A profile of Mauritius is sketched in this paper. Emphasis is placed on the nature, scope, and accomplishments of population activities in the country. Topics and sub-topics include: location and description of the country; population (size, growth patterns, age structure, urban/rural distribution, ethnic and religious composition, migration, literacy, economic status, future trends); population growth and socio-economic development (relationships to national income, size of the labor force, agriculture, social welfare expenditures); history of population concerns; population policies; population programs (objectives, organization, operations, research and evaluation); private efforts in family planning; educational and scientific efforts in population; and foreign assistance for family planning activities. (RH)
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**Location and Description**

Mauritius is an island in the Indian Ocean, 500 miles due east of Madagascar and over 1,000 miles from the southeast coast of Africa. The land rises to a central plateau 900-2,400 feet in height, surrounded by mountains, which are thought to be the rim of an ancient volcano. The southeast trade winds bring occasional cyclones, usually in the months of January to March. Rainfall varies greatly within the area, from 35 inches a year around the coastal belt to over 100 inches in the central plateau area.

The economy of Mauritius is heavily dependent on sugar which, with molasses and other by-products, accounts for about 95 per cent of the total export revenue. Annual production of sugar and molasses in recent years has usually fluctuated around 600,000 metric tons, although in 1960, when two major cyclones caused great damage to the fields, it was as low as 500,000 metric tons. Sugar cane fields cover over 50 per cent of the area of the island.

There are plans to diversify the economy, but they have not yet been implemented. After sugar and molasses, tea is the most important export item, but in 1968 it still accounted for less than 3 per cent of the total income from exports (an increase from somewhat over 1 per cent in 1964).

Another growing industry is tourism, which in 1968 accounted for about 3 per cent of all foreign exchange earnings.

**Population**

**Size**

Total population. In the middle of 1969 the total population was estimated at 799,000. The island has an area of 720 square miles, yielding a density of over 1,100 persons per square mile.

Mauritius has a number of smaller island dependencies of which the largest is Rodrigues, located about 600 miles east of Mauritius, with a population of about 24,000 in an area of 40 square miles. The various other dependencies have a population of not much more than 1,000 and a total area of less than 50 square miles. In this report only the island of Mauritius will be considered.

Number and size of households. In 1962 there were 138,000 private households with an average of 4.9 persons per household for both urban and rural areas. There was, however, a greater tendency in towns than in villages for more than one household to share the same roof. Thus the average number of persons per housing unit was 7.6 in urban and only 5.9 in rural areas, with an overall figure of 6.4.

Married women of reproductive age. In 1962 there were about 144,000 women in the reproductive ages 15 to 49. Of these, about 110,000 had been married and about 98,000 were currently married.

Age at marriage. The average age at marriage for women is low, but a comparison of census figures shows that there was a tendency for this to increase between 1952 and 1962. Thus, 40 per cent of women aged 15–19 and 72 per cent of those aged 20–24 were married at the time of the 1952 census as compared to 28 per cent and 68 per cent, respectively, in the 1962 census.

These average figures tend to minimize the difference between the two main ethnic groups. It is the Indians who are changing to a higher age at marriage, although they are still marrying, on the average, considerably earlier than the General Population (a term denoting mainly persons of mixed European and African origin). Thus, among women aged 15–19, 55 per cent of the Indians were married in 1962, as compared to 35 per cent in 1962; 12 per cent of the women aged 15–19 in the General Population were married in 1962, as compared to 11 per cent in 1962. Similarly, for those aged 20–24, 84 per cent of the Indians and 49 per cent of the General Population were married in 1952; in 1962 these figures were 79 per cent and 49 per cent, respectively.

The lack of adequate marriage registration statistics makes it difficult to establish the existence of any changes in the marital age distribution that may have occurred since the 1962 census. The importance of such data derives from the fact that, in the absence of birth control, the younger the age of the woman at marriage, the more children she is likely to have: in 1962 the average number of live births to women aged 40–44 and with unbroken marriages at the time of the census was 6.6, 6.1, 5.0, 4.1, and 2.1 for women who married at ages under 18, 18–21, 22–25, 26–29, and 30 and over, respectively.1

1 About 54,000 (55 per cent) of the 98,000 currently married women claimed to have had their marriages registered. This percentage figure varies considerably over the various age groups, increasing monotonically with
age. Of those aged 15-19 and currently married, only 18 per cent claimed to have had their marriages registered as compared to 71 per cent of those aged 45-49. These figures provide some evidence of the tendency toward registration after a certain period after the marriage union. This evidence is, however, limited to religious marriages. The incidence of free unions, which in 1962 comprised about 7 per cent of all unions, increased from 6 per cent among currently married women aged 15-19 to 9 per cent among those aged 45-49.

In 1969, 3,812 first marriages for women were registered. In 50 per cent of all cases the wife belonged to the Indian group and in the other 50 per cent to either the General Population or Chinese groups despite the fact that the Indian group is more than twice as large as the other two groups together.

Among Indians, marriage registration is not only uncommon, but, when it occurs, the delay between the beginning of the union and the registration is much greater than among the General Population and Chinese. There is no direct evidence on the length of union before registration. An indirect indicator is the number of children thereby legitimized and this information is obtained at registration. In 1969, there were no children to be legitimized in 72 per cent of all General Population or Chinese but in only 42 per cent of India: marriages.

For registered marriages legitimizing no children, there has been a decline in female average age at marriage for most years since 1962. The figure stood at 24.2 in 1962; it dropped almost steadily to 22.5 in 1968; and it then increased to 23.3 in 1969. During that period, the average age at marriage for the General Population and Chinese groups fluctuated between 23.0 and 24.2, showing only a very moderate downward trend. For the Indian group, the average age at marriage declined sharply from 25.1 in 1962 to 21.6 in 1968 and then increased to 23.3 in 1969. However, since marriage registration among Indians is very rare and highly social-class selective, the absolute figures for average age at marriage cannot be assumed to represent those for the whole of the Indian community.

