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India's Family Planning Programme: A Critical Appraisal

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THE PHILOSOPHY OF FAMILY PLANNING

The concept that the human race should control its instinct to reproduce is comparatively recent one in the history of mankind. Malthus in the early years of the last century pointed out that there will be a danger if the growth of the human population outstrip the world's resources on food and other necessities of life. He advocated that this should be done by restriction of marriage and abstinence within marriage. Indeed, the present alarming growth in the population of the world is comparatively recent. In earlier times, one pestilence or famine would wipe out the whole population. Also there were large areas of world which were comparatively empty in which people could migrate from overpopulated areas and thus find adequate resources to redevelop their lives. The industrial revolution which coincide with the beginning of the conquer of many diseases has led to the urbanization of the population with consequent overcrowding and this in itself has tended to produce a vicious circle of poverty, overcrowding and excessive fertility.

Since the beginning of this century significant advannces have been made in technology of all kinds. Advances in medical sciences have dramatically reduced maternal, pre-natal and infant mortality rates in the developed as well as developing countries. It is a sobering thought that in Britain in the year 1900, infant mortality rate was 201 per thousand live births.

All the methods of contraception at present in use in developing countries with the exception of oral contraceptives and injectable steroids, were already available in some form by the end of the nineteenth century. Their availability, sale and distribution were, however strictly limited. They were only available to a small proportion of people mainly those who were better educated and affluent.

Organization of family planning services in Britain dates essentially from the 1930s and owes its origin to the pioneer work of Marie slopes and others. Orthodox medicine including gynecology was slow to appreciate the benefits of safe and reliable methods of birth control and much of the early work was carried out by voluntary organizations such as the Family Planning Association. Many family doctors and gynecologists were prepared to give contraceptive advice. It was not until the 1950s that any systematic instructions to medical students began.

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This deficiency has now largely been remedied and questions of family planning form part of the syllabus for the medical students of post-graduate Diploma in obstetrics and gynecology. General practitioners are expected to be familiar with the main methods of birth control.

FAMILY PLANNING IN INDIA PRIOR TO INDEPENDENCE

India, the largest country in South Asia accounts for 2.4 percent of the total world land area and accommodates 15.0 percent of the world population. Since 1921, the Indian population began to grow steadily and particularly since 1930's Indian economists have been emphasising the adverse impact of population growth on employment and agriculture. In 1923, Professor N.S. Phadke started the "Birth Control League" at Bombay while Kulkarni formed a similar organization in Pune. Professor R.D. Karve opened the first family planning clinic at Pune in 1923 despite opposition by the influential members at that time. Again in 1928 with the support of many influential persons including the high court judges, a Neo-Malthusian League was formed in Madras city. In 1930; the Mysore government issued an order for setting up birth control clinics in the Victoria Hospital and Vani Vilas hospital in Bangalore and in the Krishna Rajendra hospital in Mysore. In 1932, the senate of Madras University agreed to give instructions on contraceptives and in the preceding year the Government of Madras agreed to open birth control clinic in the Presidency. The first female clinic for family planning was opened in Bombay in 1936. Dr. A.P. Pillai opened a family planning course training in 1937. After that few clinics were opened in Uttar Pradesh and Madhya Pradesh in 1939.

POPULATION AWARENESS AMONG POLITICAL LEADERS

The Census Commissioner of India first attracted the attention of Government of India in 1931 for introducing urgent steps to reduce the birth rate. In 1938, Netaji Subhas Chandra Bose, President of the Indian National Congress advocated a definite restriction of numbers. He appointed a National Planning Committee under the chairmanship of Shri Jawaharlal Nehru. They began their work in early 1939. Its sub-committee on population was chaired by Dr. Radhakamal Mukerji and they prepared a report and it was considered by the parent body in 1940. In 1943, the government appointed the Health Survey and Development Committee (popularly known as Bhore Committee) which made comprehensive survey of India's health needs and also provided data on base population. This study recognised the fact that improvement of health and control of diseases and famine was the reason for high population growth. The committee submitted its report in 1946 and considered deliberate limitation of families to be 'advisable' and also observed that it could not be secured through self control to any material extent.

POPULATION POLICY IN INDIA

When the Congress party came into power after independence, they recognised the need for population control. In 1949, the Family Planning Association of India (FPAI) was formed in Bombay. Since its inception, FPAI has worked vigorously for greater family planning acceptance

among the Indian population. Further, the voluntary birth control movement in India has largely gained momentum which was developed on the western modal of planned parenthood movement.

India was the first country to adopt family planning as an integral component of official government policy in 1952. The planning Commission appointed by Government of India was assigned the task to formulate a plan for most effective and balanced utilisation of natural resources for economic development. When the first five year plan were introduced, the intention of government is to stabilize the population growth rate at a level consistent with the natural resources. They considered that the reduction in birth rate is the only way. Therefore, fertility control became the important ingredient of Population policy.

ORIGIN AND EVOLUTION OF FAMILY PLANNING PROGRAMME

India has the unique distinction of having been the first country to introduce an official family planning programme in 1951 as an integral part of its socio-economic development plan. Since then the programme has grown steadily and today it is perhaps the second largest programme in the world covering a huge population of about 70 crores. During its evolution, various strategies were developed for extending the reach and improving the performance of the programme.

When the family planning programme was started in 1951, the approach was essentially clinical. The family planning services were made available in clinics on the expectation that people would visit them for getting advice and service. However, this approach failed to draw an adequate number of couples to the family planning clinics.

