



COMMITTEE ON COMMODITY PROBLEMS

INTERGOVERNMENTAL GROUP ON TEA

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SOCIO-ECONOMIC FACTORS AND IMPLICATIONS FOR THE LIVELIHOOD OF TEA SMALLHOLDERS

I. INTRODUCTION

1. At its Twenty-first Session and subsequent intersessional meeting in October 2015, the Intergovernmental Group on Tea (IGG/Tea) noted that tea smallholders continued to face a number of challenges because of the relatively low socio-economic returns associated with this farming system compared to other stages in the tea value chain. While tea production by smallholders is growing worldwide, their situation is problematic because green leaf prices they are paid have not been sufficient to sustain their livelihood and often tend to be below the cost of production, especially if labour cost is factored in.

2. The present document (CCP:TE 16/4) is an attempt by the Secretariat to evaluate how tea export earnings impact smallholder livelihood and food security. The Secretariat has developed an analytical framework for monitoring policy development in tea producing and exporting countries; firstly at the tea sub-sectors level and ultimately, smallholders in particular. Hence, this document will specifically examine the following two dimensions:

- **Economic:** Tea production and productivity; exports and imports of tea; tea sub-sector contribution to the national income; smallholder income and impact on their livelihoods and food security; and
- **Social:** Rural population, employment and poverty; sanitation and potable water.

3. To prepare this document, the Secretariat used information from its tea database, the IGG/TE annual questionnaires, the survey of smallholders and the Secretariat's extensive knowledge of the world tea economy. The Secretariat is grateful for the survey responses received from India, Indonesia, Kenya, Malawi, Sri Lanka and Tanzania. However, upon compilation, the microeconomic data at farm level remained inconsistent and difficult to reconcile. The varying sample sizes, particularly the extremely small samples, exacerbated the inconsistencies. Although the Secretariat was constrained by the lack of a full set of essential data for an econometric analysis and the time needed to complete documentation for the Twenty-second Session, an attempt was made to use the information gathered to analyse and draw some conclusions on the implication of tea production and export earnings on the livelihood and food security of smallholders.

4. The IGG/Tea Secretariat report, *World tea production and trade: current and future development (2015)*¹, provides a comprehensive overview of the tea industry and the major issues faced by the world tea economy. Updated information are contained in document CCP:TE16/Inf.2: *Current Market Situation and Medium Term Outlook*. The following analysis supplements areas not specifically covered by these documents.

5. The Secretariat seeks guidance from the Group on whether the required analysis should be pursued, and if so, the work that needs to be done as a next phase to improve data collection and analysis on tea producing small-holders.

II. PRODUCTION

6. China² and India, with tea production of over 1.9 million tonnes and 1.2 million tonnes, respectively, remain the largest tea producers in the world (Table 1). Additionally, in recent years there have been significant increases in harvested tea areas in major producing countries. Between 1990 and 2014, harvested tea areas in China increased by about 1.4 million hectares (ha), in India by nearly 150 000ha and in Kenya by more than 100 000ha, while Viet Nam expanded from 80 000ha in 2000 to over 128 000ha in 2014.

Table 1. Major tea producers, their production and productivity

Countries	Production			Area			Yield		
	1990	2000	2014	1990	2000	2014	1990	2000	2014
	thousand tonnes			thousand ha			Kg/ha		
Argentina	53	68	82	38	38	41	1382	1789	2008
Bangladesh	46	53	64	49	49	58	942	1085	1093
Burundi	4	7	9	9	8	10	469	890	900
China (Mainland)	540	683	1950	1062	1089	2741	509	627	711
India	721	850	1211	417	504	567	1730	1686	2137
Indonesia	161	163	145	135	154	123	1189	1056	1177
Iran Islamic Rep. of	46	47	27	35	35	32	1314	1350	828
Japan	90	89	81	50	50	45	1798	1786	1806
Kenya	197	237	449	97	126	203	2031	1883	2210
Malawi	40	42	46	19	19	19	2079	2217	2413
Sri Lanka	234	309	340	222	189	204	1055	1635	1666
Thailand	5	6	15	10	6	22	526	908	698
Turkey	123	139	246	79	77	77	1554	1802	3195
Uganda	7	29	65	21	21	38	319	1394	1720
Viet Nam	32	72	180	75	80	128	429	896	1406

Source: FAO IGG/Tea Secretariat.

