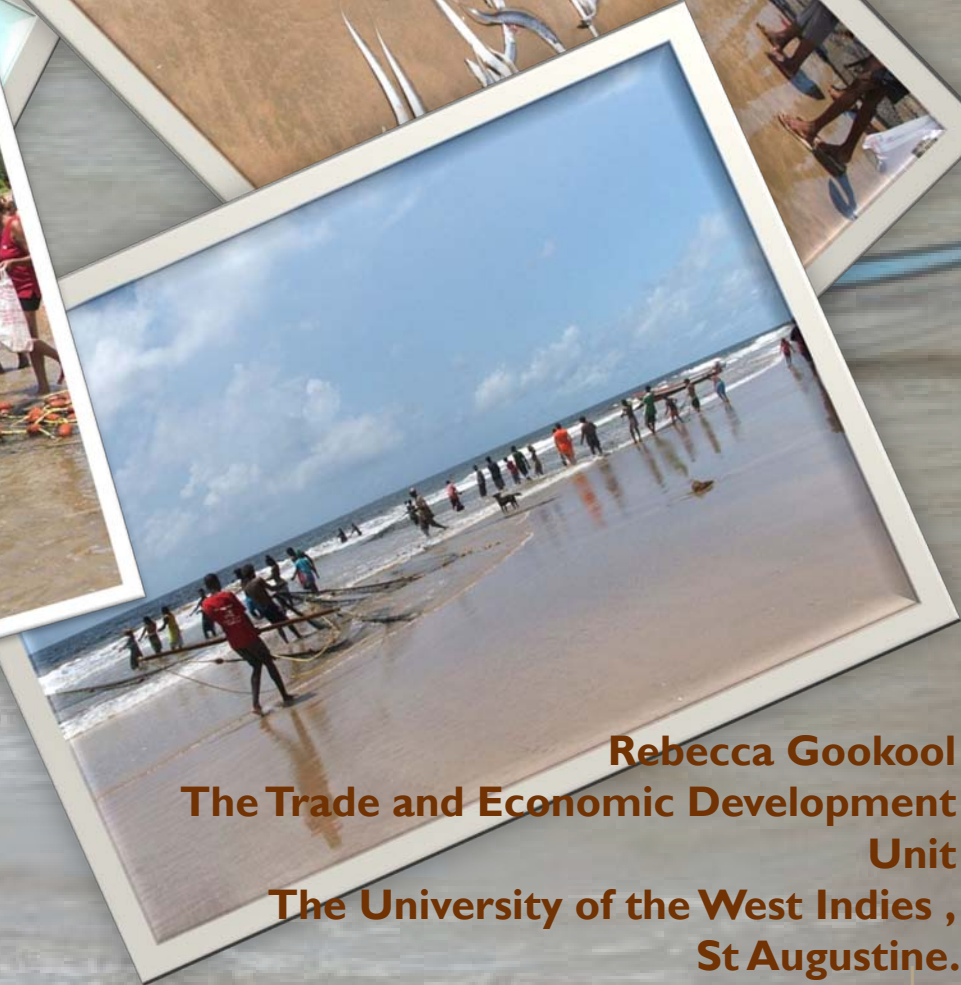


# Determination of the Income of Boat Owner's in southeast Trinidad



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# Introduction

- A producing firm combines the four factors of production; land labor, capital and entrepreneurship; to produce output.



# In the Context of the Fishing Industry

- Land: Marine resources public good
- Labor: Sailors
- Capital: Boat, Engine and Net
- Entrepreneurial Talent: Boat owner expertise often in the role of the captain.



# In the Context of the Boat owning Fishermen

- A firm incurs fixed costs and variable costs.
  - The fixed costs are those costs which are related to the fixed assets – Boat, Engine and Net (or pot as the case may be)
  - The variable costs are those costs which relate to the variable assets. Variable costs include, the wages for sailors, gas and oil, ice, bait, meals and incidentals. *Maintenance costs* associated with the fixed assets can also be regarded as part of variable costs.

