

Some Reflections on Agrarian Prospects

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Indian agriculture is once again in a slowdown. After the spurt of 2004–05–2011–12 when growth accelerated and the variability of production declined, in recent years growth has slowed and volatility has risen. Given weak world economic prospects and looming climate change, the main objectives of agricultural policy should now be to (i) enhance efficiency of production and natural resource use, and (ii) devise appropriate safety nets to cope with risks whether from markets or climate.

In a downward revision from earlier provisional estimates, the revised National Accounts Statistics (NAS) released on January 29 place the rate of growth of gross value added (GVA) in Agriculture and allied sectors at *minus 0.2%* in 2014–15, negative for the first time since 2002–03. Crop output in 2014–15 is estimated to have declined by 3.2% due to the 12% monsoon deficit that year, but this was counterbalanced substantially by a 7.3% growth of the livestock sector.

The real interest, however, is regarding 2015–16. With a monsoon deficit again, this time of 14%, this is only the third instance since independence (and only fourth since 1901) of two consecutive meteorological droughts. However, first advance estimates of the 2015–16 kharif crop output (about 1.5% less than last year's fourth estimates but higher than first estimates of 2014–15) suggest only a marginal drop from 2014–15. And, although still too early to take a call on rabi output, the data on rabi sowing also suggests a fairly small shortfall. Thus, indications so far are that this rare meteorological event, as well as other weather extremes such as floods in Tamil Nadu, may not have hit crop output as badly as many had feared. Nonetheless, outcomes of this and the previous year are a significant break in recent agricultural performance and thus an appropriate time to take stock of the situation.

Impact on Inflation

Consider, first, the immediate issue that most concerns the media: the effect of drought on inflation. The latest (that is, December 2015) wholesale price index (wpi) for food articles was 8% higher than a year earlier, with prices of pulses and vegetables soaring 56% and 21%, respectively. Obviously, this irks consumers and makes them doubt official claims of

low inflation. But it is a fact that overall wpi inflation, which came down significantly in 2014–15, remains negative with prices of cereals, fuel and most manufactured products, including food products, either flat or even actually down. The consumer price index (cpi), both overall and its food and beverage component, was about 6% higher in December 2015 than a year earlier. This is up from its lows and higher than wpi, but is in line with official targets and well below double-digits, which were common during 2005 to 2013. Overall, therefore, it can be said that the drought has not had any major inflationary impact so far, except maybe on items like pulses, vegetables and a few others for which imports are only a very limited option. The main reasons for this are: first, cereal stocks remain adequate and, second, the ongoing global commodity price deflation. World agricultural prices, which had increased massively between 2005 and 2011, have actually fallen by about 25% during the last two years.

In fact, the present situation is similar to the El Nino years of 1997–98 and 2002–03, when too there was hardly any inflationary effect, although agriculture GVA had declined 3% and 7%, respectively, much more than in 2014–15 or is likely this year. Then, like now, world agricultural prices were in decline following the Asian meltdown and domestic demand was being restrained by requirements of fiscal consolidation. However, while this comparison may be comforting on inflation, it is actually worrying because, as is now fairly well known, the period from the mid-1990s to the mid-2000s was one of an agricultural setback as well as of heightened rural distress.

For example, Chand et al (2015), who review growth of farm incomes since 1983, note that the decade from 1993–94 to 2004–05 was the worst of three periods analysed, not just in terms of growth of agricultural output, but even more from the point of view of farmer well-being. They calculate that growth of real income per farmer decelerated from 2.7% per annum during 1983–1993–94 to 2% during 1993–94–2004–05, and

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report that the number of farmer suicides increased 70% between 1995 and 2004. This outcome, which was then termed an "agrarian crisis" by the media, was of course in part due to recurrent bouts of below normal rainfall. But this was hugely magnified because the coincidence of falling farm prices with adverse output shocks significantly multiplied risks of farming and of debt default. Chand et al also note that this situation was substantially reversed during 2004–05–2011–12, when the rate of growth of real income per farmer accelerated to 7.3% per annum and incidents of farmer suicides declined almost as rapidly as they had earlier increased. This happened not only because the rate of growth of agricultural output increased to 4% per annum, but because there was also significant improvement in agriculture's terms of trade and an actual reduction in the number of farmers, as family members diversified to non-agricultural occupations. But Chand et al were rather pessimistic regarding continuation of this trend.