7. The underlying dynamics of tea productivity indicate that the yield average in China, was the lowest among the major world tea producers in 2014, with only 711 kg/ha, compared to India, the second largest producer, where yields averaged 3 times that of China at 2 137 kg/ha (Table 1). A fundamental factor determining differences in yields is the varietal difference in each country. The main tea variety³ grown in China is *Camelia sinensis var. sinensis*, while in India it is *Camelia sinensis var. assamica*, though some areas like Darjeeling do grow *Camelia sinensis var. sinensis*.

¹ <http://www.fao.org/3/a-i4480e.pdf>

² China refers only to the mainland in this document.

³ The latest nomenclature of tea plants are *Camellia sinensis (L) O. Kuntze* for China tea, *Camellia assamica (Masters)* for Assam tea and *Camellia assamica sub sp. lasiocalyx (Planch, MS)* for Cambodia type tea.

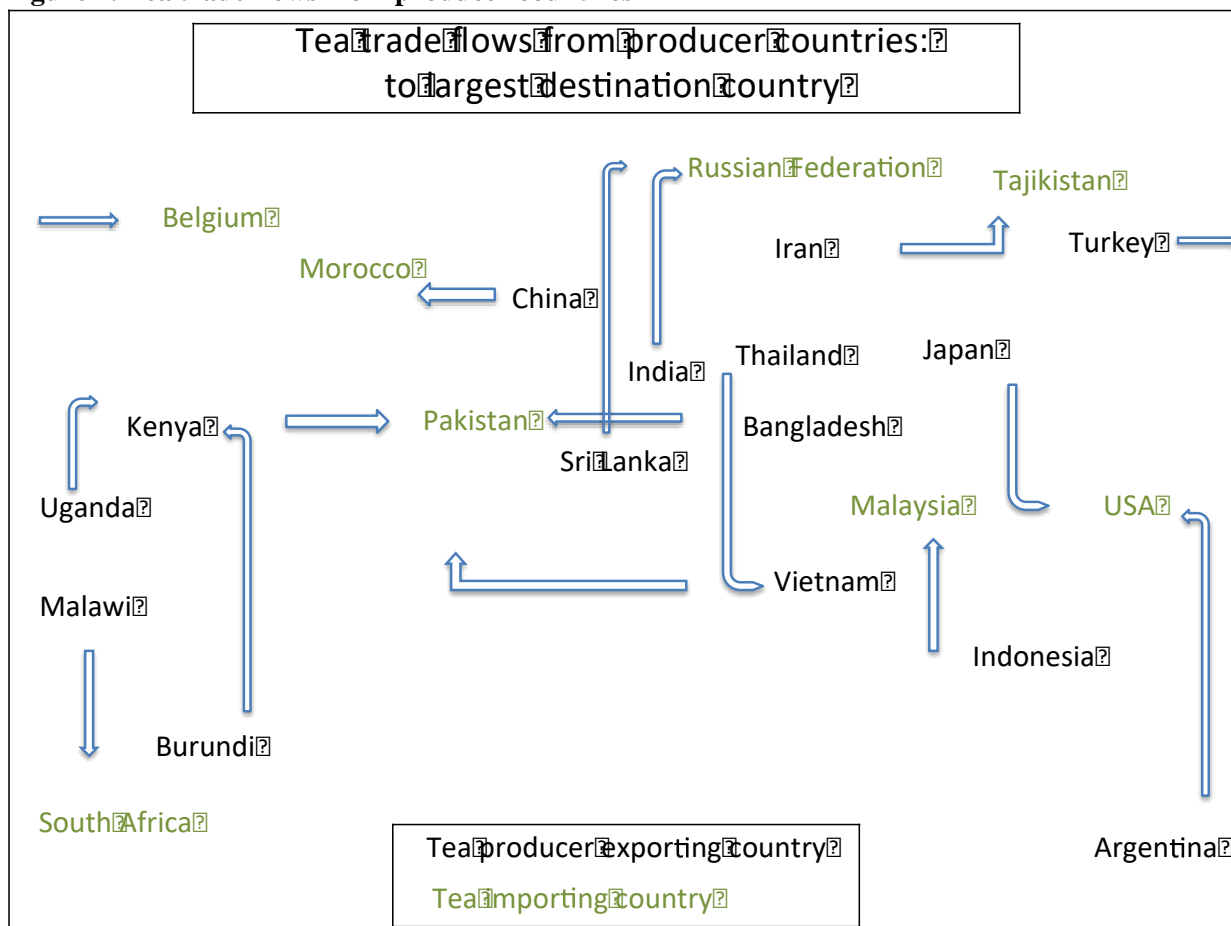
Improvements in yields in most countries over the past three decades were mainly due to the introduction of new clones and adoption of good agricultural practices. The major exception to the general trend in increasing yields is Iran (Islamic Republic of), where yields declined from 1 350 kg per hectare in 2000 to 828 kg per hectare in 2014. Further analysis at the country level would be needed to provide a more in-depth understanding of these yield changes during the past three decades.

