Vol XLVI
No. 3

ISSN 0019-5014

JULY-
SEPTEMBER
1991

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS

INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

Ind. Jn. of Agri. Econ.
Vol. 46, No. 3, July-Sept. 1991

Rapporteur's Report on Land and Water Markets

Rapporteur: V.B. Athreya*

With rapid commercialisation of agriculture, market relations have become an increasingly dominant feature of India's agrarian regime, notwithstanding the significant heterogeneity of the latter. While market relations in respect of produce, labour and land have considerable antiquity, water markets are a more recent phenomenon, at least in terms of spread. Water markets have certainly received an impetus in the post-Independence period, both on account of institutional reforms in agriculture and the 'new agricultural strategy' initiated in the mid-sixties. Twentyfive years into the green revolution, and after four decades of hesitant and half-hearted land reforms, it would certainly be interesting to look into the evolution, status and nature of land and water markets and their implications for policy.

A number of questions arise when one looks at land and water markets. Given that they are localised markets, there is bound to be considerable heterogeneity in their modes of functioning. Is it possible to identify both general and specific determinants of the emergence and the mode of functioning of such markets? What are the consequences of the nature of functioning of these markets for the different sections of the agrarian population? Do land markets in India accentuate ownership inequalities? Is it always the case that lease markets operate in such a way that operational holdings are less unequally distributed than ownership holdings? What has been the impact of land reforms on land markets? Are there clear regional patterns in the nature of functioning of land markets arising from agro-climatic, environmental and historical factors? How extensively developed are the water markets? Who buys and who sells water? Is there a great deal of variety in the terms on which water is sold or supplied? One could, of course, go on adding to this list many more meaningful questions.

Some of these questions have been explored in the thirty-four papers submitted to the Conference under this theme. Of these papers, seven deal with water markets and twenty-seven with land markets. The nearly 1:4 distribution is perhaps a reflection, at once, of the longer (and more systematically examined) history of land markets and the novelty of water markets as a phenomenon of Indian agriculture. It is, however, quite evident that water markets have not only come to stay, but are spreading rapidly, and one would expect, in the years to come, a far greater quantum of publishable research on the operation of water markets.

Many of the papers submitted to the Conference deal with case studies and pertain to a small, often non-random sample of the universe about which inferences are sought to be made. While such studies may no doubt offer useful insights, it is extremely difficult to draw policy implications from such material. Much of the discussions in the papers is also descriptive rather than analytical in nature. We also have instances of methodological extremes of the opposite kind, where linear programming techniques or regression analysis are uncritically applied.

In this brief review, we do not intend to summarise every paper accepted for discussion

* Professor and Head, Department of Economics, Bharathidasan University, Tiruchirapalli (Tamil Nadu).

at the Conference. Rather we shall draw on the analyses and conclusions in various papers in relation to some key issues which have been posed by the two keynote papers, one on land markets and the other on water markets.

WATER MARKETS

The keynote paper on water markets by Tushaar Shah is a veritable tour de force, which I found most enlightening. Shah begins with a discussion of the backdrop against which the issue of water markets in the context of irrigation development in India is being examined. Posing the crucial question of whether the haves or the have-nots will get the last remaining natural resource - water, he notes ".... the massive scale and speed with which the resource [water] is already being pre-empted by the rural elite...." Reviewing the role of public policy in checking the trend of usurpation, by the elite, of one more - and final - productive resource, he argues that existing policy instruments in fact exacerbate rather than check the trend. While groundwater is a common property resource, it is easily captured and privatised by owners of private tubewells. In effect, ..."ownership rights on water are given or denied through the rights to establish modern, Water Extraction Mechanisms (WEMs)." Shah argues that siting and licensing norms, on account of their recent introduction, still more recent enforcement, and non-applicability to existing WEM owners, ".... impose a 'virtual' allocation of ownership rights on groundwater which favours early exploiters and penalises the late ones, a majority of whom are likely to be resource poor." Since policing of the norms takes place through the credit and electricity supply agencies, the well-to-do can either evade the norms altogether or bribe their way past them. Shah sees the emergence of water markets as a "....redeeming feature in this otherwise gloomy scenario...." and lists their benefits to non-WEM owners, small holder WEM owners, agricultural labourers and the community as a whole. Evidence from various states shows that the existence of water markets can have "....dramatic beneficial effects on the incomes of water buyers and the economy of the community as a whole."

