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PREFACE

Assurance of a remunerative and stable price environment is considered to be one of the three basic foundations for increasing agricultural production and productivity, the other two being a productive technology package and easy and reliable access to inputs and services. As a part of the strategy for the development of agriculture, the Government has been taking action on all the three dimensions. It is no wonder that agricultural production has been rising at a steady pace over the years and the country crossed the barrier of 200 million tonnes of foodgrain production in 1998-99 and repeated the feat in 1999-2000, despite adverse agro-climatic conditions during the latter year.

As regards the prices, the Commission for Agricultural Costs and Prices (CACP) has been advising the Government since the mid sixties in respect of 24 agricultural commodities. The methodology used by them has been upgraded over a period of time, based on the recommendations/suggestions made by expert Committees/Groups in this regard. The cost of cultivation is determined on the basis of data collected by 16 Agricultural Universities spread throughout the country. The cost accounting method is used by these universities for collecting cost of cultivation. Further all paid out costs, i.e., the expenditure incurred by farmers on purchasing items like seeds, fertilizers, diesel, labour, etc., as also imputed costs like the cost of family labour used, rental value of owned land, rate of interest on fixed capital and working capital employed and depreciation, etc. are taken into account for determining the cost of cultivation. In addition, a reasonable profit margin is also added so as to ensure remunerative prices to the farmers. The recommendations of the CACP are duly considered by the Central Government, by taking into account views of the State Governments concerned, different Central Ministries and Planning Commission, etc.. The success of the price policy of the Government can be seen from the fact that it has helped in attaining not only balanced growth of the agriculture but also motivated farmers to raise productivity through higher investment and use of modern inputs.

This volume brings out the Commission's Report on Price Policy for the crops grown in 1999-2000. The Reports carry a lot of statistical data and analysis of the same in a very lucid and scientific manner. The report also contains, apart from the Minimum Support Prices recommended by them for different crops, various non-price recommendations for the development of agriculture sector. These recommendations are made, keeping in view the national and international economic scenario. We hope that this volume would be found to be very useful by the researchers also.

MAY 22, 2000

(BHASKAR BARUA)

COMMISSION FOR AGRICULTURAL COSTS AND PRICES

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**A. REPORT ON PRICE POLICY FOR SUGARCANE
FOR THE 1999-2000 SEASON**

COMMISSION FOR AGRICULTURAL COSTS AND PRICES

REPORT ON PRICE POLICY FOR SUGARCANE FOR THE 1999-2000 SEASON

In this Report, the Commission for Agricultural Costs and Prices presents its views on Price Policy for Sugarcane for the 1999-2000 season. The Commission recommends that

- a) that the import duty on sugar be increased and that the government start rebuilding buffer stocks; (Para 12)
- b) the fixation of sugarcane prices should reflect the cost and parity considerations currently incorporated in the SMP, and that considerations such as the price of sugar or the profitability of the sugar industry should be incorporated as an addition over the SMP; (Para 26)
- c) there be urgent consultations with the states and with industry and farmer representatives to settle upon a mutually acceptable formula for this additional payment; (Para 27)
- d) the government when it announces the SMP, should also announce what this translates into at the national average recovery level calculated over the past five years; and (Para 28)
- e) the statutory minimum price for sugarcane payable by sugar factories for the 1999-2000 season be fixed at Rs 56.10 linked to a basic recovery of 8.5 per cent subject to a premium of Rs 0.66 for every 0.1 percentage point

increase in the recovery above that level. At the average all-India recovery rate of 9.92 per cent for the last 5 years, the SMP recommended is Rs 65.47 per quintal.

(Para 37)

2. The Commission submitted its report on price policy for sugarcane for the 1998-99 season on 8th September, 1997 recommending the statutory minimum price (SMP) of sugarcane payable by sugar factories at Rs 52.70 per quintal linked to a basic recovery of 83 per cent subject to a premium of Rs 0.62 for every 0.1 percentage point increase in the recovery above that level upto 10 per cent. So far the Government has not announced the price policy although the sowings for the 1998-99 crop are already over and crushing is due to begin next month. **(Table 1)**

3. The production of sugarcane declined to 2773 million tonnes during 1996-97 from the peak level of 281.1 million tonnes reached during the 1995-96 season. This decline was concentrated in the tropical zone where area declined by 11.7 per cent from 1.59 million hectares in 1995-96 to 1.41 million hectares in 1996-97, causing production to decline by 10.2 per cent from 130.2 million tonnes to 116.9 million tonnes despite some increase in the yield per hectare. In the subtropical zone, however, production increased by 6 per cent, from 142 million tonnes to 151.1 million tonnes, despite a decline in the yield, due to an 8.5 per cent increase in area from 2.38 million hectares to 2.58 million hectares. The major setback in production was in the states of Maharashtra, Karnataka and Tamil Nadu where production declined by 4.9, 3.1 and 6 million tonnes respectively, due mainly to a decline in area. On the other hand, production increased significantly in Uttar Pradesh and Punjab, by 5 and 2.4 million tonnes respectively, again due entirely to area increase.

4. Although final figures of sugarcane production for the 1997-98 season are not yet available, the preliminary estimates made available by the Directorate of Economics and Statistics (DES), Ministry of Agriculture, show a further decline, by over 5 per cent, to about 262 million tonnes, due to a decline in area with yield remaining almost unchanged from the previous year. Unlike during the previous year, however, the decline during 1997-98 appears to have been concentrated in the subtropical zone where production is likely to have declined by around 10 per cent. In its reply to the Commission, Punjab has reported an almost 40 per cent decline in production, and Haryana and Uttar Pradesh have also reported substantial declines in sugarcane output, mainly due to a decline in area. Sizeable declines in both area and production are reported also by Andhra Pradesh and Maharashtra, but the overall production in the tropical zone is unlikely to be much less than during 1996-97 because of the performance in Tamil Nadu where production is reported to have increased by over 30 per cent. (Table 2)

5. Comparing the preliminary production Figures for 1997-98 with the final figures for 1995-96, when record production was achieved, shows a peak to trough decline in cane production of about 7 per cent during the current cane cycle, with Maharashtra reporting the largest decline. These magnitudes are similar to those observed in the corresponding phase of previous cane cycles, which also showed a tendency for the cycle in the tropical zone to lead that in the subtropical zone. At least in part, this latter tendency appears to be due to the fact that cane prices are more directly linked to sugar prices in the tropical zone, particularly in the case of co-operatives. Thus, although sugar production peaked in 1995-96 in both Maharashtra and Uttar Pradesh, and the wholesale price index for sugar fell below its previous year's level in February 1995, the cane price paid by mills rose in Uttar Pradesh during 1995-96, whereas it fell in Maharashtra. Not surprisingly therefore, during the 1996-97 season, cane area and production fell in Maharashtra but rose somewhat in Uttar Pradesh, where the fall in production was delayed till the

next year, and followed the rise in cane arrears and fall in cane prices which occurred in 1996-97.

(Table 3 & 4)

6. Sugar production declined 21.4 per cent from its peak level of 1643 lakh tonnes in 1995-96 to 129.1 lakh tonnes in 1996-97. This decline occurred in almost all states, but was most marked in the tropical zone where production declined by over 30 per cent, from 102.6 lakh tonnes to 71.1 lakh tonnes. The decline in the subtropical zone was by only 5 per cent, from 583 lakh tonnes to 55.5 lakh tonnes. It was initially expected that sugar production during 1997-98 would drop further to below 120 lakh tonnes, but there was better than expected performance in the tropical zone. Provisional estimates of sugar production indicate that although output declined by about 11 per cent during 1997-98 in the subtropical zone, it increased by almost 7 per cent in the tropical zone. All India Sugar output during 1997-98 is now placed at over 127 lakh tonnes, i.e. a drop of only around 1 per cent as compared to 1996-97. (Table 5)

7. These figures of sugar and sugarcane production imply that the utilization of cane for sugar production, which had risen from 43 per cent in 1993-94 to 54 per cent in 1994-95 and to a record 62 per cent in 1995-96, fell to 47 per cent in 1996-97 and is likely to have been about 49 per cent during 1997-98. Also, the capacity utilization of the sugar industry which had increased to 120 and 128 per cent in 1994-95 and 1995-96 respectively, from 85 per cent in 1993-94, is likely to have been around 95 and 90 per cent in 1996-97 and 1997-98. With pressure on capacity eased, there was both an improvement in recovery and a reduced incidence of cane arrears. The all-India recovery rate, which had fallen to a low of 9.4 per cent in 1995-96 from an average of over 10 per cent during the previous four years, improved to 9.9 per cent in 1996-97 and is likely to have been maintained around this level in 1997-98. Sugarcane arrears, which had risen from Rs 128 crore at the end of May 1994 to Rs 1460 crore at the end of May 1996, declined to Rs 833 crore and Rs 456 crore on the corresponding date in 1997 and 1998 respectively.

(Table 6,7,8 & 9)

8. The wholesale price index for sugar had risen 34 per cent between 1991-92 and 1993-94 during the trough of the previous sugar cycle, and had remained roughly stable during 1994-95 and 1995-96 at the peak of the present cycle. The index rose 18 per cent between July 1996 and July 1997 at the beginning of the downturn of the present cycle, but has thereafter risen by only 1.5 per cent to July 1998. This somewhat subdued Behaviour of sugar prices during the last year or so reflects a number of factors including low aggregate demand in the economy, relatively high opening stocks of sugar, and the liberal import policy. World sugar prices have also been declining since 1994. The international price of raw sugar (contract no. 7) declined from more than \$ 360 per tonne at the beginning of 1995, to \$ 300 per tonne in June 1996, to \$ 273 in June 1997 and to \$ 204 in June 1998. As to the domestic price of khandsari and gur, the price Behaviour of the former has closely paralleled domestic sugar prices, but that of gur has fluctuated much more strongly, having risen 73 per cent July 1992 to July 1994, fallen 16 per cent between July 1994 to July 1996 and again rising 40 per cent between July 1996 and July 1998.

(Table 10 & 11)

9. With gur and sugar prices higher during 1996-98 and these being reflected in cane payments, sugarcane area and production are expected to increase during 1998-99, and this response is likely to be larger in the tropical zone. Advance estimates of sugarcane area for the 1998-99 season reported by the States to the Commission suggest that this is likely to be about 20 and 10 per cent higher than in 1997-98 in Maharashtra and Uttar Pradesh respectively. However, Bihar, Punjab and Tamil Nadu have reported reduced planting. On the basis of the replies provided to the Commission by the nine major sugarcane growing states, it is provisionally estimated that during 1998-99 All-India sugarcane area is likely to be higher by about 8 per cent and that sugarcane output might increase by somewhat more. Sugarcane production is, therefore, poised to begin another upward swing and may come close to or even surpass the previous peak level reached in 1995-96.

(Table 12,13 & 14)

10. On the basis of the past relationship between sugar production and cane production, the likely sugar production during 1998-99 may be put at 12 to 18 per cent higher than in 1997-98. Sugar output may then be in the range of 142 to 150 lakh tonnes. This would imply that sugar factories would be crushing just over 50 per cent of the cane available, and that the availability of cane for other uses would increase by around 5 per cent. Also, with the capacity of sugar factories standing at 142 lakh tonnes in 1997-98, and given that this has been increasing by about 6 to 8 lakh tonnes annually in the recent past, the likely production of sugar would be close to capacity. Further, with annual sugar consumption at around 140 lakh tonnes currently, and annual demand growth at about 5 per cent, production is also likely to be close to consumption demand. Thus, unless an unusual situation such as in 1994-95 occurs, when sugar output jumped 49 per cent, the recovery this time is likely to be more smooth and closer to equilibrium.

11. The sugar year 1997-98 had begun with carry-over stocks of 66 lakh tonnes of sugar. Add to the likely production of just over 127 lakh tonnes, this gives an availability of about 193 lakh tonnes from domestic sources. Domestic consumption is placed at around 140 lakh tonnes; but exports were low, less than half lakh tonnes, because of low international prices. This leaves a balance of around 53 lakh tonnes, but the carry-over stocks into 1998-99 are likely to be higher because of imports. According to DGCI&S figures, sugar imports so far this year have been around 6 lakh tonnes, and, according to trade sources, another 2 lakh tonnes are under contract, mainly from Pakistan. Carryover stocks at the end of the present year may therefore end up at over 60 lakh tonnes, which is very high at the bottom of the cane cycle. However, like last year, levy sugar stocks are likely to fall short at the beginning of the 1998-99 season. The government has exhausted the buffer stock of 10 lakh tonnes, and had to borrow 12 lakh tonnes of sugar from industry last year in order to meet PDS requirements. Payment for this has been pegged to three months average free sale realization. the price of sugar pledged to banks, or the CIF import price, whichever is least

Table 15)

12. The liberal import policy has therefore helped the government to contain the PDS subsidy which has increased despite two increases in the issue price of sugar during 1997, from Rs 9.05 per kilogram before February to Rs 11.40 per kilogram from October onwards. Nonetheless, it is questionable whether such large sugar imports are prudent given the current overall stock situation and the likely upturn in sugar production. The government has recently increased the import duty on sugar, but this is still well below the duties levied by other countries, and imports are still attractive, especially because Pakistan has not only devalued its currency but has also increased its export subsidy. It is to be hoped that the government and industry can arrive at an amicable resolution of the problem of meeting PDS supplies from private stocks without undue reliance on imports. Given that production and domestic consumption are not likely to diverge very widely in 1998-99, the carry-over stocks at the beginning of 1999-2000 would be comparable to that at the beginning of 1997-98 if net imports can be kept under control. If, moreover, the government starts rebuilding its buffer stocks this year, the inventory situation of the industry would be relatively comfortable. The Commission therefore recommends that the import duty on sugar be increased and that the government start rebuilding buffer stocks. If this is done, the cash-flow position of factories would be better, and lead to less arrears, than is normal at the top of the cycle. Taken together with the other features mentioned above which suggest a smoother takeoff from the trough, this would create conditions appropriate to implementing longer run policies towards putting the cane and sugar economy on a more stable and sustainable growth path.

13. In its past reports, the Commission has been examining such longer-run issues. As discussed in last year's sugarcane report, cane output has been growing over the last decade and a half at about 3 to 4 per cent per annum in both the tropical and subtropical zones, but with divergent contributions of area and yield. In the tropical zone, yields have been stagnant or in decline, and the growth has been due entirely to area expansion. In

the subtropical zone, on the other hand, yield growth has been the main contributor to output increase, but even here there is some evidence of deceleration in yield growth during the nineties. The priority in the cane sector should therefore not be on further area expansion, particularly in the tropical zone where sugarcane competes for scarce water resources with other crops, but on productivity. In both the tropical and subtropical zones, there is a need to emphasise varietal breakthroughs for not just higher yields but also to increase the sucrose content of the cane produced. The main requirement is to attain a varietal composition which optimizes per hectare sucrose production and permits a longer crushing season.

14. In this context, the Commission has obtained scientific opinion which suggests that the major constraints lie in the trade-off that currently exists between high sucrose content and susceptibility to disease, and in the production of adequate quantities of seeds of the required varieties and quality. The Centrally sponsored scheme of Sustainable Development of Sugarcane based Cropping Systems (SUBACS) addresses many of these problems, including accelerated seed production, tissue culture, heat treatment and integrated pest management. In their replies to the Commission, the States have appreciated this programme, but have pointed out that the allocation under some items, particularly tissue culture and bio-pesticides, are too low relative to requirements. Moreover, expert opinion favors inter cropping of sugarcane with pulses and soyabeans, and there is also a view that there should be a greater encouragement to ratooning in order to save on seed requirements, reduce costs, and to take advantage of the benefits of early maturation. The Commission is of the view that, since the priority should not be to bring more area under sugarcane, the cropping systems perspective regarding sugarcane cultivation is the correct one, and that, for sustainable development in the future, agronomic issues regarding the crop should not be discussed in isolation. This is true also of other policies regarding the crop, including price policy. These should not be limited merely to considering

the inputs used directly in cane production or the requirements of the user industry, but should pay greater attention to other complementary and competitive factors within the sugarcane economy. Unlike in most other major sugar producing countries, where there are captive plantations, sugarcane production in India is by small independent cultivators and this requires to be taken specifically into account.

15. While sustainable development of sugarcane is important, perhaps the greater problem relates to the state of India's sugar industry. International comparisons show that although India's sugarcane yields are higher than the world average and the cost of production of sugarcane is also relatively low, the conversion cost of sugarcane into sugar is relatively high. As one of the world's largest producers and consumers of sweeteners, India can and should be a competitive producer and for this it is vital to improve the efficiency of the sugar industry. Currently, world sugar prices are much more volatile than India's domestic price and the Indian sugar industry can compete internationally only in years when world prices are relatively high. Moreover, because India's cane economy is based on production by small holders, who can not only divert land to other uses but also have the option of diverting cane to gur and khandsari, Indian sugar factories face much larger fluctuations in their cane supply than their competitors in other countries. This is a major reason for inefficiencies since inventories are therefore relatively high and the industry alternates between periods of low capital utilization and low rates of recovery of sugar from cane. Other major problems of the sugar industry include the outdated technology and uneconomic scale of many factories, an inadequate effort to reduce costs through more productive use of by-products, and locational imbalances between the area under sugarcane and the available installed capacity.

