ECONOMIES OF SCALE PARADOX IN THE SRI LANKAN TEA INDUSTRY: A SOCIO-CULTURAL INTERPRETATION

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Abstract

This paper explores issues in the Sri Lankan tea industry, which contrary to conventional thinking on economies of scale, is dominated in production, yield, efficiency and contribution to the national economy by the newly emerged smallholder sector. Despite significant structural changes in the last decade, particularly the privatisation of large scale plantations due to underperformance as state-owned entities, the plantation sector still does not achieve expected performance, with yield and labour productivity about half that of major competitors. In contrast, the smallholding sector shows substantial contribution to the industry, and achieves at close to international standards. This scenario leads to questioning the universality of the doctrine of economies of scale. This study found that socio-cultural and political relations dominate production, and as a consequence, the theory of economics of scale has a loose interpretation in the context of Sri Lankan tea industry. The paper begins with brief overviews of the current world tea trade situation and the dual tea economy in Sri Lanka. Critical ownership phases of plantations are discussed in the historical, social-cultural and political economy context to identify causes of the performance disparity between sectors. Finally, implications and policy issues are addressed in providing some suggestions for industry enhancement.

Introduction

Sri Lanka, formerly known as Ceylon, has an established reputation as a leading producer of the world’s best teas. However, in recent years, there has been increasing dissonance between reputation and performance. The export-oriented industry is under increasing threat from within and without. A range of complex domestic issues has negatively affected productivity and efficiency, while increasing international competition has had significant impacts on product price and profitability.

The purpose of this paper is to explore issues confronting the tea industry in Sri Lanka, in order to identify potential remedial policy and management strategies. In particular, an apparent contradiction of the doctrine of economies of scale is addressed.

This work forms part of a PhD research project in strategic management in the plantation sector of the Sri Lankan tea industry. The information presented here has been gathered through literature review combined with primary fieldwork data gathered from participant observation and key informant interviews within the industry. In the interests of brevity, methodology is not described.

The World Tea Economy

Tea is a natural beverage that competes with other natural and formulated beverages. The world tea trade within the last five years is shown in Table 1. This table demonstrates a variable but obvious trend for increasing supply (12.2%) and declining price received (16.5%) over the 5 year period. That this is part of a long-term trend is evident in the fact that world prices declined by 67% in the period between 1970 and 1995 (World Bank, 1995).

Table 1: Trends in World Tea Export Volumes (Mt) and Values (US$/t)

<table>
<thead>
<tr>
<th>Year</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qt. (Mt)</td>
<td>US$/t</td>
<td>Qt.</td>
<td>US$</td>
<td>Qt.</td>
<td>US$</td>
</tr>
<tr>
<td>1312</td>
<td>2,272</td>
<td>1,414</td>
<td>2,373</td>
<td>1,372</td>
<td>2,031</td>
</tr>
</tbody>
</table>

Source: FAO 2002
The five major players in world tea production and export are shown in Table 2.

**Table 2: Main tea producing and exporting countries**

<table>
<thead>
<tr>
<th></th>
<th>Production (% of world)</th>
<th>Export (% of world)</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>28</td>
<td>12</td>
</tr>
<tr>
<td>China</td>
<td>24</td>
<td>17</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Kenya</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Indonesia</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>


The dominance of these five main producers is currently under significant challenge. Their contribution to world trade fell from about 80 percent of tea exports in 1995 to 71% in 2001. This was largely due to the production from new market entrants including Vietnam, Cuba, Argentina, Brazil, Peru, Uganda, Bangladesh, Malawi and Malaysia (FAO 2002). As can be seen, Sri Lanka occupies third place in total production volume but is still the leading exporter, with 20% of the world total. However, its declining importance is seen in the statistic that this share of world trade has dropped from 40% in 1970. Furthermore, its 10% production volume increase in that period is far less than the impressive increases of competitors in Asia and Africa, such as Kenya and Tanzania (ADB 1995; World Bank 1995; ITC 2002; FAO 2002)

**Tea industry in Sri Lanka**

Under British colonial rule, large-scale tea plantations began to be established in the 1860s, and were so successful that by the end of 19th century, the industry had become the mainstay of the economy, and the country one of the world’s leading tea producers. Its continued dominance has been described above. Currently, the tea industry occupies about 190,000 ha of land throughout the country, in both upland and lowland locations.

