

## *Agriculture Agenda for Odisha – Issues and Challenges\**

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It is a matter of great pleasure to participate in this very important Agriculture Conclave organised by the Reserve Bank of India with active support from the Odisha University of Agriculture & Technology (OUAT), the National Bank for Agriculture & Rural Development (NABARD) and the Government of Odisha. As you would be aware, both the Reserve Bank of India, Bhubaneswar Office and the OUAT are celebrating their Golden Jubilee year – fifty years of commitment to the development of the economy of the State, in general, and agriculture, in particular. Commitment of the Reserve Bank towards providing impetus to the agriculture sector of the State can be judged from the fact that way back in 1962, we started our operations in Bhubaneswar with the lone department – the Agriculture Credit Department. The same year also saw the birth of OUAT at Bhubaneswar following the recommendations of the Planning Commission which had suggested setting up of dedicated education centres for agriculture in the country. Two great institutions are working towards the same goal with able support of the NABARD and the State Government. This conclave is a great example of coming together of all the stakeholders, such as, farmers, farmers' organisations, researchers, banks, Reserve Bank, NABARD, NGOs and government departments/agencies for the common cause of agriculture development of Odisha. It is perhaps time to reassess our strategies, policies and perspectives for continuing the momentum of growth in agriculture in the State and I am sure this Conclave will provide us the requisite platform to deliberate on issues and challenges and also draw concrete action plan for the future.

\* Keynote address by Shri Harun R Khan, Deputy Governor, Reserve Bank of India delivered at the Conclave on 'Agriculture Agenda for Odisha' on February 24, 2012 at Bhubaneswar. The speaker acknowledges the contributions of Shri. K. K. Gupta, NABARD, Bhubaneswar, Shri. B. S. Choudhary, Reserve Bank of India, Bhubaneswar, Shri. Suraj. S and Shri. Surajit Bose, Reserve Bank of India, Mumbai.

2. There is no doubt that rural India has to be an integral part of the development and the transformation process. Consequently, agriculture policy formulation has to remain at the centre of the developmental agenda and inclusive growth strategy of the country. In my presentation today, I intend to highlight the role of Reserve Bank of India in the agriculture sector, the concerns on development of agriculture, recent trends in economic growth and development of agriculture in Odisha, outline some of the issues and challenges of the agriculture sector in the State in a framework of SWOT analysis and end with some thoughts on challenges that lie ahead.

### **A. Role of Reserve Bank in Agriculture Sector for Inclusive Growth**

3. As the central bank of the country, the concerns of Reserve Bank has always been to maintain price stability and ensuring availability of credit for the productive requirements of the economy. Unlike many other Central Banks, since its inception, provision of credit and facilities to the agriculture sector has been one of the major objectives of the Reserve Bank of India. This was very aptly echoed by our first Prime Minister Pt. Jawahar Lal Nehru who had emphasised the centrality of agriculture in our economy when he said everything else can wait but not agriculture. In pursuit of the objective of inclusive growth strategy, the Reserve Bank has stepped up its efforts to promote financial inclusion in recent years by increasing the penetration of the formal financial sector. It is critical to increase the coverage of formal finance in rural sector, particularly in agriculture, in order to ward off the financial vulnerabilities and risks arising from the sourcing finance through informal means from money lenders and other similar entities. The Reserve Bank has been taking special initiatives for extending the outreach of banking facilities through branch banking and also through host of alternate models. Thus, the

financial inclusion drive is particularly significant for the State like Odisha for achieving inclusive growth objectives as more than 60 per cent of the total work force directly or indirectly engaged in agriculture where its contribution to growth is declining due to various reasons.

