

## Recent Trends in the Progress of Sericulture in India

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### SETTINGS

In view of the importance of sericulture in the Indian economy, an attempt is made here to analyse its growth in the recent decade, i.e., 1982-91. The issues concentrated upon are Government's effort to promote sericulture in the country; sericultural villages; the area under mulberry cultivation of disease free layings (DFLs) and cocoons; reeling techniques; output of silk and silkwaste; relative share of India in the global production; imports and exports; and future prospects.

### GOVERNMENT MEASURES

For the promotion of sericulture, a number of steps were initiated in the country. During 1930s, the Government of India granted protection to silk industry. The industry was recognised during the Second World War period because of its valuable services for the manufacture of parachutes. This has created considerable increase in the demand and quality of silk. The Government of India set up the Central Silk Board (CSB) in April, 1949. Till then, no systematic efforts were made for the orderly development of silk industry. Planned development of sericulture was taken up only after the CSB was constituted. It assists the states in the formulation of programmes. all the state level, emphasis is laid on the improvement of food plants and silkworm seed; introduction of a package of practices for mulberry cultivation and improved techniques of rearing; encouraging the rearing of bivoltine cocoons; modernisation of reeling and spinning as also rationalization of marketing of cocoons and silk. Besides, the Board is directly responsible for organizing research; training the students from

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developing countries located in Asia and Africa; post - graduate training; testing and grading of silk; promotion of rational marketing; pre-shipment inspection; import and distribution of raw silk under price stabilisation scheme; and standardisation as well as quality control.

During the First Five year plan period, 130 schemes were implemented for consolidation and providing the necessary organisational base for the development of silk industry. In the Second plan period, emphasis was laid on reeling so as to enhance quality as well as raw silk output. Consequently improved cottage basins were introduced on a large scale. In order to regulate imports and stabilise domestic market, the Government canalised the import and distribution of raw silk. Five inspection centres were opened to promote exports. A Working Group on Sericulture was constituted by the Government of India to review the progress made under the Second Five Year Plan and formulate the proposals for the Third Five Year Plan period. Realising the need for independent research organisations for developing suitable tropical technology, Government of India established the Central Sericultural Research and Training Institute (CSRTI) in Mysore in 1962. It opened 5 regional sericultural research stations, 23 research extension centres for mulberry sector, 3 basic and multiplication and training centres and one research extension centre for tasar sector. During the Third five Year Plan period, on the export front, *Centrosilk Trade Mark* scheme was introduced for quality control and inspection.

In the Fourth Five Year Plan period, bivoltine rearing was introduced in the traditionally multivoltine areas of Karnataka, Tamil Nadu and West Bengal. During the Fifth Five Year Plan period, a special scheme was initiated to promote mulberry cultivation in backward areas through the supply of mulberry cuttings/saplings at subsidies rates. With a view to hastening the success of bivoltine programme and to supplement the efforts of state governments in respect of production and supply of high quality bivoltine and multivoltine hybrids/seeds, the CSB established eleven grainages. The CSB also introduced the price stabilization scheme to ensure a fair economic return to the primary producers

and availability of quality raw silk to weavers at a reasonable price. In 1982, The Central Silk Technological Research Institute (CSTRI) was set up in Bangalore to undertake research on reeling, spinning, weaving, etc. This institute established 7 demonstration-cum training centres and testing units at several places in the country. During the Sixth Five Year Plan period, intensive sericultural development schemes which were initially administered by the CSB were transferred to state governments. A particularly important development has been the beginning of a concern for the needs of women in the industry and the setting up of special women's schemes.

During the Seventh Five Year Plan period, a number of developmental programmes were implemented. Intensive sericulture development projects for mulberry were taken up for implementation in Orissa and West Bengal for purposes of expansion of the area under improved variety of mulberry, setting up of sound infrastructure for quality seed production, supply and marketing, etc. The CSB established 303 chawkie rearing centres for rearing of young silkworms under ideal conditions and supplying them to the sericulturists in order to ensure successful rearings/crops. The Mulberry Sericulture Development Project was taken up for implementation in Andhra Pradesh and Tamil Nadu. Silkworms Seed Technology Laboratory was set up in Bangalore for carrying out research and evolving suitable techniques of seed production and their testing, processing, preservation and marketing. The National Sericulture Project was initiated during 1989-90 to bring an additional 57600 hectares of land under mulberry cultivation in order to produce 6072 metric tonnes of mulberry raw silk by the end of the five-year project period. The Planning Commission constituted a sub-group on sericulture for the formulation of development programmes during the Eighth Five Year Plan period (1992-97).

For sericulture, specific allocations were not made during the First Plan period since it was included in village industry. However, during that period, a grant-in-aid amounting to Rs.45.97 lakhs was provided to state governments from out of the provision made for the development of other village industries (Table 1).

**Table 1**  
**Plan-wise Public Sector Outlay and Investment on Sericulture**

(IRs. In Lakhs)

| Name of the Plan<br>(1) |           | Outlay<br>(2) | Actual<br>Investment<br>(3) | % of col.<br>3 to col. 2<br>(4) |
|-------------------------|-----------|---------------|-----------------------------|---------------------------------|
| First Plan              | 1951-56 * | 45.97         | 21.61                       | 47.00                           |
| Second Plan             | 1956-61   | 414.42        | 250.62                      | 60.47                           |
| Third Plan              | 1961-66   | 702.01        | 411.74                      | 58.65                           |
| Three Annual Plans      | 1966-69   | 552.52        | 281.30                      | 50.91                           |
| Fourth Plan             | 1969-74   | 969.00        | 674.99                      | 69.66                           |
| Fifth Plan              | 1974-78   | 2554.38       | 1695.23                     | 66.37                           |
| Two Annual Plans        | 1978-80   | 2909.71       | 2364.72                     | 81.27                           |
| Sixth Plan              | 1980-85   | 16737.00      | 12638.65                    | 75.51                           |
| Seventh Plan            | 1985-90   | 31078.00      | 29404.62                    | 94.62                           |
| Tow Annual Plans        | 1990-92   | 37308.00      | -                           | -                               |
| Eighth Plan             | 1992-97   | 86076.00      | -                           | -                               |

: \* Grant-in aid

Source : Central Silk Board, Silk in India Statistical Biennial, 1992,  
 Bangalore, 1993, pp.6-15

But the utilization was only to the tune of Rs. 21.61 lakhs. The utilization was low at 47 percent due to procedural delays and paucity of technical personnel. The public sector outlay on sericulture increased progressively from Rs. 414.42 lakhs in the Second Plan to Rs. 86076 lakhs in the Eighth Plan. The amount actually spent increased from Rs. 250.62 lakhs during 1956-61 to Rs. 29404.63 lakhs during 1985-90. The share of actual investment in the outlay increased from 60.47 to 94.62 percent with to and fro fluctuations. For instance, the Seventh Plan recorded the highest investment of 94.62 percent while it was the lowest, 50.91 percent during the three Annual Plans (1966-69) put together. During all the plan periods, the amount actually incurred was far short of the

outlay. The public sector outlay for the Eighth Plan period is Rs. 86076 lakhs.