# Methodology



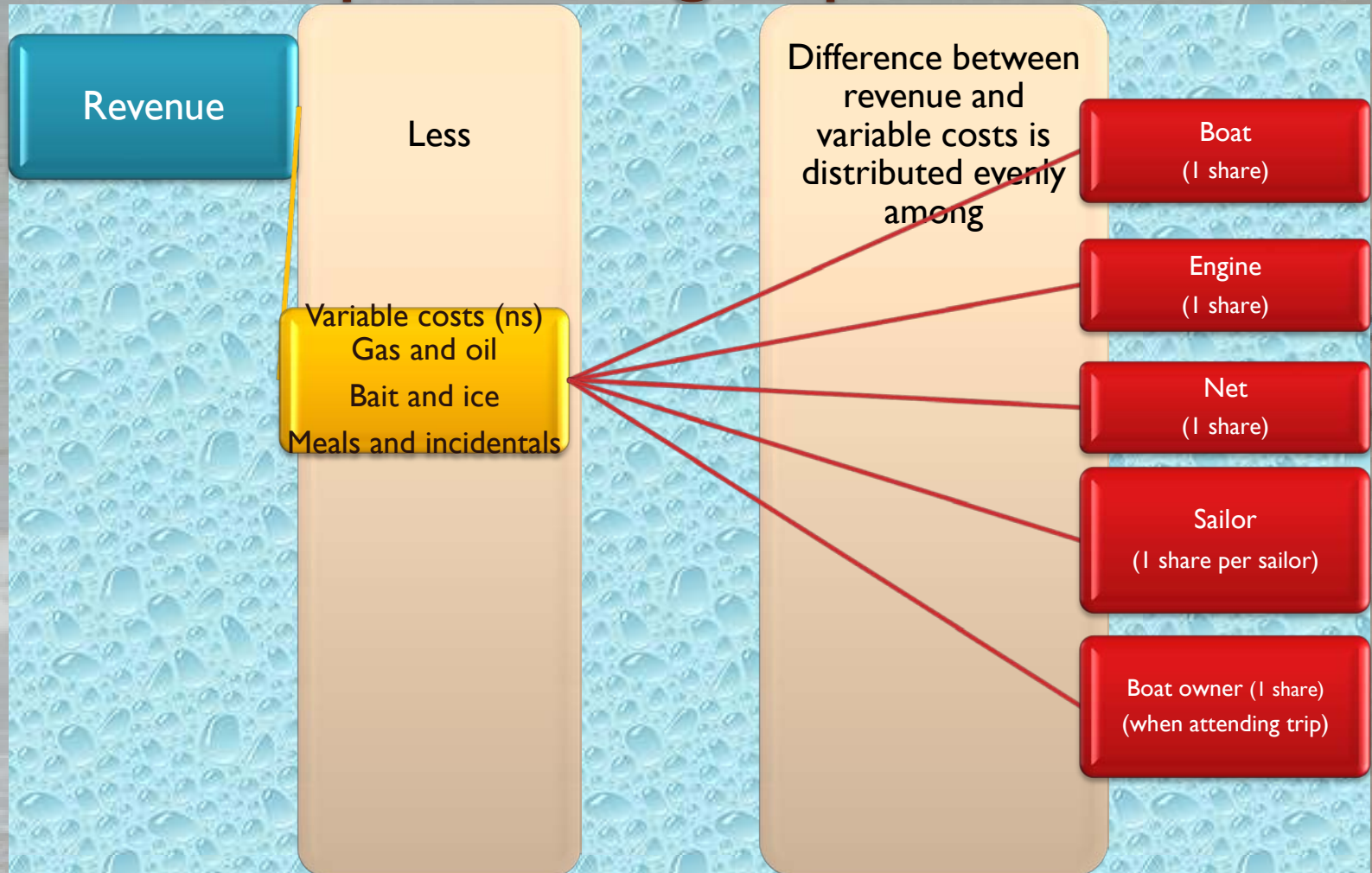
- To determine boat owners income this study employed a survey instrument, the results of which were relayed to senior representatives from both SEFA and GOMFA.

# Methodology



- Field work indicated that boat owning fishermen employed a basic ‘share’ system method of distributing the benefits of the catch of any particular trip.