16. In its previous reports, the Commission has emphasised the importance of minimizing the amplitude of the cane and sugar cycles through appropriate buffer stock and cane pricing policies,

and has also drawn attention to the importance of measures which can inculcate a greater degree of discipline in cane supply. In the context of discipline, it has also frequently expressed the view that the practice in Maharashtra and Gujarat of factories undertaking harvesting and transportation has much merit since it enables better planning of varietal composition and of crushing. On the issue of capacity expansion, the Commission has always taken the view that this should be encouraged, since the growth of sugarcane production is related to the availability of crushing capacity and since capacity has usually been found to be grossly inadequate at the peak of the cane cycle. It has, however, been arguing that the emphasis on new capacity creation should be through modernization and expansion of existing factories, with encouragement to new factories restricted mainly to deal with imbalances between existing capacity and available cane supply. Government policies have attempted to license new capacity according to certain criteria related to the demand for sugar and the availability of cane. But, in practice, actual installed capacity has fallen far below that licensed and modernization has proceeded at less than the desired pace.

17. Perhaps because of this, the government has recently decided to delicense the sugar industry, removing the incentives currently available for new entrants but allowing factories the freedom to expand capacity without permission and also, in principle, allowing new factories to be set up freely so long as this is not at a radial distance of less than 15 kilometers from an existing factory. However, in their discussions with the Commission almost every state government and industry organization has expressed the view that the details regarding zoning of cane area have not yet been specified and that it is still not clear whether a no objection certificate will be required and, if so, from whom. Further reactions range from the view that delicensing is a "non-issue" which will make no significant difference, to apprehensions that existing factories could be adversely affected because the minimum distance specified is too low and new factories could poach on cane area already developed by existing factories. It has been argued that delicensing will

not improve matters for existing factories, and that free entry need not increase efficiency in this industry where there is a need to develop and maintain cane area commensurate with crushing capacity and where there are strong, and often desirable, barriers to exit, particularly in the co-operative sector. Moreover, delicensing would not deal with the problem of large fluctuations in cane and sugar production. The predominant view among those who have responded to the Commission was that issues regarding decontrol, i.e. the levy obligation, restriction on free sales, and the pricing of sugarcane, were more important than the issue of delicensing.

18. The issue of decontrol has come to the fore following the submission of its report by the High Powered (Mahajan) Committee on Sugar Industry. The submission of this report is an important development since it makes a number of far reaching recommendations regarding the sugarcane and sugar economy. Set up following the Judgement by the Uttar Pradesh High Court to strike down the practice of State Advised Prices (SAP), this committee has recommended a phased removal of sugar from the PDS and of the levy obligation on sugar factories. It has also recommended a new system of sugarcane pricing involving the retention of the Statutory Minimum Price as a support price for sugarcane, but with primary responsibility for sugarcane pricing vested on a new Sugarcane Pricing Board which is expected to set prices of sugarcane based on the price of sugar. The Commission has discussed the recommendations of the Mahajan Committee in detail with the state governments and with industry.

19. The Mahajan Committee's recommendation to phase out the supply of sugar through the Public Distribution System (PDS) and, along with this, the levy obligation on industry, has evoked different responses to the Commission from the States and industry. While industry has generally supported ending both PDS supply and the levy, arguing that it should not be taxed to subsidise consumers, almost every state government has opposed ending PDS distribution of sugar and taken the view that

the levy can be discontinued only if the Centre undertakes to supply and subsidise PDS sugar. When asked what would be their preference if such Central subsidisation was not feasible, most states preferred to continue with the levy although some felt that it would be better, in that case, to stop the levy obligation and finance the PDS subsidy through an additional excise tax on sugar. Industry also appears divided on what to do if PDS has to continue without extra subsidies provided by the Centre. The private sector largely favors replacement of the levy by a higher excise tax, while within the co-operative sector the preference seems to be more to retain the levy than to increase excise taxes. There was greater unanimity in the response to a further question of how the levy price of sugar should be determined if levy obligations continue. Most respondents favoured basing this on the actual price of cane, rather than on the SMP as at present. However, even here there was some lack of clarity regarding PDS prices which would then need to increase because levy prices would be higher.

20. There also appears to be a major divergence of views between industry and the states regarding the Mahajan Committee's recommendation that the Centre set up a Sugarcane Pricing Board to end the practice of State Advised Prices (SAP). Private industry supports this, but most state governments have expressed preference for retaining their own discretion in this matter, and have sought changes in legislation to make this possible given past Court judgements. The co-operative sector appears largely indifferent on this issue because the Mahajan Committee's recommendations allows them to continue with the existing system of a first payment based on the Statutory Minimum Price (SMP) and subsequent payments related to returns.

21. In its Sugarcane Report last year, the Commission had discussed in detail the existing basis of sugarcane and sugar pricing and the role played by the SMP in this. It had noted that the SMP has in the past been determined fully in accordance with the role envisaged by the Sugarcane Control Order 1966, but that the further

provision, under Clause 5A of that Order, for an additional cane payment based on profits of the sugar mills, had not been properly Implemented. With State governments having taken upon themselves the role of setting SAPs higher than the SMP, the latter had lost much of its relevance as the basis for the price of cane received by farmers, and was now in the mainly relevant to determine the price received by factories for levy sugar. The Commission had reiterated its earlier position that the practice of setting SAPs be discontinued, and had recommended that the government consider a more rational basis for calculating the additional cane price over and above the SMP recommended by the Commission. In making these recommendations, it had been guided by the views then received from state governments and industry which had indicated that there was more support for continuing with the existing system of partial decontrol than for total decontrol. Attitudes appear to have changed somewhat since then with the submission of the Mahajan committee report, and there now appears to be greater support for the Idea of decontrol and for the view that. If levy obligations continue, levy prices should be set on the basis of actual cane price rather than, as envisaged under the Sugar Control Order, on the basis of the opportunity cost of cane production as measured by the SMP. The Commission has discussed this matter in detail and come to the conclusion that some modified version of the Bhargava formula, along the lines suggested in its last year's report, is still the best option. However, since this is not what the Mahajan committee has recommended and since attitudes generally appear to have changed, it has also considered other options.

22. The crux of the Mahajan committee's recommendations regarding pricing is that, although the SMP should continue to be fixed on the basis of the cost of production of cane and its price parity with competing crops, it should be treated as a minimum support price as in the case of other crops. The SMP should be made applicable to khandsari units, but it should neither be linked to sugar recovery nor be the basis for fixation of either

the price of levy sugar or the sugarcane purchased by sugar factories. Co-operatives In Maharashtra, Gujarat and North Karnataka can if they wish continue the practice of distributing sale proceeds among member growers while using the SMP as the basis of their first payment. But, the sugarcane price payable by other factories would be fixed zone-wise by a newly set up Board on the basis of prevailing sugar prices and actual recovery rates so as to maintain some long-run ratio between the price of cane and that of sugar. The SMP would be relevant only if the price of cane so calculated turned out to be lower. The committee has also recommended delinking the SMP from the price of sugar, both by deleting the requirement that the SMP be fixed taking consumer and industry interests into account, and by linking the levy price, if this is at all required, not to the SMP but to the actual cane price as fixed by the new Board.

23. The Commission has given a great deal of thought to these recommendations. It welcomes the recommendation that the SMP be treated as a minimum price applicable also to khandsari producers. But it is constrained to point out that it would neither be workable nor desirable to fix the price of cane payable by factories on the basis of the sugar price, ignoring the SMP. For a start, if cane prices are to be fixed on the basis of the actual sugar price realised by factories and on the actual recovery rate realised in a given year, the final cane price would be known only after the sugar year has ended. For this reason, the Mahajan Committee has recommended a two-part cane payment with about 80 per cent paid within 15 days of delivery on the basis of an advance calculation and the remaining after the end of the sugar year. However, such a two-part payment may not be feasible, except in the case of co-operatives in Maharashtra. Gujarat and North Karnataka for which, in any case, the Mahajan committee has recommended that the present system can continue. In the case of these co-operatives, the current practice is to make a first payment based on the SMP and subsequent payments based on actual results, in line with the Bhargava formula. But except in these cases, the Bhargava formula was found unworkable precisely

because it involved a two-part payment. Sugarcane is a long duration crop involving relatively heavy expenditure, and unless there is a supporting system whereby adequate credit is provided in advance, it is difficult for farmers to sustain production if payment is delayed. Co-operatives in Maharashtra, Gujarat and North Karnataka do provide such credit, but this is not the case with other sugar factories. It may therefore be difficult to introduce any pricing system based on two-part payment for such factories, and so, in order to be feasible, any new pricing formula would have to be based not on current working results but on past parameters.

24. The Commission also has serious reservations about the principles underlying the Mahajan Committee's recommendation to link sugarcane prices to sugar prices without considering factors, such as the cost of cane production and the returns that farmers could have obtained from alternative crops, which are currently considered in detail while recommending the SMP. The effect of this would be to delink completely the pricing of cane from parameters relating to the sugarcane economy. This has been justified on the grounds that a similar practice is followed in some other countries. But such a justification overlooks the fact that what can be quite a rational practice in cases where cane is supplied by captive farms and where the sugar and sugarcane economies are completely integrated vertically, may not be so in the Indian situation where cane supply is from independent small producers who can divert land and other resources if they so chose. While the price of sugar, and other factors relating to sugar production, are relevant demand side considerations for the fixation of the cane price, it would be irrational to adopt any cane pricing scheme which totally overlooks the supply side considerations facing cane producers.

25. Further, as discussed in the Commission's Sugarcane Report last year, any scheme which links cane price to the price of sugar leads to cycles because the cane available for sugar production is very sensitive to the cane price in the current and preceding two seasons. One reason why the amplitude of the sugarcane/sugar cycles has been

greater in recent years has been the tendency for SAPs to be raised much further above the SMP following years of shortages than in years of surplus, causing cyclical fluctuations in the ratio of the SAP to SMP with which cycles in output are closely correlated with a lag. For this reason, the Commission had in its report last year suggested that the additional cane price over and above the SMP should ideally be set close to some econometrically estimated equilibrium calculated from past data, or that, if fixed on the lines of the Bhargava formula, it should be based on some moving average of profits over a number of past years. Further simulations suggest that setting cane prices on the basis of sugar prices alone could exacerbate cyclical fluctuation seven more than what is actually observed, and that this destabilizing effect may be even greater if free international trade was allowed and, as a result, the much larger fluctuations in world sugar prices were imported into the domestic economy. Although at first sight it may appear that industry would suffer less if the price of cane were linked to that of sugar, since this enables industry to pass on to cane producers some of the consequences of cyclical ups and downs, in fact it is more likely that such a linkage will, by accentuating the sugar and sugarcane cycles, increase the main disadvantage faced by the Indian industry compared to its international competitors.

26. It is, therefore, the considered opinion of the Commission that the fixation of sugarcane prices should reflect the cost and parity considerations currently incorporated in the SMP, and that considerations such as the price of sugar or the profitability of the sugar industry should be incorporated as an addition over the SMP. Moreover, since these latter considerations»and also the recovery rate, cannot in general be incorporated contemporaneously without a two-part pricing scheme, these are better calculated on the basis of past moving averages and added on to the SMP while announcing the cane price which, as in the case of any other crop, should preferably be announced before the sowing season. Such an SMP plus approach, while avoiding the problems with the Mahajan formula discussed above, need not be

inconsistent with the basic thrust of the Mahajan committee recommendations. These in any case require that the CACP continue to recommend the SMP, that this be treated as a minimum price applicable not only to factories but to khandsari units as well, and envisage that co-operatives in Maharashtra, Gujarat and North Karnataka will continue with what is in effect an SMP plus practice. Another advantage of such an SMP plus approach is that this would not require deleting Clause 5A of the Sugarcane Control Order 1966, and an amendment would suffice. This is of some importance since if the Order stands without Clause 5A, only the SMP without the additional cane price would have statutory status and the legal basis of any other price would be unclear.

27. If this principle of SMP plus is accepted, various alternative and feasible formulae can be worked out. For example, as was suggested in the Commission's report last year, the Bhargava formula for the additional cane price could be retained but the returns element currently included in the levy price could be treated as profit and shared. Alternatively, and more in line with the Mahajan committee recommendations, a certain percentage of the realization from sugar sales could be added on to the SMP. In this context it may be mentioned that whereas the Mahajan committee has suggested that cane payments should comprise 60 to 70 per cent of the realization from sugar sales, it is observed that if cane payments were evaluated at SMP these would have averaged only 45 per cent of such realization during the 1990s, so that at least 15 per cent of the realization from sugar sales could be distributed as the additional cane price. Estimates of cane price obtained from calculations based on alternative formulae are presented in Table 16. These give for four years, 1994-95 to 1997-98, and by levy sugar zones: (a) the zone-specific SMP obtained by applying zone-specific recovery rates to the basic SMP, (b) the zone-specific cane price by the Bhargava formula, (c) the zone-specific cane price by the modified Bhargava formula including in profits the returns component in the levy price, (d) the zone-specific cane price by the Mahajan formula calculated with a 60 per cent grower's share, and

(e) the zone-specific cane price based on a modified Mahajan formula where grower's get 15 per cent share of sugar price over and above the zone-specific SMP. It may be seen that the all-India cane price by the modified Bhargava, the Mahajan and the modified Mahajan formulae are all not too different from each other and from the actual cane price, but there are larger Inter-zone variations in price according to the two modified SMP plus formulae than according to the Mahajan formula proper, mainly because of large inter-zonal variations in the zone-specific SMPs. However, since the Mahajan committee has also recommended that the SMP be uniform across the country and not be linked to recovery rates, the two modified formulae have also been calculated using the national SMP uniformly across zones, and the prices according to both of these show less inter-zonal variation than that according to the Mahajan formula. Such calculations are quite routine and can be used to test the implications of different formulae, and also to determine the cane price once a formula is agreed upon and the SMP announced, especially if it is agreed that considerations regarding the price of sugar or other parameters related to the actual working of sugar factories cannot be passed on in the current year and would relate to past years. It is, therefore, recommended that there be urgent consultations with the states and with industry and farmer representatives to settle upon a mutually acceptable formula for this additional payment

(Table 16)

28. As the above calculations show, the Mahajan Committee's recommendation that the SMP should no longer be based on the recovery rate has a strong bearing on the choice of formula and the inter-zonal differences in cane price that this is likely to lead to. Moreover, this recommendation merits consideration because it is based on the important principle that the price of cane should be based on its own inherent sucrose content and not on other factors, such as the conditions of the factory, which also affects actual recovery. The Mahajan Committee has, in this context, made a specific recommendation that the CACP should identify high sucrose varieties of

sugarcane and recommend premiums to be allowed on these. The Commission has considered the matter of pricing varieties on the basis of their sucrose content. It notes that the sucrose content of any particular variety not only varies depending on region but also according to the date of harvesting. What is relevant is the optimal mix of early, mid and late varieties. Hence a simple ranking of varieties by average sucrose content may not be very relevant. However, it is possible to identify at the level of the state or zone, high sucrose varieties by early, mid and late maturity and give a premium to a class of varieties. The Commission has initiated this process of identification by consulting states and research institutes. Moreover, in its report last year, the Commission had recommended that progressive premiums could be given if a factory acquires equipment to test the sucrose recovery of cane directly and farmers are willing to subject their cane to such tests. It is often argued that it would not be feasible to test individually the cane brought by farmers to a factory. But this is not necessary, since varieties in a particular factory area can be randomly tested and the cane price then determined on the basis of the average sucrose content by variety. The Commission, therefore, agrees in principle with the spirit of this recommendation, to announce an SMP without linking this to the recovery rate and to award premiums to varieties based on sucrose content and maturity. But this will require further consideration and cannot, in any case, be implemented till a decision is taken on the formulae regarding the determination of the cane price and that of levy sugar. However, in the interim, while the Commission continues to recommend an SMP at a basic recovery level of 8.5 percent recovery with premium allowed for recovery beyond this, it recommends that the government when it announces the SMP on this basis also announce what this translates into at the national average recovery level calculated over the past five years.

29. As regards the PDS and the levy, the Commission has in its report test year ahead; expressed its view that PDS supplies of sugar play) an useful role; but that there is s. case for cutting

PDS supplies to the better-off and to correspondingly reduce the levy proportion further. The Commission would like to record that, the reason it is in favor of the modified form of the Bhargava formula, is that it involves no change in the formula for the price of levy sugar. All that happens immediately is that the SMP plus price becomes close to those actually prevailing with only a notional reduction of the profit from levy sales which is not at present being actually realised. Over time, however, this promises a more rational system than currently, preserving the understanding so far that PDS supplies are to be obtained on a no profit no loss basis from industry. This remains a good principle to continue, especially since profits will still be available from efficient use of the by-products produced along with levy sugar. However, despite this preference, the Commission is not opposed to financing the PDS by means other than a levy. The levy price of sugar has in recent years been 25 per cent less than the free sale price, and this could be met by imposing a 10 per cent additional excise tax along with a corresponding countervailing import duty. This would, however, pass on the main burden of the PDS subsidy on to the consumer of non-PDS sugar. Alternatively, if the levy is retained, the levy price could be delinked from the SMP and based on the price inclusive of additional cane payment. But unless the subsidy between the PDS price and the levy price is increased by some means, this would pass the burden on to the PDS consumer.