### **GROWTH PATTERN**

India has the unique distinction of being the only country in the world producing all the commercially known varieties of silk. Silk is one of the ancient agro-based, labour-intensive, cottage industries in the country. It provides livelihood for millions of people both full-time and part-time. It is a highly remunerative cash crop, with less investment yielding rich dividends. India ranks second among the mulberry silk producing countries in the world.

India has not only a time honoured silk tradition but also a rich silk fauna. Indian sericulture dates back to pre-Christian era. It is said that by 120 B.C. fabulous silks from India were exported to Europe. First, Kashmir was familiar with silk and had a flourishing trade. But Bengal's silk industry is said to have flourished from times immemorial and occupied a prominent position in the economic life of the country. In Mysore, the silk industry is stated to have been in existence for over two thousand years though it came into prominence during the time of Hyder Ali and Tipu Sultan. In Tamil Nadu, it witnessed parallel growth along with Mysore owing to geographical contiguity.

Prior to Independence, sericulture was always been considered as a subsidiary occupation of poor farmers. Though a horizontal expansion started during post-Independence era, there was no immediate perceptible progress in the vertical direction. Transplantation of temperate technologies also failed to bring a change in the late fifties. With systematic research endeavours, it become possible in the seventies to develop technologies suitable for the tropics. New mulberry varieties coupled with agronomical practices were made available to the farmers. A package of practices for young and laterage mulberry silkworm was developed, in addition to, the release of new bivoltine races. Popularisation of bivoltine races by the CSB brought out a jump in productivity since farmers started using bivoltine as a male parent for preparation of multivoltine hybrids. The traditional variety has been almost

replaced in the last ten years. Consequently the sericulture tract which was restricted to Mysore plateau could spread to non-traditional states in the eighties. Today, sericulture presents a picture of a well-knit agro-based cottage industry. Being an employment oriented rural industry, it has occupied a place of pride in the rural economy of the country.

### Area, DFLs and Cocoons

In India, acreage under mulberry plantation gradually increased from 1.80 lakh hectares in 1982 to 3.13 lakh hectares in 1991 (Table 2). The compound growth rate (CGR) during the aforesaid period was 5.91 percent, which is significant at one percent level. the DELs increased from 2420.66 to 3170. 30 lakh numbers with relative fluctuations in the period referred to. The CGR was 3.57 percent, which is significant at one percent level. The reeling cocoons went up progressively from 0.55 to 1.17 lakh tonnes with significant changes over the study period, registering a CGR of 7.71 percent, which is significant at one percent level.

Table 2  
Growth of Sericulture in India During 1982-91

| Year    | Area (lakh hectares) | DELs (lakh nos.) | Cocoons (tonnes) | Raw silk | Silk waste |
|---------|----------------------|------------------|------------------|----------|------------|
| 1982    | 1.80                 | 2420.66          | 55210            | 4801     | 1523       |
| 1983    | 1.97                 | 2520.00          | 66811            | 5214     | 1825       |
| 1984    | 2.07                 | 2679.51          | 71276            | 5681     | 2017       |
| 1985    | 2.15                 | 2572.01          | 74875            | 6895     | 2464       |
| 1986    | 2.18                 | 2628.79          | 76717            | 7029     | 2504       |
| 1987    | 2.30                 | 3007.77          | 81573            | 7905     | 2837       |
| 1988    | 2.42                 | 2767.68          | 86528            | 8455     | 3086       |
| 1989    | 2.68                 | 3008.95          | 96471            | 9683     | 3399       |
| 1990    | 2.94                 | 3478.69          | 110433           | 10905    | 3921       |
| 1991    | 3.13                 | 3170.30          | 116672           | 11487    | 3953       |
| CGR     | 5.91*                | 3.57*            | 7.71*            | 10.46*   | 11.09*     |
| 't' Cal | 15.05                | 6.94             | 14.45            | 29.32    | 19.19      |

Notes CGR : compound growth rate for the period 1982-91.

\* Indicates significant at one percent level.

Source As of the Table 1, p.57

In India, at the end of 1991, the number of sericultural villages was 59,198, out of 6,29,143. In other words, sericultural villages are 9.4 percent of the total. It can be observed that 52 percent of sericultural villages are to be found in the southern belt while 23 percent in the north-eastern states where sericulture is largely a self-consumption activity. Among the states in India, Karnataka with 56.5 percent ranked first followed by Jammu and Kashmir 38.8 percent, Meghalaya 35.9 percent, Tripura 32.2 percent, Andhra Pradesh 32 percent, Tamil Nadu 29.7 percent, Assam 29.7 percent, Manipur 17.2 percent and Nagaland 12.2 percent (Table 3). The share of sericultural villages was negligible in Rajasthan and Gujarat. In each of the remaining states, it varied between one percent and nine percent. It may be concluded that sericulture is heavily concentrated in Karnataka. It may also be pointed out that the sericultural villages are unevenly distributed across the states in the country.

In the case of area under mulberry cultivation, among the states in the country, Karnataka ranked first (47.84 percent) followed by Andhra Pradesh (24.39 percent), Tamil Nadu (11.75 percent), West Bengal (5.48 percent), Manipur (4.86 percent) and Bihar (1.3 percent). It was meagre in respect of Gujarat, Nagaland, Punjab, Sikkim and Arunachal Pradesh. In the rest of the states, it fluctuated between 0.15 percent and 0.67 percent. Out of the total area under mulberry cultivation, irrigated mulberry constituted 56 percent while the remaining unirrigated. It can be observed that nearly 85 percent of the land under mulberry plantation lies in southern India. Further, it can also be observed that the area under mulberry cultivation constituted just 0.15 percent of the total cultivable land in India and 1.20 percent in Karnataka state. With regard to DFLs, of the states, Karnataka accounted for 66.6 percent, West Bengal for 15.46 percent, Andhra Pradesh for 7.86 percent, Tamil Nadu for 6.15 percent and Jammu and Kashmir for 1.13 percent. DFLs were not produced in the states like Kerala, Rajasthan, Gujarat and Sikkim. In the remaining states, the share of each was less than 9.45 percent except Bihar (0.75 percent).