The tea industry is a major employment sector of the economy, with 3 million people (20% of the workforce) employed directly in production (approximately 1 million, see Table 3 below) or indirectly in ancillary and service industries.

Currently, the Sri Lankan tea industry consists of two main components: the recently privatised large-scale plantation or estate sector, and the smallholdings sector; there is also a minor (2%) contribution to output from state-owned plantations. Table 3 shows the contributions of the two main sectors.

**Table 3: Key economic indicators of plantation and smallholder sectors**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Tea Plantations</th>
<th>Tea Smallholdings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (no. of people)</td>
<td>700,000</td>
<td>350,000</td>
</tr>
<tr>
<td>Contribution to national tea income (%)</td>
<td>27</td>
<td>73</td>
</tr>
<tr>
<td>Land consumption (% of total tea lands)</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Production (%)</td>
<td>37</td>
<td>61</td>
</tr>
<tr>
<td>Productivity – yield (kg/ha)</td>
<td>1350</td>
<td>2216</td>
</tr>
<tr>
<td>Labour productivity (persons/ha)</td>
<td>6.14</td>
<td>4.61</td>
</tr>
</tbody>
</table>

The most notable features of this table relate to the superior performance of the smallholder sector relative to the plantation sector. Despite a workforce only half the size of that in the plantation sector, the smallholder sector contributes almost 3 times as much to national tea income, as a result of superior performance in both yield productivity and labour productivity. This appears to directly contradict the doctrine of economies of scale, especially in this situation where plantation production has been established for almost 150 years, whereas smallholder production is a much more recent development, dating back only to the 1970s, and receiving government policy support only in the 1990s. The increasing trend in tea production since 1993, to a new record level of 306 million kg in 2000 (Central Bank of Sri Lanka 2001; Ministry of Plantation Industries 2002), is attributable mainly to growth of the smallholding sector.

However, the industry is subject to complex issues, both domestically and internationally. The following sections explore these issues to seek explanation of the economies-of-scale paradox depicted in Table 3.

**Issues in Sri Lankan Tea industry**

**Losing market leadership**

The declining contribution of Sri Lanka to world tea trade has been documented above. Comparative data for Sri Lanka, India and Kenya for a range of indices, are set out in Table 4. These data are for 1991, the last year for which such comparative figures have been located. They show that whereas the private smallholder sector was very competitive with major competitors India and Kenya, the plantation sector was afflicted with low yield productivity and high cost of production. Comparison with Table 3 reveals little change in yield productivity during the 1990s, in both plantation and smallholder sectors.

**Table 4: Tea Productivity and Profitability: Sri Lanka, India and Kenya in 1991**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sri Lanka</th>
<th>India</th>
<th>Kenya</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>State</td>
<td>Private*</td>
<td>North</td>
</tr>
<tr>
<td>Yield (kg/ha)</td>
<td>1268 (52)</td>
<td>2442 (100)</td>
<td>2127 (87)</td>
</tr>
<tr>
<td>Intake per Plucker</td>
<td>13.52 (28.2)</td>
<td>24.59(51.2)</td>
<td>26.22(54.6)</td>
</tr>
<tr>
<td>Labour/ha-persons</td>
<td>3.21 (146)</td>
<td>2.7(122.7)</td>
<td>2.67(121.4)</td>
</tr>
<tr>
<td>Cost of Production $/kg</td>
<td>1.87 (199)</td>
<td>1.54(164)</td>
<td>1.52(162)</td>
</tr>
<tr>
<td>Labour cost as % of COP</td>
<td>50</td>
<td>n.a</td>
<td>39</td>
</tr>
<tr>
<td>Revenue $/ha (price = $ 2.03/kg)</td>
<td>2574 (52)</td>
<td>4957 (100)</td>
<td>4318(87)</td>
</tr>
<tr>
<td>Gross Profit ($/ha)</td>
<td>203 (8.3)</td>
<td>1196(49)</td>
<td>1085(44.5)</td>
</tr>
</tbody>
</table>


*Low elevation tea smallholdings of varying sizes but below 20 ha.
Figures in brackets are indices with the best result as the base for each variable.

