DFID Monsoon Season Post Harvest Fish Losses Research Project: Pre-Fieldwork Meeting, Atria Hotel, Bangalore 24 - 26 June 1998 and Initial Case Study Fieldwork in North Kerala.

Workshop

A three day workshop was held in Bangalore, India to plan and discuss the second fieldwork phase of the RNRRS Wet Season Post-Harvest Fish Losses Project. The objectives of the second phase of research are:

- firm up the data on post-harvest losses generated by the Exploratory Studies of 1997;
- characterise small-scale processors;
- determine how significant post-harvest losses are during the monsoon season at selected fieldwork sites;
- identify appropriate options for intervention to reduce loss.

The general terms of reference for the second phase of fieldwork were the focus of much of the workshop and these are given as Appendix 1.

The workshop was attended by the fieldwork research team, collaborating scientists from College of Fisheries Mangalore and advisers from Catalyst Management Services of Bangalore. The tentative workshop agenda is given as Appendix 2. A list of the participants is given as Appendix 3.

Discussion of Terms of Reference

The terms of reference for the case studies fieldwork (Appendix 1) were discussed. During the discussion the importance of clarifying the issues to research which would enable the identification of realistic options for intervention was highlighted. This led to a brainstorming session on intervention in the post-harvest fisheries sector. A list of the key intervention issues which the second phase of the research should investigate was drawn up and later incorporated into a general checklist.

The only change that was suggested to the terms of reference concerned the cost-benefit analyses of potential intervention options. It was agreed that it would be ambitious to conduct accurate economic and social cost-benefit analyses on intervention options during the second phase. Instead a framework for such analyses would be produced and more detailed analyses of interventions would be deferred until phase 3 of the project.

Following the discussion of the terms of reference, a draft final report structure for the forthcoming fieldwork was produced. This is given as Appendix 4. The report will include recommendations on the following:

- Characterisation of the target group (small scale processors)
- Framework for assessing significance of loss

- Are interventions necessary to reduce losses in the monsoon season? Justify the conclusion.
- If appropriate identify intervention opportunities
- What are the implications of intervention packages in terms of socio-economics, the environment, gender and labour (positive & negative)
- Assumptions related to interventions
- A framework for cost-benefit analysis for the opportunities identified

Based on the report structure and the intervention guidelines a general checklist of the topics to be investigated by the research team during phase 2 was produced. The checklist is given as Appendix 5 and shows the broad topics for research as:

- Preliminary Data
- Post-harvest Losses - Additional Data
- Significance of Loss
- Livelihood Profile
- Marginalisation
- Raw Materials
- Options for Intervention

The checklist topics were discussed in terms of who in the research team should be responsible for generating what data and how and from whom the data would be collected. These issues are recorded in Appendix 5.

Characterising Small-scale Processors

One of the gaps in the exploratory fieldwork was that it did not produce a clear picture of who small-scale processors are in terms of loss and socio-economics. An aim of the second phase of research was to rectify this omission by conducting a questionnaire survey at each research site (point a of tors) to characterise small-scale processors. The results of the survey would be used to select random samples of processors for informal interviews.

Discussions suggested that under the prevailing circumstances the data required for such a profile may be better collected using an informal data collection approach. The reasons for this are that data from a questionnaire will require analysis before it can be used for identifying samples for informal interviews and the limited time available in the field would make it difficult to complete a proper analysis and then go onto conduct informal data collection.

Instead of a questionnaire it was agreed that a list of key indicators to profile processors be used to produce a table of data which would give the user a quick picture of who the target group (small-scale processors) are. The data for the table would be generated using informal methods. The list of key indicator criteria which would be used to construct a profile table is given below.

Small-scale Processor Profile: Indicator Criteria.