Table 3  
Inter-Regional Spread in Sericulture in India at the End of 1991

| Name of the state | No. of sericultural villages | Area (hectares) | DFLs (lakh nos.) | Cocoons (tonnes) | Raw silk (tonnes) | Silk waste (tonnes) |
|-------------------|------------------------------|-----------------|------------------|------------------|-------------------|---------------------|
|                   | (a)                          | (b)             | (b)              | (b)              | (b)               | (b)                 |
| Karnataka         | 16593                        | 149785          | 2112.1           | 59033            | 6214              | 2067                |
|                   | (56.5)                       | (47.84)         | (66.62)          | (27.65)          | (54.09)           | (52.34)             |
| Andhra Pradesh    | 9377                         | 76348           | 249.20           | 32262            | 3194              | 1140                |
|                   | (32.0)                       | (24.39)         | (7.86)           | (10.11)          | (27.80)           | (28.84)             |
| Tamil Nadu        | 4655                         | 36798           | 195.00           | 11800            | 1072              | 333                 |
|                   | (29.7)                       | (11.75)         | (6.15)           | (9.24)           | (9.33)            | (9.69)              |
| West Bengal       | 1580                         | 17165           | 490.00           | 10780            | 829               | 290                 |
|                   | (3.8)                        | (5.48)          | (15.46)          | (0.25)           | (7.22)            | (7.34)              |
| Manipur           | 354                          | 15200           | 8.80             | 294              | 23                | 1                   |
|                   | (17.2)                       | (4.36)          | (0.28)           | (0.56)           | (0.20)            | (0.02)              |
| Bihar             | 4777                         | 4082            | 23.88            | 648              | 65                | 20                  |
|                   | (6.1)                        | (1.30)          | (0.75)           | (0.60)           | (0.56)            | (0.51)              |
| Jammu & Kashmir   | 2620                         | 1903            | 35.81            | 700              | 18                | 34                  |
|                   | (38.8)                       | (0.58)          | (1.13)           | (0.25)           | (0.16)            | (0.86)              |
| Maharashtra       | 1357                         | 2101            | 11.27            | 291              | 6                 | 6                   |
|                   | (3.2)                        | (0.57)          | (0.36)           | (0.01)           | (0.05)            | (0.16)              |
| Meghalaya         | 1812                         | 1252            | 3.16             | 9                | 1                 | Neg                 |
|                   | (35.9)                       | (0.40)          | (0.10)           | (0.12)           | (0.01)            | (0.13)              |
| Madhya Pradesh    | 1314                         | 1216            | 10.79            | 140              | 9                 | 5                   |
|                   | (1.7)                        | (0.39)          | (0.34)           | (0.18)           | (0.08)            | (0.05)              |
| Assam             | 7102                         | 1354            | 6.63             | 214              | 18                | 2                   |
|                   | (29.7)                       | (0.43)          | (0.21)           | (0.03)           | (0.16)            | (0.02)              |
| Orissa            | 2300                         | 1407            | 1.66             | 30               | 3                 | 1                   |
|                   | (4.5)                        | (0.45)          | (0.05)           | (0.01)           | (0.03)            | (0.02)              |
| Mizoram           | 60                           | 931             | 0.26             | 8                | -                 | -                   |
|                   | (8.2)                        | (0.30)          | (0.01)           | (0.18)           | (0.18)            | (0.02)              |
| Uttar Pradesh     | 2017                         | 726             | 14.22            | 212              | 21                | 1                   |
|                   | (1.6)                        | (0.23)          | (0.45)           | (0.04)           | (0.01)            | (0.02)              |
| Kerala            | NA                           | 620             | -                | 46               | 1                 | -                   |
|                   | -                            | (0.20)          | -                | (0.08)           | (0.01)            | -                   |
| Himachal Pradesh  | 1687                         | 587             | 3.60             | 38               | 8                 | -                   |
|                   | (9.0)                        | (0.19)          | (0.11)           | (0.04)           | (0.07)            | -                   |
| Tripura           | 278                          | 920             | 2.86             | 40               | 2                 | -                   |
|                   | (32.2)                       | (0.29)          | (0.09)           | (0.08)           | (0.02)            | -                   |
| Rajasthan         | 114                          | 470             | -                | 13               | 1                 | -                   |
|                   | (0.3)                        | (0.15)          | -                | (0.01)           | (0.01)            | -                   |
| Gujarat           | 137                          | 149             | -                | 4                | Neg               | Neg                 |
|                   | (0.7)                        | (0.05)          | -                | 0                | -                 | -                   |
| Nagaland          | 140                          | 45              | 0.41             | 16               | 1                 | Neg                 |
|                   | (12.15)                      | (0.01)          | (0.01)           | (0.01)           | (0.01)            | (0.02)              |
| Punjab            | 818                          | 65              | 0.62             | 30               | Neg               | Neg                 |
|                   | (12.5)                       | (0.02)          | (0.02)           | (0.02)           | (0.01)            | -                   |
| Sikkim            | 6                            | 40              | -                | Neg              | -                 | -                   |
|                   | (6.4)                        | (0.01)          | -                | -                | -                 | -                   |
| Arunachal Pradesh | 100                          | 45              | 0.02             | 12               | 1                 | -                   |
|                   | (1.3)                        | (0.01)          | (0.00)           | (0.01)           | (0.01)            | (0.01)              |
| Total             | 59198                        | 313109          | 3170.30          | 116672           | 11487             | 3953                |
|                   | (9.5)                        | (100)           | (100)            | (100)            | (100)             | (100)               |

Notes : NA - Not available

(a) - Figures in brackets indicate the percentage to total villages in each state

(b) - Figures in brackets indicate the percentage to total

Neg - Negligible

Source : As of the Table 1, pp. 63-69



In respect of cocoons, the percentage of Karnataka, Andhra Pradesh, Tamil Nadu and West Bengal in the total was 50.6, 27.65, 10.11 and 9.24 respectively. All the remaining states put together contributed 2.4 percent. The share of cocoons was more than the corresponding percentage of DFLs in Andhra Pradesh and Tamil Nadu. In the case of Mizoram and Nagaland both were equal. A converse situation existed among the rest of the states. It may be concluded that rearing is heavily concentrated in Karnataka among the states in the country.

### Reeling

The quality of silk depends on the quality of cocoons and the type of reeling technique adopted. The traditional reeling charkha has been in use for many centuries. The cottage basin produces better quality silk than charkha. Filature produces a slightly better quality silk than cottage basin. the reeling units including charkha, cottage and filature basin in the country were 61092 in 1990 as against 14075 in 1970 (see Table 4).

