

Revival of Agriculture and Increasing Tenancy in India

Murali D A¹

Abstract

Indian agriculture sector has been witnessing phases of growth acceleration and deceleration in the recent past. Two explanations are the policy intervention to initiate growth and changing terms of trade. Due to this, there could be a systematic change in the cropping pattern and tenancy market. Given this, there are two questions the paper would like to raise. One, is the deceleration/revival of agriculture sector crop-specific? Two, does this have any implications on tenancy? Post 1994-95, agriculture witnessed a phase of deceleration followed by revival from 2004-05. In the first phase, the total cropped area and area under food grains had witnessed an absolute decline that might have resulted in the decline in land demand from tenants and increase in share of agriculture labour. The revival of the agrarian sector coincides with a significant revival of the food grain economy and to a lesser extent non-food grain economy. Horticultural crops just maintain its average annual growth rate. With the revival of the food grain economy, there is an increase in the share of tenancy, especially pure tenants. Does this imply that the agrarian sector is divided into food and non-food grain economy? Is growth of the agrarian economy predominantly defined by the growth of food grain sector and the institutional arrangements within agriculture to organise production, like tenancy? There is a need to move on to the high value horticulture sector, but the 'land hunger' of agriculture labour, who access land through tenancy market, is a major constraint.

Keywords: Agriculture economics, Economic reforms, Food and Non-Food crops, Tenancy

JEL Codes: Q1, Q180, Q150

¹ School of Economics, University of Hyderabad, India, alijnvd@gmail.com

1. Introduction

Indian agriculture sector has been undergoing through several phases of growth in the independent era. However, much discoursed two important phases since Green Revolution are the post reform period till mid-2000s and thereafter. The post-reform period, i.e. from 1995, has been considered has deceleration period of agrarian sector whereas later phase, i.e. from 2005, as a recovery period. The post-reform period was also a worst period that experienced drastic decline in average agricultural growth rate and farm income, which revived in the later period (Chand et al, 2015). In the existing literature, these changes has been attributed to several factors, but two important of them are policy interventions and terms of trade. The policy failure in post reform period is a major explanation for the setback of agrarian sector (Narayanamoorthy, 2007). There was decline in both private and public investments, subsidies and credit supply shrunk and state supported extension service chains were inefficient and broken. On the other hand, the terms of trade deteriorated since mid '90s until 2005-06 against expectations from the reforms, which lead to decline in private investments in agriculture (Chand and Parappurathu, 2012). The world prices and Minimum Support Prices for Paddy and Wheat declined in late '90s and early 2000s that tampered average annual growth rate of the sector.

Another significant change during these phases of agricultural growth is changes in tenancy market, which rarely came to limelight in the literature. It is an important institutional arrangement to organise production in Indian agriculture. The share of leased in area and households in rural India went through phases in parallel to agricultural growth rate. When the sector was performing well during Green Revolution period, there was an increase in share of leased in area and households. However, the same declined during post-reform period and revived since mid-2000s. Interestingly, the share of pure tenants also increased in the revival period. Given this scenario, there are two questions which the paper would like to raise. One, is the deceleration/revival of agricultural sector a crop specific and two, does this have any implications on tenancy and changes in tenancy market true across all Indian states?

The period of study is from 1985 to 2012 and it completely depends on secondary data set. The data on area related information has been collected from Land Use Statistics (LUS), published by Directorate of Economics and Statistics (Department of Agriculture, Govt. of India). Data on value of output has been taken from Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation (MOSPI). Three year moving average has been calculated for the same to normalise the effect of yearly fluctuations. The data on tenancy and related

information is collected from NSSO rounds on “Land and Livestock in India”. In this paper, we consider the survey conducted in January - August 2003 (agricultural year 2002-03) and January - July 2013 (agricultural year 2012-13). These NSSO rounds are also identified as the 59th and 70th round of NSSO. Further, this paper has been divided into three sections. In the first section we present phase wise trend growth rates in agriculture to analyse the fall and revival of the sector. This also throws some light on crop wise decomposition of growth to show the source of growth in revival of agriculture sector. The second section of the paper is focused on changes in tenancy over a period of time and state wise scenario. Following is the conclusion part where we attempt to raise some important questions on nature of the agrarian sector and its relation to tenancy market.

