An aerial photograph of a coastal town and beach. The foreground shows a dense cluster of multi-story buildings with flat roofs. To the left, a wide sandy beach is covered with hundreds of small, traditional wooden fishing boats. The ocean waves are breaking onto the shore. The sky is clear and blue.

# The Structure of Social Vulnerability in South India's Fishing Communities

*International Conference on*

**NATURAL HAZARDS AND DISASTERS:  
LOCAL TO GLOBAL PERSPECTIVES**

**Anantapur, India**

**NOVEMBER 25-27, 2006**

**Dr. Eberhard Weber**  
**The University of the South Pacific**  
**Fiji Islands**  
**Weber\_e@usp.ac.fj**



1990



Dec. 2004

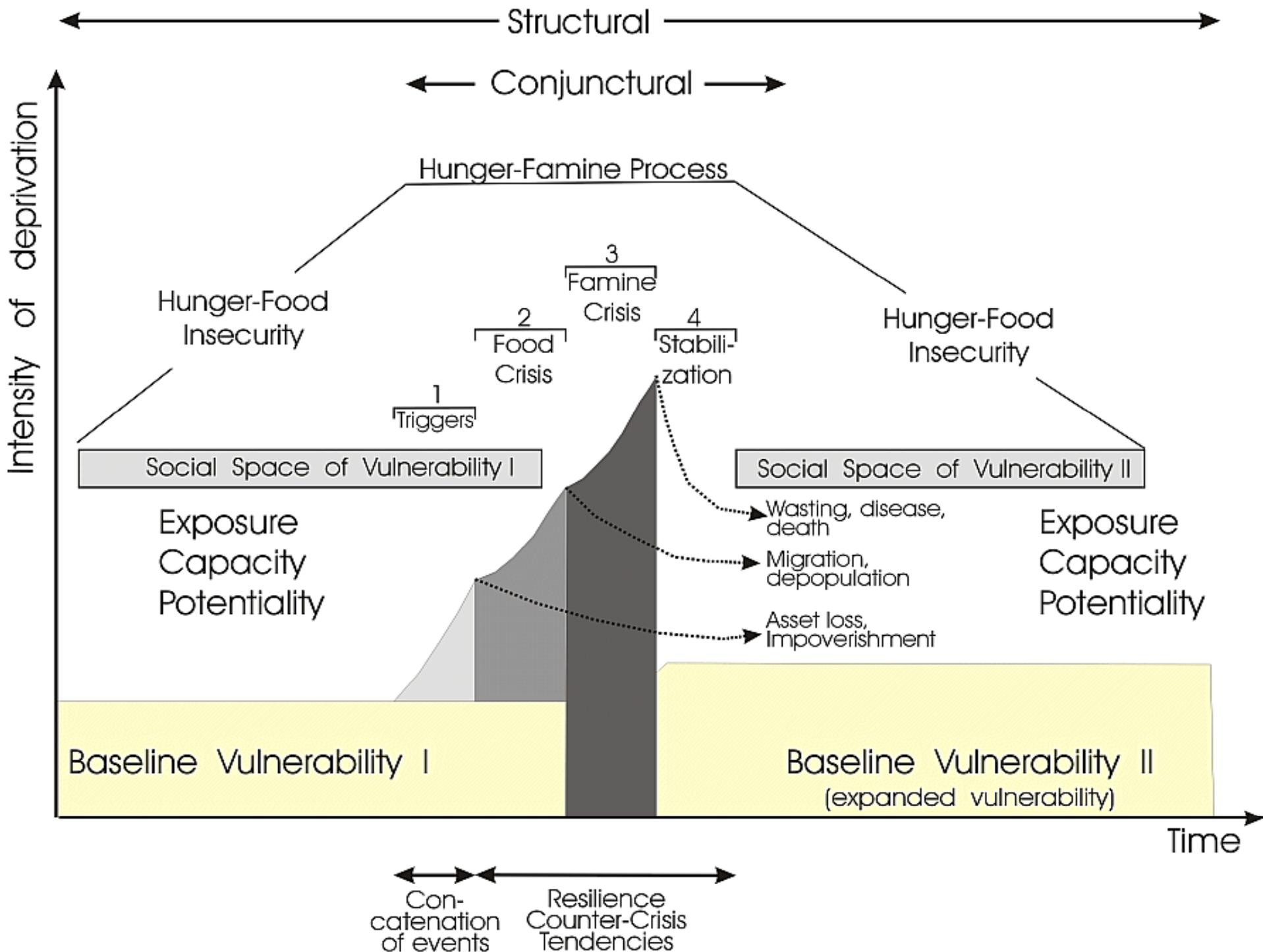




# Social Vulnerability

**"Vulnerability has (thus) two sides: an external side of *risks*, shocks and stress to which an individual or household is subject; and an internal side which is defencelessness, meaning a lack of means to *cope* without damaging loss"**