30. Turning to input prices and cost of production, after the submission of the Commission's last report on the price policy for sugarcane for 1998-99 season, the statutory minimum wages have been revised upward in Haryana, Punjab and Maharashtra. As per information received from the states, the actual wages (money wage) for agricultural labourers have also been increasing in most of the sugarcane growing states, at rates similar to the rate of increase in the consumer price index of agricultural labourers. As for electricity rates/tariff, these are reported to have been revised upward in Karnataka, In Karnataka, canal irrigation rate have also been

reported to be revised. No changes in canal water rates or electricity rates are reported by any state since August, 1997. The index number of wholesale prices of diesel oil (HSDO) increased by 21.3 per cent from 270.0 in July, 1997 to 327.6 in July, 1998, whereas that of diesel oil (LDO) increased only by 3.7 per cent from 314.9 to 326.6 during this period. The indices of electricity for irrigation increased by 10.6 per cent from 255.5 in July, 1997 to 282.7 in July, 1998. During the same period, due to no change in the administered prices of urea and stabilization in the prices of phosphatic, potassic and other decontrolled fertilizers and in view of concessions earlier announced on these by the Central Government, indices of fertilizer prices declined slightly. The wholesale price index for fodder also remained almost at the same level. As regards the prices of other inputs, the increase was 5.2 per cent for tractors, 4.9 per cent for lubricants, 3.7 per cent for pesticides, 2.5 per cent for cattle feed and 2.0 for non-electrical machinery

(Table 17, 18 & 19)

31. Since the submission of the Commission's last report on price policy for sugarcane in September, 1997 the only estimates of cost of cultivation/production of sugarcane which have become available are those with respect to Maharashtra and Uttar Pradesh for 1995-96. In respect of other major sugarcane producing states the estimates already available with the Commission pertain to Andhra Pradesh and Haryana for 1995-96 and for Karnataka and Tamil Nadu for 1994-95. The Cost of cultivation of sugarcane for Maharashtra is estimated to have increased from Rs 30713 for 1994-95 to Rs 35804 per hectare for 1995-96 mainly on account of higher expenditure on human labour and seeds. The expenditure on human labour has gone up by 50 per cent from Rs 8151 to Rs 12238. Similarly expenditure on seeds has gone up by about 98 per cent from 1600 to 3168 per hectare between 1994-95 and 1995-96. The cost of production is estimated to have increased by a lower margin from Rs 35.69 to Rs 37.02 per quintal owing to an improvement in yield on sample holdings from 813 to 861 quintals during this period. For Uttar Pradesh, the cost of cultivation

has marginally decreased from Rs 21431 in 1994-95 to Rs 21311 per hectare in 1995-96. Cost of production in 1995-96 at Rs 41.97 was almost the same as compared to previous year.

32. The cost of cultivation of sugarcane for Andhra Pradesh and Haryana for the year 1995-96 is estimated at Rs 38990 and Rs 25204 per hectare respectively and cost of production at Rs 47.42 and Rs 45.13 per quintal respectively. For Karnataka and Tamil Nadu, the cost of cultivation for the year 1994-95 is estimated at Rs 29834 and Rs 33132 per hectare respectively and cost of production at Rs 35.20 and Rs 27.95 per quintal respectively. The C₃ cost of production for 1995-96 works out to Rs 40.96 for Maharashtra, Rs 46.17 for Uttar Pradesh, Rs 53.01 for Andhra Pradesh and Rs 49.73 per quintal for Haryana.

(Table 20 & 21)

33. On the basis of the observed changes in the prices of variable inputs and revisions made so far in the administered prices of various farm inputs, the C₁ cost of production of sugarcane for 1999-2000 is projected at Rs 50 for Uttar Pradesh, Maharashtra and Haryana, Rs 61 for Andhra Pradesh, Rs 41 for Tamil Nadu and Rs 43 per quintal for Karnataka. The weighted average C₁ cost of production works out to Rs 49 per quintal. The C₃ cost of production for 1999-2000 crop of sugarcane is projected at Rs 55 both for Uttar Pradesh and Haryana Rs 56 for Maharashtra its 67 for Andhra Pradesh, Rs 45 for Tamil Nadu and Rs 47 per quintal for Karnataka. The weighted average C₃ cost works out to Rs 54 per quintal. Adjusting to an 8.5 per cent recovery level on a proportionate basis using state specific average recovery rates gives a weighted average C₂ cost of production of Rs 43 per quintal and weighted average C₃ cost of production of Rs 47 per quintal.

(Table 22 & 23)

34. It may be noticed that the projections made this year for 1999-2000 are slightly less than those made last year for 1998-99. This can be attributed mainly to the following reasons, (a) due to change in projection methodology, (b) the last year

projections assumed a much higher inflation rate for 1997-98 than was actually observed and (c) the cost estimates made available for Uttar Pradesh this year for 1995-96 show no increase over 1994-95 whereas in last years projections an increase was assumed. For this reason, the costs for 1998-99 have been projected again and compared to the projections for 1999-2000. This shows an increase of around 6 per cent in 1999-2000 over 1998-99.

35 The Commission has in the-past had occasion to comment on the non-availability of cost estimates. This year, the DES has not been able to provide even a single estimate for 1996-97, let alone for 1997-98. The Commission has, however, received more up to date estimates of cost of production for sugarcane from the state governments of Gujarat, Haryana, Karnataka, Maharashtra, Punjab, Tamil Nadu and Uttar Pradesh. Some of these states have also projected the costs for 1999-2000. However, as pointed out in earlier reports, these costs of cultivation received from states differ vastly in concepts and methodologies and cannot be used directly. Nonetheless, since these are useful to cross-check the data from the Comprehensive Scheme provided by DES, these have been presented in the Table, where a comparison with the Comprehensive Scheme results is made after correcting/modifying these estimates to correspond more or less reasonably with the concepts used in the Comprehensive Scheme. It may be seen from this Table that for all states except Haryana and Maharashtra, the data obtained from states corresponds reasonably well with that provided by the DES. In the case of Haryana, the labour use and seed rate appear too high in the state estimate, and, in the case of Maharashtra, the state estimate appears to assume too high a seed rate and too low an yield

(Table 24 & 25)

36. The Commission has, as usual, also examined the gross returns from sugarcane with those from competing crop rotations in different states. It is observed that the return to sugarcane compares well with the return from competing crop rotations in most states when it is priced at the SMP adjusted to the average recovery. However, in some cases (e.g. Haryana) the returns to sugarcane evaluated at the SMP with basic recovery of 8.5 per cent is somewhat less than the return from the paddy-wheat rotation. This shows that it is necessary to adjust the SMP for recovery before making comparisons, and that if this is done, the inter-crop parities are well balanced.

37. Keeping in view the emerging demand and supply situation, cost of production, trend in prices of inputs, cost of transportation and other relevant factors, the Commission recommends that the statutory minimum price for sugarcane payable by sugar factories for the 1999-2000 season be fixed at Rs 56.10 linked to a basic recovery of 8.5 per cent subject to a premium of Rs 0.66 for every 0.1 percentage point increase in the recovery above that level. At the average all-India recovery rate of 9.92 per cent for the last 5 years, the SMP recommended is Rs 65.47 per quintal.

SD/-
(ABHIJIT SEN)

SD/-
(D.K. MAROTHIA)

SD/-
(M.S. BHATIA)

Sd/-
(Y.V. KRISHNA RAO)

Sd/-
(G.S.BRAR)

SD/-
(R.G. SAXENA)

September 5, 1998

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Table – 1
Statutory Minimum Prices of Sugarcane as recommended by CACP and fixed by Govt.

Season (October to September)	Recommended by C.A.C.P.			Fixed by the Government		
	Price (Rs per quintal)	Linked to a basic recovery (Percent)	Premium (paise/quintal)	Price (Rs per quintal)	Linked to a basic recovery (Percent)	Premium (paise/quintal)
1	2	3	4	5	6	7
1967-68	5.68	9.4	4.00	7.37	9.4	5.36
1968-69	7.23	9.0	5.36	7.37	9.4	5.36
1969-70	7.26	9.2	5.36	7.37	9.4	5.36
1970-71	7.35	9.2	5.00	7.37	9.4	5.36
1971-72	7.37	9.4	6.60*	7.37	9.4	5.36
1972-73	8.00	9.0	7.50	8.00	8.5	9.40
1973-74	8.00	8.5	9.40	8.00	8.5	9.40
1974-75	8.50	8.5	10.00	8.50	8.5	10.00
1975-76	9.50	8.5	11.18	8.50	8.5	10.00
1976-77	9.50	8.5	11.18	8.50	8.5	10.00
1977-78	9.50	8.5	11.18	8.50	8.5	10.00
1978-75	10.00\$	8.5	11.76	10.00	8.5	11.76
1979-80	10.00	8.5	11.76	12.50	8.5	14.71
1980-81	13.00	8.5	15.29	13.00	8.5	15.29
1981-82	15.503	8.5	18.24	13.00	8.5	15.29
1982-83	13.50	8.5	18.24	13.00	8.5	15.29
	+2.00					
1983-84	14.00**	8.5	18.82	13.50	8.5	15.88
	+2.00					
1984-85	14.00**	8.5	18.82	14.00	8.5	16.47
	+2.00					
1985-86	16.50	8.5	19.41	16.50	8.5	19.41
1986-87	-	-	-	17.00	8.5	20.00
1987-88	19.50	9.5	20.53\$\$	18.00	8.5	21.18
				18.50	8.5	21.76
1988-89	19.00		22.35	19.00	8.5	22.35
				19.50		
1989-90	20.00**	8.5	23.53	20.00	8.5	23.53
	22.00#	8.5	25.88	22.00	8.5	25.88
1990-91	23.00***	8.5	27.06	23.00	8.5	27.06
	24.00#	8.5	28.23	23.00	8.5	27.06
1991-92	25.00	8.5	29.41	24.00	8.5	28.24
	26.00#	8.5	30.59	26.00#	8.5	30.59
1992-93	27.00	8.5	31.76	27.00	8.5	31.76
	29.00#	6.5	34.12	31.00	8.5	36.47
1993-94	30.50	8.5	35.88	32.50	8.5	38.24
	34.50#	8.5	40.59	34.50	8.5	40.59
1994-95A	37.00	8.5	43.53	37.00	8.5	43.52
	39.10#	8.5	46.00	39.10	8.5	46.00
1995-96	42.50	8.5	50.008	42.50	8.5	50.00
				42.50#	8.5	54.00
1996-97	45.90	8.5	54.00B	45.90	8.5	57.00
1997-98	48.45	6.5	60.00	48.45	8.5	60.00

- * : A like discount for recoveries below that level upto 8.4 percent.
 \$\$: A like discount for recoveries below that level upto 8.5 percent
 \$: A like discount for recoveries below that level upto 8.5 percent
 \$: One member recommended a price of Rs. 12.50 per cent quintal linked of 10 paise for every increase of 0.1 per cent in recovery.
 : One member recommended a price of Rs. 25.00 per quintal linked to a recovery of 10 percent.
 ** : One member recommended a price of Rs. 25.00 per quintal linked to a recovery of 9.5 percent
 : Transport charges from field to the factory gate/purchase centre within a radius of 16 kms.
 # : Revised
 *** : Two members recommended a price of Rs. 28 per quintal linked to a recovery of 8.52 per cent
 A : A premium of Rs. 0.60 per quintal for recovery above 10 percent
 B : A premium of Rs. 0.65 per quintal for recovery above 10 percent

Table – 2
Sugarcane : Area, Production and Yield

Area : '000 hectares
Production : '000 tonnes (Cane)
Yield : Kg per hectare

State	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97 (FINAL)
	2	3	4	5	6	7	8	9	10	11	12	13	14	16	17	18	19
SUB-TROPICAL REGION*																	
Area	1660	2028	2164	2034	1858	1793	2011	2169	2116	2115	2253	2348	2237	2069	2165	2375	2577
Production	76265	92581	97690	93588	84735	87238	91315	98660	96586	17366	125168	131095	121880	119610	128072	142025	151164
Yield	45937	45644	45141	46021	45613	48655	50388	50106	50366	55495	55549	57113	54484	57808	59148	59790	58659
Uttar Pradesh																	
Area	1163	1652	1783	1688	1543	1490	1678	1801	1761	1761	1856	1933	1858	1761	1839	1974	2101
Production	64205	76440	81387	78244	70888	73037	84736	93054	88523	97422	103562	111098	102929	104082	110239	119830	124841
Yield	47092	46280	45654	46353	45936	49018	50507	51668	50260	55313	55811	57474	55398	59110	59942	60692	59420
Bihar																	
Area	111	124	130	128	112	119	112	120	127	125	149	145	133	120	123	125	140
Production	3480	4180	4464	3885	3737	4001	3729	4546	5483	6694	7805	7077	6032	4398	5663	5485	6323
Yield	31412	33822		30444	33425				43206	53725	52490	48841	45353	36680	45968	43880	45164
Punjab																	
Area	71	106	104	84	79	78	97	106	97	103	101	109	112	77	83	132	173
Production	3920	6120	6340	5530	4920	5050	6110	5820	6000	6500	6000	6920	6369	4710	5160	8620	11040
Yield	55211	57736	60962	65833	62516	54744	52990	54906	51856	63107	59406	63486	56866	61169	62169	65303	63815
Haryana																	
Area	115	147	147	134	124	106	124	142	131	126	148	161	134	111	120	144	163
Production	4660	5840	5500	5930	5190	5150	6740	5240	6580	6750	7800	9000	6550	6420	7010	8090	8960
Yield	40522	39728	37415	44254	41855	48585	54355	36901	50229	53571	52703	55901	48881	57630	58417	56181	54969
TROPICAL REGION*																	
Area	802	938	952	863	875	852	864	914	1022	1144	1250	1298	1180	1198	1554	1594	1407
Production	69071	83258	80788	70117	74727	73690	74924	78898	86674	98957	106127	110487	99433	104192	140640	130209	116936
Yield	86091	88790	84835	81294	85393	86500	86707	86331	84775	86531	84929	85108	84265	86965	90496	81672	83110
Maharashtra																	
Area	256	297	326	294	293	265	280	292	314	383	444	453	404	344	518	580	516
Production	23591	28780	31360	26549	26367	23706	24091	24984	25500	34008	38416	36187	30854	27892	44260	46656	41805
Yield	92331	96868	96256	90303	90114	89354	86071	85590	81131	88771	86523	79882	76371	81056	85527	80442	81017
Gujarat																	
Area	75	84	95	103	103	91	69	82	94	106	118	120	127	128	155	162	166
Production	4435	5023	6695	7746	7582	6490	5566	6078	7907	9160	10600	10239	10872	10232	10785	10511	11404
Yield	59215	59582	70330	75500	73401	71471	80432	74392	84387	86413	89600	85186	85606	79688	69716	65045	68699
Andhra Pradesh																	
Area	132	180	170	142	138	133	138	143	15-	^W	182	202	171	176	209	214	199
Production	10054	14962		9743	9791	9675	8808	9490	10767	T1134	12667	15057	12163	13474	16046	15180	14945
Yield	75936	83258	74286	68854	71105	72632	63916	66226	59958	70468	69562	74540	71129	76732	76702	71101	75101
Karnataka																	
Area	157	175	187	173	172	172	181	203	240	265	272	285	262	301	345	313	255
Production	12421	14286	14916	12820	13392	13815	14854	17580	18733	21210	20964	24117	22480	26603	33093	24918	21852
Yield	79367	81495	79722	74233	77860	80554	82157	86815	78184	80068	76989	84621	85802	88499	95949	79559	85694
Tamil Nadu																	
Area	183	201	175	152	170	191	196	195	221	232	233	238	216	249	328	326	271
Production	18570	20208	15210	13258	17594	20005	21605	20766	3768	23445	23480	24887	23064	25992	36456	32944	26930
Yield	01475	100388	87163	87397	03801	04682	10004	06766	07594	01228	100817	104567	106778	104217	111214	101055	99373
All-India																	
Area	2667	3193	3358	3110	2953	2849	3079	3279	3329	3438	3686	3844	3572	3422	3867	4147	4168
Production	54248	166358	189506	74076	70319	70648	86090	96737	13037	25569	241046	253995	228033	229659	275540	281100	277254
Yield	57844	58359	56441	55978	57673	59889	50444	60006	50992	65612	65395	66076	63839	67120	71254	67784	66520

* : Major Sources : Directorate of Economics and Statistics, Ministry of Agriculture.

Table – 3
Prices of Sugarcane Paid by Sugar Factories

(Rs. per Qtl.)