**Production Orientation**

The Sri Lankan tea industry concentrates on volume of production rather than market demand. It could be argued that it has failed to adequately exploit new market needs such as value-added teas. In the past two decades, the progress in this direction has been unimpressive with less than four percent of the tea exported belonging to higher value-added categories (tea bags, instant and green tea) (Shanmugaratnam 1997; Lister et al. 1997). Currently, only 30-35 percent of the tea exported is packeted, while the rest is bulk tea (National Development bank & NDBS 1995). In reality, although Sri Lankan tea producers complain about low prices, the country has lost its market shares in several regions due to the higher prices and the poor quality of Ceylon tea (Kelegama et al. 1995).
In addition to these issues, there are specific and critical issues in relation to both sectors, which are addressed separately in summary form in Tables 5 and 6.

### Table 5. Issues in the Tea Plantation Sector

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old Tea Bushes</td>
<td>More than 50 percent of tea fields are 100 years old and use old, low yielding tea varieties generated from seed rather than more productive recently developed vegetatively propagated cultivars.</td>
</tr>
<tr>
<td>Lack of Basic Product Mix</td>
<td>Orthodox types of tea have been dominant, despite a growing demand for fast-infusing crush-tear-curl (CTC) tea in the Middle East, Pakistan and Russia. Only 3% of Sri Lanka's tea is CTC in contrast to India's 83% and Kenya's 98% (FAO cited in RPCTIT 1995).</td>
</tr>
<tr>
<td>'Old' technology</td>
<td>The geography of most tea cultivation areas limits mechanisation of harvesting and other field activities. Moreover, the majority of the tea factories in operation are small and use obsolete technology (Asian Development Bank 1995). The average area served by a factory is 308ha as opposed to 1,000ha in Kenya (ADPS et al, 1993), where smallholdings dominate the tea sector. This creates higher processing costs for Sri Lankan tea.</td>
</tr>
<tr>
<td>High labour costs</td>
<td>Tea plantation activities are labour intensive. Rising labour cost is a major contributory cause to declining profitability. The political bargaining power of workers’ unions influences wage costs, for example through winning wage increases which also include the unusual guarantee of 300 days work per year, unjustifiable on productivity grounds.</td>
</tr>
<tr>
<td>Politicisation of labour relations</td>
<td>Workers are used by politicians for their political agendas. In particular, Tamil politicians from plantations who are members of cabinet strongly influence policy decision-making on plantations. This is only a part of more complex reality which involves peculiar ethno-political union-worker relationships, and workers’ security.</td>
</tr>
<tr>
<td>Patriarchy</td>
<td>The trade union- worker relationship represents the paternalism which is some ways reflects the old estate management-worker relationship from colonial times. The trade union is an institution that reproduces feudal bureaucratic social relations.</td>
</tr>
<tr>
<td>Uncertain Property Rights</td>
<td>Privatisation of tea plantations resulted politicisation of process and in turn the lack of total transfer of ownership that affected to a ‘real form’ of privatisation. This was backed by historical legacy of land ownership, political and trade union opportunism. Consequently, private capitalism was prohibited to access resources of plantations fully.</td>
</tr>
</tbody>
</table>

### Table 6. Issues in the Smallholdings sector

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality, Unity and Identity</td>
<td>The main issues stem from the large number and diversity in size and location of the 500,000 smallholdings. Quality of product is reduced by damage to an estimated 30-40% of tea leaves during transport. There is no politically free institution to facilitate market unity. As a consequence, processing efficiencies and market brand identity are elusive or unavailable.</td>
</tr>
<tr>
<td>Politicising</td>
<td>This peasant sector is attractive to politicians and they formed co-operative type of societies to achieve their political objectives.</td>
</tr>
<tr>
<td>Exploitation</td>
<td>Agents such as collectors, transport providers, and brokers may exploit smallholders through low payments, wrong weight measurements, and unreasonable deductions.</td>
</tr>
<tr>
<td>Growth</td>
<td>Land scarcity limits expansion of smallholdings.</td>
</tr>
<tr>
<td>Labour</td>
<td>Most tea smallholders employ family labour, but problems of labour supply are emerging because the young generation is resistant to this work as it has low dignity in Sri Lankan society. In this social structure, parents also encourage children to be educated and find a socially accepted job. This issue is common for tea plantations as well.</td>
</tr>
</tbody>
</table>
How the past created the present: tea plantation history