III. TRADE

8. International trade in tea is complex in that the initial commodity is often blended, retail packed and branded. This is undertaken either in the producer country itself, in an intermediate country (for economic reasons) or in the final destination country where consumption occurs. The current trend is to handle more of the blending and packaging in the producer countries themselves or in intermediate countries where lower processing costs may be available (Figure 1). Some countries rely on a single market for the vast majority of their exports such as: Argentina, Bangladesh, Burundi and Uganda, while the remaining producer countries have broader export markets. The reliance on single export market can be risky, as unexpected events can disrupt exports and result in a loss of the export market and revenues.

9. The major producer exporting countries of tea in 2014 were Sri Lanka, China, Kenya, India and Viet Nam, while the major tea-importing countries were the Russian Federation, United States, United Kingdom, Egypt and Pakistan, accounting for over 640 000 tonnes of tea imports.

Figure 1. Tea trade flows from producer countries



Source: FAO IGG/Tea Secretariat.

IV. VALUE OF TEA PRODUCTION AND TRADE

A. VALUE OF PRODUCTION

10. Tea production makes a major contribution in value terms to many national economies, and smallholders play a major role in these economies (Table 2). In countries where smallholders dominate tea production, such as China (more than 90 percent), Viet Nam (more than 80 percent), Kenya and Sri Lanka (close to 70 percent) and India (more than 30 percent) the value of production (excluding further processing and value addition along the full value-chain) in 2014 were:

- USD 10.1 billion in China;
- USD 1.2 billion in Kenya;
- USD 899 million in Sri Lanka;
- USD 315.7 million in Viet Nam; and
- USD 3.2 billion in India.

The values of tea production of other major producers in 2014 were:

- USD 634 million in Turkey;
- USD 293 million in Indonesia; and
- USD 123 million in Argentina.

Table 2. Value of production, agriculture value added as a percentage of GDP and employment in agriculture as a percentage of total employment in Major Producing Countries