Therefore, the programme strategy was changed from the clinical to the extension approach at the beginning of the Third Five Year Plan (1961-66). Unlike the clinical approach, the extension approach was meant to take the programme to the people by spreading the message and methods of family planning through an extensive network of primary health centres in rural areas, and hospitals and family welfare centres in urban areas.

The programme was strengthened in 1966 by the creation of a full-fledged Department of Family Planning in the Ministry of Health and Family Planning. Family planning services were integrated with those of health, maternal and child care with the help of specially trained multi-purpose workers. The Intra Uterine Device (IUD) was introduced during this period, but unfortunately without adequate preparation. After an initial period of encouraging response from the women during 1965 and 1966, IUD became unacceptable to a majority of women because of perceived side effects of the device that were unanticipated.

With the failure of IUD as an acceptable method of family planning, there was again a change in the programme strategy during 1969-74 with a shift in emphasis towards mass camps for carrying out vasectomy operations. Although this approach received overwhelming response initially it could not be continued for long for lack of sustained demand. Hence

mass camps were replaced subsequently by mini camps, where only a few cases (between 20 and 25) were operated on, in order to ensure better follow-up care and to enhance acceptor satisfaction.

The next four years (1974-78) witnessed a drastic rise and fall in family planning acceptance. With the formulation of a National Population Policy for the first time in 1976 (Ministry of Health and Family Welfare, 1976), that envisaged a series of fundamental measures "to mount a direct assault on the problem of population", the programme performance reached a peak level during 1976-77. In the subsequent year, as a result of change in the National Government following the General Elections held in February 1977, the Family Planning Programme suffered a serious set-back. However, by 1980 there was some recovery in the programme with an increasing trend in the number of acceptors of various methods of family planning including sterilization. This positive trend continued and strengthened following the years between 1981 to 1987.

FAMILY PLANNING DURING FIVE YEAR PLANS

The First Five Year Plan, 1951-56

The very First Five Year Plan enunciated that the programme for family limitation and population control should discover suitable techniques of family planning and devise methods by which knowledge of these techniques could be widely disseminated and give advice on family planning as an integral part of the service of government hospitals and public agencies. A sum of Rs. 6.5 million was allocated by the Central Government to the Ministry of Health for a family planning programme which would include provision of contraceptive advice, field experiments on different family planning methods to determine their suitability, acceptability and effectiveness in different sectors of the population, development of suitable procedures to educate the people on family planning methods; collection of information on reproductive patterns, attitudes and motivations affecting family size, study of the interrelationships between economic, social and population changes, and research into the physiological and medical aspects of human fertility and its control. The belief that there was already some intrinsic demand for family planning services and that supply would induce demand, prompted the Government to open family planning clinics during this period. The people were expected to go on their own to these clinics to demand and receive family planning services.

The Second Five Year Plan, 1956-61

The family planning programme made notable progress in the period covered by the second five year plan. A more vigorous action-cum-research programme was undertaken. The distribution of contraceptives was extended to primary health centres, hospitals and dispensaries and maternity homes run by state governments. In both rural and urban areas, contraceptives were issued free to those with incomes below Rs. 100 and at half price to those in the Rs. 100-200 income groups. The Central Family Planning Board recommended the inclusion of sterilization operation in the

family planning programmes in hospitals and institutions where facilities existed. The number of service clinics was increased from 147 to 4,165 with the exception that people would go there for advice and service.

Considerable progress was achieved at the Contraceptives Testing Unit in Bombay and elsewhere under the guidance of the Indian Council of Medical Research and the All India Institute of Hygiene and Public Health in Calcutta. Demographic research centres were set-up in Bombay, Calcutta, Delhi and Trivandrum. A broad based training programme was developed which included centres for training of instructors, a rural training demonstration and experimental centre, development of training clinics into regional training centres and ad hoc training courses. Family planning was incorporated in the normal training programme of a number of training institutions for doctors and medical auxiliaries. A financial provision of Rs. 50 million was made in the second plan.

The Third Five Year Plan, 1961-66

In the third plan period, the basically clinical approach of the first two plans was replaced by an extension education approach aimed at bringing the message and services to the people in the far corners of the country through a network of primary health centres and sub centres in the rural areas and hospitals and family welfare planning centres in the urban areas, and involving voluntary organizations and local leaders. In respect of the different methods of family planning a "cafeteria approach" was adopted leaving the choice to the acceptor. The programme gained momentum in 1966 when a Department of Family Planning was constituted in the Ministry of Health and Family Planning at the centre to give technical and administrative direction and guidance to the programme and effective coordination of its various facets. The Third Five Year Plan clearly stated that "the objective of stabilizing the growth of population over a reasonable period must be at the very centre of planned development.

The period 1966-69, was termed as a "plan-holiday" when the earlier programmes were continued with annual budgeting and target setting. The programme was integrated with the public health programmes in the country, such as the Maternal and Child Health (MCH) services operated through the Primary Health Centres (PHCs) in rural areas and Urban Family Welfare Planning Centres (UFWPCs) in towns and cities. The expenditure during this period increased to Rs. 704.6 million.

In 1968, the delivery of family planning services was extended through the commercial distribution of condoms. The year-to-year targets in terms of number of acceptors was fixed. Monetary incentives were given to those concerned with sterilization (acceptor, physician and motivator) and those concerned with IUD insertions.