The current downward trend in the average age at marriage may be related to the increasing proportion of young women in the population. Women aged 15-24 made up 8 per cent of the total population in 1962 and 10.5 per cent in 1969. Age-specific registered marriage rates, per thousand, have in fact declined between the two periods 1962-1966 and 1967-1969 from 16.6 to 15.3 and from 28.7 to 26.3 for the 15-19 and 20-24 age-groups, respectively. These two age groups account for over 70 per cent of registered marriages.

Further evidence of a recent tendency to postpone marriages is provided by the results of a fertility survey conducted in early 1970 by the Population Control Evaluation Programme. Sampling women in four large villages, the survey has showed, among other things, that average age at the start of a union (not necessarily a registered marriage) had gone up from 17.5 for the inter-census period 1952-1962 to 18.5 for 1962-1969.

Growth Patterns
The small size of the island and its limited possibilities for economic development contribute to the problem of overpopulation. As in many other underdeveloped countries, however, overpopulation is only a recent phenomenon in Mauritius. When the French took over the island in 1715, it was uninhabited despite earlier brief settlements by the Portuguese and the Dutch. Settlers from France arrived on the island and obtained slaves from Africa, Madagascar, and Réunion. In 1810, the year when French administration ceased and Mauritius became a British colony (as it remained until independence in 1968), the population was estimated at 75,000, of which about one-fifth were of European origin.

The main function of the slaves was to work on the sugar plantations. When slavery was abolished in 1833, indentured labor was brought over from India, and to a much smaller extent from China, to take the place of the freed slaves.

At the time of the first census in 1846, the population had reached 158,000, of which almost two-thirds were males mainly because of the very high preponderance of men among immigrants. The main wave of immigration occurred in the 1850's, causing the population to increase from 181,000 at the 1851 census to 310,000 in 1861. Again, male immigrants by far outnumbered female immigrants; the male proportion of the population at the 1861 census was practically the same as in 1846.

Immigration continued at a much reduced level for another two decades, with females forming a somewhat larger segment of immigrants than in the past. At the 1881 census the population was enumerated at 360,000, and the male proportion made up 56 per cent. After that date immigration was insignificant in the population growth of Mauritius. In fact, the population grew very slowly until about the end of the Second World War: by the 1944 census it had only reached 419,000. At this time it was found that the previous numerical superiority of males—the result of sex-selective immigration—had disappeared.

Population growth since the end of the Second World War has been rapid. The 1952 census enumerated 501,000 inhabitants, an increase of 82,000 in the eight years since the previous census and an increase greater than that between the 1881 census, following the end of almost all immigration, and the 1944 census. From 1952 to 1962, the date of the latest census, the population increased by 181,000, bringing the total to 682,000. This recent rapid increase in the population was due to the widened gap between the crude birth and death rates.

Mauritius has a tradition of very good birth and death registration statistics as well as adequate censuses. Changes in the rate of natural increase, i.e., the difference between the two vital rates, can be measured for periods extending back to the late nineteenth century. Until about the end of the First World War, the five-year averages show almost no difference between the birth and death rates—each of which fluctuated between about 35 and 39.

From the end of the First World War until about the end of the Second World War, the birth rate was higher than the death rate because of a drop in the latter. But even during this period the rate of natural increase for five-year averages was always less than 1 per cent, although this figure hides a 1.6 per cent increase for 1944, the year the birth rate rose to 43 with the return of the Mauritian soldiers from the War.
It was in the immediate post-War years that the rapid rate of population growth started. In those years the annual birth rate rose well above 40, even reaching 50 in 1950, while the death rate dropped from 30 in 1946 to 14 in 1950. These figures yielded an average rate of annual increase of about 3 per cent in the late forties and early fifties. Despite some subsequent reduction in the birth rate, the rate of annual increase continued at about 3 per cent until 1964; during these years the death rate declined further to 9 in 1964. The crude birth rate increased from 38 in 1962 to 40 in 1963, and then decreased to 31 in 1968; the crude death rate stayed approximately constant around the level of 9; and the rate of natural increase rose from 29 in 1962 to 30 in 1963, and then decreased to 22 in 1968.

Like the death rate, the infant mortality rate has dropped sharply in the past few decades from 154 in 1944–1948 to 85 in 1949–1953 and to a minimum of 57 in 1964; between 1964 and 1968, it increased to 69. At the same time, life expectancy for males and females has increased from 33 and 34, respectively, in 1942–1946 to 50 and 52 in 1951–1953 and to 59 and 62 in 1961–1963.

RURAL/URBAN DISTRIBUTION

The urban areas consist of five towns extending for about 15 miles along the main highway of the island from the center to Port Louis, the capital, in the northwest part of the country.

Although differences exist between town and village societies, any comparison between the two must take into account the fact that Mauritius is a very small country with a good communications system; no point on the island is at a distance greater than about 25 miles from the nearest town. Because of these factors, contact between urban and rural areas is common, and distinctions between them are not as sharp as elsewhere.

In 1962 the population living in urban areas was estimated at 34 per cent of the total population; the population of individual towns ranged from 89,000 (Port Louis) to 28,000. Since then, town boundaries have been redefined. The new boundaries would have shown 44 per cent of the population living in urban areas at the time of the 1962 census, with Port Louis having 120,000 inhabitants. There is, however, no evidence of extensive urbanization. Thus from the 1944 census to the 1962 census, the urban percentage stayed almost constant, at 31 per cent (according to the old boundaries).

One of the most striking differences between the urban and rural communities lies in their ethno-religious structure. Thus, in 1962 the General Population and Chinese formed one-half of the urban but slightly less than one-quarter of the rural population. It is the Indians, and more specifically the Hindus rather than the Muslims, who are the country dwellers: they comprised 77 per cent of the rural population (63 per cent Hindu and 14 per cent Muslim). About two-thirds of the Chinese and one-half of the General Population lived in towns as compared to one-quarter of the Indians.

ETHNIC AND RELIGIOUS COMPOSITION

Mauritius has a multi-racial society. The three main influences are Indian, African-cum-European, and Chinese. For statistical purposes, persons of African, European, and a mixture of African and European origin as well as those who are of neither Indian nor Chinese lineage are usually grouped together under the term “General Population.” Although exact figures are not available, a large majority of that group consists of persons of mixed African and European blood.