Renewed Distress

Their concern was real. Reports of distress are again flowing in from rural areas of many states and the term "agrarian crisis" can be seen in the media once more. This is not just on account of the impact of drought on crop production. Rural incomes have also been impacted by a weakening world economy and the sluggish domestic investment climate. Export demand is down for many goods of rural origin and domestic prices of export crops (for example, basmati rice, cotton and rubber) have fallen due to the world commodity price deflation.

On the domestic side, the anaemic growth of fixed investment since 2012–13 has caused growth of the construction sector, the most buoyant source of non-farm employment for rural workers, to fall from an average of nearly 10% per annum during 2005–12 to just around 4% in the last three years. Add to this the fact that efforts at fiscal consolidation have meant that public expenditure in rural areas has not increased in real terms after 2012–13, and that all of the above have multiplier effects, rural and farm real per capita incomes have probably at

best stagnated during the last two years. This is certainly true of rural real wages which increased very rapidly from 2007 to 2012, but have declined after 2013. This is also showing up in low growth of sales of fast moving consumer goods and durables such as two-wheelers. Further, the NAS report a 2014–15 growth of nominal agricultural GVA much lower than prevalent interest rates and also an absolute decline of investment in agriculture. This combination, if it continues, portends a sharp increase in the burden of farm debt with all its worrying consequences.

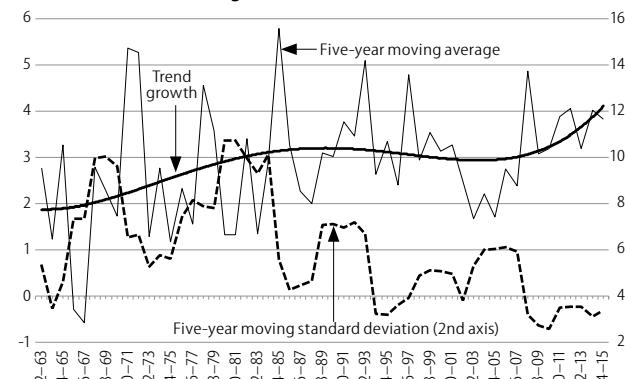
Lessons from 2004–05–2011–12

However, with multiple issues involved and many of these international in dimension, and thus beyond the scope of domestic policy, it is necessary to concentrate on those things which are doable. In particular, it is necessary to identify the inherent strengths that emerged from the experience during 2004–05 to 2011–12 and to build on these.

A starting point for this is Chart 1, which is reproduced from the Twelfth Five Year Plan document but with latest data for a longer period up to 2014–15. Here, the first (solid) line plots the five-year moving average of annual growth rates of agricultural GVA and the second (dashed) line plots the five-year moving standard deviation of the same annual growth rates. Thus, while the point on the solid line for 2004–05 is the average of the five annual growth rates during 2000–01 to 2004–05, the corresponding point on the dashed line is the standard deviation of the same five growth rates.

This simple chart makes four important points. First, despite sharp fluctuations, the green revolution caused the underlying trend agricultural growth to accelerate after the mid-1960s from about 2% to 3%. And, though this stalled by the end-1980s as that technological potential exhausted, growth accelerated again after 2005, to around 4%. Second,