Turning to the evolution of water markets, one may classify water markets as more or less developed, depending on certain features: nature of transactions (cash/kind); nature of contractual terms (standard/varied); proportion of output of water sold by LIS owners (high/low); differences in cropping pattern, input use and technology between WEM owners and others (small/large); and percentage of non-WEM owners and their land using purchased water (high/low). Also in a more developed water market, selling water would have become a specialised activity, and WEM owners would not only seek to meet their own irrigation needs, but also to maximise returns from sale of water. Based on such a scheme, Shah finds the water markets in the Eastern regions (Orissa, Bihar and West Bengal) to be the least developed, and those in Punjab, Haryana, Western Uttar Pradesh, Gujarat and Maharashtra (as also parts of Tamil Nadu) to be highly developed. Discussing the potential role of water markets, under situations with varying combinations of water potential and water utilisation, Shah notes that they can play a positive role everywhere except where a low potential is already close to full utilisation. However, it is difficult to actualise the potential role of water markets on the ground, since "....localised fragmented water markets almost everywhere operate like natural oligopolies." Recognising thus that it is difficult to make groundwater markets competitive, Shah poses the question of whether "....it is possible to create a situation where oligopolists behave as if they operate under competitive conditions", and answers

that, "In the case of water markets, it seems it is."

Taking up the question of electricity pricing and its relationship to the efficiency of water markets, Shah argues for a flat, horsepower linked tariff (FR) as opposed to pro-rata tariff (PR) based on meter readings. According to Shah, under FR, "....sellers experience natural and powerful stimulus to expand the utilisation of their WEM by selling more water since the bulk of the additional revenue so earned constitutes their net profit. This stimulus intensifies competition among oligopolistic sellers and forces a lowering of the water prices." Shah's argument is only for a flat tariff, and not for low or subsidised power tariff, since logically, the level at which FR is pegged (provided it is not so high as to lead to disinvestment in electric pumpsets) should not make a difference to market behaviour. Shah argues for a progressive FR, where the rate per horsepower rises as the capacity of WEM increases as the optimal system, inasmuch as it would give small holders owning WEMs a cost advantage, and in water scarce areas, has the further benefit of discouraging large capacity motors. Shah also provides a coherent and logical discussion of the merits and demerits of PR as opposed to FR. Turning to public policy for groundwater development, Shah makes the point that "....water market performance can be substantially improved not by subsidising power but by improving the quality of power supplied to WEMs." The same logic holds for public tubewells. Direct subsides to farmers to invest in WEMs and subsidising investments in underground pipelines would help make water markets more competitive by increasing the number of sellers and partially delocalising the market. Investment in pipelines would also increase the efficiency of use of both water and power.

Finally, Shah takes a brief look at conjunctive water use and seeks to identify a policy package "....that would effectively integrate water markets into a scheme of conjunctive water use using private tubewells and vertical drains." Shah argues that "....if groundwater irrigation is encouraged in core command [of a surface (canal) irrigation system], and more canal water is made available to recharge the aquifers as also to reduce the pressure on groundwater irrigation in the peripheral command areas", this would help establish a water resource equilibrium via groundwater markets.

Shah's insightful and provocative paper, which challenges many established notions, should provide rich material for discussion at the Conference.