4. Credit availability should be timely and adequate. It is important to note that finance is a critical input which can command all other resources required for farming. Therefore, the conventional approach of granting crop loans wherein farmers approach the banks will not suffice. Bankers will have to play an active role in supporting the farmers in several ways, just like they did during the heydays of the Green Revolution. In fact, one of the major objectives of nationalisation of banks in 1969 was channelising the productive credit to agriculture sector. It is not merely the rate of interest that matters but equally important is the issue of number of times a farmer is required to come to the bank and the complexities of documentation. While branch banking will continue, Business Facilitators (BFs) and Business Correspondents (BCs) have to be utilised increasingly to generate incremental business. Reserve Bank has been emphasising that the banks need to increasingly use information and communication technology (ICT) tools to increase their outreach reduces transaction costs and provides built-in safeguards in regard to the know your customer (KYC)

and the due diligence related issues. Simplification of the documentation/procedure and related public services like digitisation of land records, electronic search and lien facility would contribute to hassle-free delivery of rural financial services. Credit Bureaus will also have to come up to provide credit history of the borrowers and, thereby, facilitate efficient due diligence of the clients. In fact providing holistic financial services covering credit, savings, insurance and remittance on a sustainable basis by the formal as well as semi-formal financial institutions has assumed critical importance for business growth and profitability of these institutions and economic advancement of the target clientele. In short, rural banking is likely to see a lot of action and change in the days to come. It is also important to note that besides financial services, host of complimentary policies and resources are necessary for sustainable development of the agricultural sector and the farmers under Credit Plus approach.

## B. Recent Trends in Growth of Odisha *All India Perspective*

5. Given the large scale dependence of the population on the agriculture sector, Odisha remains primarily an agrarian economy. The Net State Domestic Product (NSDP) of Odisha accounted for around 2.3 per cent of the all-India net domestic product (NDP) during 2010-11<sup>1</sup>. Over the five year period 2005-06 to 2009-10, the NSDP growth in Odisha increased to 7.9 per cent

**Table: 1: Economic Growth - Odisha vis-à-vis India**

| Sector                 | Growth Rates                 |                             |                |                | Share in NSDP                |                             |                |                |
|------------------------|------------------------------|-----------------------------|----------------|----------------|------------------------------|-----------------------------|----------------|----------------|
|                        | 2000-01 to 2004-05<br>(Avg)* | 2005-06 to 2009-10<br>(Avg) | 2009-10        | 2010-11        | 2000-01 to 2004-05<br>(Avg)* | 2005-06 to 2009-10<br>(Avg) | 2009-10        | 2010-11        |
| Agriculture and Allied | 3.5<br>(1.3)                 | 3.9<br>(2.9)                | 9.7<br>(0.4)   | 0.1<br>(6.5)   | 29.7<br>(21.8)               | 22.4<br>(17.3)              | 21.1<br>(15.2) | 20.6<br>(15.0) |
| Industry               | 12.6<br>(4.2)                | 6.3<br>(8.1)                | -2.6<br>(7.7)  | -10.8<br>(6.4) | 15.0<br>(17.4)               | 18.9<br>(16.9)              | 17.3<br>(16.6) | 15.1<br>(16.3) |
| Services               | 6.3<br>(6.8)                 | 10.3<br>(10.2)              | 11.6<br>(10.0) | 6.6<br>(9.3)   | 55.3<br>(60.8)               | 58.7<br>(65.8)              | 61.7<br>(68.1) | 64.3<br>(68.7) |
| <b>NSDP</b>            | <b>6.1</b>                   | <b>7.9</b>                  | <b>8.5</b>     | <b>2.2</b>     |                              |                             |                |                |
| <b>All -India NDP</b>  | <b>5.1</b>                   | <b>8.5</b>                  | <b>8.1</b>     | <b>8.4</b>     | <b>100</b>                   | <b>100</b>                  | <b>100</b>     | <b>100</b>     |

\*: Data for Odisha for 2000-01 to 2004-05 is old base (1999-2000).

**Note:** Figures in brackets denote growth & shares of different sectors in NDP at the all India level.

**Source:** Central Statistics Office.

<sup>1</sup> Disaggregated data on Net State Domestic Product (NSDP) at 2004-05 prices for the State of Odisha are available up to 2010-11 from Central Statistics Office (CSO).

