# Estate Women's Fertility in Sri Lanka: Some Aberrant Perspectives in the Causal Links

*The deviant path taken by the fertility performance of the estate women since the 1940s unravels determinants of an unusual nature, outside the dictum of accepted demographic parlance for they are basically an outcome of negative factors*

**By P. Puvanarajan***

The common findings of research are that women in the labour force bear fewer children than those out of it. However, the behavioural pattern of Indian Tamils is somewhat aberrant in nature as for some time in the 1950s, 1960s and 1970s, their fertility performance was lower than for those women in the other major ethnic groups in the country, namely the Sinhalese and the Sri Lankan Tamils. On closer examination of the underlying factors, it becomes evident that it is again not the labour force participation per se that was the determining factor, and that fresh and different evidence reveals factors accounting for this impressive but anomalous inverse link.

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The work of the Indian Tamil women in the estates, involving the picking of tea, is in no way to be associated with any career-building process but is basically linked with the struggle for survival. This is evidenced by the findings of Langford (1982) who, on analysing World Fertility Survey data, indicated that 95 per cent of the Indian Tamil women on estates had worked since marriage, compared with 41 per cent of Sinhalese, or 22 per cent of Sri Lankan Moors. Langford (1982:26) further states that "the World Fertility Survey data indicates not only that almost all estate. women had gone out to work since marriage but that 90 per cent or more of them worked at each stage of family building", meaning thereby that childbearing and work occurred concurrently. Therefore, it is hard to identify the common association that is often established as existing between working women and fertility, as it is a situation where women are engaged in hard labour. An attempt to account for their deviant lower fertility performance needs to look for the prevalence of negative factors, which disturb the process of reproduction from conception to live births. Thus, the main objective of the study is to examine the changing scenario in fertility trends among the estate women in Sri Lanka from the mid-1940s. The study centres around bringing to light the determinants which contributed to the anomalies that prevailed over time in their fertility behavioural pattern and establishing the causal links.

## Data and limitations

The study is primarily based on secondary data which include the 1975 World Fertility Survey, the population censuses of Sri Lanka from 1946 to 1981 and statistics for the period 1957-1981 from the Registrar General's Department, along with data provided by the Demographic and Health surveys of 1987 and 1993, to show recent transitional trends in their fertility behaviour.

Apart from the secondary data used, the study leans on vital qualitative data obtained through a number of case studies of the Indian estate Tamil women that helped establish the causal links in respect of their reproductive capabilities. Moreover, the census of population was not conducted after 1981 and data from the July 2001 census are still being processed, while the Registrar General's Department has not published data on fertility performance by ethnic groups since 1989.

## Results

## Estate Indian Tamils: background

The Indian Tamils who form the estate labour population of Sri Lanka were drawn from a poverty-stricken population in South India. Socially, they belonged to the lower stratum of society in the prevalent caste system which is

woven into the fabric of community life there. Hence, the management which undertook to employ them on the plantations was able to satisfy them with the provision of the basic amenities of life in respect of health, housing and education. Consequently, their socio-economic conditions, compared with other sectors of the population in the country, could be regarded as the lowest. Their educational background is poor, with literacy rates among the estate women being the lowest: only 56.3 per cent literate in 1981 compared with the national level of 83.2 per cent of women. Educational facilities in the estates were kept to the bare minimum. They did not fall in line with the general educational system of the land, for there was much disparity in the quality and standards maintained.

Trends in age at marriage revealed that the singulate mean age at marriage for the country was on the rise between 1946 and 1981. This record was corroborated by the World Fertility Survey findings of 1975. Furthermore, Langford (1982), using evidence from that survey, indicated that the age at marriage of women had been rising in all major ethnic groups in the country. But strangely, the survey data of the sample of the estate Tamil women revealed that their age at marriage was lower than that of most other women in the population, with a singulate mean age at marriage of 18.1 (compared with 19.7 for the rest). Such an early marriage behavioural pattern of this segment of the population may be explained by their origins from South India, with their roots in the system of child marriage. "Despite laws prohibiting girls from marriage before the age of 17 and boys before the age of 18, there were over 10 million child brides in the late 1980s in India" (Population Headliners, Nos. 168, 169). According to the Family Planning Foundation of India (FPFI), 46 per cent of girls in rural areas were married before the age of 13 and the rest before the age of 17.