Robert Chambers 1989



# The structural dimension of vulnerability

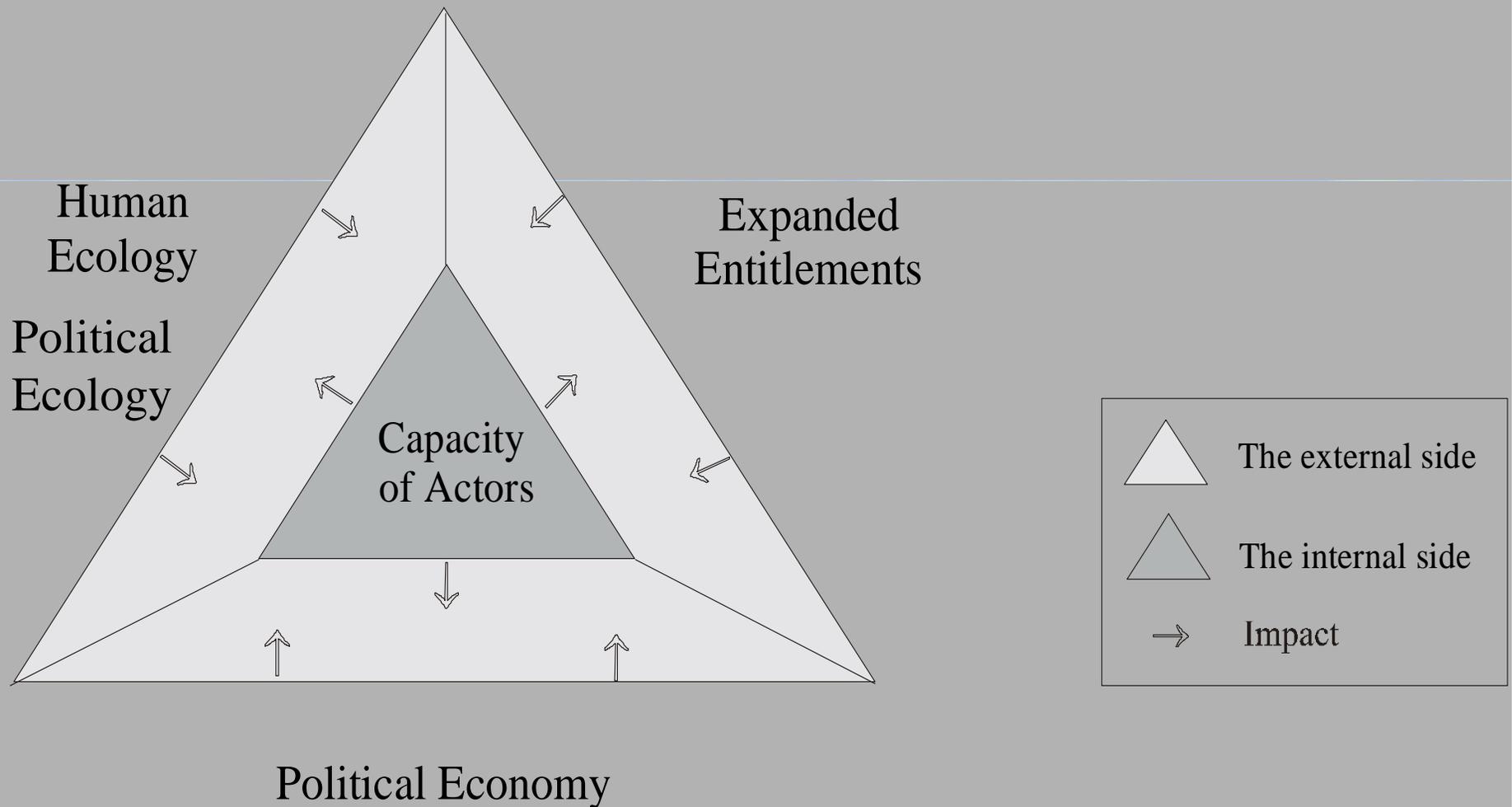
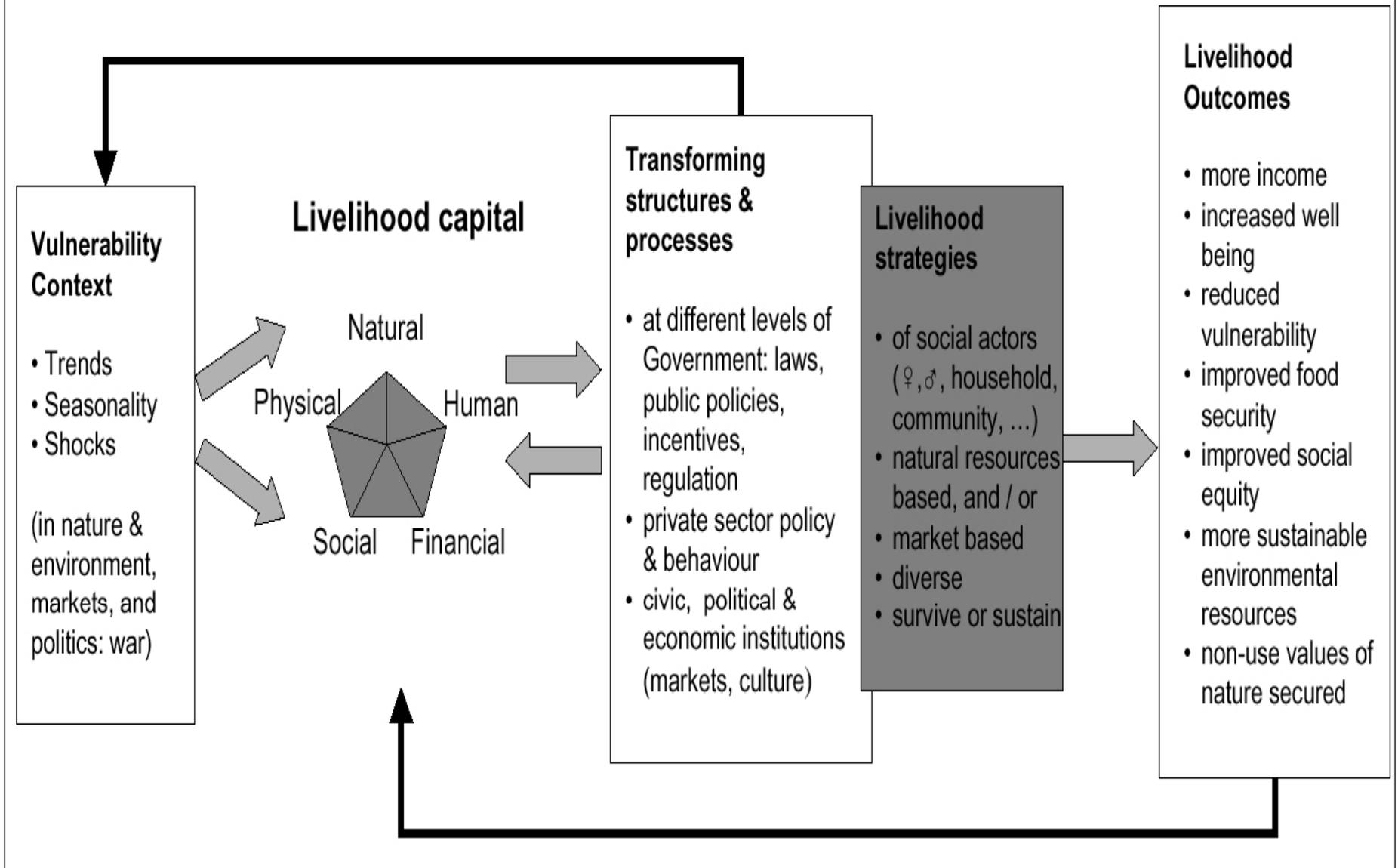