2. Revival of Agrarian growth

One of the methods to analyse performance over long period of time is to identify breaks in performance and then to identify phases in the sector. Chand and Parappurathu (2012), identify multiple breaks (five break in between 1960 and 2011-12) in the performance of the agrarian sector. In the period of our interest, Chand and Parappurathu (2012), identify two breaks (1995-96 and 2004-05). Based on the breaks we have identified the first phase can be identified from 1985-86 to 1995-96, second phase from 1995-96 to 2004-05 and the third phase from 2004-05 to 2010-11. Based on these phases we have tried to analyse the average annual growth of the agrarian sector as well as aggregate crop-wise growth rates.

Table 1: Average Annual Growth Rates of Agriculture Sector

	Agriculture GDP (at 2004-05 prices)	Value of agriculture of output
Phase I (1985-86 to 1995-96)	3.08	2.50
Phase II (1995-96 to 2004-05)	2.83	1.95
Phase III (2004-05 to 2010-11)	3.74	3.77

Source: Planning commission report, 2014 and Central Statistics Office (MOSPI)

If one compares the average annual growth rates over phases, the two estimates, presents a case where the agrarian sector witnessed a deceleration of growth in the second period and then again witnessed a revival in the third period (table 1). The annual rate of growth in the third period is higher when compared to the first period. But is the deceleration in the second period and revival in the third period a crop specific and state specific feature?

During the first period, the average annual growth of total cropped area increased by 0.58 but during the second period, when the agrarian sector is decelerating, there is a decrease in the total cropped areas and a revival in the total cropped areas when the sector revives. If one keeps

the question of causation aside, it presents a case of collinear movements in the two variables. Is this trend also true at crop specific level? To analyse the crop specific effect, we classified crops into four groups - food grains (FG), Non-Food grains (NFG), Horticultural crops (Horti.) and Other crops. FG includes cereals and pulses, NFG comprises all other food crops like oilseeds, fibres, plantation crops and condiments and spices (except fruits and vegetables). The fruits and vegetables are categorised as horticultural crops. At last, other crops includes other food crops and miscellaneous crops.

Table 2: Annual average growth rate of area for major Crop groups during different Phases of growth

Period	Total cropped area	Area under FG	Area under NFG	Area under Horti.	Area under others
Phase I (1985-86 to 1995-96)	0.58	-0.08	2.48	2.76	-0.29
Phase II (1995-96 to 2004-05)	-0.09	-0.35	0.16	2.91	-0.62
Phase III 2004-05 to 2010-11)	0.73	0.51	1.42	0.4	0.3

Source: Directorate of Economics and Statistics, Department of Agriculture

The average annual growth rate of cropped area increased in the first phase but the growth rate of cropped area under FG was negative implying an absolute decline in area under food grain (table 2). The growth rate of area under non-food grain as well as horticulture crops witnessed a positive growth in the first period. In the second period, the growth rate of area is negative which looks to be predominantly contributed by absolute decline in food grain area and area under 'other crops' in this period, there looks to be shift in area from food grain to horticulture. By the third period, there looks to be a revival of area under food grains and non-food grain with deceleration in growth in area under horticulture crop.

Table 3. Average Annual growth rate of Value of product (VOP) for major Crop groups during different Phases of growth

Period	Total value	Value of FG	Value of NFG	Value of Horti.	Value of other crops
Phase I (1985-86 to 1995-96)	2.5	2.67	4.3	2.64	-0.69
Phase II (1995-96 to 2004-05)	1.95	0.46	2.3	4.36	2.01
Phase III 2004-05 to 2010-11)	3.77	3.13	5.1	4.84	0.67

Source: Central Statistics Office (MOSPI)

