

Effect of Tsunami on the Socio-economic Condition of Rice Farmers

B. Shanmugasundaram¹ and K.A. Ponnusamy²

1. Asstt. Prof. (Agrl. Extension), RARS, Mele Pattambi, KAU, Kerala-679 306, 2. Prof. & Head,
Training Division, DEE, TNAU, Coimbatore, Tamil Nadu-641003

Corresponding author E-mail: sundarrars@rediffmail.com

ABSTRACT

An ex post facto study was conducted in India among 120 Tsunami affected rice farmers belonging to 16 villages of Nagapattinam and Cuddalore districts of Tamil Nadu and Karaikal region of Union Territory of Puducherry. The study was conducted with the specific objective of studying the effect of tsunami on the Socio-economic condition of rice farmers which contained nine sections viz., change in rice area, change in rice yield, Change in income from Rice, Farm changes, Home changes, Material changes, Social changes, Economic changes and Health, Education and Spiritual changes. The findings revealed that more than half of the respondents expressed No change in rice area, reduction in yield and income of rice to the tune of 1400 Kg/ac/season and Rs7500/ac/season respectively, improvement of the existing land, developed better outside contact and relationship with extension worker and also incurred huge loss and debts. Modification of the existing home and purchasing new house hold items and spending more for religious and other ceremonies were the other changes seen.

Key words: Socio economic condition; Rice farmers; Tsunami;

Rice is the staple food for the world in general and India in particular. It is estimated to contribute about 2.5 per cent of Gross Domestic Product (GDP) of India and provides employment to a large work force in crop production and in paddy processing.

On December 26, 2004 for the first time in half of a century, India experienced the devastating effects of Tsunami, caused by a series of earthquakes. The earthquake set off giant tidal waves three to ten meters in height. The Tsunami waves caused extensive damage to three states (Andhra Pradesh, Tamil Nadu and Kerala) and two Union Territories (Puducherry and Andaman and Nicobar Islands) in India.

Post Tsunami scenario of Tamil Nadu and Puducherry: The government of Tamil Nadu announced an immediate crop compensation of Rs. 2,500 per hectare in cash for standing crops lost. A compensation package of Rs.12,500 per hectare was computed, of which 66 per cent was allocated in the first year, and the balance amount was carried over to the second and third years. The Government of Puducherry has sanctioned an amount of Rs. 3750.00/ha as immediate relief to crop loss and a one time relief of Rs 60,000.00/ha for yield loss and restoration of productivity in Tsunami affected lands. (Dixit, 2006).

Singh.et al. (2005) revealed that there is little knowledge available on the farmers recouping capacity following a major disaster. Documentation on the current

coping mechanism and research on the future needs to strengthen the coping strategy of the farmers in changing scenario of hazard intensification and vulnerability context is needed. It is also emphasized that "without strategies to improve people's socioeconomic condition, no disaster preparedness programme can improve their coping mechanism. Until we achieve such socio economic improvement, the redirection of development resources to emergency response will continue and achieving the desired level of growth will remain a distant goal".

Keeping the above factors in mind, the present research was designed with the specific objective to study the effect of Tsunami on the socio economic condition of rice farmers.

METHODOLOGY

The Tsunami waves caused extensive damage to three states (Andhra Pradesh, Tamil Nadu and Kerala) and two Union Territories (Puducherry and Andaman and Nicobar Islands) in India. However, Tamil Nadu State and Union Territory of Puducherry were selected purposively for the study. In Tamil Nadu the extent of crop area affected was severe in Nagapattinam district followed by Cuddalore district. Hence the two districts were selected. Out of the two affected regions in Puducherry, ie., Puducherry (80ha) and Karaikal (712 ha) the extent of crop area damage was severe in Karaikal region. Hence it was selected.

The criteria set for selection of taluks in Nagapattinam district include the selection of first three taluks having maximum damage of paddy area. Accordingly, Vedarnayam, Tharangampadi and Sirkali were selected for the study. Based on the same criteria set for Nagapattinam district, Cuddalore taluk was selected for the study. Karaikal region is geographically a small area and hence the selection based on taluk does not arise. The same criteria adopted for selection of taluk was followed in the selection of villages also. As the extent of paddy area affected was very less (21 ha) the selection of villages was made at random in Cuddalore taluk (Cuddalore district). In Karaikal region about 11 villages were affected due to Tsunami. Out of the 11 villages, four villages were selected at random. Finally 16 villages were selected. A sample size of 120 paddy affected farmers was considered as optimum. The effect of Tsunami on the socio-economic condition of rice farmers contained nine sections viz., change in rice area, change in rice yield, change in income from rice, farm changes, home changes, material changes, social changes, economic changes and health, education and spiritual changes

RESULTS AND DISCUSSION

Effect of Tsunami on the socio economic condition of rice farmers: The effect of Tsunami on the Socio-economic condition of rice farmers can be inferred from Table 1 that 26.67 per cent of the respondents had reduced the area under rice cultivation by less than one acre and 38.33 per cent of the respondents had reduced the rice area cultivation by two acres. However it is seen that 56.67 per cent of the respondents reported "No change in area" under rice after the occurrence of Tsunami. The reduction in rice area by nearly 44 per cent of the farmers may be due to the fact that there had been substantial damage of soil because of Tsunami and also due to the apprehension of the farmers that farming could not be taken up for at least two to three years after the tsunami.

