

TWIN PROBLEMS OF THE TEA INDUSTRY: CAUSES AND A WAY-OUT

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Causes of lowered productivity

A steep decline in the yield of clonal tea fields after the third pruning, that is 12-15 years after planting, in many tea plantations, especially in the low and the mid-elevations, has now become a common occurrence in Sri Lanka. This is a result of low tea-bush densities owing to casualties and debilitated tea bushes. Some tea fields have less than 50% of the original bush stand, which has been partly attributed to poor soil conditions, bad weather (drought), pest and disease attacks, and the ageing of the bushes. Sometimes poor management (adoption of improper cultivation practices, arising from a lack of workers, or from attempts at cost reduction) has also contributed to the lower productivity. Moreover, the potential of our tea fields for yielding crop has not been exploited by the use of proper harvesting policies, owing to a lack of workers.

Field observations have shown that our tea clones have a high density of shoots, of which an annual mean of about 50 shoots can be harvested from each bush, in a given plucking round. Accordingly, the potential productivity of our tea fields is about 5000 kg/ha/yr. It is a known fact in tea cultivation that "wealth is created in the field; only value can be added in the factory".

Addressing the twin problems of declining field productivity and the shortage of workers is thus of paramount importance.

A deficit of workers

The shrinking labour force on tea plantations, and the poor out-turn of the resident or permanent workers in estates, have created a great deficit of workers available for field operations such as plucking. This situation is a threat to the country's tea industry. The labour out-turn of many low-country plantations is said to be about 50% of the available labour force. The majority of the youth in worker families are either idling and dependent on their parents' earnings, or working outside the estates. Some have gone abroad.

Measures to attract and retain workers

Worker families and the younger children are being looked after by estates which spend a colossal amount of money every year to provide them with their basic needs.

After privatization of the tea plantations, various measures have been implemented to attract workers, increase worker productivity and reduce absenteeism. Payment of very attractive over-kilo rates (Rs 10/kg in some estates), extra allowances for working over and above a minimum number of days per month, awards for the best pluckers, and more frequent payments of advances, are some of the measures taken by plantation managers. Some estates have recruited workers from non-tea growing areas and distant villages, and provided them with accommodation facilities within the estate premises. Such measures have minimized the problem of worker shortage in some estates. However, in many instances those measures have not brought about any significant improvements in labour out-turn or productivity.

Worker attitudes and improved technologies

Changes of worker attitudes also affect the labour situation in plantations. At one of the field programmes, organized by the TRI, to introduce the TRI Selective Tea Harvester (the TSTH), together with innovative plucking baskets, the leader of a plucking gang in her vote of thanks at the end of the programme, said: "If we are to cry for our rights, we should make this tea estate productive, and therefore it is our duty to send at least one of our children to work and look after this estate, before we ask for our rights. New technologies and innovations such as those shown to us today will definitely attract our children, and change their attitude to a new fashion of work."

With the provision of appropriate technologies, the industry can still retain some of its workers and get their maximum contribution towards higher productivity. However, with social changes and the opening up of many other avenues for attractive employment, increasing the labour supply to the estate sector will continue to be a difficult task in the future.

An alternative strategy

Arising from this, it will be necessary to try an alternative strategy: to set aside marginal tea lands, and increase the productivity of selected, high-potential tea lands, using available resources in a sustainable manner.

About 180,000 ha of registered tea plantations in Sri Lanka produce approximately 300 million kg of made tea annually. Accordingly, the average productivity of our tea lands at present is estimated to be about 1,650 kg of made tea/ha/yr. This is much

lower than the productivity of some other leading tea-growing countries, such as Kenya (2,200 kg/ha/yr). When the productivity of small holdings (less than 50 ha), and large estate plantations, is determined separately, the productivity of the former is markedly higher than that of the latter: 2,200 and 1,400 kg/ha/yr respectively.

There is however great potential for increasing productivity in the large plantations using the alternative strategy.

Generally, in an agricultural system saddled with intractable problems like lack of labour, it is more profitable to continue to maintain a small extent of land with high productivity than a large extent with low productivity. The same rule is true for the tea industry.

