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BOOK REVIEWS

Parched Earth: The Maharashtra Drought 1970-73, V. Subramanian, Government of Maharashtra, Orient Longman Ltd., Bombay, 1975. Pp. xvi+640. Rs. 75.00.

The Indian Famine 1967: A Study in Crisis and Change, K. Suresh Singh, People's Publishing House, New Delhi, 1975. Pp. xiii+312. Rs. 45.00.

Impact of Drought on Rural Life, V. V. Borkar and M. V. Nadkarni, Popular Prakashan, Bombay, 1975. Pp. 64. Rs. 18.00.

The period between 1966 and 1973 witnessed a series of unprecedented crop failures in several parts of India. Foodgrains production which had reached 89 million tonnes in 1964-65 fell sharply to 72 million tonnes in 1965-66 and failed to recover by more than 3 million next year. A spectacular recovery took place in 1970-71 when foodgrains production reached 108 million tonnes. But there was again a drop of 3 million next year and a further severe decline of 8 million next year (1972-73). In the following two years production has not been able to catch up the 1970-71 level. During these years (1965-75) India's population increased by more than 100 million.

The situation in several States was worse. For example, in Maharashtra, foodgrains production continuously declined from 6.7 million tonnes in 1968-69 (7.2 million according to the Bulletin on Food Statistics) to 5.4 million in 1970-71, 4.9 million in 1971-72 and 3.0 million in 1972-73. Lest it be thought that there was something particularly wrong with foodgrain technology, it may be mentioned that production of cotton in Maharashtra declined from its normal at 13 to 14 lakh bales to a mere 4.7 lakh bales in 1970-71. In 1972-73, groundnut production is reported to have dropped from a normal of 6.6 lakh tonnes to 2 lakh tonnes. Only the sugarcane cultivators were more or less able to maintain their production in spite of a succession of droughts. In Bihar, foodgrains production declined from 7.1 million tonnes in 1965-66 (7.5 million in 1964-65) to 4.1 million tonnes in 1966-67.

Such widespread distress could not but have provoked sensational reportage. Snapshots of starving children appeared in international press. Here was material for a 'best-seller,' and one duly appeared under the title *Famine—1975!* in which India was written off as beyond the hope of redemption. India's credibility to feed its swelling population was severely shaken. But there was another side to the story which very much needed to be recorded, a chronicle of the stupendous effort made by the Indian administration and voluntary agencies to meet the challenge of a devastating situation. And it is in the fitness of things that this task has been performed by some senior members of the Indian Administrative Service who had to bear the brunt of

the challenge. The famine and scarcity were not merely an economic phenomenon to be measured in terms of index numbers, per capita availability or their inflationary impact. Their human aspect, their impact on the millions who suffered and on the few on whom fell the unenviable task of relieving their suffering, is altogether a different story.

Out of three books reviewed here, two have been written by IAS officers, who were at the centre of the operation to fight the famine. One can also perceive in their account their feeling of personal involvement in the task they were performing. Besides the capacity to marshal the material, they seem to have a penchant for writing—though in a somewhat flashy style. Strangely, the third book by two University Professors also owes its inspiration to another administrator, the Divisional Commissioner of Ahmednagar district (Maharashtra).

Some measure of the magnitude of distress and relief operations in Maharashtra may be obtained from the following account. "Out of the total number of 35,778 inhabited villages in Maharashtra, 23,062 villages in 1970-71, 14,687 in 1971-72 and 30,878 in 1972-73 were affected by the drought. The total rural population affected during the three years of the drought ranged between 1.5 crores to nearly 3 crores, constituting from 43 per cent to 86 per cent of the rural population." At the peak of distress in May, 1973, nearly 5 million people were employed daily on relief works. The total expenditure incurred on relief works alone was over Rs. 255 crores. At the peak, the average bill per day amounted to Rs. 1 crore. One must endorse the author's observation that "The organizational effort required for preparing surveys and plans and estimates, for sanctioning, implementing and supervising the works, taking prompt measurements and ensuring prompt payment, for providing drinking water to men and cattle, fodder to cattle, amenities and medical relief at the worksites, was indeed colossal." And in spite of many criticisms of relief programmes, one cannot but endorse Wolf Ladejinsky's observation that "Considering with what the Collectors have to make do, their performance on the firing line is altogether praiseworthy." It should also be stated that the author has duly noted the criticisms of the relief operations made from time to time. His attempt to answer the criticism may not be wholly convincing. Yet, what he has said on the issue of dovetailing of Plan and relief works (pp. 156-158) deserves attention of persons whose major preoccupation is to deal with abstract ideas. Limitations imposed by shortage of technical staff and 'absence of any shelf of schemes of productive nature' is repeatedly admitted. As one Collector observed, "whereas on a macro level it would be possible to match the total employment demand and the total supply, it was difficult to marry the two at the field level, and if a productive work was not available within reasonable distance (5 km. from the workers' residence), road works had to be sanctioned." *Parched Earth* is a prolix but a complete book, flamboyant at places but transparently sincere, impartial to the extent a person personally involved in the administration of relief could conceivably be, heavy for the reviewer but rewarding to a scholar who would not like to miss a single detail.