**Table 4**  
**Trends in Reeling Units in India for the Period 1970-90**

| Year | Charkhas         | Cottage basins   | Filature basins  | Total          |
|------|------------------|------------------|------------------|----------------|
| 1970 | 8147<br>(57.88)  | 4206<br>(29.88)  | 1722<br>(12.24)  | 14075<br>(100) |
| 1979 | 15449<br>(62.68) | 4907<br>(19.91)  | 4291<br>(17.41)  | 24647<br>(100) |
| 1983 | 22385<br>(65.06) | 6879<br>(19.99)  | 5143<br>(14.95)  | 34407<br>(100) |
| 1986 | 21927<br>(61.52) | 6529<br>(18.32)  | 7186<br>(20.16)  | 35642<br>(100) |
| 1988 | 21893<br>(58.08) | 6988<br>(18.46)  | 8879<br>(23.46)  | 37850<br>(100) |
| 1990 | 35155<br>(57.55) | 10374<br>(16.98) | 15563<br>(25.47) | 61092<br>(100) |

Note : Figures in parentheses indicate the percentage to total.

Source : Relevant issues of Central Silk Board, Silk in India :  
Statistical Biennial 1992, Bangalore 1993.

There are significant fluctuations in the growth of reeling units over the period. The share of charkhas in the total number of reeling units increased gradually from 57.88 percent in 1970 to the highest 65.06 percent in 1983. The percentage of cottage basins declined from 29.88 to 16.98 percent with relative fluctuations during the aforesaid period. As against this, the proportion of filature basins increased continuously from 12.24 to 25.47 percent during the period referred to except for a fall in 1983. It shows that the filatures improved their share at the cost of cottage basins. It also indicates that new reelers preferred filatures while establishing reeling units. When all the charkha, cottage and filature basins are put together, the growth rate was 4.3 times in 1990 over 1970. The main reason why charkha is still dominating the Indian silk reeling industry is that the bulk of raw material has to be kept as low as possible for the rate of the finished product to be saleable. Secondly, the establishment of charkha unit does not involve any big investment or special skill and this enables charkha silk to be sold at a minimum price which is very much wanted by the weaving industry. Finally, the inferior quality multivoltine cocoons and defective cocoon available at lower prices can be reeled more economically on charkha than on cottage/filature basins. However, working conditions are unhygienic and silk produced is of low quality, not suitable for weaving fine fabrics. It may be concluded that charkha is popular in India. It may be further concluded that filatures have a wide acceptance in recent times.

In India, during 1990, there were 61092 reeling units including filatures, cottage basins and charkhas. When all the installed filatures, cottage basins and charkhas are considered together, 74.15 percent are located in Karnataka followed by West Bengal (11.75 percent) Tamil Nadu (6.48 percent) and Andhra Pradesh (4.65 percent) (see Table 5). In each of the states like Manipur, Jammu and Kashmir, Madhya Pradesh, Uttar Pradesh and Assam, the proportion was in the range of 0.94-0.19 percent. In the rest of the states, it was less than 0.1 percent. In the case of filatures and cottage basins also, Karnataka topped the list with 74.35 percent followed by Tamil Nadu (13.02 percent), West Bengal (4.63 percent), Andhra Pradesh (4.6 percent) and Jammu and

Kashmir (1.51 percent). The percentage of the share of Uttar Pradesh, Assam, Manipur and Mahya Pradesh was 0.42, 0.35, 0.29 and 0.15 respectively.

**Table 5**  
**State-wise Installed Mulberry Silk Reeling Basins in India**  
**at the End of 1990**

| Name of the state | Filature basins | Percentage    | Cottage basins | Percentage      | Total        | Percentage      |
|-------------------|-----------------|---------------|----------------|-----------------|--------------|-----------------|
| Karnataka         | 19284           | (74.35)       | 26020          | (74.02)         | 45304        | (74.15)         |
| West Bengal       | 1200            | (4.63)        | 6000           | (17.07)         | 7200         | (11.79)         |
| Tamil Nadu        | 3379            | (13.02)       | 590            | (1.67)          | 3969         | (6.48)          |
| Andhra Pradesh    | 1193            | (4.60)        | 1646           | (4.68)          | 2839         | (4.65)          |
| Manipur           | 75              | (0.29)        | 500            | (1.43)          | 575          | (0.94)          |
| Jammu & Kashmir   | 392             | (0.51)        | -              | -               | 392          | (0.64)          |
| Assam             | 91              | (0.35)        | 219            | (0.62)          | 310          | (0.41)          |
| Madhya Pradesh    | 40              | (0.15)        | 97             | (0.27)          | 137          | (0.22)          |
| Utter Pradesh     | 115             | (0.42)        | -              | -               | 115          | (0.19)          |
| Bihar             | 3               | (0.01)        | 55             | (0.16)          | 58           | (0.09)          |
| Tripura           | 32              | (0.13)        | -              | -               | 32           | (0.05)          |
| Maharashtra       | 21              | (0.08)        | 10             | (0.03)          | 31           | (0.05)          |
| Himachal Pradesh  | 30              | (0.12)        | -              | -               | 30           | (0.05)          |
| Rajasthan         | 24              | (0.09)        | -              | -               | 24           | (0.04)          |
| Arunachal Pradesh | 1               | (0.01)        | 16             | (0.05)          | 17           | (0.03)          |
| Orissa            | 17              | (0.07)        | -              | -               | 17           | (0.03)          |
| Nagaland          | 15              | (0.06)        | -              | -               | 15           | (0.03)          |
| Gujarat           | 12              | (0.05)        | -              | -               | 12           | (0.02)          |
| Meghalaya         | 11              | (0.04)        | -              | -               | 11           | (0.02)          |
| Mizoram           | 2               | (0.01)        | -              | -               | 2            | (0.01)          |
| Punjab            | 2               | (0.01)        | -              | -               | 2            | (0.01)          |
| Sikkim            | -               | -             | -              | -               | -            | -               |
| Kerala            | -               | -             | -              | -               | -            | -               |
| <b>Total</b>      | <b>25937</b>    | <b>100.00</b> | <b>35155</b>   | <b>(100.00)</b> | <b>61092</b> | <b>(100.00)</b> |

Note: Figures in parentheses indicate the percentage to total.