Year	Uttar Pradesh	Bihar	Haryana	Punjab	Maharashtra	Gujarat	Andhra Pradesh	Karnataka	Tamil Nadu
1	2	3	4	5	6	7	8	9	10
1974-75	12.25- 14.40	12.25- 13.75	10.50- 15.26	13.85- 14.35	8.50- 18.00	10.00- 10.50	8.60- 12.50	8.70- 17.50	8.60- 11.50
1975-76	11.00- 16.00	12.25- 13.50	12.50- 13.00	11.00- 15.35	9.50- 15.00	8.00- 11.00	8.61- 12.00	10.00- 15.50	8.80- 11.00
1976-77	12.25- 13.25	12.25- 15.25	13.00- 16.60	13.25- 13.60	9.50- 12.50	9.00- 15.00	10.50- 11.90	10.00- 15.00	8.50- 11.90
1977-78	12.50- 13.50	12.50- 12.75	10.00- 13.50	13.50- 16.20	10.00- 16.00	12.28- 12.24	8.50- 17.00	9.00- 12.75	10.50- 12.75
1978-79	8.50- 12.71	12.50- 12.59	10.00- 12.50	12.50- 17.75	9.50- 15.46	10.50- 12.24	10.00- 17.90	10.47- 12.50	10.00- 12.50
1979-80	12.50- 22.00	12.50- 15.59	14.00- 19.00	14.12- 17.53	14.06- 25.50	12.94- 22.00	12.50- 15.74	14.12- 25.00	13.09- 17.21
1980-81	19.00- 26.00	19.00- 23.05	23.00- 26.00	23.00- 28.00	21.00- 33.81	16.00- 27.40	18.50- 22.20	18.44- 28.20	17.50- 22.50
1981-82	20.50- 21.50	20.50- 26.00	22.00- 26.95	23.00- 26.00	18.00- 25.62	15.00- 27.50	15.00- 20.61	19.00- 22.16	17.50- 20.61
1982-83	20.50- 21.50	19.00- 20.50	20.00- 23.00	20.00- 23.00	15.00- 25.00	14.50- 20.50	13.46- 22.64	17.00- 22.16	14.95- 20.61
1983-84	20.50- 21.50	20.50- 23.00	20.00- 23.00	20.00- 26.00	15.00- 21.00	15.00- 22.69	14.29- 22.00	18.00- 20.52	13.50- 20.52
1984-85	21.00- 22.00	21.00- 24.16	21.00- 25.00	22.00- 25.00	18.00- 25.42	16.50- 25.09	15.49- 25.00	18.00- 23.94	18.50- 23.94
1985-86	23.00- 24.00	23.00- 27.00	24.00- 28.42	22.00- 32.19	13.00- 31.88	23.50- 25.62	16.50- 27.86	21.20- 25.24	19.10- 25.24
1986-87	21.00- 28.00	24.50- 28.00	24.50- 29.00	24.00- 30.15	20.00- 28.10	22.00- 27.53	17.60- 29.00	19.95- 25.80	21.41- 25.80
1987-88	26.50- 27.00	26.50- 27.00	28.00- 32.00	28.00- 31.00	23.00- 30.20	33.50- 38.60	23.96- 25.17	23.50- 28.50	22.64- 27.18
1988-89	30.00- 34.00	30.00- 34.00	31.00- 35.00	31.00- 35.00	24.20- 47.50	25.00- 49.50	22.50- 28.00	24.00- 30.00	24.35- 28.06
1989-90	38.00- 41.00	35.00- 42.00	36.00- 40.00	36.00- 40.00	25.00- 62.00	34.85- 56.00	23.55- 36.80	31.50- 50.50	28.82- 38.82
1990-91	41.00- 44.00	41.50- 44.50	41.00- 46.00	42.00- 46.00	26.00- 53.00	22.00- 53.00	27.50- 36.53	36.00- 39.00	30.10- 36.25
1991-92	45.00- 48.00	41.50- 44.50	45.00- 54.00	45.00- 49.00	29.00- 52.50	27.00- 60.00	31.51- 40.59	30.89- 45.00	29.06- 35.00
1992-93	46.00- 49.00	45.00- 49.00	46.00- 50.00	46.50- 50.50	31.00- 49.65	38.00- 71.90	36.47- 58.32	35.01- 61.00	35.26- 45.71
1993-94	58.00- 61.00	53.50- 56.50	56.00- 60.00	55.00- 62.00	36.00- 61.00	31.00- 50.00	39.37- 56.33	45.00- 65.00	36.35- 55.11
1994-95	66.00- 70.00	66.00- 70.00	66.00- 70.00	68.00- 72.00	46.00- 66.00	50.00- 73.00	46.00- 62.15	60.00- 70.00	42.78- 63.37
1995-96	70.00- 74.00	71.00- 75.00	70.00- 75.00	73.00- 77.00	45.00- 46.00	43.50- 60.00	48.66- 72.00	58.00- 65.88	44.50- 65.88
1996-97	67.00- 76.00	55.00- 75.00	76.00- 80.00	73.00- 77.00	46.00- 78.85	61.50- 67.50	52.16- 73.70	59.70- 80.00	45.90- 75.37
1997-98	48.45- 80.00	54.13- 73.50	78.00- 82.00	78.00- 82.00	52.00- 83.00	45.00- 69.45	55.65- 78.22	57.45- 81.60	48.45- 84.64

Source : Directorate of Sugar,
Ministry of Food.

Table - 4
Sugarcane : State Advised Prices

(Rs./Qtl.)									
Year	Uttar Pradesh	Bihar	Punjab	Haryana	Maharashtra	Gujarat	Andhra Pradesh	Tamil Nadu	Karnataka
1	2	3	4	5	6	7	8	9	10
1987-88		26.50					20.50- 26.29		
1988-89	30.00- 34.00	30.00- 34.33	35.00	31.00		25.00- 49.50	24.00- 29.36	22.50- 28.06	28.50
1989-90	38.00- 41.00	39.00- 42.00	40.00	36.00		34.85- 56.00	27.50- 34.99	28.82- 34.12	32.50
1990-91	41.00- 44.00	41.50- 44.50	46.00	41.00		22.00- 33.00	28.50- 38.22	30.98- 36.25	36.00
1991-92	45.00- 48.00	43.25- 46.25	49.00	45.00		27.00- 60.00	29.50- 38.52	32.62- 37.35	36.00
1992-93	46.00- 49.00	46.00- 49.00	50.00	46.00		38.80- 71.90	36.50- 47.21	39.61- 46.58	42.50
1993-94	58.00- 61.00	53.50- 61.00	62.00	56.00	41.00	34.50- 50.00	40.00- 53.65	45.00- 55.59	46.50
1994-95	66.00- 70.00	66.00- 70.00	72.00	66.00	46.00	50.00- 73.00	50.00- 66.47	53.12- 63.37	56.50- 60.40
1995-96	70.00- 74.00	71.00- 75.00	77.00	70.00	46.00	50.50- 94.60	53.40- 71.62	59.29- 71.88	58.00- 64.00
1996-97	72.00- 76.00	70.00- 75.00	80.00	76.00	46.00	60.70- 102.10	56.80 75.51	59.90 77.52	62.50- 70.00
1997-98	75.00- 80.00	73.50	82.00	78.00	54.00		61.00- 81.09	66.00- 81.53	

* : Prices actually paid by Sugar Factories

Source : State Replies for Sugarcane Report for 1999-2000 season.

Table – 5
Production of Sugar

(Lakh tonnes)

State	80-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90	91-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98 7/98	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Subtropical																			
Region	15.27	27.46	27.37	22.7	19.02	22.08	33.79	34.6	31.46	40.54	40.4	49.88	39.338	35.55	46.65	58.25	55.49	49.00	
Uttar Pradesh	12.24	20.81	20.35	17.27	14.79	16.51	25.57	26.66	23.02	30.88	29.75	36.53	28.57	27.15	36.09	43.60	40.84	39.04	
Bihar	1.94	3.44	3.70	2.25	1.44	2.50	2.99	3.12	3.19	3.35	4.15	4.62	3.27	2.21	3.94	3.79	3.62	3.08	
Punjab	0.51	1.49	1.50	1.46	1.42	1.46	2.34	2.10	2.45	2.95	2.75	3.84	4.09	3.11	3.19	6.32	6.13	3.07	
Haryana	1.03	1.72	1.82	1.72	1.37	1.61	2.89	2.72	2.80	3.36	3.75	4.89	3.45	3.08	3.43	4.54	4.90	3.81	
Tropical Region	34.81	55.08	52.92	34.87	41.1	46.7	49.19	54.46	54.21	68.41	77.76	81.11	84.75	61.35	97.42	102.57	71.05	75.62	
Maharashtra	20.85	30.26	30.25	19.93	23.11	23.88	23.88	27.94	26.29	39.23	41.18	42.19	33.60	27.46	50.25	53.76	3.66	38.55	
Gujarat	3.32	5.31	4.73	3.92	4.03	5.57	5.76	5.78	5.78	6.67	8.32	7.53	7.51	8.26	7.59	11.26	9.67	8.84	
Andhra Pradesh	2.63	5.46	5.13	2.95	3.55	4.06	5.30	5.44	5.07	5.66	7.01	8.43	5.40	6.47	8.74	8.66	7.72	7.76	
Karnataka	3.71	6.49	6.30	3.83	4.41	5.08	6.12	7.45	7.03	7.96	9.42	10.32	8.48	8.31	12.25	12.67	8.70	8.92	
Tamil Nadu	4.30	7.56	6.51	4.24	6.00	8.11	8.13	7.85	10.04	8.89	11.83	12.64	9.76	10.85	18.59	16.22	10.50	11.55	
All India	51.48	84.38	82.32	59.16	61.44	70.17	85.02	91.10	87.52	109.89	120.47	134.11	106.09	98.24	146.43	164.29	129.05	126.72	

Source : Directorate of Sugar,
Ministry of Food

Table – 6
Utilization of Sugarcane

(‘000 Tonnes)

Year	Production of Sugarcane	Sugar Prod.	Sugarcane used for				
			% to total Cane	Seed, Feed Chewing	% to total Cane	Gur and Khandsari	% to total Cane
1	2	3	4	5	6	7	8
1969-70	135024	45701	33.85	16291	12.07	73032	54.09
1970-71	126368	38199	30.23	15179	12.01	72990	57.76
1971-72	113570	31011	27.31	13510	11.90	69041	60.79
1972-73	124867	40405	32.36	15002	12.01	69460	55.63
1973-74	140804	42264	30.02	16815	11.94	81725	58.04
1974-75	144289	48421	33.56	17202	11.92	78666	54.52
1975-76	140604	41850	29.76	16722	11.89	82032	58.34
1976-77	153007	48925	31.98	18208	11.90	85874	56.12
1977-78	176965	67292	38.03	21065	11.90	88608	50.07
1978-79	151655	59694	39.36	17957	11.84	74004	48.80
1979-80	128833	39031	30.30	15123	11.74	74679	57.97
1980-81	154248	51572	33.43	18201	11.80	84475	54.77
1981-82	186358	87360	46.88	21787	11.69	77211	41.43
1982-83	189506	82669	43.62	22304	11.77	84533	44.61
1983-84	174076	58990	33.89	20803	11.95	94285	54.16
1984-85	170319	60057	35.26	20115	11.81	90155	52.93
1985-86	170648	68560	40.18	20205	11.84	81883	47.98
1986-87	186090	85184	45.78	22242	11.95	78664	42.27
1987-88	196736	93910	47.73	23562	11.98	79264	40.29
1988-89	203037	85669	42.19	24114	11.88	93254	45.93
1989-90	225569	111116	49.26	26447	11.72	87735	38.89
1990-91	241046	122287	50.73	28552	11.85	90207	37.42
1991-92	253995	133999	52.76	26629	10.48	93367	36.76
1992-93	228033	102971	45.16	27098	11.88	97964	42.96
1993-94	229659	98205	42.76	27260	11.87	104347	45.44
1994-95	275540	147598	53.57	32706	11.87	95235	34.56
1995-96	281100	174245	61.99	33001	11.74	73854	26.27
1996-97	277254	130354	47.02	32910	11.87	113999	41.12

Source : Directorate of Sugar,
Ministry of food.

Table – 7

Annual Licensed Production
Capacity of Sugar Industry

(Lakh tonnes)

State	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98 (31.7.98)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Maharashtra	28.76	29.97	31.57	45.31	55.56	56.43	58.81	59.20	67.93	68.65	73.01	80.84	82.24
Uttar Pradesh	20.81	23.00	25.55	34.36	42.02	43.55	44.80	45.61	54.38	56.64	67.46	81.89	82.02
Karnataka	8.26	8.76	9.33	10.77	11.47	11.46	11.73	11.73	13.60	12.98	29.00	29.28	29.48
Tamil Nadu	7.27	9.82	12.37	13.86	14.83	14.83	15.05	14.98	15.06	15.24	16.99	20.56	21.74
Andhra Pradesh	5.99	5.99	6.31	7.42	8.30	8.54	8.81	8.67	11.85	11.83	13.06	13.88	14.25
Gujarat	5.35	5.58	5.58	9.01	11.51	13.21	13.39	13.38	14.45	14.72	15.40	15.36	15.10
Bihar	3.71	3.83	4.04	3.82	4.00	4.00	4.12	4.12	4.55	4.90	5.60	7.45	7.69
Haryana	1.84	1.84	2.62	3.74	3.74	4.09	4.58	4.58	5.99	6.17	6.23	6.72	7.07
Punjab	1.58	2.80	3.04	5.13	5.69	8.47	8.48	8.48	9.18	9.81	9.81	11.03	12.20
Madhya Pradesh	0.69	0.64	0.64	1.21	1.45	1.45	1.68	1.68	2.13	2.13	2.35	3.13	4.47
Others	2.15	2.29	2.91	3.01	3.66	4.12	4.12	4.28	4.60	4.61	0.53	7.69	6.71
Total	86.41	94.52	103.96	137.64	162.23	170.15	175.57	176.72	203.71	207.68	239.44	277.83	282.97
Capacity under Liberalized Licensing Policy	2.08	3.79	4.47										
Grand Total	88.49	98.31	108.43	137.64	162.23	170.15	175.57	176.72	203.71	205.56	239.44	277.83	282.97

Note : Capacity Estimation as per New Norms since 1988-89

Source : Directorate of Sugar, Min. of Food.

Table – 8
Annual Installed Production capacity of Sugar Industry

State	(Lakh tonnes)																				
	1972-73	1973-74	1974-75	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98 (31-7-98)	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Maharashtra	11.42	11.85	12.71	20.76	20.76	21.16	22.96	24.33	25.61	26.93	29.89	30.02	31.02	32.09	34.52	36.87	38.34	39.87	43.01	45.43	
Uttar Pradesh	12.69	12.92	12.92	15.85	16.26	16.87	17.68	17.96	13.66	19.29	23.37	23.89	24.50	25.35	27.10	29.33	32.06	34.79	36.39	38.82	
Karnataka	2.89	3.30	3.65	5.51	5.83	6.67	7.13	7.29	7.92	7.91	7.70	7.70	7.70	8.03	8.37	8.37	8.37	8.37	8.37	8.84	
Tamil Nadu	3.32	3.52	3.80	5.74	5.74	6.11	6.19	6.51	6.80	6.95	8.32	9.49	10.05	10.28	11.57	11.93	11.84	12.63	12.73	13.17	
Andhra Pradesh	2.83	3.03	3.27	4.96	5.09	5.48	5.56	5.62	5.70	5.83	5.52	5.52	5.52	6.28	6.38	6.38	6.35	6.79	7.49	8.35	
Gujarat	2.03	2.03	2.22	4.21	4.41	4.64	4.96	5.16	5.16	5.35	5.81	6.06	6.32	6.51	7.21	7.47	8.11	8.54	8.96	9.60	
Bihar	3.39	3.39	3.39	3.48	3.48	3.46	3.48	3.48	3.48	3.47	3.27	3.35	3.42	3.61	3.80	3.92	4.12	4.12	4.01	4.27	
Haryana	0.67	0.67	0.67	1.16	1.16	1.16	1.55	1.55	1.55	1.55	2.11	2.51	3.21	3.56	3.56	3.56	3.56	3.91	4.27	4.27	
Punjab	0.55	0.55	0.55	0.83	0.88	0.88	0.88	1.10	1.21	1.43	2.48	2.48	3.95	4.29	4.50	5.20	6.25	6.25	6.25	6.25	
Madhya Pradesh	0.43	0.43	0.43	0.52	0.52	0.64	0.64	0.64	0.64	0.64	0.77	0.77	0.77	0.77	0.77	0.76	0.99	0.99	0.99	0.99	
Others	1.20	1.37	1.37	1.52	1.52	1.72	1.70	1.71	1.84	1.86	1.63	1.62	1.60	1.62	1.63	2.21	2.21	2.20	2.12	2.12	
Total	41.42	43.06	44.98	64.56	65.65	68.81	72.98	75.35	78.57	81.21	90.87	93.41	98.06	102.39	109.41	116.00	122.20	128.46	134.59	142.06	

Note : Capacity Estimation as per New Norms since 1988-89
Source : Directorate of Sugar,
Ministry of Food

Table – 9
Average Recovery of Sugar From Sugarcane

(per cent)

State	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96	96-97
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Uttar Pradesh	9.14	9.67	9.33	9.58	9.59	9.43	8.90	9.47	9.04	9.08	9.19	9.66	9.37	9.42	8.71	9.36
Bihar	9.00	8.31	8.13	9.44	9.48	9.22	8.97	9.16	8.99	9.07	8.72	9.37	9.20	9.15	8.82	9.23
Punjab	9.71	10.62	10.47	10.63	9.79	9.69	10.18	9.61	9.13	8.95	9.23	9.39	9.27	9.13	8.70	8.86
Haryana	8.59	9.47	9.07	9.38	9.48	9.91	9.94	9.88	9.77	9.44	9.76	10.00	9.52	9.19	8.35	8.83
Maharashtra	10.68	10.95	11.14	11.12	11.22	10.99	10.83	11.05	10.72	10.76	11.20	11.32	11.14	10.93	10.48	11.11
Gujarat	9.72	9.57	10.52	10.84	10.97	10.91	10.22	11.47	10.96	10.91	11.14	11.34	11.09	11.65	10.48	10.71
Andhra Pradesh	8.64	9.08	9.68	9.41	9.360	9.36	9.17	10.03	9.89	9.61	9.98	10.18	9.87	9.43	9.54	10.21
Karnataka	10.07	10.20	10.20	10.41	10.44	10.16	10.13	10.52	10.38	10.25	10.50	10.65	10.48	10.30	9.81	10.54
Tamil Nadu	8.79	9.04	9.31	9.54	9.56	9.56	9.23	10.19	9.37	9.11	9.33	9.41	8.96	8.68	8.34	8.95
All India	9.66	9.96	10.03	10.24	10.24	9.98	9.71	10.23	9.90	9.86	10.02	10.31	10.01	9.93	9.43	9.90

Source : Directorate of Sugar,
Ministry of Food

Table – 10
Index Numbers of Wholesale Prices

(Base : 1981-82 = 100)