- Sources of income (pie chart)
- Expenditure profile (pie chart)
- Male/female distribution
- Female headed households
- Level of affluence- basket of assets - land, house, etc. (fixed assets)

- proportion of expenditure on food vs other expenses
- consumption pattern
- housing

- Quantities of fish processed
- Varieties of fish processed
- Processes used
- Turnover
- Cycle time
- Storage of finished product
- Individual or group activity (processing)
- Source of working capital
- Value of loss by processor by team
- Perceptions of loss - processor & team
- Recognition of loss - processor and team
- Inhibition factors to reducing loss - processor and team

Significance of Loss

A key objective of the phase 2 research is to determine whether post-harvest fish losses during the monsoon are significant and justify loss reduction interventions. Significance is probably best judged by using a combination of factors rather than relying on quantitative data solely. The perceptions of the processors who are experiencing losses is a key criteria, but this alone may not give an objective broader indication of significance. The awareness of losses and the implications may or may not be something which is fully understood by processors and hence the perceptions of informed non-processors is also relevant, especially in light of ideas for loss intervention. Trends in loss levels is also an important issue in determining whether intervention is necessary. If the trend is predicted to be for high losses in the future then the justification for intervention is increased.

In order to assist the research team to decide whether losses are significant or not at a particular fieldwork site a list of indicators were identified as a guide. The indicators are given below.

- Recognition of loss
- Valuation of loss
- Inhibitions to solutions to loss
- History of attempts to reduce loss by processors & others
- Micro level loss assessment results
- Macro level loss assessment results
- Future trends of losses based on historical trend
- Future's price estimate
- Who gains and loses from losses
- Marginalisation resulting from losses

Some of the indicators are likely to be better indicators than others. Predicting trends is likely to be difficult and although relevant is perhaps not as important as micro level analysis of loss levels with individual processors and the recognition of loss by processors. There is therefore scope to weight indicators according to the level of importance.

Such a guide to assessing significance would be a useful addition to the field based loss assessment methods currently being validated by NRI in West Africa.

Fieldwork Sites and Procedures

Due to time constraints it was suggested that just one site in a research area would be the focus of data collection and research. Fourteen days are set aside for fieldwork and it was agreed that the first two days in the field would be used for generating preliminary data (see Appendix 3.) and the last four days in the field should be used by the team for report writing. Justification should be given in the final report as to why sites are chosen.

Options for Intervention

The stimuli for intervention opportunities to reduce losses or reduce marginalisation were identified. These were seen as:

- suggestions from the communities including processors
- existing coping strategies used by processors to reduce losses
- observation on improvements to existing processing methods
- observations on alternative loss reduction measures
- gaps in services in the fisheries sector
- gaps in services in the non fisheries sector

It was suggested that an output of the research could be documenting and disseminating information on existing coping strategies used by small-scale processors to reduce losses. An existing idea used in Kerala for reducing losses may be something which processors in Orissa could use to reduce their losses.

Other ideas for intervention which were mentioned during the workshop were:

- making small changes in existing handling and processing methods

- encouraging processors to store fish during the non monsoon season and then sell for a higher price during the monsoon season

- alternative income generating activities which are fisheries related such as basket making from coconut leaves

Load Tracking and Scoring

Two loss assessment techniques used in Africa were explained by NRI. It was felt that both could be used during the fieldwork. Load tracking would be used with small-

scale processors from the point of landing through processing to the stage where the fish leaves the site.

Scoring is something which two team members are familiar with and is a technique which could be used with groups of small-scale processors.

