significant and far-reaching contributions to the area of systems theory. As such, Bánáthy defines a perspective that iterates this view:

*The systems view is a world-view that is based on the discipline of system inquiry. Central to systems inquiry is the concept of system. In the most general sense, system means a configuration of parts connected and joined together by a web of relationships. The Primer group defines system as a family of relationships among the members acting as a whole. Von Bertalanffy defined system as "elements in standing relationship" (Banathy, 1997:22).*

Furthermore, in taking another critical analysis of systems theory Buckley (1967) stated that three different kinds of systems exist: mechanical, organic, and socio-cultural. These three kinds of systems differ qualitatively as well as quantitatively i.e., in terms of the way they work as well as their degree of complexity and instability. Systems may also be described in terms of the degree to which they are open or closed. Open systems (e.g., socio-cultural systems) tend to respond to a greater range of fluctuations in the environment than closed systems do. Closed systems generally are entropic (i.e., they tend to break down), while open systems tend to be *negentropic* (i.e., they tend to elaborate structures).

Luhmann (1927-1998) in another perspective of systems theory, stressed that systems are always less complex than their environments. Systems simplify by selecting pieces of information from the complexity of an environment. Since systems are forced to select from a plethora of pieces of information within an environment, the systems theorist must acknowledge the contingency of a system's selections, because the system could have selected differently. This contingency entails risk, because paying attention to some bits of information while ignoring others may have unforeseen consequences for the system if what is ignored is important to the user of the information (Vandenberghe, 1999).

Luhmann (1927-1998) specifically maintained, *autopoietic systems* produce their own basic elements; they are self-organizing insofar as they create their own boundaries and internal structures; they are self-referential insofar as their elements refer to the system itself; and they are closed systems insofar as they do not deal directly with their environments, but rather with representations of their environments. According to him, the society is an *autopoietic system* (Vandenberghe, 1999). As such, the most basic element of society is communication, and anything that is not communication is part of a society's environment (e.g., biological, psychic and physical systems). Both psychic and social systems - which are environments for each other - rely on meaning. In Luhmann's view of system theory, meaning is comprehensible because of contingency. In other words, meaning emerges only because a specific action is different from other possible actions.

Luhmann (1927-1998) added, there could be double contingency which can be described as the fact that every communication must consider the way in which it will be received. In Luhmann's view, social structures (e.g., roles and norms) make it more likely that communications will be understood by both sender and receiver. Social structures also give communications some continuity over time. Double contingency thus provides much of the impetus for the evolution of social systems.

Luhmann's systems theory of differentiation is closely connected to his view of evolution. In Luhmann's view, differentiation is the means by which a system deals with changes in its environment. Differentiation tends to increase the amount of complexity in a given system - that is, as an environment changes, a system (e.g., behavior or culture) will develop new behavioural patterns in order to deal with such changes. Luhmann argues that four forms of differentiation occur: segmentary, stratificatory, center-periphery, and functional differentiation. The latter form of differentiation, according to Luhmann, is the most complex and problematic for modern society, since it means that problems are often

displaced from the level of society to one of its subsystems (e.g., the problem of ecology). Finally, Luhmann argues that society is a world society that may be observed only from within the system. In Luhmann's view, knowledge of society may be gained through the observation of the relationship between a society and its semantics, or the way in which a society describes itself (Vandenbergh, 1999).

#### 4. A Brief Review of Related Literature

Flooding has been variously defined as the overflow of areas that are not normally submerged or a stream that has broken its normal confines or has accumulated due to the lack of drainage or failure of flood control structures. Oriola (2000) in his own definition describes flood as when a river overflows both its natural and artificial banks. Causes of flooding are generally categorized into natural and artificial floods in terms of their specific causes. Most floods are induced by systemic forces such as hydro-meteorologic factors, geologic conditions, and seasonal variation in weather patterns. However, these systemic forces may be exacerbated by anthropogenic disturbances such as urban population encroachment on marginal low-lying riverine lands or swamps, improper construction techniques, and poor levees and drainage systems. Absence or failure of flood control structures i.e., levees, floodwalls, channels, etc., may exacerbate flood problems.