Figure 4 Oxfam's SL framework



# What next?

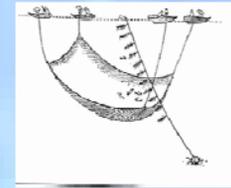
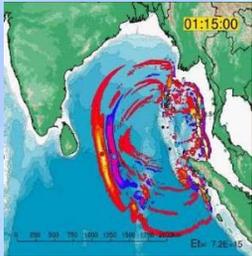
## Social Vulnerability in South India's Fishing Sector

- modernization
- political instability
- globalization, international trade
- urbanization and sustainable development
- Natural hazards

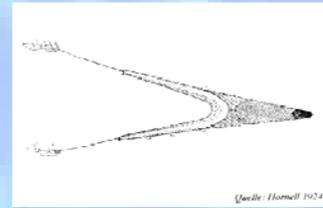
# Social Vulnerability and Fishing Communities

- Tsunami of Dec. 2004 does reveal vulnerability of fishing communities but does not create it
- Tsunami of Dec. 2004 increases future vulnerability of fishing community

26/12/2004



Colonial Times  
(1924)



Modernization  
"Blue Revolution"  
(1950 - 1980s)  
Conflicts



Past Tsunami  
2005+

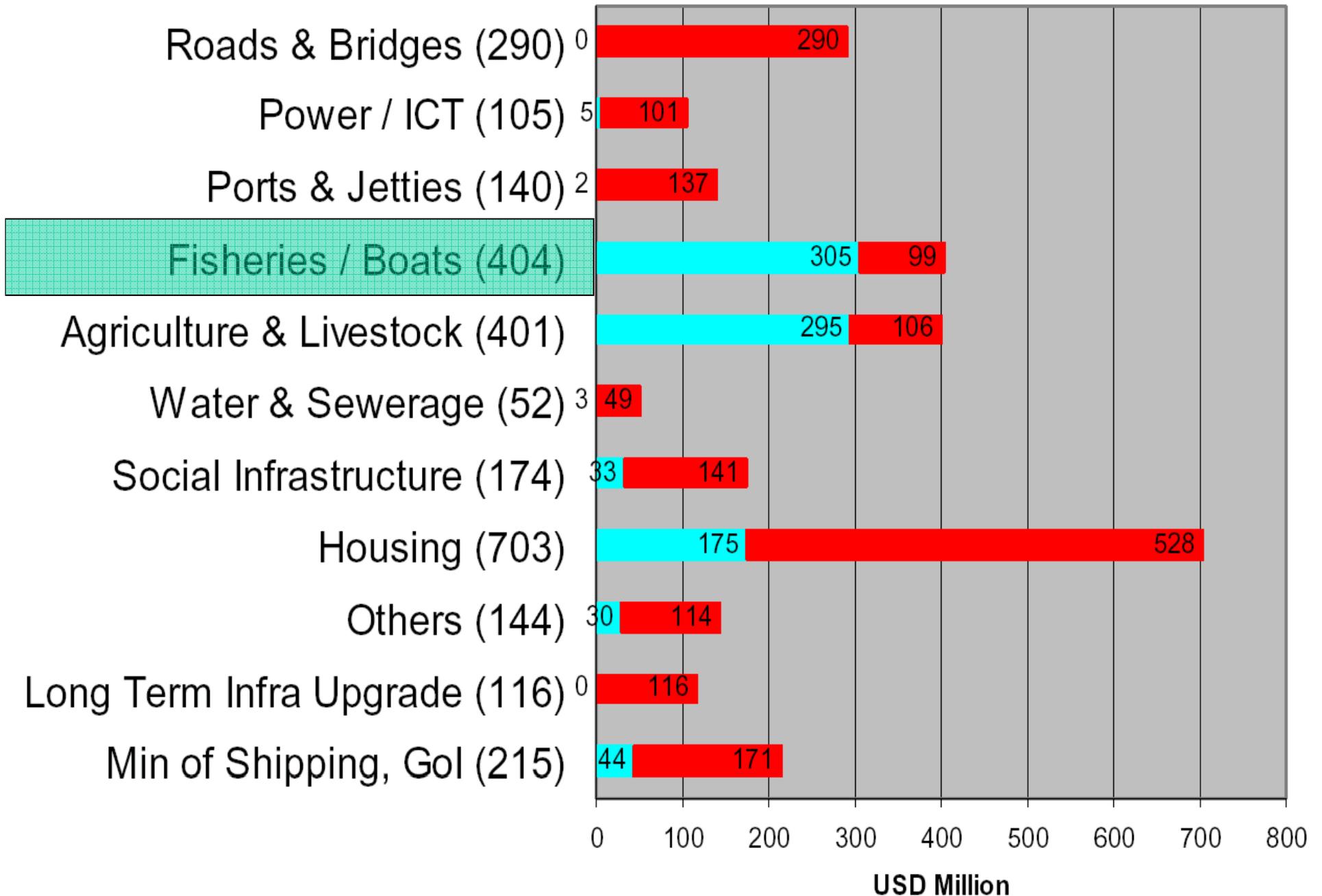


Globalization  
Structural Adjustment  
(1991 +)