Seven papers on water markets have been submitted for discussion at the Conference. They show considerable variation in the nature and functioning of water markets. Jagdish Prasad and A. Narayanamoorthy find evidence of price discrimination in North Bihar and Tamil Nadu respectively, while V.T. Raju and D.V.S. Rao find locally uniform prices in Andhra Pradesh. All are agreed, however, on the highly localised and oligopolistic nature of water markets. R. Maria Saleth finds that groundwater markets in the Indo-Gangetic plain "....benefit mostly small and marginal farmers with low or no share in canal irrigation."

K.G. Agrawal *et al.* report from a study of water markets in a district of Madhya Pradesh also that groundwater markets have benefited marginal/small farmers. Both Raju and Rao, and Agrawal *et al.* find that medium farmers are the major water sellers, while Jagdish Prasad reports dominance of large farmers.

Examining the risk bearing function in relation to groundwater, S. Bandyopadhyay finds evidence of larger risk bearing capacity among large farmers in a West Bengal village. In his study village, no marginal farmer owns tubewells. A rather different theme is taken up by D. Narayana, who argues forcefully that post-Independence minor irrigation development

in Kerala did not involve local communities, was faulty by design and substandard in construction. He also argues that state intervention led to destruction of traditional irrigation organisations, and with the introduction of energised pumps, led to market dealings in water. His apprehension of water markets (presumably as inherently inequitous) and his reference to 'equity in the communal sharing of water' alleged to have prevailed earlier, will surely provoke useful discussion.

Taking all the papers together, their methodological limitations and heterogeneous foci of inquiry make it difficult to identify any unifying theme.

LAND MARKET

In his brief but incisive lead paper, N. Krishnaji has focused primarily on the role of the land market in determining the nature and limits of the historical process of dispossession of the peasantry. Starting with the observation that the land market is only one of several mechanisms through which land transfers occur, Krishnaji notes that the neo-classical literature has tended to focus more on lease markets. He has chosen to concentrate on the Marxian model of agrarian change, where the focus "....is on the alienation of land from direct producers, linked to the dynamics of accumulation." A problem that arises in this context is whether the classical Marxian model of agrarian change under capitalist accumulation is immediately applicable in contexts other than the one which led to the positing of the model, namely, the specific historical context of pre-capitalist Europe. The model, in its most simple and general version, posits a process of proletarianisation in the course of development of capitalism in agriculture. The superiority of large scale production, in this model, operates to alienate the small producer from the land, and contributes to proletarisanisation. When stated thus baldly, the model may appear unilinear. But it still offers very critical and useful insights. Further, its practitioners have usually qualified its application by reference to the specific historical context where it is sought to be applied. As Krishnaji notes, Lenin explicitly recognised that small peasants can survive by tightening their belts to an extraordinary degree.

Turning to the specific Indian context, Krishnaji notes that the persistence of small scale farming even as the proportion of agricultural labour in rural population has increased, reflects precisely this determination of small peasantry to survive. Undoubtedly, state intervention in various forms has also contributed to promote the survival of small peasants, who might have been otherwise rendered landless by a freely operating market mechanism. Even as Bhaduri's model of debt as a mechanism for land alienation - specifically developed keeping in mind the agrarian history of India's Eastern region - does not seem to hold widely, a number of micro level studies have appeared which testify to the persistence of small holdings and non-increasing concentration of land ownership. Evidences from large scale macro surveys (National Sample Survey) also confirm this picture. Krishnaji concludes with a call for village studies, ".... informed by local histories of the changing conditions of the peasantry and the specific roles of exogenous factors such as state intervention."