Source: As of the Table 2, p.71

In the remaining states, it is insignificant. In respect of charkhas, Karnataka, West Bengal, Andhra Pradesh, Tamil Nadu and Manipur ranked first, second, third, fourth and fifth respectively. In each of the states such as Assam, Madhya Pradesh, Bihar, Maharashtra and Arunachal Pradesh, the proportion was less than one percent. In the rest of the states, charkhas are negligible. Regionally while Karnataka and Andhra Pradesh have a fair spread of all types of reeling systems, filatures and cottage basins are concentrated in Tamil Nadu and Jammu and Kashmir as against charkhas in West Bengal and Manipur. Thus, there is an unequal distribution of reeling activity among the states in the country as in the case of rearing of silkworms and production of cocoons. It may be concluded that, of the mulberry silk reeling units, around three-fourths exist in Karnataka alone.

#### **Raw Silk and Silk Waste**

The production of raw silk grew gradually from 4801 tonnes in 1982 to 11487 tonnes in 1991. The CGR during the period was 10.46 percent, which is significant at one percent level. The silk waste was 3953 tonnes in 1991 as against 1523 tonnes in 1982. The CGR was 11.09 percent, which is significant at one percent level. Production of economically usable silk waste grew in relation to overall production of silk. It may be concluded that raw silk and silk waste grew progressively during the period due to government measures and suitable agro-climatic conditions. Of the states, 54 percent of raw silk was produced in Karnataka followed by Andhra Pradesh (27.8 percent), Tamil Nadu (9.33 percent), West Bengal (7.22 percent) and Bihar (0.56 percent). The contribution of Manipur, Uttar Pradesh, Jammu and Kashmir and Assam in the total production was in the range of 0.16 to 0.20 percent. In the rest of the states, it was less than 0.08 percent. Thus, mulberry silk production is largely concentrated in the southern region, viz., Karnataka and its contiguous districts of Andhra Pradesh and Tamil Nadu. As much as 91.22 percent of the country's production takes place in this region. These three southern states together with West Bengal accounted for 98.44 percent. As many as fifteen states just produced 1.56 percent of silk. A similar trend is observed in the case of silk

waste. Some states like Karnataka, Andhra Pradesh, Tamil Nadu and West Bengal ranked first, second, third and fourth sequentially. It was negligible in respect of Meghalaya, Nagaland, Arunachal Pradesh, Uttar Pradesh, Madhya Pradesh and Tripura. It may be concluded that the sericulture activity is mainly concentrated in four states. Among them, adjacent states like Karnataka and Andhra Pradesh rank first and second respectively.

### RELATIVE POSITION OF INDIA

The primary silk producing countries in the world are Japan, China, USSR, South Korea, Brazil and India. Other important countries are Italy, Bulgaria, Iran, Turkey and Thailand where sizeable quantities of raw silk are produced. Rumania, Spain, Greece, Madagascar, Syria, the Kimer Republic, Mungang, Yugoslavia, Taiwan, etc., are some other silk producing countries at a lower level. The trends in mulberry silk production in the world are presented in Table 6. The world output of silk has gradually increased from 31.37 thousand tonnes in 1961 to 7288 thousand tonnes in 1991 except in 1983, 1985 and 1989 when there was a decline. The CGR during 1982-91 was 3.01 percent which is significant at one percent level. Among the sericultural countries, China ranked second during the period 1961-71 and occupied the first place during 1981-91. Japan ranked first during the period 1961-71, second during 1981 and 1987 and plummeted down to the third place in the last four years. The relative share of Japan declined owing to the high cost of labour. India ranked third between 1982 and 1987 and emerged second in the last four years. The share of each of the remaining countries varied across the period. China rapidly replaced Japan as the world's largest silk producer as its own production expanded and that of Japan declined with rapid industrial development, high labour cost and declining demand for Kimonos. The continuing decline of production in Japan and high growth in India led to the latter's ascendancy to the second position from 1988. For similar reasons, production in South Korea has declined since late 1970s. Though production in the USSR has grown steadily, growth has been much lower than in India.

**Table 6**  
**Trends in Mulberry Raw Silk at the Global Level for**  
**the Period 1961-90**

| ('000 tonnes)    |                  |                  |                  |                |                 |                |                 |                |
|------------------|------------------|------------------|------------------|----------------|-----------------|----------------|-----------------|----------------|
| Year/<br>Country | China            | India            | Japan            | USSR           | South<br>Korea  | Brazil         | Others          | Total          |
| 1961             | 7.00<br>(22.31)  | 1.15<br>(3.67)   | 18.05<br>(57.54) | 2.36<br>(7.52) | 0.47<br>(1.50)  | -              | 2.34<br>(7.46)  | 31.37<br>(100) |
| 1971             | 11.12<br>(27.12) | 2.26<br>(5.52)   | 20.52<br>(50.04) | 3.00<br>(7.31) | 3.03<br>(7.39)  | 0.26<br>(0.63) | 0.82<br>(2.00)  | 41.90<br>(100) |
| 1981             | 23.49<br>(42.32) | 4.59<br>(8.27)   | 16.16<br>(39.12) | 4.25<br>(7.66) | 3.28<br>(5.91)  | 1.28<br>(2.31) | 2.45<br>(4.41)  | 55.50<br>(100) |
| 1982             | 26.00<br>(46.35) | 4.80<br>(8.56)   | 14.82<br>(26.42) | 4.35<br>(7.75) | 2.52<br>(4.49)  | 1.33<br>(2.37) | 2.28<br>(4.06)  | 56.10<br>(100) |
| 1983             | 23.58<br>(45.34) | 5.21<br>(10.02)  | 12.96<br>(24.92) | 3.66<br>(7.04) | 2.42<br>(4.65)  | 1.34<br>(2.57) | 2.84<br>(5.46)  | 52.01<br>(100) |
| 1984             | 28.14<br>(49.72) | 5.68<br>(10.04)  | 12.46<br>(22.01) | 3.90<br>(6.89) | 2.29<br>(4.05)  | 1.36<br>(2.40) | 2.77<br>(4.9)   | 56.60<br>(100) |
| 1985             | 28.14<br>(50.16) | 6.89<br>(12.28)  | 10.80<br>(19.25) | 4.00<br>(7.13) | 2.09<br>(3.73)  | 1.46<br>(2.60) | 2.72<br>(4.85)  | 56.10<br>(100) |
| 1986             | 32.00<br>(54.51) | 7.03<br>(11.98)  | 9.50<br>(16.34)  | 4.0<br>(6.81)  | 1.85<br>(3.15)  | 1.56<br>(2.66) | 2.67<br>(4.55)  | 58.70<br>(100) |
| 1987             | 35.70<br>(57.35) | 7.91<br>(12.71)  | 8.34<br>(13.40)  | 4.00<br>(6.42) | 1.65<br>(2.65)  | 1.78<br>(2.86) | 2.87<br>(4.61)  | 62.25<br>(100) |
| 1988             | 35.80<br>(57.39) | 8.46<br>(13.56)  | 7.86<br>(12.60)  | 4.00<br>(6.41) | 1.61<br>(2.58)  | 1.78<br>(2.86) | 2.87<br>(4.69)  | 62.35<br>(100) |
| 1989             | 34.40<br>(56.10) | 9.68<br>(15.79)  | 6.86<br>(11.19)  | 4.00<br>(6.52) | 1.34<br>(2.18)  | 1.75<br>(2.85) | 3.39<br>(5.37)  | 61.32<br>(100) |
| 1990             | 40.70<br>(60.86) | 10.91<br>(16.31) | 6.08<br>(9.09)   | 4.00<br>(5.98) | 1.20<br>(1.80)  | 1.70<br>(2.54) | 2.29<br>(3.42)  | 66.88<br>(100) |
| 1991             | 46.40<br>(63.67) | 11.49<br>(15.76) | 5.72<br>(7.85)   | 4.00<br>(5.61) | 1.20<br>(1.65)  | 1.69<br>(2.32) | 2.29<br>(3.14)  | 72.88<br>(100) |
| CGR<br>'t' cal   | 6.81*<br>9.02    | 10.47*<br>29.51  | -11.49*<br>38.73 | 0.18Ns<br>0.24 | -9.63*<br>19.64 | 3.58*<br>5.12  | -0.23Ns<br>0.16 | 3.01*<br>6.54  |