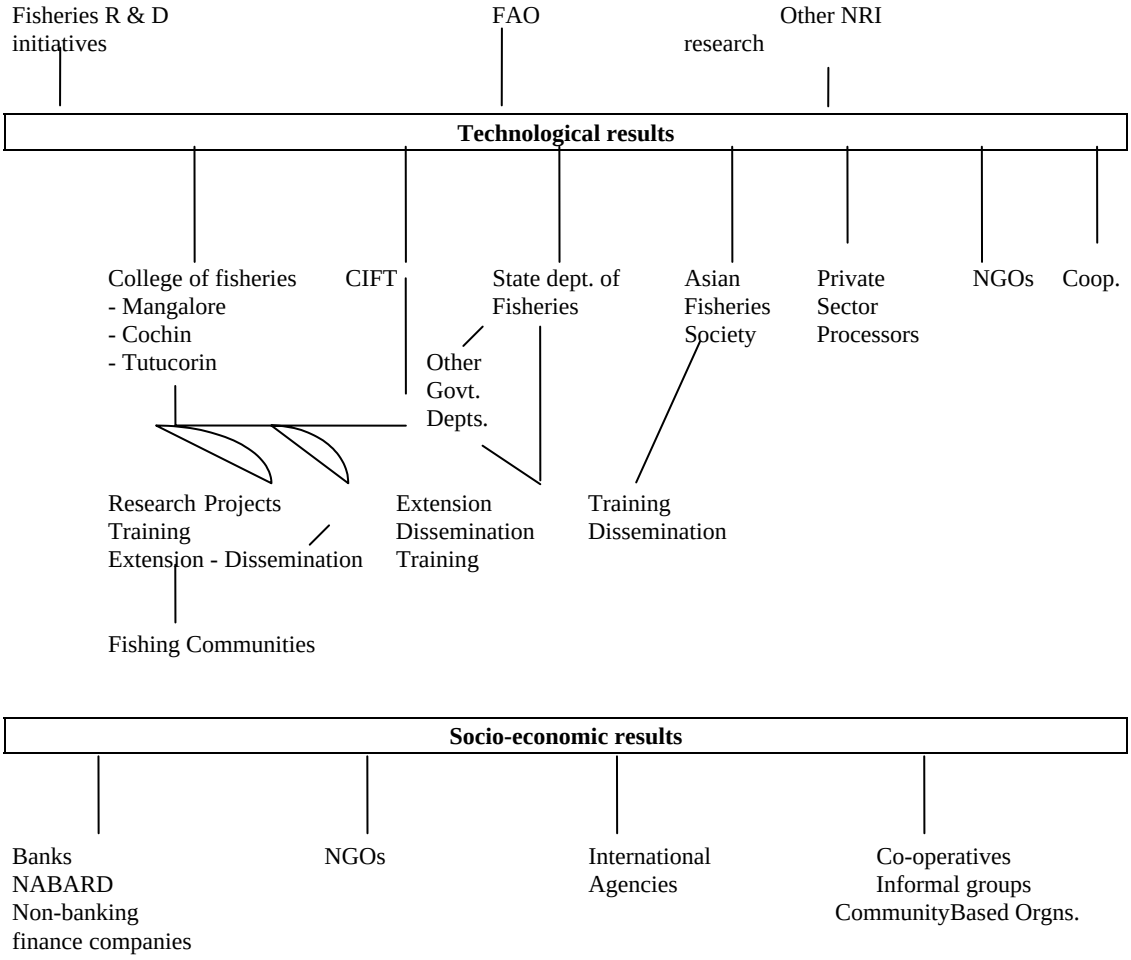
Future Activities

Below are the key project activities and timings as agreed at the workshop.

July - Oct	Field work - phase II	
	Discuss phase II with Mangalore Fisheries College	
Nov. 13	Phase II report to NRI	
	Draft coping strategies documents	
Jan 99	Workshop	
Feb	Phase III	Discuss intervention ideas with community
		Shortlist options - site specific
		Planning interventions with partners (workshop)

Dissemination of Research Results

A brainstorming session to review and clarify the potential dissemination pathways for the research results produced the flow diagrams below.



Approaches for dissemination, extension:

- seminars - disseminating information
- open days
- exhibitions
- pamphlets, posters, etc.
- as a programme in govt. departments
- newsletters
- training - extension organisations, communities

Field Research - North Kerala

Four days were spent with the research team in North Kerala. Activities in which NRI participated in or conducted in chronological order were:

- identification and vetting of field assistants
- briefing with Scientist in Charge of Central Institute of Fisheries Technology
- field research planning - checklists

- technical discussion with CIFT
- field visit to Puthiyappa fishing village
- project administration - contractual details
- visit to Virundakandi fishing village
- site selection
- briefing team in use of scoring for data collection and loss assessment
- stratification of processors at Virundakandi
- discussion of team roles
- preliminary data collection at Virundakandi
- financial arrangements with team

Information on site selection, stratification and preliminary data will be included in the final report of the case studies research.

Appendix 1 Draft Terms of Reference for Monsoon Losses Phase II

The following to be undertaken by a team composed of Shiv Kumar (socio-economist/marketing specialist) from Catalyst Management Services, N S Sudhakar (post-harvest fisheries technologist) from College of Fisheries, Mangalore and B Gomathi (social development specialist).