Countries	Value of tea production			Agriculture, value added as a percentage of GDP			Employment in agriculture as a percentage of total employment		
	1990	2000	2014	1990	2000	2014	1990	2000	2014
	million USD			percent by year			percent by year		
Argentina	41	52	123	8.1	5.1	8.3	0.4	0.7	0.5
Bangladesh	93	95	169	32.8	23.8	16.1	..	62.1	..
Burundi	8	13	24	55.9	48.1	39.3	..	..	..
China (Mainland)	728	835	10118	26.7	14.7	9.2	53.4	46.3	..
India	1454	1526	3203	29.0	23.0	17.8	..	59.9	..
Indonesia	262	173	293	19.4	15.6	13.4	55.9	45.3	34.3
Iran Islamic Rep. of	24	27	26	12.8	9.1	9.3	..	..	17.9
Japan	1767	1996	1263	2.1	1.6	..	7.2	5.1	..
Kenya	397	426	1187	29.5	32.4	30.3	..	..	..
Malawi	80	76	121	45.0	39.5	33.3	..	..	..
Sri Lanka	472	555	899	26.3	19.9	8.3	47.8	..	30.4
Thailand	7	8	78	12.5	8.5	10.5	63.3	48.5	..
Turkey	192	126	1084	18.1	11.3	8.0	46.9	36.0	19.7
Uganda	14	53	173	56.6	29.4	27.2	..	..	..
Viet Nam	49	90	316	38.7	22.7	18.1	..	65.3	..

Source: FAO IGG/Tes Secretariat.

11. As can be seen in the above table, the change in the value of tea production from 1990 to 2014 was significant both in absolute and in percentage terms. During this period, China saw the value of its

tea production increase by 1 290 percent, Viet Nam by 545 percent, Kenya by 199 percent, India by 120 percent and Sri Lanka by 90 percent.

12. From a policy perspective, the value of tea production as a percentage of total agriculture production is very important in sector policy and strategy formulation, particularly if the agriculture sector contributes significantly to the national economy. For instance, nearly 40 percent of Burundi's GDP comes from agriculture and about 30 percent in Kenya and Malawi (Table 2).

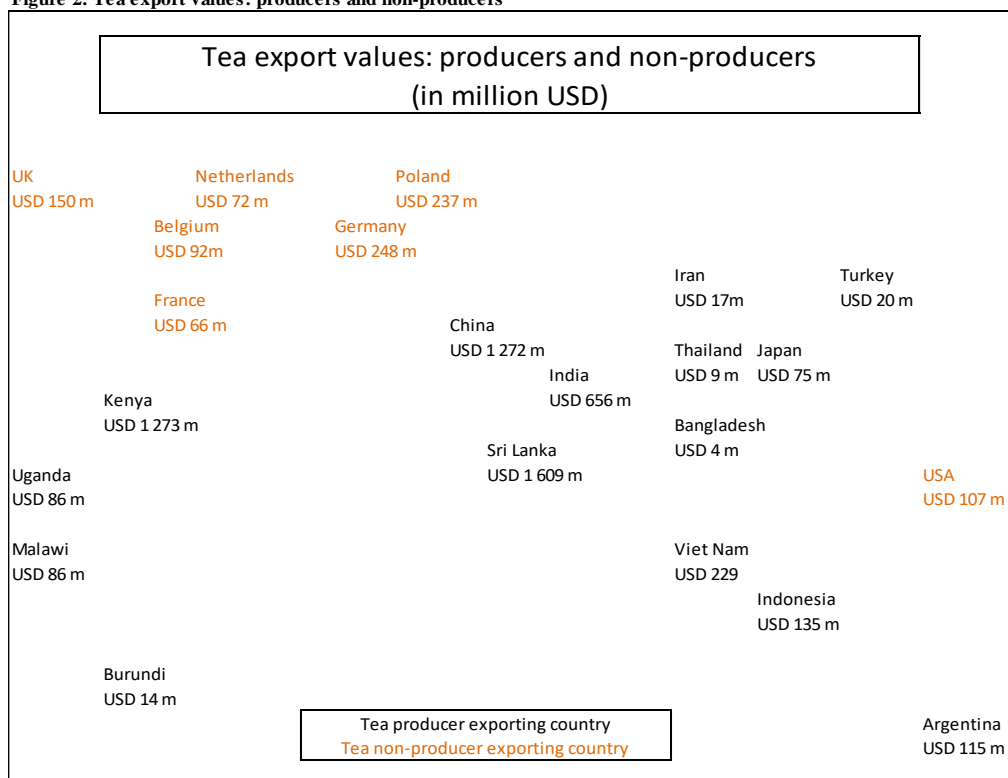
13. For smallholder dominated tea producing countries, the value of tea production as a percentage of total agriculture production in 2014 were 28.9 percent in Sri Lanka and 16.3 percent in Kenya. This illustrates the importance of tea, not only to the agriculture sector, but also to the national economies in these countries, and, by extension, the significant weight of the role of smallholders (who account for 70 percent of production) in contributing to the national economies. The sustainability of their livelihoods determines the future of the tea subsector and its contribution to the agriculture sector.