With a low average age at marriage, one would expect the estate women to have a higher fertility performance than those in other ethnic groups, in view of their longer period of marital life during their reproductive span than those marrying at latter ages. Here again, as on the earlier occasion when relationships between fertility and the degree of labour force participation of these women were looked at, anomalous facts surfaced. The marital fertility of the estate women was found to be lower than the population of Sri Lanka as a whole, with 3.63 mean number of children ever born to the estate women and 3.94 to all groups (**table 1**). The table reveals the mean number of children ever born to estate women and to other ethnic groups in the population by age at marriage and duration of marriage. The interesting fmding is that the estate Tamil women, despite their relatively lower ages at marriage, show the least fertility performance at all ages, This trend was found to be consistent both

**Table 1. Mean number of children ever born to estate Tamil women and to other ethnic groups in SriLanka by age at marriage, 1975**

| Age at first marriage | Sinhalese | Sri Lankan Tamils | Sri Lankan Moors | Estate Tamils | All |
|---|---|---|---|---|---|
| All ages | 3.94 | 3.95 | 4.35 | 3.63 | 3.94 |
| <20 | 4.89 | 4.55 | 4.80 | 4.12 | 4.75 |
| 20+ | 2.86 | 2.65 | 2.89 | 2.35 | 2.81 |

*Source:* Langford, C.M. (1982). "The fertility of Tamil estate workers in Sri Lanka", World Fertility Survey Scientific Reports, No. 31 (Voofburg, International Statistical Institute).

among women who married before age 20 and those who married later. Such unusual aberrant fertility behaviour among these women is further highlighted in the survey, which also revealed that these women had reported far less contraceptive use than women in other ethnic groups in the sample, making the task of accounting for their lower fertility behaviour far more formidable.

## Features and trends in fertility

The fertility of the Indian Tamil estate women was on the decline from 1946 to 1971 and showed a rise in 1981. In 1946, their fertility was higher than the all-island figure: a crude birth rate of 41.2 per 1,000, compared with a crude birth rate of 37.4 per 1,000 population. However, from 1946 to 1971, the crude birth rate of the estate women fell from 41.2 to 25.7, representing a 38 per cent fall, whereas the all-island rate dropped by only 19 per cent from 37.4 to 30.4. Furthermore, it is interesting to note that between 1946 and 1953, the figures for Sri Lanka and all other ethnic groups in the country recorded an increase in birth rates. For instance, among the two major ethnic groups in the island, the Sinhalese showed a 6 per cent increase in the crude birth rate, which rose from 38.7 to 41, and the Sri Lankan Tamils recorded a 10 per cent increase from 35.6 to 39.2. At the same time, astonishingly, the Indian Tamils showed a 20 per cent decline in their crude birth rate from 41.2 to 33. In addition, Langford (1982) observes a fall in the general fertility rate as well as in the estimated marital general fertility rates of estate women during the period 1946-1953. Trends in the crude birth rate from 1953 to 1971 indicate declines among all ethnic groups in the country but the estate women reveal the lowest fertility performance among them all. However, the fertility of the Indian estate women is seen to undergo a change in trends after a lag of three and a half decades when in 1981 it indicated a rise in the crude birth rate. This behaviour again is a departure from that of other ethnic groups as they all continued to record a fall in the crude birth rate (**table 2**). An attempt will now be made to account for these unusual tendencies over time in the fertility behaviour patterns of the Indian estate women.

**Table 2. Crude birth rates by major ethnic groups, Sri Lanka,1946-1981**

| Ethnic groups | Crude birth rate | | | | |
|---|---|---|---|---|---|
| | 1946 | 1953 | 1963 | 1971 | 1981 |
| Sinhalese | 38.7 | 41.0 | 34.5 | 29.9 | 27.6 |
| Sri LankanTamils | 35.6 | 39.2 | 37.6 | 31.8 | 29.9 |
| Sri Lankan Moors | 41.7 | 42.7 | 42.9 | 39.0 | 31.8 |
| Indian Tamils | 41.2 | 33.0 | 28.3 | 25.7 | 30.0 |
| Sri Lankan | 37.4 | 38.7 | 34.4 | 30.4 | 28.2 |

*Source:* Fernando, D.F.S. (1990). "Differential mortality and fertility in Sri Lanka, by ethnic group", *Biology and Society* 7(4):215-224.

## Mortality of Indian Estate Tamils

Although the all-island demographic indicators are impressive and stand out best among the countries in South Asia, disaggregated analysis reveals that this segment of the population living in the plantation districts forms an ethnic group which is not a representative sample of the overall macrodemographic picture. While the all-island crude death rate in 1981 was 6.0 per 1,000, the Indian Tamils recorded a high 10.7 rate per 1,000.The discrepancy is all the more significant when comparisons are made with other ethnic groups, all of which express a better performance than the national rate (**table 3**). Similar trends are seen in the infant mortality rate, which has been consistently much higher than for other ethnic groups over the years and stood at 73 per 1,000 live births in 1981 (**table 4**), when the all-island figure was only 30 with all other ethnic groups recording less than the national rate.

