Uganda Globalisation Project:
The micro-economic data on icing and handling interventions

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1.0 Acknowledgements

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2.0 Outputs / Terms of Reference

The following apply to the project as whole, this report is only part of the final outputs.

1. Description & analysis of commodity systems (the product and value chains) affecting both small-scale producers, processors, traders and consumers and the industrial/export fishery.
2. A model expressed verbally, diagrammatically and quantitatively of the system as a whole, i.e. including the small-scale chain, the industrial chain and interactions between the two.
3. Description and analysis of livelihoods coping strategies among poor producers and consumers and their vulnerability to systematic shocks, especially changes in the industrial/export sector.
4. A forecast of current trends into the medium term future and assessment of consequential shocks on the small-scale fishery.
5. Widespread consultation on the policy implications of the results and identification of appropriate interventions in response to the views of the poor and Ugandan government anti-poverty policies.
6. Critique of innovative research methodologies and tools developed e.g. system modeling and forecasting methods.

3.0 Terminology

Table 1 Terminology

	Definition	Additional Notes
Fishing Ground	Where the Fish is Caught	Using Fishing Boat either Insulated or Non Insulated
Collection Point	Where the Fish is Landed	Rejection Point - Whole Fish
Handling	How the Fish is Transferred from the Fishing Boat to the Transportation	Dragged or Crates can be Used
Transportation	How the Fish is Taken From the Collection Point to Factory	Truck or Boat - Insulated, Well or Poorly
Landing Site	Where Fish is Bought by The Factories	Intermediate transfer stage used only by Transport Boats
Factory Intake	Start of the Factory Process – Off loading point	Rejection Point - Whole Fish Quality Check - Organoleptic
Processing	Filleting, Packing of Whole Fish to Fillets	Rejection Point - Part Filleted or Fillets Quality Check – Organoleptic
Traditional Method	The situation before an intervention has been applied.	Such as Before Training, Icing Etc.
Improved method	The situation after an intervention has been applied.	Such as After Training, Icing Etc.
DST	Decision support tool Example: “Ice IT” for Cost benefit analysis of the supply Chain	A method of enabling options to be explored in the aim of making decisions.

4.0 Objective

4.1 Key Objective

This reports examines the micro-economic data collected during the trials and links this information to policy advice. “Ice IT” software can be used to model scenarios for example by changing pricing structures or the impact of improved quality, so allowing this software to be used as a decision support tool (DST).

4.2 Other Objectives

To identify typical interventions which can made in the chain and examine the impact on the following

1 Handling of product

2 Used ice and insulation on quality

3 Method on transportation

3a Source of product

4 Reject Rate at the Islands, Factory, Landing Site and Factory Intake

5 Training of supplier

6 Economic effect of cost of intervention

5.0 Trials Overview

5.1 Summary

This study follows on from previous icing studies and projects using a tried and tested protocol from previous DFID/UNIDO icing trials. The information collected looks at the impact of interventions on quality through measurement of losses through the chain (Reject rates) and organoleptic results during processing (Quality).

Trials have been conducted to examine the cost impact of a variety of interventions through different parts of the chain. The interventions include icing at various points of the chain and also training in product handling.

Sensitive cost information has been standardised due to daily fluctuation and to enable a clear picture of the value of losses, this is based on actual data captured towards the start of the project. This information can be modified to test how different pricing structures would affect the overall profitability of fish production.

The following interventions were examined from a quality and cost analysis viewpoint

1. Economic costing for modification of boat and truck design.
2. Impact of Icing at various stages of the supply chain
3. Differences in the supply chain – Lake Kyoga v Lake Victoria
4. Classification of Trials Based on Trained Suppliers
5. Losses at the Collection Centre

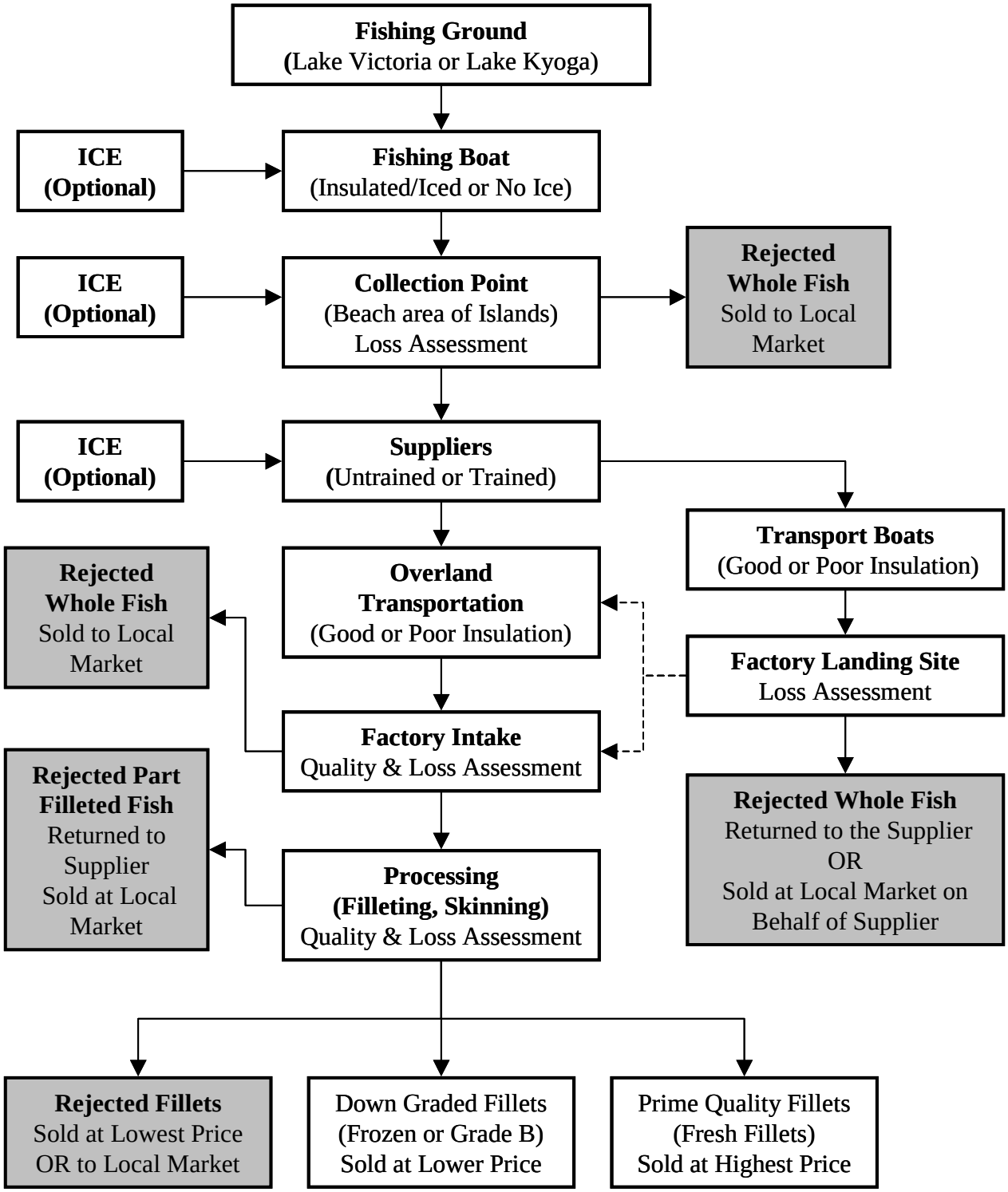
The impact of the above interventions are performed by comparing “Traditional” with the “Improved” method.

Key indicators used are:

1. Quality - Organoleptic assessments at the Landing Site and during processing.
2. Losses – Collection Point, Landing Site and Processing
3. Downgrades – Loss of Prime quality product during processing
4. Yields – Based on prime quality output, compared with expected cutting yields.

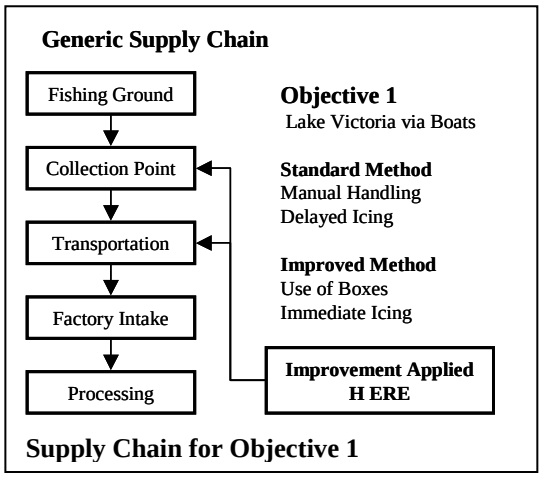
5.2 Overview of Supply Chain

Figure 1 is the generic supply chain for Nile Perch and Tilapia, potential variances such as insulation, icing and rejects are indicated at each stage.



5.3 Overview of Interventions and Costs Analysis

5.3.1 Determine the effect of Icing Immediately at the Collection Point using Non-Insulated Fishing Boats



Supply Chain for Objective 1

This intervention involved the introduction of Crates/Boxes. Figure 3 and 4 show the traditional method of using rope to secure the fish, often being dragged on the beach.

To the right the introduction of crates for weighing and transferring the fish to either a temporary storage unit (Iced) or to the transport boat

Traditionally if ice were to be used then this may be a delayed action, waiting for the product to be landed and held until the transport boat is ready for loading then iced, referred to as delayed icing.

Figure 5 shows the icing of the fish, notice the pattern of laying out to reduce bruising.

Expected Outcome:

Improved food safety, Extended Shelf Life

Actual Outcome:

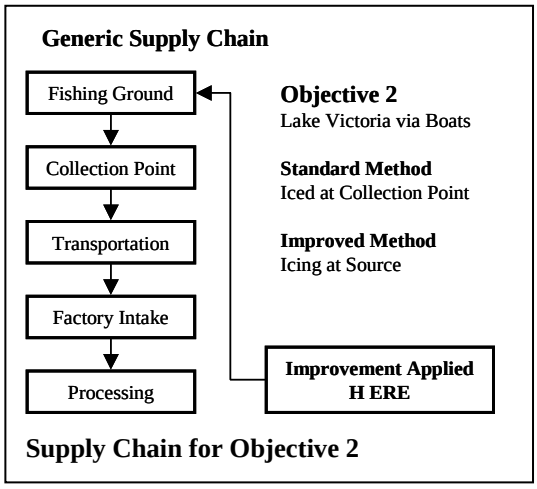
Total of 42 trials (18 Control) between June 2002 and Dec 2002 – Nile Perch

Standard Method:	54,650 Kgs
Pre Process Rejects	2,711 Kgs (4.96%)
Yield as Prime Quality	19,480 Kgs (37.2%)
Fillets Downgraded	698 Kgs
Fillets Rejected	527 Kgs
Improved Method:	74,064 Kgs
Pre Process Rejects	584 Kgs (0.79%)
Yield as Prime Quality	29,184 Kgs (39.7%)
Fillets Downgraded	76 Kgs
Fillets Rejected	141 Kgs

Cost of Intervention

Minimal cost for Crates (only a few required) and training costs

5.3.2 Determine the effect of Icing Immediately at Source (Fishing Ground) using Insulated Fishing Boats



Supply Chain for Objective 2

This intervention looks at the introduction of icing at the source (Fishing Ground), involving the fishing boats to be modified to enable them to carry ice and have insulation for holding the fish.

Icing at source enables the temperature of the caught fish not to rise above the lake water temperature and reduces the need for more ice at the collection point

Expected Outcome:

Improved food safety, Reduced losses, Improved yield, Extended shelf life

Actual Outcome:

Total of 31 trials (15 Control) between June 2003 and Nov 2003 – Nile Perch

	Standard Method	**Improved Method:**
Total Weight for Trials	8,248 Kgs	3,240 Kgs
Pre Process Rejects	149 Kgs (1.8%)	2 Kgs (0.06%)
Yield as Prime Quality	19,480 Kgs (37.3%)	1.317 Kgs (40.6%)
Fillets Downgraded	698 Kgs	11 Kgs
Fillets Rejected	None	None

This is based on the cost of the boat being 800,000, 1.5 million for the Engine and running costs of 1.2 million per year.

Cost of Intervention

The cost to improve the Fishing Vessels is approx 400,000 /= per boat, based on existing data for capital costs, maintenance, life span and a fishing boat that performs 350 Trips a Year the cost per Trip (using the Ice-IT software)

is ….

Traditional: 4,743/= per trip,
Improved: 4,971/= per trip

Figure 7 shows the Traditional Method, where no ice is used. Fish can be potentially bruised and an increase in temperature can occur on hot days.

The modification would include insulated area for holding the ice and fish when caught.

5.3.3: Determine the effect of using a well-insulated truck (Lake Kyoga)

This trial looked at journeys of similar time and distance, the control using the traditional truck, the modified truck has had the container part replaced with better insulating material. Neither are Iced at source.

This trial was performed on both Tilapia and Nile Perch

Expected Outcome:

Improved shelf life, Quality and Freshness may be slightly improved as the journey may be on poor roads and would depend on the stacking of the product inside the truck and level of icing.

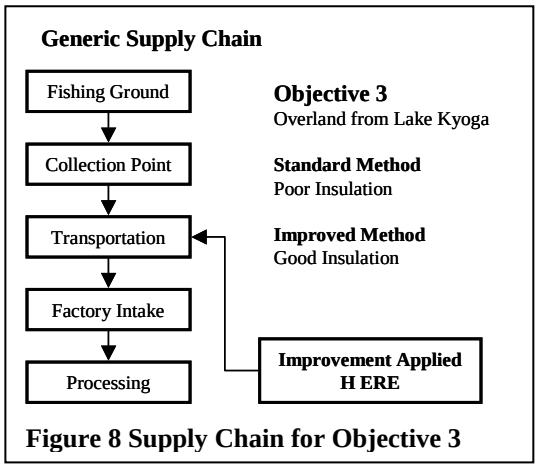


Figure 8 Supply Chain for Objective 3

Actual Outcome: Tilapia

Total of 36 trials (18 Control) between July 2003 and Jan 2004 – Tilapia

	Standard Method	**Improved Method:**
Total Weight for Trials	17,231 Kgs	33,113 Kgs
Pre Process Rejects	474 Kgs (2.7%)	639 Kgs (1.9%)
Yield as Prime Quality	4,887 Kgs (28.9%)	9,697 Kgs (29.9%)
Fillets Downgraded	260 Kgs	55 Kgs
Fillets Rejected	None	None

Actual Outcome: Nile Perch

Total of 36 trials (18 Control) between July 2003 and Oct 2003 – Nile Perch

	Standard Method	**Improved Method:**
Total Weight for Trials	16,428 Kgs	31,984 Kgs
Pre Process Rejects	390 Kgs (2.37%)	746 Kgs (2.34%)
Yield as Prime Quality	5,698 Kgs (36.5%)	12,507 Kgs (39.9%)
Fillets Downgraded	623 Kgs	112 Kgs
Fillets Rejected	None	None

Cost of Intervention

The cost to improve the Transport Vehicle (Figure 9), is approximately 1.8 million Ug.Sh., when incorporated with the cost of the vehicle, maintenance, life span etc. this equates to:

Standard Vehicle: 36,900 /= per trip
Modified Vehicle 39,050 /= per trip

This is based on a capital cost of 25 million Ug.Sh and a 10 year life span, running costs of 0.6 million per yr.

5.3.4 Determine the effect of Icing Immediately at the Collection Point & use of Insulation

This is the result of two interventions; see 5.3.2, use of icing at source and 5.3.3, Good insulated transportation.

Expected Outcome:

Improved shelf life, Quality and Freshness should improved on 5.3.3, as two interventions are being implemented, that of icing at source, which reduces the temperature as soon as possible, and the insulated vehicle which is more efficient at keep the product cool. However the journey may be on poor roads and would depend on the stacking of the product inside the truck and level of icing for the optimum benefits.

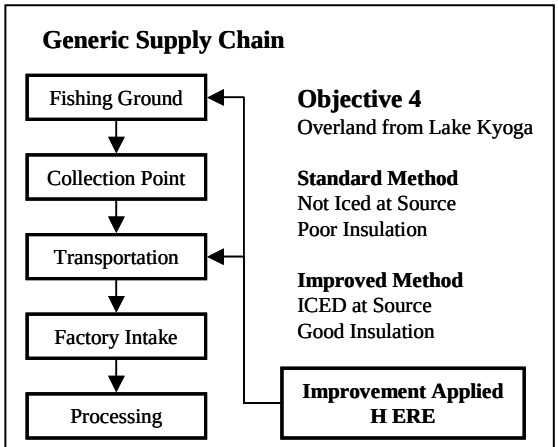


Figure 11 Supply Chain for Objective 4

Trials took place between July 2003 and Jan 2004

Actual Outcome: Tilapia - **ALL TRIALS (Includes poor Quality Fish)** 36 trials (18 Control)

	Standard Method	**Improved Method:**
Total Weight for Trials	17,331 Kgs	20,075 Kgs
Pre Process Rejects	474 Kgs (2.7%)	535 Kgs (2.7%)
Yield as Prime Quality	4,887 Kgs (28.7%)	2,950 Kgs (16.9%)
Fillets Downgraded	260 Kgs	112 Kgs
Fillets Rejected	None	None

Actual Outcome: Tilapia**–Excludes trials with 100% downgrades** 28 trials (18 Control)

	Standard Method	**Improved Method:**
Total Weight for Trials	17,331 Kgs	9,835 Kgs
Pre Process Rejects	474 Kgs (2.7%)	172 Kgs (1.75%)
Yield as Prime Quality	4,887 Kgs (28.7%)	2,950 Kgs (30.4%)
Fillets Downgraded	260 Kgs	None
Fillets Rejected	None	None

Actual Outcome: Nile Perch - **ALL TRIALS (Includes poor Quality Fish)** 36 trials (18 Control)

	Standard Method	**Improved Method:**
Total Weight for Trials	16,428 Kgs	26,044 Kgs
Pre Process Rejects	391 Kgs (2.4%)	594 Kgs (2.3%)
Yield as Prime Quality	5,698 Kgs (36.5%)	6,549 Kgs (26.0%)
Fillets Downgraded	623 Kgs	3,484 Kgs
Fillets Rejected	None	None

Actual Outcome: Nile Perch - Excludes trials with 100% downgrades 30 trials (18 Control)

	Standard Method	**Improved Method:**
Total Weight for Trials	16,428 Kgs	17,109 Kgs
Pre Process Rejects	391 Kgs (2.4%)	199 Kgs (1.5%)
Yield as Prime Quality	5,698 Kgs (36.5%)	6,549 Kgs (39.0%)
Fillets Downgraded	623 Kgs	199 Kgs
Fillets Rejected	None	None

Cost of Intervention – See 5.3.2 & 5.3.3

5.3.5 Determine the effect of applying training

The training would be

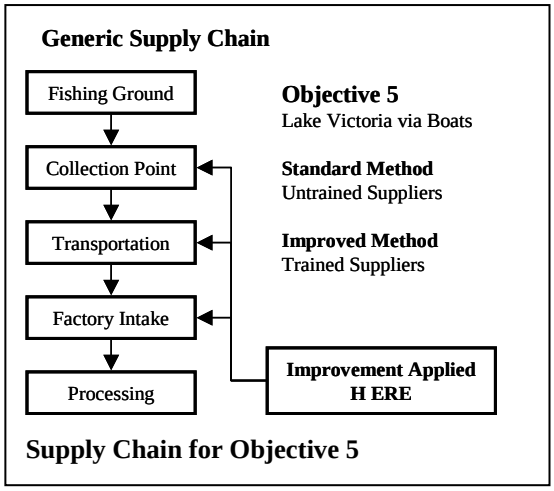
Expected Outcome:

Improved Quality and a reduction of Losses

Actual Outcome:

Significant decrease in losses after training of the suppliers can be seen between 2 to 5% difference.

When the handling crew were changed, an increase in losses was observed until the new crew where re-trained. This can be seen with Senkule – Tilapia



Supply Chain for Objective 5

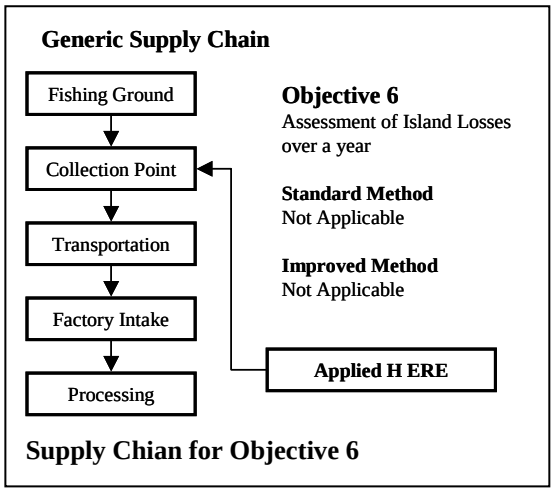
Table 2 Summary of Lossess Pre/Post Training

Nile Perch	Losses at Factory Landing Site - Pre-Training	Post-Training	Variance
Alice	6.7%	1.5%	-5.2%
Senkule	5.4%	1.9%	-3.4%
Kizza Salongo	5.3%	3.0%	-2.3%
Mposa Kawooka	5.7%	1.9%	-3.8%
Tilapia			
Alice	5.8%	3.5%	-2.3%
Nkusi Bhai	7.2%	1.4%	-5.9%
Senkule	4.4%	2.2%	-2.2%

5.3.6 Determine the level / quantity of Upstream Losses (Collection Points) over a period to identify seasonal changes.

This outcome was difficult to assess, as no documentation exists for actual losses on an island, this could be assessed by verbal discussion and estimates. The definition of losses at the island, could be any whole fish which is not bought by a supplier, so sells for a low price on the local market.