B. VALUE OF TRADE

14. World trade in tea was valued at over USD 5.61 billion in 2014, for an export volume of 1.73 million tonnes. Although Kenya exported the largest volume of tea (about 414 000 tonnes), the revenue earned from its tea exports was only the third largest, because its export unit value of USD 2.36 per kg was well below those of Sri Lanka, at USD 4.90 per kg, and China, at USD 4.22 per kg (Figure 2).

15. Among non-tea producing countries, Germany, Poland, the United Kingdom, the Netherlands, Belgium and the Russian Federation were the largest exporters in 2014. The tea export unit values of these exporters varied between USD 7 per kg and USD 11 per kg, which clearly indicate the premium additions for blending, packaging, etc.

Figure 2. Tea export values: producers and non-producers



Source: FAO IGG/Tea Secretariat.

C. PRODUCER PRICES

16. Using the latest data on producer prices available to the Secretariat, a comparison was made against the FAO Composite Tea Price index for black tea. In 2013 the Composite tea prices averaged USD 2.79/kg, while the price paid to producers varied considerably from USD 0.63/kg to USD 2.54/kg (Table 3).

17. Green tea prices varied considerably also, but as green tea prices are not factored into the Composite price, comparison was made between producer price and export unit values (fob). Japan enjoyed the highest premium for their green tea exports at USD 20.89/kg, while the domestic price in China of USD 4.80/kg confirms the strength of its domestic market compared to its export markets where unit values averaged USD 4.22/kg.

Table 3. Export Unit value, producer prices, auction prices USD/Kg - 2013

Countries	2013		
	Export Unit Value	FAO Composite Prices	Producer Prices
	USD/kg		
Argentina	1.50	2.79	0.63
Burundi	1.44	2.79	0.72
China, mainland	3.92	2.79	4.80
India	3.40	2.79	2.18
Indonesia	2.22	2.79	0.68
Japan	22.75	2.79	16.20
Kenya	2.69	2.79	2.54
Malawi	1.82	2.79	0.68
Sri Lanka	4.75	2.79	2.27
Tanzania United Rep. of	2.11	2.79	1.24
Turkey	3.65	2.79	2.70
VietNam	1.62	2.79	1.53

Sources: IGG/TE questionnaires and FAOSTAT. Compilation by the Secretariat IGG/Tea.

V. SMALLHOLDER INCOME AND LIVELIHOOD

18. Given the preceding overview of the factors driving smallholder socio-economic tea developments, additional information extracted from the IGG/TE annual questionnaires, supplemented by data provided by several tea boards and results of field surveys conducted and received from various countries were then used to conduct further analysis and arrive at the conclusions contained in the following sections.

19. As mentioned in the introduction of this document, the Secretariat is grateful to the Tea Boards of India, Indonesia, Kenya, Malawi, Sri Lanka and Tanzania for providing survey data of their tea smallholders. Although the microeconomic data at farm level were inconsistent and incomplete for an econometric analysis, the Secretariat was able to conduct some basic analyses to arrive at several useful results and draw useful conclusions on the implication of tea production and export earnings on the livelihood and food security of smallholders.

20. Results of the Secretariat's analysis provide margins at the farm-gate and indicative net incomes from tea and how they contribute to the livelihoods of smallholder households (Tables 4 to 8). Because of the proprietary nature of the data, countries have been assigned letters rather than named to avoid identification.