From 1963 onwards, not only was there a change towards a further rise in the prevalent levels in life expectancy of the Sri Lankan population, but a change came about which signalled a transformation from developing pattern to a developed pattern, whereby the expectation of life of women began to be higher than that of men.

**Table 3. Crude death rates by major ethnic groups, Sri Lanka,1946-1981**

| Ethnic groups | Crude death rate | | | | |
|---|---|---|---|---|---|
| | 1946 | 1953 | 1963 | 1971 | 1981 |
| Sinhalese | 20.5 | 10.4 | 7.9 | 6.8 | 4.9 |
| Sri Lankan Tamils | 20.9 | 12.4 | 10.5 | 8.2 | 5.1 |
| Sri Lankan Moors | 25.5 | 14.0 | 10.1 | 7.9 | 5.8 |
| Indian Tamils | 18.2 | 12.1 | 11.1 | 13.4 | 10.7 |
| Sri Lankan | 20.4 | 11.0 | 8.7 | 7.7 | 6.0 |

*Source:* Fernando, D.F.S. (1990). "Differential ,mortaliiy and fertility in Sri lanka, by ethnic group", *Biology and Society* 7(4):215-224.

**Table 4. Infant mortality rates by major ethnic groups, Sri Lanka, 1957-1981**

| Ethnic groups | 1957-1959 | 1960-1964 | 1965-1969 | 1970-1974 | 1975-1979 | 1980 | 1981 |
|---|---|---|---|---|---|---|---|
| Sinhalese | 56 | 49 | 46 | 40 | 37 | 31 | 27 |
| Sri Lankan Tamils | 66 | 54 | 48 | 39 | 31 | 26 | 21 |
| Sri Lankan Moors | 76 | 62 | 55 | 46 | 36 | 28 | 27 |
| Indian Tamils | 106 | 101 | 103 | 113 | 99 | 86 | 73 |
| Sri Lankan | 63 | 55 | 52 | 47 | 41 | 34 | 30 |

*Source:* Fernando, D.F.S. (1990). "Differential mortality and fertility in Sri Lanka, by ethnic group", *Biology and Society* 7(4):215-224.

A district study of mortality by Rao (1976) revealed that the Nuwara Eliya District, which has the largest plantation population in the country, showed a female expectation life of 55.1, as against 56.1 for males compared with the national level of life expectancy, being 67.1 for females and 64.2 for males. Census data reveal that in 1981, the estate females still lagged behind the males with a life expectancy of 64.6 and 64.7 respectively in the Nuwara Eliya District, when the national expectation of life for females was 71.7 and 67.8 for males. ESCAP estimates of Sri Lanka for 1992 were 74 for women and 70 for men (ESCAP, Population Data Sheet, 1992). Hence, it is disheartening to note that the exogenous factors, which contributed to the precipitous fall in mortality referred to in studies by Meegama (1967), Nadarajah (1976), Selvaratnam (1970) and Newman (1965), had failed to permeate the estate population. The resultant effect is visible in the low expectation of life at birth prevalent among the estate population, with women still lagging behind men whereas women reached better life expectancy than men at the national level as far back as 1963. These trends in mortality and expectation of life are evidence of the deprivation factor in respect of health, medical and educational services which the estate population faces and which the rest of the population in the country are fortunate to enjoy.

In addition to the poor education levels attained by this segment of the population, their health facilities were minimal, with estate dispensaries manned by a category of personnel called "Estate Medical Assistants", whose professional attainments only equipped them to answer minor health problems. Most estates had a maternity ward with limited bed capacity and deliveries handled by a midwife. Above all, the estate population were housed under the most uncongenial living conditions. The housing type provided being "line rooms", a long row of dwellings subdivided into smaller units of living space of around 3 by 3.75 metres, ill-ventilated, cramped and skirted by drains often containing stagnant water.

## Poor nutritional levels and fertility: some findings

For women to reproduce, they should not only be free from specific diseases but also in a state of health that would permit them to establish or fulfil their reproductive capability. Poor nutrition could disturb the physiology of reproduction, leading to delays in puberty and the impairment of ovulation, or bring about abnormalities in the menstrual cycle. Poor nutrition is widespread in many developing countries and there is evidence of the relationship between malnutrition and amenorrhea. "Therefore, in selected populations with severe malnutrition, or in a subgroup of disadvantaged women within a population, poor nutrition may prolong post-partumamenorrhea sufficiently to have a significant demographic effect. This is in part attributable to the slow down of metabolic processes as a result of the lack of essential nutrients" (Gray, 1983:143).

Moreover, it must be noted that reproduction itself is an important cause of nutritional disorders in women. Menstrual blood loss contributes substantially to iron deficiency anaemia in societies with inadequate dietary iron supplies, while pregnancy and lactation make major demands upon maternal protein, calorie vitamin and mineral stores. Thus,repeated cycles of pregnancy and lactation may be a factor leading to the state of chronic undernutrition observed in many women in developing countries (Jelliffe and Jelliffe, 1978).