Colonial Era

Tea plantations were created by the British colonial state in 1860s. Land was acquired for almost nothing, and when the local people showed indifference to plantation work, cheap slave-type labour was introduced from South India. It was important that an estate be large enough to generate a gross income to cover overhead costs and make a net return for absentee British owners. In this case, larger holdings demanded a resident labour force (Bandarage 1983; De Silva 1982; Jayewardena 2000). This required a labour indenture system which is the worker and family were tied to an estate by "compulsion or by social mechanism". Therefore, the estate was both the workplace and home - a total institution. As a result, the services provided were important elements of a paternalistic social security system. This was effectively implemented by the plantation superintendent whose complex patriarchal role has been described by Shanmugaratnam (1997) and De Silva (1982, p.289).

It has been argued that as a consequence of the profit imperative, the large size and management system of the plantation was driven by external rather than internal economies of scale, since the technology of crop production was divisible or scale neutral (De Silva 1982).

Tea plantation activity did not demand specialised skills or gender, although tea plucking was, and still is, regarded as a female activity. There was no other fixed division or specialisation of labour. Shanmugaratnam (1997) notes that allocating labour for various activities to maintain an equitable distribution of workdays demands great direct control of labour. Work norms were enforced personally by the kangany (supervisor) whose job was to keep a close watch on every worker.

After the country gained independence in 1948, almost 100 years of British plantation ownership ended. Some foreign owners had already relinquished their interests before this time in the expectation of forthcoming nationalisation (Rote 1986). However, much of the system they created has endured through the half century since independence, despite dramatic changes in government policy settings towards plantation ownership and management.

Nationalisation

Under the socialist Government manifesto introduced in 1970, the foreign owned plantations were nationalised under the Land Reform Low No.39 of 1975. This abolished the Agency Houses, and brought a new form of state bureaucratic structures which were centralised and politicised (De Silva 1982; Bandarage 1983; PERC 1996; Shanmugaratnam 1996; Gamage 1997; Jayawardena 2000).

Although nationalisation aimed at improvement of plantation performance the ethno-political situation created unexpected results.

Growing political bargaining power of the plantation worker unions resulted in the granting of citizenship to a majority of Tamil workers (of Indian origin) since 1980. This led these workers to become a decisive force in politics. Unions demanded that the plantation workers should be treated as in other state owned non-agricultural enterprises.

The crisis of the plantation sector – its loss of competitiveness in the world market - resulted from two main issues: (1) declining productivity, caused by weakening of

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1Estate workers consider the superintendent and assistant superintendent as 'big lord' (periyathurai) and 'small lord' (sinna thurai) respectively. In Tamil the word “thurai” for lord became “dorai” in the estate and the superintendent and assistant superintendent are called Periya Dorai and Sinna Dorai.
ecological capital and obsolescence of processing machinery, and (2) rising cost of production, particularly labour costs. Inappropriate resource management, lack of capital accumulation, and post-nationalisation policies, fuelled these issues. The underperformance at the beginning of the 1990s, illustrated above in Table 4, has widened (Ekanayaka 1996; Central Bank of Sri Lanka 1998).

Given the labour intensive nature of tea production, labour productivity in tea cultivation is highly dependent on land productivity. The low productivity per hectare in the plantations is a symptom of the cumulative effects of several factors such as poor rates of replanting and infilling, inadequate fertiliser applications, and neglect of soil and water conservation. Even though these malfunctions have a history that predates nationalisation they continued after nationalisation (SLBDC 1991; Asian Development Bank 1995; Shanmugaratnam 1997) and followed by the privatisation as well.

