

## **Causes for Non-Adoption of Post Tsunami Rice Cultivation Practices**

**B. Shanmugasundaram<sup>1</sup> and K.A. Ponnusamy<sup>2</sup>**

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 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.

A comprehensive rehabilitation package involving eminent Scientist, State Department of Agriculture and Non-Governmental Organisations (NGOs) was recommended under the ROTAAL(Rehabilitation of Tsunami Affected Agricultural Lands) programme, Yet many farmers were reluctant to adopt the technology due to some causes which were broadly classified into Technology related Causes, Psychological Causes, Social Causes, Environmental Causes, and Personal Causes. Hence delineating of the causes under each category will help to formulate strategies for sustaining rice production in Tsunami affected areas. At this juncture this study was undertaken to delineate the causes for non adoption of Post Tsunami Rice cultivation practices.

### **METHODOLOGY**

The study was conducted one and a half year after the Tsunami in purposively selected Nagapattinam and Cuddalore districts of Tamil Nadu and Karaikal region of Puducherry. Multi-stage random sampling was applied for selection of three taluks from Nagapattinam district and one Taluk from Cuddalore districts. Karaikal region is geographically a small area and hence the selection based on taluk does not arise. Further 120 Tsunami affected farmers representing 16 villages were selected.

The author visited the region, interviewed the Tsunami affected farmers and reviewed report and other literature on the Tsunami.

### **RESULTS AND DISCUSSION**

#### **Technology related causes**

The technology related causes were discussed under the following sub heads as given below:

1. Compatibility of technology
2. Complexity of technology

#### **Compatibility of technology**

From table 1, it could be observed that 48.33 per cent of the respondents expressed “Technology does not fit to the need of the farmer” as the causes for non adoption of post tsunami rice cultivation practices followed by 31.67 per cent expressing “Technology not consistent with the values and norms of the society” 28.33 per cent on “Technology not in harmony with previous practices followed” and 27.50 per cent on “Technology cannot be adopted independently” (27.50) as the reasons for non – adoption of post tsunami rice cultivation practices. Loss of interest in farming expressed by more than 65 per cent of farmers and fear about Tsunami expressed by around 60 per cent of the farmers might be the reason for the above findings. Further close on the heels of Tsunami Tamil Nadu was hit by a second Disaster – the flood which inundated the fields. The positive side of this

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<sup>1</sup>Assistant Professor(Agricultural Extension) Division of Social Science, Regional Agricultural Research Station(RARS),Kerala Agricultural University, Pattambi, Kerala, India, <sup>2</sup>Professor and Head, Training Division, Directorate of Extension Education, Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India

disaster is that the salinated lands got leached to a large extent. Hence the expression that Technology does not fit into the needs of the farmers might have emerged.

**Table 1: Compatability of Technology**

S.No	Causes	Number	%
1	Technology not in harmony with previous practices followed	34	28.33
2	Technology not consistent with the values and norms of the society	38	31.67
3	Technology does not fit into the needs of the farmer	58	48.33
4	Technology cannot be adopted independently	33	27.5

### Complexity of technology

Table 2 reveals that 35.00 per cent of the tsunami affected farmers opined that the technologies recommended for post tsunami rice cultivation are "Difficult to apply in the field" while one-fourth (25.00%) of the respondents revealed that they find "Difficulty in getting necessary inputs and labour for application" of the technology. A meager percentage (18.33 %) of the farmers revealed that the "Technology is difficult to understand". The difficulty expressed by the farmers is due to the fact the some of the interventions for instance Application of Gypsum requires taking deep drainage channels around the field for the purpose of leaching the salts. The farmers on the other hand are mentally not interested in trying the new innovations recommended.

**Table 2: Complexity of technology**

(N=120)

S.No	Causes	Number	%
1	Technology is difficult to understand	22	18.33
2	Technology is difficult to apply on the field	42	35.00
3	Difficult in getting necessary inputs and labour for application	30	25.00

### Psychological causes

The table 3 indicates that 65.83 per cent of the tsunami affected farmers expressed "Loss of interest in farming" followed by 60.83 per cent "Fear about another

tsunami", 60.00 per cent expressing "Lack of conviction" 53.33 per cent in "Lack of motivation from development agencies" and 45.83 per cent expressing "Lower self-esteem" as the reason for non-adoption of post tsunami rice cultivation practices. Wickrama (2006) also reported that 24.00 per cent of the Tsunami affected victims expressed both distress and family problems while 12.00 per cent expressed inadequate levels of self –efficacy for dealing with recovery from tsunami related damages.

