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Post Disaster Livelihood Insecurity and Coping Strategies: The Case of Thane Cyclone Affected Cashew Plantation Farmers

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Abstract

Natural disasters have continued to take a toll on the lives and livelihoods of people since eons. The strongest tropical cyclone of 2011 named Thane, severely wreaked havoc in Cuddalore district in Tamil Nadu, causing extensive damage to cashew plantations and consequently disrupting the means of survival of several small and marginal farmers. The foregoing paper presents the case of such farmers in the Meliruppu village in Panruti Block of the said district. It endeavours to capture the post disaster livelihood insecurity among the cashew farming households and adoption of specific coping strategies to tide over the resultant distress. The study further contemplates suggestions for the effective recovery and resurrection of livelihoods of the affected populace.

Keywords: Cyclone, Livelihood Security, Cashew Plantations, Disaster

Introduction

Disasters have been an integral part of human existence and universal phenomena since eons, yet defining and understanding these is highly contested. The conventional definitions reflect that "disasters are events in which societies or their large subunits incur physical damages and losses and/or disruption of their routine functioning. Both the causes and effects of these events are related to the social structure and processes of societies and their subunits" (Kreps, 1986, p.32). Disaster has also been explained as a state of collective stress in a community; or a contradiction between the capacity to cope with destructive agents and their negative impacts. It is said to occur when one or more of the vulnerable socio-cultural systems fail to provide an adaptation to the environmental conditions (Pelanda in Quarantelli, 1998, p.59).

Despite several technological strides, the capacity of human beings to control natural disasters is awfully limited. The trail of loss, destruction and devastation led by these natural physical processes is extensively evidenced world over, more so in the developing countries across South Asia. In 2001, nearly 90 per cent of natural disasters and 95 percent disaster related deaths occurred in the developing countries (Aryabandu and Wickramsinghe, 2003, p.19). The Indian subcontinent in particular, is highly vulnerable to natural disasters like earthquakes, cyclones, floods, droughts, landslides and bushfires (Ambast et al., 2007) due to its peculiar geo-climatic conditions coupled with social and economic vulnerabilities. Satendra (2003, p.2) affirmed that in India, 55 per cent of the total land is vulnerable to earthquakes, 8 per cent to cyclone and 5 per cent to floods.

The coastal areas in India are highly vulnerable to extreme disasters due to their typical topography and configuration. There are 13 Coastal States and UTs in the country, with about 84 coastal districts affected by tropical cyclones. The cyclones, arising due to violent action of wind, rain, sea waves and storm, are one of the most common hazards affecting our 5700 kms long coastline along the Arabian Sea and Bay of Bengal. Naidu (1989) in his book "*Economic Consequences of 1977 Cyclone in Andhra Pradesh*" warned that cyclone constitute the most frequently recurring severe natural disaster affecting man and his environment and occur in almost all tropical oceans.

Cyclones are natural events, which can neither be wished away nor prevented. What actually makes these hazards

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turn in to disasters is the vulnerability of the people and their means of livelihood and the fragility of infrastructure. High population density, comparatively better employment opportunities and economic compulsions force people to occupy areas, which are susceptible to cyclones, saline ingress and flooding. Traditional coping mechanisms have been the mainstay for these people to counter hazards, but during major disasters these coping mechanisms are found waning. Though communities have a natural tendency to face hazards by joining hands, they usually fail to generate the desired synergy because of unsystematic and ad hoc approaches. On many occasions people are not even aware of the risks involved. The frequent disasters nullify the development of several years and turn the clock back for these vulnerable families.

In the wake of susceptibility and a high frequency of occurrence of disasters, a lot of scientific research is taking place in the country to predict, project and forecast hazardous events. At the same time, several social scientists are studying the social impact and consequences of natural disasters on individuals and communities. When the natural forces strike, there is loss of human lives, houses are destroyed, infrastructure is disrupted, services get tattered and crops and livestock are flattened, rendering the livelihoods fragile and insecure. Singh (1996) confirmed that disasters undermine development efforts and cause loss of life and scarce resources, reduction of productivity and environmental degradation. It must be understood that such crises predominantly hit the poor, especially small and marginal farmers, landless labourers, land-poor peasants, socially underprivileged sections and women the hardest (Swaminathan, 2009). Disaster has a long term impact on a community's livelihood systems and it in return affect the customs and practices, hence putting a question mark on the cultural survival (Companion, 2015). The impact of a disaster on the vulnerable sections of population is multipronged emanating from infrastructural damage, causalities and disruption of essential services.