Months	85-86	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
1	2	3	4	5	6	7	8	9	10	11	12	13	14
SUGAR													
October	113.0	116.9	117.9	129.4	146.8	141.7	157.5	177.0	203.4	228.8	226.8	230.8	276.4
November	113.7	118.3	118.0	128.0	146.0	142.3	156.9	176.3	206.3	220.1	227.2	237.7	277.2
December	118.0	117.2	118.0	125.9	141.9	141.4	156.3	173.9	209.9	222.0	226.6	245.4	277.3
January	117.6	118.0	122.5	126.5	141.0	143.1	160.0	175.8	214.9	222.6	227.5	245.3	276.1
February	117.6	116.5	121.8	126.9	140.9	144.2	170.7	183.4	226.4	221.1	227.2	248.6	275.8
March	119.1	116.0	121.7	128.5	141.8	142.6	170.6	193.4	227.8	219.8	228.0	261.8	275.3
April	118.8	116.2	122.2	131.0	143.6	143.1	170-3	194.9	231.9	222.2	229.1	264.4	275.9
May	118.1	117.7	123.7	135.8	139.7	144.9	174.8	202.2	245.4	223.5	231.3	270.1	277.8
June	117.1	117.7	126.8	135.5	141.7	147.5	174.2	199.9	247.1	222.7	234.7	272.4	277.7
July	116.7	117.5	130.5	140.7	140.9	152.1	177.1	199.0	238.3	224.2	232.2	274.1	278.1
August	117.0	118.2	127.8	147.9	140.6	161.5	176.5	200.9	233.3	225.1	234.8	274.4	
September	116.3	117.7	128.5	153.4	140.9	159.6	177.0	200.8	235.2	225.6	233.7	276.4	
Average	116.9	117.3	123.3	134.1	142.2	147.0	168.5	189.8	226.7	223.1	229.9	258.5	276.8
GUR													
October	135.3	141.5	130.0	154.2	189.1	184.5	182.8	206.9	315.5	312.5	288.3	316.3	377.8
November	122.9	126.5	128.3	124.5	165.8	173.9	167.6	190.6	209.1	303.9	278.0	207.5	354.4
December	109.7	113.8	120.2	113.6	147.3	159.2	155.3	195.9	260.6	287.5	264.8	254.4	350.9
January	112.4	112.0	119.5	115.8	147.6	154.3	149.1	192.5	258.4	276.5	257.5	250.2	355.9
February	110.7	106.4	109.1	115.9	142.3	149.6	146.0	194.9	255.5	266.2	235.4	255.2	343.3
March	110.0	103.1	107.1	129.6	148.8	149.3	144.8	207.3	260.6	257.1	222.5	265.2	340.5
April	111.2	101.4	115.2	145.0	155.3	154.8	147.8	228.4	276.4	266.5	221.4	276.3	338.8
May	118.4	109.1	120.0	160.0	154.2	162.2	160.8	258.3	300.4	272.9	232.1	313.0	351.0
June	130.7	114.0	129.1	165.1	168.0	177.1	168.2	292.8	311-5	282.7	250.9	340.1	368.5
July	134.0	119.8	140.8	175.6	181.4	180.8	187.7	296.2	324.3	285.3	273.2	350.1	381.3
August	132.2	128.0	144.3	192.8	182.0	186.9	196.3	313.9	323.9	289.5	285.1	374.0	
September	139.0	131.9	153.7	200.7	183.6	191.6	194.6	327.1	325.4	288.5	308.6	377.3	
Average	122.2	117.3	126.4	149.4	163.8	168.7	166.8	242.1	291.8	232.4	259.8	305.0	356.2
KHANDSARI													
October	100.0	95.9	96.9	115.1	167.5	146.8	148.8	158.3	184.9	244.2	221.0	255.4	253.4
November	98.3	94.7	93.2	112.7	160.1	138.3	139.2	155.9	188.7	212.5	222.8	255.4	252.6
December	94.3	95.1	96.4	103.3	147.8	130.5	131.3	154.2	189.0	204.2	225.2	255.4	251.4
January	89.2	97.1	99.9	96.5	140.4	129.2	125.8	151.2	197.7	206.3	227.8	241.3	264.5
February	93.2	96.8	98.3	100.5	134.8	138.5	129.0	157.4	199.4	208.8	223.8	231.9	279.9
March	101.6	90.9	98.3	104.5	138.8	137.4	133.7	163.1	212.8	206.4	224.3	239.7	278.1
April	96.8	92.8	101.2	110.7	151.1	142.3	134.4	173.2	226.4	216.9	224.3	243.6	275.6
May	94.6	101.0	105.4	128.8	153.2	150.3	140.5	188.3	249.1	223.7	231.3	253.4	282.4
June	101.0	99.7	110.8	135.6	145.3	160.7	147.1	192.8	257.9	221.1	241.2	254.8	277.5
July	99.1	101.0	119.1	143.5	141.5	163.6	154.7	193.9	243.0	222.7	239.8	251.9	282.4
August	98.6	103.6	117.7	152.6	142.8	157.5	156.9	195.8	235.0	232.9	242.3	251.9	
September	98.0	100.9	116.7	166-2	139.4	159.7	157.3	197.9	243.9	215.5	253.7	252.3	
Average	97.1	97.5	104.9	122.5	146.9	146.2	141.6	173.5	219.4	217.9	231.5	248.9	269.8

Source : Office of the Economic Adviser,
Ministry of Industry

Table – 11
 Sugar : International Price of London daily Raw Base 96
 in bulk UK. Shipment No 7 Contract

Year / month	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Avg.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1993-94													
\$/MT				256.50	280.70	294.00	282.00	256.80	257.30	303.00	330.50	314.50	283.70
Rs./Otl.				808.49	876.35	917.87	880.40	801.73	803.92	945.97	943.14	981.87	836.64
1994-95													
\$/MT	321.30	357.70	366.40	353.80	365.30	363.90	328.40						350.97
Rs./Otl.	1023.01	1127.83	1155.26	1119.42	151.79	1147.38	1028.55						1107.61
1995-96													
\$/MT				305.80					300.90	315.90	305.50	279.50	301.52
Rs./Otl.				1074.89					1053.75	1136.61	1093.36	1002.85	1073.09
1996-97													
\$/MT	270.80	262.90	265.10		276.10	268.40	281.60	271.30	273.00	280.30	23.10	263.00	272.42
Rs./Otl.	970.01	944.34	953.30		010.25	965.43	1012.92	976.14	982.53	1003.24	1037.87	962.32	982.58
1997-98													
\$/MT	295.70	283.90	297.60	272.50	255.60	246.30	231.30	228.30	204.20				257.27
Rs./Otl.	1076.05	1048.16	1177.31	1050.49	993.26	977.81	922.87	928.50	867.24				1004.63

Source : Directorate of Economics & Statistics
 Ministry of Agriculture.

Table – 12
Sugar : Month-end Wholesale Prices

(Rs per quintal)

State/Centre /Variety	Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Avg.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Andhra Pradesh														
Kakinada	1990-91	800	800	800	835	785	785	800	855	860	870	870	835	825
(S-30)	1991-92	755	805	790	825	835	815	885	900	840	900	900	900	846
	1992-93	900	860	900	910	1030	1000	1090	1145	1000	1100	1070	1050	1005
	1993-94	1110	1170	1250	1270	1280	1315	1370	1480	1400	1200	1300	1285	1286
	1994-95	1175	1100	1230	1210	1200	1170	1230	1175	1190	1200	1230	1200	1193
	1995-96	1295	1230	1225	1260	1270	1295	1325	1380			1400	1290	1297
	1996-97	1295	1300	1290				1365	1460	1450	1445			1372
	1997-98													
Bihar														
Patna	1990-91	850	850	850	850	850	850	850	900	900	900	900	900	871
(C-30)	1991-92	900	850	870	870	855	880	810	900	930	950	960	950	894
	1992-93	960	920	900	920	1000	1000	990	1130	1150	1100	1100	1160	1028
	1993-94	1160	1200	1210	1280	1290	1300	1340	1500	1575	1500	1460	1450	1355
	1994-95	1340	1260	1230	1240	1270		1290		1300	1350	1280	1300	1286
	1995-96	1300	1270	1280	1300	1310	1320	1350	1420	1350	1360	1460	1420	1345
	1996-97	1400	1400	1310	1260	1350	1350	1375	1500	1460	1450	1500	1530	1407
	1997-98	1500	1500	1530	1500	1520	1460	1520	1560	1600	1550			1524
Gujarat														
Rajkot	1990-91	815	840	800	860	815	810	830	870	890	880	875	875	847
(C-30)	1991-92	845	855	845	860	865	850	885	945	925	960	955	970	897
	1992-93	960	950	945	975	1055	1050	1140	1185	1040	1160	1140	1190	1066
	1993-94	1150	1160	1315	1315	1200	1320	1405	1505	1530	1325	1400	1430	1338
	1994-95	1350	1225	1260	1250	1260	1260	1260	1260	1260	1260	1270	1270	1265
	1995-96	1330	1350	1320	1315	1325	1350	1350	1370	1390	1375	1340	1250	1339
	1996-97	1390	1325	1350	1350	1350	1350	1350	1350	1350	1470	1460	1470	1379
	1997-98	1500	1530	1535	1500	1490	1480	1520	1500	1510	1510			1508
Tamil Nadu														
Chennai	1990-91	787	782	782	838	812	882	837	848	743	858	838	793	817
(S-30)	1991-92	763	768	783	853	843	808	858	923	868	868	863	878	840
	1992-93	913	900	933	908	983	1023	1108	1143	1003	1033	1043	1043	1003
	1993-94	1113	1153	1233	1283	1298	1308	1443	1463	1363	1208	1293	1228	1282
	1994-95	1113	1063	1203	1213	1093	1113	1168	1193	1113	1113	1178	1143	1142
	1995-96	1163	1158	1178	1238	1258	1268	1323	1393	1243	1313	1358	1243	1261
	1996-97	1243	1233	1255	1240	1293	1233	1333	1403	1453	1473	1493	1423	1340
	1997-98	1493	1463	1460	1463	1468	1473	1513	1480	1453	1423			1469
Punjab														
Jullandhar	1990-91	875	880	870	900	870	880	890	925	940	930	940	940	903
(D-30)	1991-92	940	900	915	895	895	900	900	912	865	970	970	950	918
	1992-93	960	990	925	920	1050	1030	1100	1215	1120	1095			1041
	1993-94				1170	1270			1585	1590	1280	1470	1530	1414
	1994-95	1435	1200	1250		1265	1265	1350	1365	1360	1345	1325	1315	1315
	1995-96	1320	1420	1420	1405	1310	1300	1305	1305	1365	1360	1430	1415	1363
	1996-97	1470	1420	1295	1260	1285	1315	1435	1435	1465	1465	1455	1475	1398
	1997-98	1510	1515	1550	1535	1520	1490	1550	1565	1535	1545			1532

(Continued..)

Table – 12 (Concluded)
Sugar : Month-end Wholesale Prices

(Rs per quintal)

State/Centre /Variety	Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Avg..
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Maharashtra														
Mumbai (M-30)	1990-91	832	829	794	841	802	820	850	880	906	886	880	875	850
	1991-92	840	853	858	860	880	840	870	940	940	942	951	940	893
	1992-93	950	929	955	970	1090	1039	1146	1172	1125	1190	1075	1125	1064
	1993-94	1165	1195	1302	1340	1324	1357	1459	1535	1455	1325	1420	1425	1359
	1994-95	1350	1240	1244	1243	1245	1240	1289	1230	1265	1277	1286	1318	1269
	1995-96	1308	1315	1317	1297	1330	1320	1341	1432	1270	1385	1415	1322	1338
	1996-97	1352	1286	1332	1308	1309	1332	1425	1475	1497	1530	1535	1520	1408
	1997-98	1540	1575	1510	1482	1482	1487	1467	1510					
Karnataka														
Bangalore (S-30)	1990-91	800	778	790	830	815	810	830	878	880	875	855	825	831
	1991-92	800	815	805	870	855	825	880	915	895	905	920	940	869
	1992-93	945	925	915	945	1020	1035	1135	1165	1040	1100	1040	1200	1039
	1993-94	1130	1185	1265	1320	1310	1325	1465	1540	1480	1270	1358	1310	1330
	1994-95	1170	1125	1230	1235	1170	1150	1230	1150	1180	1200	1240	1255	1195
	1995-96	1245	1245	1255	1255	1300	1315	1320	1445	1250	1365	1400	1300	1308
	1996-97	1330	1290	1320	1260	1290	1315	1370	1445	1475	1505	1530	1475	1384
	1997-98	1525	1515	1525	1460	1485	1465	1525	1490	1480	1500			
Uttar Pradesh														
Hapur (C-29)	1990-91	636	820	805	875	862	842	840	900	915	975		900	874
	1991-92	650	865	870	875	875	865	865	900	1000	930	920	915	894
	1992-93	950	870	855	885	1100	950	1040	1130	1075	1060	1130	1085	1011
	1993-94	1125	1140	1175	1250	1230	1285	1320	1450	1525	1250	1375	1440	1297
	1994-95	1350	1200	1190	1225	1230	1225	1300	1300	1300	1310	1275	1340	1270
	1995-96	1350	1350	1320	1350	1300	1250	1300	1400	1325	1325	1360	1325	1330
	1996-97	1325	1300	1230	1275	1315	1325	1400	1420	1400	1400	1430	1450	1356
	1997-98		1450	1420	1450	14^0	1460	1400	1400	1465	1475			
West Bengal														
Calcutta (S-30)	1990-91	920	875	900	900	890	880	880	910	940	950		935	907
	1991-92	920	900	860	900	900	890	890	950	960	975	1000	985	928
	1992-93	960	960					1005	1110	1150	1135	1120	1170	1076
	1993-94	1190	1260	1290	1260	1310	1340	1440	1535	1535	1320	1370	1390	1353
	1994-95	1305	1245	1250	1265	1270	1360	1310	1330	1340	1340	1360	1420	1316
	1995-96	1400	1400	1400	1400	1410	1370	1410	1480	1390	1440	1500	1470	1423
	1996-97	1420	1420	1370	1360	1400	1390	1480	1540	1520	1520	1550	1560	1461
	1997-98	1560	1560	1580	1550	1560	1540	1590	1585	1590	1590			

Source : Directorate of Economics & Statistics,
Ministry of Agriculture.

Table – 13
Gur : Month-end Wholesale Prices

		(Rs. per quintal)												
State/Centre Variety	Year	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept.	Avg.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Andhra Pradesh														
Anaka-Palli (II Sort)	1990-91	490	438	418	381	341	369	410	540	535	516	499	470	451
	1991-92	460	420	370	355	355	365	415	472	525	580	570	495	449
	1992-93	535	546	552	547	615	628	652	830	830	965	838	935	706
	1993-94	817	630	696	715	690	605	761	695	755	763	765	715	724
	1994-95	730	754	655	650	510	570	571	666	710	735	690	764	667
	1995-96	790	667	609	518	523	590	605	760	840	861	886	999	721
	1996-97	950	725	754	634	864	830	1063	1135	165	140	211	145	968
	1997-98	1065	1025	1135	850	860	884	862	919	940	900			
Vijayawada (II Sort)	1990-91	600	650		600	550						700	650	625
	1991-92	600	700	500	400	500	500	550	600	700	800	950	900	642
	1992-95	950	850	900	850	850	1020	1050	1200	400	400	400	300	098
	1993-94	1400	1000	1100	1000	750	950	1100	1100	250	300	200	200	113
	1994-95	1200	1150	1000	1000	1000	1000	1000	1050	050	050	050	200	063
	1995-96	1200	1050	950	1100	950	950	950	1150	200	050	000	250	067
	1996-97	1250	1250		1380		1050							233
	1997-98							1150						150
Bihar Patna (Chakki) (A-2)	1990-91	700	600	600	500	550	525	550	500	500	550	600	750	577
	1991-92	750	650	600	500	500	550	500	500	500	500		600	558
	1992-93	575	650	550	550	540	540	625	900	900	000	100	010	745
	1993-94	1070	851	700	700	850	850	1000	1020	150	000	000	000	
	1994-95	1000	925	800	750	750	760	850						834
	1995-96	975	950	830	800	725	650	630	750	775	800	950	900	811
	1996-97	950	725	630	660	750	750	750	760	750	100	100	150	840
	1997-98	1115	1050	1070	1100	1025	850	1030	1050	250	300			084
Gujarat Ahmedabad (Chaku)	1990-91	620	575	575		575	530	510	550	610	615	625	615	582
	1991-92	595	530	490	535	510	520	520	535	574	630		660	554
	1992-93	630	630	610	600	600	600	600	655	690	650	640	650	630
	1993-94	660	670						670	200	210	250	100	966
	1994-95	1150	1150	1120	1100	1010	1010	1020	1010	010	910	910	920	027
	1995-96	910	930	930	910	930	930	930		920	930	950	930	928
	1996-97	1370	1340	1410	1210			850		050	550	560		256
	1997-98				1220			1300						260
Maharashtra Mumbai (Kolha- pur-2)	1990-91	625	625	630	640	640	625	630	650	810	800	875	875	702
	1991-92	825	625	650	650	675	700	725	800	875	900	975	875	773
	1992-93	875	850	860	860	875	910	1000	1025	150	175	325	275	015
	1993-94	1300	1250	1300	1250	1300	1300	1300	1300	300	375	450	550	331
	1994-95	1400	1500	1550	1575	1600	1200	1250	1200	200	300	300	400	373
		1400	1500	1500	1500	1500	975	950	900	900	950	950	950	
	1996-97	950	950	950	950	950	1000	1000	1050	100	100	100	100	009
	1997-98	1150	1150	1150	1350	1350	1350	1350						264
Madhya Pradesh Bhopal (Deshi)	1990-91	600	625	650	600	500	450	465	460	500	540	550	625	547
	1991-92	600	625	650	600	600	600	600	575	580	630	650	625	611
	1992-93	625	600	600	705	710	715	825	925	900	025	175	250	838
	1993-94	1300	1100	1100	1050	1050	960	950	1050	110	225	075	100	089
	1994-95	1000	950	900	900	850		950	900	900				919
	1995-96									800	850	880	950	870
	1996-97	975	950	950	700	700					150			904
	1997-98													

(Contd...)