**Table 3: Psychological causes for non adoption of Post tsunami rice cultivation practices**

(N=120)

S.No	Causes	Number	%
1	Loss of interest in farming	79	65.83
2	Fear about another Tsunami	73	60.83
3	Lower self esteem	55	45.83
4	Lack of motivation from development agencies	64	53.33
5	Lack of conviction	72	60.00

### Social causes

It could be observed from the table 4 that 63.33 per cent of the Tsunami affected farmers felt "Shortage of labour work force" followed by 49.17 per cent on "Lack of technical guidance", 26.67 per cent on "Too many agencies give different recommendations" 22.50 per cent on "Non-inclusion of leased farmer in the reclamation programme" and 18.33 per cent on "Non-inclusion of small farmer in reclamation programme" as the reason for non-adoption of post tsunami rice cultivation practices. This is in line with the findings of Rodriguez *et al.* (2006) who reported that tsunami affected Agricultural labourers have been left out of the proposed relief packages offered by the government.

**Table 4: Social causes for non adoption of Post tsunami rice cultivation practices.**

(N=120)

S. No	Causes	Number	%
1	Shortage for labour work force	76	63.33
2	Too many agencies give different recommendations	32	26.67
3	Lack of technical guidance	59	49.17
4	Non inclusion of leased farmer in reclamation programme	27	22.50
5	Non inclusion of small farmer in reclamation programme	22	18.33

### Environmental causes

It is explicit from table 5 that 55.83 per cent of the Tsunami affected farmers reported “unfavorable soil condition due to subsequent flood” as the main cause followed by 45.00 per cent revealing “Non availability of water” as the major environmental cause for non adoption of post tsunami rice cultivation practices. However it is seen that a 17.50 per cent of the respondents expressed “Change in water quality (bore well) making rice cultivation unfit” as the environmental cause for non adoption of post tsunami rice cultivation practices. Reports from Indian Agricultural Research Institute (IARI) by Singh(2005) have shown that Post tsunami soil EC levels have increased by 5 to 15 times compared to normal season, while soil pH levels increased marginally. Ramachandran *et al.* (2006) also reported that Tsunami has caused significant damage to the ecosystem which will require long lasting effects.

**Table 5: Environmental causes for non adoption of Post tsunami rice cultivation practices (N=120)**

S. No	Causes	Number	%
1	Unfavorable soil condition due to subsequent flood	67	55.83
2	Non availability of water	54	45.00
3	Change in water quality making unfit for rice cultivation	21	17.50

### Personal causes

From the table 6 it is clear that 65.83 per cent of the Tsunami affected farmers opined “Non availability of relief material in required quantity” as the main cause for non adoption of post tsunami rice cultivation practices followed by 61.67 per cent expressing “Inadequate credit for buying the inputs”. Rodriguez *et al.* (2006) reported that “in some instances, NGOs duplicated efforts or provided assistance not suited to the locale or to the varying population sizes. Further, while in some communities there seemed to be an abundance of aid, in other communities, particularly remote ones, the distribution of aid seemed to be quite slow and limited.”

**Table 6: Personal causes for non adoption of Post tsunami rice cultivation practices (N=120)**

S. No	Causes	Number	%
1	Diversion of relief fund received for some other purposes	58	48.33
2	Non availability of relief material in required quantity	79	65.83
3	Non availability of relief material in right time	64	53.33
4	Inadequate credit for buying the inputs	74	61.67
5	Feeling of unnecessary	66	55.00

### CONCLUSION

The finding of the study clearly reveal that Difficulty in the implementation of rehabilitation programme by the different stake holders, prevailing labour shortage, and the mental condition of the farmer in times of distress were the reasons for non adoption of Post Tsunami cultivation Practices.

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