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## *Blending Management to Technology*

### *A Success Story on Innovative Tea Harvesting System at Alton estate*

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## *Part I:*

# *Opportunities and Benefits of Innovative Tea Harvesting System*



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## *Manual harvesting of tea*

### *Present problems (Vicious cycle)*

Lack of skilled pluckers  
 Low plucking intake  
 Under plucking /leaving shoots  
 Coarse leaf  
 Stripping/removal of *arimbu*  
 Leaf damage  
 Poor quality of made tea  
 High refuse tea content  
*Profitability ??*



## Improved Technology

### Improved technology

TRI Selective Tea Harvester +  
Innovative Tea Plucking Basket

### Management intervention

Training, supervision & provision of  
other needs

Jackets/Trousers /Shoes etc



## The Technology

### Selective Tea Harvester



Lighter in weight (325g)  
Maneuverable in any field  
Feels the plucking surface  
Hands close to the shoot  
Selective harvesting  
Minimum damage to *arimbu*  
Avoid maintenance leaves  
High output  
Preserved quality of shoot



## Innovative Tea Plucking basket



Lighter in weight (600g)  
 Less entanglement  
     with tea bushes  
 Convenient to use  
 Easy to drop shoots  
 Preserves quality of shoot  
 Impressive appearance



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## Management Intervention



**Training, supervision & provision of other needs**

**Jackets/Trousers /Shoes etc**



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## A case study on Alton estate

### Present status of using selective harvesters

Division	Total Extent	Shearing VP	Shearing Seedling	Shearing %	No of Shears
Upper	79.78	24.33	17.50	52.43	100
Lower	53.32	32.57	20.75	100.00	110
B'Field	40.2	1.00	8.00	22.39	22
Kincora	60.67	2.00	30.00	52.74	40
<b>Total</b>	<b>233.97</b>	<b>59.90</b>	<b>76.25</b>	<b>58.19</b>	<b>272</b>



### Reduction of below-norm pluckers (%)

#### *VP tea*

Year	Above 16 kg	14-16kg	11-13kg	Below 10kg
2011 (Up to August)	59.83	33.52	4.19	2.46
2010	28.90	26.18	15.87	29.05
**2009	23.23	20.31	16.10	40.36
2008	31.74	19.24	14.04	34.97
2007	35.94	12.97	13.43	37.65
2006	39.71	11.05	16.81	32.43

\*\* Introduction of harvesters



## Less below-norm pluckers (%)

### *Seedling tea*

Year	Above 16 kg	14-16kg	11-13kg	Below 10kg
2011 (Up to August)	50.38	39.55	3.92	6.14
2010	16.78	22.11	16.24	44.87
2009	17.12	17.33	15.77	49.78
2008	18.48	19.79	13.29	48.44
2007	15.92	10.57	11.84	61.67
2006	18.72	9.76	15.84	55.68



## Impact of below-norm pluckers on plucking cost

Below-norm pluckers	Pluckers (No/ha/yr)	Plucking Cost (Rs/kg, MT)	Saving (Rs/kg)
<i>With 30% below-norm pluckers</i>	517	163.81	-
Reduce below-norm pluckers by 10 %	511	162.09	1.72
Reduce below-norm pluckers by 20 %	506	160.66	3.15
Reduce below-norm pluckers by 30 %	502	159.52	4.29
Reduce below-norm pluckers by 40 %	497	158.09	5.72



## High plucking averages

### Plucker intake (kg/day)

Division	VP		Seedling	
	Manual	<i>Shears</i>	Manual	<i>Shears</i>
Upper	20 (2)	26 (1)	-	17 (2)
Lower	-	20 (1)	-	18 (2)
B' field	16 (1)	-	-	16 (1)
Kincora	16 (1)	-	-	15 (0.3)

Standard Deviations are given in Parenthesis



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### Impact of increasing plucking Average (*Over kilos*) on plucking cost

Type	Plucker Intake kg/day	Plucking cost (Rs/kg MT)						
		At Present intake	Intake increase by 0.5kg	Intake increase by 1kg	Intake increase by 2kg	Intake increase by 3kg	Intake increase by 4kg	Intake increase by 5kg
VP	18	164	162 (2)	160 (4)	157 (7)	154 (10)	151 (13)	149 (15)
Seedling	14	222	218 (4)	214 (8)	208 (14)	202 (20)	197 (25)	193 (29)

*(-) Reduction of plucking cost Rs/kg, MT*

Average productivity in VP & Seedling in Co-operate sector is 1888 & 1089 kg/ha/yr (Agronomic Profile of the Corporate Sector Tea Plantations in Sri Lanka, TRI, 2008)

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## Less labour requirement

### Monthly LPH

Division	VP		Seedling	
	Manual	Shears	Manual	Shears
Upper	43 (5)	36 (2)	-	32 (4)
Lower	-	32 (4)	-	18 (3)
B' field	46 (8)	-	-	32 (5)
Kincora	42 (8)	-	-	24 (5)

Standard Deviations are given in Parenthesis



## Win-win situation



- Benefits to estate
- Benefits to workers



## Benefits to estate

- Improved plucker productivity
- Entire fields being properly plucked
- Maintain plucking rounds
- Higher crop
- Better leaf standards
- Low COP
- High NSA
- Better profit margin

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## Benefits to workers

- Higher wages
- Better living standards
- Improved working environment
  - Provision of basket, overall, shoes etc
- Job satisfaction
- Social recognition

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