

232nd Experiments & Extension Forum

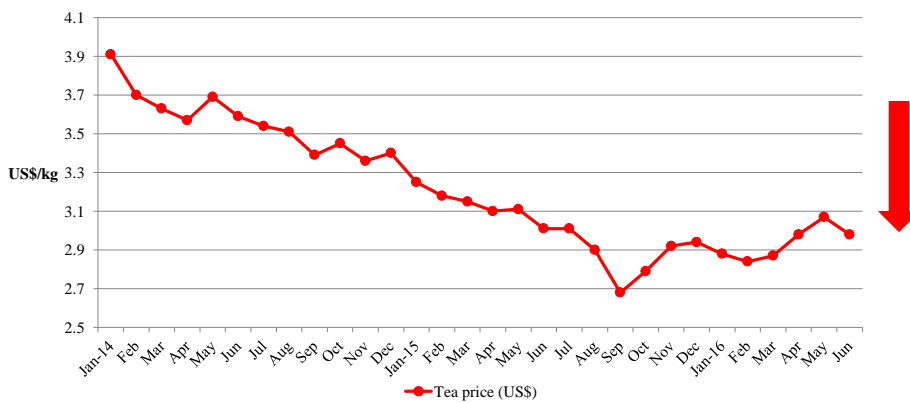
Keynote Address

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Tea Research Institute of Sri Lanka

Tea Prices at Colombo Auctions (2014 - 2016)

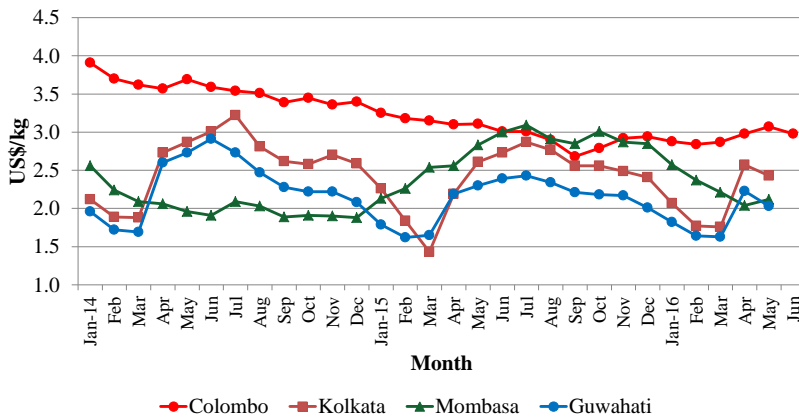


Comparison of Colombo Auction Prices (US\$/kg)

Month	Price change (2014 & 2013)	Price change (2015 & 2014)	Price change (2016 & 2015)
Jan	0.58	(0.66)	(0.37)
Feb	0.36	(0.52)	(0.34)
Mar	0.16	(0.47)	(0.28)
Apr	0.17	(0.47)	(0.12)
May	0.39	(0.58)	(0.04)
Jun	0.39	(0.58)	
Jul	0.36	(0.53)	
Aug	0.13	(0.61)	
Sep	(0.20)	(0.71)	
Oct	(0.34)	(0.66)	
Nov	(0.36)	(0.44)	
Dec	(0.41)	(0.46)	



Fluctuation of Tea Prices at Main Tea Auction Centers (2014 - 2016)



Reasons for low prices at Colombo auctions

1. Devaluation of the Ruble (major drop in the ruble value started in July 2014)
2. Drop in oil prices in most of the premier importing destinations (i.e. Russia, Ukraine and the Middle East)
3. Trade constraints in most of the Middle Eastern countries (over 70% of Sri Lankan teas)
4. Global Black tea production has increased in 2016



