Synopsis

1.1 Issues

Growth is a pervasive phenomenon. It is like a strong tile which pushes everybody up from the narrow rivulet to the wide open ocean. It opens possibilities that are innumerable. New dimensions are enlivened hopes ignited and realisation endorsed.

In their recent book “An Uncertain Glory: India and its Contradictions” Sen and Dreze (2013) argued in integrating growth with development. Growth brings possibilities but they have to be reaped. Tides open new possibilities of growth but also shipwrecks, particularly if one is ill prepared for it. For example, establishment of a new industrial unit in a backwater creates employment opportunities. However, they can be reaped only if a person is properly skilled. For the unskilled ill educated populace of the backwater this avenue is closed. For them, the only solace is the new type of informal job created around the settlement. This may improve their standard of living but reduces their social status from a free independent farmer to the informal petty job holders.

Our concern is agricultural growth. Numerous debates have been raised regarding the pace and sources of the agrarian growth process in India. This is an important issue and has its own significance. In a country where about 70% of rural people are directly engaged in agriculture, the problem cannot be neglected. Our study also contributes to this end. We have searched for the pace and pattern of growth dynamics across the cross sectional variation of the country. Our study is a district level analysis across some of the major states of India.

The issue however does not end here. Growth has a normative aspect – it influences on the welfare of the people. It was a seminar work of Kakwani (1991 and 1997) that was first captured normative aspect of growth delving deeply into the relationship between long run and short run growth. Kakwani (1991 and 1997) was able to sort out a weighting structure appropriate for a social welfare function. The structure was adopted by us in the context of Indian agriculture. This would help us to unravel the welfare complexity behind the agrarian dynamics.
In the current decade another issue related to growth is the dimension of efficiency. There are two ways in which output can be increased without using the current level of resources – the technical change and efficiency change. The concept of TFP is developed to capture this niceties’ of growth. Our study incorporates the TFP analysis in the context of the Indian agriculture. Interestingly TFPG is different from simple growth. It is the effect of combine input uses and technical changes. The cross sectional analysis of TFPG relates output changes in input uses.

Again the ethical dynamics of TFPG is rarely covered. In this respect a path breaking work is done by Rao and Coelli (1999). This work tries to capture the impact on social welfare due to change in the output per se. The inequality indices (such as gini - coefficient) has been utilised for capturing the welfare dimension of growth. The methods developed in the model can be used to chart the welfare changes when growth occurs. Agrarian TFPG analyse by us have utilise this approach.

Lastly a direct link between Total Factor Productivity Growth (TFPG) and some basic parameters of social welfare have been addressed. It is interesting to find out whether an expansion of the TFPG can help to reduce rural poverty. Growth without sufficient impact on welfare is a Mormon’s voice. We may be elated at observing a very high growth rate. However, such a elation is illusive unless and until it can bring a meaningful change to the lights of people who are connected with it. Our study is a modest attempt to bring out the issue in the context agrarian changes in India.

1.2 Objectives

- To analyse the agrarian scenario of selected states using several growth parameters using Kakwani’s (1991 and 1997) method.
- To unravel welfare implications of alternative growth measures.
- To counter pose efficiency along with growth using TFPG study.
- To understand welfare implications of such efficiency embedded growth measures.

In this introductory chapter we have briefly stated the issues involved and the objectives of our study. However to gauge the problem more critically it is necessary to look at the existing literature on this topic. This would help us to bring out canvas on which the picture can be drawn. This is the task we undertaken in the next chapter.
1.2 Brief Description of the Study

Apparently our problems are two fold. On the one, we see the pace and reatem of a
dynamic change in agriculture. For this we first consider the simple growth measures in
relation to Indian agriculture. The fence is crossed here to encompass newer methods of
growth calculation as developed by Kakwani (1991 and 1997). The same exercise is
repeated when input changes are related to output changes delving into the boiling pot
of what economist call TFPG. Again the district level agricultural data of major states is
concern. This is one side of the moon. The other side is the normative features of
growth. Taking a Cue from A. Sen’s interesting book ‘Inequality of what’ we argue
growth of what in agriculture is related to the welfare of people whose livelihood
depends on it. Unless the relationship between growth and welfare is positive, this spurt
of high growth becomes demise in moon walking even the concept of TFPG is not
immune to this phenomenon. A paper by Rao and Coelli (1999) clears this issue. We
employed the welfare induce simple growth and TFPG measures. However, these are all
technicalities. The direct link between TFPG and welfare inequality movement should
be assessed. We take this task also.

Chapter -1 is an introductory chapter. In this chapter we motivate our study. The
rationale of a positive and normative link up is clarified here. Our objectives are also
spelt out. Finally a plan of the study is given.

No study can begin in vacuum. The background of a study is very important.
This is our task in chapter-2. This chapter gives a details study of the existing literature
on agricultural growth as well as agricultural productivity. For the purpose of analysis
we will segregated the existing literature in two parts- 1) existing literature related to
growth in Indian agriculture and 2) literature related to efficiency in Indian agriculture.
In this chapter we have briefly reviewed the major works that have been done in the
context of growth as well as efficiency in Indian agriculture that have been done by
various researchers on this topic. These reviews help us to find out the gaps in the
existing literature and pave out for our study.
Chapter 3 provides a brief description of data and methodology used for our empirical analysis. The data that have been used is collected from three main sources. For the analysis of welfare enhancing growth measure of Indian agriculture, the required data have been collected from The Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India. For the analysis of efficiency of Indian agriculture, we have used the data on relevant parameters published by G.S Bhatta and Gurmail Singh on their book ‘Economic Liberalisation and Indian Agriculture – A District Level Study’ (2011). Finally to provide a link between TFPG and poverty we use the District Level Household and Facility Survey (DLHS) Data compiled by The Ministry of Health and Family Welfare (MoHFW), Government of India.