There is little inter-marriage between Indians and members of the other two communities, but the General Population and the Chinese intermarry fairly freely. Demographic and sociological differences exist between the communities, and relevant data are often analyzed separately. Numerically, the Indians form the main group; the 1962 population was 67 per cent Indian; 30 per cent General Population; and 3 per cent Chinese. This composition reflects a radical change from the days of French colonization when almost 100 per cent of the population belonged to the General Population group. It was the Indian immigration in the middle of the nineteenth century and that of the Chinese somewhat later that changed the ethnic composition to its present pattern, which has remained almost unaltered for about 100 years.

In the 1962 census, 49 per cent of the population were Hindus, 34 per cent Christians (95 per cent of which were Roman Catholic), 16 per cent Muslim, and 1 per cent adherents of Chinese religions.

These overall figures blur fundamental differences among the various ethnic groups. The 1962 census shows no breakdown of ethnic group by religion but this information is available from the 1952 census. This census showed the following: the Indians were 72 per cent Hindus, 23 per cent Muslims, and 5 per cent Christians; the General Population were 96 per cent Roman Catholics, and almost all of the remaining belonged to other Christian denominations; the Chinese were almost equally divided between Christians and members of Chinese religions.

LITERACY

The literacy level is fairly high. According to the 1952 census, 47 per cent of the population aged 5 or over could neither write nor read, but in 1962 the proportion of illiterates had been reduced to 31 per cent (23 per cent of the males and 39 per cent of the females). The gap between the literacy levels of men and women is closing rapidly. For example, while 17 per cent of males aged 13–19 and 28 per cent of females of the same age group had never attended school or received private tuition, the corresponding figures for those aged 5–12 were 10 per cent and 13 per cent.

ECONOMIC STATUS

In 1952 only 33 per cent of the total population and 54 per cent of those aged 15–64 were economically active. These low figures dropped still further to 27 per cent of the total population and 51 per cent of those aged 15–64 in 1962. The explanation for such a low proportion of economically active persons lies mainly in the low proportion of women in the labor force, a situation which is related to the absence of sufficient employment opportunities as well as to a tradition of women staying at home or working in the family fields. Thus, in 1962, 83 per cent of men aged 15–64 and only 18 per cent of women were economically active.

It is very difficult to obtain accurate indicators of unemployment. Al-
though unemployed persons seeking employment may register, by no means do all do so. The unemployment situation is further blurred by the existence of relief labor recruited among registered unemployed.

There is, however, no evidence of a real increase in employment in recent years. This is borne out by the bi-annual Survey of Employment and Earnings in Large Establishments which was introduced in 1966. It is even doubtful whether the low levels of employment recorded in the 1962 Census have been maintained. The combined number of registered unemployed and relief workers averaged 8,400 in 1964, when the relief labor system was introduced, and 25,600 in 1968.

**Future Trends**

Fertility rates appear to be currently dropping from the higher levels of the years around the 1962 census to considerably lower levels.

The most recent projections which have guided governmental planning are those worked out by Edith Adams of the United Nations and made available in 1966. On the assumption of no migration and a gradual increase in life expectancy from 59.9 for males and 63.2 for females in 1962-1967 to 67.8 and 71.5 for males and females, respectively, in 1982-1987, three different population projections for 1987 were made. On the assumption of no change in fertility, the projection was 1.64 million; a moderate decline in fertility, 1.42 million; and a rapid decline in fertility, 1.19 million.

These projections would give for mid-1969 an interpolated population figure of between about 895,000, under the assumption of a rapid decline in fertility, and rather over 850,000, under the assumption of no fertility change. These figures are to be compared with an actual population estimate of only 799,000, for the same date, arrived at by the Central Statistical Office (C. S. O.) on the basis of vital registration figures since the 1962 census.

Even allowing for an underenumeration at the census of approximately 4,000 which the U. N. projections take into consideration, while the C.S.O. estimate does not, as well as for the net emigration of about 10,000 persons between the census date and mid-1969, the estimated population is well below the lowest projection. As there has been no major change in mortality, this implies an unexpectedly large decline in fertility during the last few years coinciding with the establishment of the family planning campaign.

**Population Growth and Socio-economic Development**

**Relationship to National Income**

The per capita Gross National Product (GNP) increased steadily for the first few years after World War II, although at a decreasing rate. In 1948 it stood at Rs717 (US$129) while in 1952 it had reached Rs1069 (US$192). Since then, however, it has fluctuated around the level of Rs1050 (US$193) with the exception of 1960 and 1963. In 1960 it reached a low of Rs850 (US$153) because of the two cyclones that destroyed a large proportion of the sugar cane, and in 1963 it reached a high of Rs1283 (US$226) because of an exceptionally good cane crop. In 1968, the latest year for which figures are available, it stood at Rs1046 (US$188), i.e., less than the level of sixteen years earlier. In view of the limited opportunities for economic development in Mauritius, it should be noted that the modest increase of less than 60 per cent in the GNP between 1952 and 1968 was not enough to raise the per capita GNP because of a population increase of the same order.

**Relationship to Social Welfare Expenditures**

**Public Education.** In 1969, enrollment in primary schools was almost complete for children aged 6-11. Enrollment in secondary schools has almost doubled during the last ten years and in 1969 about 35 per cent of children aged 12-17 were enrolled. This increase was particularly marked for girls whose secondary school enrollment increased by about 150 per cent during the same period.

Between 1962 and 1969, the average size of primary and secondary schools increased from 352 to 435 and from 256 to 301, respectively. The average number of pupils per teacher remained almost constant at 34 for primary and 22 for secondary schools.

In the financial year 1968-1969 total expenditure on public education was Rs31.0 million (US$5.6 million), i.e., Rs39 (US$7.02) per capita. This was 9.6 per cent of total government expenditure in that year.

**Public Health.** Although Mauritius is relatively well provided with medical personnel, the supply of doctors has not been keeping up with population increases. Thus, in 1965, the ratio of population to number of doctors was 4,259:1 but in 1969 it had gone up to 4,842:1. There were 529 persons to one nurse (in 1968) and 5,089 persons to one midwife (in 1969).