# Boat Owner's Distribution of the Returns per fishing trip to Sea



Money attending Boat Owner Receives per trip therefore includes

a: Share for the Boat

b: Share for Engine

c: Share for net

g: Share as a participating Sailor

Money absent Boat Owner Receives per trip therefore includes

a: Share for the Boat

b: Share for Engine

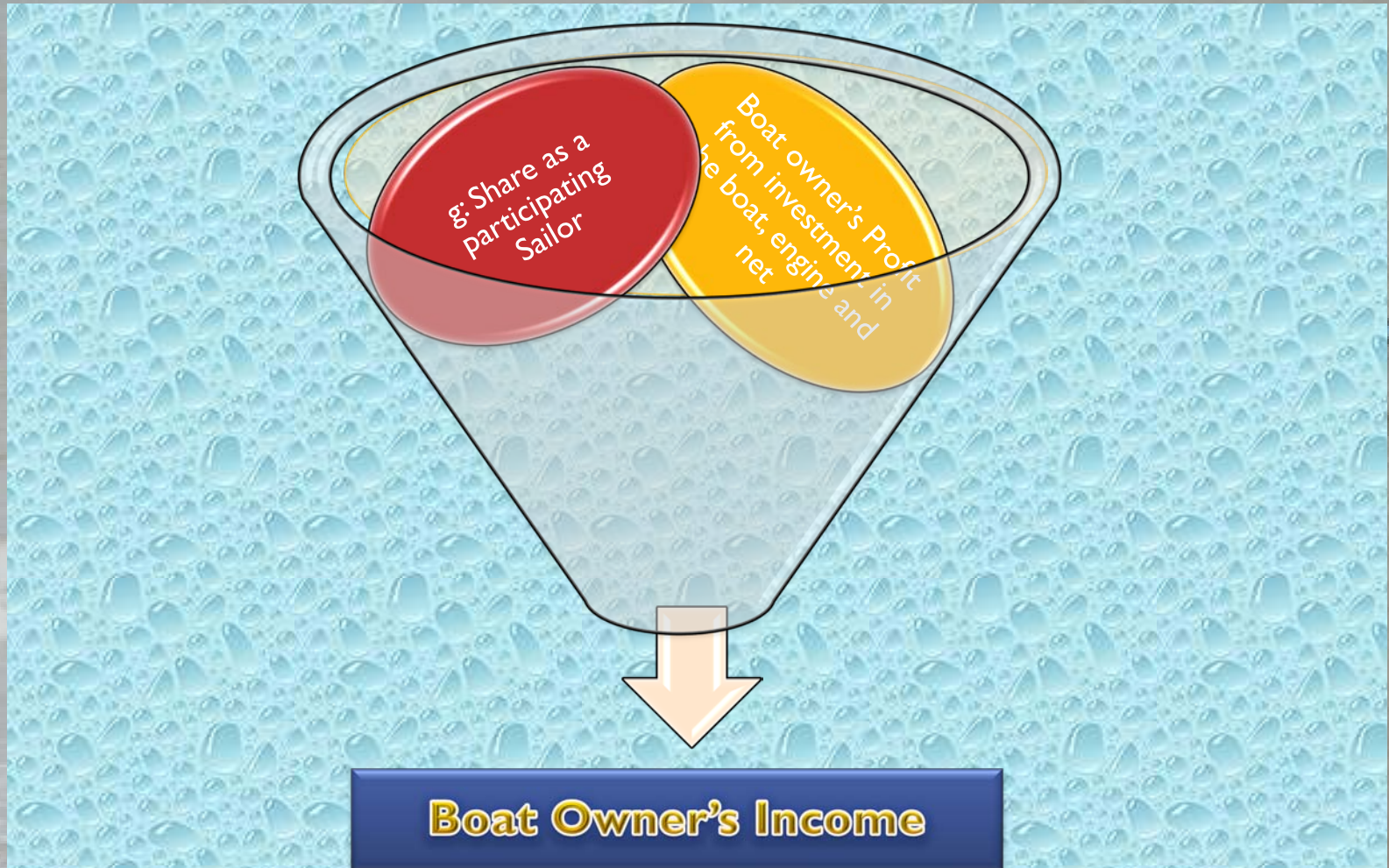
c: Share for the net



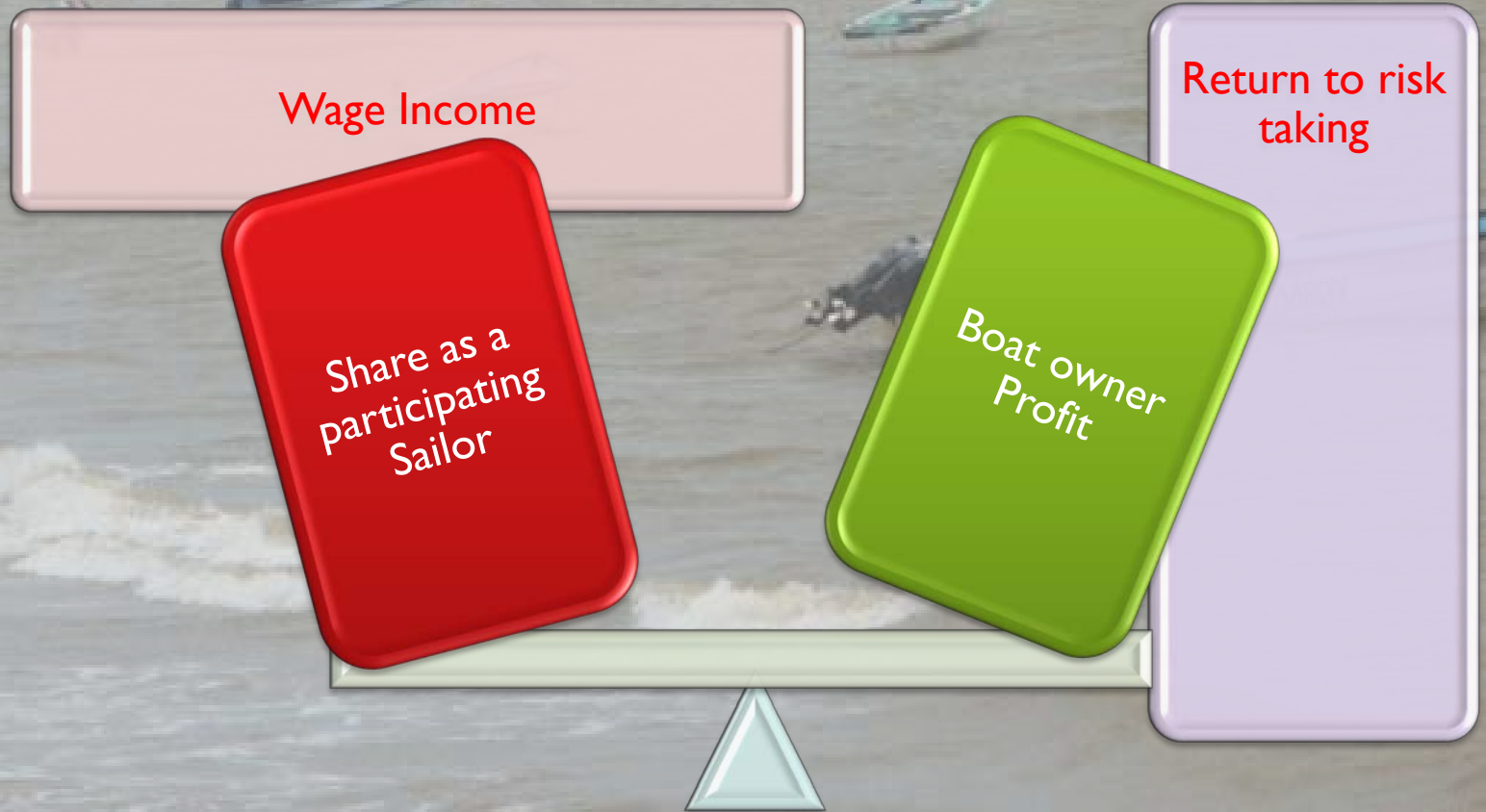
# Estimating boat owner's income

- The share attributed to the boat, engine and net includes,
  - Maintenance costs associated with the assets (mending of nets, cleaning and painting of boats and servicing of engine etc.). This cost is not deducted from the revenue obtained on an average trip. This cost is covered by the boat owner on a needs to basis.
  - Replacement investment. The boat owner would no doubt allocate some portion of the return received from fishing to replace the fixed assets employed by the firm.
  - Boat owner profits. This is the return on the boat owner's entrepreneurial talent and risk taking effort.

# What is the Boat owner's Income



# What should the Boat Owner be Compensated For During a Seismic Survey?



# Key Considerations in Compensating Boat owners



- Can boat owner's fish in other areas?



- Who is responsible for compensating non boat owning fishermen?



- How do you treat with boat migration?