Table 2 indicates that 45.83 per cent of the respondents had a decrease in yield upto 600 Kg while most of the respondents (95%) expressed a yield reduction up to 1400 kg. Only a meager percentage (5%) of the respondents expressed "No change in yield". The decrease in yield is in accordance with the presentations made by Singh (2006) wherein he had reported that rice yields of tsunami affected areas after reclamation were least in Nagapattinam districts compared to Kancheepuram, Cuddalore and Villupuram districts of

Tamil Nadu. Since majority of the respondents selected for study belong to Nagapattinam (severely affected district) such a result has emerged. To support the findings it is seen that the participatory field demonstrations on paddy conducted by MSSRF in the Tsunami affected regions revealed that the rice yield was further hampered due to continuous rain and flood during the panicle initiation stage. (MSSRF News letter, 2006).

Table 1. Effect of Tsunami on rice area (per acre/season)

S.No.	Particulars	N	Per cent	Cumulative %
1	Decrease between 0.1 to 0.5 acre	11	09.17	09.17
2	Decrease between 0.6 to 1.0 acre	21	17.50	26.67
3	Decrease between 1.1 to 1.5 acre	05	04.16	30.83
4	Decrease between 1.6 to 2.0 acre	09	07.50	38.33
5	Decrease of more than 2.0 acre	06	05.00	43.33
6	No change in area	68	56.67	100.00
	Total	120	100.00	

Table 2. Effect of Tsunami on rice yield (kg/ acre/season)

S.No.	Particulars	N	Per cent	Cumulative %
1	Decrease in yield of less than 200 Kg	09	07.50	07.50
2	Decrease in yield between 201-400 Kg	24	20.00	27.50
3	Decrease in yield between 401-600 Kg	22	18.33	45.83
4	Decrease in yield between 601-800 Kg	24	20.00	65.83
5	Decrease in yield between 801-1000 Kg	19	15.83	81.66
6	Decrease in yield between 1001-1200 Kg	14	11.67	93.33
7	Decrease in yield between 1201-1400 Kg	02	01.67	95.00
8	No change in yield	06	05.00	100.00
	Total	120	100.00	

When the respondents were distributed based on the change in income levels as a result of Tsunami, it is seen that nearly one-third (27.83 %) of the respondents had decrease in income of rice up to Rs.2000/ac/season and more than half of the respondents expressed a decrease in income level of rice ranging from Rs2000/ac/season to Rs.5000/ac/season while a negligible percentage (5.00%) of the respondents reported "No change in their income level".

Table 3. Effect of Tsunami on rice income (Rs/ acre/season)

S.No.	Particulars	N	Per cent	Cumulative %
1	Decrease in income of less than 1000	05	04.17	04.17
2	Decrease in income between 1000-2000	20	16.66	20.83
3	Decrease in income between 2001-3000	17	14.17	35.00
4	Decrease in income between 3001-4000	21	17.50	52.50
5	Decrease in income between 4001-5000	31	25.83	78.33
6	Decrease in income between 5001-6000	11	9.17	87.50
7	Decrease in income between 6001-7000	8	6.67	94.17
8	Decrease in income between 7001-8000	1	0.83	95.00
9	No change in income	6	5.00	100.00
	Total	120	100.00	

The results displayed in Table 4 reveal that 76.67 per cent of the respondents had “Improved the existing land” and nearly half of the respondent (47.5%) had purchased / received as relief additional livestock during the relief and rehabilitation phase of Tsunami. It is interesting to note that 21.67 per cent of the respondents had returned the leased in land back to the owners due to compulsion by the owner farmer to receive the relief aid from government departments/relief agencies or due to uncertainty by the tenant farmer for sustainable rice production in future.

The study revealed that 23.33 per cent of the respondents modified the existing home after the incidence of Tsunami (Table 5). A meager number of the respondents (7.5%) expressed that they purchased new home / received as relief new home from different Tsunami relief agencies. This supports the report that in Tamil Nadu tsunami shelter reconstruction programme is making a headway with 6783 permanent shelters in place across 13 districts of Tamil Nadu (*TNTRC Newsletter - Feb. - March 2006*).

Table 4. Effect of Tsunami on farm changes

S.No	Particulars	Agree		Disagree	
		N	Per cent	Number	Per cent
1	Purchase of new lands	—	—	120	100.00
2	Improved existing lands	92	76.67	28	23.33
3	Leased in land for cultivation	11	09.17	109	90.83
4	Leased out land for cultivation	15	12.50	115	95.83
5	Kept land uncultivated	22	18.33	98	81.67
6	Returned leased out land to the owner	26	21.67	94	78.33
7	Deepened existing well	—	—	120	100.00
8	Dug new well	15	12.50	115	95.83
9	Purchased new implements	23	19.17	97	80.83
10	Purchased new tractor	2	01.67	118	98.33
11	Purchased/received relief additional livestock	57	47.50	63	52.50

Table 5. Effect of Tsunami on home changes

S.No	Particulars	Agree		Disagree	
		N	%	N	%
1	Purchased new home Govt. new home from relief agencies	09	07.50	111	92.50
2	Modified existing home	28	23.33	92	76.67
3	Disintegration of joint family	—	—	120	100.00
4	Joint farming	05	04.17	115	95.83

Around 31.67 per cent of the respondents expressed that they “purchased house hold items like radio, TV, Phone, VCR” while 20.83 per cent expressed that they “purchased new house hold utensils” after the killer waves struck the shores (Table 6).