In Bihar the situation in 1966 and 1967 was no less harrowing. In the second year of the drought "the *bhadai* crop declined sharply from the normal 1.2 million tonnes to 0.08 million tonnes. Bihar's 'normal' deficit of 1.3 million tonnes widened to 4.8 million according to official estimates, and to 6.4 million according to non-official estimates. Out of the population of 53 million, 29 million of the rural population was badly affected, and about one million partially so."

People from all over the country responded magnificently to the call by the national leaders to "open their hearts and purse." Suresh Singh however records that "the response of the industry, with some exceptions, was disappointing. The sugar mills did not contribute at the rate of one rupee per tonne of the sugar produced, and the coal and other industries also did not fall in line with the suggestion that they should accept production-based rate of contribution." But the role played by the voluntary agencies both Indian and international was simply magnificent. For once, there was not only perfect understanding between themselves and co-ordination of their operations, excellent rapport was established with government agencies at all levels. They soon grew out from the traditional type of relief—free kitchens and distribution of clothes and medicine—and engaged themselves in constructive activities for agricultural development. More than the money they collected and spent, it was the manpower that they mobilized which helped the relief and development assistance to reach the vast expanse of suffering humanity. One wishes that this latent capacity could be harnessed to the mundane task of administration and development in normal times.

The cost of the scarcity/famine relief (1965-68) in Bihar came to Rs. 722 crores, out of which Rs. 317 crores was contributed by international aid and voluntary agencies, the Central Government's assistance came to Rs. 203 crores.

Impact of Drought on Rural Life is in fact a study of only two villages in the Marathwada region of Maharashtra, affected by the droughts of 1970-73. "The villages were surveyed in the first week of July, 1973." The limitations of this brevity are, in some measure, compensated by the research competence of the authors. Besides, the micro focus enabled the authors to probe deeper into many facets of relief operations and their impact. For example, at the very outset they state: "We had sought data on the total amount spent on these (scarcity) works and total wages disbursed. We could not, however, secure this data adequately enough." And again, "We soon found that the list of households was not accurate in respect of holdings." It is heartening to learn that in spite of the disappointing experience of previous years, the farmers did not give in to despair and in 1973 they sowed their lands as usual in the hope of a normal monsoon. Unfortunately, they suffered a double loss, the crop failed third time in succession and they had to forgo the wages they would have received had they opted for relief work. Had they left their

lands fallow they would have suffered less. On the other hand, agricultural labourers, since they were not 'encumbered' by the ownership of land, suffered the least, judged by the change in main assets. In fact, in one of the two villages, their assets position improved during the drought years, thanks to the continuing availability of work on relief programmes: a sad commentary on their plight during normal years. In the same village "the largest cultivator (group) shows a significant increase in assets due to purchase of electric motors made possible by bank loans in 1972-73." To be precise, in 1972-73 this group purchased Rs. 4,400 worth of assets per household without any investment from own resources. The medium group (10 to 25 acres) however met their entire investment from their own resources.