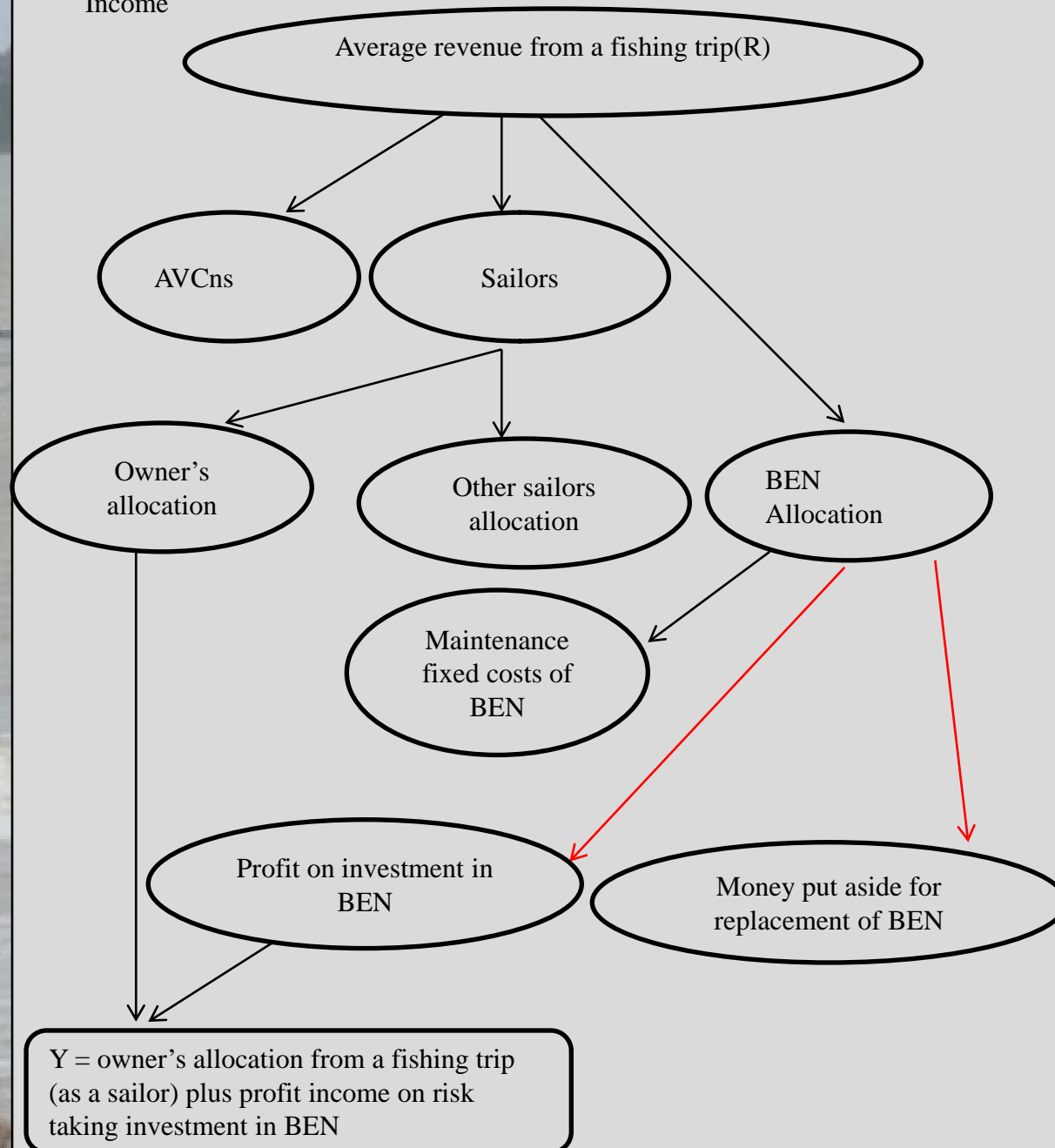


- How do you treat with the non boat owning crew members?