21. Comparing income data derived from tea versus other on- and off-farm activities in percentage terms, tea contributes heavily to household incomes in 2 out of the 4 (countries D and C). In country D income from tea contributes 70 percent of smallholder household income (Table 4). In countries A and B, only one third of total income is derived from tea production, while survey returns from country E were incomplete to conduct this part of the analysis.

Table 4. Household Income from Tea versus Other Activities

Income share in %	B	C	D	E	A
Income from tea (%)	33	67	70	n/a	32.5
Income from other on-farm activities (%)	30	24	25	n/a	n/a
Income from off-farm earnings (%)	37	9	5	n/a	n/a

Source: 2015 survey responses.

22. In terms of contribution to poverty alleviation, comparative tables were constructed to look at consistency. The analysis in Table 5 was based on the income data provided by the Tea Boards or available in national statistics, while the analysis in Table 6 was based on the Secretariat's gross margin analysis from the survey data compiled by the country respondents and from IGG/TE questionnaires. The challenge for the next phase is to reconcile the differences. National statistics offices and the World Bank were the sources of poverty indicators.

23. Total incomes per day in all countries (except for country E, where data on income was not available) were above the poverty line, when national poverty indicators are used. Incomes in countries B and C are significantly higher than their respective national poverty lines, while in countries A and D total incomes linger just above their national poverty lines (Table 5). However, if the World Bank poverty indicator of USD1.90 per day is used, then total smallholder household incomes of 3 countries A,B and C remain above the poverty line, while that of country D falls below.

Table 5. Comparative Incomes from Tea versus On- and Off-farm Activities and Poverty Implications – Secretariat Analysis based on national income data

Annual household income in USD	B	C	D	E	A
Total income	2000.00	2619.40	637.70	n/a	987.83
Income from tea	667.00	1755.00	446.40	n/a	321.04
Income from other farm activities	593.00	628.66	159.40	n/a	n/a
Income from off-farm activities	741.00	235.75	31.90	n/a	n/a
Total income/day	5.48	7.18	1.75	n/a	2.71
Income from tea/day	1.83	4.81	1.22	n/a	2.4
National poverty line/day	0.74	0.68	1.00	0.88	2.4

FAO IGG/Tea Secretariat calculations based on similar survey responses.

24. If the analysis is broken down further and assumes that all the holdings are mono-cropped with tea and no other on-farm activities, then only smallholders in country C would have incomes which are significantly above the national and World Bank poverty indicators. Smallholders in countries B and D would have incomes slightly above the national poverty lines but below the World Bank poverty line, while smallholder incomes from tea in country A is significantly below the national and international poverty lines and heavily dependent on other economic activities.

25. A gross margin analysis was undertaken by the Secretariat, using data from the smallholders survey compared to data from macroeconomic sources and IGG/Tea annual questionnaires (Tables 6 and 7). The comparison was made to highlight inconsistencies and the need to reconcile the two sets of data. The results of the analysis were then used to evaluate them against the poverty indicators.

Table 6: Cost of Production and Earnings of Smallholders (based on the Surveys provided by the Members)

Country	2014/2015							
	Green leaf cost of production	Green leaf farm gate price	Green leaf margin	Average tea farm size	Production per farmer	Gross income per farmer	Net income per farmer	Claimed income per farmer
	USD/Kg	USD/Kg	USD/Kg	Hectares	Kg/GL	USD	USD	USD
India	0.09	0.22	0.13	1.25	13995	3079	1819	321
Indonesia	0.13	0.15	0.02	0.42	2502	370	38	667
Kenya	0.11	0.51	0.40	0.41	4527	2309	1824	1755
Malawi	0.05	0.15	0.10	0.33	3583	537	367	446
Sri Lanka	0.09	0.52	0.43	0.33	4381	2278	1890	
Tanzania		0.14						

Table 7: Earnings of Smallholders (based on our macro data and data in the annual questionnaires)

