

## Strategy to Mitigate Tsunami Effect by Prawn Farmers of Andhra Pradesh

**Key words :** Coping mechanism, Malady, Mitigation, Preparedness, Remedy, Strategy, Tsunami.

Prawn culture has been recognized as part of agriculture activity in many coastal districts including Krishna district of Andhra Pradesh and gaining momentum now-a-days, since the gestation period is short, technology is easy to operate and returns were higher. As disasters have become annual feature, the prawn farmers were facing many losses to their prawn ponds. Tsunami that occurred on 26<sup>th</sup> of December, 2004, reported as the huge rupture and conceivable as the sea floor deformed all the way long (Charles Mc Creery, 2004), had caused loss of Rs. 10 crores to aquaculture damaging the prawn ponds, infrastructure and also wiped away the entire crop.

Considering the above back drop depicting the shattered economic conditions of the prawn farmers, vulnerable situation, it was felt desirable to develop a strategy to reduce the affect of Tsunami and to create awareness about preparedness and coping mechanisms to mitigate Tsunami.

In the light of methodology suggested by Wilkinson and Bhandarkar 1984, 'Case study method' was followed in the present study to explore and analyze the life of prawn farmers of Koduru mandal in Krishna district of A.P. affected due to recent Tsunami hazard in terms of maladies and remedies so as to attain satisfaction of prawn farmers. In otherwords, the past events with pros and cons were analysed interms of three functional units covered under three case-lets and the integrated affect of Tsunami was reflected in the form of a case study.

The case-lets entitled Unexpected wave of misfortune, Wiped bunds-weeping farmer, Deep to deepest in debts were selected each from three villages of Koduru mandal in Krishna district of Andhra Pradesh purposively based on the severity of havoc created by Tsunami on 26<sup>th</sup> December, 2004.

From the case study over three case-lets, it was observed that all were small and marginal farmers following normal prawn culture but not extensive prawn culture because of their insufficient assets. All of them have started prawn culture lured by the immense profits that were obtained during 1993's. In the subsequent years, all their ponds were prone to disease attacks and some disasters which made them to ran into unprecedented debts.

Tsunami on 26<sup>th</sup> December 2004, became a black Sunday on their lives, took everything from their cultures along with their dreams. The huge gigantic waves were gone away but their woes have begun. They became hopeless, lost and went into depression and shocked to see their shattered prawn farms and their debts seem to laugh at their faces savagely.

Strategy is required so as to make sustainable development in prawn farming in the light of recent havoc created by Tsunami on December 26<sup>th</sup>, 2004. The view point was endorsed by subject matter experts of prawn culture and eminent scientists like Swaminathan (2005) while suggesting mangrove restoration to combat the ill effects of TSunami. It is at this context the following strategy was developed based on the results of the study (Fig 1).

Fig. 1 depicts the strategy to mitigate Tsunami disaster by prawn farmers. One can not forget the hazardous devastation caused by 26<sup>th</sup> December 2004 Tsunami. It has created havoc and vulnerable situation. The maladies are many and took lot of time to apply remedies. Eight dimensions *viz.*, physical, technical, economical, social, political, cultural, institutional and psychological were presented as maladies for which remedies were elicited from the prawn farmers interms of vulnerabilities and capacities.

The lessons learnt from the experience of the case study were given in the middle box of the Fig.1. The third box of the Fig.1 reflects a strategy in terms of preparedness and coping mechanisms. The strategies were enlisted below:

1. Plan in advance for construction of strong bunds by growing small plants which can fix the soil by their root system and make the bunds withstand to high velocity winds and flooding to certain extent.
2. The sea coast, has to be covered by developing mangroves which can reduce the tidal energy and there by protect the prawn ponds from destruction due to Tsunami.
3. Canal systems and drainage systems were to be properly constructed in such a way that they provide diversion of water when there was sudden raise in water level.



	ISSUES	RECOMMENDATIONS
• PHYSICAL	<ul style="list-style-type: none"> <li>• Absence of ponds in the sea during completion of sea gate</li> </ul>	<ul style="list-style-type: none"> <li>• Mangroves are to be developed</li> <li>• Tidal water can also be grown in closed sea (fish-pond)</li> </ul>
• TECHNICAL	<ul style="list-style-type: none"> <li>• Lack of quality inputs</li> <li>• Use of outdated technology</li> <li>• Modern technology not reaching the farmers</li> </ul>	<ul style="list-style-type: none"> <li>• Modern technology and scientific advancement</li> <li>• Awareness about good inputs</li> <li>• Consulting trained extension personnel</li> </ul>
• ECONOMIC	<ul style="list-style-type: none"> <li>• No credit availability from government institutions</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of loans by government</li> </ul>
• SOCIAL	<ul style="list-style-type: none"> <li>• Fluctuation in the price of the prawns</li> <li>• Ineffective local markets</li> <li>• Lack of cooperative among farmers</li> </ul>	<ul style="list-style-type: none"> <li>• Co-operative producer-quality</li> <li>• Reliable input links</li> </ul>
• POLITICAL	<ul style="list-style-type: none"> <li>• Lack of harmony in community organizations due to caste differentiation</li> <li>• Intermediation by the village leader in decision making</li> </ul>	<ul style="list-style-type: none"> <li>• Farmers have to be more professional in their attitude</li> <li>• Freedom of decision taking</li> </ul>
• CULTURAL	<ul style="list-style-type: none"> <li>• Persistence of 'feudalism'</li> <li>• Superior in identifying of beneficiaries</li> <li>• Existence of reproductive habits</li> <li>• False expectations and lack of learning from the previous events</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid 'feudalism'</li> <li>• Government should be impartial</li> <li>• Education can change their attitude</li> <li>• Success stories on diversification</li> </ul>
• INSTITUTIONAL	<ul style="list-style-type: none"> <li>• Lack of access to public services</li> <li>• Lack of preparations for any contingencies</li> <li>• Emphasis of relief measures is substantial but not as appropriate as a whole</li> <li>• Lack of real time early warning systems</li> </ul>	<ul style="list-style-type: none"> <li>• Needed sufficient support from public bodies</li> <li>• Proper planning from all levels</li> <li>• Early warning through latest technologies</li> </ul>
• PSYCHOLOGICAL	<ul style="list-style-type: none"> <li>• Discrepancy in the cultural of the fish</li> <li>• Fatal (Fidelity, Confused, Repetitive and loss)</li> <li>• Repetitive need, Inflexible and rigid</li> </ul>	<ul style="list-style-type: none"> <li>• By caregivers</li> <li>• Provision of Psychologist</li> </ul>

4. Bringing attitudinal buildup in the prawn farmers by preparing their minds to face such sudden disasters.
5. Educating the farmers about different alarm signals especially the signals given by the animals, birds, frogs etc., which can first fore see the coming disaster by their acute hearing ability, by considering as a indigenous early warning system.
6. Conducting practice oriented training programmes to the prawn farmers in order to escape from Tsunami disaster.
7. Reserve funds need to be created to combat and cope-up with sudden disasters like Tsunami.

Applying the strategy to mitigate Tsunami disaster, farmers assure good prawn catch followed by value addition through prawn processing in the form of development of prawn culture through the steps like attention, interest, conviction, action and satisfaction yielding the final output as satisfaction of prawn farmer.

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