The number of persons per hospital bed went up from 205 in 1960 to 249 in 1968 when the total number of beds in government and private hospitals, clinics, etc., was 3,159. A new general hospital was opened in 1969 and, when fully operational, it will have 350 beds.

In the financial year 1968-1969 total expenditure on public health was Rs27.3 million (US$4.9 million), i.e., Rs34 (US$6.12) per capita. This was 8.5 per cent of total government expenditure in that year.

**Social Security.** In 1964, a Ministry of Social Security was established. It is responsible for the payment of old age pensions, outdoor relief allowances and family allowances. Its total expenditure in the financial year 1964-1965 was Rs31.8 million (US$5.7 million) or 12.1 per cent of total government expenditure, and of that amount Rs9.5 million (US$1.7 million) was on family allowances.

The firmer establishment of governmental pro-family planning policy has led to some recent changes in family allowance regulations aiming to reduce financial support given to large families.

Under the old law, every non-taxpaying family with three or more children under age 14 qualified for a monthly allowance of Rs15 (US$2.70). In 1968 and again in 1969 the law was changed so that currently only those families whose total annual income does not exceed Rs2700 (US$486) and who have three or more children under age 14 qualify and the amount is only Rs10 (US$1.80) monthly.

These changes were the main cause of the reduction of expenditure on social security to Rs27.2 million.
(US$4.9 million) in the financial year 1968–1969, or 5.5 per cent of total government expenditure, and of which amount Rs6.2 million (US$1.1 million) was on family allowances. On a per capita basis, expenditure on social security was Rs34 (US$6.12).

History of Population Concerns

Until the Second World War, there was little obvious need for systematic population control policies in Mauritius. The large population increases, due to immigration, had stopped long ago and the high death rate was keeping a very effective check on the rate of growth. This situation began to change rapidly, however, when the high post-War birth rates were accompanied by sharply reduced death rates.

In 1953 the Governor appointed a committee to investigate the problem of the country's economic development. In its report, published in 1955, the committee expressed serious concern over the changing population situation and recommended that the Government take immediate steps to inform the public of the urgency of the problem, to provide family planning services, and to encourage emigration. However, no direct action was taken on the committee's recommendations.

In 1957 a voluntary organization, the Mauritius Family Planning Association (F.P.A.), was formed. Although a number of clinics were opened, the lack of Government support, funds, and experience, and the absence of a receptive public prevented the Association from having an impact for a number of years. Debates in and out of the Legislative Council and statements from the Roman Catholic Church opposing the use of contraception were almost the only form of activity related to the problem.

In 1959, the Governor of Mauritius appointed Professor R. M. Titmuss, from the United Kingdom, to advise the Government on future social security policies. Later in 1959, the new Governor appointed a committee under Professor J. E. Meade, also from the United Kingdom, to report on the economic and social structure of Mauritius and to advise on ways to improve the standard of living. Both reports that followed strongly emphasized the need for population control measures. In addition, the Titmuss report made specific suggestions for such measures. The reports, containing some strongly worded arguments, caused a considerable stir.

The climate of opinion began to change a few years later. In 1963 a largely Catholic organization, the Action Familiale (A. F.) was formed to encourage the use of the rhythm method of contraception. In 1964 the Government offered financial support to both the Family Planning Association and the Action Familiale, and in 1965 the International Planned Parenthood Federation started supplying a yearly grant to the Family Planning Association.

Population Policies

Mauritius has not so far had a formal population policy. However, the Government continues at an increased level the financial support it initiated in 1964 to the two organizations. It also assists in their work by supplying a number of facilities through the various industries.

Population Programs

Objectives

The main feature of the family planning movement in Mauritius is the existence of two private organizations which are almost totally independent of one another. Although both the Family Planning Association and the Action Familiale receive financial support from the Government, they have remained basically private concerns. Consequently, there have been no overall planning targets. The aim of both organizations is to enhance family welfare by providing family planning services to as many couples as possible, as quickly as possible.

At present, the Government has not yet begun to play an official role in policy formulation and implementation with regard to family planning. However, it does provide the focal point for the compiling of information and conducting of surveys on the progress of both private programs. In October 1967 a Population Evaluation Programme was established in the Ministry of Health for this purpose. The Programme compiles information from the private organizations and from other branches of the Government, such as the Central Statistical Office, concerned with record-keeping. Some of the Programme's methods and findings will be discussed later in this paper.

The Government is now exploring the possibilities of uniting population efforts under its administration. In November and December 1969, Dr. A. P. Satterthwaite, on a World Bank mission at Government's request, visited the island to prepare an Action Plan for the period 1970–1974. The Plan recommends the integration of family planning with all private and governmental maternity and child health services and the placement of the complete new organization within the Ministry of Health. The Government has, on principle, accepted the recommendations and has now approached international organizations to provide financial support needed to meet additional costs involved in the implementation.

Type

To date, family planning is the only form of population control in which there has been official activity.

There are some who advocate emigration as a more immediate solution to the problem of overpopulation. The level of emigration has been increasing in recent years. Thus, the total number of emigrants rose from 594 in 1963 to 3,073 in 1966, and decreased to 2,382 in 1969. However, besides the fact that the numbers involved are still too small to ease substantially the population pressure, there are two problems: first, emigration from an underdeveloped country tends to be highly selective in favor of those who have much potential to contribute to the country's development. Second, in order to increase emigration, the Government would probably have to subsidize passages and provide other assistance, which could make emigration an expensive operation.

Organization

The chief executive of the Family Planning Association is responsible to the Association's governing body, the Managing Committee, composed of 14 members. Major policy decisions of the Association are approved by the Ministry of Health before implementation, and overseas grants are channeled to the Association through the Ministry.

For Family Planning Association purposes, the island is divided into five regions. A supervisor is respon-
possible for the work carried out in each of the regions and the five supervisors are responsible to the chief executive. At the end of 1969, 90 centers were functioning.