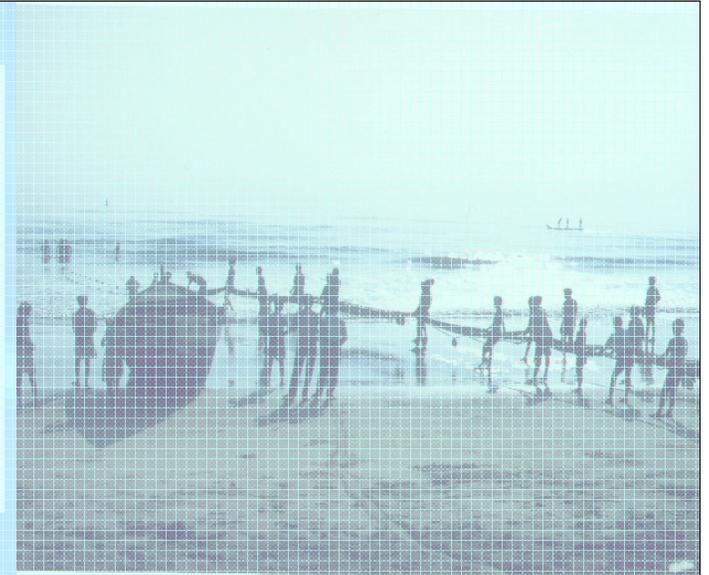
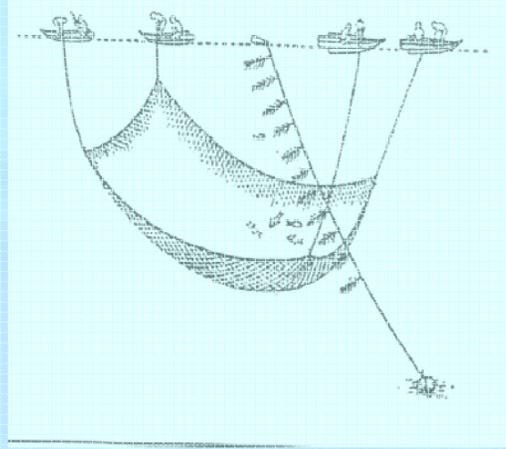
(Total USD Million)

Short Term Medium Term

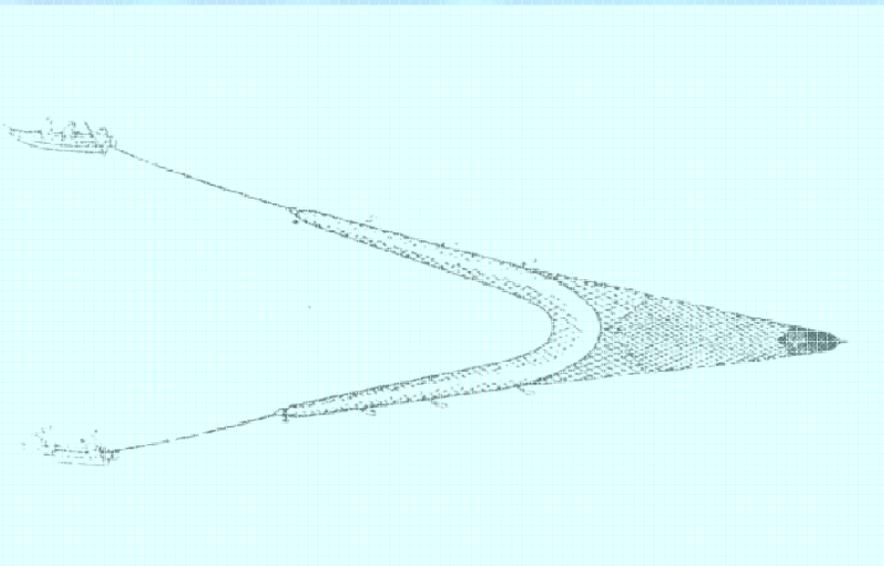


# Program Deliverables – Replacement of Fishing Vessels

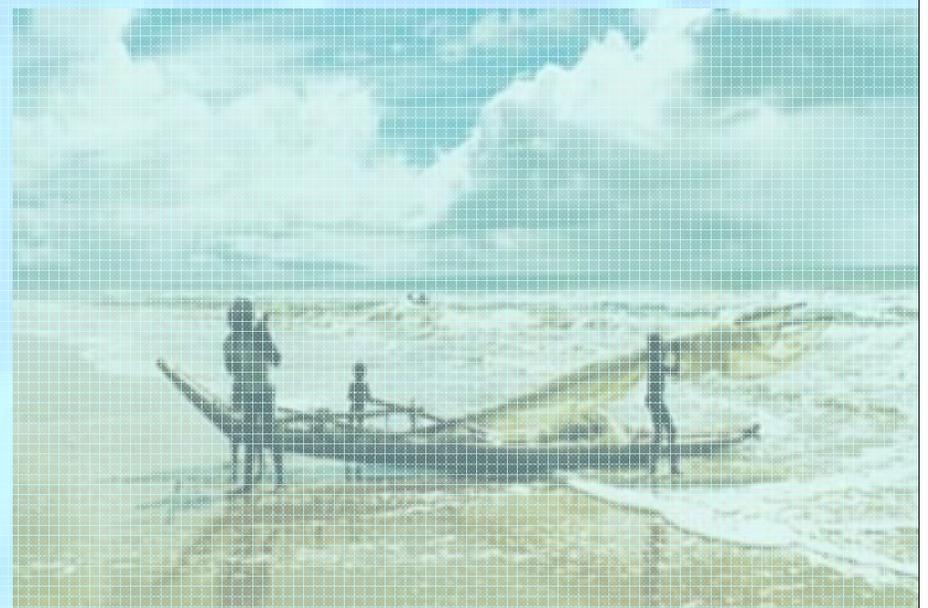
	Catamarans (100% subsidy)	Boats with motors (50% subsidy)	Mechanised boats (35% subsidy)	Total
A&N	413	-	376	789
AP	1,000	-	362	1,362
Kerala	95	2,416	8	2,519
Pondicherry	6,280	1,241	239	7,760
TN	31,383	9,700	2,655	43,738
Total	39,171	13,357	3,640	<b>56,168</b>