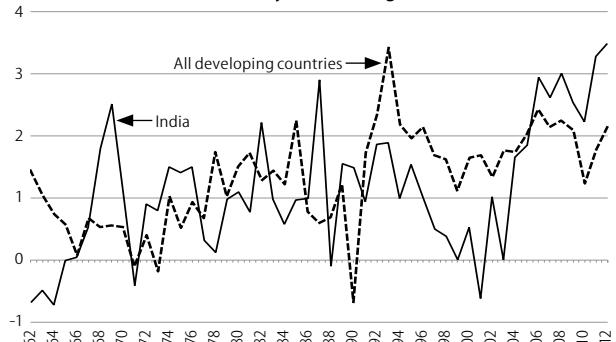
Chart 1: Five-year Moving Average and Moving Standard Deviation of Annual Growth Rates of Agriculture GDP



that variability of annual growth rates, which had actually increased with the introduction of the green revolution, declined very sharply after early 1980s. This was in part because of irrigation expansion and wider spread of HYV technology, but the magnitude of the decline is explained mainly by rain-fed agriculture becoming less vulnerable to weather shocks through diversification and watershed development. Third, the period 1996–2005 saw marked deterioration of both these positive trends: average growth declined and growth variability increased. This period was associated with a particularly poor performance in rain-fed areas, in part because of poorer monsoons. But the most important reason for the overall setback was a neglect of agriculture in economic policy and the rundown of support systems which had begun in the early 1990s. Fourth, the period after 2004 saw significant increase in growth averages as well as substantial decline in their variability. This was driven by higher productivity all-round, but much more in commodities and in areas that were not covered by the green revolution, that is, rain-fed crops, horticulture and livestock. Growth rates improved considerably in rain-fed areas to surpass those in irrigated areas and this happened despite significant warming, more frequent extreme weather events and no real improvement in average annual rainfall.

Total Factor Productivity

These observations are buttressed by Chart 2 (p 14), which plots, for both India and all developing countries, rates

Chart 2: Total Factor Productivity Growth in Agriculture

Source:<http://www.ers.usda.gov/data-products/international-agricultural-productivity.aspx>.

of growth of Total Factor Productivity in Agriculture (TFP, a measure of returns to input use and efficiency) as calculated by the United States Department of Agriculture. Again, four points are worth noting. First, the considerable similarity in movement of the two series, highlighting the importance of common international factors on Indian agricultural performance. Second, that the period 1993–2004, when agriculture was relatively neglected and agrarian distress most evident, was also the only extended post-green revolution period when India's TFP performance fell substantially below that of other countries. Third, that the two periods when India performed better than the developing world as a whole were during 1968 to 1976 (that is, the prime green revolution period) and post-2005. And, fourth, that of these two periods, TFP growth was very significantly higher post-2005 than during the green revolution.

Together, these charts emphasise not only the importance of TFP but also its changing nature. This should be appreciated since, given weak world economic prospects and looming climate change, the main objectives of agricultural policy should be to (i) enhance efficiency of production and natural resource use, and (ii) devise appropriate safety nets to cope with risks whether from markets or climate. In this context it should also be noted that (a) the green revolution was based on intensifying input-use, but that in many areas further intensification is now yielding negative returns if natural resource depletion is factored in; (b) that many activities that have gained from more recent TFP growth, such as horticulture and livestock, require longer gestation

not only on-farm but also from supportive infrastructure and that reducing variability is itself a pathway to higher growth; and (c) that TFP is as much about institutions as about technology per se, particularly in the context of tiny farms and given the importance of preserving

common natural resources. These considerations had led policy formulation during 2004 to 2014 to combine technology missions with efforts to rebuild support institutions. The optimistic message from Charts 1 and 2 is that positive outcomes did follow, some of which are seen to continue even into 2014–15.

Changing Priorities

In this context, it is worth identifying where the priorities of the present government may differ from the policies that were pursued during 2004 to 2014. Some clue to this is provided by a December 2015 NITI Aayog Occasional Paper entitled "Raising Agricultural Productivity and Making Farming Remunerative for Farmers". As the first policy paper on agriculture from this new institution, it can be excused for its reticence to acknowledge achievements of the previous government and seeking instead to "bring about a second Green Revolution in India." Nonetheless, it is an important document that concentrates on five issues: (i) measures necessary to raise productivity, (ii) policies to ensure remunerative prices for farmers, (iii) reforms necessary in the area of land leasing and titles, (iv) a mechanism to bring quick relief to farmers hit by natural disasters, and (v) initiatives necessary to spread the green revolution to the Eastern states.