The Fourth Five Year Plan, 1969-74

In the Fourth Five Year Plan, family planning was included among the programmes of the highest priority. A numerical target was set for reducing the crude birth rate from 39 per thousand population to 25 per-

thousand within the next 10 to 12 years. To achieve this, a concrete programme was drawn up for creating facilities for the married population during their reproductive span to bring about: (a) group acceptance of the small size family; (b) personal knowledge about family planning methods; and (c) ready availability of supplies and services. An outlay of Rs. 3150 million was made to strengthen and speed up the programmes. An increased emphasis was placed on the adoption of the "camp approach" for carrying out sterilization operations and strengthening of infrastructure facilities in the rural areas. At the end of this plan period, the "mass camp" approach was replaced by a "mini-camp approach" where in one camp, only about 25 cases were to be operated, since a number of complaints were received from persons operated in larger camps. Emphasis was given to post-partum programmes in major hospitals, urban welfare planning centres and on a smaller scale in PHCs.

In 1971, Parliament passed the Medical Termination of Pregnancy Act which liberalized the grounds for induced abortions. The Act which became effective from 1 April 1972 made it possible for a pregnant women not desiring a pregnancy to have an induced abortion during the first trimester of pregnancy for various medical, social or economic reasons including contraceptive failure.

The Fifth Five Year Plan, 1974-79

The Fifth Five Year Plan, which was operated only for four years, 1974-78, underwent drastic changes because of change of government at the centre witnessed the dramatic rise and fall in family planning acceptance in the country. During this plan, a sum of Rs. 4089.8 million was spent on the programme and the programme received an enormous boost from the government in 1976 with a National Population Policy, formulated for the first time in history in that year. This policy document aimed at making a "frontal attack on the problem of population." The performance in the family planning programme during the year 1976-77 was the best ever to be realized in the history of the programme of any country, with a total number of 8.26 million sterilization, which was more than the total number of sterilizations carried out in the previous four-year period.

With the change of government at the centre brought about by the general elections held in February 1977, the programme suffered a serious setback. It became a victim of political controversies and almost completely collapsed during 1977-78. However, there were some departures from the 1977 policy as to the approach of the government in achieving the targets. While the earlier policy did not consider it a practical solution to "wait for education and economic development to bring out a drop in fertility" and desired "direct assault" on population problems, the 1977 policy desired to achieve the same goal through a "programme of education and motivation." It was also stated "Compulsion in the area of family welfare must be ruled out for all times to come. Our approach is educational and wholly voluntary."

The Sixth Five Year Plan, 1980-85

In its Sixth Five Year Plan, India has postulated its long term demographic goal of reaching NRR one by the year 2000, when the crude birth rate would be 21, crude death rate 9. Infant mortality rate 60, expectation of life at birth 64 years and 60 percent of couples in the reproductive ages effectively protected by contraception. The time by which NRR of one is to be achieved can be adjusted according to the plans and resources of a country but it seems to be a significant intermediate goal to be realized before realizing the ultimate goal of zero population growth. This seems to be a fundamental conceptual departure in the setting of demographic goals adopted in the Sixth Five Year Plan in India in contrast to the earlier plans.

A second policy perspective emerges from an analysis of the changing pattern of marital fertility recently observed in India as in many other developing countries. It has been observed that the decline in fertility is mainly due to decline in marital fertility of women aged 30 and above. This suggests that the family planning methods are likely to be used predominantly as methods of limitation of family size than for spacing of children in the early stages of development. The marital fertility rates of women below 30 years of age have actually increased in the last decade in a number of States in India indicating an increase in potential fertility among younger couples and absence of effective spacing among children. The tendency among Indian couples seems to be to have the desired number of children, as they arrive and then to stop child-bearing rather permanently. Spacing as a health concept to promote the health of mothers and children, advocated for so many years, by public health specialists, does not appear to have taken root, and is not likely to do so in the near future. Even spacing methods such as pills and IUD seem to be used by women for limitation purposes. Surprisingly, the recent trends in family planning acceptance reveal that even in the Western countries the proportion of eligible couples who have taken to permanent methods as vasectomy or tubectomy has increased substantially in the past decade. These findings suggest that the emphasis placed thus far by India on sterilization is consistent with global trends and that the country should substantially increase and improve facilities for sterilization services and at the same time increase availability of spacing methods with back-stopping facilities for induced abortion for the convenience of those who have used a non-permanent method and failed. It is also noteworthy that there is a global trend towards female methods of contraception and that desired family size and fertility levels in future may be dictated by women.

Taking the above factors into consideration, the Sixth Plan document envisages a long-term demographic goal taking into account not only fertility levels but also mortality levels. It has been observed that the rapidly declining trend in mortality experienced since independence, has been slowed down since 1970 and during the 1970s there has been very little decrease in mortality levels. In recent years, the infant moral-ity has changed tremendously and came to the level of 96 per thousand live births in 1986.

Seventh Five Year Plan, 1986-1990

The long-term goal is to reach Net Reproduction Rate of Unity (NRR=1) by 2000 A.D. with a birth rate of 21, death rate of 9, infant mortality rate of below 60 per thousand live births and couple protection rate of 60 percent. According to this plan objectives, the goals to be reached by 1990 (medium term goals) are birth rate of 29.1 per thousand population, death rate of 10.4 and infant mortality rate of 87 per thousand live births and couple protection rate of 42 percent.