## Colonial Times (1924) Small-Scale-Fishery Sector in Madras Presidency



Quelle: Hornell 1924



# Periya Vallai (Shore-Seine)





**Distribution of catch (value of catch: 1000Rs)**

Gear used	Number of Persons	Share (Rs)	Share/Person
<b><u>Shore Seine</u></b>			
owner of MoP	(1)	500	500
labourer on boat	15	250	16.7
labourer at the beach	15	250	16.7
<b><u>Kambi Valai</u></b>			
owner of gear	1	200	200
owner of boat	4	133	33.3
owner of kambi	1	333	333
labourer	10	333	33.3
<b><u>Mada Valai</u></b>			
owner of gear	1	333	333
owner of boat	4	333	83.3
labourer	10	333	33.3
<b><u>Thuri Valai</u></b>			
owner of gear	1	250	250
owner of boat	2	250	125
labourer	5	500	100
<b><u>Gill Net</u></b>			
owner of gear	1	100	100
owner of boat	1	400	400
labourer	3	500	166.6



Modernization  
“Blue Revolution”  
(1950 - 1980s)





- **Major Conflict in the Indian Fisheries Sector**

- Different User Groups compete for the same resource

Small-Scale-Fisherpeople

vs

Mechanized Trawlers

- High Quality Marine Products as important source for foreign exchange



# Modernization in Fishing

“My evaluation is that it is a scandal, and not a partial scandal but a total scandal [...] The INP (*Indo-Norwegian Project*) failed in four ways: less protein became available to the population, the level of living of the fishermen decreased, partly violent conflict between the traditional and modern sectors emerged, and depletion of the raw material, particularly the shrimps, set in. Still however the project was a success in the sense of being a major source of foreign currency.

**Johan Galtung**

The Indo-Norwegian Project  
A “Development” Project revisited  
Internationales Asienforum

1984

# Modernization in Fishing

“If steam trawling is undertaken, it will certainly revolutionise fishing in India and give rise to an intense competition between the poor fishermen and the rich capitalists [...] The fishermen are likely to complain of a depletion of stock in the fishing grounds because of the activities of trawlers.

**D.D. Anugraham**

The Fisherfolk of Madras

University of Madras

unpublished M.A.-Thesis 1940

# Modernization in Fishing

“Madras does not need steam trawlers and to jump from the catamaran to the steamer is impossible and would be unwise even if it were possible, because revolutionary methods here as elsewhere are a mistake”