In regard to income, in both the villages wage income earned in scarcity relief works formed a dominant component of the total income—81.4 per cent in the village badly affected by the drought and 59.4 per cent in the other. Public relief works provided some farming groups their only source of subsistence and also the wherewithal to meet the unexpected loss of agricultural inputs. Employment on scarcity works in Marathawada as on January 1, 1973 was 6.88 lakhs, by April 12, 1973 it had increased to 13.82 lakhs. Thus, though the relief programme acquitted itself creditably, the same cannot be said of the public distribution system. Fair price shops supplied only cereals, and that to the extent of only 25 per cent of the households' purchases.

It is true that the severe drought of 1972-73 took the State unawares. Unavoidably, only two relatively less productive programmes, metal breaking and road construction, could be immediately undertaken. "So much metal had been collected by the end of 1972-73—most of it having no prospect of being used in near future—that it is impossible to think of further continuation of metal breaking." But it does appear that the lesson has been learned, and the district authorities are now supposed to have on their shelves blueprints of productive projects. The authors make a welcome plea for undertaking works to improve the *quality* of village life, even if it is 'unproductive' in the narrow sense.

The authors do not approve of the revised orders of September, 1974 which restrict the scope of the Employment Guarantee Scheme (EGS)—*e.g.*, the proviso that the scheme should not affect agricultural operations for want of manpower. Much would depend on the view one takes of the role of the EGS. Is it to be the main plank of employment policy or should more employment be generated in the current occupations (*e.g.*, through multiple cropping) of the people concerned through intensification and planned development?

M. L. DANTWALA

Demand and Supply of Eggs : An Econometric Analysis, D. S. Sidhu, S. Chand & Co. (Pvt.) Ltd., New Delhi-55, 1974. Pp. xii + 146. Rs. 30.00.

This book is a revised version of the author's doctoral dissertation accepted in 1970 by the Indian Agricultural Research Institute, New Delhi. The underlying motivation of the study is that the "determination of reliable estimates of demand and supply elasticities is essential for all policies that impinge on production and marketing of different commodities." Pursuing this idea further, the author concentrates his investigations in estimating demand and supply elasticities for eggs—an area in which very few studies in the Indian context are available. The book is based on the data collected through personal contacts with the households referred to as the egg consumers and poultry farm operators called the egg producers. In this respect the study is based largely on the primary data collected through the systematically selected samples of commercial poultry farms and egg consumers. Both the egg consumers and poultry farm operators belong to Ludhiana in Punjab.

The book contains six chapters. The first chapter gives an overview of the egg industry and the last chapter highlights some of the conclusions emerging from the study. The second chapter which is of interest to econometricians summarises the results of the previous studies using quantitative techniques in the field of agricultural commodities in general and eggs in particular. The discussion in this chapter has been attempted separately for studies based on cross-section as well as time-series data—with little attempt to include studies involving the pooled data. While this chapter is interesting in the sense it indicates the extent to which econometric methods have been applied to agriculture, it fails to take notice of the major theoretical work done by Ragnar Frisch on the demand elasticities and subsequent application of Frisch technique to the U.S. agricultural commodities. The third chapter describes various channels of marketing for eggs in the Punjab. Of the seventeen pages devoted to this chapter, more than half the number of pages have been devoted to the price structure in Amritsar market while the interest of the study is in Ludhiana. Here the author has analysed the price data into different components such as trend, seasonal, cyclical and irregular fluctuations by the multiplicative method. Trend values indicated in Table 2 have been derived from twelve months' moving average. This by itself is not correct as this method will give values corresponding not exactly to the month, say, July but to a period somewhere between June and July when the average based on the data for January to December is computed. Since the author is interested in deriving the values for each month of the year, it would have been more appropriate if the use of central moving average had been made for this purpose. Secondly, on page 42 the author has made a recommendation "that the Punjab Government and the State Marketing Board should take necessary steps for regulation of eggs under the Agricultural Produce Markets Act, 1961." This recommendation does not follow from the discussion in the chapter. If the movements in egg-feed parity ratios pre-

sented in Table 6 are to be taken as the basis for the recommendation, then expansion of poultry farm industry during the last decade when the parity index consistently ruled below 100 appears to be somewhat intriguing.