The following steps are undertaken in this plan to improve programme performance.

In order to ensure maximum utilisation of infrastructure available under the Family Welfare Programme, a procedure has been laid down to schedule weekly camps at each PHC area for provision of family welfare services and also one day weekly camp at sub-centre level for IUD insertions. Performance under the Family Welfare Programme is being reviewed periodically in the meetings of State Health Secretaries.

A technical committee has been constituted to supervise the quality of services and related aspect to fulfill the satisfaction of the acceptors. To meet the shortfall in achievement of targets under spacing methods, this plan has some intention to organise special drives to educate the people.

This plan will take an enormous effort to implement the Universal Immunization programme so that it can reduce the infant and child mortality and enhance the acceptance of family planning. Instructions have been issued by the Ministry of Urban Development to allow the incentive rebate of 0.5 percent interest on house building advance to loan Central Government employees if they or their spouses undergo sterilization operation after one surviving child.

EVALUATION OF FAMILY WELFARE PROGRAMME

Before going into detailed discussion on evaluation of family planning programme in India over a period of time, let us start with the desired demographic goals during plan periods.

Desired Demographic Goals During Plan Periods

Table 1 provides the particulars of the demographic goals specified during different years since 1962, for the country as a whole.

It can be seen from the table that the demographic goals set in terms of crude birth rate, till very recently had to be revised time and again, the goal of reaching a birth rate of 25 by 1972 set in 1962, has not been realized in 1982 nor in the sight of realization within the next plan period. The basic strategy of programme implementation remained essentially the same, as formulated in 1962, with multiplication of peripheral workers to cover less and less population, emphasis on sterilization through the camp approach and increasing incentives offered to acceptors of sterilization.

Table 1
Desired Demographic Goals, India, 1966-90

Year of Statement	Specified Demographic Goal	Year by Which the Goal is to be Achieved
	CBR of 25	1972
1966	CBR of 25	as expeditiously
1968	CBR of 23	1978-79
1969	CBR of 32	1974-75
Beginning of the IVth Plan	CBR of 25	1979-81
1974	CBR of 30	1979
Beginning of the Vth Plan	CBR of 25	1984
April 1976	CBR of 30	1978-79
I Population Policy	CBR of 25	1983-84
April 1977	CBR of 30	1978-79
II Population Policy	CBR of 25	1983-84
January 1978	CBR of 30	1978-79
Central Council of Health	CBR of 30	1982-83
Sixth Five Year Plan	NRR of 1	2000
Document (1980-85)	CBR of 21	2000
	CDR of 9	2000
	Expectation of Life at Birth of 64 years	2000
	Couple Protection Rate: 60 percent	2000
Seventh Five Year Plan	NRR of 1	2006-11
Document (1985-90)	CBR of 29	1990
	CDR of 11	1990
	IMR of 90	1990
	Couple Protection Rate: 42 percent	1990

Source: K. Srinivasan, 1983, "India's Family Planning Programme: Its Impact and Implications," The Journal of Family Welfare, Volume, XXX. No. 2, December.

The overall strategy of the sixth plan is integrated with the long-term demographic goal of reaching NRR of one by the year 1996. It is envisaged latter that it is necessary to increase the proportion of couples protected by all family planning methods to be about 60 percent. The target fixed every year in terms of equivalent sterilization did not realize at any time since 1978. The actual performance of sterilization is always less than the targets. For instance, in the year 1987-88, the achievement of sterilization is only 82.8 percent against the target of 6.0 million sterilization fixed for the year. The big gap of 1.1 million sterilization between the target and achievement has created doubts about the feasibility of the targets prescribed in the Seventh Five Year Plan. In this context, Srinivasan comments, "If this trend continues and leads

to postponement of the achievement of demographic goal, it might lead to the postponement of the realization of economic objectives. The addition made to the population on account of the failure to prevent the given number of births would put additional strain on the economy in the form of additional investment" (Srinivasan, 1982).

Sources of Funding

The National Family Welfare Programme is a cent percent centrally sponsored programme. This programme is implemented by states and union territories and voluntary organizations but the entire cost is borne by the Government of India. The Central Government gets some assistance from foreign agencies both in the form of Grant-in-aid and soft loan but no part of expenditure is funded by private sources.

The expenditure on family planning has increased from 0.14 crores in first plan period to 3256 crores in seventh plan period. The speed at which the expenditure on public sector has increased cannot be comparable.

Table 2
Family Planning Expenditure During Plan Periods

(Rs in Crores)

Plan Periods	Expenditure on Family Planning	Expenditure Public Sector	Percent Expenditure on Family Planning Total Public Sector
First Plan	0.14	1960.00	Negligible
Second Plan	2.15	4672.00	0.05
Third Plan	24.86	8576.50	0.30
Annual Plans	70.46	6625.40	1.10
Fourth Plan	284.43	15778.80	1.80
Fifth Plan	408.48	39426.20	1.30
Sixth Plan	1425.73	110971.20	1.30
Seventh Plan	3256.00	180000.00	1.80

Source: Annual Report on Ministry of Health and Family Welfare, 1987-88.

Family Planning Targets and Performance

Table 3 provides the targets set and the achievements in terms of number of acceptors of various methods of family planning during the past 19 years from 1969 to 1988. Except few years, the targets have not been fulfilled as stated in each year. Between 1972-75, the performance was around 40 to 60 percent where as the emergency year (1976-77) it has gone up by 192.5 percent in the case of sterilizations. This was the best to be realized ever in history in the population of any country, with a total number of sterilization of 86 lakhs which was more than the total number of sterilization carried out in previous four year periods. Had this tempo been continued even for a few years, the birth rate would have been brought down dramatically.