Privatisation

In June 1992, with pressure of the World Bank and Asian Development Bank, and in recognition of the poor performance of plantations under state (national) ownership, the government initiated a partial privatisation of the sector. Management contracts were issued to commercial interests, while national ownership of land was retained (Shanmugaratnam 1997). The government created 23 state owned Regional Plantation Companies (RPC) out of 449 estates and reallocated estates to the RPCs. Prior to the formation of RPCs, the CWC, the main trade union of the plantation workers, along with other unions, had been agitating for certain demands including wage increases in addition to the continuation of former work practices such as 300 days work per worker.

The new management companies struggled with the tension between generating profit while meeting politically mandated employment conditions overlapping with social obligation relating to provision of housing and welfare for resident workers inherited with the plantations. A study carried out by the Asian Development Bank and the government of Sri Lanka (1993), identified the labour problem as the most serious for management.

In 1995, following a change in government, full privatisation of state plantations was commenced. This was the largest agricultural privatisation in the world. Initially, foreign investors were allowed ownership of up to 49 percent of the issued share capital of an RPC, but this policy was subsequently changed, controversially, to one of domestic ownership only (Shanmugaratnam 1997).

The commercial difficulties faced by management companies during the partial privatisation period have intensified since full privatisation, because the workers’ housing question has changed into a land question, with demands by unions and political groups for alienation of plantation land for landless Sinhalese villages. This is a complex socio-economic problem, which contributes to the competitive disadvantage experienced by plantations in comparison to smallholders illustrated in Tables 3 and 4.

Given the scale neutral field production technology that is common to both sectors, it is evident that the superior performance of the smallholder sector over the large plantations is due to lower transaction and direct production costs made possible through owner management and dependence on family and hired labour. However, it is possible that in some situations smallholders incur significantly higher bargaining costs to secure a good price for their green leaf from middlemen or factory owners.

In conclusion, privatisation of RPCs is still an ongoing process and it seems that the government has been messing through without a long-term perspective and a strategy that addresses immediate and long-term issues proactively. There is an obvious failure

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2 Ceylon Workers Congress.
at the national policy level to fully recognise the role and responsibilities of the state in designing and implementing a privatisation programme for the plantation sector.

Tea Smallholdings Sector: small scale, large contribution

Within the last two decades, the smallholding sector, comprised of 500,000 holdings of 0.5 to 20 ha, has shown remarkable improvement in productivity, land consumption, employment and income generation to the industry (Government of Sri Lanka 2000). Its recent and current status is illustrated in Table 3 and 4 above. This sector, accounting for 61 per cent of total output, recorded a 12 per cent growth over 1999, compared with a 2 per cent growth in the production under regional plantation companies. The average yield in the smallholdings sector, at 2216 kg/ha is almost close to double that in the larger scale plantation sector (Central Bank of Sri Lanka 2001).

Despite its superiority in numerous ways to the plantation sector, the smallholding sector is not free from problems. As illustrated in Table 6 above, these include political interventions, a lack of proper institutional and policy frameworks, and the nature of peasant type of production, characterised by lack of information and knowledge of farmers, lack of market orientation, and reliance on traditional technology, family labour and management.

Reasons for the sector’s apparent success, despite such problems, include lean structure, family ownership and control, low transaction cost, clear property rights, and the state’s subsidiary mechanism. Therefore, the smallholdings enjoy high productivity and low cost of production.

There are also clear socio-cultural heritage reasons for the sector’s success. The peasant feudalistic mode of production has existed since the 5th BC (Pieris 1956), so there exists a clear preference for small-scale cash crop production over other forms. This preference is rooted in Buddhist religious values and belief systems, which embrace the simple life and low expectations, and provide neither confidence nor experience in ‘managing’ in the industrial capitalist sense. Their main value is to be satisfied with what they have.

Contextual Implications and Possible Policy issues on Plantations

Although smallholdings work effectively, as long as the present Tamil plantation workers (of Indian descent) are dependent on estate employment, selling or distributing plantations to Sinhala3 smallholders is not a workable proposition. Thus, plantations will have to continue in institutional form. This provides opportunities for more profitable land use including economics of scale.