As in the case of area, the average annual growth rate of value of agricultural output shows the declining trend when one sees deceleration phase when compared to the first phase. The average annual growth rate of total value of agricultural output declines from 2.5 to 1.95. The growth rate of value of food grains and non-food grains declined from 2.67 to 0.46 and 4.3 to 2.3 respectively. However, the average annual growth rate of value of horticultural crops increases from 4.36 to 4.84 percentage. So the acceleration in the average annual growth of horticultural crop precedes the policy intervention i.e., National Horticultural Mission 2005-06. In the recovery period agrarian growth average annual growth rate of all crops increases to 3.77, a rate much higher than in the first phase. The revival of the agrarian growth process, coincides with revival of average annual growth of value of output from food grain and non-food grain sectors. The horticultural crop witnesses only a marginal increase in growth rate from 4.36 to 4.84. In Chand and Parappurathu (2012), the phase 2004-05 to 2010-11, the trend growth rate in value of production has increased for all major crop groups (excluding spices and condiments) when compared to 1995-96 to 2004-05 (Chand and Parappurathu (2012), p-57, table 3). But interestingly, cereals witnessed a significant quantum jump in trend growth rate from 0.51 in the decelerating phase of agrarian growth to 2.60 in the revival state. A phase wise analysis agrarian economy presents some interesting observations. When the sector witnesses a deceleration in the second period, the average annual growth rate on value of production fell for foodgrain and non-foodgrain crops with horticulture witnessing an increase in growth. In the revival phase of the economy, there is a revival of foodgrain and non-foodgrain sectors. This trend seems to be true for most of the states also. There was a decline in average annual growth rate of total area for the all the states except West Bengal and Haryana during 1994 and 2004 and revived from 2005. Similarly, the average annual growth rate of value of output increased for all the states except Bihar since mid-2000s. So does this imply that acceleration/deceleration in agrarian growth on the acceleration/deceleration of the foodgrain sector are related or in other words, the agrarian growth does not show major indicators of decoupling with the foodgrain economy.

3. Over time trends in tenancy

Secondary data on tenancy is considered on three points of time (1991-92, 2002-03 and 2012-13). The year on which data on tenancy is available are one year in each of the three periods. There is a fluctuating trend in share of land under tenancy in the three year. In the first period, the share of land under tenancy was 8.2% and in the deceleration phase, share of land under tenancy also decreased to 6.5% and it again increased to 10.13% in the acceleration phase. The

share of households leasing in land also reveal a similar tendency. The share of households leasing in land was 11% in 1991-92 (the year in first phase), and this ratio decreased to around 10% in 2002-03 and then increased to around 12.26 percent by 2012-13. The land leased in by the pure tenants (households operating land but not owning land) also increased from around 25% in 2002-03 to 30% by 2012-13. The decrease in share of land under tenancy in 2002-03, might not have been a reflection of incentive for self-cultivation but maybe due to deceleration in the agrarian sector. When compared to 1991-92, in the year 2002-03 the share of cultivators also decreased but by 2012-13, there looks to be a small revival in the share of cultivators in the rural economy (Chitrasen and Vijay 2016). So by 2012-13, the share of cultivators are showing a marginal increase, share of land under tenancy is increasing and share of pure tenants in total tenants are also increasing when compared to 2002-03.

Table 4: Share of leased in area and households to total operated households from 1991-92 to 2012-13

Year	1991-92	2002-03	2012-13
% of land leased in to total operated area	8.52	6.5	10.25
% of households leasing in land to total operating households	11	10.1	12.26
Share of pure tenants to total tenants		25.29	30.49

Source: NSSO unit level data, 59th and 70th round- land and livestock and NSSO Reports

In the phase wherein agrarian sector was reviving, nearly all states witnessed an increase in share of households leasing in land as well as share of land under tenancy. The important exception were Gujarat, Haryana and Uttar Pradesh wherein both the variables witnessed a decline. In addition, Orissa witnessed a decline in share of households leasing in land and Assam and Maharashtra decline in the share of land leased in to total land operated. States like Andhra Pradesh, Bihar, Punjab and Tamil Nadu have witnessed a significant increase in tenancy arrangements. The outlier looks to be the state of Andhra Pradesh (undivided) which has the highest proportion of tenancy arrangements. This also seems to be true for other states which have high irrigational area. On the average, when the tenancy variable declines it is of smaller magnitude when compared to states which witnesses an increase which are of a higher magnitude.

Another notable change within tenancy market is a significant increase of pure tenants. At all India level and in all major states of India there is a significant increase in entirely leased in area or pure tenants between 2003 and 2013. Evidently, the landless labour are becoming cultivators over a period of time. At all India level, the share of pure tenants increased from

25.3 to 30.5 percent (table 5). State-wise scenario of pure tenants is also similar to all India level. Except Gujrat, Karnataka, Kerala, Maharashtra and Odisha all other major states witnessed an increase in pure tenants. Among them Gujrat, Karnataka and Kerala seems to have witnessed a drastic decline, which needs an explanation. There is a huge jump in share of pure tenants in a given decade. States like Andhra Pradesh and Tamil Nadu witnessed a significant jump from 27.48 and 24.75 to 47.05 and 46.27 percent respectively.