This could be for several reasons, e.g. a glut of fish, no demand in the market, hence suppliers do not buy or actual rejects due to poor quality at the collection point.



Supply Chian for Objective 6

The values below are the rejects due to poor quality at the landing site by a supplier.

Expected Outcome:

Varied increase / decrease of quantities placed on the local market is dependant on many factors, quantity landed, quality on the day, requirement by suppliers (external market forces).

Table 3 Losses at the Collection Point - Islands

Actual Outcome:

Losses at the Collection Point - Islands												
Losses percent	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03
Kigungu	2.0%	2.1%	2.6%	2.2%	1.6%	2.3%	1.5%	1.7%	2.4%	2.3%	2.5%	2.4%
GUL	1.9%	2.0%	1.9%	2.2%	1.9%	2.4%	2.5%	2.3%	2.4%	2.7%	2.6%	2.3%
Gaba	2.0%	2.1%	1.8%	2.3%	2.0%	1.5%	1.7%	3.0%	3.2%	3.7%	3.8%	3.6%

5.3.7 To determine the Effect of different Fishing Sources using same mode of transport.

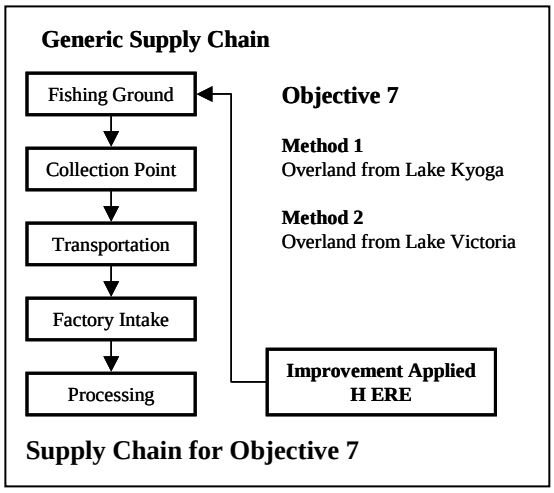
Both methods use Iced at Source, and well insulated Trucks.

Gaba = 45mins to 1 Hour

Ninga & Kitalanganya = approx 4 Hours

Expected Outcome:

It would be expected that the Lake Kyoga fish would be of poorer quality as it has further to travel, but handling methods per site may vary.



Supply Chain for Objective 7

Actual Outcome: Nile Perch

Total of 42 trials (21 Lake Victoria) between July 2003 and Dec 2003 – Nile Perch

	Lake Victoria	**Lake Kyoga**
Total Weight for Trials	32,289 Kgs	27,381 Kgs
Pre Process Rejects	1,189 Kgs (3.7%)	489 Kgs (1.8%)
Yield as Prime Quality	12,785 Kgs (40.9%)	10,495 Kgs (39.1%)
Fillets Downgraded	1,096 Kgs	286 Kgs
Fillets Rejected	0.1%	None

6.0 Economic Costing of Modification

Earlier trials documented the different suppliers transportation, and looked at the improved design and impact on capital costs verses the gain/loss in quality and finished product after processing

6.1 Boats

Before:	Poor to No Insulation, Potential Impact: Higher losses, Inconsistent quality
Main Improvements:	Better Insulation Use of containers to stack Fish Potential Impact: Reduced Bruising, Better Shelf Life, Higher Quality, and Improved Yields
Applied to:	Two types of boat were used, the fishing boat, used for capture and transfer to a collection point and the transport boat, used for accumulating the hauls ready for transporting to a landing site near or at the factory.

6.2 Trucks

Before:	Poor to No Insulation, Fish Stacked / Stock Piled Potential Impact: Crushing, excess Bruising and higher reject rate
Main Improvements:	Better Insulation Use of containers to stack Fish Potential Impact: Reduced Bruising, Better Shelf Life, Higher Quality, and Improved Yields
Applied to:	Trucks

6.3 Cost Calculations

Based on the Icing Trials to date, the boats (Indirect Costs) were categorised and associated costs determined. Using the information from each journey the direct costs are documented

For both Indirect & Direct costs, an additional category “Other” has been included to enable a cost profile to be built up.

Indirect Costs:	Transportation, Containers & Other
Direct Costs:	Fish, Ice (Quantity, Cost/Kg) & Other

Following the product through the chain, the quality and losses were documented to enable an assessment of the impact of an intervention.

To see the effect of gain/loss of quality the sale prices needed to be documented to estimate the return. The software will then calculate the “Gross Profit” based on the Sales – Costs documented.

Sales Value: Grade, Quantity, Cost/Kg and Yield

Using this information cost profiles can be build up and “What if” scenarios built by replacing costs with new values or standardising the costs to eliminate variance especially for the Indirect costs.

This would enable investment costs to be incorporated on existing trials data to see the effect on profit. Figure is the summary cost screen per Icing Trial, showing the cost centres and sales.

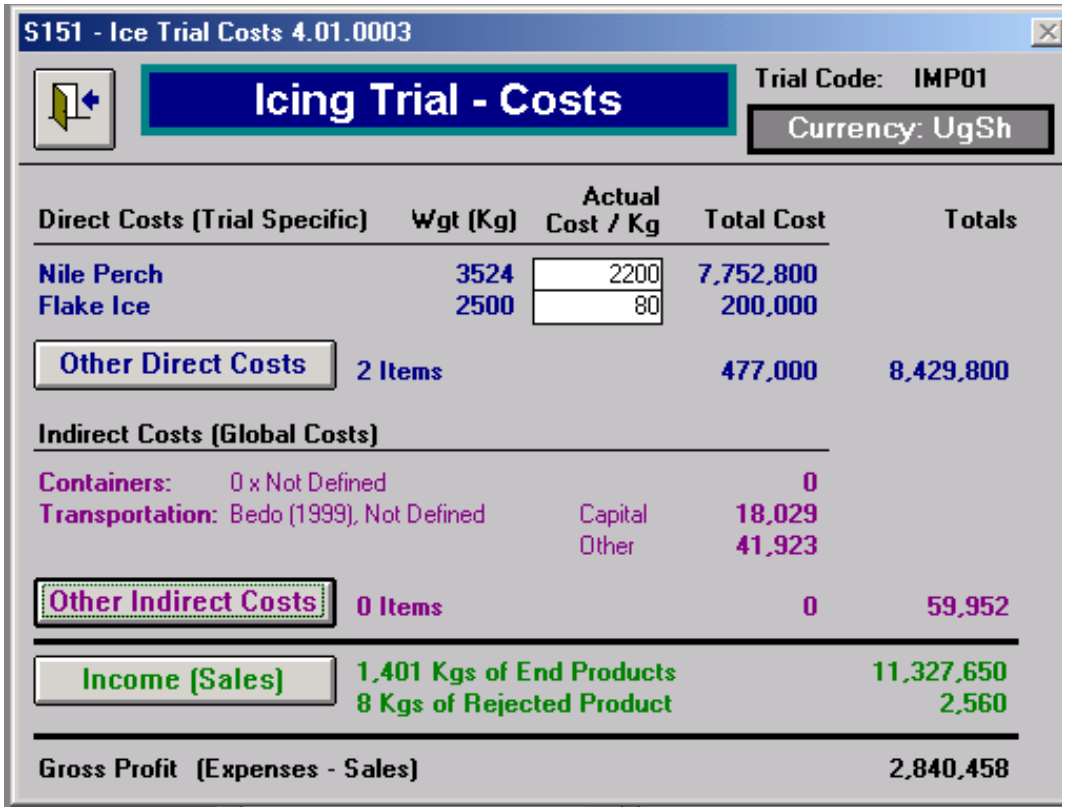


Figure 15

The following values have been determined by using the "Ice IT" software. Based on 52 Trips per year, the estimated life span of the Engine and Boat, maintenance and other costs associated with the trip.

Table 4 List of Transport with Costs

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List of Transport

Transportation (Key and Description)		Capital Expenditure (Boat + Engine)	Cost/Trip (Capital)	Cost/Trip (Other)	Total Cost/Trip
FB1	Fishing Boat - NOT Insulated	2,300,000	1,314	3,429	4,743
FB2	Fishing Boat - Insulated	2,700,000	1,543	3,429	4,971
TB1a	Transport Boat 25HP (GF1)	6,500,000	18,429	46,154	64,583
TB1b	Transport Boat 40HP (GF2)	18,500,000	27,644	34,615	62,260
TB1c	Transport Boat 20HP (GF3)	8,000,000	32,853	34,615	67,468
TB1d	Transport Boat ??HP (GF4)	6,500,000	19,952	34,615	54,567
TB2	Transport Boat 40HP (Namakome)	9,000,000	34,615	67,308	101,923
TB3	Transport Boat 55HP 7 Ton	10,000,000	44,712	38,462	83,173
Truck1	Truck - NOT Insulated	25,000,000	29,762	7,143	36,905
Truck2	Truck - Insulated	26,800,000	31,905	7,143	39,048

Direct Costs

Direct Costs will depend on the distance of the trip, and the number of crew members. Costs will consist of the Labour, Fuel, Landing & Market Dues, Permits and Certificates. Fuel Consumption has been estimated at 20 Litres/Hr

Table 5 Length of Time Taken to Reach Landing Sites (hrs)

Landing Site	Hours	Landing Site	Hours	Landing Site	Hours
Bubeke	4	Buyange	4	Kava	1
Llambu	6	Mawala	6	Kakyungna	3
Mazinga	7	Nkose	7	Gaba (Overland)	1
Lake Kyoga (Ninga)	4	Kisaba	5	Liibu	5

6.4 Handling – At Beaches

Before: Fish transferred from Fishing Boats to Transport Boats using ropes, possible contact with beach and promotes poor hygiene

High Risk of contamination, Bruising, higher losses

Main Improvements: Use of containers to move fish from Fishing Boats to Transport Boats

This is negligible cost as only 2 or 3 three crates are used to "ferry" the product between boats.

6.5 Using "Ice IT" Scenarios as Decision Support Tool

6.5.1 Introduction

The following sections look at how "Ice IT" can be used to examine the cost implications based on the predictive costs and quantity of prime fillets and the reduction of losses through the chain for the above interventions.

Most trials were part intakes, so often showing a loss as the cost of the boat would be spread over a small catch (ie 92 Kgs, for a 7 ton boat) and not all data regarding costs can be collected due to the sensitivity and fluctuation at different points of the supply chain.

"Ice IT" can document the current prices as well as standard costs for the Boat(s) and Values of Purchase and Sales, the cost per Kg difference can be calculated using both the daily price and the "standard" price, so allowing better comparisons of profit & loss margins.

A third assessment examines the list of "End Products" and identifies the best possible yield (usually 41% for Nile Perch, 30% for Tilapia). For this reason all trials that involved Headless & Gutted or Whole & Gutted have been omitted as these yields do not relate to the fillet yields and would generate a best yield at say 65%.

Two Stages in the supply chain are looked at, the Fishing Ground to the Collection Point, and the Collection Point to the Factory, including Processing. to enable costing at each stage and to allow a pricing structure to be implemented at the point of sale. The software allows a single purchase price and selling at multiple prices.

6.5.2 Setting up “Ice IT”

The following supply chains would be set up as different “datasets” as the have non-related information and pricing structures. Many different scenarios with different weights, ice quantity and pricing can be set up per data set.

The key difference for the datasets below are 1. Supply Chain & Type of Product)

Dataset 1 Supply Chain: Capture to Collection Point
Product: Tilapia

Dataset 2 Supply Chain: Collection Point to Factory
Product: Tilapia

Dataset 3 Supply Chain: Capture to Collection Point
Product: Nile Perch

Dataset 4 Supply Chain: Collection Point to Factory
Product: Nile Perch

This is performed in the Maintenance Menu – NOTE: All the Trials data in Section 5 & 7 which use the Ice IT database, are based on Dataset 3 & 4: Collection Point to Factory (Nile Perch & Tilapia)

Dataset 1 & 2 are examples of how other parts of the chain can be examined if required.

Assumes all costs are in Ugandan Shillings

Table 6 Guide to Using the Maintenance Menu of the Ice IT Database

Maintenance Menu	Entries to be Made	Values
Company Name	The Fisherman	N/A
Raw Materials (What is Bought)	Fresh Nile Perch (What is caught at source, therefore not paid for)	0
Types of Ice	Flake	80 /=
End Products (What is to Be Sold)	1st Quality 2nd Quality	Enter appropriate values
Loss Reasons	Rejects	Enter Value
Direct Costs (Cost Per Trial/Trip)	This can be built up and added to, Typical entries would be: Labour, Fuel, Permits If a levy where to be introduced or cost for grading the product for sale at the collection point, this too could be incorporated. **Exclude Fish & Ice as these are assumed common to all trials**	Enter Unit Costs, Units are defined by the user,
Quality Tests	Depends on the number & type of tests, but for simplicity the single entry for Visual Assessment is sufficient	0 = Score Units: = "Out of 10" Test = Organoleptic
Journey Stages	S10 – Fishing Ground S15 – Collection Site	Flag the section which should be added when using the "Quick Method" of data entry
Transportation	This should contain the relevant types of transport See Below	Variable – See Below

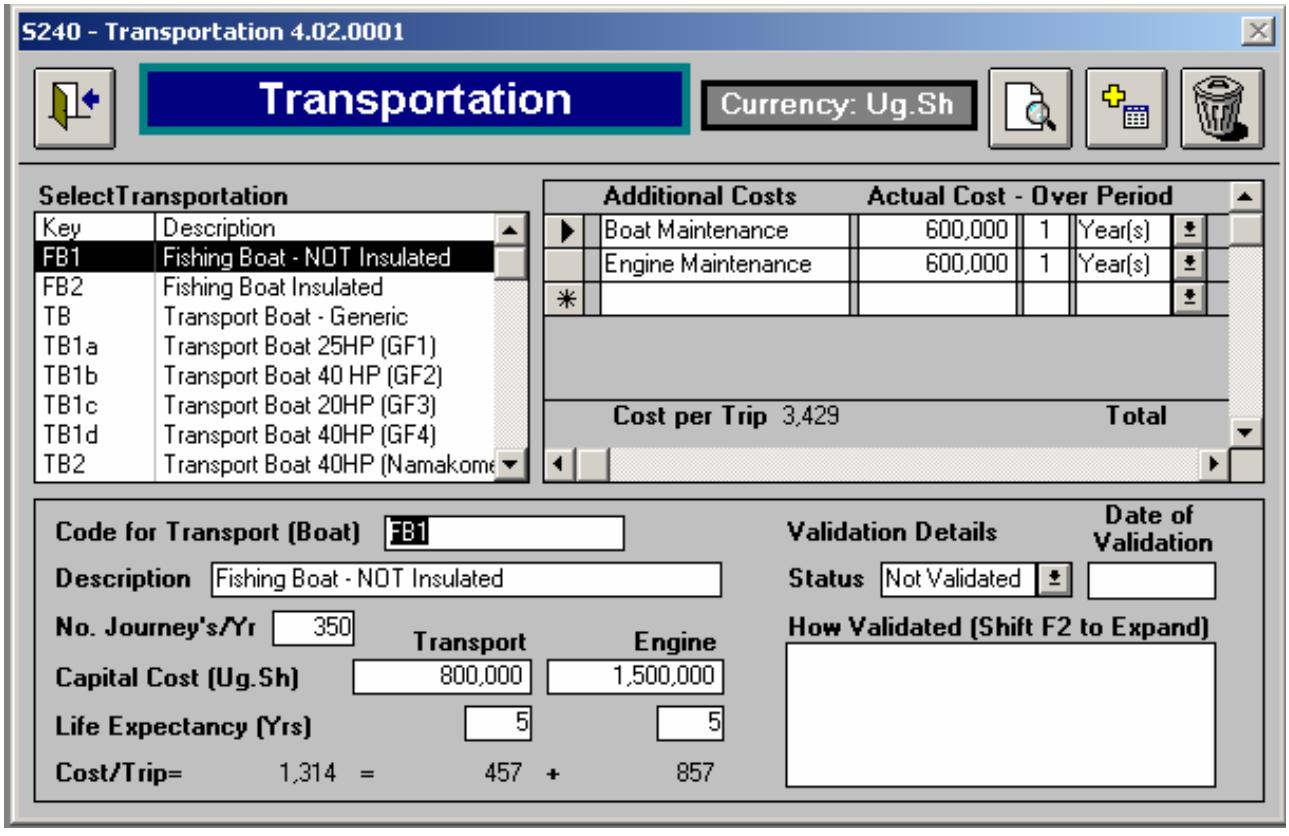


Table 7 Continuation of the Guide to Using the Maintenance Menu

Maintenance Menu	Entries to be Made	Values
Insulation Material	Not applicable for Costing Scenarios	Used for Melting Rates
Containers	Used if the product involves other methods of handling such as crates which may need to be "costed"	Optional List
Indirect Costs	As with direct costs, except these are not directly applicable to a "Trial" or "Trip", but are time based, such entries may be: Insurance, Nets & gear, Safety Equipments, Boat Licence, other Yearly expenses that are paid regardless of the number of trips made.	Optional List

Supply Chain: Capture to Collection Point

This set up can be used to look at the impact of a pricing structure at a collection point can be modelled

A levy may be incorporated for grading product and the impact on the income of the local fisherman. By adding this to the Direct Costs.

The number of outputs can be limitless, as many variables can be introduced and by modifying the scenarios such as the catch size, quantity of Ice used (Allowing less space for fish) and even incorporating additional costs to ensure a true perspective of the actual direct & indirect costs.

A "Trial" can be copied and the data modified such as changing the type of transport, from a motorised boat to an sail boat, different sized engines, the effect of costing better handling or insulation as part of the design

Each trial can then be compared to see the cost impact as is demonstrated next.

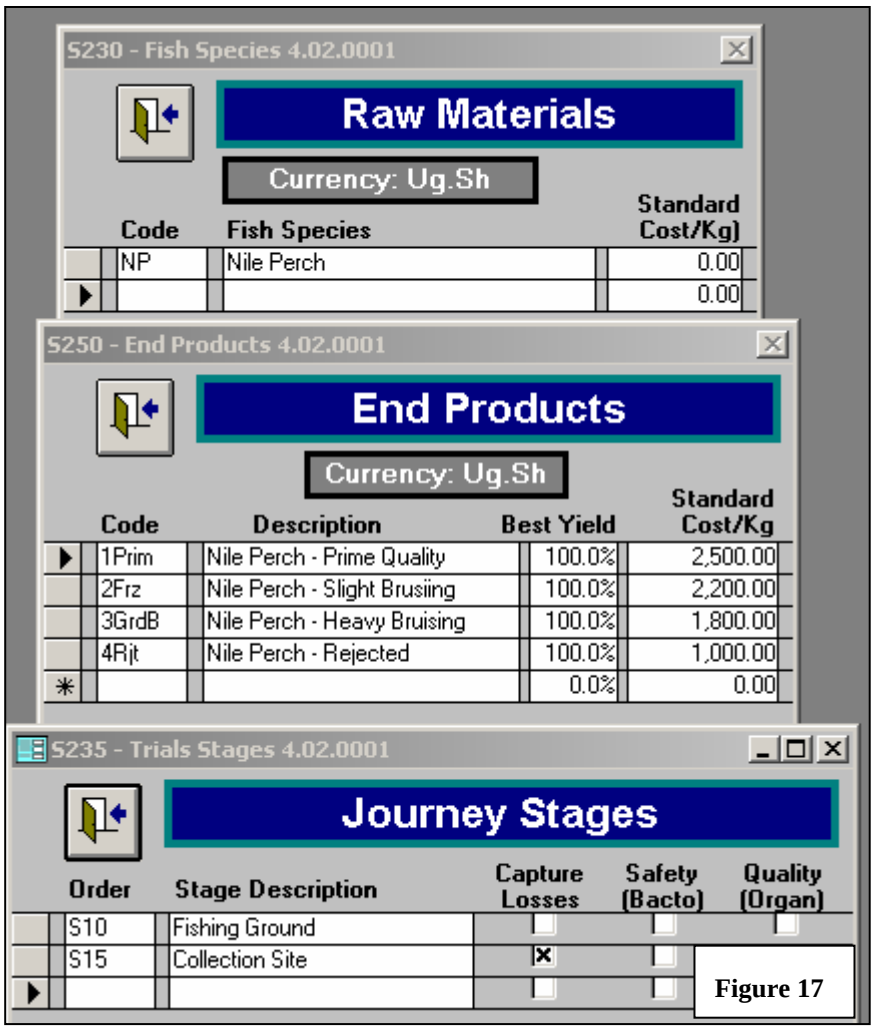


Figure 17

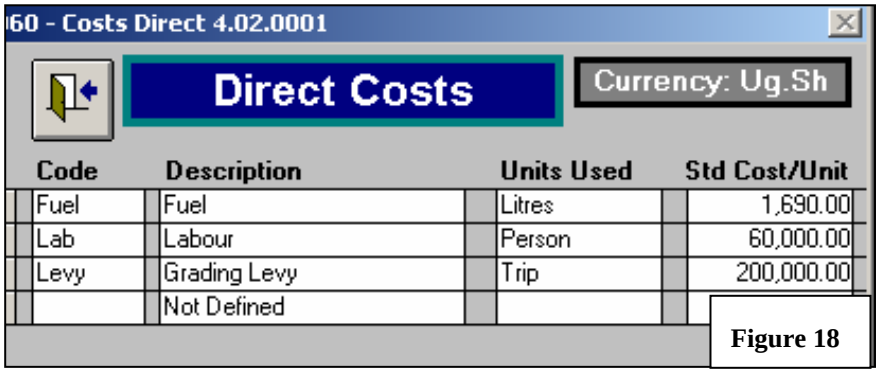


Figure 18

Example 1:

Fish is Caught, Using a 1 Ton Un-insulated Boat, This is expected to give 25% Good quality fish, out of an 800 Kgs Catch

Trial Costs - Actuals	Actual Cost per Unit	Quantity	Expenses (Ug.Sh)	Sales (Ug.Sh)
Direct - Ice				
Flake Ice	0.000	0 Kgs		
Direct - Other				
Fuel	1,690.000	50 Litres	84,500	
Grading Levy	200,000.000	1 Trip	200,000	
Labour	60,000.000	2 Person	120,000	
Direct - Raw Materials				
Nile Perch	0.000	800 Kgs		
InDirect - Transport Capital				
Fishing Boat - NOT Insulated	1,314.286	1 Journey	1,314	
InDirect - Transport Other				
Boat Maintenance	1,714.286	1 Journey	1,714	
Engine Maintenance	1,714.286	1 Journey	1,714	
Sales - Acceptable				
Nile Perch - Heavy Bruising @ 100.0%	1,800.000	100 Kgs		180,000
Nile Perch - Prime Quality @ 100.0%	2,500.000	200 Kgs		500,000
Nile Perch - Rejected @ 100.0%	1,000.000	0 Kgs		
Nile Perch - Slight Brusiing @ 100.0%	2,200.000	500 Kgs		1,100,000
Sales - Losses				
Not Defined	0.000	0 Kgs		
Gross Gain: 1,370,757 = 1,713 per Kg			**409,243**	**1,780,000**

Example 2

Fish is Caught, Using a 1 Ton Insulated Boat, This is expected to give a high % of Good quality fish with a smaller catch of 700 Kgs, but with the Levy and Pricing Structure to encourage high quality product, so ensuring more available product for the export market rather than local market

Trial Costs - Actuals	Actual Cost per Unit	Quantity	Expenses (Ug.Sh)	Sales (Ug.Sh)
Direct - Ice				
Flake Ice	80.000	300 Kgs	24,000	
Direct - Other				
Fuel	1,690.000	50 Litres	84,500	
Grading Levy	200,000.000	1 Trip	200,000	
Labour	60,000.000	2 Person	120,000	
Direct - Raw Materials				
Nile Perch	0.000	700 Kgs		
InDirect - Transport Capital				
Fishing Boat Insulated	1,542.857	1 Journey	1,543	
InDirect - Transport Other				
Boat Maintenance	1,714.286	1 Journey	1,714	
Engine Maintenance	1,714.286	1 Journey	1,714	
Sales - Acceptable				
Nile Perch - Heavy Bruising @ 100.0%	1,800.000	0 Kgs		
Nile Perch - Prime Quality @ 100.0%	2,500.000	600 Kgs		1,500,000
Nile Perch - Rejected @ 100.0%	1,000.000	0 Kgs		
Nile Perch - Slight Brusiing @ 100.0%	2,200.000	100 Kgs		220,000
Sales - Losses				
Not Defined	0.000	0 Kgs		
Gross Gain: 1,286,529 = 1,838 per Kg			**433,471**	**1,720,000**

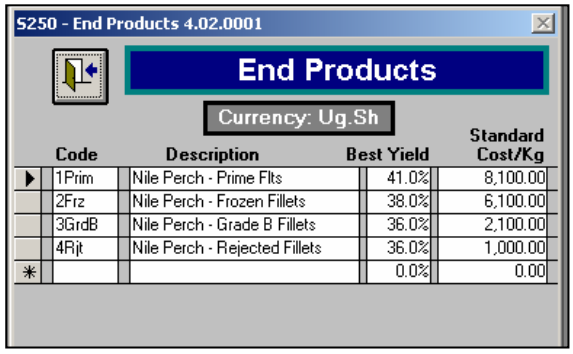
7.0 Interventions and Cost Analysis

All cost information has been based on the same cost structure, only standardised costs have been used for the cost analysis exercise as these trials where performed over several years and inflation has increased, whilst purchase costs fluctuate depending on the time of year and demand on the product in the market place.

Other issues such as the sensitivity of the prices paid, running cost and time required documenting individual costs and applying similar cost structures can vary and not be wholly accurate, for these reasons the following cost elements have be used and referred to as the "Standard Costs".

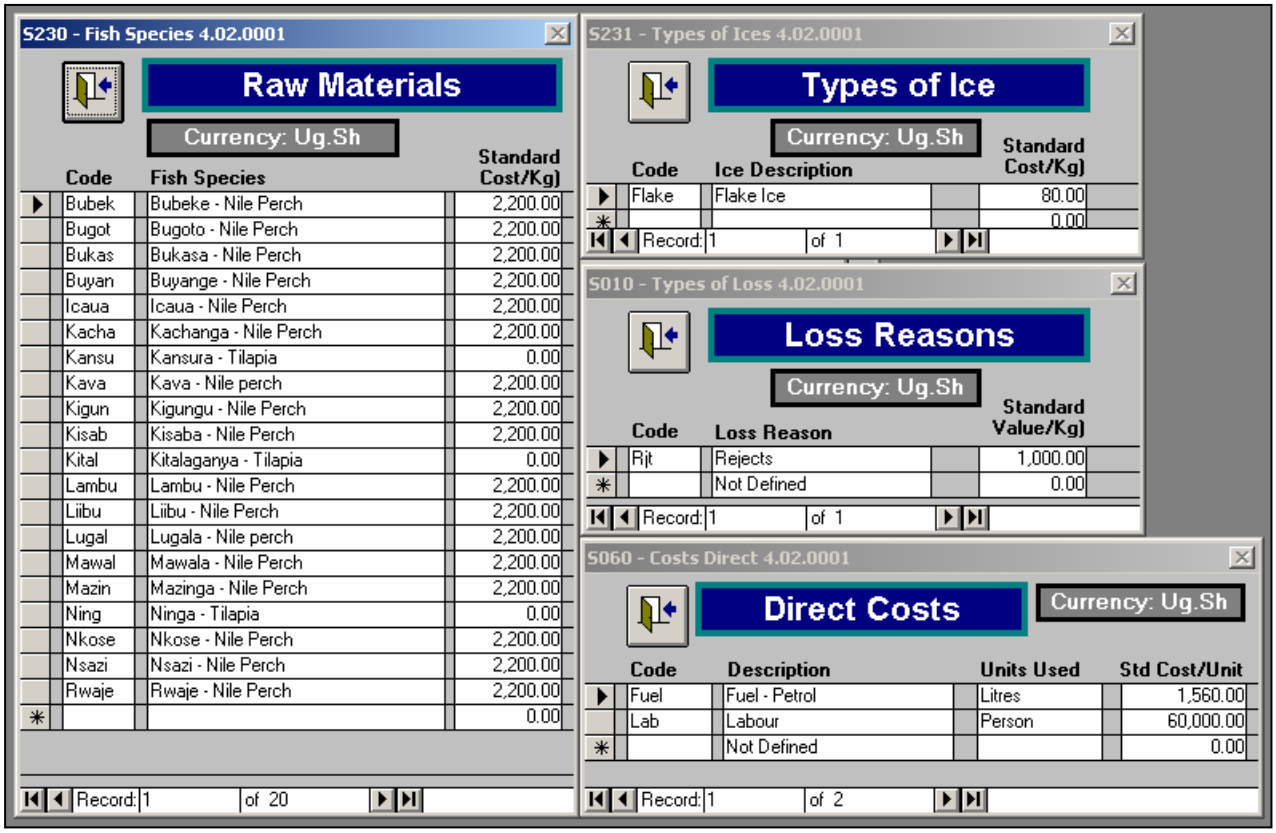
The Boat in all cases has been defined as a "Transport Boat - Generic" If the quantities used for the trial are a small percent of the total carrying capacity then the cost of the transport, fuel and labour will be omitted for comparison as these costs would be disproportionate to the sample size used.

For example, several trials have very small sample sizes and is not a representative quantity of the normal load, for example in Objective 2, one sample size is only 92 Kilos and many <150Kgs, which amounts to less than 2% of the potential load, for this reason the cost of the transport, Fuel and Labour have been set to Zero and the report re-printed to focus on the cost saving, as one could assume the cost are similar for both. However, if the intervention included a capital investment then the appropriate adjust can be made. On the whole, most capital interventions, such as insulation, only form a minor increase in the actual cost per trip. For example, an improvement in the fishing boat is less than 250/= (<1% of the cost per Trip). **See section 6.3**. This may apply to trials where overland transportation is used.



Code	Description	Best Yield	Standard Cost/Kg
1Prim	Nile Perch - Prime Flts	41.0%	8,100.00
2Frz	Nile Perch - Frozen Fillets	38.0%	6,100.00
3GrdB	Nile Perch - Grade B Fillets	36.0%	2,100.00
4Rjt	Nile Perch - Rejected Fillets	36.0%	1,000.00
		0.0%	0.00

Below are the standard costs (sometimes modified to zero if not representative of sample size)



Code	Fish Species	Standard Cost/Kg)
Bubek	Bubeke - Nile Perch	2,200.00
Bugot	Bugoto - Nile Perch	2,200.00
Bukas	Bukasa - Nile Perch	2,200.00
Buyan	Buyange - Nile Perch	2,200.00
Icaua	Icaua - Nile Perch	2,200.00
Kacha	Kachanga - Nile Perch	2,200.00
Kansu	Kansura - Tilapia	0.00
Kava	Kava - Nile perch	2,200.00
Kigun	Kigungu - Nile Perch	2,200.00
Kisab	Kisaba - Nile Perch	2,200.00
Kital	Kitalaganya - Tilapia	0.00
Lambu	Lambu - Nile Perch	2,200.00
Liibu	Liibu - Nile Perch	2,200.00
Lugal	Lugala - Nile perch	2,200.00
Mawal	Mawala - Nile Perch	2,200.00
Mazin	Mazinga - Nile Perch	2,200.00
Ning	Ninga - Tilapia	0.00
Nkose	Nkose - Nile Perch	2,200.00
Nsazi	Nsazi - Nile Perch	2,200.00
Rwaje	Rwaje - Nile Perch	2,200.00
		0.00

Record: 1 of 20

Code	Ice Description	Standard Cost/Kg)
Flake	Flake Ice	80.00
		0.00

Record: 1 of 1

Code	Loss Reason	Standard Value/Kg)
Rjt	Rejects	1,000.00
	Not Defined	0.00

Record: 1 of 1

Code	Description	Units Used	Std Cost/Unit
Fuel	Fuel - Petrol	Litres	1,560.00
Lab	Labour	Person	60,000.00
	Not Defined		0.00

Record: 1 of 2

7.1 Icing Immediately at the Collection Point

Overview

The traditional method of transferring fish from the fishing boat to the transport boat would be using ropes and manually carrying the fish. The fish would then be accumulated and iced later.

The standard method introduced the use of Crates to carry the fish to the transport boats, then icing immediately.

Traditional Method (Nile Perch)	Improved Method (Nile Perch)
Fish caught by traditional fishing boats – NOT Iced	Fish caught by traditional fishing boats NOT Iced
Transferred by Traditional Method **(Manually Hauled)**	Transferred by **using plastic containers**
Fish taken to Collection Point – **Delayed Icing**	Fish taken to Collection Point – **Immediate Icing**
Fish transferred to transport boat and iced	Fish transferred to transport boat and iced
Fish taken to factory landing site	Fish taken to factory landing site
Fish Processed in to Fresh Fillets	Fish Processed in to Fresh Fillets

Table 8 Quality & Loss Assessments at Collection Point – Nile Perch

Quality and Loss Assessments – Nile Perch

Loss Assessments	**Traditional**	**Improved**	**Variance**
Losses at Landing Site	0.0%	0.0%	0.0%
Losses at Factory Reception	4.8%	0.0%	-4.8%
Losses On-Line (Whole Fish Equivalent)	0.0%	0.0%	0.0%
Overall Losses (Whole Fish)	4.8%	0.0%	-4.8%
Losses On-Line (Fillets)	2.2%	0.0%	-2.2%
Quality Assessments (Averages)			
Visual - At Factory Intake	Not Assessed	Not Assessed	Not Assessed
Visual - After Processing	Not Assessed	Not Assessed	Not Assessed
Yield - Prime Quality / Weight Processed	37.2%	39.7%	+2.5%

Cost Analysis

Data Source: Ice IT Dataset: Obj1.mdb & Obj1-v2.mdb (Ice IT DataSet)
IceTrial_Objectives_References6.xls – Table: Obj1

Summary of Results:

Reference: Appendix 1a & 1b NILE PERCH		**STANDARD - Gross Gain Per Kg. (Ug.Sh)**		
		Before	After	**Variance**
Indirect Cost of Transport + Direct Cost of Fuel + Direct Cost of Labour	**APPLIED**	598	792	**194**
	OMITTED	744	929	**185**

7.2 Icing Immediately at Fishing Ground

Overview

A series of trials were undertaken which used ice at source (Fishing Ground) using modified vessel compared with icing at the Collection Point

Traditional Method (Nile Perch)

Fish caught by traditional fishing boat – **NOT Iced**
Fish taken to Collection Point – Iced
Fish transferred to transport boat - Iced
Fish taken to factory landing site
Fish Processed in to Fresh Fillets

Improved Method (Nile Perch)

Fish caught by insulated fishing boat – **Iced**
Fish taken to Collection Point – Iced
Fish transferred to transport boat
Fish taken to factory landing site
Fish Processed in to Fresh Fillets

Table 9 Quality & Loss Assessments at Fishing Ground – Nile Perch

Loss Assessments	**Traditional**	**Improved**	**Variance**
Losses at Landing Site	1.5%	0.0%	-1.5%
Losses at Factory Reception	0.2%	0.0%	-0.2%
Losses On-Line (Whole Fish Equivalent)	0.1%	0.1%	0.0%
Overall Losses (Whole Fish)	***1.8%***	***0.1%***	***-1.7%***
Losses On-Line (Fillets)	0.0%	0.0%	0.0%
Quality Assessments (Averages)			
Visual - At Factory Intake	7.7	8.3	+0.6
Visual - After Processing	7.3	8.6	+1.3
Yield - Prime Quality / Weight Processed	**33.0%**	**40.6%**	**+7.6%**

Data Source: Ice IT Dataset: Obj2.mdb & Obj2-v2.mdb (Ice IT DataSet)
IceTrial_Objectives_References6.xls – Table: Obj2

Table 10 Summary of Results

Reference: Appendix 2a & 2b NILE PERCH		**STANDARD - Gross Gain Per Kg. (Ug.Sh)**		
		Before	After	**Variance**
Indirect Cost of Transport + Direct Cost of Fuel + Direct Cost of Labour	**APPLIED**	717	453	**-264**
	OMITTED	928	1,026	**98**

7.3 Well insulated truck (Lake Kyoga)

Overview

A series of trials were undertaken which used ice at source (Fishing Ground) using modified vehicle (Well Insulated) compared with a poorly insulated vehicle

Traditional Method (Nile Perch & Tilapia)

Fish caught by traditional fishing boat – NOT Iced
Fish taken to Collection Point – Iced
Fish transferred to **poorly insulated truck** and iced
Fish taken to factory landing site
Fish Processed in to Fresh Fillets

Improved Method (Nile Perch & Tilapia)

Fish caught by traditional fishing boat– NOT Iced
Fish taken to Collection Point – Iced
Fish transferred to **well insulated truck** and iced
Fish taken to factory landing site
Fish Processed in to Fresh Fillets

Table 11 Quality & Loss Assessments of a Well Insulated truck – Tilapia

Loss Assessments	**Traditional**	**Improved**	**Variance**
Losses at Landing Site	0.0%	0.0%	0.0%
Losses at Factory Reception	2.5%	1.8%	-0.7%
Losses On-Line (Whole Fish Equivalent)	0.2%	0.1%	-0.1%
Overall Losses (Whole Fish)	2.7%	1.9%	-0.8%
Losses On-Line (Fillets)	0.0%	0.0%	0.0%
Quality Assessments (Averages)			
Visual - At Factory Intake	7.9	7.8	-0.1
Visual - After Processing	7.8	7.8	0.0
Yield - Prime Quality / Weight Processed	28.9%	29.9%	+1.0%

Data Source: Ice IT Dataset: Obj3a.mdb & Obj3a-v2.mdb (Ice IT DataSet)
IceTrial_Objectives_References6.xls – Table: Obj3a

Table 12 Summary of Results

Reference: Appendix 3a & 3c TILAPIA		**STANDARD - Gross Gain Per Kg. (Ug.Sh)**		
		Before	After	**Variance**
Indirect Cost of Transport + Direct Cost of Fuel + Direct Cost of Labour	**APPLIED**	453	512	**59**
	OMITTED	587	582	**-5**

Table 13 Quality & Loss Assessments of a Well Insulated truck – Nile Perch

Loss Assessments	Traditional	Improved	Variance
Losses at Landing Site	0.0%	0.0%	0.0%
Losses at Factory Reception	2.0%	2.1%	+0.1%
Losses On-Line (Whole Fish Equivalent)	0.4%	0.3%	-0.1%
Overall Losses (Whole Fish)	2.4%	2.3%	-0.1%
Losses On-Line (Fillets)	0.0%	0.0%	0.0%
Quality Assessments (Averages)			
Visual - At Factory Intake	7.7	7.0	-0.7
Visual - After Processing	7.6	6.9	-0.8
Yield - Prime Quality / Weight Processed	36.5%	39.9%	+3.4%

Data Source: Ice IT Dataset: Obj3b.mdb & Obj3b-v2.mdb (Ice IT DataSet)
IceTrial_Objectives_References6.xls – Table: Obj3b

Table 14 Summary of Results

Reference: Appendix 3b & 3d NILE PERCH		STANDARD - Gross Gain Per Kg. (Ug.Sh)		
		Before	After	**Variance**
Indirect Cost of Transport + Direct Cost of Fuel + Direct Cost of Labour	**APPLIED**	655	867	**212**
	OMITTED	695	891	**196**

7.4 Icing Immediately and Good Insulation

Overview

A series of trials were undertaken which

Traditional Method (Nile Perch & Tilapia)

Fish caught by **traditional fishing boat –** NOT Iced
Fish taken to Collection Point – Iced
Fish transferred to **poorly insulated truck** and iced
Fish taken to factory landing site
Fish Processed in to Fresh Fillets

Improved Method (Nile Perch & Tilapia)

Fish caught by **insulated fishing boat – Iced**
Fish taken to Collection Point – Iced
Fish transferred to **well insulated truck** and iced
Fish taken to factory landing site
Fish Processed in to Fresh Fillets

Table 15 Quality & Loss Assessments of Icing Immediately & Good Insulation – Tilapia

(All Samples)

Loss Assessments	Traditional	Improved	Variance
Losses at Landing Site	0.0%	0.0%	0.0%
Losses at Factory Reception	2.5%	2.3%	-0.2%
Losses On-Line (Whole Fish Equivalent)	0.2%	0.3%	+0.1%
Overall Losses (Whole Fish)	2.7%	2.7%	0.0%
Losses On-Line (Fillets)	0.0%	0.0%	0.0%
Quality Assessments (Averages)			
Visual - At Factory Intake	7.9	6.7	-1.2
Visual - After Processing	7.8	6.5	-1.3
Yield - Prime Quality / Weight Processed	28.7%	16.9%	11.4%

Table 16 Quality & Loss Assessments of Icing Immediately & Good Insulation – Tilapia

(Rogue Samples REMOVED – Poor Quality FISH)

Loss Assessments	Traditional	Improved	Variance
Losses at Landing Site	0.0%	0.0%	0.0%
Losses at Factory Reception	2.5%	1.7%	-0.8%
Losses On-Line (Whole Fish Equivalent)	0.2%	0.0%	-0.2%
Overall Losses (Whole Fish)	2.7%	1.7%	-1.0%
Losses On-Line (Fillets)	0.0%	0.0%	0.0%
Quality Assessments (Averages)			
Visual - At Factory Intake	7.9	7.2	-0.7
Visual - After Processing	7.8	7.0	-0.8
Yield - Prime Quality / Weight Processed	28.7%	30.4%	+1.7%

Data Source: Ice IT Dataset: Obj4a.mdb & Obj4a-v2.mdb (Ice IT DataSet)
IceTrial_Objectives_References6.xls – Table: Obj4a

Table 17 Summary of Results

Reference: Appendix 4a & 4b TILAPIA		**STANDARD - Gross Gain Per Kg. (Ug.Sh)**		
		Before	After	**Variance**
Indirect Cost of Transport + Direct Cost of Fuel + Direct Cost of Labour	**APPLIED**	-106	-115	**-11**
	OMITTED	574	617	**43**

Table 18 Quality & Loss Assessments of Icing Immediately & Good Insulation – Nile Perch

(All Samples)