The feasibility of achieving the present level of national production with a lesser extent of tea should be carefully evaluated. More than 50% of our tea lands have been planted with high-yielding, or moderately high-yielding, tea clones. Estate records show that these clones produce well above 2,500 kg of made tea/ha/yr by the third pruning cycle, at all elevations. There are also many, good seedling-tea fields having the same level of productivity. If this level of productivity can be sustained in large plantations, only about 49,000 ha of tea lands (about 52% of the extent of the large plantations), may be needed to produce approximately 122 million kg of made tea, which was the contribution of the large plantations in the year 2000.

High productivity from good agricultural practices

By adopting good cultural practices throughout the year, looking after each bush in the field and implementing an efficient infilling programme, estates can maintain a good ground-cover with about 12,000 healthy bushes per ha. However, inferior or sub-standard planting materials should never go into the field for future planting.

Field productivity can be markedly enhanced by improving soil fertility. In this strategy, proper establishment and management of shade trees, and application of organic manure, are vital. Field trials have shown that an approximately 25% increase in yield can be achieved by elevating the soil organic carbon level by about 1%. Moreover, irrigation and fertigation during dry spells increase tea yield by about 50-100%. However, the availability of resources, such as water, limits the application of irrigation and fertigation techniques in some tea plantations.

The other important aspects to which careful attention ought to be paid are harvesting and pruning. Harvesting should be planned according to labour availability. Manual harvesting, or harvesting using the TSTH, should be undertaken on high-yielding tea fields at proper rounds, and any crop due to be discarded, because of a shortage of workers, should be harvested if possible using motorized machines.

In order to achieve a yield of 2,500 kg/ha/yr, the harvesting of about 25 shoots per bush (12,000 bushes/ha) is necessary at every plucking round, at a minimum of 45 rounds/year. The potential productivity of our tea bushes is much higher than this amount of yield. All harvestable shoots should be plucked selectively from each bush at the correct intervals (equal to a phyllochron) by deploying an adequate number of workers. Experimental results have shown that shorter plucking rounds (five days) give more than a 20% increase in yield, compared to extended rounds (10 days), at all elevations. Maintenance of proper plucking rounds will also ensure a better leaf standard, mitigating problems associated with tea manufacture and quality.

A combination of mother leaf and fish leaf plucking (mother leaf plucked during lean periods, and fish leaf plucked during rush-crop periods) will give a higher productivity, higher than 20%, than continuous hard plucking (fish leaf plucking). The labour requirement for plucking can be markedly reduced, by 30-40%, by use of the TSTH, without reducing the yield and quality of the made tea. In addition, the introduction of innovative plucking methods (the TSTH used in combination with improved plucking baskets) will change worker attitudes, and improve labour output. Resting the bushes before pruning, medium lung-pruning and tipping will also contribute to higher productivity (an increase of 25-30%), with a significant saving of labour in the tea plantations.

Benefits from reducing the tea extent

Although the labour force available at present is not sufficient to work on the entire extent of our tea plantations, workers can be used effectively on about half of the estate-sector tea lands, if good agricultural practices, which arrest debilitation and death of bushes, and proper harvesting techniques, are adopted. With this strategy, about 5-10 % of the extent can be reduced every year, with about 50% of the extent going out of tea production in about 5-10 years. The savings from the abandoning of tea lands could then be efficiently utilized to upgrade the productivity of fields which have potential.

The benefits accruing from reductions in the cost of maintenance of unproductive or abandoned tea lands, and increases in the productivity of the remaining tea fields, should be carefully evaluated. If the results of the initial step are promising, and the crop losses from reduction of the tea extent are offset by increases in productivity of the remaining tea lands, the programme may be continued. If not, reasons for not achieving the expected benefits should be explored.

The lands that go out of tea should be used for forestry, either for timber or for fuel-wood plantations. In addition, a part can be kept as thatch banks (rehabilitation grasses). Green material harvested from such areas can be used for improving soil fertility in the tea areas. Such a system may not only be sustainable but also environmentally friendly.

This strategy could be used to revitalize our tea industry by fighting against soil degradation, bush debilitation and decline in the quality of made tea. During the last two decades, the extent of our tea lands has been reduced by about 25% (about 60,000 ha), with a doubling of average productivity. This shows that higher production can be secured from a smaller extent of tea land using only limited resources.