The fieldwork site areas are North Kerala, Andhra Pradesh and Orissa. The fieldwork is to start in July 1998 and be completed by 30 September 1998. A single team report of the work to be submitted to NRI by November 13th 1998.

a) Characterise small-scale processors and those effected by loss, using a short questionnaire that includes questions on loss, socio-economics and perceptions.

b) Working with a random sample of processor households:

To determine the significance of post-harvest loss at the micro level. Generate an understanding of the monetary value of post-harvest loss during the monsoon and non monsoon periods in relation to turnover, margin, costs and profit. Use individual case studies to give data on costs, income, margins, profit.

Investigate the role of other non fish processing income generating activities in household security. Generate a clear understanding of processors coping strategies during the monsoon and whether losses have a significant effect on household coping strategies.

Clarify whether the risk of loss is a significant cause of processors to opt out of processing during the monsoon.

c) Generate a clear understanding of trends in post-harvest loss levels over time and a better understanding of the seasonality of losses, quantifying loss according to seasons/over time on an annual basis (scoring).

d) Conduct a technical appraisal of losses clarifying the reasons for loss, how loss varies according to different processing methods, different species and quantify loss at the micro level. (NRI loss assessment methods - load tracking, scoring, flow diagrams, questionnaire).

Interventions

e) In light of previous intervention work conducted in the post-harvest sector in India, in collaboration with small-scale processors and other stakeholders determine whether there are opportunities for small-scale processors to make more from available fishery resources. Describe opportunities in terms of who, what, where, how and when. Identify appropriate technical and/or non technical interventions which will reduce the negative effects of post-harvest losses. Provide cost benefit analyses of potential interventions. Identify stakeholders who would be interested in participating in pilot intervention studies.

f) Clarify to what extent the marginalisation of small-scale processors could be addressed by intervention.

Colachel - the kilathy loss (To be confirmed)
To be undertaken by a team from CIFT and Catalyst Management/SIFFS between July 31st and September 1st 1998. Report to be submitted to Project Leader (NRI) by October 1st 1998.

Generate a better technical and socio-economic understanding of the triggerfish (kilathy) *(Balistidae spp)* loss which is occurring at Colachel. Identify any post-harvest opportunities for reducing the loss, including a cost benefit analysis and an implementation strategy. (Use NRI loss assessment methods).

Appendix 2 Workshop Agenda

Discussion of Fieldwork Terms of Reference
(Case study fieldwork terms of reference to be discussed)

Fieldwork Sites - who, where, when, how
(Exploratory study team members to give an overview of the sites for the next phase of fieldwork.)

Draft Questionnaire for Fieldwork
(A short questionnaire to characterise small-scale processors which includes socio-economic, loss and perception questions to be drafted. Questionnaire to be used by the research team)

Loss Assessment Methods - Scoring, Load Tracking
(Two loss assessment techniques which should be used during the forthcoming fieldwork will be explained by A Ward)

Interventions - Lessons From Past Experiences - Catalyst, Mangalore, DFID PHFP, NRI
(An important focus of the forthcoming fieldwork will be interventions to reduce post-harvest fish losses. Attempts have been made in the past to intervene in the post-harvest sector. Lessons from these past experiences should be discussed. Guidelines to assist the research team to be drawn up)

Future Project Activities - dissemination and outputs
(An overview of the future project activities to be given and discussed. How should the results be disseminated in India to target institutions and beneficiaries? Discuss the tangible research outputs)

Any Other Business

Appendix 3 Workshop Participants

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Appendix 4 Draft Phase 2 Report Structure

Introduction, Background

Methodology

1. Post-harvest losses - additional data

1.1 Short review - exploratory data
1.2 Site specific features of processing methods
1.3 Losses - reasons, processing methods, species
1.4 Seasonal and time trends of loss
1.5 Micro level assessment

2. Significance of loss:

2.1 Recognition of loss |
2.2 Valuation of loss | by processor & team
2.3 Inhibitions to solutions to loss |

2.4 History of attempts to reduce loss by processors & others
2.5 Micro level results
2.6 Macro level results
2.7 Future trends of losses based on historical trend
2.8 Future's price estimate
2.9 Who gains and loses from losses
2.10 Marginalisation
2.11 Conclusion - are losses significant or not ?