Loss Assessments	**Traditional**	**Improved**	**Variance**
Losses at Landing Site	0.0%	0.0%	0.0%
Losses at Factory Reception	2.0%	2.1%	0.0%
Losses On-Line (Whole Fish Equivalent)	0.4%	0.1%	0.0%
Overall Losses (Whole Fish)	2.4%	2.8%	0.0%
Losses On-Line (Fillets)	0.0%	0.0%	0.0%
Quality Assessments (Averages)			
Visual - At Factory Intake	7.7	7.7	0.0
Visual - After Processing	7.6	7.4	-0.2
Yield - Prime Quality / Weight Processed	36.5%	26.0%	-10.5%

Table 19 Quality & Loss Assessments of Icing Immediately & Good Insulation – Nile Perch

(Rogue Samples REMOVED – Poor Quality FISH)

Loss Assessments	**Traditional**	**Improved**	**Variance**
Losses at Landing Site	0.0%	0.0%	0.0%
Losses at Factory Reception	2.0%	1.4%	-0.6%
Losses On-Line (Whole Fish Equivalent)	0.4%	0.1%	-0.3%
Overall Losses (Whole Fish)	2.4%	1.5%	-0.9%
Losses On-Line (Fillets)	0.0%	0.0%	0.0%
Quality Assessments (Averages)			
Visual - At Factory Intake	7.7	7.9	+0.2
Visual - After Processing	7.6	7.6	0.0
Yield - Prime Quality / Weight Processed	36.5%	39.0%	+2.5%

Data Source: Ice IT Dataset: Obj4b.mdb & Obj4b-v2.mdb (Ice IT DataSet)
IceTrial_Objectives_References6.xls – Table: Obj4b

Table 20 Summary of Results

Reference: Appendix 4c & 4d NILE PERCH		**STANDARD - Gross Gain Per Kg. (Ug.Sh)**		
		Before	After	**Variance**
Indirect Cost of Transport + Direct Cost of Fuel + Direct Cost of Labour	**APPLIED**	655	816	**161**
	OMITTED	795	907	**112**

7.5 Impact of Training

Overview

A series of trials were undertaken which

Lake Kyoga (Nile Perch)

Fish caught by traditional fishing boats – NOT Iced
Fish taken to Collection Point – Iced
Fish transferred to **poorly insulated truck** and iced
Fish taken to factory landing site
Fish Processed in to Fresh Fillets

Lake Victoria (Nile Perch))

Fish caught by traditional fishing boats– NOT Iced
Fish taken to Collection Point – Iced
Fish transferred to **well insulated truck** and iced
Fish taken to factory landing site
Fish Processed in to Fresh Fillets

Table 21 Summary of the Impact of Training

Nile Perch	Losses at Factory Landing Site - Pre-Training	Post-Training	Variance
Alice	6.7%	1.5%	-5.2%
Senkule	5.4%	1.9%	-3.4%
Kizza Salongo	5.3%	3.0%	-2.3%
Mposa Kawooka	5.7%	1.9%	-3.8%
Tilapia			
Alice	5.8%	3.5%	-2.3%
Nkusi Bhai	7.2%	1.4%	-5.9%
Senkule	4.4%	2.2%	-2.2%

7.6 Upstream Losses (Collection Points)

Overview

A series of trials were undertaken which

Traditional Method (Untrained Personnel)

Fish caught by traditional fishing boat – **NOT Iced**
Fish taken to Collection Point – Iced
Fish transferred to transport boat - Iced
Fish taken to factory landing site
Fish Processed in to Fresh Fillets

Improved Method (Trained Personnel)

Fish caught by insulated fishing boat – **Iced**
Fish taken to Collection Point – Iced
Fish transferred to transport boat
Fish taken to factory landing site
Fish Processed in to Fresh Fillets

Table 22 Losses at the Collection Point – Islands Actual Outcome:

Losses at the Collection Point – Islands												
Losses percent	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03
Kigungu	2.0%	2.1%	2.6%	2.2%	1.6%	2.3%	1.5%	1.7%	2.4%	2.3%	2.5%	2.4%
GUL	1.9%	2.0%	1.9%	2.2%	1.9%	2.4%	2.5%	2.3%	2.4%	2.7%	2.6%	2.3%
Gaba	2.0%	2.1%	1.8%	2.3%	2.0%	1.5%	1.7%	3.0%	3.2%	3.7%	3.8%	3.6%

7.7 Fishing Source (Victoria v Kyoga)

Overview

A series of trials were undertaken which

Lake Kyoga (Nile Perch)

Fish caught by traditional fishing boats – NOT Iced
Fish taken to Collection Point – Iced
Fish transferred to **poorly insulated truck** and iced
Fish Processed in to Fresh Fillets

Lake Victoria (Nile Perch))

Fish caught by traditional fishing boats– NOT Iced
Fish taken to Collection Point – Iced
Fish transferred to **well insulated truck** and iced
Fish Processed in to Fresh Fillets

Table 23 Quality & Loss Assessments at Fishing Source – Nile Perch

Loss Assessments	**Lake Victoria**	**Lake Kyoga**	**Variance**
Losses at Landing Site	0.0%	0.0%	0.0%
Losses at Factory Reception	3.2%	1.6%	-1.6%
Losses On-Line (Whole Fish Equivalent)	0.5%	0.2%	-0.3%
Overall Losses (Whole Fish)	3.7%	1.8%	-1.9%
Losses On-Line (Fillets)	0.1%	0.0%	-0.1%
Quality Assessments (Averages)			
Visual - At Factory Intake	7.7	7.1	-0.6
Visual - After Processing	7.8	6.9	-0.9
Yield - Prime Quality / Weight Processed	40.9%	39.1%	-1.8%

Data Source: Ice IT Dataset: Obj4b.mdb & Obj4b-v2.mdb (Ice IT DataSet)
IceTrial_Objectives_References6.xls – Table: Obj4b

Table 24 Summary of Results

Reference: Appendix 7a & 7b NILE PERCH		**STANDARD - Gross Gain Per Kg. (Ug.Sh)**		
		Before	After	**Variance**
Indirect Cost of Transport + Direct Cost of Fuel + Direct Cost of Labour	**APPLIED**	655	816	**161**
	OMITTED	795	907	**112**

Conclusion

On the whole using these “mini” trials, it was noted that a significant impact could be made on income generation by the use of small interventions which all can be confirmed as cost effective control measures. Such measures as insulations, transportation and handling can all be improved with pay back being achieved quite quickly.

To enable a better cost analysis more trials would be required and a strengthening of the available tools for the impact should be developed.

Appendices:

Appendix 1a – Objective 1 – Inc. All Indirect & Direct Costs

Standard Costs

CONTROL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD12	6,864,000	7,116,400	54,567	7,170,967	-306,967	3,082	-100
STD13	8,693,400	6,856,800	54,567	6,911,367	1,782,033	2,964	601
STD14	10,037,100	7,554,200	54,567	7,608,767	2,428,333	3,281	740
STD17	8,719,400	6,845,800	54,567	6,900,367	1,819,033	2,959	615
STD16	11,575,500	9,764,800	54,567	9,819,367	1,756,133	4,300	408
STD04	14,461,500	11,078,700	54,567	11,133,267	3,328,233	4,841	688
STD18	10,288,240	7,848,000	54,567	7,902,567	2,385,673	3,372	707
STD07	5,744,880	4,919,400	54,567	4,973,967	770,913	2,055	375
STD08	8,324,100	6,639,800	54,567	6,694,367	1,629,733	2,837	574
STD15	8,211,400	6,444,000	54,567	6,498,567	1,712,833	2,748	623
STD20	4,362,200	3,900,800	54,567	3,955,367	406,833	1,592	256
STD02	5,242,420	4,222,000	54,567	4,276,567	965,853	1,738	556
STD10	5,322,860	4,263,800	54,567	4,318,367	1,004,493	1,757	572
STD19	4,628,640	3,751,200	54,567	3,805,767	822,873	1,524	540
STD05	15,748,320	11,425,200	54,567	11,479,767	4,268,553	4,998	854
STD06	11,703,860	8,655,400	54,567	8,709,967	2,993,893	3,739	801
STD09	10,497,500	8,131,800	54,567	8,186,367	2,311,133	3,501	660
STD11	10,461,240	7,828,200	54,567	7,882,767	2,578,473	3,363	767
Totals	*160,886,560*	*127,246,300*	*982,212*	*128,228,512*	*32,658,048*	*54,651*	*598*

TRIAL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP05	9,922,760	7,294,600	54,567	7,349,167	2,573,593	3,163	814
IMP08	5,946,000	4,600,800	54,567	4,655,367	1,290,633	1,896	681
IMP17	9,430,900	7,029,600	54,567	7,084,167	2,346,733	3,000	782
IMP02	12,609,000	9,273,600	54,567	9,328,167	3,280,833	4,020	816
IMP07	5,869,800	4,530,400	54,567	4,584,967	1,284,833	1,864	689
IMP35	11,090,900	8,721,400	54,567	8,775,967	2,314,933	3,769	614
IMP34	3,242,360	2,355,000	39,048	2,394,048	848,312	1,029	824
IMP27	7,708,800	5,667,800	54,567	5,722,367	1,986,433	2,459	808
IMP03	11,940,880	8,794,000	54,567	8,848,567	3,092,313	3,802	813
IMP09	5,799,700	4,479,800	54,567	4,534,367	1,265,333	1,841	687
IMP15	6,462,500	4,966,000	54,567	5,020,567	1,441,933	2,062	699
IMP01	11,045,700	8,213,600	54,567	8,268,167	2,777,533	3,524	788
IMP22	3,366,660	2,823,600	54,567	2,878,167	488,493	1,074	455
IMP31	13,254,000	9,742,600	54,567	9,797,167	3,456,833	4,219	819
IMP24	10,335,080	7,714,200	54,567	7,768,767	2,566,313	3,297	778
IMP20	9,804,000	7,269,400	54,567	7,323,967	2,480,033	3,109	798
IMP28	8,391,900	6,288,200	54,567	6,342,767	2,049,133	2,663	769
IMP37	14,444,300	10,510,400	54,567	10,564,967	3,879,333	4,568	849
IMP04	8,118,040	5,902,000	54,567	5,956,567	2,161,473	2,569	841
IMP10	11,112,400	7,996,400	54,567	8,050,967	3,061,433	3,521	869
IMP13	13,805,500	9,912,600	54,567	9,967,167	3,838,333	4,392	874
IMP19	4,464,360	3,741,600	54,567	3,796,167	668,193	1,587	421
IMP30	17,057,800	12,037,800	54,567	12,092,367	4,965,433	5,358	927
IMP32	16,491,100	11,861,800	54,567	11,916,367	4,574,733	5,278	867
Totals	*231,714,440*	*171,727,200*	*1,294,096*	*173,021,296*	*58,693,144*	*74,064*	*792*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD12	9,982,598	7,116,400	54,567	7,170,967	2,811,631	3,082	912
STD13	9,600,396	6,856,800	54,567	6,911,367	2,689,029	2,964	907
STD14	10,627,159	7,554,200	54,567	7,608,767	3,018,392	3,281	920
STD17	9,584,201	6,845,800	54,567	6,900,367	2,683,834	2,959	907
STD16	13,927,700	9,764,800	54,567	9,819,367	4,108,333	4,300	955
STD04	15,678,379	11,078,700	54,567	11,133,267	4,545,112	4,841	939
STD18	10,921,908	7,848,000	54,567	7,902,567	3,019,341	3,372	895
STD07	6,656,145	4,919,400	54,567	4,973,967	1,682,178	2,055	819
STD08	9,189,043	6,639,800	54,567	6,694,367	2,494,676	2,837	879
STD15	8,900,772	6,444,000	54,567	6,498,567	2,402,205	2,748	874
STD20	5,156,488	3,900,800	54,567	3,955,367	1,201,121	1,592	754
STD02	5,629,382	4,222,000	54,567	4,276,567	1,352,815	1,738	778
STD10	5,690,923	4,263,800	54,567	4,318,367	1,372,556	1,757	781
STD19	4,936,236	3,751,200	54,567	3,805,767	1,130,469	1,524	742
STD05	16,188,522	11,425,200	54,567	11,479,767	4,708,755	4,998	942
STD06	12,110,621	8,655,400	54,567	8,709,967	3,400,654	3,739	910
STD09	11,339,739	8,131,800	54,567	8,186,367	3,153,372	3,501	901
STD11	10,892,757	7,828,200	54,567	7,882,767	3,009,990	3,363	895
Totals	*177,012,968*	*127,246,300*	*982,212*	*128,228,512*	*48,784,456*	*54,651*	*893*

TRIAL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP05	10,244,957	7,294,600	54,567	7,349,167	2,895,790	3,163	916
IMP08	6,141,144	4,600,800	54,567	4,655,367	1,485,777	1,896	784
IMP17	9,717,000	7,029,600	54,567	7,084,167	2,632,833	3,000	878
IMP02	13,020,780	9,273,600	54,567	9,328,167	3,692,613	4,020	919
IMP07	6,037,496	4,530,400	54,567	4,584,967	1,452,529	1,864	779
IMP35	12,207,791	8,721,400	54,567	8,775,967	3,431,824	3,769	911
IMP34	3,332,931	2,355,000	39,048	2,394,048	938,883	1,029	912
IMP27	7,964,701	5,667,800	54,567	5,722,367	2,242,334	2,459	912
IMP03	12,314,678	8,794,000	54,567	8,848,567	3,466,111	3,802	912
IMP09	5,962,999	4,479,800	54,567	4,534,367	1,428,632	1,841	776
IMP15	6,678,818	4,966,000	54,567	5,020,567	1,658,251	2,062	804
IMP01	11,414,236	8,213,600	54,567	8,268,167	3,146,069	3,524	893
IMP22	3,478,686	2,823,600	54,567	2,878,167	600,519	1,074	559
IMP31	13,665,341	9,742,600	54,567	9,797,167	3,868,174	4,219	917
IMP24	10,678,983	7,714,200	54,567	7,768,767	2,910,216	3,297	883
IMP20	10,070,051	7,269,400	54,567	7,323,967	2,746,084	3,109	883
IMP28	8,625,457	6,288,200	54,567	6,342,767	2,282,690	2,663	857
IMP37	14,795,752	10,510,400	54,567	10,564,967	4,230,785	4,568	926
IMP04	8,320,991	5,902,000	54,567	5,956,567	2,364,424	2,569	920
IMP10	11,404,519	7,996,400	54,567	8,050,967	3,353,552	3,521	952
IMP13	14,225,688	9,912,600	54,567	9,967,167	4,258,521	4,392	970
IMP19	5,140,293	3,741,600	54,567	3,796,167	1,344,126	1,587	847
IMP30	17,354,562	12,037,800	54,567	12,092,367	5,262,195	5,358	982
IMP32	17,095,442	11,861,800	54,567	11,916,367	5,179,075	5,278	981
Totals	*239,893,294*	*171,727,200*	*1,294,096*	*173,021,296*	*66,871,998*	*74,064*	*903*

Appendix 1b – Objective 1 – Exclude Transport, Labour & Fuel

Standard Costs

CONTROL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD12	6,864,000	6,780,400	0	6,780,400	83,600	3,082	27
STD13	8,693,400	6,520,800	0	6,520,800	2,172,600	2,964	733
STD14	10,037,100	7,218,200	0	7,218,200	2,818,900	3,281	859
STD17	8,719,400	6,509,800	0	6,509,800	2,209,600	2,959	747
STD16	11,575,500	9,460,000	0	9,460,000	2,115,500	4,300	492
STD04	14,461,500	10,649,100	0	10,649,100	3,812,400	4,841	788
STD18	10,288,240	7,418,400	0	7,418,400	2,869,840	3,372	851
STD07	5,744,880	4,521,000	0	4,521,000	1,223,880	2,055	596
STD08	8,324,100	6,241,400	0	6,241,400	2,082,700	2,837	734
STD15	8,211,400	6,045,600	0	6,045,600	2,165,800	2,748	788
STD20	4,362,200	3,502,400	0	3,502,400	859,800	1,592	540
STD02	5,242,420	3,823,600	0	3,823,600	1,418,820	1,738	816
STD10	5,322,860	3,865,400	0	3,865,400	1,457,460	1,757	830
STD19	4,628,640	3,352,800	0	3,352,800	1,275,840	1,524	837
STD05	15,748,320	10,995,600	0	10,995,600	4,752,720	4,998	951
STD06	11,703,860	8,225,800	0	8,225,800	3,478,060	3,739	930
STD09	10,497,500	7,702,200	0	7,702,200	2,795,300	3,501	798
STD11	10,461,240	7,398,600	0	7,398,600	3,062,640	3,363	911
Totals	*160,886,560*	*120,231,100*	*0*	*120,231,100*	*40,655,460*	*54,651*	*744*

TRIAL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP05	9,922,760	6,958,600	0	6,958,600	2,964,160	3,163	937
IMP08	5,946,000	4,171,200	0	4,171,200	1,774,800	1,896	936
IMP17	9,430,900	6,600,000	0	6,600,000	2,830,900	3,000	944
IMP02	12,609,000	8,844,000	0	8,844,000	3,765,000	4,020	937
IMP07	5,869,800	4,100,800	0	4,100,800	1,769,000	1,864	949
IMP35	11,090,900	8,291,800	0	8,291,800	2,799,100	3,769	743
IMP34	3,242,360	2,263,800	0	2,263,800	978,560	1,029	951
IMP27	7,708,800	5,409,800	0	5,409,800	2,299,000	2,459	935
IMP03	11,940,880	8,364,400	0	8,364,400	3,576,480	3,802	941
IMP09	5,799,700	4,050,200	0	4,050,200	1,749,500	1,841	950
IMP15	6,462,500	4,536,400	0	4,536,400	1,926,100	2,062	934
IMP01	11,045,700	7,752,800	0	7,752,800	3,292,900	3,524	934
IMP22	3,366,660	2,362,800	0	2,362,800	1,003,860	1,074	935
IMP31	13,254,000	9,281,800	0	9,281,800	3,972,200	4,219	942
IMP24	10,335,080	7,253,400	0	7,253,400	3,081,680	3,297	935
IMP20	9,804,000	6,839,800	0	6,839,800	2,964,200	3,109	953
IMP28	8,391,900	5,858,600	0	5,858,600	2,533,300	2,663	951
IMP37	14,444,300	10,049,600	0	10,049,600	4,394,700	4,568	962
IMP04	8,118,040	5,651,800	0	5,651,800	2,466,240	2,569	960
IMP10	11,112,400	7,746,200	0	7,746,200	3,366,200	3,521	956
IMP13	13,805,500	9,662,400	0	9,662,400	4,143,100	4,392	943
IMP19	4,464,360	3,491,400	0	3,491,400	972,960	1,587	613
IMP30	17,057,800	11,787,600	0	11,787,600	5,270,200	5,358	984
IMP32	16,491,100	11,611,600	0	11,611,600	4,879,500	5,278	924
Totals	*231,714,440*	*162,940,800*	*0*	*162,940,800*	*68,773,640*	*74,064*	*929*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M. Wgt (Kgs)	Gain Per Kgs
STD12	9,982,598	6,780,400	0	6,780,400	3,202,198	3,082	1,039
STD13	9,600,396	6,520,800	0	6,520,800	3,079,596	2,964	1,039
STD14	10,627,159	7,218,200	0	7,218,200	3,408,959	3,281	1,039
STD17	9,584,201	6,509,800	0	6,509,800	3,074,401	2,959	1,039
STD16	13,927,700	9,460,000	0	9,460,000	4,467,700	4,300	1,039
STD04	15,678,379	10,649,100	0	10,649,100	5,029,279	4,841	1,039
STD18	10,921,908	7,418,400	0	7,418,400	3,503,508	3,372	1,039
STD07	6,656,145	4,521,000	0	4,521,000	2,135,145	2,055	1,039
STD08	9,189,043	6,241,400	0	6,241,400	2,947,643	2,837	1,039
STD15	8,900,772	6,045,600	0	6,045,600	2,855,172	2,748	1,039
STD20	5,156,488	3,502,400	0	3,502,400	1,654,088	1,592	1,039
STD02	5,629,382	3,823,600	0	3,823,600	1,805,782	1,738	1,039
STD10	5,690,923	3,865,400	0	3,865,400	1,825,523	1,757	1,039
STD19	4,936,236	3,352,800	0	3,352,800	1,583,436	1,524	1,039
STD05	16,188,522	10,995,600	0	10,995,600	5,192,922	4,998	1,039
STD06	12,110,621	8,225,800	0	8,225,800	3,884,821	3,739	1,039
STD09	11,339,739	7,702,200	0	7,702,200	3,637,539	3,501	1,039
STD11	10,892,757	7,398,600	0	7,398,600	3,494,157	3,363	1,039
Totals	*177,012,968*	*120,231,100*	*0*	*120,231,100*	*56,781,868*	*54,651*	*1,039*