The Action Familiale is governed by an Executive Committee whose main function is to coordinate the work of the various Working Committees, each responsible for a separate aspect of the work, e.g., medical questions, youth education, etc. Members of the Executive Committee are the honorary president, the president, the managing secretary, the financial secretary, the head of the information committee, and the coordinator of all the regions.

For Action Familiale purposes, the island is divided into 12 regions and each region into a varying number of sectors, with a total of 47 such sectors. A group of workers functions in each sector, and the leader of the group represents the sector on the Regional Committee. Each of the 12 Regional Committees has a representative on the Executive Committee.

Operations

Character of program. Of the 90 centers operated by the Family Planning Association at the end of 1969, 34 were at Social Welfare Centers or Maternity and Child Welfare Centers; 28 at dispensaries or hospitals; 19 at village halls; and 9 at other establishments. Only two were at premises owned or rented by the Association. Most of the other centers were lent on a part-time basis and free-of-charge by the owners, including the Ministries of Social Security and Health and the Maternity and Child Welfare Society. The Action Familiale operates in some of the same premises as the Family Planning Association but usually not simultaneously.

An effort is made to contact as many women post partum as possible. This is, of course, relatively easy for women giving birth in hospitals since all main hospitals contain family planning centers. In 1969, however, only about 31 per cent of live births took place in hospitals. Although the proportion of women who go to hospitals for delivery is increasing, a comprehensive postpartum program must attempt to contact the majority of women who give birth at home or elsewhere. To improve the postpartum program, a scheme was initiated in 1969 utilizing the information used in the birth notification process. According to the scheme, which has not been put into full practice yet, the main and subdepartments of the Ministry of Health supply the names and addresses of women for whom they have handled official “birth notification.” Birth notification is a procedure distinct from the usual birth registration. It is a responsibility of the Ministry of Health and its purpose is to remind new mothers of regulations requiring new-born children to be vaccinated against smallpox within six months of birth. For postpartum program purposes, notification has two advantages over registration as a source of information. First, by law, notification has to take place within 48 hours of birth as compared to 40 days for registration. Second, since notification is a Ministry of Health responsibility, and the Ministry of Health is the Government department most closely involved with the family planning campaign, it is administratively simpler to obtain the names and addresses from this Ministry than from the Registrar General’s department, which is responsible for registration. In the postpartum program, new mothers are contacted either by personal visit or by mail. A comparison of live births notified to live births registered has shown that, in 1968, 22,661 (93 per cent) of the 24,413 births which occurred and were registered were also notified (although the 48-hour time period had sometimes been liberally extended by the family concerned without legal repercussions). One of the main reasons why notification figures are somewhat lower than those for registration is a tendency to omit notification, but not registration, in the cases of children dying within hours or a few days after birth.

Other Ministries participate to a certain extent in the family planning activities. In addition to providing accommodation at many of its Social Welfare Centers, the Ministry of Social Security includes family planning in its “Welfare Months,” which feature talks and exhibitions on aspects of social welfare. The Ministry of Education permits sex education at the secondary school level. In addition, sex education forms part of the adult education program organized by that Ministry. The Ministry of Information gives free time on radio and television and permits the use of mobile cinema vans for film projections in villages and elsewhere. The Ministry of Youth and Sport permits sex education among the members of youth clubs and allows the inclusion of exhibitions on the theme of family planning at youth club activities.

Methods. The oral contraceptive is the most common method used, followed by the rhythm method. The pill, condom, and IUD are the three main methods of the Family Planning Association, while rhythm is the only Action Familiale method. A very small minority of Family Planning Association clients use other methods. Sterilization is rarely used.

Oral contraception is the method chosen by the majority of Family Planning Association clients. The Swedish International Development Authority (SIDA) is the source of a free supply of two brands of pills, which are sold to clients at Rs0.50 (US$0.09) per cycle. In 1968, 83 per cent of all cycles issued were of these two brands. The remaining had been purchased by the Association and sold at cost price, which was about Rs1.75 (US$0.32). It was felt that although most clients could be satisfied with the two brands supplied by SIDA, side effects occasionally necessitated a change to a third brand. The trend is, however, toward reducing the proportion of non-SIDA supplied oral contraceptives. Private users may buy the pills at pharmacies at a cost varying with the brand but of the order of Rs4.50 (US$0.81).

SIDA also supplies free-of-charge one brand of condom sold by the Association at Rs0.25 (US$0.05) for three units. Another brand is purchased by the Association and resold at the cost price of Rs0.20 (US$0.04) per unit. Despite the relatively low cost of the SIDA-supplied brand, in 1968 the other brand accounted for as much as 46 per cent of all condoms sold.

The charge for IUD insertion is Rs0.50 (US$0.09).

The Action Familiale charges Rs2 (US$0.36) per thermometer used to measure the body temperature when the rhythm method is followed, and an additional charge of Rs0.50...
The motivators, accompanied by the educators, visit the clients once or twice a month. They assess the work that has been accomplished and prepare the plan of work for the 12 persons in charge, one each, of the 12 regions of the island. Each motivator meets weekly with the person in charge of the region in which she works. The personnel of the Action Familiale also includes two doctors employed on a part-time basis.

Every two months there is a meeting of all the educators in a region. The person in charge of the region delivers a progress report, and a doctor or a visitor from headquarters addresses the meeting.

Twice a year prospective educators are trained. If they pass the test administered at the end of the training period, they work for a probationary period of three months with a fully trained educator. If they prove satisfactory in the practical as well as the theoretical aspects, they qualify as educators. To date, over 700 educators have qualified, but only about 350 are in active service.

The motivators meet monthly and receive further information on their work either from a doctor or from the regional coordinator.

**Budget:** The Government, through the Ministry of Health, gives a yearly grant of Rs250,000 (US$45,000) to each of the two organizations. Of this, a sum of Rs40,000 (US$7,200) is withheld from each organization to meet the costs of publicity and other family planning activities organized by the Ministry.