Table 3
Targets and Achievements in Different Methods of Family Planning in India, 1969-70 to 1986-87

Year	Sterilisations ('000)			IUD Insertion ('000)			C.C. Users ('000)		
	Target	Achievement	Percent	Target	Achievement	Percent	Target	Achievement	Percent
1969-70	2215	1422	64.2	702	459	65.3	2431	1509	62.1
1970-71	2600	1330	51.2	900	476	52.9	4800	1963	40.9
1971-72	2079	2187	105.2	831	488	58.8	3829	2354	61.5
1972-73	5697	3122	54.8	949	355	37.4	4258	2398	56.3
1973-74	2267	942	41.6	669	372	55.5	4303	3000	69.7
1974-75	2000	1354	67.7	600	433	72.1	3500	2521	72.0
1975-76	2492	2669	107.1	912	607	66.5	4358	3528	80.9
1976-77	4299	8261	192.2	1137	581	51.1	4690	3692	78.7
1977-78	0	949		1001	326	32.5	5000	3253	65.1
1978-79	3965	1484	37.4	600	552	91.9	4000	3469	86.7
1979-80	3049	1778	58.3	1149	634	55.2	5003	3069	61.3
1980-81	2896	2053	70.9	791	628	79.4	5042	3718	73.7
1981-82	2896	2792	96.4	791	750	94.8	5042	4439	88.0
1982-83	4522	3981	88.0	1512	1074	71.0	6502	5765	88.7
1983-84	5900	4532	76.8	2500	2134	85.4	7900	7661	97.0
1984-85	5823	4085	70.2	3183	2562	80.5	10000	8505	85.1
1985-86	5560	4902	88.2	3244	3274	100.9	9515	9387	98.7
1986-87	6000	5043	84.1	3750	3935	104.9	10500	9825	93.6
1987-88	6000	4969	82.8	4250	4356	102.5	10750	11326	105.4

Source: Ministry of Health and Family Welfare, Government of India, Family Welfare Programme in India, Year Books (1973-88), Department of Family Welfare, Nirman Bhavan, New Delhi.

The years after emergency, specially 1977-78 and 1978-79 have been miserably poor, to say the least. During the last four years, the performance was hovering around 80 percent in sterilizations. One striking feature of the trends in family planning acceptance over the years is that the increasing trend in the number of acceptors in female sterilization more or less maintained, in spite of the fluctuations in the total number of acceptors of various methods. The programme fluctuations from year to year have been mainly in the acceptance of vasectomy, which has been found to be extremely vulnerable to political climate, incentives, commitment of the local leaders and of medical health personnel. Moreover the steadily rising trends in the acceptance of tubectomy can be taken to be definite indication of the potential demand for family planning services among the married women in this country. Increased emphasis on the female method appears to be a wise and safe policy for the next few years.

Analysis of Expenditure

Table 4 provides data on the expenditure incurred in the family planning programme since 1951 to 1987-88 with total expenditure, per capita expenditure, cost per sterilization equivalent and cost per birth averted. The expenditure on the programme in the national level has increased from nearly Rs. 15 lakhs in 1951-56 to about Rs. 1343 lakhs in 1966-67, and to about Rs. 17298 lakhs in 1976-77, but during the post-emergency period (1977-79), it had gone to the level of Rs. 9333 lakhs. In 1987-88, the expenditure on family planning programme was Rs. 67950 lakhs. It can be seen from the table that the cost per sterilization equivalent has increased over the years and the present (1987-88) expenditure of about Rs. 937 per sterilization equivalent is quite high compared to the past trend and has practically more than trebled since 1974-77 because of the programme becoming relatively more inefficient. After 1969-70, only emergency year has registered the lowest cost per sterilization equivalent with Rs. 171. While the number of personnel working in the programme and other expenditure on infrastructure have steadily increased since 1975-76, the poor performance since 1977 up to 1987-88 has raised the per capita expenditure in sterilization over the last 10 years to very high levels. The infrastructure facilities and expenditure already invested in the family planning programme are definitely capable of yielding a far better performance, with a proper political climate, motivation from local leaders and commitment from programme personnel who appear to have been mobilized during the period under investigation. The cost per birth averted has been reported as always less than cost per sterilization equivalent. In 1987-88, India has spent Rs. 684 for averting one birth. Moreover, it has to be realized that the per capita expenditure on family planning is still Rs. 4 per year in 1987-88 and thus there is an urgent need to improve the efficiency of the programme, further investments in the programme also appear to be fully satisfied.