According to Nott (2006:51), the causes of floods can be broadly divided into **physical**, such as climatological forces, and **human influences** such as vegetation clearing and urban development. The most common causes of floods are climate related, most notably rainfall. Prolonged rainfall events are the most common causes of flooding worldwide. Human impacts on river catchments influence flood behavior. Land use changes in particular have a direct impact on the magnitude and behavior of floods. Deforestation results in increased run-off and often a decrease in channel capacity due to increased sedimentation rates.

Babalola (1997) rightly pointed out that floods are most frequently related to climate. There are purely environmental hazards of meteorological phenomenon but very often induced by man's improper utilization or abuse of the physical environment. He identified that excessively heavy and prolonged rainfall is the commonest universal cause of floods such as the heavy rain on Exmore in August 1952, Oder's catchment in Czech republic and Poland in July 1997, Ogunpa in Ibadan in 1980 and 1988, Asa at Ilorin in 1976, Lisaluwa and Arogo in Ondo 1988 and 1995 (Babalola, 1997) and perhaps the July 10, 2011 heavy down pour in Lagos (Punch July 11, 2011).

As Giddens (2001) asserted the potential consequences of global warming which is the rising of sea levels resulting from climate change, may cause the polar ice caps to melt and the oceans to warm thereby expanding and resulting to overflow or rising sea levels. This therefore implies that cities that are near the coasts or in low-lying areas will be flooded and become uninhabitable. This may have also caused the various floods that occurred in most parts of the coastal regions of Nigeria such as Lagos, Rivers, Bayelsa, Delta, etc.

Also, the collapsed dams and other water control measures, such as the recent releases of dams from both outside and within Nigeria may cause floods. Cases of such floods have been reported at Dogurog, Wales in 1952, Frejus in France in 1959, Kano in Nigeria in 1988 (Oriola, 2000, Babalola, 1997).

Writing on the social impacts of flooding has over time revealed various dimensions of devastating consequences. According to a study undertaken in Scotland, the study suggests that social impacts of flooding are linked to the level of well being of individuals, communities and societies. It includes aspects related to the level of literacy and education, the existence of peace and security, access to basic human rights, systems of good governance, social equity, positive traditional values, knowledge structure, customs and ideological beliefs and overall collective organizational systems. Some groups are more vulnerable than others mainly those less privileged in society (see Living with Risk 2002: 47).

A study by the International Flood Initiative (2003) suggest that floods are the most taxing of water related natural disasters to humans, material assets as well as to cultural and ecological resources affecting people and their livelihoods and claiming thousands of lives annually worldwide. According to the Australian experience, the emotional behavior of many flood victims was shocking. The emotional cost of flooding was long lived. Follow-up studies found that about one-quarter still had not recovered from the emotional trauma of the event. Factors that contributed to the non-recovery included the severity of the flooding, the degree of the resulting financial hardship, age and socio-economic status. Elderly people on low incomes whose houses were deeply flooded were the most ill- affected (Flood Management in Australia, 1998:81).

Thus, a severe flood can impose a range of emotional costs on flood victims, many of them quite severe. Moreover the emotional strain may linger for years after the event. Flood aware communities can be expected to suffer less social and financial disruption than communities with a low level of flood awareness (Flood Management in Australia, 1998:82). Lindsell and Prater (2003) argue that social impacts can cause significant problems for the long term functioning of

specific types of households and businesses in an affected community. A better understanding of disasters' socio-economic impacts, therefore, can provide a basis for prediction and the development of contingency plans to prevent adverse consequences from occurring.

## 5. Methodology

The study was conducted in Southern Ijaw LGA of Bayelsa State using five selected clans, namely; Boma, Olodiana, Ogboin, Oporoma and Tarakiri clans respectively. The study adopted a descriptive survey design. Three hundred and eighty six ( $n = 386$ ) participated in the study in a combination of cluster and purposive sampling techniques across the five clans using an instrument of questionnaire for data collection. While focus group discussions and interview were conducted in each of the selected clans in order to ascertain questions related to the objectives of the study. Analysis of data collected for the study was based on the instruments of data collection. The quantitative data analysis was based on Statistical Package for Social Science (SPSS) using univariate, bivariate, crosstabulation and chi square statistical tool respectively. While verbatim method and content analysis were used for the analysis of quantitative data.