*vis-à-vis* 6.1 per cent in the preceding five years. The growth was mainly led by strong services sector growth along with support from agriculture sector. During 2010-11, NSDP growth declined sharply to 2.2 per cent, recording the lowest growth amongst all the States in that year, and was in contrast to the trend in the all-India NDP growth (Table 1). Unlike at the all-India level, in the case of Odisha, the share of agriculture sector is higher than that of the industrial sector in NSDP.

### Regional Perspective

6. From the regional perspective, the NSDP of Odisha grew at faster pace than that of the other Eastern States as a whole in 2009-10 mainly on account of accelerated growth in agriculture and services sectors. In terms of share to NSDP, the position of the Odisha as compared to the Eastern States as a whole and all-India level was higher in the case of agriculture and industry, while it was lower in the case of services sector (Table 2).

## C. Concerns on Development of Agriculture

### Global Context

7. Today, agriculture is a cause of global concern in the context of (a) price volatility with a rising trend, especially of agricultural commodities, (b) growing concerns for food security and resultant trade restrictions, (c) global economic conditions in the recent past, (d) the forecasted rate of reduction of growth of agricultural land over the next two decades, (e) increasing mismatches between supply of agricultural products for food, feed & fuel in relation to growing demand and (f) the climatic changes which are exerting

pressures on agricultural production. Thus, enhancing agriculture production and productivity have emerged as a global challenge and this is more severe for low income and developing countries.

### Indian Context

8. India, with 2.4 per cent of the world's geographical area, is the largest producer of pulses, tea, and milk and second largest producer of fruits, vegetables, wheat, rice, groundnut and sugarcane in the world but supports about 16.2 per cent of the world's population. Coupled with small scale land holdings and deep rooted poverty in rural areas, the magnitude and dimensions of challenges for agriculture policy-makers have increased manifold. In the context of 2 – 3 per cent growth in the agriculture sector in the last 15 years (2.5 per cent in the 9<sup>th</sup> Five Year Plan, 2.4 percent in the 10<sup>th</sup> Five Year Plan and around 3.2 per cent in the 11<sup>th</sup> Five Year Plan), the target of 4 per cent growth in agriculture set for the 12<sup>th</sup> Five Year Plan underscores the importance of agriculture to the economy of the country.

9. Our Prime Minister Dr. Manmohan Singh had very aptly identified four key deficits afflicting Indian agriculture, namely, *Knowledge Deficit, Infrastructure Deficit, Public Investment and Credit Deficit and Market Economy Deficit*. The declining contribution of Indian agriculture has been attributed to various factors including stagnation in yield levels, limited introduction of new varieties of seeds and crops, lack of technological breakthrough for productivity increase in the rain-fed areas, absence of effective risk mitigants for price, production and personal risks for the agricultural

**Table 2: Sectoral Growth and Shares in 2009-10**

|                 | (per cent)                      |          |          |      |                                 |          |          |
|-----------------|---------------------------------|----------|----------|------|---------------------------------|----------|----------|
|                 | Growth Rate of NSDP             |          |          |      | Share in NSDP                   |          |          |
|                 | Agriculture & Allied Activities | Industry | Services | NSDP | Agriculture & Allied Activities | Industry | Services |
| Odisha          | 9.7                             | -2.6     | 11.6     | 8.5  | 21.1                            | 17.3     | 61.7     |
| Eastern States* | 2.7                             | 1.2      | 11.8     | 8.4  | 20.4                            | 12.5     | 67.1     |
| All India – NDP | 0.4                             | 7.7      | 10.0     | 8.1  | 15.2                            | 16.5     | 68.3     |

Source: Central Statistics Office.

