

BOOK REVIEW

Irrigation in India's Agricultural Development : Productivity, Stability, Equity, by B. D. Dhawan, Institute of Economic Growth, Delhi; Sage Publications India Pvt. Ltd., New Delhi-48, 1980. Pp 265. Rs. 180.00.

Indian agriculture has traditionally been rainfed resulting in violent fluctuations in yield and output. Irrigation as the complementary input with fertilizer played a big role in economic development and made green revolution a possible reality in India. After independence, inspite of large investments made in the irrigation, the return to investment are very disappointing. However, considering the highly variable nature of monsoon, even with a little over one third of the irrigated acreage, it has been made possible to add stability to output, besides improving the yield levels and output. The studies conducted so far in the field of irrigation have confined themselves mostly to regional levels or highly aggregate level. Thus, the literature on irrigation finds itself lacking in the studies with a proper blending of statewise results leading to conclusions at the national level. The book under review is an attempt to fill this void. The book entitled "Irrigation in India's Agricultural Development" gives an exhaustive coverage of various facets of irrigation at aggregate level and at times state level as well. The book consists of 10 chapters, the first three chapters devoted for a discussion on importance, need for irrigation, conception and misconception about irrigation impact and the methodology adopted for carrying out the analysis. Out of remaining 7 chapters, the last chapter summarises the findings and puts forth certain suggestions and policy issues. The remaining chapters confine themselves to analysis of impact of irrigation on productivity, output, income, area etc. and then the analysis is extended to examine the stabilising effect of irrigation. In addition, the study also focuses attention on the role played by irrigation in protecting the output in the wake of droughts. The analysis does not end here, rather, the most important aspect-equity of

gains from irrigation, is also discussed in detail with facts and figures making the reading an interesting one.

Productivity of irrigation is measured in terms of aggregate crop output (FEES) being influenced by different sources of irrigation. Agricultural income is decomposed into irrigated and unirrigated so as to assess the contribution of irrigation towards income. In studying the protective role of irrigation, the author makes use of previous reports on droughts and the outputs, area and yield, corresponding to that period for irrigated and unirrigated conditions. This technique does give a picture of intensity of drought and its ramifications and its reduction if any, due to irrigation. But it fails to capture the indirect effect of drought on irrigation sources.

The author analyses the productivity of water resources (ha-cm) on aggregate crops and then looks at individual crops in a comparative framework (chapter 4). Based on the analysis, he suggests sugarcane for northern India, mustard for Rajasthan and groundnut for southern India on account of their superiority over paddy and wheat in judiciously using the scarce water resource. At this juncture, one is bound to be lacking knowledge in understanding the two different stands taken by the author. On one hand, the author justifies the predominance of foodgrains in irrigated area, by saying that their importance emanates from the problem of feeding public distribution system. On the other, he recommends sugarcane and oilseeds in the major foodgrains growing areas. This needs clarification.

Chapter 6 is concerned with the income impact of irrigation which is an extension of output impact excepting that income impact considers the costs associated with irrigation. The author makes use of the statewise estimates of income in the agricultural sector and after regressing this gross irrigated and unirrigated area gets the estimates and the difference between the income from irrigated area and the fraction of unirrigated income gives the income impact of irrigation. As admitted by the author himself, income does not include the income originating from livestock and dairy enterprises. This is of utmost importance which is excluded in the analysis. This limitation is serious enough to make the results uncomparable.

The stabilising role of irrigation is probed in chapter 7. The results of the study indicate substantial gain in stability due to irrigation. But, there are exceptions to this as revealed by Maharashtra, Bihar, M.P. and Karnataka where in the results do not lend any support to the view that irrigation adds stability, to the output.

Once the gains in productivity, stability, income generation and protection are established as a result of irrigation, a question arises as to

how these gains are distributed. Obviously the question of equity in gains is of paramount importance and the author, realising its importance, carries out the analysis and does a commendable job by interpreting these results in a separate chapter 9 exclusively for this aspect. Contrary to the general impression that the flow of benefits of irrigation is directed more towards the large farmers, it has been clearly demonstrated that the gains need not increase with the farm size as implied by Tamil Nadu and Punjab. Although a mention is made in the methodology chapter of the employment effects of irrigation, the book is silent about this crucial determinant of the status of an economy. The last chapter summarises the findings and the author does not hesitate to make some value judgements in highlighting the findings in favour of irrigation.

This book is a welcome addition to the literature on irrigation, particularly, the impact of irrigation. The book would surely be a guiding force behind all the researchers and administrators in the field of irrigation.

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