Sector data on calorie intake show the estate sector as having the highest, which is around 2,000 calories. Nonetheless, their nutritional levels are the lowest being adjudged by the fact that chronic undernutrition in the estate sector was as high as 60 per cent, whereas for both the urban and rural sectors, it was around 33 per cent (Janatha Estates Development Board, 1984). Of the total expenditure on food in the estate sector, 19.02 per cent was spent on wheat flour compared with 1.56 and 2.21 on that item by the urban and rural sectors respectively. This consumption pattern among the estate sector had remained fairly consistent in the consumer finance surveys of 1963, 1973 and 1978-79. In this regard, it is necessary to indicate that wheat flour is regarded in Sri Lanka as food of the poor and as the largest proportion of its consumers are among the estate population it does seem to provide convincing evidence of their low nutritional levels.

Many of the above deficient health, welfare and nutritional aspects of life have their origins in the poor educational background of the estate women. Apart from the employment prospects that education could provide for women, it helps in maintaining the desired levels of health, personal hygiene and nutrition.

The poor socio-economic conditions surrounding the estate population and the resultant low nutritional levels among mothers have resulted in their impoverishment and inability to reproduce. Hence, it is such negative factors that need to be regarded as contributing to lower fertility. However, such low fertility performance, when related to the remarkable degree of the estate women's participation in the labour force, ironically signals an inverse link which needs to be regarded as spurious in nature. The common, if not the popular, inverse relationship established by researchers between the two variables turns out to be a fallacy in this situation. It is the negative side of these women's life with its inherent qualities of undernourishment and the concomitant anaemic state which contributes to such low fertility performance, and possibly not those factors associated with the enhanced status that women normally derive fiom being in employment.

The determinants at work in this situation do not conform to the accepted norms where, for example, demographic factors like age at marriage, which has an inverse relationship with fertility, strangely shows a positive association among the estate women. Therefore, their fertility behaviour creates anomalies in their relationship with other demographic variables. Indeed, their lower fertility level does not find any association with labour force participation per se since it is not linked with women's positive achievements, an outcome of aspirations due to higher educational attainments and a desire for career building, but to a combination of negative factors. Some are attributable to a legacy of the past, others to the unfortunate turn of events after their arrival in the island, setting the stage for the general deterioration of their lives.

## Possible determinants of abnormal fertility behaviour

Studies have focused attention on the estate population with a view to attempting to account for their unusual fertility behaviour. Langford (1982) regards foetal loss and poor health care as the causative factors involved. He provides evidence from the World Fertility Survey data which indicates estate women having reported more wasted pregnancies than others. Ratnayake and others (1984) regard the varying intensity of breastfeeding as determining the changes in fertility. This argument stems from the fact that if breastfeeding and the consequent duration of lactation continue long after childbirth, it results in the absence of menstruation, which contributes to women remaining in an infecund state. They attribute the lower fertility levels of the estate women before 1975, when the World Fertility Survey in Sri Lanka was conducted, to breastfeeding and regard any visible rise in their fertility performance during and after the World Fertility Survey to improved living conditions brought forth by the nationalization and state takeover of the estates in 1975. The better life, they contend, led to the introduction of healthy substitutes such as powdered baby milk which led mothers to withdraw breast feeding earlier than

before. However, Langford (1982), considering the high degree of labour force participation of the estate women, which keeps mothers away from their babies, and going by evidence provided by the World Fertility Survey refers to the "weakening of the impact of breastfeeding" (Langford 1982:20). He assigns it a less significant function in determining the fertility of the estate women. Caldwell and others (1987:18) state "there is probably no clear cut explanation for low fertility on the estates because its causes are multiple. Undoubtedly, estate women breastfeed for much longer periods than most of the rest of the society. The duration of post-parhun sexual abstinence was probably always considerably longer among the estate Indian Tamils and continues to be so. As with much of the rest of society, there are probably high levels of terminal abstinence, but there seems to be little doubt that the Indian Tamils are more likely to practise sexual abstinence at other times as well. Together these are probably the major causes of low fertility". Moreover, they had observed the population as possessing knowledge of abortion through respondents who expressed their familiarity with points of access to the service in the nearby town of Kandy. Nonetheless, they sound highly sceptical about the truth underlying low fertility. This is explicit in their conclusion, which indicates that to uncover the truth they would require the services of investigators drawn from within their community. But with the poor educational background of this population, one has to be pessimistic of achieving any success through this suggestion.

