

## Annex 8: PETS analysis - Background data

## ZAMBIA – COST BENEFIT OF CAPII PROJECT

COST BENEFIT OF CAP II PROJECT		
<b>Calculation of Possible Total CF Yeild - Start with Mumbwa</b>		
13 FO's x 30 FCs =	390	FC's
No of CF Hectares each - per 'returns' 330 FC	16.4	
Mumbwa Hectares per returns - 390 FCs	6407	
Assume error factor of 25% = Adjusted Ha	8540	33%
Extraneous Factors - Large Farmers, Spontaneous adopters, Late Planters - %		33%
Approximate possible Ha - Mumbwa	11384	
FO Full Complement Ratio - all Regions 11:66		6
Approx possible Ha - all Regions - Now	68303	
Assume end of 2010 was 85% of that	58058	Total Ha 85%
<b>Economics - Direct Cost Benefit</b>		
<b>Assumptions</b>		
Production increase builds up evenly over 5 years		
For illustrative purposes only, all production is maize		
75% is Basin with yeild of 5 tonne per ha		5
25% is Ripper with 2.8 tonne per ha		2.8
<b>Calculations</b>		
	Tonnes	
Yeild - Basin	217,717	
Yeild - Ripper	40,640	
<b>Total Yeild</b>	<b>258,357</b>	
Less Base Yield of 1.3t p ha	75,475	1.3
<b>Net Increase in Yeild</b>	182,882	
Miller Price per Tonne = \$10	200	
per 50kg x 20 bags = \$200		
	1 year Harvest	
<b>Incremental Revenue from CF Farming Ops into Rural Economy</b>	<b>36,576,412</b>	
Av Norwegian Annual Funding Approx	6,456,612	
<b>Benefit Ratio. Cash generated into Rural Economy : per dollar of funding</b>	<b>5.7</b>	
<b>Wider Economic Impact</b>		
Retail Value Added of the Production @ ZK45k per 25kg = \$ 9 bag = \$360 per Tn : Less Paid to Farmers	29,261,129	
Multiplier impact of marginal revenue into Rural Economy : Multiplier	3	
	109,729,236	
<b>SUMMARY</b>		
1. Incremental Value generated/received by Rural Economy	36,576,412	
2. Retail Value Added of the Production	29,261,129	
3. Direct Multiplier value of 1.	109,729,236	
<b>TOTAL VALUE GENERATED ATTRIBUTED TO CFU PROJECT</b>	<b>175,566,777</b>	
<b>OVEALL BENEFIT TO COST RATIO</b>	<b>27 :1</b>	

**MALAWI – NASFAM**

The model below assesses the cost :benefit ratio of achieving the 51% increase in Farmers Incomes

COST : ECONOMIC BENEFIT US\$								
Assumptions								
1. The increase in farm income is achieved evenly over the 5 year period								
2. Based on Total Membership of 50800								
3. Economic Multiplier of 3 for cash increase to citizens in Rural Areas      3								
Direct Cost Benefit	Final	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Cumulative Gain over 5+ 6th years	
End Level of Income	1272							
Start Level of Income	867							
Net Gain per Member	405	81	162	243	324	405	1215	
Members	50800	20,574,000	4,114,800	8,229,600	12,344,400	16,459,200	20,574,000	
							<b>C:B Ratio</b>	<b>4.16</b>
Total Dev Expenditure US \$mil *	2007	3.8	Wider Economic Benefit					
	2008	4.2	Multiplier effect x 3				246,888,000	
	2009	4.1	Value Added in Crop Processing				123,444,000	
	2010	3.7	Tobacco = 40% of crop @ 300%				98,755,200	
	2011	4	Balance of 60% @50%				24,688,800	
<b>TOTAL</b>		<b>19.8</b>	<b>Total Wider Ec Benefit</b>				<b>452,628,000</b>	
* Per NASFAM Official 5 Year Summary							<b>Overall Ratio</b>	<b>22.86</b>

## TANZANIA – MNGETA FARM COST OF SALES ANALYSIS AND BASIS OF PREPARATION AND ASSUMPTIONS

ATTRIBUTABLE COST OF SALES	Commercial	SRISH
Fertilizer, Fuels, Chemicals	2.290	
Maintenance - Farm Equip	561	
Depreciation Farm Equip & Land Prep	231	
Depreciation on Irrigation Equip	-	
Imputed Interest on Farm Equip & Land Prep	332	
Imputed Interest on Irrigation Loans	-	
Cost of Small Holder Purchases	-	3.996
<b>Total Cost of Rice Farming</b>	<b>3.414</b>	<b>3.996</b>
<i>Cost per Tonne - Farming</i>	<i>487.644</i>	<i>444.000</i>
Cost Milling - Current Vol. Tz Bn	1.330	1.330
Milling cost - Pro rata incr rev vol	703	904
Repairs and Maintenance	109	109
Depreciation on Milling Equip	176	176
Imputed Interest on Milling Equip	198	198
<b>Total Milling Costs</b>	<b>1.185</b>	<b>1.386</b>
<i>Milling Cost per Tonne</i>	<i>169.320</i>	<i>154.009</i>
<b>Total Cost of Revised Rice Production</b>	<b>4.599</b>	<b>5.382</b>
<i>Total Direct Cost of Production per Kg</i>	<i>1.011</i>	<i>879</i>

### BASIS OF PREPARATION / ASSUMPTIONS / NOTES

1. All amounts are based on the actual figures reported in the 2012 Financial Accounts.
2. Fertilizer Fuels and Chemicals are based on a cost per hectare basis (not per tonne).
3. Cost of Milling is per tonne.
4. Cost of Purchases from Smallholders is based on the (fair) price negotiated for 2013 regarding the repayment of financing loans. It is assumed that the entire output from the 1800 hectares can be purchased at this price, especially if it is an advance payment (for which a marginal requirement for crop financing interest has been provided)
5. Where applicable the line item costs for Commercial are 25% of the total line item costs for 2012, on the basis that the 2000 hectares planted under Commercial rainfed will be 25% of total 8000 hectare planted (2x 3000 ha Irrigated Crops).
6. To arrive at an equitable cost comparison, 'imputed' interest costs have been factored in to the financing of the related capital equipment. This is necessary because the SRISH operations do not require the use of heavy capital equipment.
7. The amount paid to SRISH of 4.795 bn shillings, equates to \$ 3 million paid to growers in the local economy, which subsequently adds a further \$ 9 million via the multiplier effect.