Not surprisingly, much of what is contained in this paper is very similar to what was contained in the Twelfth Plan. On the productivity side, this is particularly the case regarding water-use efficiency, soils, seeds and fertiliser policy, except that there is a much greater explicit endorsement of genetically modified organisms (GMOs). The sections

on marketing, insurance, land lease and titling and on the eastern region are also very similar, except that at various points there is a more explicit call to move towards direct benefit transfers (DBT) to farmers, be it regarding subsidy, deficiency payments in lieu of a minimum support price (MSP) or disaster relief/insurance. Given that there were strong supporters of both GMOs and DBT in the previous regime, the differences of commission probably only reflect that there are fewer doubts regarding these in the present government than in the previous.

Omissions in New Approach

What is important, however, are the omissions in the occasional paper. These relate mainly to the architecture of agricultural policy and support systems, and to the role of collective effort. For example, what is missing completely is any reference to the Rashtriya Krishi Vikas Yojana (RKVY) that attempted to incentivise agricultural planning and investment at the state and district level while decentralising and untying the fund flow. Also missing are the nature of support to state extension systems and conceptualisation of the role expected of cooperatives, farmer producer organisations and other existing institutional arrangements such as in the case of watershed development. Further, although reference is made to conservation agriculture, there is no mention of the ambitious National Mission for Sustainable Agriculture, and within it for rain-fed area development, that was drawn up in the Twelfth Plan. Presently, Twelfth Plan initiatives continue, though with much reduced funding after the Fourteenth Finance Commission award and states might be expected to devise their own alternatives after this plan period is over.

In light of the earlier discussion, this raises two related questions. The first follows from the emphasis put on the idea that market reforms will deliver efficiency while DBT will be a better mechanism for support and safety nets. This requires that states agree not to interfere too much with (or through) markets and that the centre rely more on delivering benefits directly to farmers

rather than involve institutions of state governments. But does this not carry the risk that states may wind down, or at least not strengthen, some support institutions such as on extension, credit, animal health and agricultural universities? The second relates to the average scale of operation of Indian farmers and the extended TFP setback that followed institutional erosion during the 1990s. Is there not a need to continue with the rebuilding exercises that were the main focus during 2005–14? It is these, and not so much the details, that require a medium-run focus and a hopeful sign here is that the present government has borrowed much from the RKVV architecture in designing its new Pradhan Mantri Krishi Sinchai Yojana.

Recognition of NREGA

But what about the immediate situation and the rare occurrence of two droughts in succession? Again there is hope in that this has meant recognition of the merits of National Rural Employment Guarantee Act (NREGA). There is hope too in the fact that in the two previous cases of consecutive drought, GVA rebound in the following year was 15% in 1967 and 16% in 1988, so that 2016–17 may be a record harvest and weaken prices further. I am therefore more optimistic about short-run output prospects than about welfare of farmers. The latter is not just about agriculture but also health and education, where currently there is evidence of slippage. In addition, there is the danger, as happened

during the low inflation years from 1997 to 2004, of a counterproductive tendency towards complacency and neglect of agriculture when food inflation is low because of low world prices and resulting stagnant rural incomes reduce demand further. Many of these issues were discussed in the Mid-term Appraisal of the Tenth Plan and during formulation of the Eleventh Plan, but their relevance was reduced as world prices soared from 2005 to 2011 and remained elevated till 2014. Perhaps it is time to also revisit some of those discussions.

REFERENCE

Chand, R, R Saxena and S Rana (2015): "Estimates and Analysis of Farm Income in India, 1983–84 to 2011–12," *Economic & Political Weekly*, Vol L, No 22, 30 May.