Country	2014						
	Smallholders (operators)	Smallholders production in 2014	Smallholders value of production	Earnings per farmer	Production per farmer green leaves	Production per farmer	Price paid to farmers
	Number	Thousand tonnes	Thousand USD	USD	Kg/green leaf	Kg	USD/Kg
India	200000	398	398040	1990	8956	1990	1.00
Indonesia	99882	51	34416	345	2297	510	0.68
Kenya	253000	262	602249	2380	4668	1037	2.30
Malawi	15573	14	9585	615	4103	912	0.68
Sri Lanka	397273	247	576442	1451	2802	623	2.33
Tanzania	30000	12	7556	252	1799	400	0.63

26. The Secretariat's gross margin analysis from the survey data indicates that per-day net income from tea cultivation is sufficient to lift smallholders above the national and World Bank poverty lines in countries A, C and E but not in countries B and D, where net income from tea per day is either directly on the national poverty line or significantly below it (Table 8).

Table 8. Comparative Incomes from Tea versus On- and Off-farm Activities and Poverty Implications: Secretariat analysis based on national data

Annual household income in USD	B	C	D	E	A
Annual net income from tea	38	1824	367	1890	1819
Total annual net income applying percentage rates	114	2723	525	n/a	5598
Total net income/day	0.31	7.46	1.44	n/a	15.34
Net income from tea/day	0.10	5.00	1.01	5.18	4.98
National poverty line/day	0.74	0.68	1.00	0.88	2.4

FAO IGG/Tea Secretariat calculations based on survey responses.

VI. CONCLUDING REMARKS

27. Tea production provides income to smallholders contributes to and national income for the overall economy, while employment in agriculture provides an income for workers in rural areas. In countries where tea dominates agriculture, the contribution of the tea sector to rural income cannot be emphasized enough.

28. However, from the information gleaned from the survey compared to actual market realities summarised in the preceding overview of the world tea economy, it is clearly evident that there is a great disparity between tea smallholders and other players in the value chain.

29. Despite taking the biggest risk in the value chain (production and market uncertainties, adverse weather, climate change, weeds and disease infestations, etc.), farm earnings from the margins that accrue to the tea smallholders are clearly not sustainable. In quite a few cases, tea smallholders actually earn incomes that are below national and international poverty line indicators. Therefore, if their concerns are not properly addressed, then rural poverty, unemployment and food insecurity will increase and urban drift will accelerate.

30. Already there is evidence of a significant downward trend in employment in agriculture over the past three decades (Table 2).

31. There is also evidence for urban drift. From 1990 to 2014, the rural population in India dropped from 74.5 percent to 67.6 percent; in Indonesia, from 69.4 to a 47 percent; in Kenya, from 83.3 to 74.8 percent; and in Malawi, from 88.4 to 83.9 percent.

32. Such declines in rural populations put pressure on the rural labour market, making labour cost higher. Supporting evidence of this is the “de-estating” phenomenon first raised and discussed by the IGG/TE at its 20th Session in Sri Lanka in 2012.

33. To exacerbate matters, the socio-economic conundrum of tea smallholders also affects their wellbeing. Deducting from data on sanitation and potable water available to the Secretariat, it can be concluded that among tea producing countries, access to sanitation facilities in Malawi, Kenya, Burundi, India, Indonesia and Viet Nam still requires considerable attention, while access to potable water was of particular concern in Kenya, Malawi, Uganda, Bangladesh and Indonesia.

34. Finally, governments should consider putting in place enabling policies to ensure that tea smallholders have sustainable livelihoods. These should include, *inter alia*:

- Land tenure and land use policies to ensure that economies of scale in production and cropping and farming systems are sustainable in the long run;
- Credit policies to ensure good agricultural practices are achieved. Policy instruments could include the setting-up of micro credit schemes in the immediate terms and facilitate lending from mainstream financing institutions in the longer term;

- Policies to enable the establishment and/or strengthening of support institutions, including producer organizations/cooperatives/self-help groups to increase tea smallholders' bargaining position as well as achieving economies of scale in the purchasing and distribution of agricultural inputs and sale and processing of green leaf;
- Strengthening research and development and effective extension; and
- Harmonized quality standards and collective certification.