Livelihoods and the life sustenance activities of communities living in disaster prone areas get intensively affected by their response to hazards and associated coping. It is established that the brunt of natural disasters could perpetuate poverty, inequalities and deprivation if proper steps are not taken to restore the livelihoods of people. In absence of livelihood security and in the face of adversity, people adopt a range of coping strategies, both beneficial and harmful. For instance, Palanisami et al. (2009) described the adverse impact of Tsunami on the livelihoods of farming households who were forced to abandon cultivation and work as casual labourers for sustenance. The poor who suffer from income fluctuations or have little in reserve, and also have limited access to financial services in the aftermath of disaster, may be more prone to reduce consumption and show downfall in the other household indicators as a consequence (UNDP, 2008; UNEP, 2009).

Mileti (1999) argued that when a disaster strikes, people plan only for their immediate future, overestimate their ability to cope and rely heavily on emergency relief. Geis (2000, p.152) considered it advisable for a community to adopt proactive measures in their decision making process which can minimize the vulnerability to natural hazards. Similarly, Kamla Prasad (1999) advocated contingency planning for mapping of local capacities and resources for immediate relief to provide time for outside assistance to step in. Importance of vulnerability reduction, beforehand along with post disaster assistance were also stressed by Lewis (1999). Dynes (1993, p.177) suggested that disaster prevention and mitigation must stress social rather than physical solutions. In this context, Das (2002) concurred that people in disaster prone regions should themselves take up the responsibility of their own lives and should be prepared to adapt to such situations. Santha (2014), is of the opinion that formal adaptation are highly techno-centric, costly and does not take into account the vulnerabilities of the community affected by disaster. Hence the informal adaptation strategies adopted by the communities at local level are a response to the shortcomings. Thus, community preparedness, coordination, awareness and participation as measures for coping up with any kind of disaster are equally significant. Sahini and Dhamija (2005) also reiterated that unless people are prepared and made aware holistically, risk reductions will be difficult.

It has been put on record that the states of Tamil Nadu, Andhra Pradesh, Orissa and West Bengal on the east coast and Gujarat on the west coast are more vulnerable to cyclone disasters. The resource poor faming and fishing communities get severely affected, with repercussions on the agricultural yield and their livelihoods. One such severe tropical cyclonic storm, named Thane Cyclone, occurred on 30th December 2011 and wreaked havoc in Pondicherry, Cuddalore, Villupuram and Nagapattanam districts in Tamil Nadu. It exposed the populace and the land to the impact of storm, high-speed wind and profound

torrential rains causing physical devastation, coastal flooding and saline inundation. The cyclone reportedly affected the livelihoods of over three lakh families, destroyed 3.5 lakh houses and about 1, 10,752 hectares of crops (Impact Assessment Report, Community Collective Society for Integrated Development (CCFID)). The study was thus undertaken to unravel the livelihood patterns and coping strategies of the small and marginal cashew farmers worst affected in the aftermath of Thane cyclone.

Research Locale, Objectives and Design

The study was carried out in the Panruti Block of Cuddalore district in Tamil Nadu. This district is one of the most natural disaster prone areas due to its proximity to the sea. The Panruti block is well known commercially in the trade circles for its cashew production and export. The village selected for the study was Meliruppu, located at a distance of 8.3 km from the main town Panruti and is around 30.8 km far from the city of Cuddalore. This small agrarian village, with predominantly small and marginal farmers, was severely ravaged by the Thane cyclone. The livelihoods of cashew cultivators, in particular, were jeopardized. What makes the matter worse is that it would take farmers minimum seven years to ten years to get a minimum yield after they plant new saplings. The farmers have to find some alternative source of livelihood till the plantation is recovered. It is a difficult situation since the condition of farmers is worrisome as no compensation would restore their loss for the next few years. Thus, the study was contemplated to assess the socio-economic impact of Thane cyclone on their livelihoods, the constraints faced as well as the specific coping strategies adopted to withstand the resultant distress.

A descriptive research design was followed since the intent was to give a fair description of the conditions and situation at the village level. In line with the objectives, use of multiple methods was deemed significant to collect data. Systematic sampling was used to select the study population. A list of farmers having less than five acres of land was obtained from the Panchayat office. The intended sample size was 10 per cent of the total population to represent a reasonably true picture of the community. Thus, out of 562 small farmers, a total of 56 farmers were selected for the study. Data was collected through both, primary and secondary sources. Observation technique and group discussions were used to acquaint oneself with the various aspects of the selected village community and devastation caused by the cyclone. Following this, structured interview schedules were used with the sampled farming households. The analysis and interpretations have been put forth as quantitative numerics supplemented with relevant narratives from the field.

Results and Discussion

Demographic profile of the respondents: Majority of the interviewed respondents (90.7 per cent) were male and 38 per cent were in the productive age group of 39-48 years (see Table 1). There were relatively fewer female headed households in the village. In terms of educational status, almost 43.6 per cent were illiterate and a wide majority (81.5 per cent) belonged to MBC (Most Backward Caste). The backward social caste status coupled with abysmal education of respondents significantly affected their opportunities for livelihood enhancement in allied farm or other nonfarm sectors. Family size is also an important determinant of living conditions and the welfare of family members. Its composition is related to occupation and income and is likely to have an important influence on household livelihood activities. In terms of type of family, around 68.5 per cent subjects reported 0-4 members in their households and were largely nuclear households. Around 3.7 per cent respondents had more than 10 dependents, which made it difficult for them to cope with reduced incomes consequent to the disaster.