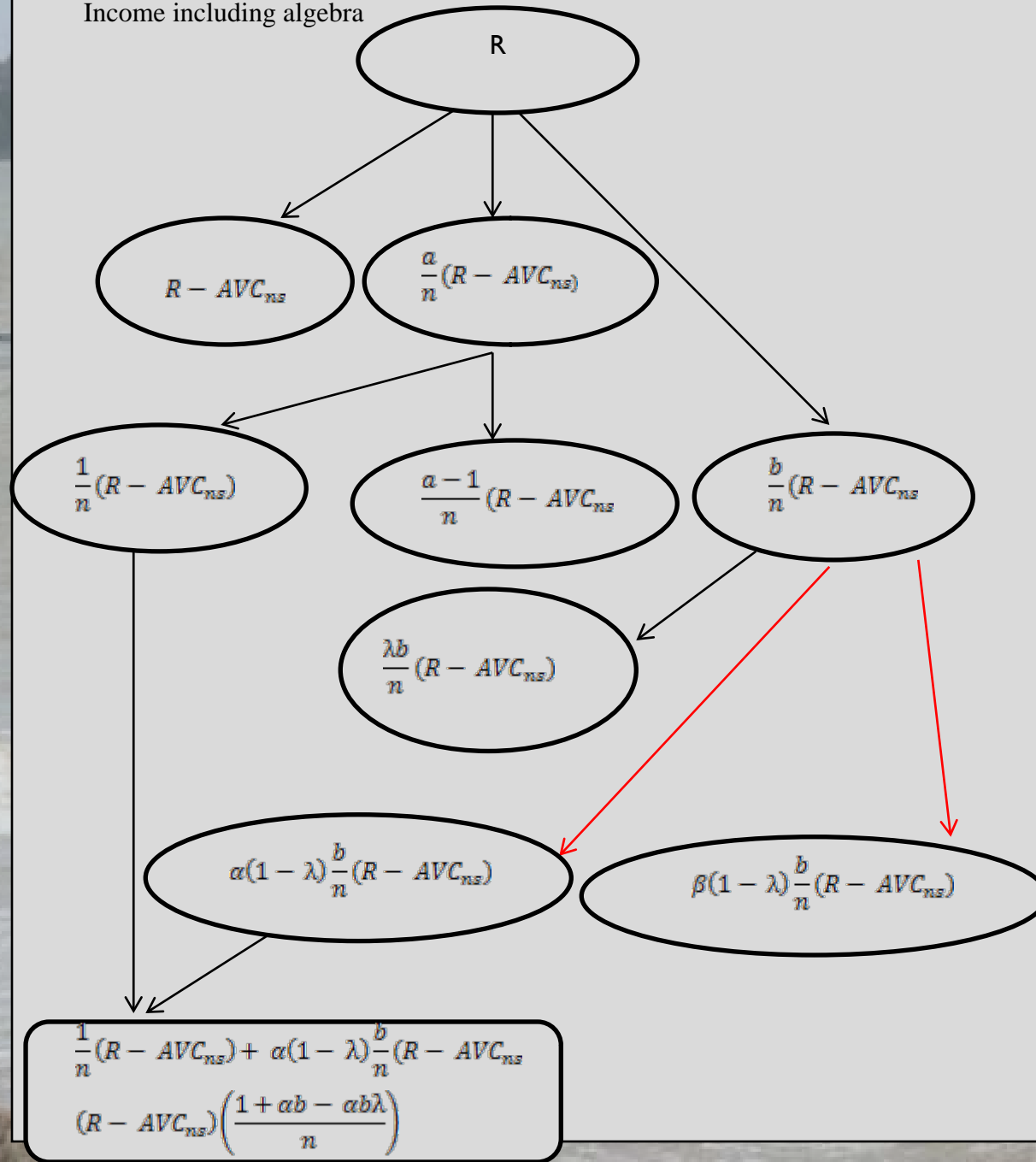
# Survey

- This study used a structured questionnaire on a sample (94) of the boat owning fisherfolks (the study initially attempted a census of all the fisherfolks registered with SEFA, GOMFA and a list provided by bpTT, however, it was not possible to get in contact with about 15 of the fisherfolks).
- The questionnaire collected both qualitative and quantitative information. A literature review was then undertaken to determine a rigorous block of information necessary for determining the opportunity cost associated with a compensation package for lost time.