Twenty-seven papers have been submitted for discussion at the Conference under the theme of land markets. Most of them are based on primary data, while a few have used only secondary data. There is, generally speaking, no clear theoretical focus in the papers, but very rich material has been brought together. The quality as well as the concerns of analysis differ considerably across the papers. There are some common concerns however. One

common theme that recurs in many papers is who gets land and who is losing land in the land market. The evidence on this seems to be quite ambiguous, even within a given state. For instance, while Arun Nandi and Sachinandan Sau argue, based on a study of four villages in Midnapore district of West Bengal, that their results are "... indicative of an in-built tendency of land market transactions to equalise ownership holdings across households", A.K. Ray in his study of two villages from the West Bengal districts of Nadia and Hooghly reports that land market transactions "... seem to be resulting in a net transfer of land from small cultivators to mainly medium and large cultivators." Binoy N. Verma, using secondary data, finds that large farmers in West Bengal are net sellers. Similarly, D.K. Marothia *et al.* (studying a village in Madhya Pradesh), N.A. Gadre *et al.* (Vidarbha in Maharashtra), R.K. Panda and G.C. Kar (Orissa), Ramesh Chand and S.C. Tewari (Hill region in Himachal Pradesh), K.N. Rai *et al.* (Haryana), U.K. Pandey *et al.* (Haryana) and R.K. Pandey and V.R. Kiresur (Karnataka) all find that large farmers have gained land and small farmers have lost in the land market, and some report even increasing concentration of land. R.V. Dadibhavi and S.B. Somannavar (Karnataka), V.K. Pandey *et al.* (Uttar Pradesh) and B.R. Atteri and Geeta Bisaria (all-India) find that large farmers are net sellers and small farmers have gained. Given the methodological limitations of the inquiries concerned, it would be hazardous to generalise one way or the other about the impact of land markets as they have evolved, on inequality in and concentration of land ownership. However, the point to note is that whatever may be the evidence on 'raw' land distribution, when quality and value are taken into account, and when productive farm assets as a whole are taken into account, the picture in the post-green revolution period is most likely to reflect increased concentration. I advance this a prior argument on the ground that while state intervention in the area of land reforms may have helped prevent increase in ownership concentration, other measures of the state have served to promote concentration of productive assets as a whole.

A second recurrent theme in the papers is the operation of the lease market. S. Hari Kumar draws our attention to the emergence of informal leasing of land by agricultural labourers facing massive unemployment from farmers who find cultivation unprofitable in the specific conditions of Kuttanad in Kerala. The re-emergence of leasing in a post-land reform context is certainly a comment on the limits to agrarian reform within the present socio-economic milieu. Hari Kumar finds that large and medium farmers lease out while small farmers and landless labourers lease in.

In an interesting study of the lease market in the Punjab, Bant Singh *et al.* find that land-lease activity has increased sharply in the Punjab between 1971-72 and 1987-88. While land rent has increased, its ratio to productivity and to land value has declined. Small holders, widows and servicemen lease out.

The other paper on paper on leasing of agricultural land in the Punjab by I.S. Chatha *et al.* confirms the modern, capitalist character of tenancy in the Punjab. They find that 80 per cent of the leases are based on cash rent, with rents averaging around Rs. 3,000 per acre in 1990-91. The authors consider small farms unviable, and argue for large capitalist farms, and for revising old tenancy legislation to encourage the lease market further, "... which is essential, keeping in view the requirements of modern technology."

In a paper on leasing, cast in the neo-classical mould, Pratap Singh Birthal and R.P. Singh show that managerial skill is an important factor in the determination of desired cultivated area, and hence in the leasing decision.

Pandey and Kiresur in a paper on leasing in North Karnataka report the prevalence of fixed rent tenancy and inverse relationship between area leased in and owned area.

Other papers submitted under the theme of land markets have taken up historical evolution of land markets (K. Badri Narayanan), analysis of agricultural productivity (Binod Chandra Mohanty and Dibakar Naik), impact of irrigation on land market (R.R. Suryawanshi *et al.*), impact of land market on castewise ownership (S.P. Upadhyay *et al.*, Verma), optimum utilisation of land resources (S.P. Bhardwaj *et al.*) and role of land reforms in West Bengal on the land market (Ashish Kumar Banik)

Taking an overall view, the thirty-four papers on land and water markets, despite their varied levels of methodological rigour and substantive content, do provide considerable material for wide ranging discussions on questions of efficiency, equity and growth implications of land and water markets. The two lead papers will, of course, set the tone.