In 1968 the Family Planning Association received a total of Rs807,000 (US$145,260), of which Rs607,000 (US$109,260) came from the International Planned Parenthood Federation, Rs187,000 (US$33,660) from the Ministry of Health, and Rs13,000 (US$23,400) from profit on the sale of contraceptives, membership fees, etc. (In 1967 the Ministry of Health gave the additional sum required to make up the usual yearly total of Rs210,000.) The expenses of the Association amounted to Rs998,000 (US$125,640), which was divided as follows: Rs37,400 (US$67,200) for salaries, Rs146,000 (US$26,280) for medical fees, Rs60,000 (US$10,800) for traveling and van maintenance, Rs25,000 (US$4,500) for clinical expenses, and Rs93,000 (US$16,740) for other costs. The excess of funds received over payments made was Rs109,000 (US$19,620).

The income of the Action Familiale in 1968 amounted to a total of Rs250,000 (US$45,000), of which Rs210,000 (US$37,800) came from the Ministry of Health and about Rs40,000 (US$7,200) from the sale of various items. Expenses, which amounted to approximately the same total as income, were Rs210,000 (US$37,800) for salaries, Rs20,000 (US$3,600) for traveling and Rs20,000 (US$3,600) for other purposes.

**Research and Evaluation**

The Population Control Evaluation Programme, a branch of the Ministry of Health, is the central organization for conducting research and evaluation on family planning. It was set up with the aid of a grant from the Nuffield Foundation. Technical, personnel, and advisory services are supplied by the Population Investigation Committee at the London School of Economics and Political Science and by the Research Group in the Department of Medical Statistics at the London School of Hygiene and Tropical Medicine.

The main purposes of the Evaluation Programme are: (1) to assess the impact of the family planning campaign on the rate of growth of the total population and of various subgroups; (2) to conduct research into areas related to the administration of the campaign (e.g., personnel efficiency, effectiveness of information and education techniques); (3) to assess the importance of measures other than family planning (e.g., higher age at marriage, emigration) in reducing the rate of population growth; (4) to advise the Ministry of Health and the two family planning organizations on the results of research and to ensure that procedures likely to enhance the aims of the family planning campaign are applied to as great an extent as feasible; and (5) to measure the effect of such procedures and review the situation accordingly on a continuing basis.

A review of the situation through 1969 will be published in late 1970. Research on specific aspects of the campaign has been carried out since the establishment of the unit in 1967 and the results and conclusions fed
back to administration. Currently the Evaluation Programme issues a monthly report with details of new acceptors and discontinuers of the two organizations.

The Evaluation Programme relies mainly on data collected from the following organizations: the Family Planning Association, the Action Familiale, the Central Statistical Office, the Registrar General's Department, the Ministry of Health, and the Comptroller of Customs.

Records of the Family Planning Association and Action Familiale. Both family planning organizations are using records wholly or partly devised by the Evaluation Programme. Copies of these records are sent monthly to Evaluation for processing and analysis.

There are six major records involved. The client card contains demographic and medical data. The monthly trend form notes changes in the methods of contraception used by each client. The daily sheet records the details of each center visit, including the amount of supplies taken, whether the client was examined by a doctor, etc. The call sheet is used for home follow-up visits, which are usually made to clients who have missed their center appointments. An attempt is made to obtain information on reasons for having missed the center appointment, the current status of the client (i.e., whether still continuing with the method), and the reasons for dropping out among clients who indicate that they do not intend to continue with contraception.

When canvassing, Family Planning Association welfare workers, motivators, and volunteers issue a coupon to every potential client who is willing to accept it. The canvasser writes an appointment date for a clinic visit on the coupon, and adds some basic demographic data. The coupon is divided into three sections, one of which is kept by the canvasser, another by the canvasser, and the third is sent to Evaluation. If, as requested, the canvasser brings her coupon segment to the center, this is also sent to Evaluation.

At the end of 1969, motivators received Rs25 (US$4.50) monthly as a retainer fee and Rs2 (US$0.36) as a referral fee for each acceptor who produced her coupon segment. Volunteers (who could be anybody) received Rs2 (US$0.36) as a referral fee. The coupon system is not used by the Action Familiale.

The coupon plays a relatively smaller role in the evaluation of the Mauritius family planning campaign than in some other countries using this type of record. This is mainly because systematic family planning in Mauritius is largely synonymous with the family planning services provided by the two organizations. This facilitates the keeping of very extensive service statistics, which, on the whole, are obtained by family planning personnel rather than by private practitioners and other persons outside the movement. A second factor which reduces the relative importance of such initial records as the coupon is the vital need for follow-up records. The main methods used by family planning acceptors—the pill, rhythm, and condom—necessitate careful follow-up subsequent to acceptance since the decision to discontinue with these methods is more easily carried out than the decision to discontinue with the IUD.

The client attendance sheet records information on the dates of clinic and home visits for each client together with her current status and the type and amount of contraceptive supplies purchased. This gives a continuing record for each acceptor and aids in predicting her status at any point in the future.

Government organizations. The Central Statistical Office (CSO) provides demographic information about Mauritius. This includes census data, a bi-annual digest of statistics, and also population projections by various characteristics such as age group, ethnic group, and residence. The CSO also conducts, on request, special analyses of data obtained from other sources.

The Registrar General's Department collects data on the registration of live births, marriages, deaths, and stillbirths and sends them to the CSO for processing. The Evaluation Programme requires detailed analysis of this data; hence, the CSO has been requested to supply regularly an analysis, by various characteristics, of registered live births and marriages.

The Ministry of Health, in addition to the birth notification data, supplies information on abortion cases referred to hospitals.

The Comptroller of Customs supplies monthly information on the type, quantity, and value of contraceptives imported. This provides some information on the extent of family planning practice outside the two organizations and on the trend over time.

Surveys. Among the family planning surveys which the Evaluation Programme has organized have been the following:

1. Follow-up on all Family Planning Association acceptors to the end of 1968. It was decided to interview everyone, rather than to use sampling, since the relatively small size of the population involved together with the large number of ethnoreligious and other subgroups would require a large sampling fraction.

2. Follow-up on all Action Familiale acceptors to the end of 1968 and on those who had been fully trained on how to use the rhythm method.