## 6. Results and Discussion

### 6.1 Social Demographics

In terms of the sex of the respondents 48.4% of the respondents are males, while 51.6% of them are females. So also, the study distribution of the respondents by age 18-25 were 14.8%; 29-40 (19.2%); 41-50 (43.8%), while 22.3% of the respondents were of the ages of 51 and above. This invariably implies that the age range of 41-50 among the participants has the largest percentage of respondents. This also implies that this age range of the respondents are adult who undoubtedly have the most experience about the terrain of the research locales to give adequate information about the subject of investigation of the study. In respondents' family composition, the study revealed that 20.2% were of 1-5 members, 46.4% are of 6-10 members, while 33.4% are of 11 members and above respectively. This implies that family composition of between 6-10 members had the largest percentage of respondents. The 11 members and above family of 33.4%, may be attributed to the polygamous system of family composition practiced in the research locales.

Educationally, 5.7% of the respondents have no formal education, 35.5% have primary education, 36.8% have secondary education, while 22.0% of them have tertiary educational qualification. This implies that a smaller percentage of the respondents have no formal education. What it means is that a good number of the study participants are educated to certain level. However, despite the 22.0% of respondents who have tertiary educational qualification, larger percentages of the respondents were able to interact with field researchers in English Language and Pidgin. As such, that could not have warped the effectiveness and validity of the research finding. Again, on the basis of the respondents' categories of occupations, 47.2% of them engaged in farming/fishing, 9.3% engaged in the civil service, 25.4% engaged in small scale businesses, while 18.1% of the participants engaged in other means of livelihood; this also included students. Thus the largest percentage (47.2%) of the respondents were engaged in farming/fishing while those in small scale businesses representing 25.4% followed suit. The least percentage of respondents represented by civil service of 9.3% may be attributed to the few local officials working in the local government establishments across the research areas of our investigation. Various categories of occupations with varied percentages were equally represented in the study.

In religious affiliations of respondents, 93.5% of the respondents practice Christians, 4.9% of them practice African Traditional Religion (ATR), while 1.6% practice Islamic religion. The higher percentage of 93.5 represented by Christianity may have been so since the research areas are dominated by those practising Christianity as religion. The lowest percentages of respondents in both ATR (4.9%) and Islam (1.6%) respectively have no much significance on the subject of investigation of the study.

### 6.2 Test of Null Hypothesis

HO 1 = There is no positive correlation that exists between the natural phenomenon of flood that ravaged Bayelsa State and the social life of the people.

The table below indicates the observed and expected frequencies of the respondents, and the residual (the difference of the observed and expected frequencies).

**Table 1.** Computation of flooding and social life

Variable	Observed N	Expected N	Residual
Undecided	17	77.2	-60.2
Strongly Disagree	20	77.2	-57.2
Disagree	12	77.2	-65.2
Agree	245	77.2	167.8
Strongly Agree	92	77.2	14.8
Total	386		

Chi Square = 511.953<sup>a</sup>; Degree of freedom = 4; Asymp. Sig = 0.000; P < 0.05

Since the p value (.000) is less than  $\alpha$  level (0.05), then we can reject H0. That is, there is sufficient evidence to conclude that the larger proportions of respondents agreed that positive correlation exists between natural phenomenon of flooding in Bayelsa State and the social life of the people. In other words, the higher the natural phenomenon of flooding in the study area the more the social life of the people of the area is affected negatively. This test result is a confirmation of the findings of Folorunsho and Awosika (2001) who asserted that flood affect the social life of people and the most vulnerable of such are women and children.

From the qualitative data obtained from the focus group discussions (FGDs), the following information coincides with the quantitative data:

*...When things like this happened, there is no doubt about it that many things would be lost like farm land, property, in fact, some deities in the forest would be involved which is even against the gods and goddess of this community. Definitely, those that worship them may not find it very easy if peradventure the deities become angry with them. You can see that it is very dangerous (FGD/Female Teacher/Tarakiri).*

HO 2 = There is no positive relationship between flooding in Bayelsa State, Cultural life and socio-cultural change that has taken place.

The table above indicates the observed and expected frequencies of the respondents of the flood, cultural life and social change.