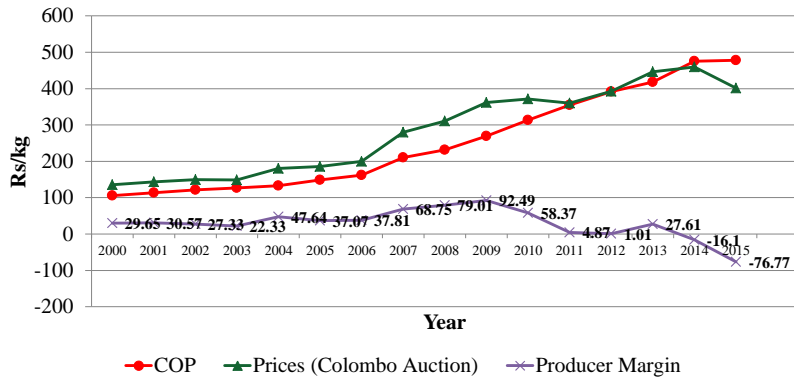
Reasons for low price at Colombo Auctions

World Crop Statistics (Mn/kgs)

Country	2014	2015	2016	Difference +/-	
				2014 vs 2015	2015 vs 2016
Sri Lanka (Jan-May)	173.6	172.9	153.8	-0.7	-19.1
Bangladesh (Jan-May)	15.9	14.7	22.7	-1.2	8.0
Malawi (Jan-May)	32.7	29.0	28.4	-3.7	-0.6
North India (Jan-May)	154.2	183.0	195.9	28.8	12.9
South India (Jan-May)	90.9	98.8	76.6	7.9	-22.2
Kenya (Jan-Apr)	152.0	105.5	177.2	-46.5	71.7



COP, NSA & Producer Margin



Effect of Recent Policy Changes on COP Banning of Glyphosate & Glufosinate Ammonium

Consequences

****Crop Loss (kg of made tea per year) due to weed growth**

Type of bush cover	Productivity (kg/ha/yr)	No weed control			50% weed control		
		Crop loss (%)	Crop loss-ha/yr	Crop loss at National level	Crop loss (%)	Crop loss-ha/yr	Crop loss at National level
100% bush cover	>2500	1	25	1151970.6	0.5	12.5	575985
60% bush cover	2500-1600	9	180	11452367	5	100	6362426
Poor bush cover VP	<1600	9	144	3383369.1	5	80	1879650
seedling fields	1200	15	180	9528966	10	120	6352644
Total crop loss		25,516,672			15,170,705		



Effect of Recent Policy Changes on COP Banning of Glyphosate & Glufosinate Ammonium

**High cost for manual weeding (Rs/ha/yr)

Type of bush cover	Up /mid/uva			Low		
	Manual	Manual +Chemical	Difference	Manual	Manual +Chemical	Difference
100% bush cover	12375	5628	6747	27500	15253	12247
60% bush cover	20625	17056	3569	44000	32181	11819
Poor bush cover VP	33000	21181	11819	55000	37681	17319
Seedling fields	41250	23931	17319	66000	43181	22819

Additional cost for manual weeding through out the year (when compared to combination of chemical +manual weeding) Rs.2.70 -19.01/kg of made tea



Effect of Recent Policy Changes on COP Removal of Fertiliser Subsidy

**Production (mnkg)=1.148 fertiliser applied ('000 Metric Tons)
+96.79**

Crop loss in corporate sector (mnkg MT/yr)

Type of Tea Land	Up	Uva	Mid	Low	Total
SD	9.63	6.66	4.26	1.45	22.01
VP	17.08	5.01	6.08	4.81	32.98
Total	26.71	11.67	10.34	6.26	54.99



Effect of Recent Policy Changes on COP Removal of Fertiliser Subsidy

**Increasing cost of production

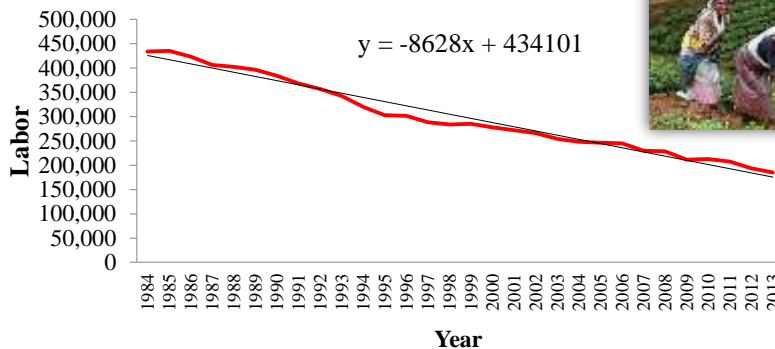
Comparison of Fertilizer Cost With and Without Fertilizer Subsidy (VP Tea field)