3. Follow-up on coupon acceptors who did not come to the center for contraception. The universe surveyed consisted of such persons contacted in the second half of 1968. The main aims of the survey were to learn the reasons for non-acceptance of contraception and to compare characteristics of acceptors with nonacceptors.

Surveys carried out or planned for 1970 include an annual follow-up survey of Family Planning Association and Action Familiale clients designed to obtain pregnancy histories during the preceding year as well as to identify those clients who have dropped out and their reasons for doing so; and a survey matching acceptors with nonacceptors in order to compare pregnancy records.

Accomplishments

Data from the surveys already carried out are currently being analyzed. The results from these as well as from some of the surveys planned for 1970 will be included in the report to be issued by the end of that year. Until these results are available, it is not possible to assess accurately the impact of the family planning campaign on fertility. The report is planned to
also include an assessment of the contributions to the decline of the fertility rate of factors such as more effective use of contraception among nonclients, higher age at marriage and wider incidence of abortion. Preliminary findings follow.

A marked decline in the crude birth rate in recent years is apparent from a comparison of age-specific fertility rates in the years between 1962 and 1968. The fertility rates of almost all the main age-groups have decreased by slightly over one-fifth between 1964, when the family planning campaign began functioning systematically, and 1968. Fertility rates per 1,000 women by age group, for the years 1964 and 1968, respectively, are:

<table>
<thead>
<tr>
<th>Year</th>
<th>15-19</th>
<th>20-24</th>
<th>25-29</th>
<th>30-34</th>
<th>35-39</th>
<th>40-44</th>
<th>45-49</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
<td>91.4</td>
<td>309.5</td>
<td>301.3</td>
<td>247.7</td>
<td>165.5</td>
<td>62.5</td>
<td>8.0</td>
</tr>
<tr>
<td>1968</td>
<td>72.9</td>
<td>239.4</td>
<td>245.7</td>
<td>179.3</td>
<td>129.8</td>
<td>46.5</td>
<td>7.8</td>
</tr>
</tbody>
</table>

The crude birth rate decreased from 27% in 1962 to 24.9% in 1968. Provisional figures for 1969 indicate that there has been a further large drop to about 24.

The number of new acceptors, by year and by organization, 1964-1969, is as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Planning Association</th>
<th>Action Familiale</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
<td>73</td>
<td>821</td>
<td>894</td>
</tr>
<tr>
<td>1965</td>
<td>1,412</td>
<td>1,596</td>
<td>3,008</td>
</tr>
<tr>
<td>1966</td>
<td>4,672</td>
<td>2,089</td>
<td>6,761</td>
</tr>
<tr>
<td>1967</td>
<td>9,348</td>
<td>2,130</td>
<td>11,478</td>
</tr>
<tr>
<td>1968</td>
<td>7,291</td>
<td>1,839</td>
<td>9,130</td>
</tr>
<tr>
<td>1969</td>
<td>6,408</td>
<td>2,156</td>
<td>8,574</td>
</tr>
<tr>
<td>Total</td>
<td>29,204</td>
<td>10,641</td>
<td>39,845</td>
</tr>
</tbody>
</table>

The total number of acceptors represents about 35% of all women aged 15-49 and living in some form of union.

The reasons for the drop in the number of acceptors from 11,478 in 1967 to 8,574 in 1969 are being investigated. The drop may be related to the continuing increase in the total number of acceptors which necessitates an increase in the amount of time devoted to clinic duties and follow-up visits. This may have brought a consequent decrease in the amount of time available for canvassing since the increased number of clients was not accompanied by an increased number of welfare workers. Partly in order to remedy this, the Family Planning Association is increasing the number of motivators employed. In the past, however, the method of recruitment and the form of payment of motivators has been inadequate to ensure satisfactory performance. Thus, as described earlier, a number of women were employed as motivators solely because they occupied a prominent position in the village. Some of those women were satisfied to receive Rs25 (US$4.50) per month as a retainer fee and had little interest in canvassing and earning the Rs2 (US$0.36) referral fee per acceptor. The figures for 1969 illustrate the need for revision of the motivator situation. In that period, 101 motivators referred only 2,476 acceptors, i.e., an average of about two per month. The average earnings of a motivator were, therefore, about Rs20 (US$3.22) per month as compared to a salary of about Rs200 (US$36) for a welfare worker. There is, of course, no reason to raise the level of payment in the cases where low earnings are due mainly to poor performance. During that period, however, the motivator who recruited the largest number of acceptors, i.e., 153 over the year, earned only about Rs50 (US$9) per month on the average. Also, about one half of the motivators referred, on the average, one or less acceptor per month implying that, for these motivators, the average cost of an acceptor was Rs27 (almost US$5) or more. For about one-fifth of the motivators, the average cost per acceptor was over Rs100 (US$18) as they had referred only 3 or fewer new clients in the year.

Reform of the motivator situation is currently underway: new motivators are being added to many areas; the retainer fee has been reduced to Rs2 (US$0.36) and the referral fee increased to Rs6 (US$1.08). This payment is made only for clients accepting the pill or IUD (not condoms). It is also planned to change the system of payment so that the motivator receives no part of the referral fee until the client has regularly followed the method for three months at which time one half of the fee will be paid. If the client continues for another three months, the rest of the fee will be paid. It is expected that this procedure will reduce dissatisfaction among competent motivators. Moreover, their average earnings, although still substantially below those of welfare workers in absolute figures, will be more commensurate with the number of hours worked.

A notable success of the two organizations is their increasing appeal to younger, recently married women of lower parity. Although the exact figures for Action Familiale are unavailable at the present time, there is evidence that the trend shown in Table 1 for Family Planning Association acceptors reflects fairly well that for Action Familiale acceptors also.

An interesting characteristic of acceptors is the very low ethno-religious selectivity, as shown in the comparison of the percentage distribution of Family Planning Association acceptors, by ethnic group and religion, with that of the total population in 1962. Family Planning Association acceptors (1964-1969) were 69 per cent Indian and 31 per cent General Population and Chinese; the total population in 1962 was 67 per cent Indian and 33 per cent General Population and Chinese. The acceptors were 51 per cent Hindu, 17 per cent Muslim, and 32 per cent Roman Catholic and other; the total population in 1962 was 51 per cent Hindu, 16 per cent Muslim, and 33 per cent Roman Catholic and other.