\*The Eastern States consist of Odisha, Bihar, West Bengal & Jharkhand.

sector, *etc.* Another plausible reason is the deceleration in public and private sector investment particularly in agriculture although in recent time, gross capital formation in the sector has increased. This decline is one of the main factors for stagnation in agricultural production, and thereby poverty in rural areas. Low level of value addition and insufficient focus on agro-processing together with inadequate marketing linkages, particularly for the small and marginal farmers, have also contributed to the declining contribution. Many studies have also highlighted that fragmentation of land, low technological inputs, unsustainable water management and resource utilisation, rising pressure of population on land, land degradation alongwith low level of mechanisation, fertilizer consumption, *etc.* are some of the critical causes of concern for the agriculture sector of India.

### ***Agriculture in Odisha***

10. Though the agriculture sector of Odisha contributes only around 20 per cent towards State Gross Domestic Product (GSDP), it provides employment and sustenance, directly or indirectly, to more than 60 per cent of the total workforce of the State. In this sense, the agriculture sector is still the mainstay of the economy of Odisha. According to the Economic Survey 2010-11 of Odisha, despite wide annual variations in its growth, the agriculture sector has grown at an average annual rate of 4.8 per cent in the first three years of the 11<sup>th</sup> Five Year Plan.

11. The real per capita income of Odisha was ₹24,356 in 2010-11 which was around 68 per cent of All-India real per capita income of ₹35,917. According to the 64<sup>th</sup> round of NSSO, the monthly per capita consumer expenditure (MPCE)<sup>2</sup> for rural and urban Odisha is below the respective national averages. The Engel's ratio (which measures the share of food expenditure in total expenditure and has been widely used as an indicator of the standard of living) for Odisha, both in rural and urban areas, is generally higher than the all-

<sup>2</sup> The monthly per capita consumer expenditure is an important socio-economic indicator and is used to compare the standard of living and calculate the extent of poverty.

India level. In the food and non-food consumption behaviour, an average Indian spends more than an average person in Odisha. According to the latest India Human Development report, the ranking of Odisha remained as the second lowest among all the Indian States for a period 1999-00 to 2007-08.

12. In short, the above parameters pinpoint that the State of Odisha has been lagging behind the national economy and highlights the necessity of achieving higher growth on a sustainable manner across the sectors particularly the agriculture sector in order to uplift the society from underdevelopment and poverty. Though the contribution of agriculture to NSDP has declined, the percentage of workforce engaged in agriculture has remained somewhat unchanged. This implies that (a) there has been an overcrowding in agriculture without any perceptible increase in production and (b) there has been an increase in disguised unemployment or underemployment in the agriculture sector with zero or near zero marginal productivity of agricultural labour.

### ***Agriculture Production in Odisha***

13. Odisha is an agrarian state with 70 per cent of the population of the State dependent on agriculture. The State has about 6.41 million hectares of cultivable area out of a total geographical area of 15.57 million hectares, of which 6.02 million hectares is the net area sown. As mentioned earlier, agriculture contributes about 20 per cent of the Net State Domestic Product of the State (Table 3).

The performance of two major crops of the State are briefly summarized below.

#### ***Rice***

14. With 6.9 million tonnes of rice, the State stood fifth in rice production during 2011-12. This constituted 6.7 per cent of the total production of 102.7 million tonnes in the country as against 5.4 per cent and 7.8 per cent during 2000-01 and 2004-05 respectively (Table 4). The trend in rice production in the State showed that though production of the crop has increased in absolute terms over the years, its share at