# Diagrammatic Representation of the Methodology for Determining Fishermen Income



Diagrammatic Representation of the Methodology for Determining Fishermen Income including algebra



# Survey Results

Variable	Survey Estimate
R	\$2727
$AVC_{ns}$	\$1141
n	7 (when the boat owner attends trip to sea)
b	3 share attributable to boat engine and net
$\lambda$	0.10
$\vartheta$	Average number of trip boat owner attends per week - 4
$\vartheta$	Average number of trip boat owner does not attend per week - 1
A	Estimated at 50% by fishermen



# Results of Survey

Average cost of Gas + oil	\$694
Average cost of Ice	\$98
Average cost of Bait	\$225
Average cost of Meals + other incidentals	\$124
Average Variable costs (AVCns)	\$1,141

# Results of Survey

Average sailors' labor income when boat owner attends: (R- AVCNs) / (# of sailors + allocation for BEN + boat owner)	\$235
Average sailors' labor income when boat owner does not attend: (R- AVCNs) / (# of sailors + allocation for BEN )	\$277

Average boat owner wage income per week (\$235* average number of trips the boat owner attend)	\$948
Average boat owner wage income per month (Average weekly wage income *4)	\$3,793

# Results of Survey

Average amount of (R- AVCNs) attributed to boat, engine and net (with boat owner)

\$706

Average amount of (R- AVCNs) attributed to boat, engine and net (without boat owner)

\$830

# Results of Survey

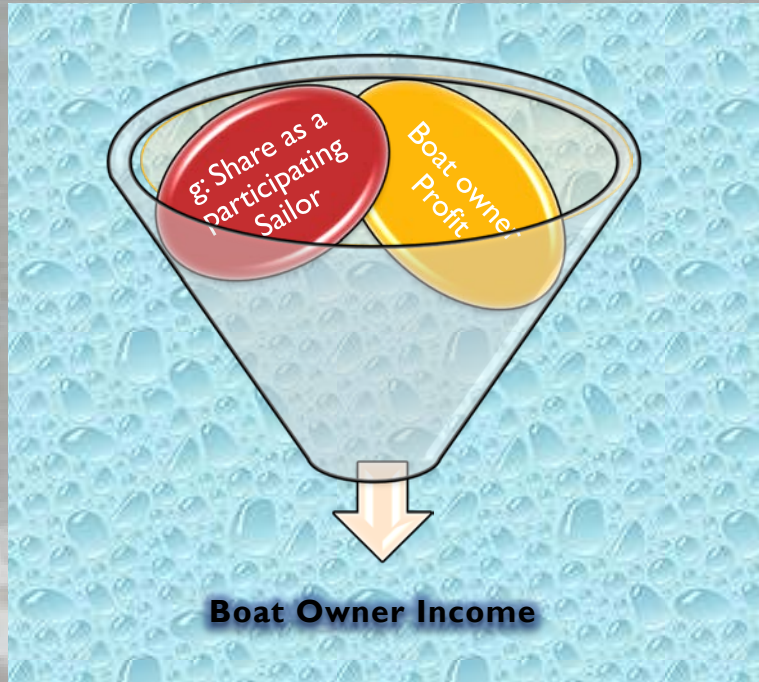
Average amount of money to maintain the vessel per trip	\$20
Average amount of money to maintain the engine per trip	\$24
Average amount of money to maintain the net or fish pot per trip	\$54
Average maintenance cost per trip	\$92

# Results of Survey

Average amount of money per trip allocated to BEN (with boat owner) less Maintenance Cost	\$613
Average amount of money per trip allocated to BEN (without boat owner) less Maintenance Cost	\$738

Stakeholder interviews with boat owners revealed that the portion of the BEN allocation attributable to boat owner's profit is on average 50%

# Results of Survey



Compensation for Boat owners loss in income  
= wage income + Profit

Per Week	\$2,670
Per Month	\$10,681
SEFA	
Per Week	\$2,993
Per Month	\$11,973
GOMFA	
Per Week	\$3,046
Per Month	\$12,182

# Limitations of the Study

- The survey undertaken is specific to the south east region, although the methodology may have more universal relevance.
- Field research indicated that pots have different shelf lives as compared to nets and indeed consideration was not made of the fact that the shelf life of an average boat, differs from that of an average engine or an average net. This is not extremely restrictive as the study is for an instance in time.

# Limitations of the Study

- Long term damage of the fisheries resources have not been factored into the income calculations.
- No consideration has been made of the compensation due to the non boat owning fishermen or any other stakeholder group along the value chain in the fishing industry in the south east area.



# Conclusion: The Way Forward

- It is critical that MNCs get an independently determined registry of non boat owning fishermen in order to determine their socio economic characteristics.
  - It is also necessary to develop an independent registry of the vendors – retailers and wholesalers of fish
- Some consideration must also be given to the long term impact of bpTT's presence in the community itself. To mitigate some of the negative implications the company can engage onshore investments specific to the fishing industry. This is the Hartwick rule principle and cannot be ignored.