Analysis of Achievement

Table 5 provides data on number of equivalent sterilizations, number of birth averted and percentage of couples currently and effectively

Table 4
Expenditure in Family Planning Programme, Per Capita Expenditure, Cost Per Birth Averted and Cost Per Sterilisation Equivalent, India

Year	Expenditure (in Lakhs)	Per Capita Expenditure*	Cost Per Sterilisation Equivalent (Rupees)*	Cost Per Birth Averted (Rupees)*	Number of Equivalent Sterilisation (in Lakhs)	Birth Averted (Millions)	Birth Averted Cumulative Total	Percentage of Couples Currently Effectively Protected (percent)
1951-56	15	0.0036	214	000	0.07	0.00	0.0000	
1956-61	216	0.0516	9	309	25.00	0.07	0.0700	
1961-66	2486	0.5357	154	444	16.13	0.56	0.6300	
1966-67	1343	0.2707	110	243	12.16	0.55	1.1868	4.5
1967-68	2652	0.5231	127	314	20.92	0.84	2.0310	6.7
1968-69	3051	0.5886	163	242	18.78	1.25	3.2894	8.7
1969-70	3618	0.6827	218	223	16.59	1.61	4.9055	10.3
1970-71	4890	0.9024	306	255	15.98	1.92	6.8227	10.6
1971-72	6176	1.1146	249	288	24.81	2.14	8.9642	12.4
1972-73	7974	1.4078	237	314	33.73	2.53	11.4959	14.6
1973-74	5785	0.9978	469	193	12.33	2.99	14.4884	14.7
1974-75	6205	1.0479	378	204	16.38	3.02	17.5183	14.8
1975-76	8061	1.3316	262	257	30.67	3.12	20.6477	17.0
1976-77	17298	2.7948	171	398	86.57	3.72	24.3705	23.5
1977-78	9332	1.4753	783	184	12.38	5.05	29.4205	22.5
1978-79	11040	1.6633	591	218	18.67	4.92	34.3486	22.4
1979-80	11852	1.7917	540	241	21.59	4.90	39.2573	22.3
1980-81	14191	2.0993	572	272	24.79	4.93	44.1902	22.8
1981-82	18390	2.6652	557	360	33.03	5.11	49.2961	23.7
1982-83	29455	2.0812	630	535	46.85	5.48	54.7670	25.9
1983-84	39210	2.7135	681	631	57.50	6.21	60.9771	29.5
1984-85	49800	3.3205	896	689	55.55	7.23	68.2457	32.1
1985-86	56440	3.7452	847	695	66.63	8.12	76.3660	34.9
1986-87	64240	4.1795	904	715	71.04	8.99	85.3646	37.5
1987-88	67950	4.3335	937	684	72.49	9.94	95.3062	39.8

Source: Ministry of Health and Family Welfare, Government of India, Family Welfare Programme in India, Year Books (1973-83), Department of Family Welfare, Nirman Bhavan, New Delhi.

* Calculated by the authors.

Table 5
Achievement in Equivalent Sterilisations, Birth Averted and Couple Protection Rate, India

Year	Number of Equivalent Sterilisation (in Lakhs)	Birth Averted (Millions)	Birth Averted Cumulative Total (Millions)	Percentage of Couples Effectively Protected (Percent)
1951-56	0.07	0.00	0.0000	
1956-61	25.00	0.07	0.0700	
1961-66	16.13	0.56	0.6300	
1966-67	12.16	0.55	1.1868	4.5
1967-68	20.92	0.84	2.0310	6.7
1968-69	18.78	1.25	3.2894	8.7
1969-70	16.59	1.61	4.9055	10.3
1970-71	15.98	1.92	6.8227	10.6
1971-72	24.81	2.14	8.9642	12.4
1972-73	33.73	2.53	11.4959	14.6
1973-74	12.33	2.99	14.4884	14.7
1974-75	16.38	3.02	17.5183	14.8
1975-76	30.67	3.12	20.6477	17.0
1976-77	86.57	3.72	24.3705	23.5
1977-78	12.38	5.05	29.4205	22.5
1978-79	18.67	4.92	34.3486	22.4
1979-80	21.59	4.90	39.2573	22.3
1980-81	24.79	4.93	44.1902	22.8
1981-82	33.03	5.11	49.2961	23.7
1982-83	46.85	5.48	54.7670	25.9
1983-84	57.50	6.21	60.9771	29.5
1984-85	55.55	7.23	68.2457	32.1
1985-86	66.63	8.12	76.3660	34.9
1986-87	71.04	8.99	85.3646	37.5
1987-88	72.49	9.94	95.3062	39.8

Source: Ministry of Health and Family Welfare, Government of India, *Family Welfare Programme in India, Year Books (1973-83)*, Department of Family Welfare, Nirman Bhavan, New Delhi.

Note : Equivalent Sterilisation is Computed by Using the Following Ratio: 1 Sterilisations = 3 Intra Uterine Device Users = 18 Conventional Contraceptive Users = 9 Equivalent Oral Pill Users.

protected by all family planning methods from 1951-56 to 1987-88. It reveals the following features. Firstly, as reported elsewhere in this paper, the total number of equivalent sterilization never reached the level of emergency year (86.5 lakhs). After emergency, the reported equivalent sterilization was 12.38lakhs, seven time lower than the previous year, thereafter, it has shown a definite increase and it has reached 72.49 lakhs in 1987-88. Secondly, the number of birth averted is the cumulative effect of equivalent sterilizations spread over a period of time. The number of birth averted due to all family planning methods was 9.94 millions in 1987-88 whereas the birth averted since inception of the programme was 95.31 millions. To achieve the long-term demographic goal of Net Reproduction Rate of 1 by 2001, 60 percent of couples have to protected. As per the information published by the Ministry of Health and Family Welfare, 39.8 percent of couples are currently effectively protected by all family planning methods during 1987-88. It indicates that we have to increase our Couple Protection Rate (CPR) by 20 percent in the next 10 years.