**F.A. Nicholson**

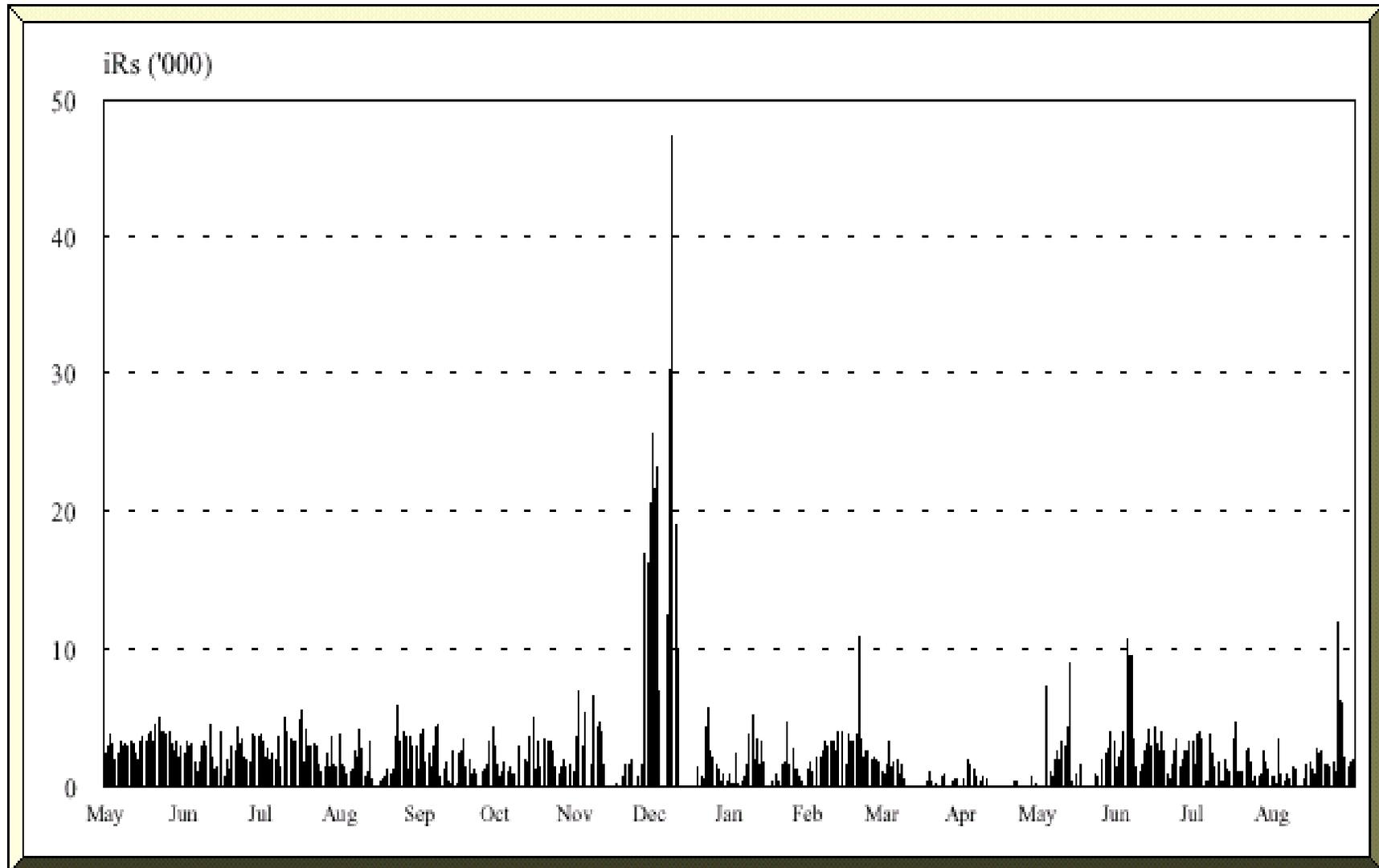
Director

Madras Department of Fisheries

1908

# Value of marketable catches of 37 fishing-teams

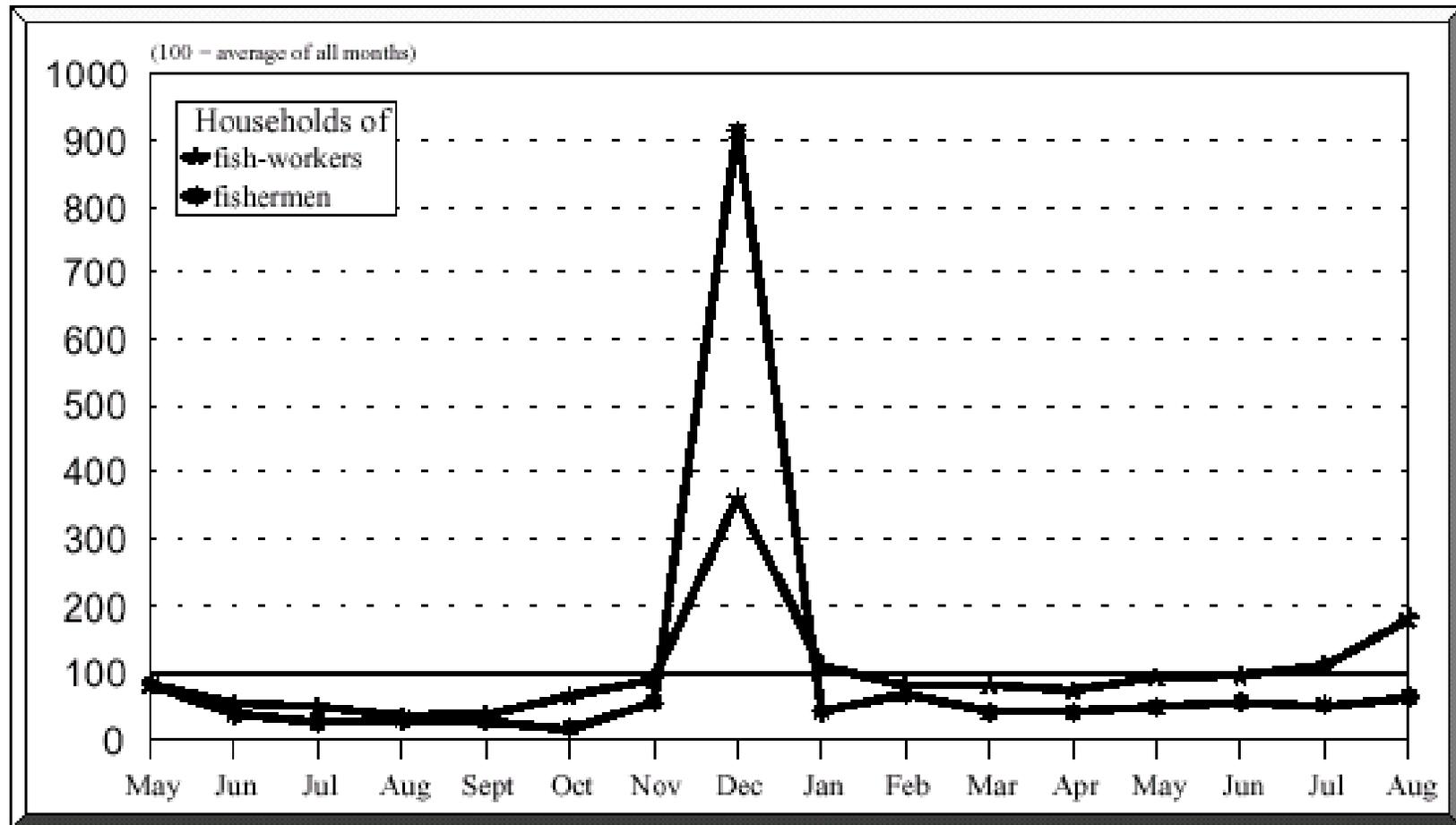
Madras, May 1991 - August 1992



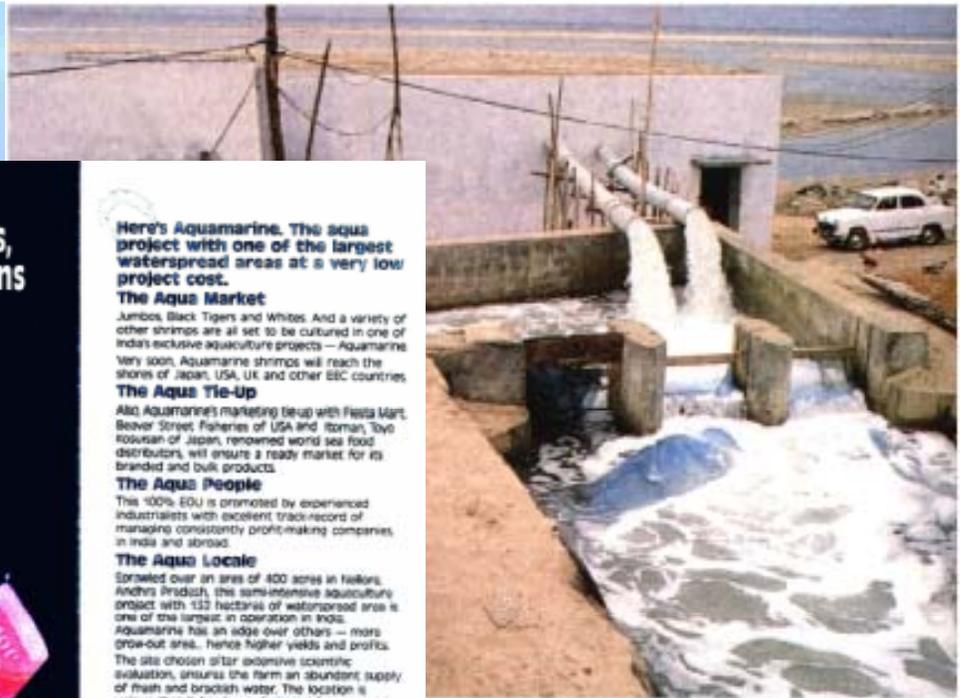
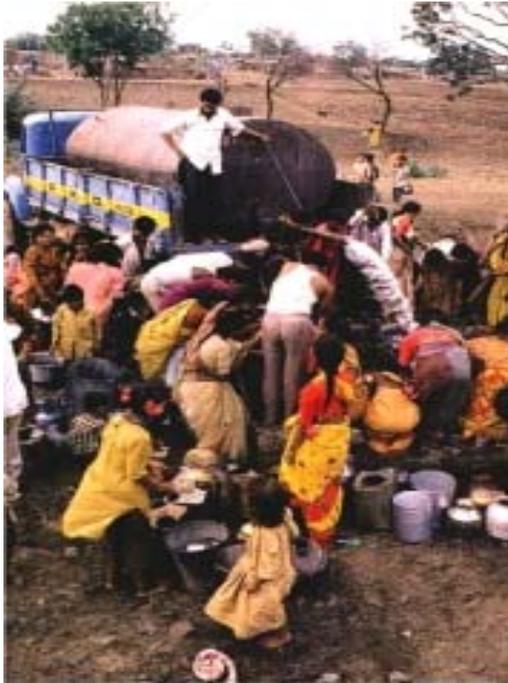
*Madras, May 1991 - Aug 1992; E. Weber*

## Repayment of loans

May 1991 - August 1992



*Madras, May 1991 - August 1992, E. Weber*



After feeding the Americans,  
the Japanese and the Europeans  
there will be nothing  
left for us...  
Except profits.

**Here's Aquamarine.** The aqua project with one of the largest waterspread areas at a very low project cost.

**The Aqua Market**  
Jumbos, Black Tigers and Whites. And a variety of other shrimps are all set to be cultured in one of India's exclusive aquaculture projects — Aquamarine. Very soon, Aquamarine shrimps will reach the shores of Japan, USA, UK and other BBC countries.

**The Aqua Tie-up**  
Also, Aquamarine's marketing tie-up with Fiesta Mart, Beaver Street Fisheries of USA and Itohan, Toyko of Japan, renowned world sea food distributors, will ensure a ready market for its branded and bulk products.

**The Aqua People**  
This 100% EOU is promoted by experienced industrialists with excellent track-record of managing consistently profit-making companies, in India and abroad.

**The Aqua Locale**  
Sprawled over an area of 400 acres in Andhra Pradesh, this semi-intensive aquaculture project with 132 hectares of waterspread area is one of the largest in operation in India. Aquamarine has an edge over others — more grow-out area, hence higher yields and profits. The site chosen after exhaustive scientific evaluation, assures the firm an abundant supply of fresh and brackish water. The location is unique that it has been sheltered from natural calamities.

Each unit — Hatchery Farm and Processing-cum-Packaging Unit is an individual profit centre equipped with the state-of-the-art machinery and quality control equipment. To enhance productivity and profitability at all levels.

**The Aqua Connection**  
All this topped by a technical arrangement with Hanasa International Corporation, Taiwan, one of the world leaders in aquaculture techniques, gives the project a distinct advantage.

**The Aqua Cost**  
Amazingly, the entire integrated project is programmed at a low cost of Rs. 18.50 crores. Already in commercial production, offering quick return on investment and poised for meeting Global Profits.

**The Aqua Catch**  
Quite naturally, it's the best possible catch for you and a great return on your investment, offering you an ocean of opportunities.