If Action Familiale acceptors are also considered, since about 60 per cent of them belong to either the General Population or Chinese ethnic

![Table 1](image-url)
groups and are Roman Catholics, even the very slightly smaller propensity of acceptance among these same population sub-groups apparent from Family Planning Association figures would disappear. These sub-groups would, in fact, show a slightly higher than average rate of acceptance.

There is a greater likelihood of acceptance among urban than among rural dwellers. The acceptors were 55 per cent urban and 45 per cent rural, as compared to 44 per cent urban and 56 per cent rural for the total population in 1962. The difference is not, however, as large as in some other underdeveloped countries with family planning programs and this may be related to the small size of the island and the consequent extensive contact between town and country.

The percentage distribution of initial methods chosen by Family Planning Association acceptors (1964-1969) was as follows: 64.9 per cent, the pill; 5.3 per cent, the IUD; and 29.8 per cent, the condom. However, since a number of clients initially accepted condoms for a few days or weeks prior to changing to the pill or IUD, the percentage distribution of methods taking these changes into account was as follows: 70.7 per cent, the pill; 6.3 per cent, the IUD; and 23.0 per cent, the condom.

Preliminary follow-up survey results estimate, for 1968, 5,800 couple-years of use for the pill, 1,600 for the IUD, and 2,500 for condoms, i.e., a total of 10,700. The figure for condoms, however, is not strictly comparable to the figures for the pill and the IUD as it does not take into consideration consistency of use. It does not imply the use of condoms at every coitus but only relates to a period of time over which condoms have been used by a couple, however sporadically. This becomes clear by a comparison of the number of condoms issued by the Association in 1968, which is 116,000, to the 2,500 estimated couple-years of use. The two figures imply an average use of about 46 condoms per couple-year. This is well below the very tentative average estimate of 100 condoms needed by a couple per year if this method of contraception is used at every coitus.

Also from follow-up survey results, 3,500 couple-years of use of the rhythm method are estimated in 1968 for Action Familiale registered clients.

In 1968, the Association issued 90,000 pill cycles as well as the 116,000 condoms. For 1969, the figures are 120,000 and 104,000, respectively.

First results of the follow-up surveys show the following percentage continuation rates after 1 month, 3 months, 6 months and 12 months, respectively: pill, 92.7, 81.2, 69.5, and 53.2; IUD, 95.5, 88.8, 81.4 and 67.7; condoms, 75.1, 53.2, 39.7 and 25.2.

Figures for condoms include clients accepting that method provisionally, prior to changing to the pill or IUD.

Mauritius serves as an excellent laboratory for evaluation and research. The relatively low cost of survey fieldwork and the high degree of data checking made possible by the compactness of the country allow for much experimentation. In addition to the work completed or in progress, a wide range of projects is planned for the future, much of it focused on the operations of the campaign. The main difficulty has been inadequate facilities for the machine processing of the data. Most of the analysis to date has been carried out on the rather aged equipment of the Central Statistical Office. In recent months, two computers have been in operation on the island, but there is a lack of trained programming operators and only limited use of the computers can be made at present. Much of the analysis is being carried out on University of London computer equipment through the Research Group in the Department of Medical Statistics in the London School of Hygiene and Tropical Medicine. The Government of Mauritius is now obtaining its own computer. In time, this will enable a larger proportion of Evaluation analysis to be carried out locally.

Of major concern to Evaluation is the organization of the next census, to be conducted in 1972. Traditionally, censuses have been of high quality in Mauritius. Nevertheless, in the past, marriage and fertility questions have tended to be somewhat limited and perfunctory. There is a vital need for more careful planning of this aspect in the next census. It is most important that the census assist Evaluation in the attempt to determine the impact of family planning and other population measures during the preceding decade, and hence guide subsequent action planning.

Foreign Assistance

From their beginning through the end of 1969 the two family planning organizations have received a total of US$432,000 in foreign assistance and Rs1,650,000 (US$297,000) from the Government of Mauritius.

The International Planned Parenthood Federation has provided the bulk of foreign assistance. Its contribution amounts to US$356,000, exclusively to the Family Planning Association to cover, together with the Government grant, most recurrent and capital costs.

The Swedish International Development Authority has given pills and condoms valued at US$30,000.

The Oxford Committee for Famine Relief (OXFAM) has made funds available to the F.P.A. and Action Familiale for the purchase of vans. These were valued at US$10,000.

The Population Council has given US$4,000 for the purchase of another van.

The Association has also received from various foreign sources, clinic equipment valued at US$12,000.

Other foreign contributions to the Action Familiale were US$9,000 by Ent’re Aide et Fraternité and US$11,000 by other Catholic organizations.

In addition to the aid listed above, the Nuffield Foundation, the United Kingdom Ministry of Overseas Development, and the International Planned Parenthood Federation have financed assignments of foreign consultants to the Ministry of Health and the Family Planning Association.

Summary

Mauritius has a number of elements important to a successful family planning campaign. The small area and high density of the island, combined with a good transportation system, make it easy to reach even the most remote hamlet for information, canvassing, follow-up visits, etc. At the same time, compared to other underdeveloped countries, Mauritius has a high degree of literacy and a supply of experienced administrators, qualified doctors and nurses, and well organized health services.
Unfavorable comparisons are sometimes made with other countries in terms of the cost per acceptor. That cost is high in Mauritius, amounting to approximately Rs 120 (US$21.60). Overhead, however, the cost of which is not directly proportional to the number of acceptors, accounts for a substantial proportion of that amount. Also, it should be remembered that although it may be possible to keep costs low by restricting a family planning campaign to some of the more promising areas in a country, in order for family planning services to be accessible to the whole of the population a disproportionately large increase in cost may be expected.

References
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This is part of an information service provided by The Population Council and The International Institute for the Study of Human Reproduction, Columbia University.
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