EFFECTIVENESS OF FAMILY PLANNING

The output in the family planning programme is measured in terms of equivalent sterilization. It is calculated by the following ratio:

1 Sterilization = 3 Intra Uterine Device Insertions = 18 Equivalent Conventional Contraceptive Users = 9 Equivalent Oral Pill Users.

In other words, equivalent sterilizations have been calculated by a formula by adding the number of sterilizations, 1/3 number of Intra Uterine Device Insertions, 1/18 number of equivalent Conventional Contraceptive users and 1/9 number of equivalent Oral Pill users.

The equivalent conventional contraceptive user is arrived at by dividing the off take of condoms, diaphragms, jelly/cream tubes and foam tablets by 72, 2, 7 and 72 respectively required on an average by a couple in a year to give complete protection. At the same time, the calculation of conventional contraceptive users from 1970/71 onwards only the net figures of condoms, after deducting the number of pieces distributed to vasectomized persons for extra protection have been used. The equivalent number of oral pill acceptor is calculated by dividing the number of oral pill cycles by 13. The breakdown of equivalent sterilizations by their components, by states in India are presented in Table 6.

STATE-WISE ANALYSIS

The present inter-state variation in respect of cost-effectiveness measured in terms of cost per equivalent sterilizations is presented in Table 7. The following observations may be noted.

(a) In the year 1987-88, the Government of India's expenditure on family welfare programme was Rs. 67950 lakhs whereas the achievement in terms of equivalent sterilizations was 72 lakhs. The unit cost per equivalent sterilization was calculated as Rs. 805 for the country as a whole for the period 1987-88.

Table 6
Breakdown of Equivalent Sterilisations by Their Components by States in India, 1987-88

States	Number of Sterilisations	Number of Intra Uterine Device Users	Number of Equivalent Conventional Contraceptive Users	Number of Equivalent Pill Users	Number of Equivalent Sterilisations
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	457489	173974	432695	108587	551584
Assam	78274	21079	30460	6333	87696
Bihar	510085	206360	101116	16569	586330
Gujarat	277062	318661	573844	111476	427549
Haryana	77603	182573	581639	32871	174426
Karnataka	319763	189765	209316	71950	402641
Kerala	195298	85530	169992	28000	236363
Madhya Pradesh	318311	233544	692741	131225	449225
Maharashtra	460612	393732	728891	247562	659857
Orissa	146982	114086	196210	44948	200905
Punjab	149030	348826	504758	54598	299414
Rajasthan	194479	140055	298022	44182	262630
Tamil Nadu	511744	493770	303521	158666	710826
Uttar Pradesh	751670	1197824	960398	155572	1221586
West Bengal	324575	94994	197732	81084	376234
India	4938937	4355953	11325981	2064206	7249499

Source: Ministry of Health and Family Welfare, Government of India, Family Welfare Programme in India, Year Book (1987-88), Department of Family Welfare, Nirman Bhavan, New Delhi.

Notes : Column (6) is Computed by Using the Following Ratio: 1 Sterilisation = 3 Intra Uterine Device Users = 18 Conventional Contraceptive Users = 9 Equivalent Oral Bill Users. Sterilisations includes Vasectomies (Male Sterilisations) and Tubectomies (Female Sterilisation).

Table 7
Cost-effectiveness of Family Welfare Programme in India: Inter-state Differences 1987-88

States	Number of Equivalent Sterilisations	Percent Share India	Expenditure (Lakhs)	Percent Share India	Cost Per Equivalent Sterilisation (Rs.)	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh	551584	8.30	5154.8	9.64	935	10
Assam	87696	1.32	1274.4	2.38	1453	15
Bihar	586330	8.82	4218.1	7.89	719	4
Gujarat	427549	6.43	3802.3	7.11	889	9
Haryana	174426	2.62	1043.5	1.95	598	3
Karnataka	402641	6.06	4105.0	7.67	1020	1
Kerala	236363	3.56	2381.8	4.45	1008	11
Madhya Pradesh	449225	6.76	3721.8	6.96	828	6
Maharashtra	659857	9.93	5512.6	10.31	835	7
Orissa	200905	3.02	2254.4	4.21	1122	14
Punjab	299414	4.50	1399.6	2.62	467	2
Rajasthan	262630	3.95	2681.7	5.01	1021	12
Tamil Nadu	710826	10.69	2783.7	5.20	392	1
Uttar Pradesh	1221586	18.38	9828.1	18.37	805	5
West Bengal	376234	5.66	3327.2	6.22	884	8
India	6647267	100.00	53489.0	100.00	805	-

Source: Ministry of Health and Family Welfare, Government of India, Family Welfare Programme in India, Year Books (1973-83), Department of Family Welfare, Nirman Bhavan, New Delhi.

Notes : Column (2) is Computed by Using the Following Ratio: 1 Sterilisations = 3 Intra Uterine Device Users = 18 Conventional Contraceptive Users = 9 Equivalent Oral Pill Users. Column (6) is calculated from Column (2) and (4).

(b) It is obvious that there are variation between the states in respect of total population as well as the total expenditure on family welfare programme so the number of equivalent sterilizations are also bound to vary. Comparing the states, the lowest expenditure was incurred in the State of Haryana with Rs. 1043 lakhs, on the other hand, the highest expenditure was allocated for the State of Uttar Pradesh - Rs. 9828 lakhs - 9 times more than Haryana.