TRIAL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M. Wgt (Kgs)	Gain Per Kgs
IMP05	10,244,957	6,958,600	0	6,958,600	3,286,357	3,163	1,039
IMP08	6,141,144	4,171,200	0	4,171,200	1,969,944	1,896	1,039
IMP17	9,717,000	6,600,000	0	6,600,000	3,117,000	3,000	1,039
IMP02	13,020,780	8,844,000	0	8,844,000	4,176,780	4,020	1,039
IMP07	6,037,496	4,100,800	0	4,100,800	1,936,696	1,864	1,039
IMP35	12,207,791	8,291,800	0	8,291,800	3,915,991	3,769	1,039
IMP34	3,332,931	2,263,800	0	2,263,800	1,069,131	1,029	1,039
IMP27	7,964,701	5,409,800	0	5,409,800	2,554,901	2,459	1,039
IMP03	12,314,678	8,364,400	0	8,364,400	3,950,278	3,802	1,039
IMP09	5,962,999	4,050,200	0	4,050,200	1,912,799	1,841	1,039
IMP15	6,678,818	4,536,400	0	4,536,400	2,142,418	2,062	1,039
IMP01	11,414,236	7,752,800	0	7,752,800	3,661,436	3,524	1,039
IMP22	3,478,686	2,362,800	0	2,362,800	1,115,886	1,074	1,039
IMP31	13,665,341	9,281,800	0	9,281,800	4,383,541	4,219	1,039
IMP24	10,678,983	7,253,400	0	7,253,400	3,425,583	3,297	1,039
IMP20	10,070,051	6,839,800	0	6,839,800	3,230,251	3,109	1,039
IMP28	8,625,457	5,858,600	0	5,858,600	2,766,857	2,663	1,039
IMP37	14,795,752	10,049,600	0	10,049,600	4,746,152	4,568	1,039
IMP04	8,320,991	5,651,800	0	5,651,800	2,669,191	2,569	1,039
IMP10	11,404,519	7,746,200	0	7,746,200	3,658,319	3,521	1,039
IMP13	14,225,688	9,662,400	0	9,662,400	4,563,288	4,392	1,039
IMP19	5,140,293	3,491,400	0	3,491,400	1,648,893	1,587	1,039
IMP30	17,354,562	11,787,600	0	11,787,600	5,566,962	5,358	1,039
IMP32	17,095,442	11,611,600	0	11,611,600	5,483,842	5,278	1,039
Totals	*239,893,294*	*162,940,800*	*0*	*162,940,800*	*76,952,494*	*74,064*	*1,039*

Source Data Reference

Suppliers	Collection Point	No.
Kizza	Bubeke	STD12,13,14,17
Sempala	Bugoto	STD16
Byansi	Bukasa	STD04
Kanakulya	Lambu	STD18
Gull 2	Mazinga	STD07,08,15,20
Kebusiro	Mazinga	STD02,10,19
Lubega	Nkese	STD05
Luwemba	Nkese	STD06,09,11
Kizza	Bubeke	IMP05
Kyagulanyi	Bukasa	IMP08,17
Mabya	Bukasa	IMP02,07,35
Subuufu	Gaba	IMP34
Mulambuzi	Kigungu	IMP27
Mambya	Kisaba	IMP03,09,15
Bedo	Liibu	IMP01,22,31
Bedo	Lugala	IMP24
Lubega	Nkese	IMP20,28,37
Mukasa	Nsazi	IMP04,10,13,19,30,32

Appendix 2a – Objective 2 – Inc. All Indirect & Direct Costs

Standard Costs

CONTROL

Species: Lambu - Nile Perch
Company: Kanakulya

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
SC02	769,600	677,560	54,567	732,127	37,473	280	134
SC04	2,543,500	1,806,160	54,567	1,860,727	682,773	793	861
SC06	1,162,640	985,560	54,567	1,040,127	122,513	420	292
SC08	2,012,800	1,447,560	54,567	1,502,127	510,673	630	811
SC10	1,012,900	765,560	54,567	820,127	192,773	320	602
SC12	3,380,000	1,872,160	54,567	1,926,727	1,453,273	823	1,766
SC14	1,218,500	915,160	54,567	969,727	248,773	388	641
SC16	2,633,600	1,891,960	54,567	1,946,527	687,073	832	826
SC18	2,780,520	2,023,960	54,567	2,078,527	701,993	892	787
SC21	2,471,500	1,872,160	54,567	1,926,727	544,773	823	662
SC23	1,415,000	1,407,960	54,567	1,462,527	-47,527	612	-78
SC25	1,248,200	932,760	54,567	987,327	260,873	396	659
SC27	1,087,600	908,560	54,567	963,127	124,473	385	323
SC29	1,192,900	897,560	54,567	952,127	240,773	380	634
SC31	872,950	666,560	54,567	721,127	151,823	275	552
Totals	*25,802,210*	*19,071,200*	*818,510*	*19,889,710*	*5,912,500*	*8,249*	*717*

TRIAL

Species: Lambu - Nile Perch
Company: Kanakulya

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
SC01	331,800	290,360	54,567	344,927	-13,127	104	-126
SC03	619,880	477,360	54,567	531,927	87,953	189	465
SC05	529,300	413,560	54,567	468,127	61,173	160	382
SC07	580,900	457,560	54,567	512,127	68,773	180	382
SC09	284,400	257,360	54,567	311,927	-27,527	89	-309
SC11	576,700	446,560	54,567	501,127	75,573	175	432
SC13	303,250	263,960	54,567	318,527	-15,277	92	-166
SC15	331,800	290,360	54,567	344,927	-13,127	104	-126
SC17	553,000	435,560	54,567	490,127	62,873	170	370
SC19	2,212,000	1,583,960	54,567	1,638,527	573,473	692	829
SC20	1,501,000	1,064,760	54,567	1,119,327	381,673	456	837
SC22	1,011,200	765,560	54,567	820,127	191,073	320	597
SC24	489,800	391,560	54,567	446,127	43,673	150	291
SC26	429,230	369,560	54,567	424,127	5,103	140	36
SC28	399,200	347,560	54,567	402,127	-2,927	130	-23
SC30	300,200	257,360	54,567	311,927	-11,727	89	-132
Totals	*10,453,660*	*8,112,960*	*873,077*	*8,986,037*	*1,467,623*	*3,240*	*453*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Lambu - Nile Perch
Company: Kanakulya

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
SC02	906,920	677,560	54,567	732,127	174,793	280	624
SC04	2,568,527	1,806,160	54,567	1,860,727	707,800	793	893
SC06	1,360,380	985,560	54,567	1,040,127	320,253	420	763
SC08	2,040,570	1,447,560	54,567	1,502,127	538,443	630	855
SC10	1,036,480	765,560	54,567	820,127	216,353	320	676
SC12	2,665,697	1,872,160	54,567	1,926,727	738,970	823	898
SC14	1,256,732	915,160	54,567	969,727	287,005	388	740
SC16	2,694,848	1,891,960	54,567	1,946,527	748,321	832	899
SC18	2,889,188	2,023,960	54,567	2,078,527	810,661	892	909
SC21	2,665,697	1,872,160	54,567	1,926,727	738,970	823	898
SC23	1,982,268	1,407,960	54,567	1,462,527	519,741	612	849
SC25	1,282,644	932,760	54,567	987,327	295,317	396	746
SC27	1,247,015	908,560	54,567	963,127	283,888	385	737
SC29	1,230,820	897,560	54,567	952,127	278,693	380	733
SC31	890,725	666,560	54,567	721,127	169,598	275	617
Totals	*26,718,511*	*19,071,200*	*818,510*	*19,889,710*	*6,828,801*	*8,249*	*828*

TRIAL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
SC01	336,856	290,360	54,567	344,927	-8,071	104	-78
SC03	612,171	477,360	54,567	531,927	80,244	189	425
SC05	518,240	413,560	54,567	468,127	50,113	160	313
SC07	583,020	457,560	54,567	512,127	70,893	180	394
SC09	288,271	257,360	54,567	311,927	-23,656	89	-266
SC11	566,825	446,560	54,567	501,127	65,698	175	375
SC13	297,988	263,960	54,567	318,527	-20,539	92	-223
SC15	336,856	290,360	54,567	344,927	-8,071	104	-78
SC17	550,630	435,560	54,567	490,127	60,503	170	356
SC19	2,241,388	1,583,960	54,567	1,638,527	602,861	692	871
SC20	1,476,984	1,064,760	54,567	1,119,327	357,657	456	784
SC22	1,036,480	765,560	54,567	820,127	216,353	320	676
SC24	485,850	391,560	54,567	446,127	39,723	150	265
SC26	453,460	369,560	54,567	424,127	29,333	140	210
SC28	421,070	347,560	54,567	402,127	18,943	130	146
SC30	288,271	257,360	54,567	311,927	-23,656	89	-266
Totals	*10,494,360*	*8,112,960*	*873,077*	*8,986,037*	*1,508,323*	*3,240*	*466*

Appendix 2b – Objective 2 – Exclude Transport, Labour & Fuel

Standard Costs

CONTROL

Species: Lambu - Nile Perch
Company: Kanakulya

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
SC02	769,600	616,000	0	616,000	153,600	280	549
SC04	2,543,500	1,744,600	0	1,744,600	798,900	793	1,007
SC06	1,162,640	924,000	0	924,000	238,640	420	568
SC08	2,012,800	1,386,000	0	1,386,000	626,800	630	995
SC10	1,012,900	704,000	0	704,000	308,900	320	965
SC12	3,380,000	1,810,600	0	1,810,600	1,569,400	823	1,907
SC14	1,218,500	853,600	0	853,600	364,900	388	940
SC16	2,633,600	1,830,400	0	1,830,400	803,200	832	965
SC18	2,780,520	1,962,400	0	1,962,400	818,120	892	917
SC21	2,471,500	1,810,600	0	1,810,600	660,900	823	803
SC23	1,415,000	1,346,400	0	1,346,400	68,600	612	112
SC25	1,248,200	871,200	0	871,200	377,000	396	952
SC27	1,087,600	847,000	0	847,000	240,600	385	625
SC29	1,192,900	836,000	0	836,000	356,900	380	939
SC31	872,950	605,000	0	605,000	267,950	275	974
Totals	*25,802,210*	*18,147,800*	*0*	*18,147,800*	*7,654,410*	*8,249*	*928*

TRIAL

Species: Lambu - Nile Perch
Company: Kanakulya

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
SC01	331,800	228,800	0	228,800	103,000	104	990
SC03	619,880	415,800	0	415,800	204,080	189	1,080
SC05	529,300	352,000	0	352,000	177,300	160	1,108
SC07	580,900	396,000	0	396,000	184,900	180	1,027
SC09	284,400	195,800	0	195,800	88,600	89	996
SC11	576,700	385,000	0	385,000	191,700	175	1,095
SC13	303,250	202,400	0	202,400	100,850	92	1,096
SC15	331,800	228,800	0	228,800	103,000	104	990
SC17	553,000	374,000	0	374,000	179,000	170	1,053
SC19	2,212,000	1,522,400	0	1,522,400	689,600	692	997
SC20	1,501,000	1,003,200	0	1,003,200	497,800	456	1,092
SC22	1,011,200	704,000	0	704,000	307,200	320	960
SC24	489,800	330,000	0	330,000	159,800	150	1,065
SC26	429,230	308,000	0	308,000	121,230	140	866
SC28	399,200	286,000	0	286,000	113,200	130	871
SC30	300,200	195,800	0	195,800	104,400	89	1,173
Totals	*10,453,660*	*7,128,000*	*0*	*7,128,000*	*3,325,660*	*3,240*	*1,026*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Lambu - Nile Perch
Company: Kanakulya

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
SC02	906,920	616,000	0	616,000	290,920	280	1,039
SC04	2,568,527	1,744,600	0	1,744,600	823,927	793	1,039
SC06	1,360,380	924,000	0	924,000	436,380	420	1,039
SC08	2,040,570	1,386,000	0	1,386,000	654,570	630	1,039
SC10	1,036,480	704,000	0	704,000	332,480	320	1,039
SC12	2,665,697	1,810,600	0	1,810,600	855,097	823	1,039
SC14	1,256,732	853,600	0	853,600	403,132	388	1,039
SC16	2,694,848	1,830,400	0	1,830,400	864,448	832	1,039
SC18	2,889,188	1,962,400	0	1,962,400	926,788	892	1,039
SC21	2,665,697	1,810,600	0	1,810,600	855,097	823	1,039
SC23	1,982,268	1,346,400	0	1,346,400	635,868	612	1,039
SC25	1,282,644	871,200	0	871,200	411,444	396	1,039
SC27	1,247,015	847,000	0	847,000	400,015	385	1,039
SC29	1,230,820	836,000	0	836,000	394,820	380	1,039
SC31	890,725	605,000	0	605,000	285,725	275	1,039
Totals	*26,718,511*	*18,147,800*	*0*	*18,147,800*	*8,570,711*	*8,249*	*1,039*

TRIAL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
SC01	336,856	228,800	0	228,800	108,056	104	1,039
SC03	612,171	415,800	0	415,800	196,371	189	1,039
SC05	518,240	352,000	0	352,000	166,240	160	1,039
SC07	583,020	396,000	0	396,000	187,020	180	1,039
SC09	288,271	195,800	0	195,800	92,471	89	1,039
SC11	566,825	385,000	0	385,000	181,825	175	1,039
SC13	297,988	202,400	0	202,400	95,588	92	1,039
SC15	336,856	228,800	0	228,800	108,056	104	1,039
SC17	550,630	374,000	0	374,000	176,630	170	1,039
SC19	2,241,388	1,522,400	0	1,522,400	718,988	692	1,039
SC20	1,476,984	1,003,200	0	1,003,200	473,784	456	1,039
SC22	1,036,480	704,000	0	704,000	332,480	320	1,039
SC24	485,850	330,000	0	330,000	155,850	150	1,039
SC26	453,460	308,000	0	308,000	145,460	140	1,039
SC28	421,070	286,000	0	286,000	135,070	130	1,039
SC30	288,271	195,800	0	195,800	92,471	89	1,039
Totals	*10,494,360*	*7,128,000*	*0*	*7,128,000*	*3,366,360*	*3,240*	*1,039*

Appendix 3a – Objective 3 – Inc. All Indirect & Direct Costs (Tilapia)

Standard Costs

CONTROL

Species: Kansura – Tilapia
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD500	1,869,000	1,240,800	36,905	1,277,705	591,295	958	617
STD501	1,816,600	1,321,200	36,905	1,358,105	458,495	1,025	447
STD502	2,213,100	1,580,400	36,905	1,617,305	595,795	1,241	480
STD503	1,456,100	1,068,000	36,905	1,104,905	351,195	814	431
STD504	223,600	242,400	36,905	279,305	-55,705	126	-442
STD505	1,602,400	1,166,400	36,905	1,203,305	399,095	896	445
STD506	2,175,500	1,446,000	36,905	1,482,905	692,595	1,129	613
STD507	2,453,200	1,735,200	36,905	1,772,105	681,095	1,370	497
STD508	1,688,000	1,176,000	36,905	1,212,905	475,095	904	526
STD509	1,341,200	961,200	36,905	998,105	343,095	725	473
STD510	1,300,200	966,000	36,905	1,002,905	297,295	729	408
STD511	1,894,800	1,365,600	36,905	1,402,505	492,295	1,062	464
STD512	1,958,000	1,365,600	36,905	1,402,505	555,495	1,062	523
STD513	2,391,900	1,707,600	36,905	1,744,505	647,395	1,347	481
STD514	2,397,800	1,659,600	36,905	1,696,505	701,295	1,307	537
STD515	948,700	1,090,800	36,905	1,127,705	-179,005	833	-215
STD516	1,576,000	1,160,400	36,905	1,197,305	378,695	891	425
STD517	1,486,800	1,065,600	36,905	1,102,505	384,295	812	473
Totals	*30,792,900*	*22,318,800*	*664,286*	*22,983,086*	*7,809,814*	*17,231*	*453*

TRIAL

Species: Kitalaganya – Tilapia
Company: Bogere

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP500	4,220,000	3,001,200	39,048	3,040,248	1,179,752	2,425	486
IMP501	5,777,600	3,969,600	39,048	4,008,648	1,768,952	3,232	547
IMP502	3,554,800	2,469,600	39,048	2,508,648	1,046,152	1,982	528
IMP503	4,442,200	3,055,200	39,048	3,094,248	1,347,952	2,470	546
IMP504	3,915,800	2,715,600	39,048	2,754,648	1,161,152	2,187	531
IMP505	3,331,400	2,324,400	39,048	2,363,448	967,952	1,861	520
IMP506	3,139,600	2,186,400	39,048	2,225,448	914,152	1,746	524
IMP507	3,183,700	2,271,600	39,048	2,310,648	873,052	1,817	480
IMP508	2,533,800	1,791,600	39,048	1,830,648	703,152	1,417	496
IMP509	2,324,800	1,654,800	39,048	1,693,848	630,952	1,303	484
IMP510	2,037,000	1,460,400	39,048	1,499,448	537,552	1,141	471
IMP511	3,336,600	2,346,000	39,048	2,385,048	951,552	1,879	506
IMP512	1,882,400	1,353,600	39,048	1,392,648	489,752	1,052	466
IMP513	2,821,800	1,983,600	39,048	2,022,648	799,152	1,577	507
IMP514	2,500,200	1,762,800	39,048	1,801,848	698,352	1,393	501
IMP515	4,904,000	3,403,200	39,048	3,442,248	1,461,752	2,760	530
IMP516	2,859,800	2,010,000	39,048	2,049,048	810,752	1,599	507
IMP517	2,253,200	1,617,600	39,048	1,656,648	596,552	1,272	469
Totals	*59,018,700*	*41,377,200*	*702,857*	*42,080,057*	*16,938,643*	*33,113*	*512*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Kansura – Tilapia
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD500	1,724,400	1,240,800	36,905	1,277,705	446,695	958	466
STD501	1,845,000	1,321,200	36,905	1,358,105	486,895	1,025	475
STD502	2,233,800	1,580,400	36,905	1,617,305	616,495	1,241	497
STD503	1,465,200	1,068,000	36,905	1,104,905	360,295	814	443
STD504	226,800	242,400	36,905	279,305	-52,505	126	-417
STD505	1,612,800	1,166,400	36,905	1,203,305	409,495	896	457
STD506	2,032,200	1,446,000	36,905	1,482,905	549,295	1,129	487
STD507	2,466,000	1,735,200	36,905	1,772,105	693,895	1,370	506
STD508	1,627,200	1,176,000	36,905	1,212,905	414,295	904	458
STD509	1,305,000	961,200	36,905	998,105	306,895	725	423
STD510	1,312,200	966,000	36,905	1,002,905	309,295	729	424
STD511	1,911,600	1,365,600	36,905	1,402,505	509,095	1,062	479
STD512	1,911,600	1,365,600	36,905	1,402,505	509,095	1,062	479
STD513	2,424,600	1,707,600	36,905	1,744,505	680,095	1,347	505
STD514	2,352,600	1,659,600	36,905	1,696,505	656,095	1,307	502
STD515	1,499,400	1,090,800	36,905	1,127,705	371,695	833	446
STD516	1,603,800	1,160,400	36,905	1,197,305	406,495	891	456
STD517	1,461,600	1,065,600	36,905	1,102,505	359,095	812	442
Totals	*31,015,801*	*22,318,800*	*664,286*	*22,983,086*	*8,032,716*	*17,231*	*466*

TRIAL

Species: Kitalaganya – Tilapia
Company: Bogere

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP500	4,365,000	3,001,200	39,048	3,040,248	1,324,753	2,425	546
IMP501	5,817,600	3,969,600	39,048	4,008,648	1,808,953	3,232	560
IMP502	3,567,600	2,469,600	39,048	2,508,648	1,058,953	1,982	534
IMP503	4,446,000	3,055,200	39,048	3,094,248	1,351,753	2,470	547
IMP504	3,936,600	2,715,600	39,048	2,754,648	1,181,953	2,187	540
IMP505	3,349,800	2,324,400	39,048	2,363,448	986,353	1,861	530
IMP506	3,142,800	2,186,400	39,048	2,225,448	917,353	1,746	525
IMP507	3,270,600	2,271,600	39,048	2,310,648	959,953	1,817	528
IMP508	2,550,600	1,791,600	39,048	1,830,648	719,952	1,417	508
IMP509	2,345,400	1,654,800	39,048	1,693,848	651,552	1,303	500
IMP510	2,053,800	1,460,400	39,048	1,499,448	554,352	1,141	486
IMP511	3,382,200	2,346,000	39,048	2,385,048	997,153	1,879	531
IMP512	1,893,600	1,353,600	39,048	1,392,648	500,952	1,052	476
IMP513	2,838,600	1,983,600	39,048	2,022,648	815,952	1,577	517
IMP514	2,507,400	1,762,800	39,048	1,801,848	705,552	1,393	506
IMP515	4,968,000	3,403,200	39,048	3,442,248	1,525,753	2,760	553
IMP516	2,878,200	2,010,000	39,048	2,049,048	829,152	1,599	519
IMP517	2,289,600	1,617,600	39,048	1,656,648	632,952	1,272	498
Totals	*59,603,402*	*41,377,200*	*702,857*	*42,080,057*	*17,523,345*	*33,113*	*529*

Appendix 3b – Objective 3 – Inc. All Indirect & Direct Costs (Nile Perch)