Most of the respondents (97.50%) expressed that their “outside contact increased in recent times”. A vast majority (87.50%) replied that they “developed better relations with extension workers”. Nearly Seventy Six per cent of the respondents expressed that the “Organisational participation increased” and half of the respondents expressed that “other farmers approached them for farm opinion” (Table 7).

Table 6. Effect of Tsunami on material changes

S.No	Particulars	Agree		Disagree	
		Number	Per cent	Number	Per cent
1	Purchased new utensils	25	20.83	95	79.17
2	Purchased household appliances	13	10.83	107	89.17
3	Purchased Jewels	05	04.17	115	95.83
4	Purchased new vehicles	05	04.17	115	95.83
5	Purchased household items like Radio, TV, Phone, VCR	38	31.67	82	68.33

Table 7. Effect of Tsunami on social changes

S.No	Particulars	Agree		Disagree	
		Number	Per cent	Number	Per cent
1	Better relations developed with extension workers	105	87.50	15	12.50
2	Organizational participation increased	92	76.67	28	23.33
3	Many farmers approached you for farm opinions	65	54.17	55	45.83
4	Emerged As a leader	24	20.00	96	80.00
5	Became effective communicator as contact farmer	22	18.33	98	81.67
6	Outside contact increased	117	97.50	03	02.50
7	Subscribed for farm publications and general publications	05	04.17	115	95.83

Table 8. Effect of Tsunami on economic changes

S.No	Particulars	Agree		Disagree	
		Number	Per cent	Number	Per cent
1	Repaid old loans	32	26.67	88	73.33
2	Increased saving/deposit	19	15.83	101	84.17
3	Invested money on other enterprises	17	14.17	103	85.83
4	Diversified the cultivation to too many crops	04	03.33	116	96.67
5	Incurred loss and debts	89	74.17	21	17.50

Table 9. Effect of Tsunami on health, education and spiritual changes

S.No	Particulars	Agree		Disagree	
		Number	Per cent	Number	Per cent
1	Provided higher education to children	—		120	100.00
2	Had better health care	12	10.00	108	90.00
3	Had better nutritional food	10	08.33	110	91.67
4	Spent more for food / clothing	23	19.17	97	80.83
5	Spent more for religious and other ceremonies	52	43.33	68	56.67

The formation of self help groups to the extent of 478 groups comprising 13511 members by the State Department of Agriculture (*Anuradha, 2006*) and formation of many more groups by the Non-governmental agencies paved way for success in the participatory land reclamation activities. *Rodriguez et al. (2006)* reported that “a high level of social cohesion, significant social organization, extensive participation of community members in the recovery process, a strong sense of camaraderie and community membership among

the individuals residing in the same area, and altruistic behavior, as shown by community members’ eagerness to help and provide support part of their communities. The emergence of self-help groups was instrumental in the cleanup and recovery process in these communities”.

Nearly three fourth of the respondents (74.12%) expressed that they “incurred loss and debts due to Tsunami” while 26.67 per cent expressed that they “repaid old loans” which might be due to the compensation received by the farmers after the Tsunami reports from

NCRC (2006) revealed that an amount of Rs. 141,21,079 has been disbursed by Primary Agricultural Cooperative Bank (PACB) benefiting 8875 farmers of Nagapattinam district (Table 8).

Table 9 reveals that about 43.33 per cent of the respondents stated that they spent more for religious and other ceremonies during the Post Tsunami Phase. This might be due to the fact that most of the survivors of tsunami suffer from a disorder called the Post Traumatic Stress Disorder (PTSD), a reaction to a traumatic event. This may emerge after days, weeks, months or even after the events (NISCAIR, 2006). To overcome this people may resort to the spiritual system of coping with disaster to return to pre-disaster normality in the Tsunami affected regions. The finding is in line with the results of Telles *et al.* (2006) to overcome this Becker (2006) pointed out that a team from National

Institute of Mental Health and Neuro Sciences, Bangalore travelled to the tsunami affected regions and implemented a "Train the Trainer" community based mental health programme of Psychosocial care to facilitate children and adult survivors.

CONCLUSION

It can be concluded that more than half of the respondents expressed no change in rice area, reduction in yield and income of rice to the tune of 1400 Kg/ac/season and Rs7500/ac/season respectively, improvement of the existing land and outside contact, better relationship with extension worker and also huge loss and debts. Around one fourth of the respondents have modified their existing home and purchased new house hold items. Nearly half of the respondents expressed that they have spent more for religious and other ceremonies.

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