Fertilizer mixture	Productivity (kg/ha/yr)	Fertilizer cost with subsidy (Rs)	Fertilizer cost without subsidy (Rs)	Difference (Rs)	Difference (Rs/kg)
Low	1650	32583	56067	23484	14.23
Mid	1800	38860	66700	27840	15.47
Up	2000	42502	72458	29956	14.98
Uva	1700	34476	62303	27827	16.37
National Average	1687	38614	63963	25349	15.03



Unavailability of Skilled Workers

Labor force in plantation sector (1984-2013)



Workforce has declined by 57% (248517 workers) for the last three decades (from 1984 to 2013).



Unavailability of Skilled Workers

Severity of labour scarcity in tea plantations

Category	Mid country		Low country		Uva		Up		Total	%
	No. of estates	%	No. of estates	%	No. of estates	%	No. of estates	%		
Severe (Labor availability is lesser than 50% of the requirement)	20	39	18	25	6	11	10	8	54	18
Average (Labor availability is 51-75 % of requirement)	20	39	36	49	33	60	61	48	150	49
Less (Labor availability is higher than 75% of requirement)	8	16	16	22	16	29	49	38	89	29
Adequate/excess	3	6	3	4	0	0	8	6	14	5
Total	51	100	73	100	55	100	128	100	307	100

Labour availability of 54 estates is 50% less than the requirement.



Low worker productivity

Break even plucker productivity at different output price

Tea price (Rs./kg of made tea)	700-1499 kg of yielding tea fields	1500-1999 kg of yielding tea fields	2000-2500 kg of yielding tea fields	Average estate
	Plucker intake (kg of Green leaf/day)			
400	33	30	28	31
425	29	26	24	27
450	26	24	22	24
475	24	22	20	22
500	22	20	19	21
550	18	17	16	17



Wage Hike and Break even plucker productivity

Break even plucker productivity at different wage rate (Average tea price is taken as Rs.425/kg of made tea)

Wage increase (Rs./worker day)	700-1499 kg of yielding tea fields	1500-1999 kg of yielding tea fields	2000-2500 kg of yielding tea fields
	Plucker intake (kg of Green leaf/day)		
Current (837.50)	33	30	28
906.25 (10% increase)	35	31	29
940.63 (15% increase)	38	34	31
975.00 (20% increase)	42	37	34



Suggestions

- ✓ Alternative worker deployment models
- ✓ Mechanization of field practices
- ✓ Linked wage hike with worker productivity
- ✓ Maintaining good bush cover
- ✓ Adopting good agricultural practices
- ✓ Monitoring and supervision (Plucker intake, output/worker etc)



Alternative Worker Deployment Model Out Grower System at St. Coombs Estate

- Extent allocated for out growers - 8.11 ha
- Ten progressive workers were selected
- 7500 bushes (Upper division - 3A) and 10500 bushes (Lower division - 14) distributed for each family.
- Average productivity 3A (Upper division) - 2625 kg/ha/year & Field no. 14 recorded an average yield of 2100kg/ha/year
- They worked full time in the allocated blocks (Temporally removed from the check roll)
- Engaged in all the agricultural practices
- No payments from the estate
- Income - by supplying crop to the estate



Alternative Worker Deployment Model Out Grower System at St. Coombs Estate

Plucker intake (kg of Green leaf/worker day)

Month	Upper Division		Lower Division	
	Before	After	Before	After
Sep	14	38	20	27
Oct	18	39	21	29
Nov	27	47	24	31
Dec	16	37	21	26
Jan	28	36	24	28
Feb	19	31	15	27
Mar	26	37	15	27
Apr	28	34	20	28
May	30	37	20	27
Jun	22	37	14	24
Jul	16	29	10	33
Aug	27	33	22	18
Average	23	36	19	27



Alternative Worker Deployment Model Out Grower System at St. Coombs Estate

Comparison of income - Before and after out grower system (Rs.)