Standard Costs

CONTROL

Species: Kansura - Nile perch
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD200	1,776,000	1,384,800	36,905	1,421,705	354,295	588	603
STD201	1,555,560	1,180,200	36,905	1,217,105	338,455	495	684
STD202	1,354,320	1,041,600	36,905	1,078,505	275,815	432	638
STD203	1,744,240	1,327,600	36,905	1,364,505	379,735	562	676
STD204	3,593,920	2,722,400	36,905	2,759,305	834,615	1,196	698
STD205	3,578,200	2,616,800	36,905	2,653,705	924,495	1,148	805
STD206	2,156,800	1,607,000	36,905	1,643,905	512,895	689	744
STD207	2,244,960	1,666,400	36,905	1,703,305	541,655	716	757
STD208	2,370,360	1,752,200	36,905	1,789,105	581,255	755	770
STD209	3,057,040	2,231,800	36,905	2,268,705	788,335	973	810
STD210	3,786,520	2,660,800	36,905	2,697,705	1,088,815	1,168	932
STD211	3,183,640	2,324,200	36,905	2,361,105	822,535	1,015	810
STD212	2,571,600	1,899,600	36,905	1,936,505	635,095	822	773
STD213	2,945,480	2,218,600	36,905	2,255,505	689,975	967	714
STD214	3,490,160	2,535,400	36,905	2,572,305	917,855	1,111	826
STD215	2,981,680	2,920,400	36,905	2,957,305	24,375	1,286	19
STD216	4,092,530	3,624,400	36,905	3,661,305	431,225	1,606	269
STD217	2,721,140	2,069,000	36,905	2,105,905	615,235	899	684
Totals	*49,204,150*	*37,783,200*	*664,286*	*38,447,486*	*10,756,664*	*16,428*	*655*

TRIAL

Species: Kitalaganya - Nile Perch
Company: Bogere

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP200	513,920	452,000	39,048	491,048	22,872	164	139
IMP201	3,410,880	2,539,800	39,048	2,578,848	832,032	1,113	748
IMP202	3,778,240	2,753,200	39,048	2,792,248	985,992	1,210	815
IMP203	4,989,240	3,635,400	39,048	3,674,448	1,314,792	1,611	816
IMP204	4,726,320	3,470,400	39,048	3,509,448	1,216,872	1,536	792
IMP205	4,013,240	2,902,800	39,048	2,941,848	1,071,392	1,278	838
IMP206	4,520,820	3,292,200	39,048	3,331,248	1,189,572	1,455	818
IMP207	5,959,140	4,282,200	39,048	4,321,248	1,637,892	1,905	860
IMP208	6,188,190	4,332,800	39,048	4,371,848	1,816,342	1,928	942
IMP209	6,857,900	4,838,800	39,048	4,877,848	1,980,052	2,158	918
IMP210	5,945,780	4,183,200	39,048	4,222,248	1,723,532	1,860	927
IMP211	5,586,030	3,998,400	39,048	4,037,448	1,548,582	1,776	872
IMP212	5,729,640	4,110,600	83,173	4,193,773	1,535,867	1,827	841
IMP213	5,808,600	4,269,000	39,048	4,308,048	1,500,552	1,899	790
IMP214	6,367,720	4,574,800	39,048	4,613,848	1,753,872	2,038	861
IMP215	8,756,560	6,163,200	39,048	6,202,248	2,554,312	2,760	925
IMP216	7,940,440	5,503,200	39,048	5,542,248	2,398,192	2,460	975
IMP217	9,128,160	6,506,400	39,048	6,545,448	2,582,712	2,916	886
Totals	*100,220,820*	*71,808,400*	*746,983*	*72,555,383*	*27,665,437*	*31,894*	*867*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Kansura - Nile perch
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD200	1,904,532	1,384,800	36,905	1,421,705	482,827	588	821
STD201	1,603,305	1,180,200	36,905	1,217,105	386,200	495	780
STD202	1,399,248	1,041,600	36,905	1,078,505	320,743	432	742
STD203	1,820,318	1,327,600	36,905	1,364,505	455,813	562	811
STD204	3,873,844	2,722,400	36,905	2,759,305	1,114,539	1,196	932
STD205	3,718,372	2,616,800	36,905	2,653,705	1,064,667	1,148	927
STD206	2,231,671	1,607,000	36,905	1,643,905	587,766	689	853
STD207	2,319,124	1,666,400	36,905	1,703,305	615,819	716	860
STD208	2,445,445	1,752,200	36,905	1,789,105	656,340	755	869
STD209	3,151,547	2,231,800	36,905	2,268,705	882,842	973	907
STD210	3,783,152	2,660,800	36,905	2,697,705	1,085,447	1,168	929
STD211	3,287,585	2,324,200	36,905	2,361,105	926,480	1,015	913
STD212	2,662,458	1,899,600	36,905	1,936,505	725,953	822	883
STD213	3,132,113	2,218,600	36,905	2,255,505	876,608	967	907
STD214	3,598,529	2,535,400	36,905	2,572,305	1,026,224	1,111	924
STD215	4,165,354	2,920,400	36,905	2,957,305	1,208,049	1,286	939
STD216	5,201,834	3,624,400	36,905	3,661,305	1,540,529	1,606	959
STD217	2,911,861	2,069,000	36,905	2,105,905	805,956	899	897
Totals	*53,210,292*	*37,783,200*	*664,286*	*38,447,486*	*14,762,806*	*16,428*	*899*

TRIAL

Species: Kitalaganya - Nile Perch
Company: Bogere

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP200	531,196	452,000	39,048	491,048	40,148	164	245
IMP201	3,605,007	2,539,800	39,048	2,578,848	1,026,159	1,113	922
IMP202	3,919,190	2,753,200	39,048	2,792,248	1,126,942	1,210	931
IMP203	5,218,029	3,635,400	39,048	3,674,448	1,543,581	1,611	958
IMP204	4,975,104	3,470,400	39,048	3,509,448	1,465,656	1,536	954
IMP205	4,139,442	2,902,800	39,048	2,941,848	1,197,594	1,278	937
IMP206	4,712,745	3,292,200	39,048	3,331,248	1,381,497	1,455	949
IMP207	6,170,295	4,282,200	39,048	4,321,248	1,849,047	1,905	971
IMP208	6,244,792	4,332,800	39,048	4,371,848	1,872,944	1,928	971
IMP209	6,989,762	4,838,800	39,048	4,877,848	2,111,914	2,158	979
IMP210	6,024,540	4,183,200	39,048	4,222,248	1,802,292	1,860	969
IMP211	5,752,464	3,998,400	39,048	4,037,448	1,715,016	1,776	966
IMP212	5,917,653	4,110,600	83,173	4,193,773	1,723,880	1,827	944
IMP213	6,150,861	4,269,000	39,048	4,308,048	1,842,813	1,899	970
IMP214	6,601,082	4,574,800	39,048	4,613,848	1,987,234	2,038	975
IMP215	8,939,640	6,163,200	39,048	6,202,248	2,737,392	2,760	992
IMP216	7,967,940	5,503,200	39,048	5,542,248	2,425,692	2,460	986
IMP217	9,444,924	6,506,400	39,048	6,545,448	2,899,476	2,916	994
Totals	*103,304,665*	*71,808,400*	*746,983*	*72,555,383*	*30,749,282*	*31,894*	*964*

Appendix 3c – Objective 3 – Exclude Transport, Labour & Fuel (Tilapia)

Standard Costs

CONTROL

Species: Kansura – Tilapia
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD501	1,816,600	1,230,000	0	1,230,000	586,600	1,025	572
STD500	1,869,000	1,149,600	0	1,149,600	719,400	958	751
STD502	2,213,100	1,489,200	0	1,489,200	723,900	1,241	583
STD503	1,456,100	976,800	0	976,800	479,300	814	589
STD504	223,600	151,200	0	151,200	72,400	126	575
STD505	1,602,400	1,075,200	0	1,075,200	527,200	896	588
STD506	2,175,500	1,354,800	0	1,354,800	820,700	1,129	727
STD507	2,453,200	1,644,000	0	1,644,000	809,200	1,370	591
STD508	1,688,000	1,084,800	0	1,084,800	603,200	904	667
STD509	1,341,200	870,000	0	870,000	471,200	725	650
STD510	1,300,200	874,800	0	874,800	425,400	729	584
STD511	1,894,800	1,274,400	0	1,274,400	620,400	1,062	584
STD512	1,958,000	1,274,400	0	1,274,400	683,600	1,062	644
STD513	2,391,900	1,616,400	0	1,616,400	775,500	1,347	576
STD514	2,397,800	1,568,400	0	1,568,400	829,400	1,307	635
STD515	948,700	999,600	0	999,600	-50,900	833	-61
STD516	1,576,000	1,069,200	0	1,069,200	506,800	891	569
STD517	1,486,800	974,400	0	974,400	512,400	812	631
Totals	*30,792,900*	*20,677,200*	*0*	*20,677,200*	*10,115,700*	*17,231*	*587*

TRIAL

Species: Kitalaganya – Tilapia
Company: Bogere

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP500	4,220,000	2,910,000	0	2,910,000	1,310,000	2,425	540
IMP501	5,777,600	3,878,400	0	3,878,400	1,899,200	3,232	588
IMP502	3,554,800	2,378,400	0	2,378,400	1,176,400	1,982	594
IMP503	4,442,200	2,964,000	0	2,964,000	1,478,200	2,470	598
IMP504	3,915,800	2,624,400	0	2,624,400	1,291,400	2,187	590
IMP505	3,331,400	2,233,200	0	2,233,200	1,098,200	1,861	590
IMP506	3,139,600	2,095,200	0	2,095,200	1,044,400	1,746	598
IMP507	3,183,700	2,180,400	0	2,180,400	1,003,300	1,817	552
IMP508	2,533,800	1,700,400	0	1,700,400	833,400	1,417	588
IMP509	2,324,800	1,563,600	0	1,563,600	761,200	1,303	584
IMP510	2,037,000	1,369,200	0	1,369,200	667,800	1,141	585
IMP511	3,336,600	2,254,800	0	2,254,800	1,081,800	1,879	576
IMP512	1,882,400	1,262,400	0	1,262,400	620,000	1,052	589
IMP513	2,821,800	1,892,400	0	1,892,400	929,400	1,577	589
IMP514	2,500,200	1,671,600	0	1,671,600	828,600	1,393	595
IMP515	4,904,000	3,312,000	0	3,312,000	1,592,000	2,760	577
IMP516	2,859,800	1,918,800	0	1,918,800	941,000	1,599	588
IMP517	2,253,200	1,526,400	0	1,526,400	726,800	1,272	571
Totals	*59,018,700*	*39,735,600*	*0*	*39,735,600*	*19,283,100*	*33,113*	*582*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Kansura – Tilapia
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD500	1,724,400	1,149,600	0	1,149,600	574,800	958	600
STD501	1,845,000	1,230,000	0	1,230,000	615,000	1,025	600
STD502	2,233,800	1,489,200	0	1,489,200	744,600	1,241	600
STD503	1,465,200	976,800	0	976,800	488,400	814	600
STD504	226,800	151,200	0	151,200	75,600	126	600
STD505	1,612,800	1,075,200	0	1,075,200	537,600	896	600
STD506	2,032,200	1,354,800	0	1,354,800	677,400	1,129	600
STD507	2,466,000	1,644,000	0	1,644,000	822,000	1,370	600
STD508	1,627,200	1,084,800	0	1,084,800	542,400	904	600
STD509	1,305,000	870,000	0	870,000	435,000	725	600
STD510	1,312,200	874,800	0	874,800	437,400	729	600
STD511	1,911,600	1,274,400	0	1,274,400	637,200	1,062	600
STD512	1,911,600	1,274,400	0	1,274,400	637,200	1,062	600
STD513	2,424,600	1,616,400	0	1,616,400	808,200	1,347	600
STD514	2,352,600	1,568,400	0	1,568,400	784,200	1,307	600
STD515	1,499,400	999,600	0	999,600	499,800	833	600
STD516	1,603,800	1,069,200	0	1,069,200	534,600	891	600
STD517	1,461,600	974,400	0	974,400	487,200	812	600
Totals	*31,015,801*	*20,677,200*	*0*	*20,677,200*	*10,338,601*	*17,231*	*600*

TRIAL

Species: Kitalaganya – Tilapia
Company: Bogere

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP500	4,365,000	2,910,000	0	2,910,000	1,455,000	2,425	600
IMP501	5,817,600	3,878,400	0	3,878,400	1,939,200	3,232	600
IMP502	3,567,600	2,378,400	0	2,378,400	1,189,200	1,982	600
IMP503	4,446,000	2,964,000	0	2,964,000	1,482,000	2,470	600
IMP504	3,936,600	2,624,400	0	2,624,400	1,312,200	2,187	600
IMP505	3,349,800	2,233,200	0	2,233,200	1,116,600	1,861	600
IMP506	3,142,800	2,095,200	0	2,095,200	1,047,600	1,746	600
IMP507	3,270,600	2,180,400	0	2,180,400	1,090,200	1,817	600
IMP508	2,550,600	1,700,400	0	1,700,400	850,200	1,417	600
IMP509	2,345,400	1,563,600	0	1,563,600	781,800	1,303	600
IMP510	2,053,800	1,369,200	0	1,369,200	684,600	1,141	600
IMP511	3,382,200	2,254,800	0	2,254,800	1,127,400	1,879	600
IMP512	1,893,600	1,262,400	0	1,262,400	631,200	1,052	600
IMP513	2,838,600	1,892,400	0	1,892,400	946,200	1,577	600
IMP514	2,507,400	1,671,600	0	1,671,600	835,800	1,393	600
IMP515	4,968,000	3,312,000	0	3,312,000	1,656,000	2,760	600
IMP516	2,878,200	1,918,800	0	1,918,800	959,400	1,599	600
IMP517	2,289,600	1,526,400	0	1,526,400	763,200	1,272	600
Totals	*59,603,402*	*39,735,600*	*0*	*39,735,600*	*19,867,802*	*33,113*	*600*

Appendix 3d – Objective 3 – Exclude Transport, Labour & Fuel (Nile Perch)

Standard Costs

CONTROL

Species: Kansura - Nile perch
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD200	1,776,000	1,384,800	0	1,384,800	391,200	588	665
STD201	1,555,560	1,180,200	0	1,180,200	375,360	495	758
STD202	1,354,320	1,041,600	0	1,041,600	312,720	432	724
STD203	1,744,240	1,327,600	0	1,327,600	416,640	562	741
STD204	3,593,920	2,722,400	0	2,722,400	871,520	1,196	729
STD205	3,578,200	2,616,800	0	2,616,800	961,400	1,148	837
STD206	2,156,800	1,607,000	0	1,607,000	549,800	689	798
STD207	2,244,960	1,666,400	0	1,666,400	578,560	716	808
STD208	2,370,360	1,752,200	0	1,752,200	618,160	755	819
STD209	3,057,040	2,231,800	0	2,231,800	825,240	973	848
STD210	3,786,520	2,660,800	0	2,660,800	1,125,720	1,168	964
STD211	3,183,640	2,324,200	0	2,324,200	859,440	1,015	847
STD212	2,571,600	1,899,600	0	1,899,600	672,000	822	818
STD213	2,945,480	2,218,600	0	2,218,600	726,880	967	752
STD214	3,490,160	2,535,400	0	2,535,400	954,760	1,111	859
STD215	2,981,680	2,920,400	0	2,920,400	61,280	1,286	48
STD216	4,092,530	3,624,400	0	3,624,400	468,130	1,606	291
STD217	2,721,140	2,069,000	0	2,069,000	652,140	899	725
Totals	*49,204,150*	*37,783,200*	*0*	*37,783,200*	*11,420,950*	*16,428*	*695*

TRIAL

Species: Kitalaganya - Nile Perch
Company: Bogere

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP200	513,920	452,000	0	452,000	61,920	164	378
IMP201	3,410,880	2,539,800	0	2,539,800	871,080	1,113	783
IMP202	3,778,240	2,753,200	0	2,753,200	1,025,040	1,210	847
IMP203	4,989,240	3,635,400	0	3,635,400	1,353,840	1,611	840
IMP204	4,726,320	3,470,400	0	3,470,400	1,255,920	1,536	818
IMP205	4,013,240	2,902,800	0	2,902,800	1,110,440	1,278	869
IMP206	4,520,820	3,292,200	0	3,292,200	1,228,620	1,455	844
IMP207	5,959,140	4,282,200	0	4,282,200	1,676,940	1,905	880
IMP208	6,188,190	4,332,800	0	4,332,800	1,855,390	1,928	962
IMP209	6,857,900	4,838,800	0	4,838,800	2,019,100	2,158	936
IMP210	5,945,780	4,183,200	0	4,183,200	1,762,580	1,860	948
IMP211	5,586,030	3,998,400	0	3,998,400	1,587,630	1,776	894
IMP212	5,729,640	4,110,600	0	4,110,600	1,619,040	1,827	886
IMP213	5,808,600	4,269,000	0	4,269,000	1,539,600	1,899	811
IMP214	6,367,720	4,574,800	0	4,574,800	1,792,920	2,038	880
IMP215	8,756,560	6,163,200	0	6,163,200	2,593,360	2,760	940
IMP216	7,940,440	5,503,200	0	5,503,200	2,437,240	2,460	991
IMP217	9,128,160	6,506,400	0	6,506,400	2,621,760	2,916	899
Totals	*100,220,820*	*71,808,400*	*0*	*71,808,400*	*28,412,420*	*31,894*	*891*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Kansura - Nile perch
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD200	1,904,532	1,384,800	0	1,384,800	519,732	588	884
STD201	1,603,305	1,180,200	0	1,180,200	423,105	495	855
STD202	1,399,248	1,041,600	0	1,041,600	357,648	432	828
STD203	1,820,318	1,327,600	0	1,327,600	492,718	562	877
STD204	3,873,844	2,722,400	0	2,722,400	1,151,444	1,196	963
STD205	3,718,372	2,616,800	0	2,616,800	1,101,572	1,148	960
STD206	2,231,671	1,607,000	0	1,607,000	624,671	689	907
STD207	2,319,124	1,666,400	0	1,666,400	652,724	716	912
STD208	2,445,445	1,752,200	0	1,752,200	693,245	755	918
STD209	3,151,547	2,231,800	0	2,231,800	919,747	973	945
STD210	3,783,152	2,660,800	0	2,660,800	1,122,352	1,168	961
STD211	3,287,585	2,324,200	0	2,324,200	963,385	1,015	949
STD212	2,662,458	1,899,600	0	1,899,600	762,858	822	928
STD213	3,132,113	2,218,600	0	2,218,600	913,513	967	945
STD214	3,598,529	2,535,400	0	2,535,400	1,063,129	1,111	957
STD215	4,165,354	2,920,400	0	2,920,400	1,244,954	1,286	968
STD216	5,201,834	3,624,400	0	3,624,400	1,577,434	1,606	982
STD217	2,911,861	2,069,000	0	2,069,000	842,861	899	938
Totals	*53,210,292*	*37,783,200*	*0*	*37,783,200*	*15,427,092*	*16,428*	*939*

TRIAL

Species: Kitalaganya - Nile Perch
Company: Bogere

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP200	531,196	452,000	0	452,000	79,196	164	483
IMP201	3,605,007	2,539,800	0	2,539,800	1,065,207	1,113	957
IMP202	3,919,190	2,753,200	0	2,753,200	1,165,990	1,210	964
IMP203	5,218,029	3,635,400	0	3,635,400	1,582,629	1,611	982
IMP204	4,975,104	3,470,400	0	3,470,400	1,504,704	1,536	980
IMP205	4,139,442	2,902,800	0	2,902,800	1,236,642	1,278	968
IMP206	4,712,745	3,292,200	0	3,292,200	1,420,545	1,455	976
IMP207	6,170,295	4,282,200	0	4,282,200	1,888,095	1,905	991
IMP208	6,244,792	4,332,800	0	4,332,800	1,911,992	1,928	992
IMP209	6,989,762	4,838,800	0	4,838,800	2,150,962	2,158	997
IMP210	6,024,540	4,183,200	0	4,183,200	1,841,340	1,860	990
IMP211	5,752,464	3,998,400	0	3,998,400	1,754,064	1,776	988
IMP212	5,917,653	4,110,600	0	4,110,600	1,807,053	1,827	989
IMP213	6,150,861	4,269,000	0	4,269,000	1,881,861	1,899	991
IMP214	6,601,082	4,574,800	0	4,574,800	2,026,282	2,038	994
IMP215	8,939,640	6,163,200	0	6,163,200	2,776,440	2,760	1,006
IMP216	7,967,940	5,503,200	0	5,503,200	2,464,740	2,460	1,002
IMP217	9,444,924	6,506,400	0	6,506,400	2,938,524	2,916	1,008
Totals	*103,304,665*	*71,808,400*	*0*	*71,808,400*	*31,496,265*	*31,894*	*988*

Appendix 4a – Objective 4 – Inc. All Indirect & Direct Costs (Tilapia)

Standard Costs

CONTROL

Species: Kansura – Tilapia
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD500	75,000	91,200	36,905	128,105	-53,105	958	-55
STD501	25,000	91,200	36,905	128,105	-103,105	1,025	-101
STD502	32,400	91,200	36,905	128,105	-95,705	1,241	-77
STD503	14,600	91,200	36,905	128,105	-113,505	814	-139
STD504	4,000	91,200	36,905	128,105	-124,105	126	-985
STD505	13,000	91,200	36,905	128,105	-115,105	896	-128
STD506	38,000	91,200	36,905	128,105	-90,105	1,129	-80
STD507	16,000	91,200	36,905	128,105	-112,105	1,370	-82
STD508	44,000	91,200	36,905	128,105	-84,105	904	-93
STD509	8,000	91,200	36,905	128,105	-120,105	725	-166
STD510	15,000	91,200	36,905	128,105	-113,105	729	-155
STD511	21,000	91,200	36,905	128,105	-107,105	1,062	-101
STD512	20,000	91,200	36,905	128,105	-108,105	1,062	-102
STD513	21,000	91,200	36,905	128,105	-107,105	1,347	-80
STD514	38,000	91,200	36,905	128,105	-90,105	1,307	-69
STD515	28,000	91,200	36,905	128,105	-100,105	833	-120
STD516	34,000	91,200	36,905	128,105	-94,105	891	-106
STD517	27,000	91,200	36,905	128,105	-101,105	812	-125
Totals	*474,000*	*1,641,600*	*664,286*	*2,305,886*	*-1,831,886*	*17,231*	*-106*