Table – 13 Concluded)
Gur : Month-end Wholesale Prices

(Rs. per quintal)

State/Centre/ Variety	Year	Oct	Nov	Dec	Jan	Feb	Marc	Apri	May	June	July	Aug	Sept	Avg
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Karnataka														
Bangalore (Local) (A-1)	1990-91	600	600	590	590	580	580	580	590	500	500	540	520	564
	1991-92	550	520	500	490	500	480	490	515	560	660	700	700	555
	1992-93	800	690	760	710	660	850	950	1100	1150	1000	1150	1100	910
	1993-94	1250	1100	1000	920	850	900	1000	980	1000	1000	950	950	992
	1994-95	980	1000	850	860	830	930	860	920	850	820	950	980	903
	1995-96	1000	850	820	920	750	780	760	960	1100	940	1000	1290	931
	1996-97	1350	1200	1140	1210	1120	1100	1100	1500	1630	1620	1600	1420	1333
	1997-98	1520	1420	1575	1440	1280	1390	1360	1375	1365	1260			1399
Tamil Nadu														
Chennai	1990-91	582	632	555	581	504	453	479	597	571	500	550	500	542
	1991-9	500	625	575	475	420		450	475	475	600		650	525
	1992-93	875	650	700	625	650	825	800	1100	1100	1150	1100	1150	894
	1993-94	1200	1300	950	850	700	900	1000	900	1050	1000			985
	1994-95	1150	1050	800	775	625	675	775	775	775	750	800	850	817
	1995-96	750		780	760			650	900	950	950	950	1050	860
	1996-97	1150	1110	1050	1080	1050		1227	1350	1590	1400	1450	1555	1274
	1997-98	1550								1150	1200			1300
Uttar Pradesh														
Hapur (Balti)	1990-91	520	375	345	360	340	400	475	480	500	525	500	450	439
	1991-92	370	290	300	375	345	328	385	465	580	450	420	390	392
	1992-93	470	460	450	450	530	560	660	760	750	780	1000		625
	1993-94	650	500	640	645	668	595	740	840	825	850	800	890	720
	1994-95	660	633	630	650	625	640	750	775	760	765	800	825	709
	1995-96	675	590	565	540	475	600	560	600	700	700	760	700	622
	1996-97	665	465	540	565	625	600	850	940	900	1100	1100	1300	804
	1997-98	855				725	860	765	865	965	1060			871
Bareilly (Local)														
	1990-91	506	370	378	365	350	348	381	460	480	517	552	547	438
	1991-92	390	335	303	330	354	335	360	410	400	430	477	490	385
	1992-93	440	410	390	430	490	520	585	870	830	900	1000	1000	655
	1993-94	625	505	665	655	720	670	790	900	880	880	930	905	760
	1994-95	660	650	620	700	620	620	700	750	820	835	815	827	718
	1995-96	675	690	510	580	555	500	545	520	550	570	650	685	586
	1996-97	710	620	550	560	570	665	650	660	690	775	910	925	690
	1997-98	825	980	780	750	810	810	800	825	880	850			833
Kanpur (Pansera)														
	1990-91	470	410	430	380	370	405	480	540	555	575	600	610	485
	1991-92		400	380	360	350	380	455	470	525	575	600	443	
	1992-93	500	505	475	425	480	550	700	840	885	940	1035	1165	708
	1993-94	625	570	720	670	800	690	890	1035	1035	1000	1000	1000	836
	1994-95	800	790	810	825	780	855	870	910	970	1010	925	870	868
	1995-96	880	780	740	740	490	450	600	595	740	800	975	950	728
	1996-97	840	500	570	560	700	635	825	1000	1000	1090	1100	970	816
	1997-98	825	820	1150	850	810	810	900	1050	1150	1285			965
Punjab Jullandhar (Deshi)														
	1990-91	570	530	480	500	420	490	495	570	570	590	630	660	542
	1991-92	645	450	450	450	470	510	500	520	570	565	565	565	522
	1992-93	570	565	540	550	600	625	675	800	800	820			655
	1993-94			760	820				950	1070	950	1060	1090	927
	1994-95	1055	800	810	800	810		850	900	900	900	940	975	882
	1995-96	975	850			715	670	700	670	750	750	775	825	768
	1996-97	900	840	600	635	650	660	640	710	875	980	975	1030	791
	1997-98	1100	1025	1075	1250	1250	1000	1080	1050	1200	1200			1123

Source : Directorate of Economics & Statistics,
Ministry of Agriculture.

Table – 14
Khandsari : Month-end Wholesale Prices

(Rs. per quintal)

State/Variety Centre	Year	Oct	Nov	Dec	Jan	Feb	Marc	Apri	May	June	July	Aug	Sept	Avg
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Uttar Pradesh														
Bareilly (Deshi)	1990-91	755	735	730	728	720	726	721	758	770	780	776	738	745
	1991-92	750	722	675	660	691	700	735	765	770	780	770	725	729
	1992-93	645	720	720	725	725	830	970	940	950	955	985	990	846
	1993-94	995	940	990	1060	1100	1110	1180	1340	1200	1180	1185	1175	1121
	1994-95	1075	1060	1050	1050	1030	1025	1070	1080	1075	1100	1100	1100	1068
	1995-96	1020	1025	1000	1060	1050	1050	1100	1145	1175	1190	1175	1100	1091
	1996-97	1100	1065	1000	1000	1100	1125	1100	1150	1200	1200		1200	1113
	1997-98		1125	1160	1200	1175	1225	1200	1300	1215	1200			1200
Kanpur (Deshi)	1990-91	770	675	690	680	670	715	740	715	840	800	815	800	743
	1991-92	700	700	650	625	690	680	740	725	745	760	775	750	712
	1992-93	800	780	790	775	760	850	975	990	950	985	1010		880
	1993-94	900	930	960	1000	1000	1000	1100	1250	1200	1170	1200	1250	1080
	1994-95	1180	1100	1100	1100	1100	1100	1200	1150	1100	1130	1150	1090	1125
	1995-96	1100	1100	1175	1170	1190	1200	1200	1300	1300	1280			1202
	1996-97													
	1997-98													
Hapur (Deshi)	1990-91	690	735	650	700	680	725	720	780	820	850	835	815	750
	1991-92	750	770	660	655	635	650	700	790	780	815	820	820	737
	1992-93	835	750	700	780	800	830	900	1030	1000	970	1020		874
	1993-94		980	1000	1100	1100	1145	1250	1325	1385	1180	1275	1310	1186
	1994-95	1130	1025	950	1000	990	940	1150	1110	1050	1175	1175	1150	1070
	1995-96			1050	1010	1100	1150	1100	1250	1150	1165	1175		1128
	1996-97		1000	965	1040	1150	1150	1300	1325	1285	1300	1300	1300	1192
	1997-98	1300	1285	1300	1200	1200	1315	1400	1500					1313
Muzaffarnagar	1990-91	720	700	710	680	685	695	720	760	800	815	845	855	749
	1991-92	725	730	660	670	685	685	685	725	815	850	850	830	743
	1992-93	790	790	775	830	840	860	905	950	990	1000	1040	1060	905
	1993-94	980	96	103	107	110	100	113	135	146			1260	1135
	1994-95	1150	1000	1025	1050	950	990	1050	1080	1150	1130			1058
	1995-96	1100	1155	1130	1100	1050	1030	1050	1130	1180	1180	1225	1260	1133
	1996-97	1160	1000	990	970	1100	1050	1130	1230	1250	1210	1200	1215	1125
	1997-98									1360	1365			
Delhi (Sulphur)	1990-91	790	790	780	820	800	805	800	855	900	895	870	850	830
	1991-92	820	820	800	800	810	805	835	860	900	900	870		838
	1992-93													
	1993-94			1100	1100	1100	1120	1200	1400	1470	1300	1400	1325	1252
	1994-95	1200	1000	1050	1085	1100	1100	1225	1200	1220	1270	1250	1250	1163
	1995-96	1325	1370	1350	1200	1200	1200	1200	1300	1325	1275	1300	1375	1285
	1996-97	1375	1300	1300	1280	1275	1270	1400	1400	1420	1425	1425	1480	1363
	1997-98	1375	1375	1400	1400	1460	1460	1460	1460	1500	1600			1449

Source : Directorate of Economics & Statistics,
Ministry of Agriculture.

Table – 15
Balance Sheet of Sugar and system of Regulation

(‘000 tonnes)

Season (Oct. to Sept.)	Open- ing Stock	Prod- uction	Total		Consum- ption	System of Regulation of Sugar	
			Import	Availa- bility		Export	
1	2	3	4	5	6	7	8
1970-71	2090	3740	-	5830	4025	395	Partial Decontrol (upto May 24, 1971) (Decontrol from my 25,971)
1971-72	1410	3113	-	4523	3780	144	Decontrol (upto December, 31,1971)
1972-73	599	3873	-	4472	3511	97	Partial Decontrol 70% Levy
1973-74	864	3948	-	4812	3529	405	Partial Decontrol 70% Levy
1974-75	878	4797	-	5675	3457	924	Partial Decontrol 65% Levy
1975-76	1294	4264	-	5558	3691	1021	Partial Decontrol 65% Levy
1976-77	846	4843	-	5689	3753	312	Partial Decontrol 65% Levy
1977-78	1624	6462	.	8086	4548	202	Partial Decontrol 65% Levy (Upto 15.8.1978)
1978-79	3336	5844	-	9180	6181	863	Decontrol From 16.8.1978 Decontrol, monthly release mechanism reintroduced Full price control 12.9.79
1979-80	2136	3859	180	6175	5203	290	Full price control Upto 16.12.1979) Partial Decontrol 65 Levy (from 17.12.1979)
1980-81	682	5148	215	6045	4990	61	Partial Decontrol 65% Levy
1981-82	994	8438	-	9432	5711	383	Partial Decontrol 65% Levy
1982-83	3338	8232	-	11570	6479	422	Partial Decontrol 65% Levy
1983-84	4669	5916	64	10649	7570	706	Partial Decontrol 65% Levy
1984-85	2373	6144	1217	9734	7890	20	Partial Decontrol 65% Levy
1985-86	1824	7017	1626	10467	8353	54	Partial Decontrol 65% Levy
1986-87	2060	8502	951	11513	8775	26	Partial Decontrol 55% Levy
1987-88	2712	9110	71	11893	9333	28	Partial. Decontrol 50% Levy
1988-89	2532	8752	-	11284	9919	28	Partial Decontrol 45% Levy
1989-90	1265	10989	242	12496	10283	35	Partial Decontrol 45% Levy
1990-91	2178	12047	-	14225	10715	207	Partial Decontrol 45% Levy
1991-92	3303	13411	-	16714	11225	583	Partial Decontrol 45% Levy
1992-93P	4906	10609	-	15515	12005	397	Partial Decontrol 40% Levy
1993-94	3113	9824	460	13385	11137	55	Partial Decontrol 40% Levy
1994-95	2193	14643	674	17510	11974	41	Partial Decontrol 40% Levy
1995-96	5495	16429	42	21966	13172	887	Partial Decontrol 40% Levy
1996-97P	7907	12905		20812	13792	419	Partial Decontrol 40% Levy

Not : Carryover stocks include stocks at ports.
Source : Directorate of Sugar,
Ministry of Food

Table – 16
Cane Price Calculated under different Formulae
1994-95

State	Average Recovery Percent	SMP at Average Recovery Percent	Levy Price	Return Component in Levy Price	Average Free-Sale Realisation	Cane Price by					
						Zone Specific SMP			Uniform SMP		
						Bhargava Formula	Mahajan Formula	Modified Bhargava Formula	Modified Mahajan Formula	Modified Bhargava Formula	Modified Hahajan Formula
R	M	L	P	F	7	8	9	10	11	12	
Punjab	9.30	42.78	713.90	67.29	1174.03	55.62	54.69	58.75	56.45	62.43	60.13
Haryana	9.76	44.90	762.66	67.29	1197.26	57.63	59.34	60.91	59.73	62.47	61.29
Rajasthan	8.95	41.17	903.16	67.29	1137.36	47.46	55.49	50.47	55.04	55.76	60.33
Uttar Pradesh									0.00		46.46
West	9.60	44.16	796.80	67.29	1173.58	55.01	58.33	58.24	58.74	60.54	61.04
Central	9.39	43.19	795.62	67.29	1127.36	52.54	55.48	55.69	57.06	58.96	60.33
East	9.12	41.95	846.30	67.29	1133.06	49.80	55.17	52.86	55.74	57.37	60.25
Madhya Pradesh	9.64	44.34	812.70	67.29	1138.26	53.76	57.73	57.00	58.77	59.12	60.89
Gujarat											
South	11.00	50.60	746.68	67.29	1099.38	62.24	62.62	65.94	66.26	61.80	62.12
Saurashtra	8.90	40.94	718.05	67.29	1136.01	52.10	51.22	55.09	53.75	60.61	59.27
Maharashtra											
South	11.00	50.60	804.75	67.29	1070.42	59.37	63.00	63.07	66.35	58.93	62.21
North	10.44	48.02	801.51	67.29	1077.94	56.68	60.00	60.19	63.02	58.63	61.46
Central	10.96	50.42	763.60	67.29	1083.65	60.94	62.22	64.63	65.95	60.67	62.02
Bihar											
North	9.03	41.54	840.92	67.29	1134.14	49.48	54.55	52.52	55.18	57.44	60.10
Orissa-Assam-Nagaland-W.Bengal	8.56	39.38	815.67	67.29	1131.82	47.50	51.12	50.38	52.16	57.46	59.24
Andhra Pradesh	10.00	46.00	800.81	67.29	1075.70	54.25	57.37	57.61	60.34	58.07	60.80
Karnataka	10.55	48.53	751.63	67.29	1059.19	58.26	58.67	61.81	67.20	59.74	61.13
Tamil Nadu &											
Pondicherry	9.22	42.41	782.46	67.29	1048.76	49.78	51.61	52.88	55.31	56.93	59.36
Kerala & Goa	8.94	41.12	805.62	67.29	1087.06	48.67	51.75	51.68	54.06	57.02	59.40
All India	10.10	46.46	785.45	67.29	1094.00	55.81	58.23	59.21	61.02	59.21	61.02

1995-96

State	Average Recovery Percent	SMP at Average Recovery Percent	Levy Price	Return Component in Levy Price	Average Free-Sale Realisation	Cane Price by					
						Zone Specific SMP			Uniform SMP		
						Bhargava Formula	Mahajan Formula	Modified Bhargava Formula	Modified Mahajan Formula	Modified Bhargava Formula	Modified Hahajan Formula
R	M	L	P	F	7	8	9	10	11	12	
Punjab	9.28	46.71	871.04	74.29	1221.61	56.47	59.85	59.92	61.67	64.13	65.88
Haryana	9.56	48.22	861.56	74.29	1247.25	59.28	62.32	62.83	63.80	65.53	66.50
Rajasthan	9.12	45.85	945.39	74.29	1210.92	53.11	60.09	56.50	60.87	61.57	65.94
Uttar Pradesh											
West	9.60	48.44	898.62	74.29	1226.24	57.88	62.71	61.44	64.12	63.92	66.60
Central	9.49	47.85	881.03	74.29	1237.81	58.01	61.98	61.53	63.35	64.60	66.42
East	9.27	46.66	938.60	74.29	1209.30	54.19	60.87	57.63	61.88	61.89	66.14
Madhya Pradesh	9.59	48.39	981.36	74.29	1194.01	54.51	63.43	58.07	64.25	60.60	66.78
Gujarat											
South	11.00	56.00	852.14	74.29	1175.90	66.68	68.65	70.77	73.16	65.69	68.08
Saurashtra	8.99	45.15	940.93	74.29	1189.43	51.85	58.45	55.19	59.76	60.96	65.53
Maharashtra											
South	11.00	56.00	847.68	74.29	1131.98	65.38	66.80	69.47	72.70	64.39	67.62
North	10.20	51.68	873.27	74.29	1145.20	60.00	63.05	63.79	67.44	63.03	66.68
Central	10.80	54.92	824.24	74.29	1156.14	65.67	65.92	69.69	71.40	65.69	67.40
Bihar											
North	9.24	46.50	940.69	74.29	1214.33	54.09	60.89	57.52	61.72	61.94	66.14
Orissa-Assam-Nagaland-W.Bengal	8.50	42.50	1039.88	74.29	1216.36	47.00	58.09	50.16	57.02	58.58	65.44
Andhra Pradesh	9.76	49.30	937.73	74.29	1185.89	56.57	63.25	60.19	65.11	61.81	66.73
Karnataka	11.00	56.00	851.05	74.29	1158.98	66.16	67.96	70.25	72.99	65.17	67.91
Tamil Nadu &											
Pondicherry	8.93	44.82	931.38	74.29	1180.26	51.49	57.56	54.80	59.21	60.90	65.31
Kerala & Goa	8.82	44.23	931.75	74.29	1182.87	50.87	56.94	54.15	58.47	60.84	65.16
All India	10.06	50.92	876.75	74.29	1176.06	59.95	63.38	63.69	66.77	63.69	66.77

(Contd..)