If the tea plantations are to continue, then the labour problem and the lack of competitiveness have to be addressed. Apparently, there are contradictions between these two. The workers’ demand for 300 days of work and continuous wage increments may not be easy to meet in all plantations. In this regards, a strategy that combines intensification of tea production and diversification into other profitable and employment generating areas may be a more productive approach.

Tamil workers’ dependence on plantations for employment and their social security will progressively decrease if social mobility becomes a reality for them. The union can be expected to continue to argue against incremental changes in employment contracts and to

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3 Sinhalese are the majority ethnic group (78 percent of the total population), and mostly, smallholdings are belonging to them. Upcountry Sinhalese believe that Colonial State acquired their indigenous land, and therefore, they have a right for them.
invoke the ‘traditions and customs’ of the self-contained estate to demand employment for unemployed estate youth and to reinforce claims related to maintenance of the status quo in relation to provision of employment, housing and basic social services.

**Suggestions for improvements for the tea industry in Sri Lanka**

**Low productivity issues**

It is not easy to provide prescription for such a complex industry. Any measures aimed at improving commercial performance must be able to be aligned with socio-cultural forces including state political machinations, trade union power, security of land tenure, and workforce attributes such as values, religious beliefs, ethnicity and class structure.

One area needing urgent attention if plantation production is to become more viable is to address the labour-intensive nature and high cost of production. Efforts need to focused on lifting land and labour productivity substantially. If major competitors are able to profitably sell their tea for half the price of Sri Lankan product (Lister et al.1997), Sri Lanka must strive to do the same.

Total mechanisation is not possible, but partial mechanisation of field operations has the potential to reduce cost, improve land and worker productivity, and also boost the morale and status of workers as skilled machine operators. In addition, time-and motion and ergonomic studies could be initiated for devising ways to improve field and factory operations.

Research on product improvement and development, and promotion of Sri Lankan tea is two other key areas to be dealt with. Revision of policy frameworks and institutional arrangements are necessary to address these areas without opportunistic political agendas.

**Workforce issues**

Other major challenges for the plantation sector are related to the workforce. Chronic absenteeism has major impact on labour productivity and cost, while workforce continuity and industry viability are threatened by out-migration for better conditions and a more fulfilling life outside the tea sector. Raising the living, housing and working conditions for tea workers could address these issues. Related to this is the need to redress the low cultural esteem for tea industry employment.

Both Sri Lankan and Indian workers have similar cultural origins, and are similarly attuned to accept paternalism, collectivism, respect for authority and existing class structures, and dependency. Bureaucratic systems in the plantation section in Sri Lanka do not fully acknowledge such socio-cultural complications, and conflict is the common result. Therefore, a socio-cultural approach to the management system has to be incorporated in order to increase worker commitment.

**Smallholder sector development**

The smallholding sector has potential for further development as a competitive force. This needs a central organising body to co-ordinate activities, which should include an effective extension system. Community-based programmes can be implemented to enhance collective bargaining power and find possible solutions for labour problems. Collective power can be utilised to gain economic advantages available through wholesale buying of resources, transportation and sharing of knowledge.

**Conclusion**

The continuity of the plantation holdings depends on raising productivity of land and labour through superior biological technology and management. The major means of
raising profitability is through raising productivity and consequently lowering the cost of production. This is a major challenge for policy makers and plantation management. The smallholdings sector shows attractive growth and internationally competitive performance during the last 10 years, and has clearly overtaken the large plantations in terms of efficient use of resources, profitability and productivity. However, this sector is challenged by problems of shortage of labour and land, inconsistent product quality, exploitation by intermediates, and marketability of tea leaves. Survival and domination of the smallholdings sector is attributable to lean structure, family ownership and control, and family labour.

Historically, the large size of plantations has not conferred any inherent economies of scale that were not internal but external to it. Even today, in the cultivation of Ceylon tea, the large plantation does not enjoy any inherent economies of scale over smallholdings, as indivisible technologies are conspicuously absent. Furthermore, external diseconomies can result if the individual estates belonging to the same company do not generate sufficient profit margins to cover overheads. This study found that cultural political production relations are dominant, therefore, the theory of economies of scale has a loose interpretation.

References

Asirwatham - Chairman of Public Enterprise Reforms Commission (1996), Interview with the PERC Chairman. the Island.