In chapter -4, we have discussed the imperatives of growth rates. Traditionally, there are two types of growth rates-long-run trend growth rates also designated as Least squares Growth rates (LSGR) and period-to-period instantaneous growth rates. Kakwani (1991 and 1997) in his paper tried to find out a link between the two. In the process, he was able to derive a weight structure linking LSGR and Instantaneous Growth Rate. However this particular weight structure is rather arbitrary. Kakwani (1991 and 1997) devised alternative structure of weight structure deriving different types of growth parameters. These alternative growth rates gave varying emphasis to the differing time points thereby giving a clue to the improvement, stagnancy or enhancement of growth over time. Thus they could be profitably used as alternative measures of convergence or divergence. The chapter uses them (following the suggestion of Sengupta, Bhhattacharya and Chattopadhyay 2004). The picture is a mixed one. Some areas show an acceleration, others deceleration or stagnancy. As for convergence there are both catching up and falling down. However, the entire analysis here is positive. However agrarian growth is not a descriptive entity. Lives of millions is linked with it. Hence it should have a welfare dimension. This is our task in the next chapter.

In chapter-5 we captured the normative aspect of growth delving deeply into the relationship between long run and short run growth. Kakwani (1991 and 1997) was able to sort out a weighting structure appropriate for a social welfare function. The structure was adopted by us in the context of Indian agriculture. This would help us to unravel the welfare complexity behind the agrarian dynamics. Some of the conclusions emerging from the study are summarized below.
The empirical results show that a large number of districts from all the three states under study fell victim to the new economic policy in the post liberalisation era. The results based on different types of growth rates allow us to reject the hypothesis that the rate of growth of agriculture for the districts under study increased over time. This has not been possible mainly because of the diminishing rate of growth of the cropped area. The study also indicates that contrary to the popular belief of the neo-classical growth school, there is no perceptible convergence in the growth of productivity or output of agricultural products across the different districts.

Some changes in the growth of agricultural production during the pre and post liberalization periods are also observed. However, these changes have not been helpful to bring about a change in the long term perspective. The relative stagnancy of wheat cultivation indicates a lack of proper dissipation of modern technological know-how across regions. Some kind of regional disparities are also observed in the growth of output of various crops between the so-called developed and laggard districts of the three states under study. The short period analysis also suggest that although the relative growth performance of the district deteriorated censurably in the post liberalisation period, some of them still managed to improve their relative welfare levels better in that period.

On the basis of forgoing discussion we may conclude that the growth of agriculture during the last 40 years has been highly unequal. The less developed districts suffered a greater decline in their agricultural performance than the few advance districts. The new agricultural technology as well as liberalization policies, have not been in any case more effective for enhancing welfare-oriented growth for the districts under study in general, and for laggard districts in particular.

In chapter-6, Data Envelopment Analysis is applied to measure the structural efficiency of firms for four agro climatic zones in India. There are wide variations in cultivating practice and in the yield rate of production of these zones. The results suggest that North Western region is the dominating zone in respect of farm efficiency under CRS as well as VRS technology. The average efficiency score for this region is greater than all other region under CRS and VRS technology. It is also observed that the average efficiency score is higher under VRS technology than CRS technology. On the contrary,
the Central region is less efficient region then all other regions. The position of eastern region and southern region are also good during the last fifty years of Indian agricultural. The relative performance of the agricultural sector was gauged using DEA. Mathematical programming methods were used to measure Malmquist indexes of total factor productivity. It was found that, during that period, the total factor productivity experienced a positive evolution in the sampled countries. A decomposition of these measures suggests that, most of the good performance of factors productivity is attributable to technical efficiency change rather than to technical change. This suggests that, in the achievement of high levels of agricultural production, the principal difficulty appears in raising technology, that is, a shift in the production frontier.

Chapter -7 deals with Total Factor Productivity Growth (TFPG). TFPG is obviously an advance method on the simple growth measures linking input changes with output changes. However, even TFPG has not been generally associated with well indication. This was first achieved by Rao and Coelli (1999). We used their three models for assessing welfare related TFPG measures. The relation between simple TFPG and welfare is the play of an inequality measure – gini-coefficient of agricultural output in our case. Under all the model North –Western region becomes the best performer with a low gini coefficient and high productivity. The southern region is the follower of North-Western zone though contrast between various models is not very sharp. The almost same case is the Eastern zone. For the central zone however a massive inequality lowers welfare oriented TFPG.

Next we relate TFPG directly with some measures of social welfare. Our analysis is strongly correlated with the standard measures of welfare particularly rural poverty. It appears that a rise of TFPG lower poverty to a considerable extent. Most of the parameters of social improvement are also correlated with TFPG. In all growth and efficiency is not anomic to welfare.

In chapter 8 we have concluded and given the major findings of the study. Given this background, we can now check out our objectives.