3. Intervention:

3.1 Issues:

3.1.1 Livelihood profile
- Sources of income
- Expenditures
- Management of risks, fluctuations, gaps, savings
- Comparison between fisheries and non-fisheries
- Intervention options - future intervention decision making
- Understanding decision making process

3.1.2 Marginalisation
- Characterisation of marginalisation
- Attracting already marginalised processors back into processing

3.1.3 Definition of target group & profile

3.1.4 Coping strategies to overcome losses

3.1.5 Affinity factors

3.1.6 Infrastructure
- Utilities
- Transport
- Market
- Information
- Communications

3.1.7 Raw material

- Seasonallity
- Quantity
- Species
- Quality
- Margins

3.1.8 Bulking up

- Where in the chain and how it works ?
- Assist in interventions

3.1.9 Credit and finance

- Sources
- Credit worthiness

3.1.10 Experiences of concerted action

3.1.11 Perceptions of interventions

3.2 Options:

3.2.1 Gaps in services to fisheries in locality

3.2.2 Technical

- Improvements to existing processing methods
- Drawbacks in existing methods leading to losses
- Why processors not using recommended practices
- Appropriate, alternative technical solutions to reduce losses characterised

3.2.3 Integration of non--technical issues with technical interventions to produce intervention packages

3.2.4 Cost of technology

- Capital
- Maintenance and operation
- Replacement cost

3.2.5 Demonstrable cost-benefit

3.2.6 Time frame till payback

3.2.7 Risks

3.2.8 Stakeholders - who and what do they do

- Role in interventions

3.2.9 Barriers

- Village dynamics
- Trade channel dynamics
- Gender

3.2.10 Maintaining competitive advantage of target group

- Institutions
- Access to raw materials and markets to target group
- Optimum benefit generation

3.2.11 Simulation of interventions

3.2.12 Identify stakeholders integrated in intervention

3.2.13 Development of framework for cost-benefit analysis
- List social and economic issues to be considered

4. Recommendations/Outputs:

4.1 Are interventions necessary to reduce losses. Justify

4.2 If appropriate, what are opportunities ?
where are applicable ?
who are the stakeholders ?
who should be involved in a pilot phase to field test interventions ?

4.3 Characterisation of the target group (small scale processors)

4.4 A framework for cost-benefit analysis for the opportunities identified

4.5 What are the implications of the intervention packages in terms of socio-economics, the environment, gender and labour (positive & negative)