TRIAL

Species: Ninga – Tilapia
Company: Kabugo

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP550	16,000	91,200	39,048	130,248	-114,248	1,066	-107
IMP551	15,000	91,200	39,048	130,248	-115,248	1,010	-114
IMP552	8,000	91,200	39,048	130,248	-122,248	1,202	-102
IMP553	5,000	91,200	39,048	130,248	-125,248	54	-2,319
IMP554	14,000	91,200	39,048	130,248	-116,248	1,754	-66
IMP558	10,000	91,200	39,048	130,248	-120,248	260	-462
IMP560	15,000	91,200	39,048	130,248	-115,248	1,527	-75
IMP561	32,000	91,200	39,048	130,248	-98,248	1,520	-65
IMP564	32,000	91,200	39,048	130,248	-98,248	858	-115
IMP567	25,000	91,200	39,048	130,248	-105,248	584	-180
Totals	*172,000*	*912,000*	*390,476*	*1,302,476*	*-1,130,476*	*9,835*	*-115*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Kansura – Tilapia
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD500	0	91,200	36,905	128,105	-128,105	958	-134
STD501	0	91,200	36,905	128,105	-128,105	1,025	-125
STD502	0	91,200	36,905	128,105	-128,105	1,241	-103
STD503	0	91,200	36,905	128,105	-128,105	814	-157
STD504	0	91,200	36,905	128,105	-128,105	126	-1,017
STD505	0	91,200	36,905	128,105	-128,105	896	-143
STD506	0	91,200	36,905	128,105	-128,105	1,129	-113
STD507	0	91,200	36,905	128,105	-128,105	1,370	-94
STD508	0	91,200	36,905	128,105	-128,105	904	-142
STD509	0	91,200	36,905	128,105	-128,105	725	-177
STD510	0	91,200	36,905	128,105	-128,105	729	-176
STD511	0	91,200	36,905	128,105	-128,105	1,062	-121
STD512	0	91,200	36,905	128,105	-128,105	1,062	-121
STD513	0	91,200	36,905	128,105	-128,105	1,347	-95
STD514	0	91,200	36,905	128,105	-128,105	1,307	-98
STD515	0	91,200	36,905	128,105	-128,105	833	-154
STD516	0	91,200	36,905	128,105	-128,105	891	-144
STD517	0	91,200	36,905	128,105	-128,105	812	-158
Totals	*0*	*1,641,600*	*664,286*	*2,305,886*	*-2,305,886*	*17,231*	*-134*

TRIAL

Species: Ninga – Tilapia
Company: Kabugo

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP550	0	91,200	39,048	130,248	-130,248	1,066	-122
IMP551	0	91,200	39,048	130,248	-130,248	1,010	-129
IMP552	0	91,200	39,048	130,248	-130,248	1,202	-108
IMP553	0	91,200	39,048	130,248	-130,248	54	-2,412
IMP554	0	91,200	39,048	130,248	-130,248	1,754	-74
IMP558	0	91,200	39,048	130,248	-130,248	260	-501
IMP560	0	91,200	39,048	130,248	-130,248	1,527	-85
IMP561	0	91,200	39,048	130,248	-130,248	1,520	-86
IMP564	0	91,200	39,048	130,248	-130,248	858	-152
IMP567	0	91,200	39,048	130,248	-130,248	584	-223
Totals	*0*	*912,000*	*390,476*	*1,302,476*	*-1,302,476*	*9,835*	*-132*

Appendix 4b – Objective 4 – Inc. All Indirect & Direct Costs (Nile Perch)

Standard Costs

CONTROL

Species: Kansura - Nile perch
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD200	1,776,000	1,384,800	36,905	1,421,705	354,295	588	603
STD201	1,555,560	1,180,200	36,905	1,217,105	338,455	495	684
STD202	1,354,320	1,041,600	36,905	1,078,505	275,815	432	638
STD203	1,744,240	1,327,600	36,905	1,364,505	379,735	562	676
STD204	3,593,920	2,722,400	36,905	2,759,305	834,615	1,196	698
STD205	3,578,200	2,616,800	36,905	2,653,705	924,495	1,148	805
STD206	2,156,800	1,607,000	36,905	1,643,905	512,895	689	744
STD207	2,244,960	1,666,400	36,905	1,703,305	541,655	716	757
STD208	2,370,360	1,752,200	36,905	1,789,105	581,255	755	770
STD209	3,057,040	2,231,800	36,905	2,268,705	788,335	973	810
STD210	3,786,520	2,660,800	36,905	2,697,705	1,088,815	1,168	932
STD211	3,183,640	2,324,200	36,905	2,361,105	822,535	1,015	810
STD212	2,571,600	1,899,600	36,905	1,936,505	635,095	822	773
STD213	2,945,480	2,218,600	36,905	2,255,505	689,975	967	714
STD214	3,490,160	2,535,400	36,905	2,572,305	917,855	1,111	826
STD215	2,981,680	2,920,400	36,905	2,957,305	24,375	1,286	19
STD216	4,092,530	3,624,400	36,905	3,661,305	431,225	1,606	269
STD217	2,721,140	2,069,000	36,905	2,105,905	615,235	899	684
Totals	*49,204,150*	*37,783,200*	*664,286*	*38,447,486*	*10,756,664*	*16,428*	*655*

TRIAL

Species: Ninga - Nile Perch
Company: Kabugo

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP582	2,095,640	1,631,200	39,048	1,670,248	425,392	700	608
IMP583	4,754,420	3,345,000	39,048	3,384,048	1,370,372	1,479	927
IMP584	3,609,180	2,575,000	39,048	2,614,048	995,132	1,129	881
IMP585	2,604,680	1,866,600	39,048	1,905,648	699,032	807	866
IMP586	5,940,840	4,255,800	39,048	4,294,848	1,645,992	1,893	870
IMP587	4,928,370	3,477,000	39,048	3,516,048	1,412,322	1,539	918
IMP588	2,537,100	1,917,200	39,048	1,956,248	580,852	830	700
IMP589	4,833,360	3,644,200	39,048	3,683,248	1,150,112	1,615	712
IMP592	5,724,000	4,379,000	39,048	4,418,048	1,305,952	1,949	670
IMP594	6,315,460	4,396,600	39,048	4,435,648	1,879,812	1,957	961
IMP595	4,660,120	3,463,800	39,048	3,502,848	1,157,272	1,533	755
IMP596	5,157,240	3,782,800	39,048	3,821,848	1,335,392	1,678	796
Totals	*53,160,410*	*38,734,200*	*468,571*	*39,202,771*	*13,957,639*	*17,109*	*816*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Kansura - Nile perch
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD200	1,904,532	1,384,800	36,905	1,421,705	482,827	588	821
STD201	1,603,305	1,180,200	36,905	1,217,105	386,200	495	780
STD202	1,399,248	1,041,600	36,905	1,078,505	320,743	432	742
STD203	1,820,318	1,327,600	36,905	1,364,505	455,813	562	811
STD204	3,873,844	2,722,400	36,905	2,759,305	1,114,539	1,196	932
STD205	3,718,372	2,616,800	36,905	2,653,705	1,064,667	1,148	927
STD206	2,231,671	1,607,000	36,905	1,643,905	587,766	689	853
STD207	2,319,124	1,666,400	36,905	1,703,305	615,819	716	860
STD208	2,445,445	1,752,200	36,905	1,789,105	656,340	755	869
STD209	3,151,547	2,231,800	36,905	2,268,705	882,842	973	907
STD210	3,783,152	2,660,800	36,905	2,697,705	1,085,447	1,168	929
STD211	3,287,585	2,324,200	36,905	2,361,105	926,480	1,015	913
STD212	2,662,458	1,899,600	36,905	1,936,505	725,953	822	883
STD213	3,132,113	2,218,600	36,905	2,255,505	876,608	967	907
STD214	3,598,529	2,535,400	36,905	2,572,305	1,026,224	1,111	924
STD215	4,165,354	2,920,400	36,905	2,957,305	1,208,049	1,286	939
STD216	5,201,834	3,624,400	36,905	3,661,305	1,540,529	1,606	959
STD217	2,911,861	2,069,000	36,905	2,105,905	805,956	899	897
Totals	*53,210,292*	*37,783,200*	*664,286*	*38,447,486*	*14,762,806*	*16,428*	*899*

TRIAL

Species: Ninga - Nile Perch
Company: Kabugo

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP582	2,267,300	1,631,200	39,048	1,670,248	597,052	700	853
IMP583	4,790,481	3,345,000	39,048	3,384,048	1,406,433	1,479	951
IMP584	3,656,831	2,575,000	39,048	2,614,048	1,042,783	1,129	924
IMP585	2,613,873	1,866,600	39,048	1,905,648	708,225	807	878
IMP586	6,131,427	4,255,800	39,048	4,294,848	1,836,579	1,893	970
IMP587	4,984,821	3,477,000	39,048	3,516,048	1,468,773	1,539	954
IMP588	2,688,370	1,917,200	39,048	1,956,248	732,122	830	882
IMP589	5,230,985	3,644,200	39,048	3,683,248	1,547,737	1,615	958
IMP592	6,312,811	4,379,000	39,048	4,418,048	1,894,763	1,949	972
IMP594	6,338,723	4,396,600	39,048	4,435,648	1,903,075	1,957	972
IMP595	4,965,387	3,463,800	39,048	3,502,848	1,462,539	1,533	954
IMP596	5,435,042	3,782,800	39,048	3,821,848	1,613,194	1,678	961
Totals	*55,416,051*	*38,734,200*	*468,571*	*39,202,771*	*16,213,279*	*17,109*	*948*

Appendix 4c – Objective 4 – Exclude Transport, Labour & Fuel (Tilapia)

Standard Costs

CONTROL

Species: Kansura – Tilapia
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD500	1,869,000	1,149,600	0	1,149,600	719,400	958	751
STD501	1,816,600	1,230,000	0	1,230,000	586,600	1,025	572
STD502	2,213,100	1,489,200	0	1,489,200	723,900	1,241	583
STD503	1,456,100	976,800	0	976,800	479,300	814	589
STD504	4,000	151,200	0	151,200	-147,200	126	-1,168
STD505	1,602,400	1,075,200	0	1,075,200	527,200	896	588
STD506	2,175,500	1,354,800	0	1,354,800	820,700	1,129	727
STD507	2,453,200	1,644,000	0	1,644,000	809,200	1,370	591
STD508	1,688,000	1,084,800	0	1,084,800	603,200	904	667
STD509	1,341,200	870,000	0	870,000	471,200	725	650
STD510	1,300,200	874,800	0	874,800	425,400	729	584
STD511	1,894,800	1,274,400	0	1,274,400	620,400	1,062	584
STD512	1,958,000	1,274,400	0	1,274,400	683,600	1,062	644
STD513	2,391,900	1,616,400	0	1,616,400	775,500	1,347	576
STD514	2,397,800	1,568,400	0	1,568,400	829,400	1,307	635
STD515	948,700	999,600	0	999,600	-50,900	833	-61
STD516	1,576,000	1,069,200	0	1,069,200	506,800	891	569
STD517	1,486,800	974,400	0	974,400	512,400	812	631
Totals	*30,573,300*	*20,677,200*	*0*	*20,677,200*	*9,896,100*	*17,231*	*574*

TRIAL

Species: Ninga – Tilapia
Company: Kabugo

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP550	1,970,800	1,279,200	0	1,279,200	691,600	1,066	649
IMP551	1,867,200	1,212,000	0	1,212,000	655,200	1,010	649
IMP552	2,157,200	1,442,400	0	1,442,400	714,800	1,202	595
IMP553	93,200	64,800	0	64,800	28,400	54	526
IMP554	3,250,400	2,104,800	0	2,104,800	1,145,600	1,754	653
IMP558	480,400	312,000	0	312,000	168,400	260	648
IMP560	2,827,200	1,832,400	0	1,832,400	994,800	1,527	651
IMP561	2,710,400	1,824,000	0	1,824,000	886,400	1,520	583
IMP564	1,518,800	1,029,600	0	1,029,600	489,200	858	570
IMP567	997,600	700,800	0	700,800	296,800	584	508
Totals	*17,873,200*	*11,802,000*	*0*	*11,802,000*	*6,071,200*	*9,835*	*617*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Kansura – Tilapia
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD500	1,724,400	1,149,600	0	1,149,600	574,800	958	600
STD501	1,845,000	1,230,000	0	1,230,000	615,000	1,025	600
STD502	2,233,800	1,489,200	0	1,489,200	744,600	1,241	600
STD503	1,465,200	976,800	0	976,800	488,400	814	600
STD504	226,800	151,200	0	151,200	75,600	126	600
STD505	1,612,800	1,075,200	0	1,075,200	537,600	896	600
STD506	2,032,200	1,354,800	0	1,354,800	677,400	1,129	600
STD507	2,466,000	1,644,000	0	1,644,000	822,000	1,370	600
STD508	1,627,200	1,084,800	0	1,084,800	542,400	904	600
STD509	1,305,000	870,000	0	870,000	435,000	725	600
STD510	1,312,200	874,800	0	874,800	437,400	729	600
STD511	1,911,600	1,274,400	0	1,274,400	637,200	1,062	600
STD512	1,911,600	1,274,400	0	1,274,400	637,200	1,062	600
STD513	2,424,600	1,616,400	0	1,616,400	808,200	1,347	600
STD514	2,352,600	1,568,400	0	1,568,400	784,200	1,307	600
STD515	1,499,400	999,600	0	999,600	499,800	833	600
STD516	1,603,800	1,069,200	0	1,069,200	534,600	891	600
STD517	1,461,600	974,400	0	974,400	487,200	812	600
Totals	*31,015,801*	*20,677,200*	*0*	*20,677,200*	*10,338,601*	*17,231*	*600*

TRIAL

Species: Ninga – Tilapia
Company: Kabugo

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP550	1,918,800	1,279,200	0	1,279,200	639,600	1,066	600
IMP551	1,818,000	1,212,000	0	1,212,000	606,000	1,010	600
IMP552	2,163,600	1,442,400	0	1,442,400	721,200	1,202	600
IMP553	97,200	64,800	0	64,800	32,400	54	600
IMP554	3,157,200	2,104,800	0	2,104,800	1,052,400	1,754	600
IMP558	468,000	312,000	0	312,000	156,000	260	600
IMP560	2,748,600	1,832,400	0	1,832,400	916,200	1,527	600
IMP561	2,736,000	1,824,000	0	1,824,000	912,000	1,520	600
IMP564	1,544,400	1,029,600	0	1,029,600	514,800	858	600
IMP567	1,051,200	700,800	0	700,800	350,400	584	600
Totals	*17,703,001*	*11,802,000*	*0*	*11,802,000*	*5,901,001*	*9,835*	*600*

Appendix 4d – Objective 4 – Exclude Transport, Labour & Fuel (Nile Perch)

Standard Costs

CONTROL

Species: Kansura - Nile perch
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD200	1,776,000	1,293,600	0	1,293,600	482,400	588	820
STD201	1,555,560	1,089,000	0	1,089,000	466,560	495	943
STD202	1,354,320	950,400	0	950,400	403,920	432	935
STD203	1,744,240	1,236,400	0	1,236,400	507,840	562	904
STD204	3,593,920	2,631,200	0	2,631,200	962,720	1,196	805
STD205	3,578,200	2,525,600	0	2,525,600	1,052,600	1,148	917
STD206	2,156,800	1,515,800	0	1,515,800	641,000	689	930
STD207	2,244,960	1,575,200	0	1,575,200	669,760	716	935
STD208	2,370,360	1,661,000	0	1,661,000	709,360	755	940
STD209	3,057,040	2,140,600	0	2,140,600	916,440	973	942
STD210	3,786,520	2,569,600	0	2,569,600	1,216,920	1,168	1,042
STD211	3,183,640	2,233,000	0	2,233,000	950,640	1,015	937
STD212	2,571,600	1,808,400	0	1,808,400	763,200	822	928
STD213	2,945,480	2,127,400	0	2,127,400	818,080	967	846
STD214	3,490,160	2,444,200	0	2,444,200	1,045,960	1,111	941
STD215	2,981,680	2,829,200	0	2,829,200	152,480	1,286	119
STD216	4,092,530	3,533,200	0	3,533,200	559,330	1,606	348
STD217	2,721,140	1,977,800	0	1,977,800	743,340	899	827
Totals	*49,204,150*	*36,141,600*	*0*	*36,141,600*	*13,062,550*	*16,428*	*795*

TRIAL

Species: Ninga - Nile Perch
Company: Kabugo

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP582	2,095,640	1,540,000	0	1,540,000	555,640	700	794
IMP583	4,754,420	3,253,800	0	3,253,800	1,500,620	1,479	1,015
IMP584	3,609,180	2,483,800	0	2,483,800	1,125,380	1,129	997
IMP585	2,604,680	1,775,400	0	1,775,400	829,280	807	1,028
IMP586	5,940,840	4,164,600	0	4,164,600	1,776,240	1,893	938
IMP587	4,928,370	3,385,800	0	3,385,800	1,542,570	1,539	1,002
IMP588	2,537,100	1,826,000	0	1,826,000	711,100	830	857
IMP589	4,833,360	3,553,000	0	3,553,000	1,280,360	1,615	793
IMP592	5,724,000	4,287,800	0	4,287,800	1,436,200	1,949	737
IMP594	6,315,460	4,305,400	0	4,305,400	2,010,060	1,957	1,027
IMP595	4,660,120	3,372,600	0	3,372,600	1,287,520	1,533	840
IMP596	5,157,240	3,691,600	0	3,691,600	1,465,640	1,678	873
Totals	*53,160,410*	*37,639,800*	*0*	*37,639,800*	*15,520,610*	*17,109*	*907*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Kansura - Nile perch
Company: Senkule

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
STD200	1,904,532	1,293,600	0	1,293,600	610,932	588	1,039
STD201	1,603,305	1,089,000	0	1,089,000	514,305	495	1,039
STD202	1,399,248	950,400	0	950,400	448,848	432	1,039
STD203	1,820,318	1,236,400	0	1,236,400	583,918	562	1,039
STD204	3,873,844	2,631,200	0	2,631,200	1,242,644	1,196	1,039
STD205	3,718,372	2,525,600	0	2,525,600	1,192,772	1,148	1,039
STD206	2,231,671	1,515,800	0	1,515,800	715,871	689	1,039
STD207	2,319,124	1,575,200	0	1,575,200	743,924	716	1,039
STD208	2,445,445	1,661,000	0	1,661,000	784,445	755	1,039
STD209	3,151,547	2,140,600	0	2,140,600	1,010,947	973	1,039
STD210	3,783,152	2,569,600	0	2,569,600	1,213,552	1,168	1,039
STD211	3,287,585	2,233,000	0	2,233,000	1,054,585	1,015	1,039
STD212	2,662,458	1,808,400	0	1,808,400	854,058	822	1,039
STD213	3,132,113	2,127,400	0	2,127,400	1,004,713	967	1,039
STD214	3,598,529	2,444,200	0	2,444,200	1,154,329	1,111	1,039
STD215	4,165,354	2,829,200	0	2,829,200	1,336,154	1,286	1,039
STD216	5,201,834	3,533,200	0	3,533,200	1,668,634	1,606	1,039
STD217	2,911,861	1,977,800	0	1,977,800	934,061	899	1,039
Totals	*53,210,292*	*36,141,600*	*0*	*36,141,600*	*17,068,692*	*16,428*	*1,039*

TRIAL

Species: Ninga - Nile Perch
Company: Kabugo

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP582	2,267,300	1,540,000	0	1,540,000	727,300	700	1,039
IMP583	4,790,481	3,253,800	0	3,253,800	1,536,681	1,479	1,039
IMP584	3,656,831	2,483,800	0	2,483,800	1,173,031	1,129	1,039
IMP585	2,613,873	1,775,400	0	1,775,400	838,473	807	1,039
IMP586	6,131,427	4,164,600	0	4,164,600	1,966,827	1,893	1,039
IMP587	4,984,821	3,385,800	0	3,385,800	1,599,021	1,539	1,039
IMP588	2,688,370	1,826,000	0	1,826,000	862,370	830	1,039
IMP589	5,230,985	3,553,000	0	3,553,000	1,677,985	1,615	1,039
IMP592	6,312,811	4,287,800	0	4,287,800	2,025,011	1,949	1,039
IMP594	6,338,723	4,305,400	0	4,305,400	2,033,323	1,957	1,039
IMP595	4,965,387	3,372,600	0	3,372,600	1,592,787	1,533	1,039
IMP596	5,435,042	3,691,600	0	3,691,600	1,743,442	1,678	1,039
Totals	*55,416,051*	*37,639,800*	*0*	*37,639,800*	*17,776,251*	*17,109*	*1,039*

Appendix 5 – Objective 5 – Impact on training suppliers

Impact on Losses- Total Weight Key: **Untrained** Trained

Nile Perch	***May-03***	***Jun-03***	***Jul-03***	***Aug-03***	***Sep-03***	***Oct-03***	***Nov-03***	***Dec-03***	***Jan-04***
Alice								**856**	381
Senkule	**2,219**	1,604	3,273	5,449	6,241	**5,484**	**2,446**	2,051	4,751
Kizza Salongo	21,444	7,764	16,057	9,302	**14,591**	**25,656**	**30,143**	**16,390**	11,841
Mposa Kawooka	5,375	2,259	11,390	15,886	12,779	**9,305**	**4,106**		8,467
Tilapia									
Alice	**2,722**	**898**					3,829	4,313	5,288
Nkusi Bhai					**992**	**1,648**	1,982	2,037	2,770
Senkule	12,363	3,878	6,065	6,254	7,857	**4,750**	**3,823**	3,080	5,354

Impact on Losses - Weight Rejected

Nile Perch	***May-03***	***Jun-03***	***Jul-03***	***Aug-03***	***Sep-03***	***Oct-03***	***Nov-03***	***Dec-03***	***Jan-04***
Alice								**57**	8
Senkule	**150**	33	55	58	128	**277**	**120**	39	108
Kizza Salongo	644	70	318	314	**737**	**1,199**	**1,536**	**1,120**	469
Mposa Kawooka	132	52	191	138	350	**587**	**177**		214
Tilapia									
Alice	**153**	**56**					71	188	215
Nkusi Bhai					**42**	**118**	31	41	43
Senkule	254	84	115	128	256	**211**	**165**	54	78

Impact on Losses - Calculated as Percent

Nile Perch	***May-03***	***Jun-03***	***Jul-03***	***Aug-03***	***Sep-03***	***Oct-03***	***Nov-03***	***Dec-03***	***Jan-04***
Alice								**6.7%**	2.1%
Senkule	**6.8%**	2.1%	1.7%	1.1%	2.1%	**5.1%**	**4.9%**	1.9%	2.3%
Kizza Salongo	3.0%	0.9%	2.0%	3.4%	**5.1%**	**4.7%**	**5.1%**	**6.8%**	4.0%
Mposa Kawooka	2.5%	2.3%	1.7%	0.9%	2.7%	**6.3%**	**4.3%**		2.5%
Tilapia									
Alice	**5.6%**	**6.2%**					1.9%	4.4%	4.1%
Nkusi Bhai					**4.2%**	**7.2%**	**1.6%**	2.0%	1.6%
Senkule	2.1%	2.2%	1.9%	2.0%	3.3%	**4.4%**	**4.3%**	1.8%	1.5%

Note that some suppliers changed the system of collection, and so required re-training.