Table 5: State-wise share of leased in households and area between 2003 and 2013

States	% of land Ln HHs in 2003	% of land Ln HHs in 2013	% of Ln land in 2003	% of Ln land in 2013	% of land Ln by pure tenants to Ln in 2003	% of land Ln by pure tenants to Ln land in 2013
AP(united)	13.20	25.21	9.24	26.66	27.48	47.05
AP	NA	31.48	NA	35.24	NA	52.19
Telangana	NA	12.92	NA	13.64	NA	26.87
Assam	6.70	7.12	5.86	4.28	19.12	39.00
Bihar(united)	12.38	12.45	9.19	16.14	27.27	29.55
Gujarat	6.13	5.67	5.30	5.69	58.71	14.41
Haryana	12.85	11.87	16.98	16.01	4.81	12.98
Karnataka	4.99	8.18	3.71	7.34	36.34	9.39
Kerala	4.68	12.11	4.82	8.74	45.20	18.93
MP(united)	6.48	7.68	3.74	6.3	24.90	32.68
Maharashtra	6.78	8.00	4.85	3.43	29.65	20.34
Orissa	17.13	15.50	14.47	17.44	49.47	39.65
Punjab	12.20	14.69	19.71	26.34	5.83	3.56
Rajasthan	3.42	8.67	3.40	6.83	16.96	19.03
Tamil Nadu	9.24	12.20	6.78	14.37	24.75	46.27
UP(united)	12.93	10.18	10.64	7.89	16.90	18.90
WB	13.64	15.83	10.54	14.69	31.32	33.22
India	10.12	12.26	7.0	10.25	25.29	30.49

Source: NSSO unit level data, 59th and 70th round- land and livestock, Visit 1.

4. In lieu of conclusion

In the post 1994-95 period, Indian agriculture witnessed a phase of deceleration followed by a phase of revival of agriculture. In the phase of deceleration, the total cropped area had declined and area under food grains had also witnessed an absolute decline. In this period, the average annual growth rate of value of production from food grain also witnesses a significant decline. Maybe the decelerating growth in value of production of agriculture sector made the demand for land by pure tenants in the tenancy market sluggish. In the process decreasing land under

tenancy and increasing share of agricultural labour households. In this period, land under horticulture crop witnessed a significant increase and the average annual growth rate of value of production of horticulture crop also witnessed a significant increase but was not able to pull the sector from decelerating growth to revival of the sector. The reasons for deceleration of the sector, to the large extent, are policy failure (Narayanamoorthy, 2007), and unfavourable terms of trade for agriculture.

The revival of agricultural sector, are when the terms of trade start to go in favour of agriculture and policy initiative to revive agricultural sector. There was an increase in the share of public investment and a historic increase (up to 18.12 percent) in the share of private investments leading to the recovery of the sector (Chand and Parappurathu, 2012). With the help of schemes like Support to State Extension Programmes for Extension Reforms, which was launched in 2005-06, the extension system of agriculture sector revived to some extent (Deokar and Shetty, 2014). In terms of credit supply also the government of India promised to increase many-fold to fulfil the marginal and small farmer's requirements. Due these policy initiatives the agrarian sector revives. The revival of the agrarian sector coincides with a significant revival of the food grain economy and to a lesser extent by the non-food grain economy. The horticultural crops just maintains its average annual rate of growth in the economy. With the revival of the agrarian economy and food grain economy is the increase in the share of tenancy and specifically the increase in pure tenants.

Does this imply the agrarian sector has two parts: one the food grain and non-food grain economy? The acceleration/deceleration of growth of the agrarian economy looks to be predominantly defined by the changes in the food grain sector. The institutional arrangements within agriculture to organise production, like tenancy, depends on growth of the sector which in terms is related to the food grain economy? There is a need to move on to the high values like horticultural sector, but the 'land hunger' agricultural labour access land through the tenancy market constraining the shift to high values and high uncertain horticultural crops.

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