**Table 2.** Computation of flooding and Social Change \* Cultural life Crosstabulation

Variable	Cultural Life					Total		
	Undecided	Strongly Disagree	Disagree	Agree	Strongly Agree			
Social Life	Undecided	Count	0	1	0	5	4	10
		Expected Count	2.2	0.9	0.9	4.7	1.3	10.0
Strongly Disagree	Count	0	0	0	5	5	10	
	Expected Count	2.2	0.9	0.9	4.7	1.3	10.0	
Disagree	Count	8	11	5	24	21	69	
	Expected Count	15.0	6.4	5.9	32.7	8.9	69.0	
Agree	Count	5	11	1	52	6	75	
	Expected Count	16.3	7.0	6.4	35.6	9.7	75.0	
Strongly Agree	Count	71	13	27	97	14	222	
	Expected Count	48.3	20.7	19.0	105.2	28.8	222.0	
Total	Count	84	36	33	183	50	386	
	Expected Count	84.0	36.0	33.0	183.0	50.0	386.0	

Pearson Chi Square = 97.393<sup>a</sup>; Likelihood Ratio = 98.590; Linear-by-Association = 32.239; N of Valid Cases = 386; Degree of freedom = 16; Asymp. Sig. = 0.000

Here  $p < 0.05$  so we reject H0. That is, there is sufficient evidence to conclude that the larger proportions of respondents agreed that positive relationship exists between flooding in Bayelsa State and the, cultural life and socio-cultural change that has taken place.

*Actually, the flood disrupted our services in the church I worship. In fact, if you look at the wall of the building of our church, you will still see the mark of the water that overflow. Like in some other places, we were told that their churches collapsed during the flood. You can now see that it affected our places of worships...even both primary and secondary*

*schools in this community had to go on compulsory holiday (FGD/Female/Tarakiri).*

What respondents concluded on the socio-cultural life when they were asked whether they would conclude that the flood has impacted negatively on their socio-cultural life was as follows:

*...Yes, I will conclude that. It has negative impact on our socio-cultural life. I think when you say socio-cultural life you are talking about how we relate to one another in the community. It has a very serious negative impact. The way family was, it is no longer like that. The way we worship in church has changed because some of the churches collapsed. Like one shrine in that forest now, am sure the man in-charge we have to go and put another one in place if the god has not even become angry with him. Not that one alone, when everybody in the community were staying together in the secondary school there we behaved not the same way we used to because of the state we were. Therefore, I will conclude that it has negative impact on our socio-cultural life my brother... (Interview/Civil Servant/Tarakiri).*

*Yes, I will conclude that it has negative impact on our socio-cultural life. You know when the flood came everybody was affected. In the process we lost so many things. Then, to cope with new environment, food, and all the likes, we must readjust again. And to readjust means a very difficult thing if you will agree with me...because fishes no dey like before oo (FGD/Fisherman/Oporoma).*

## 7. Concluding Remarks

The major focus of the study has been examining the socio-cultural effects of the flooding that ravaged (2012 flood disaster) in Bayelsa State. As revealed by the literature and the analytical framework to which the study was grounded, as well as its findings; flooding as an emergence natural phenomenon affected socio-cultural life in the study area. Theoretically, as strongly averred by Buckley's (1967) view of open systems in system theory, socio-cultural systems tends to respond to a greater range of fluctuations in the environment than closed systems do; it is therefore termed as *negentropic*. This is because in closed systems which are *entropic* breaks down easily when external forces invaded, but the open systems where the socio-cultural aspect of life is situated do not break down easily instead they tend to be *negentropic*. That is to say, instead of breaking down easily they tend to elaborate in structures when an aspect of the entire system is affected so as to re-adjust either positively or negatively.

In the view of the evidence of the study that flood risk is increasing, it is pertinent to categorically state that continuing vigilance is needed to ensure that existing systems are maintained and improvements introduced. It is equally imperative that human society adopts a risk management approach if there is to be harmonious coexistence with floods. In practical terms, the chance of flooding can never be eliminated entirely. However, the consequences of flooding can be mitigated by appropriate behaviors and actions. Successful flood risk management is dependent upon the active support of all on whom the effects of flooding may impact, those directly at risk, the civil authorities and the wider community and its leaders.

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