Appendix 6 – Objective 6 – Upstream losses at the collection point

Actual Outcome:

Losses at the Collection Point - Islands												
Total Quantity												
Collection Point	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03
Kigungu	135,500	142,857	80,769	86,363	131,250	86,956	100,000	85,294	104,167	106,522	88,000	72,916
GUL	155,440	226,000	200,534	204,545	251,409	69,498	139,360	130,434	187,500	175,926	182,808	163,174
Gaba	95,000	95,700	100,200	92,500	91,700	95,600	87,530	92,300	97,020	107,200	116,250	87,500

Rejected Quantity												
Kigungu	2,700	3,000	2,100	1,900	2,100	2,000	1,500	1,450	2,500	2,450	2,200	1,750
GUL	3,000	4,520	3,750	4,500	4,849	1,656	3,484	3,000	4,500	4,750	4,753	3,753
Gaba	1,900	2,009	1,804	2,128	1,834	1,434	1,488	2,769	3,105	3,966	4,417	3,150

Losses percent												
Kigungu	2.0%	2.1%	2.6%	2.2%	1.6%	2.3%	1.5%	1.7%	2.4%	2.3%	2.5%	2.4%
GUL	1.9%	2.0%	1.9%	2.2%	1.9%	2.4%	2.5%	2.3%	2.4%	2.7%	2.6%	2.3%
Gaba	2.0%	2.1%	1.8%	2.3%	2.0%	1.5%	1.7%	3.0%	3.2%	3.7%	3.8%	3.6%

Appendix 7a – Objective 7 – Inc. All Indirect & Direct Costs

Standard Costs

CONTROL

Species: Ggaba - Nile Perch
Company: Sebuufu

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP102	4,945,730	3,818,000	39,048	3,857,048	1,088,682	1,694	643
IMP111	4,504,560	3,688,200	39,048	3,727,248	777,312	1,635	475
IMP116	5,201,340	4,099,600	39,048	4,138,648	1,062,692	1,822	583
IMP126	5,608,000	4,123,800	39,048	4,162,848	1,445,152	1,833	788
IMP133	5,643,800	4,167,800	39,048	4,206,848	1,436,952	1,853	775
IMP138	4,732,400	3,457,200	39,048	3,496,248	1,236,152	1,530	808
IMP48	3,773,760	2,757,600	39,048	2,796,648	977,112	1,212	806
IMP52	3,221,560	2,685,000	39,048	2,724,048	497,512	1,179	422
IMP55	4,290,580	3,149,200	39,048	3,188,248	1,102,332	1,390	793
IMP58	5,450,300	3,921,400	39,048	3,960,448	1,489,852	1,741	856
IMP61	4,534,260	3,329,600	39,048	3,368,648	1,165,612	1,472	792
IMP64	4,317,000	3,202,000	39,048	3,241,048	1,075,952	1,414	761
IMP69	5,680,300	4,189,800	39,048	4,228,848	1,451,452	1,863	779
IMP73	4,778,040	3,606,800	39,048	3,645,848	1,132,192	1,598	709
IMP79	3,444,980	2,511,200	39,048	2,550,248	894,732	1,100	813
IMP83	4,651,760	3,382,400	39,048	3,421,448	1,230,312	1,496	822
IMP87b	4,091,740	2,977,600	39,048	3,016,648	1,075,092	1,312	819
IMP89	3,714,940	2,726,800	39,048	2,765,848	949,092	1,198	792
IMP92	3,951,560	2,885,200	39,048	2,924,248	1,027,312	1,270	809
IMP94	5,111,160	3,692,600	39,048	3,731,648	1,379,512	1,637	843
IMP99	5,700,140	4,579,200	39,048	4,618,248	1,081,892	2,040	530
Totals	*97,347,910*	*72,951,000*	*820,000*	*73,771,000*	*23,576,910*	*32,289*	*730*

TRIAL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP200	513,920	576,800	39,048	615,848	-101,928	164	-622
IMP201	3,410,880	2,664,600	39,048	2,703,648	707,232	1,113	635
IMP202	3,778,240	2,878,000	39,048	2,917,048	861,192	1,210	712
IMP203	4,989,240	3,760,200	39,048	3,799,248	1,189,992	1,611	739
IMP204	4,726,320	3,595,200	39,048	3,634,248	1,092,072	1,536	711
IMP205	4,013,240	3,027,600	39,048	3,066,648	946,592	1,278	741
IMP206	4,520,820	3,417,000	39,048	3,456,048	1,064,772	1,455	732
IMP207	5,959,140	4,407,000	39,048	4,446,048	1,513,092	1,905	794
IMP582	2,095,640	1,756,000	39,048	1,795,048	300,592	700	429
IMP583	4,754,420	3,469,800	39,048	3,508,848	1,245,572	1,479	842
IMP584	3,609,180	2,699,800	39,048	2,738,848	870,332	1,129	771
IMP585	2,604,680	1,991,400	39,048	2,030,448	574,232	807	712
IMP586	5,940,840	4,380,600	39,048	4,419,648	1,521,192	1,893	804
IMP587	4,928,370	3,601,800	39,048	3,640,848	1,287,522	1,539	837
IMP588	2,537,100	2,042,000	39,048	2,081,048	456,052	830	549
IMP589	4,833,360	3,769,000	39,048	3,808,048	1,025,312	1,615	635
IMP592	5,724,000	4,503,800	39,048	4,542,848	1,181,152	1,949	606
IMP594	6,315,460	4,521,400	39,048	4,560,448	1,755,012	1,957	897
IMP595	4,660,120	3,588,600	39,048	3,627,648	1,032,472	1,533	673
IMP596	5,157,240	3,907,600	39,048	3,946,648	1,210,592	1,678	721
Totals	*85,072,210*	*64,558,200*	*780,952*	*65,339,152*	*19,733,058*	*27,381*	*721*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL

Species: Ggaba - Nile Perch
Company: Sebuufu

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP102	5,486,866	3,818,000	39,048	3,857,048	1,629,818	1,694	962
IMP111	5,295,765	3,688,200	39,048	3,727,248	1,568,517	1,635	959
IMP116	5,901,458	4,099,600	39,048	4,138,648	1,762,810	1,822	968
IMP126	5,937,087	4,123,800	39,048	4,162,848	1,774,239	1,833	968
IMP133	6,001,867	4,167,800	39,048	4,206,848	1,795,019	1,853	969
IMP138	4,955,670	3,457,200	39,048	3,496,248	1,459,422	1,530	954
IMP48	3,925,668	2,757,600	39,048	2,796,648	1,129,020	1,212	932
IMP52	3,818,781	2,685,000	39,048	2,724,048	1,094,733	1,179	929
IMP55	4,502,210	3,149,200	39,048	3,188,248	1,313,962	1,390	945
IMP58	5,639,099	3,921,400	39,048	3,960,448	1,678,651	1,741	964
IMP61	4,767,808	3,329,600	39,048	3,368,648	1,399,160	1,472	951
IMP64	4,579,946	3,202,000	39,048	3,241,048	1,338,898	1,414	947
IMP69	6,034,257	4,189,800	39,048	4,228,848	1,805,409	1,863	969
IMP73	5,175,922	3,606,800	39,048	3,645,848	1,530,074	1,598	957
IMP79	3,562,900	2,511,200	39,048	2,550,248	1,012,652	1,100	921
IMP83	4,845,544	3,382,400	39,048	3,421,448	1,424,096	1,496	952
IMP87b	4,249,568	2,977,600	39,048	3,016,648	1,232,920	1,312	940
IMP89	3,880,322	2,726,800	39,048	2,765,848	1,114,474	1,198	930
IMP92	4,113,530	2,885,200	39,048	2,924,248	1,189,282	1,270	936
IMP94	5,302,243	3,692,600	39,048	3,731,648	1,570,595	1,637	959
IMP99	6,607,560	4,579,200	39,048	4,618,248	1,989,312	2,040	975
Totals	*104,584,070*	*72,951,000*	*820,000*	*73,771,000*	*30,813,070*	*32,289*	*954*

TRIAL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP200	531,196	576,800	39,048	615,848	-84,652	164	-516
IMP201	3,605,007	2,664,600	39,048	2,703,648	901,359	1,113	810
IMP202	3,919,190	2,878,000	39,048	2,917,048	1,002,142	1,210	828
IMP203	5,218,029	3,760,200	39,048	3,799,248	1,418,781	1,611	881
IMP204	4,975,104	3,595,200	39,048	3,634,248	1,340,856	1,536	873
IMP205	4,139,442	3,027,600	39,048	3,066,648	1,072,794	1,278	839
IMP206	4,712,745	3,417,000	39,048	3,456,048	1,256,697	1,455	864
IMP207	6,170,295	4,407,000	39,048	4,446,048	1,724,247	1,905	905
IMP582	2,267,300	1,756,000	39,048	1,795,048	472,252	700	675
IMP583	4,790,481	3,469,800	39,048	3,508,848	1,281,633	1,479	867
IMP584	3,656,831	2,699,800	39,048	2,738,848	917,983	1,129	813
IMP585	2,613,873	1,991,400	39,048	2,030,448	583,425	807	723
IMP586	6,131,427	4,380,600	39,048	4,419,648	1,711,779	1,893	904
IMP587	4,984,821	3,601,800	39,048	3,640,848	1,343,973	1,539	873
IMP588	2,688,370	2,042,000	39,048	2,081,048	607,322	830	732
IMP589	5,230,985	3,769,000	39,048	3,808,048	1,422,937	1,615	881
IMP592	6,312,811	4,503,800	39,048	4,542,848	1,769,963	1,949	908
IMP594	6,338,723	4,521,400	39,048	4,560,448	1,778,275	1,957	909
IMP595	4,965,387	3,588,600	39,048	3,627,648	1,337,739	1,533	873
IMP596	5,435,042	3,907,600	39,048	3,946,648	1,488,394	1,678	887
Totals	*88,687,058*	*64,558,200*	*780,952*	*65,339,152*	*23,347,906*	*27,381*	*853*

Appendix 7b – Objective 7 – Exclude Transport, Labour & Fuel

CONTROL

Species: Ggaba - Nile Perch
Company: Sebuufu

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP102	4,945,730	3,726,800	0	3,726,800	1,218,930	1,694	720
IMP111	4,504,560	3,597,000	0	3,597,000	907,560	1,635	555
IMP116	5,201,340	4,008,400	0	4,008,400	1,192,940	1,822	655
IMP126	5,608,000	4,032,600	0	4,032,600	1,575,400	1,833	859
IMP133	5,643,800	4,076,600	0	4,076,600	1,567,200	1,853	846
IMP138	4,732,400	3,366,000	0	3,366,000	1,366,400	1,530	893
IMP48	3,773,760	2,666,400	0	2,666,400	1,107,360	1,212	914
IMP52	3,221,560	2,593,800	0	2,593,800	627,760	1,179	532
IMP55	4,290,580	3,058,000	0	3,058,000	1,232,580	1,390	887
IMP58	5,450,300	3,830,200	0	3,830,200	1,620,100	1,741	931
IMP61	4,534,260	3,238,400	0	3,238,400	1,295,860	1,472	880
IMP64	4,317,000	3,110,800	0	3,110,800	1,206,200	1,414	853
IMP69	5,680,300	4,098,600	0	4,098,600	1,581,700	1,863	849
IMP73	4,778,040	3,515,600	0	3,515,600	1,262,440	1,598	790
IMP79	3,444,980	2,420,000	0	2,420,000	1,024,980	1,100	932
IMP83	4,651,760	3,291,200	0	3,291,200	1,360,560	1,496	909
IMP87b	4,091,740	2,886,400	0	2,886,400	1,205,340	1,312	919
IMP89	3,714,940	2,635,600	0	2,635,600	1,079,340	1,198	901
IMP92	3,951,560	2,794,000	0	2,794,000	1,157,560	1,270	911
IMP94	5,111,160	3,601,400	0	3,601,400	1,509,760	1,637	922
IMP99	5,700,140	4,488,000	0	4,488,000	1,212,140	2,040	594
Totals	*97,347,910*	*71,035,800*	*0*	*71,035,800*	*26,312,110*	*32,289*	*815*

TRIAL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP200	513,920	360,800	0	360,800	153,120	164	934
IMP201	3,410,880	2,448,600	0	2,448,600	962,280	1,113	865
IMP202	3,778,240	2,662,000	0	2,662,000	1,116,240	1,210	923
IMP203	4,989,240	3,544,200	0	3,544,200	1,445,040	1,611	897
IMP204	4,726,320	3,379,200	0	3,379,200	1,347,120	1,536	877
IMP205	4,013,240	2,811,600	0	2,811,600	1,201,640	1,278	940
IMP206	4,520,820	3,201,000	0	3,201,000	1,319,820	1,455	907
IMP207	5,959,140	4,191,000	0	4,191,000	1,768,140	1,905	928
IMP582	2,095,640	1,540,000	0	1,540,000	555,640	700	794
IMP583	4,754,420	3,253,800	0	3,253,800	1,500,620	1,479	1,015
IMP584	3,609,180	2,483,800	0	2,483,800	1,125,380	1,129	997
IMP585	2,604,680	1,775,400	0	1,775,400	829,280	807	1,028
IMP586	5,940,840	4,164,600	0	4,164,600	1,776,240	1,893	938
IMP587	4,928,370	3,385,800	0	3,385,800	1,542,570	1,539	1,002
IMP588	2,537,100	1,826,000	0	1,826,000	711,100	830	857
IMP589	4,833,360	3,553,000	0	3,553,000	1,280,360	1,615	793
IMP592	5,724,000	4,287,800	0	4,287,800	1,436,200	1,949	737
IMP594	6,315,460	4,305,400	0	4,305,400	2,010,060	1,957	1,027
IMP595	4,660,120	3,372,600	0	3,372,600	1,287,520	1,533	840
IMP596	5,157,240	3,691,600	0	3,691,600	1,465,640	1,678	873
Totals	*85,072,210*	*60,238,200*	*0*	*60,238,200*	*24,834,010*	*27,381*	*907*

Best Costs – Assumes all Product can attain the Highest Yields

CONTROL: Species: Ggaba - Nile Perch Company: Sebuufu

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP102	5,486,866	3,726,800	0	3,726,800	1,760,066	1,694	1,039
IMP111	5,295,765	3,597,000	0	3,597,000	1,698,765	1,635	1,039
IMP116	5,901,458	4,008,400	0	4,008,400	1,893,058	1,822	1,039
IMP126	5,937,087	4,032,600	0	4,032,600	1,904,487	1,833	1,039
IMP133	6,001,867	4,076,600	0	4,076,600	1,925,267	1,853	1,039
IMP138	4,955,670	3,366,000	0	3,366,000	1,589,670	1,530	1,039
IMP48	3,925,668	2,666,400	0	2,666,400	1,259,268	1,212	1,039
IMP52	3,818,781	2,593,800	0	2,593,800	1,224,981	1,179	1,039
IMP55	4,502,210	3,058,000	0	3,058,000	1,444,210	1,390	1,039
IMP58	5,639,099	3,830,200	0	3,830,200	1,808,899	1,741	1,039
IMP61	4,767,808	3,238,400	0	3,238,400	1,529,408	1,472	1,039
IMP64	4,579,946	3,110,800	0	3,110,800	1,469,146	1,414	1,039
IMP69	6,034,257	4,098,600	0	4,098,600	1,935,657	1,863	1,039
IMP73	5,175,922	3,515,600	0	3,515,600	1,660,322	1,598	1,039
IMP79	3,562,900	2,420,000	0	2,420,000	1,142,900	1,100	1,039
IMP83	4,845,544	3,291,200	0	3,291,200	1,554,344	1,496	1,039
IMP87b	4,249,568	2,886,400	0	2,886,400	1,363,168	1,312	1,039
IMP89	3,880,322	2,635,600	0	2,635,600	1,244,722	1,198	1,039
IMP92	4,113,530	2,794,000	0	2,794,000	1,319,530	1,270	1,039
IMP94	5,302,243	3,601,400	0	3,601,400	1,700,843	1,637	1,039
IMP99	6,607,560	4,488,000	0	4,488,000	2,119,560	2,040	1,039
Totals	*104,584,070*	*71,035,800*	*0*	*71,035,800*	*33,548,270*	*32,289*	*1,039*

TRIAL

Trial ID	Sales	Direct Expenditure	Indirect Expenditure	Total Expenditure	Gross Gain	R.M Wgt (Kgs)	Gain Per Kgs
IMP200	531,196	360,800	0	360,800	170,396	164	1,039
IMP201	3,605,007	2,448,600	0	2,448,600	1,156,407	1,113	1,039
IMP202	3,919,190	2,662,000	0	2,662,000	1,257,190	1,210	1,039
IMP203	5,218,029	3,544,200	0	3,544,200	1,673,829	1,611	1,039
IMP204	4,975,104	3,379,200	0	3,379,200	1,595,904	1,536	1,039
IMP205	4,139,442	2,811,600	0	2,811,600	1,327,842	1,278	1,039
IMP206	4,712,745	3,201,000	0	3,201,000	1,511,745	1,455	1,039
IMP207	6,170,295	4,191,000	0	4,191,000	1,979,295	1,905	1,039
IMP582	2,267,300	1,540,000	0	1,540,000	727,300	700	1,039
IMP583	4,790,481	3,253,800	0	3,253,800	1,536,681	1,479	1,039
IMP584	3,656,831	2,483,800	0	2,483,800	1,173,031	1,129	1,039
IMP585	2,613,873	1,775,400	0	1,775,400	838,473	807	1,039
IMP586	6,131,427	4,164,600	0	4,164,600	1,966,827	1,893	1,039
IMP587	4,984,821	3,385,800	0	3,385,800	1,599,021	1,539	1,039
IMP588	2,688,370	1,826,000	0	1,826,000	862,370	830	1,039
IMP589	5,230,985	3,553,000	0	3,553,000	1,677,985	1,615	1,039
IMP592	6,312,811	4,287,800	0	4,287,800	2,025,011	1,949	1,039
IMP594	6,338,723	4,305,400	0	4,305,400	2,033,323	1,957	1,039
IMP595	4,965,387	3,372,600	0	3,372,600	1,592,787	1,533	1,039
IMP596	5,435,042	3,691,600	0	3,691,600	1,743,442	1,678	1,039
Totals	*88,687,058*	*60,238,200*	*0*	*60,238,200*	*28,448,858*	*27,381*	*1,039*

Source Data Reference

Suppliers	Collection Point	No.
Sebuufu	Gaba	IMP102, 111, 116, 126, 133, 138, 48, 52, 55, 58, 61, 64, 69, 73, 79, 83, 87b, 89, 92, 94, 99
Bogere	Kitalaganya	IMP200, 201, 202, 203, 204,
Kabugo	Ninga	IMP205, 206, 207, 582, 583, 584, 585, 586, 587, 588, 589, 592, 594, 595, 596