## Changing trends in estate fertility: a discussion

An attempt to account for the low fertility performance of the estate women needs necessarily to comprehend their low income and educational levels, poor state of health and the resultant low nutritional levels, as well as the extremely uncongenial housing conditions in which they are made to live. Primarily, it hinges on the negative aspects of their life and any trace of improvement in their fertility needs to be regarded as having a threshold effect and an indication of improvements in their living conditions and related standards.

The women who work on the plantations perform hard manual labour, involving the climbing of steep mountain slopes laden with weights on their backs as they keep picking tea. However hard the task, they have to engage in it due to sheer necessity for survival. The socio-economic setting that surrounds them, with its accompanying poor health and nutritional levels, is in itself an unsatisfactory state which keeps them with marginal calorie levels in their system to perform the type of hard labour that their employment demands. The task of childbearing would make additional calorie demands. Inability to match the desired level to achieve this additional task results in their experiencing what is termed "secondary sterility", distinguished from primary sterility

where women have never been able to produce a child. Secondary sterility may arise after one or two children are born, in cases where the woman is in a low nutritional state, resulting in her being incapable of conceiving and carrying pregnancy to the live birth stage. This is because the period of gestation or pregnancy followed by lactation constitutes a significant drain on a woman's nutritional reserves. Pregnancy and lactation recurring during the reproductive span of a woman can lead to chronic malnutrition called maternal depletion syndrome, resulting in the woman losing her ability to conceive and reproduce. It leads to severe disruption of the reproductive physiology, considerably affecting fertility. This is evidenced by the World Fertility Survey findings that estate women not only had fewer live births but also fewer pregnancies. Another line of inquiry that needs to be pursued with this segment of the population is with a view to ascertaining whether there is any evidence of pathological infdlity associated with diseases that could also arise from poor health and sanitation. If such a morbid state is related to poor curative medical facilities, effective access to antibiotics and other facilities of modern medicine would help to reduce childlessness and poor fertility.

## Case studies

Realizing the invisible, if not obscure, nature of the determinants at work that have contributed to the fertility behaviour of the estate women, Caldwell and others (1987: 18) state that "the full unravelling of the mysteries of fertility control on the estates awaits not better research instruments and methods but investigators who can identifj with the community".

I would now put forth a personal view, having played a similar role not by living among them in the estates but by employing women drawn from the estates. They formed part of my household as domestic help for well over a decade and a half. In short, I have played the role of a "participant observer" in my household, not of any one individual but of 10 to 12, all of whose ages ranged from 15 to 30 and thus belonged to the reproductive age group. On being brought into the household, they all revealed characteristics of being undernourished and anaemic. They required medical attention before being assigned to handle food and babies. Worm treatment had to be administered to all of them. Above all, observations relevant to the issue is that the majority of those women whom we engaged, despite having reached puberty did not menstruate, a clear reflection of their lower nutritional levels and the consequent inability to reproduce due to physiological infertility. Medical opinion confumed their anaemic and malnutritional state as causing it. This is evidenced by the fact that within a period of six to eight months after joining the household, they began their monthly cycles, an indication of their improved nutritional condition and the resultant signs of their ability to reproduce. Therefore, the dormant period when they did not menstruate is attributable to

the slowing down of metabolic processes arising from the lack of essential nutrients in the system. Hence, the poor nutritional levels of this segment of the population could keep them in a persistent state of being unable to reproduce.

The age of menarche could also vary, being sensitive to nutritional levels. Bongaarts (1980) had demonstrated that girls with a good diet had had significantly earlier menarche than those with a poor diet. He further contends that there is an inverse relationship between age at menarche and socio-economic status. This provides additional support for the influence of nutrition on the onset of puberty. It is a line of inquiry that is worth pursuing on a larger sample of estate women, with a view to detecting the underlying causes for their prevalent seemingly anomalous fertility behaviour. Thus, no set behavioural patterns in human reproduction could be inferred as it is an outcome, if not the product, of an extremely complex process. The causal links between nuptiality behaviour, such as exposure to early or late marriage and fertility, would vary among the subgroups of the population as it could be sensitive to the changing societal situations and norm which tend to be a reflection of the underlying developmental processes in force.

In pursuance of this line of argument, it is worth looking at the underlying factors that had worked towards higher fertility in the estate sector at different points of time. It is important to realize that the fertility of this segment of the population, except for being a shade lower than the Sri Lankan Moors, who recorded a crude birth rate of 41.7, was higher than for all other ethnic groups in the country in 1946, recording a crude birth rate of 41.2 live births per 1,000 population (**table 2**). Moreover, at that point of time, their crude death rate was even more impressive. By being as low as 18.2 per 1,000 deaths, it was strikingly lower than for the other ethnic groups, who all recorded crude death rates above 20 per 1,000 (**table 3**). Such a performance in births and deaths of this immigrant population could only find plausibility in one explanation, which is that in 1946, the Indian Tamils enjoyed the right to vote and would probably have been on a better footing in respect of gaining access and being entitled to education, health facilities and other related welfare measures. Being at the receiving end of these services would have had its desired effects on the population. Therefore, their higher fertility and lower mortality at such points of time need to be related to better life.