Note : Figures in parentheses indicate the percentage to total.

CGR Compound growth rate for the period 1982-91.

\* Indicates significant at one percent level.

Ns Not significant

Source As of the Table 4.

In recent years, Brazil has also emerged as an important producer. Among the countries, growth rate was the highest in India (10.47 percent ) followed by China (6.8 percent and Brazil (3.58 percent). These are significant at one percent level. The progress was negatively significant in Japan (11.49 percent) and South Korea (9.63 percent) at one percent level. In the other countries, it was insignificant. It may be concluded that both china and india recorded considerable growth in silk production.

### **IMPORTS AND EXPORTS**

Mulberry raw silk production in India is largely geared to domestic production. The export of raw silk is disallowed. Only silk fabrics and other goods made of it are exported . Silk waste is exported, depending on domestic availability relative to requirements, largely as a means of preventing an excessive build-up of stocks when the domestic spun silk industry is unable to process it. Mulberry silk imports increased from 503 to 1192 tonnes with relative fluctuations during 1982-89 (see Table 7). During this period, imports increased by 12.85 percent, which is significant at five percent level. An analysis of the availability and utilization of silk in India shows that overall availability has been considerably augmented by growing imports. Indeed, over the past few years, domestic consumption appears actually to have exceeded domestic production as imports have grown. The domestic availability of silk stood at 11487 tonnes in 1991 as against 5304 tonnes in 1982. The CGR was 8.84 percent, which is significant at one percent level.

**Table 7**  
**Relatives Share of Mulberry Silk Imports and Exports**  
**During 1982-91**

| Year   | Raw silk imports (tonnes) | Raw silk domestic availability (tonnes) | Silk exports (Rs.crores) | Percent of mulberry silk exports to total silk exports | Percent of mulberry silk exports to total Indian exports |
|--------|---------------------------|---|--------------------------|--|--|
| 1982   | 508                       | 5304                                    | 61.32                    | 87.94  | 9.79   |
| 1983   | 979                       | 6193                                    | 71.69                    | 86.53  | 0.92   |
| 1984   | 2365                      | 7046                                    | 85.92                    | 76.94  | 0.88   |
| 1985   | 975                       | 7870                                    | 112.62                   | 87.27  | 9.96   |
| 1986   | 1626                      | 8655                                    | 148.01                   | 92.61  | 1.36   |
| 1987   | 1680                      | 9585                                    | 188.39                   | 93.50  | 1.51   |
| 1988   | 1777                      | 10232                                   | 236.42                   | 92.73  | 1.51   |
| 1989   | 1192                      | 10875                                   | 311.00                   | 94.09  | 1.53   |
| 1990   | NA                        | 10905                                   | 375.33                   | 93.70  | 1.36   |
| 1991   | NA                        | 11487                                   | 417.20                   | 94.70  | 1.28   |
| CGR    | @12.85**                  | 8.84*                                   | 25.70*                   |  |  |
| 't Cal | 2.48                      | 11.77                                   | 37.09                    |  |  |

Note :

CGR : compound growth rate for the period 1982-91.

@ : Indicates compound growth rate during 1982-89.

\* : Indicates significant at one percent level.

\*\* : Indicates significant at five percent level.

NA : Not available

Source : As of the Table 1, pp. 59 and 74

Mulberry silk exports increased significantly from Rs. 61.32 corers in 1982 to Rs. 417.20 corers in 1991. The CGR during this period was 25.70 percent, which is significant at one percent level. The percentage of mulberry silk exports in the silk exports as well as total Indian exports increased considerably during this period. The proportion of mulberry silk exports to the total Indian exports was 1.28 percent in 1991 as compared to 0.79 percent in 1992. Similarly the percentage of mulberry silk exports in silk exports



varied between 76.70. the contribution of mulberry silk exports to the overall foreign exchange earnings grew in this period. It may be concluded that the share of mulberry exports in terms of silk exports and total Indian exports registered a marginal increase.

It is clear that despite the high growth rate of production, a considerable potential for increasing output for both domestic and export consumption continues. While this cannot be quantified to any extent, the substantial imports of silk represent an obvious target for domestic sericulturists to meet. Declining production in Japan and Korea and indications of stagnant production in China, despite a growing world market, underline the open-ended possibilities that exist. At the same time, silk production in India does not place much strain on the existing resource base.

#### FUTURE PROSPECTS

Indian sericulture industry has a bright future. Japan was the major silk producing country a few years back but raw silk production has been declining year after year due to fast industrialisation and higher labour costs. Japan is now importing raw silk to meet its own domestic requirements. Therefore, it is only India and China which can meet the world raw silk demand. India has an ideal natural environmental condition for sericulture development, besides unutilized arable land and labour force. South Indian farmers are already wedded to the development of sericulture whereas North Indian farmers are yet to come up in a big way to avail this opportunity of improving the socio-economic milieu of Indian villages. Indian silk fabrics are in very good demand in many western countries. India has to compete with China in the international market with better quality silk at competitive prices.