Table 1: Demographic Profile of Respondents

S. No.	*Characteristic*	*Categories*	*Frequency*	*Percentage*
1.	Sex	Male	49	90.7
		Female	5	9.3
2.	Age (in years)	18-38	15	27.8
		39-58	32	59.2
		59 and above	7	13.0
3.	Education	Non literate	25	46.3
		Primary	5	9.3
		Middle	10	18.5
		Secondary	11	20.4
		Senior Secondary and above	3	5.6
4.	Caste	Scheduled Caste	10	18.5
		Most Backward Caste	44	81.5

Source: Primary data

Habitation and household assets: A great majority of respondents (96.3 per cent) lived in self owned houses. However, 69.2 per cent reportedly had kutcha dwellings with thatched roofs. This is indicative of their poor economic status and increased vulnerability to destruction due to cyclonic winds. Most of these houses (almost 67 per cent) were destroyed during the cyclone. It was further found that 77.8 per cent of the respondents' houses were partially destroyed and 22.2 per cent were fully destroyed. 44.4 per cent of the respondents reportedly suffered loss of utensils, 20.4 per cent suffered losses of clothes, 63 per cent cited loss of television and 18.5 per cent revealed damages to their Cycles/Motor Cycles. Around 52 per cent respondents revealed loss of livestock through which they earned subsidiary income. All this apparently resulted in huge economic loss for the already poor respondents.

Land ownership: Almost 70.4 per cent respondents engaged in farming for almost nine months in a year, which indicates their dependency on farming as a source of livelihood. The distribution of respondents by acreage of land owned is shown in Table 2. It should be noted that of the 13 percent of the respondents having less than 1 acre land, 71.4 percent belonged to the Scheduled Caste households, showing their backwardness relative to the Most Backward Community. It was found that a significant number of respondents (51.9 per cent) were engaged in cashew plantation on these lands since more than 20 years.

Table 2: Distribution of Respondents by Land Owned

S. No.	Land holdings	Frequency	Percentage
1.	less than 1 acre	7	13.0
2.	1-2 acre	12	22.2
3.	2-3 acre	16	29.6
4.	3-4 acre	10	18.5
5.	4-5 acre	9	16.7
	Total	54	100.0

Source: Primary data

Access to basic services: Regarding status of infrastructural services, both pre and post disaster condition was enquired. It was found that 90.7 per cent of sampled households had access to electric supply and 96.3 per cent to water supply sources prior to the cyclone, which reduced to 59.26 per cent and 77.78 per cent respectively post disaster. One of the backward caste female lamented *"The village has gone back by 20-30 years. We have to start from scratch. Most of the houses are fully damaged. The entire electrical lines and water supply has been broken. There is paucity of portable drinking water. Everyday there is some caste based fight for accessing the water which is made available by the government authorities. There is some sort of communal tension prevailing in the community. This situation is very depressing for all of us"*. The state of sanitation was gloomy in the pre disaster period also with minimum sanitation facilities available to only 13 per cent of the selected farming households, the rest defecating in open.

Financial condition: When probed about thrift and saving patterns, almost 81.5 per cent respondents denied having any savings. From amongst those who saved, only 13 per cent relied on banks and mere 5.5 per cent on Self Help Groups (SHGs). Around 42.6 percent of the respondents admitted that before cyclone, they derived their yearly income between Rs. 40000 to 60000 from cashew plantation. In more than half the cases, the work was shared and the assistance of family members especially women and children, was sought in farming operations. Post disaster, not only did their incomes fell, but also women had to venture out to seek work elsewhere. One of the respondents mentioned *"The cyclone has devastated my work and family, leaving no scope for agricultural activities in the next few years. My wife has already started working under the MGNREGA scheme. I feel bad about it. She used to assist me in the field and now she has been forced to find work outside. I am also searching for a job. May be I will start working as a labourer in any of the construction site in Cuddalore town. With no educational or technical qualification to our credit, we have to find livelihood in such petty jobs."*

Also, only 3.7 percent of the respondents possessed any sort of insurance. In terms of expenditure incurred, money spent on food remained same for only 16.7 percent respondents and that spent on house repair/ maintenance increased for 94.4 percent of the respondents. The level of expenditure on medicines and health additionally increased for 55.6 percent of respondents.

Coping Strategies: A coping strategy may be defined as a temporary action undertaken in response to a known threat (Thomas et al, 2005). Coping strategies are risk spreading in nature and are designed to mitigate the negative impacts of an uncertain event.