Table – 16 (Concluded)
Care Price Calculated under different Formula
1996-97

State	Average Recovery Percent	SMP at Average Recovery Percent	Levy Price	Return Component in Levy Price	Average Free-Sale Realisation	Cane Price by					
						Zone Specific SMP			Uniform SMP		
						Bhargava Formula	Mahajan Formula	Modified Bhargava Formula	Modified Mahajan Formula	Modified Bhargava Formula	Modified Mahajan Formula
R	M	L	P	F	7	8	9	10	11	12	
Punjab	8.99	48.69	1084.04	128.02	1223.86	52.46	64.61	58.22	64.84	62.56	69.18
Haryana	8.91	48.24	985.45	128.02	1278.95	56.09	63.69	61.79	64.16	66.58	68.95
Rajasthan	8.93	48.35	1110.45	128.02	1210.41	51.03	64.32	56.74	64.43	61.42	69.11
Uttar Pradesh											
West	9.28	50.35	981.81	128.02	1223.97	57.09	64.37	63.03	66.44	65.71	69.12
Central	9.13	49.49	994.05	128.02	1205.56	55.28	62.98	61.13	65.24	64.67	68.78
East	8.93	48.35	1038.74	128.02	1232.96	53.55	63.49	59.27	64.22	63.95	68.90
Madhya Pradesh	9.24	50.12	1112.02	128.02	1250.32	53.95	67.95	59.87	67.11	62.78	70.02
Gujarat											
South	10.93	59.75	938.58	128.02	1229.91	69.30	74.89	76.30	78.47	69.58	71.75
Saurashtra	9.03	48.92	1055.65	128.02	1229.91	53.64	64.47	59.42	65.04	63.53	69.15
Maharashtra											
South	10.93	59.75	976.52	128.02	1227.77	67.99	75.82	74.98	78.71	68.26	71.99
North	9.84	53.54	983.63	128.02	1194.02	59.75	67.21	66.05	70.34	65.54	69.83
Central	10.56	57.64	955.55	128.02	1205.69	65.56	71.85	72.32	75.60	67.71	70.99
Bihar											
North	9.02	48.86	1140.37	128.02	1257.71	52.04	67.21	57.81	65.66	61.98	69.83
Orissa-Assam-Nagaland-W.Bengal	8.50	45.90	1420.07	128.02	1255.08	45.90	69.10	51.34	63.18	58.47	70.31
Andhra Pradesh	9.59	52.11	1071.60	128.02	1228.47	56.62	68.80	62.76	69.31	63.68	70.23
Karnataka	10.87	59.41	970.70	128.02	1200.75	66.91	74.17	73.87	77.95	67.49	71.57
Tamil Nadu &											
Pondicherry	9.63	52.34	1049.04	128.02	1243.03	57.94	69.07	64.11	69.61	64.80	70.30
Kerala & Goa	9.01	48.81	1127.98	128.02	1226.78	51.48	65.83	57.25	65.27	61.47	69.49
All India	9.75	53.03	1000.77	128.02	1213.81	59.26	67.72	65.50	69.96	65.50	69.96

1997-98

State	Average Recovery Percent	SMP at Average Recovery Percent	Levy Price	Return Component in Levy Price	Average Free-Sale Realisation	Cane Price by					
						Zone Specific SMP			Uniform SMP		
						Bhargava Formula	Mahajan Formula	Modified Bhargava Formula	Modified Mahajan Formula	Modified Bhargava Formula	Modified Mahajan Formula
R	M	L	P	F	7	8	9	10	11	12	
Punjab	8.85	50.55	1044.76	120.29	1328.19	58.08	66.92	63.40	67.28	68.14	72.02
Haryana	8.74	49.89	1000.80	120.29	1387.65	60.03	67.07	65.29	66.66	70.69	72.06
Rajasthan	8.97	51.27	1101.44	120.29	1366.62	58.41	70.38	63.80	68.86	67.82	72.88
Uttar Pradesh											
West	9.34	53.49	1011.17	120.29	1335.24	62.57	70.09	68.19	71.01	69.99	72.81
Central	9.14	52.29	1012.61	120.29	1322.60	60.79	68.19	66.29	69.34	69.29	72.34
East	8.85	50.55	1045.55	120.29	1350.01	58.63	67.65	63.96	67.46	66.70	72.20
Madhya Pradesh	9.40	53.85	1088.04	120.29	1372.03	61.86	73.63	67.51	72.26	68.95	73.70
Gujarat											
South	10.93	63.03	930.66	120.29	1351.44	76.83	80.49	83.40	83.15	75.66	75.41
Saurashtra	9.50	54.45	1062.45	120.29	1351.44	62.69	73.07	68.40	72.72	69.24	73.56
Maharashtra											
South	10.93	63.03	991.36	120.29	1305.72	73.34	80.27	79.91	81.10	72.17	75.36
North	9.01	56.31	1019.11	120.29	1329.52	65.45	73.60	71.35	74.71	70.13	73.69
Central	10.57	60.87	986.31	120.29	1334.83	71.92	78.64	78.28	80.53	72.70	74.95
Bihar											
North	9.06	51.81	1125.91	120.29	1360.73	58.19	71.44	63.64	69.67	67.12	73.15
Orissa-Assam-Nagaland-W.Bengal	8.52	48.57	1438.14	120.29	1419.40	48.57	75.67	53.69	67.49	60.41	74.21
Andhra Pradesh	9.69	55.59	1087.07	120.29	1366.26	63.71	75.67	69.53	74.51	69.23	74.21
Karnataka	10.93	63.03	993.02	120.29	1333.49	74.19	81.45	80.77	83.39	73.03	75.65
Tamil Nadu &											
Pondicherry	8.61	49.11	1048.54	120.29	1367.21	57.34	66.44	62.52	65.72	68.70	71.90
Kerala & Goa	9.19	52.59	1086.12	120.29	1360.74	60.16	71.55	65.69	70.48	68.39	73.18
All India	9.64	55.29	1032.46	120.29	1338.38	64.14	72.96	69.94	73.53	69.94	73.53

Bhargava Formula=

$$M+(0.5*0.6*(F-L)*R)/100$$

Mahajan Formula=

$$0.6*R*(0.4*L+0.6*F)/10*R \text{ All-India}$$

Modified Bhargava Formula=

$$M+(0.5*R*(P+0.6*(F-L)))/100$$

Modified Mahajan Formula=

$$M+(0.15*R*(0.6*F+0.4*L))/10*R \text{ All-India}$$

Table – 17
SUGARCANE : WAGE RATES IN MAJOR PRODUCING STATES

	(RS. PER MAN DAY)							
STATE	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
	1	2	3	4	5	6	7	8
<u>HARYANA</u>								
CPIAL Index (PUNJAB)	930.00	1045.00	1116.00	1305.00	1422.00	1508.00	1674.00	1768.00
Wage rate (AWPT)	35.15	41.75	50.12	55.62	60.87	65.30	74.76	-
Real wage rate (AWPT)	3.78	4.00	4.49	4.26	4.28	4.33	4.47	-
Wage rate Derived Casual	23.49	-	17.78	-	-	56.90	-	-
Real wage rate (Derived casual)	2.53	-	1.59	-	-	3.77	-	-
Statutory minimum wage rate	31.75	34.45	35.75	40.77	46.67	52.57	55.52	62.47
<u>MAHARASHTRA</u>								
CPIAL Index	801.00	1068.00	1106.00	1067.00	1330.00	1494.00	1498.00	1550.00
Wage rate (AWPT)	20.12	22.86	23.82	28.82	35.74	32.76	36.00	-
Real wage rate (AWPT)	2.51	2.14	2.15	2.70	2.69	2.19	2.40	-
Wage rate Derived Casual	21.09	-	26.88	-	39.21	42.09	-	-
Real wage rate (Derived casual)	2.63	-	2.43	-	2.95	2.82	-	-
Statutory minimum wage rate	16.00	16.00	16.00	16.00	24.50	24.50	24.50	24.50
<u>U.P.</u>								
CPIAL Index	960.00	1120.00	1115.00	1311.00	1447.00	1536.00	1742.00	1712.00
Wage rate (AWPT)	21.34	25.15	26.92	29.52	31.83	38.72	41.37	-
Real wage rate (AWPT)	2.22	2.25	2.41	2.25	2.20	2.52	2.37	-
Wage rate Derived Casual	20.71	23.15	24.09	25.74	28.24	29.81	-	-
Real wage rate(Derived casual)	2.16	2.07	2.16	1.9*6	1.95	1.94	-	-
Statutory minimum wage rate	19.00	23.00	24.00	24.00	24.00	24.00	44.00	48.00
<u>Karnataka</u>								
CPIAL Index	807.00	1010.00	1144.00	1105.00	1281.00	1465.00	1545.00	1562.00
Wage rate (AWPT)	15.51	16.84	16.79	22.29	21.81	20.10	-	-
Real wage rate (AWPT)	1.92	1.67	1.47	2.02	1.70	1.37	-	-
Wage rate Derived Casual	-	-	-	-	34.87	-	-	-
Real wage rate (Derived casual)	-	-	-	-	2.72	-	-	-
Statutory minimum wage rate	14.82	14.82	14.82	14.82	30.50	30.50	30.50	30.50
<u>Bihar</u>								
CPIAL Index	858.00	1036.00	1117.00	1213.00	1274.00	1365.00	1555.00	1522.00
Wage rate (AWPT)	19.23	22.20	22.74	26.17	27.95	29.75	-	-
Real wage rate (AWPT)	2.24	2.14	2.04	2.16	2.19	2.18	-	-
Wage rate Derived Casual	15.84	16.99	-	-	-	-	-	-
Real wage rate(Derived casual)	1.85	1.64	-	-	-	-	-	-
Statutory minimum wage rate	16.50	16.50	16.50	21.00	21.00	27.30	27.30	27.30

(Contd..)

Table – 17
SUGARCANE : WAGE RATES IN MAJOR PRODUCING STATES

	(RS. PER MAN DAY)							
STATE	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
	1	2	3	4	5	6	7	8
<u>Tamil Nadu</u>								
CPIA Index	784.00	940.00	1027.00	1064.00	1234.00	1391.00	1480.00	1466.00
Wage rate (AWPT)	14.15	17.57	21.76	25.13	29.48	34.52	-	-
Real wage rate (AWPT)	1.80	1.87	2.12	2.36	2.39	2.48	-	-
Wage rate Derived Casual	-	-	-	-	43.38	-	-	-
Real wage rate (Derived casual)	-	-	-	-	3.52	-	-	-
Statutory minimum wage rate	14.00	14.00	14.00	20.00	20.00	20.00	32.00	32.00
<u>Andhra Pradesh</u>								
CPIAL Index	657.00	851.00	971.00	951.00	1062.00	1176.00	1297.00	1335.00
Wage rate (AWPT)	18.42	21.14	24.50	26.07	29.89	32.53	36.95	-
Real wage rate (AWPT)	2.80	2.48	2.52	2.74	2.81	2.77	2.85	-
Wage rate Derived Casual	25.03	-	30.76	-	35.72	45.65	-	-
Real wage rate (Derived casual)	3.81	-	3.17	-	3.36	3.88	-	-
Statutory minimum wage rate	9.75	20.10	20.10	20.10	20.10	33.30	33.30	33.30

- Note : (I) Consumer Price Index Numbers for Agricultural Laborers (CPIAL)-Base 1960-61=100
Source : Labour Bureau, Ministry of Labour, Govt. of India.
- (ii) Wage rate (AWPT)- Source: Agricultural Wages in India'
Dte. Of Economics & Statistics, Ministry of Agriculture.
- (iii) Wage rate (Derived Casual) – Source: 'Comprehensive Scheme'.
Dte. Of Economics & Statistics, Ministry of Agriculture.
- (iv) Real wage rates have been calculated by using CPIAL as deflator.
- (v) Statutory minimum wage rates for agricultural labour.

Source : Ministry of Labour/States Governments

Table – 18
Index of Canal Water Rates and Electricity Rates in Major States

States	Index of Canal Water Rates						Index of Average Tariff for Electricity for Agriculture					
	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000
1	2	3	4	5	6	7	8	9	10	11	12	13
Haryana	100.0	110.2	110.2	110.2	110.2	110.2	100.0	114.1	109.9	109.9	109.9	109.9
Maharashtra	100.0	100.0	100.0	100.0	100.0	100.0	100.0	90.7	134.1	140.1	140.1	140.1
Uttar Pradesh	100.0	200.0	200.0	200.0	200.0	200.0	100.0	114.9	103.5	130.6	130.6	130.6
Andhra Pradesh	100.0	100.0	100.0	226.2	226.2	226.2	100.0	52.8	281.1	284.1	281.1	281.1
Karnataka	100.0	100.0	100.0	100.0	100.0	100.0	100.0	94.4	94.4	94.1	94.4	94.4
Tamil Nadu	100.0	100.0	100.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Bihar	100.0	187.6	187.6	187.6	187.6	187.6	100.0	106.6	106.6	106.6	106.6	106.6

Note : Indices are based on canal water rates as reported by states and electricity tariffs for agriculture collected from planning Commission publication

Table – 19
Farm Inputs : Index Numbers of Wholesale Prices

(Base 1981-82 = 100)

Month/ Year	Ferti- lizers	Electri- city (irriga- tion)	Pesti- cides	Non- electrical Machi- nery	Tractors	Lubri- cants	Diesel Oil (HSDO)	Diesel Oil (LDO)	Fodder	Casttle- Feed
1	2	3	4	5	6	7	8	9	10	11
<u>Annual Average (July-June)</u>										
1990-91	99.1	141.6	165.6	195.4	177.7	191.8	163.0	146.7	247.1	157.5
1991-92	126.0	150.8	204.4	228.7	209.5	235.9	174.1	170.2	258.3	180.0
1992-93	174.3	174.4	201.6	244.4	221.5	296.7	205.1	208.6	243.9	198.7
1993-94	182.3	226.5	243.4	249.8	228.0	332.5	222.1	228.6	269.2	210.3
1994-95	201.8	223.1	329.6	271.4	248.9	338.9	235.2	243.1	287.7	228.0
1995-96	211.8	235.0	288.6	286.2	264.8	351.6	235.1	242.9	342.4	251.9
1996-97	214.7	256.2	281.9	306.7	290.7	391.7	270.0	314.9	386.9	281.4
1997-98	223.5	268.2	289.9	312.3	308.1	406.4	329.0	317.0	419.9	289.7
<u>1997</u>										
July	223.6	255.5	281.9	310.8	298.3	399.3	270.0	314.9	393.9	289.4
August	223.6	255.5	281.9	311.4	303.7	399.3	270.0	314.9	435.6	289.4
September	223.6	255.5	284.5	310.9	306.7	399.4	345.6	314.8	411.6	289.4
October	223.3	265.7	292.3	310.5	307.5	399.4	347.0	314.8	408.5	289.4
November	223.5	257.7	292.3	311.6	307.8	399.4	344.2	314.8	408.2	289.4
December	223.5	265.7	292.3	312.0	307.8	399.4	344.2	314.8	416.6	289.4
<u>1998</u>										
January	223.5	265.7	292.3	312.3	308.6	399.4	344.2	314.8	447.8	289.4
February	223.5	265.7	292.3	311.9	308.7	412.9	344.1	314.8	455.4	289.4
March	223.5	202.7	292.3	312.1	310.4	417.4	344.7	314.8	454.8	289.4
April	223.5	282.7	292.3	315.4	312.2	414.1	332.8	323.7	434.5	290.5
May	223.7	282.7	292.3	313.1	312.1	417.4	332.8	320.7	393.1	289.4
June	282.7	292.3	315.6	313.5	419.0	329.0	326.6	378.5	291.6	291.6
July	223.4	282.7	292.3	317.1	313.7	419.0	327.6	326.6	396.7	296.7
% Change in July 98 over July 97	-0.1	10.6	3.7	2.0	5.2	4.9	21.3	3.7	0.7	2.5

Source : Office of the Economic Adviser,
Ministry of Industry

Table – 20
Sugarcane : Estimates of Cost of Cultivation/Production and related data

1	Maharashtra	Uttar Pradesh	Andhra Pradesh	Haryana	Karnataka	Tamil Nadu
	1995-96	1995-96	1995-96	1995-96	1994-95	1994-95
	2	3	4	5	6	7
Cost of Cultivation per hectare (Rs)						
A1	24834.86	7897.89	17068.04	4689.68	15989.19	23581.41
A2	24834.86	8186.92	17137.13	4689.68	15989.19	23589.07
A2+FL	26983.08	12578.25	22419.30	11399.63	16849.88	24912.76
B1	26314.06	9282.14	18865.71	5966.27	16714.89	25592.44
B2	33656.13	16919.80	33707.56	18493.69	28972.95	31808.40
C1	28462.28	13673.48	24147.87	12676.22	17575.58	26916.13
C2	35804.34	21311.13	38989.73	25203.63	29833.64	33132.09
C2*	36015.77	21311.13	39625.18	25251.08	29862.24	33249.61
Yield per hectare (Quintals)	860.89	469351	816.01	535.32	847.13	1166.30
Value of the main-product Per hectare (Rs)	42191.15	27872.14	48818.59	37228.23	58664.65	62962.59
Value of the by-product Per hectare (Rs)	1852.43	2225.65	709.05	2762.78	13.28	298.93
Implicit price (Rs./qtl.)	49.01	59.36	59.83	69.54	69.25	53.98
Cost of production per quintal (Rs)						
A1	24.31	15.60	20.76	8.40	18.87	19.89
A2	24.31	16.21	20.84	8.40	18.87	19.90
A2+FL	30.02	24.81	27.08	19.82	19.89	21.26
B1	25.70	18.34	22.94	10.68	19.72	21.59
B2	33.47	33.48	40.99	33.11	34.19	26.83
C1	29.26	26.83	29.37	22.70	20.74	22.71
C2	37.02	41.97	47.42	45.13	35.20	27.95
C2+	37.24	41.97	48.19	45.21	35.24	28.05
C3	40.96	46.17	53.01	49.73	38.76	30.86
Material and Labour inputs per hectare						
ITEM	UNIT					
Seed	(Quintals)					
Fertilizer	(Kgs. Of Nutrients)					
Manure	(Quintals)					
Human Labour	(Man Hours)					
Animal Labour	(Pair Hours)					
	37.30	25.56	44.81	6.40	35.38	53.46
	465.78	156.26	219.06	114.43	358.48	352.97
	30.88	25.54	36.54	7.46	22.33	61.78
	2366.88	1321.18	2305.43	1099.74	1647.44	61.78
	129.97	45384	28.41	50.50	63.54	43.18

Note : The estimates are provisional unless specified.