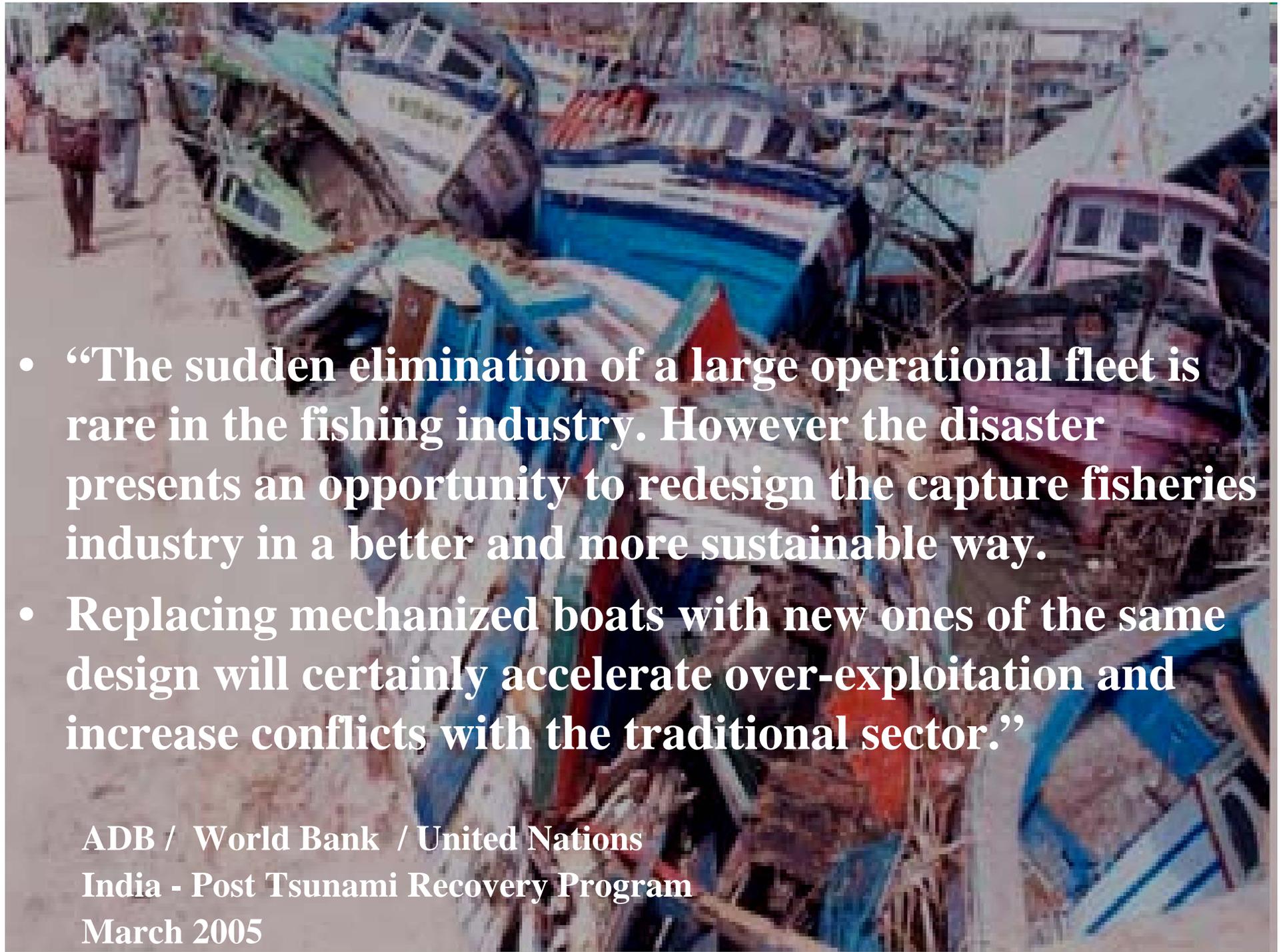
  
**AQUAMARINE  
FOOD PRODUCTS LTD**  
Regd. Office: 191 St. Mary's Road  
Awarapet, Madhav-600 018  
Tel: 436038, 430093, 437093. Fax: 044-8257393  
*The leading wave in aquaculture.*



**Globalization  
Structural Adjustment  
(1991 +)**

Thank you very much





- **“The sudden elimination of a large operational fleet is rare in the fishing industry. However the disaster presents an opportunity to redesign the capture fisheries industry in a better and more sustainable way.**
- **Replacing mechanized boats with new ones of the same design will certainly accelerate over-exploitation and increase conflicts with the traditional sector.”**

**ADB / World Bank / United Nations  
India - Post Tsunami Recovery Program  
March 2005**

- 
- As the number of trawl boats in Tamil Nadu are already in excess, this is an opportunity to reduce the trawl fleet and strengthen small scale fishing. In fact, if the trawl fleet destroyed is not replaced it gives us the opportunity to push in more small motorised boats than the pre-tsunami levels.

NGO Coordination Centre  
Nagapattinam  
April 2005

# Political Economy

- The perspective of political economy provides the macro structure in which resource endowments, i.e. the distribution of assets, and patterns of entitlements are embedded. Political economy is concerned with the distribution of power in society. It looks at long-term structural developments, including class processes, conflicts and crises, which cause and perpetuate *existing* social inequalities, access profiles and processes of marginalisation.

# Human Ecology

- The term human ecology originally refers to the application of ecological concepts to social processes. Human ecology studies the relationship between people and their social and physical environments. For the present context, one may define that "*human ecology is a way to understand both the risk of environment which vulnerable groups confront, and the 'quality' of their resource endowment*"

(Bohle et al. 1994)

# Expanded Entitlements

- According to Drèze and Sen (1989) entitlements are defined as "*the set of alternative bundles of commodities over which one person can establish command*". A wage labourer's entitlement is given by "*what he can buy with his wages, if he does in fact manage to find employment*".
- The authors expanded their definition to include non-legal, cultural and intra-familial entitlements.

## The Vulnerability Context

The Vulnerability Context frames the external environment in which people exist. People's livelihoods and the wider availability of assets are fundamentally affected by critical trends as well as shocks and seasonality – over which they have limited or no control.

Trends	Shocks	Seasonality
<ul style="list-style-type: none"><li>● Population Trends</li><li>● Resource Trends (including conflicts)</li><li>● National/International Economic Trends</li><li>● Trends in governance (including politics)</li><li>● Technological Trends</li></ul>	<ul style="list-style-type: none"><li>● Human Health Shocks</li><li>● Natural Shocks</li><li>● Economic Shocks</li><li>● (Violent) Conflict</li><li>● Crop/Livestock Health Shocks</li></ul>	<ul style="list-style-type: none"><li>● Of prices</li><li>● Of production</li><li>● Of health</li><li>● Of employment opportunities</li></ul>

# Natural Capital

- Examples of natural capital and services derived from it:
  - land
  - forests
  - marine / wild resources
  - air quality
  - erosion protection
  - storm protection
  - (bio)diversity
- For all these it is important to consider access and quality and how both are changing.

# Physical Capital

- Infrastructure such as roads, rails and telecommunications - are the key to the integration of the remote areas where many of the poor live. Not only are people able to move between rural and urban areas more easily if the transport infrastructure is good, but they are also more likely to be better informed about opportunities (or the lack of them) in areas to which they are thinking of migrating, either temporarily or permanently.

# Human Capital

- Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives.

# Social Capital

- Networks and Connectedness, either vertical (patron/client) or horizontal (between individuals with shared interests) that increase people's trust and ability to work together and expand their access to wider institutions, such as political or civic bodies
- Membership of more formalised groups
- Relationships of trust, reciprocity and exchanges

# Financial Capital

- Financial capital denotes the financial resources that people use to achieve their livelihood objectives.
- Available stocks: savings (cash, bank deposit, livestock, jewellery)
- Regular inflow of money: earned income, pensions, other transfers from the state, remittances. The more reliable the less vulnerability.