Chapter IV—'Demand and Supply' is central to the study as it is in this chapter that the author has made use of the data collected from producers and consumers. The selection procedure for egg consumers reflects the ingenuity of the author. The data collected from the households have been used for computing what the author has called annual demand functions, monthly individual demand functions, monthly market demand functions and monthly aggregate market demand function. Using linear and Cobb-Douglas types of functional equations, annual demand functions have been obtained by regressing consumption of eggs on disposable income during the year. Monthly demand functions based on the data collected through households for a single year have their own limitations. As would appear from the discussion on page 66, the author is aware of the limitation of the use of monthly data. The monthly series derived from cross-sectional data is not likely to satisfy the condition of independence of the error term. However, there is every likelihood of the underlying behaviour in per capita egg consumption being different from that envisaged in the regression equations of either linear or Cobb-Douglas types because of the presence of ratchet effect in consumption. Apart from this, the investigator's biases are likely to creep in during the process of generating monthly series despite the best care towards sophistication of the data. Further, in Part II of this chapter which is concerned with the supply functions, the author has made a reference to the use of linear programming with variable prices or recursive programming. But the subsequent discussion does not refer as to how the supply functions are to be derived for a group of poultry farms as methods of linear programming with variable prices or recursive programming are more pertinent to the micro-units than to the industry with commodity like eggs where the market conditions approximate to that of perfect competition. The author's discussion of the supply functions based on monthly observations of cross-sectional consumer data on page 68 is misleading and so also his observations that in this supply function "price was positively correlated with the quantity demanded." Nevertheless justice has been done to the supply functions derived from production functions on pages 69-77.

Chapter V discusses the results of the various equations fitted to the data. The author has done well to classify the egg consumers into urban and rural and then into household with one person serving, both husband and wife serving and having business in the urban sector. The sub-classification in the rural sector is that of service and farming. The results for the various groups based on the annual data of consumers are summarised in Table 10 (p. 86). These are annual demand functions. The section on the individual demand functions which regress per capita consumption on per capita income, and temperature as also humidity has no doubt been well described. The

equations have been fitted to three occupational groups of the urban sector. The author seems to have dropped the egg price as also the relative price of eggs as variables from the functions on the ground that it is not possible to isolate the effect of egg price on egg consumption (p. 88). This in a way suggests that egg consumers are not price sensitive. It is difficult to validate this argument in theory and justify, on the basis of monthly series derived from cross-sectional data of a year, that shifts in demand functions arise from temperature and humidity apart from income to the exclusion of movements along the demand functions as a result of price changes. Durbin-Watson values for these functions are not available. Perhaps the specification of the functional form requires further investigation. Further in the monthly market demand functions instead of per capita consumption total consumption of eggs for each occupational group in the urban sector is used as a dependent variable. Results are presented in Tables 15 and 16. From Table 15 it is not clear as to which occupational groups the equations relate since Roman numerals have been used to identify the occupational groups in Tables 10, 12 and 13 and serial numbers in Arabic numerals in Tables 15 and 16. Similarly it is difficult to identify the equations in Table 19. The monthly aggregate market demand function which regresses total consumption of eggs by all consumers in three groups in the urban sector is given in Table 18. This shows that the aggregate egg consumption is influenced by the temperature. The discussion of supply functions based on consumer data, though being elaborate, lacks theoretical justification. On the other hand, the analysis of production function from the producers' data is somewhat adequate. The supply elasticities from the producers' and consumers' data, as expected, turn out to be different. Rather than explaining differences in the two elasticities the author has derived policy implications that the demand pressures consequent to the growth in incomes will force poultry farmers to expand production. It is, however, not clear as to how the production will expand when the terms of trade for the poultry farmers are not in their favour.

Finally, despite several drawbacks in the study, the book deals with an area hitherto unexplored by the researchers and should be of interest to the students and policy makers.

D. K. BHATIA

Farmers' Response to Agricultural Prices in India (A Study in Decision Making),
D. S. Tyagi, Heritage Publishers, Delhi-52, First Edition, 1974. Pp.xiv +
239. Rs. 40.00.

The central theme of this book is an exploration of how Indian farmers form price expectations. This is done through a case study of thirty farmers selected from each of three villages in Meerut district of Western Uttar Pradesh.