Code of out grower	Income from other family members	No. of member at working age	Before out grower system		After out grower system		Income increase as %
			Average family income	Average income/member	Average family income	Average income/member	
OGU1	19000	2	34741	17371	69505	34753	100
OGU2	10000	2	26178	13089	70154	35077	168
OGU3	18000	2	29136	14568	73360	36936	152
OGU4	17500	2	33798	16899	69256	34628	105
OGU5	38500	2	53220	26610	74925	37463	41
OGL1	17000	2	32349	16175	66748	33374	106
OGL2	20500	2	36534	18267	61968	30984	70
OGL3	8000	2	21464	10732	55468	27734	158
OGL4	50200	4	62713	15678	112247	28062	79
Average	22078	2	36681	17138	72626	34554	109



Alternative Worker Deployment Model Out Grower System at St. Coombs Estate

Profits to the estate

Month	Out growers' crop	Profit (Rs.)
Sep	9646	91274
Oct	11168	105676
Nov	11232	106281
Dec	10566	99979
Jan	6731	63691
Feb	9752	92277
Mar	8723	82540
Apr	11897	112574
May	10097	95542
Jun	7910	74847
Jul	4296	40650
Aug	8536	80771
Sep	7951	75235
Total	118505	1,121,338

- Profit margin of bought leaf – Rs.9.46/kg of Green leaf
- About 4870 worker days (600 worker days/ha/yr) are required to maintenance of 8.11 ha of tea land for one year period. It saves about Rs. 3,348,175 to the estate



Alternative Worker Deployment Model

Contract Farming System at Pettigala Estate

- Year of commenced August 2014
- 26 workers were selected
- Extent allocated for contract growers - 21.5 ha
- 2000 -4600 bushes were distributed for each family.
- Average productivity of New Pettigala Division –
- Field No.1 -920, Field No.2- 875, Field No.3- 775, Field No.4- 900kg/ha/yr
- Worked part time in the allocated plots
- Engaged in all the agricultural practices



Alternative Worker Deployment Model

Contract Farming System at Pettigala Estate

Land productivity in out growers' fields (kg of made tea)

Year	Field No			
	1	2	3	4
2011	228	209	111	128
2012	217	168	60	202
2013	113	94	83	176
2014	693	908	743	795
2015	850	972	752	733
2016 (Jan –May)	659	488	265	740

Productivity of contract growers' fields has gradually increased



Alternative Worker Deployment Model

Contract Farming System at Pettigala Estate

Earnings from out growers' plots (Rs/month/family)

Field No.	2014		2015		2016	
	Average	Range	Average	Range	Average	Range
1	8500	4000-12500	10700	5020-15000	18950	11500-29000
2	10000	8000-12500	11479	10000-13500	12503	8500-17000
3	10000	8000-17000	11378	6500-21000	13632	7500-21500
4	8500	5000-13000	9600	7000-14500	20400	16000-29000



Alternative Worker Deployment Model

Contract Farming System at Pettigala Estate

Profits to the estate from bought leaf

Field No.	2014 (Aug-Dec)	2015	2016 (Jan-May)
Profits from bought leaf			
1	23040	79040	61245
2	34035	101705	51020
3	49125	139780	49360
4	33040	85225	86075
Profits from out growers crop			
	414766	1102162	706842
Total	554006	1507912	954542

About 8062 worker days (375 workers could be saved (Rs. 5.5 mn per year) from 21.5 ha



Alternative Worker Deployment Model

Contract Farming System at Pettigala Estate

➤The estate has introduced contract farming system in January 2016

➤90% of the extent is maintained by contract growers



Thank you