The disenfranchisement of the Indian estate Tamil population brought into effect by legislation enacted in 1948 dealt a blow to their future welfare as power was exclusively in the hands of those who managed the estates. The companies that managed the estates, with an outlook primarily commercial in nature, led to the gradual & generation of their living conditions. This is shown in the lower fertility and higher mortality levels recorded thereafter when compared with other ethnic groups.

Trends in the infant mortality rates among the different ethnic groups in the country from 1957 to 1981 (**table 4**) reveal a steadily eroding health situation of the infants in the estate sector when compared with other ethnic groups and with national rates as a whole. The difference between the infant mortalityrates of the estate population and the national level more than doubled from 68 per cent between 1957 and 1959 to 143 per cent in 1981, a sign that the region is lacking in the provision of health care and associated services. However, Langford (1982:14) computed indices of mortality for the estate population between 1946 and 1971. According to him, the infant mortality rate in 1946 for the estate population was 131, lower than the rate for Sri Lanka as a whole, which was 141. Thus, it establishes the viewpoint that it was the changes that took effect during the post-disenfranchisement period that made the estate population worse off, It therefore lends support to reiterating the disenfranchisement hypothesis, as between 1946 and 1953 the Sri Lankan rate declined to 71, thereby recording a 50 per cent fall, whereas the estate infant mortality rate dropped to only 112, recording only a 16 per cent fall, a clear reflection of the poor state of their health. Accompanying this rising trend in the infant mortality rate was the falling trend in the fertility rate which continued until 1971, to rise again in 1981.

### *The changing scenario and its aftermath*

There were traces of some improvement in the lot of the Indian estate population who continued to remain stateless on being disenfranchised in 1948, when in October 1964, the issue was taken up by the Governments of Sri Lanka and India. Accordingly, an agreement designated the Sirima-Shastri pact (derived from the names of the then Prime Ministers of Sri Lanka and India respectively) was signed. Under the terms of this agreement, 300,000 of these persons, together with their children, were to be granted Sri Lankan citizenship, while 525,000 with their natural increase, were to be repatriated to India, both processes to take place simultaneously over a period of 15 years (United Nations, 1976).

There were other benchmarks of progress which later contributed to uplifting them. The period of government from 1970 to 1977 saw many private ventures being nationalized. Included in the programme were land reforms. The plantations, which were a private enterprise, were affected after being brought under the control of two government corporations, namely the State Plantation Corporation (SPC) and the Janatha Estate Development Board (JEDB). This move also meant that the estate schools, which had hitherto been under the care of the management, came under the state education machinery. In this regard, it is necessary to indicate that many problems which plagued the estates had their

roots in the poor educational facilities accorded to the population. Above all, the takeover of the estates by the State resulted in the plantation labour becoming State Corporation employees serving public estates. However, changes towards a better deal for women surfaced only in 1984, when the principle of equalization of wages came to be enforced. Under this new wage structure, both male and female labour on the estates were paid the same wages. Thiswas seen as a significant improvement in terms of employment for women, who so far had earned lower wages despite working longer hours than their male counterparts.

Furthermore, with a view to providing a better quality of life in the plantations, there were other areas where improvements were in sight. The provision of better health facilities was made possible with resources provided by the Asian Development Bank. Health education, associated withenlightening women on prenatal, postnatal care and child care, has been introduced with aid sought from the United Nations Children's Fund (UNICEF). This is a step in the right direction, reckoning that it is the degree of ignorance prevalent among the Indian estate women that causes most of the health problems. The above measures were accompanied by others related to maternity leave, with emoluments which may have effects on encouraging fertility. Above all, the plans to improve the housing conditions in the estates had the desired effects. In the Janatha Estates Development Board's Housing Needs Assessment Survey (1986), a sumof Sri Lankan rupees 200 million (1 $US = SL Rs 95.9503) was spent on improving the housing conditions in the estates.

The nationalization of the estates and its aftermath brought many desired changes to life in the estates. Side by side with these, the powerful trade union the Ceylon Workers Congress (CWC), which represents them closely, watches their interests and rights. It began to wield greater influence in monitoring their welfare when their leader was not only elected to represent them in the National State Assembly but was also made a Cabinet Minister with a portfolio covering the plantation sector.