All the participants of the study indicated that, they had never been a victim of any natural disaster prior to Thane cyclone. This apparently resulted in influencing their immediate response in the process of recovery. The respondents admitted having assumed a plethora of coping strategies to tide over the period of disaster induced crisis. It was reported by 38.9 percent of the respondents that they had sold jewellery to pawn brokers. The percentage of respondents borrowing from money lenders increased from 46.3 to 79.6 percent which was suggestive of increase in financial liability post Thane cyclone. Also, 74.1 per cent respondents started working in MGNREGS (public wage employment programme) compared to 25.9 per cent, who were engaged before cyclone. This indicated a change in livelihood activity from being a cultivator to engaging in casual or daily wage labour. Around 40.7 per cent intended working as wage labourers in absence of alternative income generation avenues and their limited education.

Women cited during discussions that they only helped in their own fields at the time of sowing and harvest prior to disaster but post cyclone, were required to work outside.

Several respondents also reduced their expenditure on food (79.6 per cent) and education (27.8 per cent) to adjust the other urgent and emergent expenses after Thane cyclone. This played havoc with food and nutritional security, particularly of women and children. In addition, deferment of marriages and avoiding social celebrations during festivals were also reported by some respondents.

Effect of cyclone on cashew plantation and the compensation received: Majority of respondents (72.2 per cent) reported that their cashew plantation was destroyed totally and 27.8 per cent cited partial damage. These led them to incur huge monetary losses. A farmer highlighted his plight *"My cashew and jackfruit plantation is uprooted beyond recovery. The task of clearing the land by itself is a tedious process and will need money. The need to do replantation is a long process and I am not sure if at all I will get dividend out of this cultivation"*. It was pitiable that mere 3.7 percent respondents received compensation from the Government, which was also reportedly inadequate. It was claimed that only some households received five thousand rupees to reconstruct their houses and the relief money was rather being spent on meeting daily food expenditure. Inadequate relief funds and lack of other support caused a lot of resentment for the state government among cashew cultivators. It is important to note that demands of a small-scale, slow onset disaster can be responded effectively by a community on their own without getting assistance from outside. But in contrast, for a large-scale, rapid-onset disaster such as cyclone, the assistance from Government and other agencies is needed to recover and bounce back to normalcy.

Views on the recovery process of cashew plantation: All the farmers expressed helplessness and shared that in the absence of financial support, it would take more than a decade to resume and recover cashew plantation. A great majority of the respondents (98.1 per cent) still preferred continuing with cashew plantation if provided assistance. However, only 11.1 per cent of the total respondents were aware of the various schemes and programmes announced by the Government for their rehabilitation. A large number of respondents (55.6 per cent) also opined that water will be the main problem for the recovery of cashew plantation. It was revealed in discussions that the ground water level in the village was low and depleted, which might pose a hurdle in the recovery process as cashew crops require a large amount of water in their initial growing phase. About 59.3 per cent of cashew farmers were willing to borrow money from informal sources while 31.5 per cent indicated their preference for the Government loan/ subsidy. It was learned that, the farmers have poor access to financial resources. Similarly, 24.07 per cent respondents asserted that Government should bear the maintenance expenses till there is proper yield from the trees, however, all farmers largely complained of political callousness and bureaucratic apathy.

Conclusion

A rural community with limited means at its disposal is the worst affected in any form of disaster which can derail the normal life pattern of the victims and their families. The social and economic consequences of the disaster are of greater magnitude and it could take a long period of time for the concerned community to recover. The present study hinted at the deleterious impact of the Thane cyclone on the livelihood security of cashew plantation farmers in Meliruppu village, who were forced to rely on insufficient compensation and alternative sources of income in the unorganized sector. The risk of livelihood failure further destabilized their levels of income, food, health and nutritional security.

Looking through the lens of human rights perspective and understanding the role of state as incontrovertible in a welfare economy, it is imperative for the Government to take suitable actions like recurrent awareness generation programmes and agriculture extension activities with farmers for hazard mitigation. At the same time, people have to be empowered and made capable of managing disasters as any amount of external support would not lead to optimal results. Adoption of a community based warning systems to ensure people's safety, promotion of diversified and nonfarm livelihood activities, local capacity and resilience building, encouraging thrift and savings, efforts at effective water management and incentivizing small scale farm production could be the possible strategies aimed at sustaining post disaster livelihood security. It is also significant to strengthen community level organisations like self-help groups, co-operatives and panchayati raj institutions, so they would complement the services provided by the Government and NGOs. It has been earnestly recommended by Dhir (2001) also that intensive efforts and collaborative action on the part of the government, voluntary agencies, private sector and the community for effective disaster preparedness are significant. In concurrence, it is vital that the community and the Government work in tandem to overcome the problems and to restore things to normal.

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