It is worthwhile to mention here that the expenditure incurred by the Central Government varies from state to state not because of political reasons but depending on the size of the population, number of married couples (with wife aged 15-44 years) and the previous year's achievement. So one can compare the achievement interms of equivalent sterilization with expenditure. The question here is not to compare the state-wise expenditure but to compare the expenditure of the states with their own achievement. It simply means, how many rupees each state spends for achieving a unit of sterilization equivalent?

(c) It is also necessary to examine whether there is any relationship between percentage share of each state in the expenditure and its percentage share of achievement. The comparison of column 3 and 5 in Table 7 reveals that for Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Kerala, Madhya Pradesh, Maharashtra, Orissa, Uttar Pradesh and West Bengal both the share are almost equal. However, some states have shown great disparity. States like Karnataka and Rajasthan, the achievements are lower than expenditure whereas Punjab and Tamil Nadu have shown an opposite trend indicating the efficiency of family planning programme.

(d) In India, 39.8 percent of the couples are currently effectively protected by various family planning methods up to 1987-88. Gujarat, Haryana, Karnataka, Kerala, Maharashtra, Punjab and Tamil Nadu maintain their cost effectiveness above the Indian average.

(e) Tamil Nadu achieved a unit equivalent sterilization with Rs. 392 while Assam achieved with Rs. 1453. On the basis of ranks given in Table 7 in Column 7, fifteen states can be divided into three categories according to their economic efficiency of the programme or their level of cost per equivalent sterilization.

(i) Low cost per equivalent sterilization states: Tamil Nadu, Punjab, Bihar, Haryana and Uttar Pradesh.

(ii) Medium cost per equivalent sterilization states: Madhya Pradesh, Maharashtra, West Bengal, Gujarat and Andhra Pradesh.

(iii) High cost per equivalent sterilization states: Kerala, Rajasthan, Karnataka, Orissa and Assam.

These states can be similarly classified according to the percentage of couples currently effectively protected and equivalent sterilization per thousand population.

IMPLICATIONS FOR THE FUTURE

The revival of popular interest and support for family planning as indicated in the increasing number of acceptors of family planning methods during the past three years portends well for the success in the regulation of population growth. The long-term demographic goal-of NRR one to be realized in the country by the turn of this century was visualized in the Seventh Five Year Plan. The desire level of demographic parameters as well as required performance of various family planning methods are presented in Tables 8 and 9. It appears to be feasible if the present trend of performance continue. Programme for reduction of infant and child mortality seem to require added attention and emphasis in those areas where the mortality rates still remain high and a reduction in the IMR values below 80 or so seems to be pre-requitsite before any substantial acceptance of family planning methods by the eligible couples is achieved. The experiences from other developing countries particularly Sri Lanka and China indicate that substantial reduction in the IMR values to a level of 60 can be achieved without much change in the per capita income or urbanisation, by adoption of simple procedure through health education of the people in personal hygiene, sanitation, boiling water before using it for drinking purposes where the available water is known to be unsafe, etc. The village health guide scheme provides a good linkage between the official programme personnel and the community. The scheme should be strengthened and expanded. The trend towards increase acceptance female methods of family planning should be encouraged by providing better facilities for female sterilization, MTP services, insertion of copper T and availability of oral pills.
The scheme of incentives and dis-incentives should be reoriented to promote programmes and services for the female population on a relatively better scale for males. Spacing methods should however be encouraged in all the states and should form the mainstay of the programme in those states where more than forty percent of eligible couples have undergone sterilization. However, the government emphasizes on achieving the family planning target of Net Reproduction Rate of 1 by 2000, is in the right direction, this will lead to better economic growth for the country.

Table 8
Expected Trends in Different Demographic Parameters to Reach NRR 1 by 2000

Year	Desired Level of				Population
	NRR	CBR	CDR	IMR	(000's)
1989-90	123	27.9	11.3	104	800356
1990-91	119	27.5	11.1	102	813608
1991-92	117	27.4	11.0	100	826928
1992-93	114	27.2	10.8	99	840527
1993-94	111	26.7	10.6	97	854305
1994-95	109	26.2	10.3	95	868066
1995-96	107	25.6	10.1	93	881355
1996-97	105	24.8	10.0	91	895487
1997-98	103	23.9	9.8	89	908791
1998-99	102	23.1	9.6	88	921669
1999-2000	101	22.3	9.5	86	934036
2000-01	100	21.5	9.4	84	945946
2001-02	100	21.1	9.3	83	957399

Source: Same as Table 1.

Table 9
Required Performance of Different Family Planning Methods to Reach NRR 1 by 2000

	Required Performance of				
	Sterilization	IUD	CC Users	Total	Percent of Couples Protected
1989-90	7593750	2847656	8542969	18984375	46.5
1990-91	7312500	2742187	8226562	18281249	48.2
1991-92	7312500	3187500	8250000	18750000	49.8
1992-93	7659375	3628125	8868750	20156250	51.5
1993-94	7631250	4125000	8868750	20625000	53.3
1994-95	7846875	4577344	9372656	21796875	55.0
1995-96	8039062	5282812	9646875	22968749	56.8
1996-97	8128125	5737500	10040625	23906250	58.6
1997-98	8043750	6337500	9993750	24375000	60.4
1998-99	7875000	6644531	10089844	24609375	61.9
1999-2000	7774219	7272656	10031250	25078125	63.6
2000-01	7242187	7242187	9656250	24140624	64.2
2001-02					

Source: Same as Table 1.

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