Based on the developments over time, one is no doubt tempted to attribute the recent upturn in fertility of the Indian estate women to the improvements listed above. **Table 2** reveals that the birth rates of Indian Tamils, which consistently remained the lowest among the ethnic groups from 1953 to 1971, had moved by 1981 to second rankwith a crude birth rate of 30, coming next only to the Sri Lankan Moors. The latter are normally the highest fertility performers in Sri Lanka. Evidence of such fertility behaviour by the estate women was earlier observed in 1946 when they again came second in rank only to the said high-fertility Sri Lankan Moors. Thiscould be deemed a

**Table 5. Age-specific fertility rates, general fertility rates and total fertility rates by ethnic groups, 1981 and SriLanka 1971 and 1981**

| Age groups | Sinhalese | Sri Lankan Tamils | SriLankan Moors | Indian Tamils | Sri Lankan 1981 | Srl Lankan 1971 |
|---|---|---|---|---|---|---|
| 15-19 | 36.4 | 40.0 | 55.5 | 39.3 | 38.5 | 39.8 |
| 20-24 | 167.6 | 167.5 | 209.0 | 230.6 | 173.3 | 184.2 |
| 25-29 | 192.3 | 198.7 | 235.2 | 263.1 | 199.8 | 231.9 |
| 30-34 | 148.3 | 162.4 | 177.9 | 174.1 | 153.3 | 199.1 |
| 35-39 | 89.0 | 97.7 | 104.6 | 102.7 | 91.8 | 131.0 |
| 40-44 | 27.2 | 26.8 | 27.2 | 27.8 | 27.2 | 39.6 |
| 45-49 | 4.1 | 3.7 | 4.7 | 3.5 | 4.0 | 5.6 |
| GFR (15-49) | 107.7 | 111.6 | 201.9 | 139.2 | 111.5 | 126.9 |
| TFR | 3.32 | 3.48 | 4.07 | 3.83 | 3.44 | 4.16 |

*Source*: Fernando, D.F.S. (1990). "Differential mortality and fertility in Sri Lanka, by ethnic group", *Biology and Society* 7(4):215-224.

reflection of the better life enjoyed by the estate population prior to being disenhnchised. **Table 5** shows the age-specific fertility rates, the general fertility rates and the total fertility rates for all ethnic groups in the country as at 1981 and for Sri Lanka in 1971 and 1981. It is seen that the course taken by these indicators points to the rising trend in fertility among the Indian Tamil population. The general fertility rate and the total fertility rate of the Indian Tamils are higher than for all other ethnic groups, except for the Sri Lankan Moors, who differ in their fertility pattern. Looking at the course of age-specific fertility rates, the Indian Tamils show the highest rate for the 20-24 and 23-29 age groups, exceeding in this case even the Sri Lankan Moors, who had been steady in having the highest fertility. As for all other age groups, except for the 45-49 age group where their performance is the lowest, they rank higher than other ethnic groups except for being a shade lower than the Sri Lankan Moors. The low fertility of the Indian Tamil women of the 45-49 age group may be accounted for by their belonging to the earlier cohorts affected by the period of neglect. Above all, the rise in the fertility rates of the Indian women in 1981, compared with other ethnic groups, is all the more significant when at the national level one observes a consistently falling trend in fertility reflected in a lower general fertility rate, total fertility rate and age-specific fertility rates at all age groups between 15 and 49 in 1981 (compared to 1971). This overall change in direction in fertility observed among the Indian women is highly significant viewed against the background of the persistent falling trends prevailing between 1953 and 1971.

**Table 6. Some demographic indicators of estate population, Sri Lanka, 1981-1993**

| Year | Crude birth rate | Crude death rate | Infant mortality rate | Peri-natal mortality rate | Still birth rate |
|---|---|---|---|---|---|
| 1981 | 32.5 | n.a. | 68.7 | 104.3 | 73.4 |
| 1982 | 30.2 | 7.7 | 74.0 | 90.7 | 67.3 |
| 1983 | 31.8 | 7.4 | 58.3 | 84.4 | 61.8 |
| 1984 | 28.5 | 7.1 | 50.1 | 74.5 | 55.2 |
| 1985 | 30.6 | 7.7 | 44.9 | 69.5 | 50.3 |
| 1986 | 26.3 | 7.5 | 48.9 | 82.0 | 61.6 |
| 1987 | 22.1 | 7.7 | 48.3 | 84.3 | 61.6 |
| 1988 | 22.3 | 6.8 | 33.9 | 65.3 | 51.5 |
| 1989 | 20.4 | n.a. | 33.9 | 59.4 | 44.9 |
| 1990 | 17.6 | n.a. | 31.0 | 59.0 | 45.6 |
| 1991 | 20.9 | 6.4 | 28.8 | 55.6 | 43.5 |
| 1992 | 18.9 | 6.4 | 27.9 | 55.7 | 42.8 |
| 1993 | 17.9 | 6.4 | 29.4 | 55.7 | 43.7 |

Sources: Sri Lanka State Plantations Corporation (1991). Statistical Report and Analysis of Social Development 1980-90, Colombo and Plantation Housing and Social Welfare Trust (1997). *Health Bulletin of the Estate Sector*, 1991-1993, Colombo.