Cost A1 = All actual expenses in cash and kind incurred in production by owner.

Cost A2 = Cost A1 + rent paid for leased-in Land.

Cost A2+FL = Cost A2 + imputed value of Family Labour.

Cost B1 = Cost A1+ interest on value of owned capital assets (excluding land).

Cost B2 = Cost B1+ rental value of owned land (net of land revenue) and rent paid for leased-in land.

Cost C1 = Cost B1 + Imputed value of Family Labour.

Cost C2 = Cost B2 + Imputed value of Family Labour.

Cost C2+= Cost C2 estimated by taking into account statutory minimum or actual wage whichever is higher.

Cost C3 = Cost C2* + 10% of Cost C2+ on account of managerial functions performed by farmer.

Source : Directorate of Economics & Statistics, Ministry of Agriculture.

Table – 21
Sugarcane : Break-up of Cost of Cultivation per hectare (In Rs.)

Cost Items	Maharashtra	Uttar Pradesh	Andhra Pradesh	Haryana	Karnataka	Tamil Nadu
	1995-96	1995-96	1995-96	1995-96	1994-95	1994-95
1	2	3	4	5	6	7
<u>Operational Cost</u>	26593.24	11764.80	22150.44	11164.97	16513.62	24635.49
Human Labour						
Casual	7765.30	1621.14	6037.81	602.37	6203.48	11509.60
Attached	2324.84	110.50	1208.57	459.38	90.17	1490.89
Family	2148.22	4391.33	5282.17	6709.95	860.69	1323.69
Total	12238.36	6122.97	12528.55	7771.70	7154.34	14324.18
Bullock Labour						
Hired	1098.55	60.07	74.67	689.83	284.34	95.45
Owned	259.88	510.25	166.60	546.34	80.46	464.50
Total	1358.43	570.32	241.27	746.17	364.80	559.95
Machine Labour						
Hired	577.40	247.85	269.50	127.36	974.41	317.18
Owned	-	91.50	156.48	-	21.02	21.62
Total	577.40	339.35	425.68	127.36	995.43	338.80
Seed	3168.22	1706.42	2526.40	396.54	2431.56	2352.05
Fertilizers and Manure						
Fertilizers	4401.48	1404.56	2191.21	902.81	3465.42	3614.78
Manure	606.77	276.81	350.09	111.93	531.83	487.75
Total	5008.25	1681.37	2541.30	1014.74	3997.25	41002.53
Insecticides	-	40.24	123.47	-	22.21	100.65
Irrigation charges	2804.62	870.38	2771.52	846.40	627.26	1486.07
Interest on working ca	1437.94	433.73	992.25	262.06	920.76	1371.28
Miscellaneous	-	-	-	-	-	-
<u>Fixed Cost</u>	9211.11	9546.33	16839.29	14038.67	13320.02	8496.59
Rental value of owned	7342.06	7348.63	14772.76	12527.41	12258.06	6208.30
Rent paid for leased-1	-	289.03	69.09	-	-	7.66
Land revenue, ceases &	139.54	33.90	0.50	-	14.64	49.62
Depreciation on implem	250.31	490.53	199.27	234.66	321.63	219.98
Farm buildings						
Interest on fixed capi	1479.20	1384.25	1797.67	1276.60	725.69	2011.03
Total Cost	35804.34	21311.13	38989.73	25203.63	29833.64	33132.09
Operational Cost (base on new methodology)	26804.67	11764.80	22785.89	11212.42	16542.22	24753.01
Human Labour (based on new methodology)	12449.79	6122.97	13164.00	7819.15	7182.94	14441.70
Total Cost (based on new methodology)	36015.77	21311.13	39625.18	25251.08	29862.24	33249.61

Table – 22
Sugarcane : Variable Input Price Index

MAHARASHTRA

(Base 1994-95 = 100)

ITEMS	Weight 1995-96	INDICES		
		1995-96	1998-99*	1999-2000*
Human labour	0.4865	116.7	135.9	151.8
Bullock labour	0.0540	79.4	105.8	116.4
Machine labour	0.0230	105.3	137.4	143.9
Seeds	0.1259	136.7	185	202.5
Fertilizers	0.1750	110.4	110.6	113.2
Manure	0.0241	93.5	108.3	113.8
Insecticides	0.0000	102.3	97.4	106.2
Irrigation charges	0.1115	101.8	130.8	138.4
Weighted Index	1.00	113.6	134.6	146.9

UTTAR PRADESH

(Base 1994-95 = 100)

ITEMS	Weight 1995-96	INDICES		
		1995-96	1998-99*	1999-2000*
Human labour	0.5404	97.0	119.4	129.6
Bullock labour	0.0503	92.8	133.8	151.2
Machine labour	0.0299	105.2	137.4	143.8
Seeds	0.1506	98.32	135.5	150.8
Fertilizers	0.1240	103.7	110.7	112.1
Manure	0.0244	106.9	130.4	139.3
Insecticides	0.0036	104.2	97.1	105.9
Irrigation charges	0.0768	113.7	138.7	140.9
Weighted Index	1.00	99.6	123.6	133.2

ANDHRA PRADESH

ITEMS	Weight 1995-96	INDICES		
		1995-96	1998-99*	1999-2000*
Human labour	0.5921	115.1	148.9	168.1
Bullock labour	0.0114	97.9	136.9	153.1
Machine labour	0.0201	105.2	137.4	143.8
Seeds	0.1194	99.9	130.7	143.0
Fertilizers	0.1036	105.9	108.6	111.2
Manure	0.0165	142.9	182.2	205.7
Insecticides	0.0058	104.2	97.1	105.9
Irrigation charges	0.1310	93.7	173.3	181.6
Weighted Index	1.00	109.5	145.6	160.6

(Contd..)

Table – 22 (Concluded)
Sugarcane Variable Input Price Index

H A R Y A N A

(Base 1994-95 = 100)

ITEMS	Weight 1995-96	INDICES		
		1995-96	1998-99*	1999-2000*
Hunan labour	0.7128	108.7	126.5	143.2
Bullock labour	0.0684	106.3	127.36	135.7
Machine labour	0.0117	105.2	137.4	143.8
Seeds	0.0364	108.7	139.6	151.8
Fertilizers	0.0828	104.7	110.5	111.7
Manure	0.0103	105.5	124.0	130.8
Insecticides	0.0000	104.2	97.1	105.9
Irrigation charges	0.0776	110.3	118.9	121.6
Weighted Index	1.00	108.2	125.2	138.6

K A R N A T A K A

(Base 1994-95 = 100)

ITEMS	Weight 1995-96	INDICES		
		1995-96	1998-99*	1999-2000*
Hunan labour	0.4588	100.0	129.5	140.9
Bullock labour	0.0234	110.0	130.7	139.7
Machine labour	0.0638	110.0	137.4	143.8
Seeds	0.1559	110.0	148.5	163.9
Fertilizers	0.2222	110.0	107.6	110.4
Manure	0.0341	110.0	115.2	119.4
Insecticides	0.0014	110.0	97.1	105.9
Irrigation charges	0.0402	110.0	119.2	126.8
Weighted Index	1.00	110.0	127.2	136.5

T A M I L N A D U

(Base 1994-95 = 100)

ITEMS	Weight 1995-96	INDICES		
		1995-96	1998-99*	1999-2000*
Hunan labour	0.6157	100.0	148.1	166.4
Bullock labour	0.0241	110.0	156.4	174.9
Machine labour	0.0146	110.0	137.4	143.8
Seeds	0.1011	110.0	149.5	165.7
Fertilizers	0.1554	110.0	107.0	109.7
Manure	0.0210	110.0	154.9	172.8
Insecticides	0.0043	110.0	97.1	105.9
Irrigation charges	0.0639	110.0	131.4	141.6
Weighted Index	1.00	110.0	140.8	155.7

* : Input index is projected on the basis of observed trend in the prices of different inputs.

Table – 23
Projected Cost of Production of Sugarcane (Rs./Qtl)

States	Variable Input Price Index (Base 1994-95 = 100)						PROJECTIONS FOR 1999-2000					
	Latest estimates			Latest year as in col.(2)	1998-99	1999-2000	Yield	A2+FL	C2 Cost		C3 Cost	
	Year	A2+FL	C2						by usual method	At 8.5% recovery rate	By usual method	At 8.5% recovery rate
1	2	3	4	5	6	7	8	9	10	11	12	13
Maharashtra	1995-96	30.02	37.02	113.6	134.6	146.9	836.87	40.64	50	39	56	43
Uttar Pradesh	1995-96	24.81	41.97	99.6	123.6	133.2	472.80	33.18	50	46	55	50
Andhra Pradesh	1995-96	27.08	47.42	109.5	145.6	160.6	799.53	41.12	61	53	67	58
Haryana	1995-96	19.82	45.13	108.2	125.2	138.6	535.32	25.50	50	46	55	51
Karnataka	1994-95	19.89	35.20	100.0	127.2	136.5	847.13	27.64	43	36	47	39
Tamil Nadu	1994-95	21.26	27.95	100.0	140.8	155.7	1166.30	33.50	41	39	45	43
Weighted Average									49	43	54	47

Table – 24
Comparative Statement of Cost of Production of Sugarcane Crop obtained
From Survey Estimates by States and from Comprehensive Scheme.

States	Year	Cost of cultivation (Rs./hect.)			Yield (qtl./hect.)		Cost of Production (Rs./qtl.)		
		State Survey		C.S.Survey	State Survey	C.S.Survey	State Survey		C.S.Survey
		Original	Corrected*	Original			Corrected*		
1	2	3	4	5	6	7	8	9	10
Andhra Pradesh	1994-95	-	-	34371	-	783.04	-	-	44
	1995-96	-	-	38990	-	816.01	-	-	47
	1996-97	-	41523	-	-	-	-	-	-
	1998-99(P)	48413	-	-	800.00	-	61	52	57
Gujarat	1996-97	53906	48724	-	994.59	-	53	47	-
	1997-98	52906	48145	-	945.15	-	54	49	-
	1998-99(P)	53344	48679	-	927.28	-	55	50	-
Haryana	1995-96	-	-	25204	-	535.32	-	-	45
	1997-98	38217	-	-	557.00	-	74	62	-
	1998-99(P)	41601	-	-	600.00	-	76	64	47
	1999-2000(P)	43517	-	-	600.00	-	77	65	50
Karnataka	1994-95	29964	22896	29834	-	847.13	37	-	35
	1996-97	67375	45681	-	875.00	-	77	52	-
Maharashtra	1994-95	39354	29231	30713	744.85	812.85	53	53	36
	1995-96	39245	39144	35804	745.93	860.89	53	52	37
	1996-97	40347	40217	-	715.55	-	56	56	-
	1999-2000CP)	49188	46366	-	736.65	-	89	63	50
Punjab	1994-95	28524	-	-	650.00	-	56	44	-
	1998-99(P)	37231	-	-	650.00	-	81	57	-
Tamil Nadu	1999-2000(P)	38325	-	-	680.00	-	80	56	-
	1994-95	-	-	33132	-	-	-	-	28
Uttar Pradesh	1997-98	37998	32098	-	880.00	1166.30	43	36	-
	1994-95	-	-	21431	-	480.82	-	-	42
Uttar Pradesh	1995-96	-	-	21311	-	469.59	-	-	42
	1997-98	27764	-	-	-	-	43	-	-
	998-99CP)	30333	-	-	-	-	47	-	48
	1999-2000CP)	33333	-	-	-	-	51	-	50

* Comparable to CS Survey date, i.e. not including risk, management & transport.

P – Projected (State projections, compared to CACP projection made on the basis of CS Survey data)

Table – 25
Statement showing latest available cost
Estimates for Sugarcane crop and data gaps

States	Latest year for which cost estimates available	Data gaps for the years
(1) Andhra Pradesh	95-96	81-82,84-85,85-86,88-89,89-90, 91-92, 93-94, & 96-97
(2) Bihar	91-92	84-85,85-86.88-89.89-90, 92-93 to 96-97
(3) Haryana	95-96	91-92,93-94,94-95 & 96-97
(4) Karnataka	94-95	90-91 to 93-94,94,95-96 & 96-97
(5) Maharashtra	95-96	81-82.84-85.85-86.91-92, 93-94 & 96-97
(6) Tamil Nadu	94-95	84-85 to 86-87,88-89 to 93-94, 95-96 & 96-97
(7) Uttar Pradesh	95-96	83-84 & 96-97

**B. REPORT ON PRICE POLICY FOR COPRA
FOR THE 1999 SEASON**

COMMISSION FOR AGRICULTURAL COSTS AND PRICES

Report on Price Policy for Copra for the 1999 Season

In this report, the Commission presents its views on the Price Policy for Copra for the 1999 season. The Commission recommends that

- (i) in case the announcement of the minimum support prices for copra is delayed beyond December due to unexpected contingencies, the National Agricultural Cooperative Marketing Federation should be allowed/ required to arrange for support purchases from the beginning of the year at the already existing minimum support prices, and that as and when the support price for the season is announced the difference should be reimbursed to those from whom purchases were made before the announcement; (Para 4)
- (ii) the concerned State Governments should take steps to strengthen the system of regulated markets for coconut and copra; (Para 8)
- (iii) sufficient infrastructure be created for enabling primary marketing societies to undertake purchases of raw coconuts directly from the growers. Also, beginning from the 1999 season, the National Agricultural Co-operative Marketing Federation of India, which is the nodal agency for the Implementation of minimum support prices for copra, should Indicate, separately for each state and

the islands, the price per nut corresponding to the minimum support prices fixed for the season;(Para 12)

- (iv) In order to strengthen the data base required for the formulation of price policy, the Directorate of Economics and Statistics (DES) should consider generating advance estimates of coconut production as it does for other crops, and also evaluate the Coconut Development Board estimates of copra production with a view to generating reliable and consistent estimates. In addition, the DES may also examine the feasibility of collecting data on arrivals of copra in selected major markets; (Para 13)
- (v) the Indian Council of Agricultural Research and the Horticultural Department' of the Ministry of Agriculture should Jointly strengthen those branches of existing research institutes which are responsible for responding to the occurrence of new pests and diseases; (Para 14)
- (vi) the currently low import duty rate on palmolein be revised upwards as and when world palmolein prices decline so as to ensure that its domestic price does not decline and exert further downward pressure on the domestic prices of edible oils, including coconut oil,

and through this on the prices of copra and coconut; (Para 19)

(vi) some definite package of incentives, either in the form of tax waivers or temporary subsidies, be granted to industrial units adopting the range of technologies available with the Coconut Development Board for diversified coconut products; and (Para 21)

(vii) for the 1999 season, the minimum support price for fair average quality be fixed at Rs 3075 per quintal of milling copra and Rs 3325 per quintal for ball copra. (Para 27)

2. The Commission submitted its report on price policy for copra for 1998 season on October 31, 1997. The Government announced the price policy for copra on June 10, 1998, fixing the minimum support price for milling copra at Rs 2900 per quintal and for ball copra at Rs 3125 per quintal. The MSPs fixed were higher by Rs 40 and Rs 25 per quintal respectively for milling and ball copra than those recommended by the Commission and these involve an increase of Rs 200 per quintal for both milling and ball copra over their respective levels during the preceding year (Table 1)

3. Unlike field crops whose MSPs are required to be announced before sowing, the MSP of copra being based on a perennial crop has to be announced before the marketing season. The prices of copra generally start declining after December through May-June and, then increase until next December. Considering this, and the fact that the cultivators of coconut are predominantly small and marginal farmers who do not possess withholding capacity, the Commission had recommended that the announcement of MSP for copra should normally not be delayed beyond December. By the time the Government's announcement of the MSP

came this year, the peak marketing period of the copra season was already over. In this connection, it may be recalled that, in the last copra report, the Commission had anticipated that the prices of this commodity during 1998 were likely to be depressed. It had also recommended that there was a need for greater vigil and that the National Agricultural Cooperative Marketing Federation of India (NAFED) should be prepared to undertake price support operations.

4. From January to May, and in some cases even up to end-August 1998, the prices of milling copra were quoted below the MSP announced for the season during several months in all the major markets of Kerala, the main producing state. In some months, market prices remained even below the MSP for the preceding season. As against the declared MSP of Rs 2900 per quintal, the month-end wholesale prices of milling copra during February to May 1998 were reported in the range of Rs 2570-2765 per quintal at Kochi, Rs 2760-3050 at Alappuzha, and Rs 2600-3100 per quintal at Kozhikode of Kerala. This position improved only slightly after the declaration of the MSP in the month of June 1998. Between June and August this year the month-end wholesale prices of milling copra were in the range Rs 2685-2855 per quintal at Kochi, Rs 3000-3150 at Alappuzha, and Rs 2650-2800 per quintal at Kozhikode. From this it is clear that during much of the current season the producers of copra had to sell their output at lower than the MSP announced by the Government, and that the situation improved only from September onward. The Commission is aware of the circumstances under which the announcement of the price policy for copra for the current season was delayed. In such circumstances, however, the NAFED, which is the nodal agency for price support to copra, could have entered the market and procured the product at the already existing MSP and avoided distress sales. The Commission recommends that in case the announcement of the minimum support prices for copra is delayed beyond December due to unexpected contingencies,