4.6 State assumptions related to interventions

4.7 Framework for assessing significance of loss

Appendix 5 General Fieldwork Checklist

CHECKLIST										
13 days per site: (report writing in field - 3 days)										
Issues	**Source 1**	**Source 2**	**Source 3**	**Source 4**	**Source 5**	**Source 6**	**Source 7**	**Method**	**Responsibility**	**Date**
Preliminary data:								Group interviews		
								PRA/ RRA		
No. of processors & trend in nos. operating (over 5 years)	Proc.Grp.		Ph-I study				Team	Observation	]	
Stratification of processors:	Proc.Grp.		Ph-I study					Review of	|	
- large & small, gender-wise, women headed households								literature	|	
- processors operating in monsoon - gender-wise									|	
- processors not operating in monsoon - gender-wise									|	
- former processors - gender-wise									|	
									|	
Present infrastructure, credit & finance, raw materials	Proc.Grp.	Traders	Ph-I study				Team		| **TEAM**	
(rank species processed) to community to cross check									|	
									|	
Experiences of concerted efforts in past	Proc.Grp.	Traders		NGO	PYO	Loc.leaders			|	
									|	
Experience of interventions	Proc.Grp.	Traders		NGO	PYO	Loc.leaders			|	
									|	
Barriers	Proc.Grp.	Traders		NGO	PYO	Loc.leaders	Team		|	
									|	
Affinity factors at site - who co-operates with who ?	Proc.Grp.			NGO	PYO	Loc.leaders	Team		|	
									|	
Bulking up issues:	Proc.Grp.	Traders	Review of						|	
- where in the chain & how it works ?			literature						|	
- assist in intervention ? (partners)									|	
									|	
- Gaps in services to fisheries in localities	Proc.Grp.	Traders	Ph-I study	NGO			Team		|	
									|	
- Stakeholders - positive & negative - who they are ?	Proc.Grp.	Traders	Ph-I study	NGO		Loc.leaders	Team		]	
- Raw Materials:	Proc.Grp.	Traders	Ph-I study		PYO		Team		]	
- Quantity]									|	
- Quality] Trends									|	
- Cost/ price]									|**SUDHAKAR**	
- Alternative raw materials									|	
species - composition & price									|	
- Reasons for processing/ not-processing									|	
- Suitability of raw material for processing									]	
Post-harvest losses - additional data								Ind.interviews		
								Case studies		
								Load tracking		
- Flow diagram of processing methods including:	Ind.Proc.		Ph-I study				Team	Scoring	]	
Where loss occurs									|	
Comments									|	
Time/ temperature									|	
									|	
- Losses assessment - micro level:	Ind.Proc.		Ph-I study				Team		|	
Seasonality & frequency									|	
Reasons									|**SUDHAKAR**	
Species - (ranking)									|	
Method									|	
									|	
- Gaps in services to fisheries in localities	Ind.Proc.	Traders	Ph-I study	NGO			Team		]	
- Micro level economics	Ind.Proc.		Ph-I study						]	
Turnover									|	
Cycle									|	
Capital employed									|	
Costs (raw material, materials, storage, borrow-									|	
ings, labour, losses, recovery)									|	
Prices									|	
Margins									| **CMS/**	
Case studies with processors for particular species									| **GOMATHI**	
(losses - who gains, who loses ? - in terms of gender)									|	
Coping strategies									]	

Post-harvest losses - additional data								Ind.interviews		
								Case studies		
								Load tracking		
- Flow diagram of processing methods including:	Ind.Proc.		Ph-I study				Team	Scoring	]	
Where loss occurs									|	
Comments									|	
Time/ temperature									|	
									|	
- Losses assessment - micro level:	Ind.Proc.		Ph-I study				Team		|	
Seasonality & frequency									|	
Reasons									|**SUDHAKAR**	
Species - (ranking)									|	
Method									|	
									|	
- Gaps in services to fisheries in localities	Ind.Proc.	Traders	Ph-I study	NGO			Team		]	
- Micro level economics	Ind.Proc.		Ph-I study						]	
Turnover									|	
Cycle									|	
Capital employed									|	
Costs (raw material, materials, storage, borrow-									|	
ings, labour, losses, recovery)									|	
Prices									|	
Margins									| **CMS/**	
Case studies with processors for particular species									| **GOMATHI**	
(losses - who gains, who loses ? - in terms of gender)									|	
Coping strategies									]	