*Note*: n.a. = not available.

All such evidence of a change in their fertility behaviour may suggest support for the Malthusian principle of population, as within it is embodied the relationship between better times and higher fertility. Thisexample is not cited in isolation as studies of famine in Europe and in Bangladesh (Stein and Susser, 1978; Mosley, 1979) referred to by Gray (1983: 145) show marked decline in the birth rate expected for the period of maximum food shortage. Conversely, approximately nine months after the restoration of food supply, there was a recovery in the birth rate. These seasonal variations may be related to the factors influencing the fecundability among women.

*Apparent demographic effects of societal uplift*

Looking at recent demographic statistics presented by the Sri Lanka State Plantation Corporation in its Statistical Report and Analysis of Social Development (1991) and the Plantation Housing and Social Welfare Trust in its Health Bulletin of the Estate Sector (1997), the estate population seem to have passed the threshold stage and now show a trend towards stability. **Table 6** shows that the crude birth rate, after having risen to levels above 30 per 1,000 live births in the early 19809, began to decline quite sharply from the mid-1980s. Moreover, the overall improvement in the living conditions and

the introduction and close monitoring of expanded programmes of immunization, health care and sanitation are seen reflected in the recent decline in mortality rates, including the crude death rate, infant mortality and perinatal mortality rate.

The marked declines in both the perinatal mortality rates and the still birth rates are evidence of the improvements undergone in respect of maternal health and care, thereby enabling mothers to carry conception to a stage of live birth without foetal loss, followed by a greater survival rate of children. The process of transformation has helped to remove the aberrant demographic behavioural patterns, which prevailed when the estate population remained out of the orbit of development.

## Policy implications

The 1994 International Conference on Population and Development in Cairo emphasized the need to improve the reproductive health status of men and women in developing countries. Sri Lanka was identified as one among them. However, as a first step, it is necessary to identify any disadvantaged groups among the population and serve such groups with specially designed policies and programmes, so as to improve their overall reproductive health and fertility behavioural patterns. As the above are strategies gaining currency today, it might be relevant that such special attention be given by the Government and agencies, mooting that such programmes provide coverage to include the estate population of Sri Lanka.

The deviant path taken by the fertility performance of the estate women since the 1940s unravels determinants of an unusual nature, which are outside the dictum of accepted demographic parlance for they are basically an outcome of negative factors. The estate sector of the population is engaged in an industry which forms the backbone of the country's economy. It is vital that they are provided with services not to keep them merely contented, but happy. Their deviant fertility performance has brought to light their attendant problems of living.

Amelioration programmes basically bent on their well-being have been under way since the 1970s with a view to uplifting their living conditions. It is heartening to note that the 1987 and 1993 Demographic and Health Surveys reveal that the total fertility rate of the estate sector is the highest (2.6), being higher than the urban (2.1) and rural (2.3) sectors of the population (Department of Census and Statistics, 1995 and 2001). This signals their higher nutritional levels resulting in an improvement in their reproductive capabilities consequent on the successful implementation of programmes directed at their

well-being. Nonetheless, it is necessary to enshrine and adopt policies of a consistent nature towards their betterment as there is still a disparity between the estate sector and others in the country in terms of provision of services and welfare measures. Adopting such policies would bring their literacy, health, nutrition and housing standards on a par with those of other sectors.

Until the 1970s, national policies of family planning, which targeted lowering fertility levels, seemed irrelevant to the estate population as their fertility levels were low and it was policies bent on providing better living that were deemed relevant. Having achieved the highest levels in fertility, it now becomes necessary to map out policies that would be aligned withthose outlined for the urban and rural sectors.

In this regard, it would be beneficial to adopt policies designed to disseminate and help enhance their knowledge and the consequent receptivity to contraception. Given the low literacy levels of estate women, which lag behind urban and rural sector women, this would be a step in the right direction. Achieving this objective would call for culturally accepted family planning programmes. Nonetheless, there could still be pockets among the population who are subfertile or infecund for reasons such as sexually transmitted diseases (STDs),repeated induced abortions and associated health and environmental problems. Under the present reproductive health policy, these groups need to be supported with special programmes to match their reproductive intentions.

Given the prevalent premarital sexual behaviour of the estate population, a vigorous programme of health education could be pertinent as it would tend to create the desired awareness relevant to reproductive health. In this regard, it needs to be emphasized that taking into account the subservient roles and attitudes of women in the estates, programmes involving active male participation would have a major positive impact on the overall reproductive health status of men and women in this subpopulation.

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