Even if arable land is reserved for cultivation of food crops, mulberry can be raised on all types of soils by using government waste lands, forest fringes, fallow lands, Panchayat lands, bank/canal bunds, etc., and allotted to the farmers for using leaf for rearing silkworm and production of cocoons. Certain percentage of the afforestation programmes of social forestry which are being implemented should be reserved for raising food plants of mulberry

and allotted to the farmers/ tribals to practise sericulture by using the leaf. The farmers should also be given more technical and extension support for adopting the improved technology of silkworm rearing under hygienic conditions by controlling the pests and diseases for improved productivity of better quality cocoons and raw silk.

If India is to compete with China in the international market, the quality of yarn and fabrics should be improved substantially, besides improving productivity in order to bring down the overall cost of production. This is essential for boosting exports with better quality silk fabrics at competitive prices. Therefore, there is a strong need to change from traditional multivoltine silk to production of superior quality bivoltine silk in the country. Adequate efforts will have to be made to implement a result oriented action plan, for increasing bivoltine silk production as well as improving the techniques of silk rearing, weaving and processing for the production of exportable variety silk fabrics. With greater attention and concentration not only for horizontal expansion of sericulture industry but also to improve productivity as also quality of products by vertical growth. For this, we have to identify the areas where progressive farmers can go ahead for bivoltine rearing. Consequently, the forward and backward linkages are essential for reaping the harvest. Alternatively, we have to opt for genetic engineering so that genes responsible for hardiness only could be transplanted in the genome of bivoltine race enabling us to produce quality silk yarn everywhere at a cheaper cost.

India has an added advantage over the other silk growing countries including China in regard to the national demand for silk. In fact, production is insufficient to meet the national and international markets. Nearly 2,000 tonnes of raw silk is imported from China each year by Indian exporters for silk fabrics. With fast urbanization, the demand for silk has also increased significantly at the national level.

Thus, India has the potentiality to overtake China and gain the premier position in the production of silk and to meet the world silk demand. In fact, China cannot continue to increase its acreage for mulberry due to the shortage of arable land compared to that of

India. Already many western countries are looking towards India to meet their silk requirements. With concerted efforts, we should rise to the occasion to fulfil their expectations and take the Indian sericulture industry to new horizons.

Though, presently only about 10 percent of the country's production is exported, there will be a greater necessity and opportunity to push up exports in future. The necessity will arise from a vastly increased production envisaged in the present Eighth Five Year Plan and an opportunity will be there because of the lesser significant role of Japan as a silk exporter and the change in China's export policy. Faster growing exports in future will have to come partly from a shift in the export mix. While maintaining our importance in the international market in the heavier fabrics of mulberry, we should try and produce more quality fabrics of better reeled, better woven and better processed silk. Hence, economically viable projects are to be taken up considering the socio-economic conditions of the country in silk reeling, twisting, weaving and wet processing. There is an urgent need to accelerate the pace of production of silk so as to achieve the twin objectives, viz., curtailment of imports and increase of exports simultaneously in the international market.

## CONCLUSION

It may be concluded that due to government measures sericulture in India has recorded a spectacular growth in terms of area under mulberry cultivation, production of DFL and reeling cocoons. Among the states, Karnataka ranks first in respect of the aforesaid variables. In the case of reeling, charkha technique still dominates cottage and filature basins. During 1991, a little over 11, 437 tonnes of mulberry raw silk and 3,953 tonnes of silk waste were produced in the country. The mulberry silk production is largely concentrated in southern region, particularly Karnataka state. Among the silk producing countries in the world, India ranks second after China from 1988. However, an analysis of the availability and utilization of silk show that overall availability of domestic consumption has been considerably augmented by

growing imports. Mulberry silk exports were computed at IRs. 417.20 crores in 1991. The proportion of mulberrysilk exports to the total Indian exports was 1.28 percent in 1991 as compared to 0.79 percent in 1982. Similarly, the share of mulberry exports in silk exports varied between 76.94 percent and 94.70 percent in the period referred to. The substantial import of silk represents an obvious target for domestic sericulturists to meet. On the basis of production imports net availability and exports and also declining production in Japan and Korea and indication of stagnant production in China it can be said that the open ended possibilities exist for India.

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## BOOK REVIEW

Mithani, D.M. (1993) *Dynamics of Monetary- Fiscal Policy: An Indian Perspective*. Himalaya Publishing House, Ramdoot, Dr. Bhalerao Marg Girgoan, Bombay, pp.368 including index XV, price IRS 450.

Trade liberalization, supported by good macro policies, is critical for global growth today. Monetary policy and fiscal policy are two instruments of macro economic policy which the government adopts to influence the economic activity in the attainment of specific macro goals. In recent years India has accepted the challenge of adjustment and reform that have been setting examples for the world by turning away from import substitution and inward oriented strategies instead. She has taken unilaterable action to reduce her trade and exchange restrictions as part of comprehension adjustment and reform strategies supported by IMF and the World Bank. Thus, Indian economy stands today at a crucial turning point amidst of the process of macro economic stabilization for sustainable economic growth.

In this context| book under review provides an indepth analysis of the operations of the monetary policy in relation to fiscal policy in Indian economy over the last two decades. Based on empirical investigation the book pleads for coherence in monetary and fiscal policy.

Monetary policy is an instrument of the economic policy, so the objectives of monetary policy are not different from that of economic policy. Containment of the inflationary pressures and supporting productive activities with adequate credit have been the cornerstone of all the central banks of developing countries. Therefore, it is now beeing increasingly recognised that success of structural adjustment programmes critically hings on the achievement of price stability. In recent years monetary policy has had to bear more than its normal share of responsibility, specially in the context of the several external payments crisis. It had to respond swiftly through monetary and credit policy measures aimed at import compression and demand containment.

A central feature of the Indian monetary and credit system is that interest rates are administered. There has been considerable rationalisation which has affected banks' lending rates with reduction in number of concessional slabs and enhancement in some of the rates, thereby reducing the element of cross-subsidisation, rate of interest of government securities have been raised and for several instruments, such as Certificates of Deposits, the interest rates are freely determined by individual banks.

Divided into two parts the book contains nine chapters. Part one is the theoretical foundation of monetary-fiscal policy. Chapter on monetarism and fiscalism, monetary-fiscal policy coherence: issues and problems and towards a framework for a monetary fiscal policy: search for a mix are included in part one. Part two contains operational experience of Indian monetary fiscal policy with illuminative discussion on the subject like inflationary price spiral in India, instruments of monetary regulation, grammar of monetary targeting, interest rates in India: structure and policy and dynamics of fiscal deficit-debt nexus in Indian economy with a sound summing up.