Significance of loss:								Ind.interviews	]	
								PRA/ RRA	|	
- Recognition of loss]	Ind.Proc.		Ph-I study				Team	Case studies	|**SUDHAKAR/**	
- Valuation of loss] team & processor								Observation	|**TEAM**	
- Inhibiting factors to reducing losses]									|	
- History of attempts to reduce loss by processors & others]	Ind.Proc.	Traders	Ph-I study	NGO	PYO				|	
- Trends in the fisheries which have influenced losses]	Ex.Proc.		Review of						|	
- Future's price estimate]	N-Mon Proc.		literature						]	
Livelihood profile:	Ind.Proc.		Ph-I study				Team	Ind.interviews	]	
								PRA/ RRA	|	
- Activities, sources of income & seasonality								Case studies	|	
proportion of income fishing related								Observation	|	
proportion of income from fish processing									|	
gender break-down of income distribution									|	
- Expenditure									|	
- Gaps									|	
- Credit - cost, access, source, terms & conditions									|	
- Savings									|	
- Management of risks - comments									|**GOMATHI/**	
- Coping strategies including credit									|**SHIV**	
- gender									|	
- affinities, groupings									|	
- historical perspective									|	
- Decision making process									|	
- expenditure									|	
- investments									|	
- social - marriage, etc.									|	
- education, health									|	
- Problems associated with monsoon									|	
- time									|	
- health									|	
- Intervention ideas									]	
Marginalisation:	Proc.Grp.		Ph-I study				Team	Ind.interviews		
- During the monsoon and non-monsoon, reasons	Ind.Proc.		Review of					PRA/ RRA	]	
- Over time	Ex.Proc.		literature					Case studies	|**GOMATHI/**	
- Is every monsoon worse than last	N-Mon Proc.							Observation	|**TEAM**	
- Why other activities are taken up/ not taken up?									]	
Raw Materials:	Ind.Proc.		Ph-I study					Ind.interviews	]	
- Quantity]								PRA/ RRA	|	
- Quality] Trends								Case studies	|	
- Cost/ price]								Observation	|**SUDHAKAR**	
- Alternative raw materials									|	
species - composition & price									|	
- Reasons for processing/ not-processing									|	
- Suitability of raw material for processing									]	
Options for intervention:	Ind.Proc.	Traders	Ph-I study	NGO	PYO	Loc.leaders	Team	Ind.interviews	]	
- Suggestions from community	Proc.Grp.		Review of					PRA/ RRA	|	
- Existing coping strategies	Ex.Proc.		literature					Case studies	|	
- Observations on improvements to existing methods	N-Mon Proc.							Observation	|**TEAM**	
- Observations on alternative loss reduction measures								Review of	|	
- Gaps in services in fisheries sector								literature	|	
- Non-fishery related interventions/ options									|	
- Potential stakeholders for intervention									]	

Issues to be addressed

- Costs of technology
    - Capital
    - Operation & Maintenance
    - Replacement cost

- Demonstrable cost-benefit

- Time frame till payback

- Infrastructure support
    - Utilities
    - Transport
    - Market
    - Information
    - Communication

- Credit & Finance
    - Sources
    - Credit-worthiness

- Risk

- Raw Material
    - Seasonality
    - Species
    - Quantity
    - Quality
    - Margins

- Definition of target group & profile

- Maintaining competive advantage of target group
    - Institution
    - Access to raw material, market target group
    - Optimum benefit generation

- Barriers
    - Village dynamics
    - Trade channel dynamics
    - Gender

- Marginalisation
    - Characterisation of marginalisation
    - Attracting already marginalised processors back to processing

- Stakeholders - Who & what they do?
    - Role in interventions

- Simulation of interventions

- Livelihood profile
    - Sources of income
    - Expenditures
    - Management of risks, fluctuations, gaps, surpluses
    - Comparison between fisheries & non-fisheries
        - Intervention options - further intervention decision making

- Understanding decision making process

- Gaps in service to fisheries in locality
- Coping strategies to overcome losses
- Perceptions of interventions
- Perception of loss
- Experiences of concerted action
- Affinity factors
- Bulking up
    - Where in the chain & how it works
    - Assist in interventions
- Seasonality of loss
    - Loss outside monsoon (annual seasonality & time-line, factors)
    - loss levels over years
- Clarify reasons for loss
- Loss in terms of species and processing method
- Develop framework for cost-benefit analysis of intervention
    - list social & economic issues to be considered
- Identify stakeholders interested in intervention
- Options for intervention:

Technical

- drawbacks/ problems - current methods leading to losses
- improvements to existing processing methods
- why processors not using recommended practices
- appropriate, alternative technical solutions to reduce losses characterised

- Integration of non-technical issues with technical interventions to produce intervention package
- State assumptions related to interventions

Classification & categorisation:

Volume - main criteria

Loss - quantity, quality, perception
Social
Economic

Significance of loss:
- perception of processors
- perception of others
- loss assessment - by researchers
- loss at macro-level, fisheries sector
- micro-level - assessment, perception

to keep in mind:
- Main Focus on processing
- Reliability of information - method used, participation, data collected, etc.
- Load tracking with GOPI & other processors - by Sudhakar
- One site - in depth study & the second site - if possible
- Intervention models - brainstorm & then discuss with PHFP staff to get their views
- Seasonality by scoring method, time-line