The author states that while there are many studies on price responsiveness of Indian farmers at macro level, they are based on the assumptions that all the farmers have similar expectation and that the expectation behaviour is invariant under different price situations and through time. Both these assumptions, he says, are open to challenge. The first assumption in the form in which it is stated has never been made. The macro studies implicitly assume that aggregate price expectation of the total number of farmers would reflect the expectation of the majority with the possibility that the expectation of the minority may be in conflict with the majority view. As for the second assumption referred to by the author, there is nothing wrong to assume that expectation behaviour is stable and predictable as envisaged in Nerlove's price expectation model, one of the limitations underlying that model is in assuming constant coefficient of price expectation.

He says that studies on farmers' expectation of future prices are practically non-existent in this country. What is conspicuously missing, he states, is a satisfactory bridge between cross-sectional findings about the nature and basis of farmers' expectations and the findings of aggregative time-series analysis about price responsiveness and that his work provides the bridge.

The farmers in this case study had a large proportion of area under cash crops, the benefit of perennial irrigation and they marketed large quantities of wheat and sugarcane. Information pertaining to expected future prices was collected from the farmers by asking questions which bore relevance to the formation of price expectations, *viz.*, yield levels, cultivation expenses, price of the crops, etc. The farmers were also asked to indicate their anticipations about the price trends. The collected data relating to farmers' price expectations have been presented in the form of frequency tables and used to test hypotheses relating to formation of price expectations. In all, eleven hypotheses are tested relating to price expectations. The author's conclusions on the basis of the tests are that farmers anticipate prices, their expectations are in absolute terms and in the form of a range of prices, farmers are not guided by others, and form their own price expectations.

Some of the other conclusions reached on the basis of analysis are expected prices are more closely related to recent past prices, the relative importance of past prices in forming expectations declines as one goes back in time, farm harvest prices are considered important in forming price expectations, there is a reversal in price expectations, when the farmers believe that the trough or peak in price has been reached, price expectations are extrapolative and the basis of price expectations for different farmers are not necessarily the same. The results also show that farmers can have conflicting expectations, the expected price is nearer the maximum of the range with a rising trend and nearer the minimum of the range with a falling trend in prices and that price expectations are formed independently for each crop. It is difficult to accept the last result, when the expectation is with result to competing crops.

The author has presented an expectation model according to which the expected price is the sum total of the price in the preceding period and the weighted aggregate of one-period and two-period lag differentials, where the weights depend on how the farmers aggregate the differentials. The author states that the expectation model presented by him anticipates the trends correctly.

The author estimates the total supply response for wheat and sugarcane through an auto-regressive linear model and compares the estimates obtained from that model with the estimates from the Nerlove adjustment model. He uses the time-series data for a period of fifteen years from 1955-56 to 1969-70, relating to the selected farmers along with cross-sectional estimates on price expectations to arrive at the estimates for price elasticities for wheat and sugarcane.

The author's effort in undertaking a micro study to understand the nature and basis of farmers' price expectations needs to be highly commended. His micro study has enabled him to test separately several hypotheses, referred to above, on the formation of expectations and thus to understand in a better perspective the factors determining overall price expectations.

The meaning attached to the word "shifter variable" on p. 7 of the book, which deals with the selection of samples is inappropriate. The author clearly appears to be confused between relations such as supply (area) and price on a given supply schedule, and area and exogenous factors, like improved technology, shifting the supply schedule to the right in a price-supply quadrant. The author has not elaborated the explicit relation between price expectation and risk arising out of uncertainty and the related question of maximizing expected utility, that is, returns for any specified level of risk. The study also does not refer to, much less examine the very important question of relative stability of aggregate price expectations compared to individual price expectations and the corresponding implications of group rationality compared to individual farmer rationality or irrationality. The issue that the group behaviour is more stable and predictable than individual behaviour has far reaching implications for price policy, and it is not therefore without reason that all major policy debates are addressed to the question on what the effect of price policy will be on aggregate production and marketed surplus. The estimational form of the auto-regressive linear model used by the author is no different from the estimational form of the Nerlove adjustment model, even though the author states that he is using the auto-regressive model because the distributed lag model is not appropriate. The disadvantage of the auto-regressive linear model used by the author is that it has no underlying theory as in the case of the distributed lag model.

Printing mistakes on authors' names and words abound in this book. There are not many pages that are free from it.

L. S. VENKATARAMANAN