Monetary policy fundamentally relates to the central bank policy. But monetary policy is wider in scope and operation than central bank policy. For in reality, a central bank is not a sole controller of objectives, instruments and channels of monetary policy. Therefore, Dr. Mithani has adopted the best course by viewing monetary policy as the policy formulated and executed by the monetary authorities which included both the central bank and treasury or the ministry of finance. i.e. the government. In practice, both of these along with trade and exchange policies form the essential ingredients of macro-economic policy. Monetary and fiscal policy, therefore, should not be viewed in isolation, and Dr. Mithani has done justice by rationalising monetary and fiscal policy coherence in detail in part one. In practice there is great deal of overlapping between monetary and fiscal policy and it is not easy to draw a sharp demarcation line in determining their powers, scope of and impact on the working of the monetary system at large. In most countries including India, the central bank is no longer a totally independent sole monetary authority. Rather, the ministry of

finance or treasury is perhaps more powerful as a super monetary authority.

Events rather than theories have dictated the shifts in policy orientation of the world economies. The classical era has the era of orthodox quantity theory- a crude monetarism in policy making under the realm of *laissez-faire* capitalism. The Great Depression led to Keynesian Revolution. There has been a rise and fall of Keynesianism in the two decades of the post World War II era. Then, growing stagflation led to a forceful revival of monetarism. There has also been a rise and fall in momentarism. In the seventies and early eighties, monetarism had it hey days. Continuation of inflation with growing unemployment, failure of monetarism to deal with it effectively led the policy makers to seek a solution elsewhere. Keynes was rediscovered by the fiscalists. Supply side economics also came on the scene besides the prescription on Reaganomics which implied a cut in direct taxation as well as public expenditure.

In this light monetary and fiscal policies are intertwined in many ways: they work partly through the same channels; their relative objectives are common; and both belong to a macro economic set up and Dr. Mithani's argument that there is a nexus between the central banking and the fiscal authorities, essentially because the former markets government securities and manage public debt borrowing programme of the government, has strong footing.

Misguided and uncoordinated monetary and fiscal policies do a lot of damage to the economy by seriously disrupting their growth process and Dr. Mithani, here cites the example of Indian economy which slipped into financial repression inadvertently, as her original policies did not aim at indiscriminate repression but rather a financial control, therefore, he suggests for the adoption of flexible monetary policy targeting with a feed back approach and advocates the need for monetary policy stability through a check on fiscal deficit and monetised debt in the interest of price stability.

There is considerable controversy whether rate of interest is an important variable in determining the over all savings, but there is no doubt that transferable savings are influenced by interest rates

hence the book presents the logic for the need to give depositors a positive real rate of interest otherwise fund may move out of the organised financial system into the unorganised system. The book also designs strategy of monetary and fiscal policy mix for an effective coordination of the working of fiscal and monetary policies together. Open market operations, government deficits, interest rates structure, a mixture of short term and long term government securities, credit planing are advised to be managed in a coordinated manner so that fiscal and monetary policies work suitably in tendem and the corwding-out effect of increasing government expenditures and government debt can be ruled out.

Debt management is not a small weapon in the arsenal of monetary fiscal policy in a developing economy. Government debt policy is primarily determined by the fiscal authorities but it has to be in cooperation with monetary authorities. A conflict arises when the central bank desires to have tight money policy while the government continues to pursue an expansionary fiscal policy without maintaining fiscal discipline. The treasury usually focuses on maintaining interest costs for public borrowings, while the central bank is more interested in price stability. The latter thus expresses a growing desire for tighter money to fight inflations, the former insists on cheap money policy to maintain low interest rates. Therefore, Dr. Mithani puts forward the logic that debt management policy should be subsidiary to monetary policy, and policy makers should adopt a proper subsidiary goal for maintaining an orderly sound money market for the rational allocation of funds in productive activity. Coordination of monetary and debt policy should be an element of coordinating process of monetary fiscal policy mix in India.

Part two of the book explains about the central features of Indian monetary and fiscal system and opines that the future course of the monetary and fiscal policy would have to be continually adapted to make them more effective and productive. The policy would have to be adapted to suit the unfolding macro-economic scenario and emerging financial environment and suggests for improving the credit structure in the rural area. Influencing the economy through central banking is only one



segment of monetary fiscal policy. Its other part consists of government finance. The government, in its budgetary operations, undertakes financing some of its expenditure by creating money and other liquid financial assets through short term and long term borrowings. These monetary activities of the government form a part of fiscal policy and debt management which have received increasing attention these days. In this context the author highlights that in India during the seventies, the capital account of budget was in deficit all throughout. In the eighties however, mysteriously the capital account of the Union budgets started showing surplus for which government borrowings through market loan have been made responsible. Similarly, the monetised deficit which increased by nearly sixty two times and the ratio of this deficit to GDP increased from 0.5 percent in 1970-71 to 3.1 percent in 1989-90 proves that monetised deficit has reflected the growing monetary impact of fiscal operations over the years. This state of fiscal disequilibrium demands a sharp reduction in fiscal deficit and contains that government borrowings and government expenditure must be curtailed. Fiscal policy through welfare oriented public expenditure has significant role to play in the eradication of poverty in a country like India. Therefore, the author is right in saying that the monetary fiscal measures must be designed to raise additional resources which may be utilised for implementing anti-poverty programmes and also for creating more productive employment opportunities. The author also suggests that in the future course of monetary-fiscal policy, the government's recourse to Reserve Bank of India's credit must be contained to levels consistent with reasonable price stability and further, by reasonably lowering statutory liquidity ratio (SLR) for the commercial bank, the government's recourse to borrowings from the "captive market" should be minimised.

The book is an attempt to analyse the current scenario in the light of experience gained in the context of numerous structural and policy reforms that have been introduced in the Indian economy. The issues relating to monetary and fiscal frame must be considered as an interrelated system of linkages between the policies of the government and monetary authorities.

In contemporary macro-economic analysis, both Keynesian and monetarism have emerged a thought provoking, revolutionary and have generated rival approach in assigning and evacuating the role of money in economic activity and assessing the relative importance of monetary and fiscal policies in achieving the objective of growth with stability. In the context of ongoing debate between proponents and opponents of these school of thoughts the book presents laudable accounts of operational experience of Indian monetary-fiscal policy and opens up new vistas for sophisticated and innovative research work in the area of monetary fiscal management. For researcher and people interested in diagnosing the fiscal and monetary ailments of the Indian economy, the book is worth reading.

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