**Table 3: Percentage Share of Agriculture NSDP of Odisha vis-à-vis all India NDP**

| Items/Sectors                   | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 |
|---------------------------------|---------|---------|---------|---------|---------|---------|---------|
|                                 | Odisha  |         |         |         |         |         |         |
| Agriculture & allied activities | 25.5    | 25.2    | 22.8    | 22.0    | 20.8    | 21.1    | 20.6    |
| <i>of which:</i>                |         |         |         |         |         |         |         |
| Agriculture                     | 79.5    | 79.5    | 79.2    | 79.8    | 79.2    | 81.4    | 81.3    |
| Forestry & logging              | 15.0    | 14.9    | 15.1    | 14.6    | 14.9    | 13.4    | 13.3    |
| Fishing                         | 5.6     | 5.6     | 5.6     | 5.6     | 5.9     | 5.2     | 5.5     |
|                                 | India   |         |         |         |         |         |         |
| Agriculture & allied activities | 19.9    | 19.1    | 18.1    | 17.5    | 16.4    | 15.2    | 15.0    |
| <i>of which:</i>                |         |         |         |         |         |         |         |
| Agriculture                     | 84.0    | 84.3    | 84.3    | 84.8    | 84.4    | 84.2    | 84.7    |
| Forestry & logging              | 11.5    | 11.2    | 11.1    | 10.6    | 10.9    | 11.2    | 10.8    |
| Fishing                         | 4.5     | 4.5     | 4.6     | 4.6     | 4.7     | 4.6     | 4.5     |

Sources: 1. Central Statistical Organisation, Government of India  
2. Economic Survey 2010-11, Government of Odisha

all-India level has declined in recent years. This can be possibly attributed to higher growth of production of rice in other parts of the country. In recent years, area and yield of rice in the State has lagged behind the all-India levels. Area under rice declined by 3.0 per cent during 2010-11 and yield by 2.2 per cent during 2011-12.

### Pulse

15. In recent years, production of pulses have picked up more significantly than other crops in the State. The State produced 0.4 million tonnes of pulses during 2011-12 constituting 2.5 per cent of all India production of pulses during the year. The State produced around 0.2 million tonnes of pulses during 2000-01 and 2004-05, constituting around 2.0 per cent of all India pulses production for the respective years. During 2010-11 and 2011-12, area under pulses cultivation in the States had declined while yield has marginally increased.

## D. Issues & Challenges of Agriculture Sector in Odisha

16. Let me now highlight some of the macro and micro factors posing challenges to the sector in the State. The macro factors include lack of sustained growth in the primary sector, instability of the food grain markets in terms of access & price and lack of basic infrastructure. The micro factors include lack of access to and control over resources such as land and common property resources like water, forest and public lands,

**Table 4: Area, Production and Yield of Major Crops: India and Odisha**

| State/India             | (per cent)         |     |         |     |         |     |                     |       |       |  |
|-------------------------|--------------------|-----|---------|-----|---------|-----|---------------------|-------|-------|--|
|                         | Share in All India |     |         |     |         |     | Growth Rate 2011-12 |       |       |  |
|                         | 2000-01            |     | 2004-05 |     | 2011-12 |     | 2011-12             |       |       |  |
|                         | A                  | P   | A       | P   | A       | P   | A                   | P     | Y     |  |
| <b>Rice</b>             |                    |     |         |     |         |     |                     |       |       |  |
| Odisha                  | 9.9                | 5.4 | 10.7    | 7.8 | 9.7     | 6.7 | 2.3                 | 0.0   | -2.2  |  |
| All India               | 100                | 100 | 100     | 100 | 100     | 100 | 4.3                 | 7.8   | 3.3   |  |
| <b>Pulses</b>           |                    |     |         |     |         |     |                     |       |       |  |
| Odisha                  | 3.0                | 1.9 | 2.8     | 1.9 | 3.3     | 2.5 | -1.7                | 3.7   | 5.5   |  |
| All India               | 100                | 100 | 100     | 100 | 100     | 100 | -3.2                | -4.5  | -1.4  |  |
| <b>Coarse Cereals</b>   |                    |     |         |     |         |     |                     |       |       |  |
| Odisha                  | 0.7                | 0.5 | 0.6     | 0.5 | 0.7     | 0.6 | -11.7               | -29.3 | -19.9 |  |
| All India               | 100                | 100 | 100     | 100 | 100     | 100 | -3.2                | -0.3  | 2.9   |  |
| <b>Oilseeds</b>         |                    |     |         |     |         |     |                     |       |       |  |
| Odisha                  | 1.2                | 0.6 | 1.1     | 0.7 | 1.2     | 0.6 | 7.0                 | 8.1   | 1.0   |  |
| All India               | 100                | 100 | 100     | 100 | 100     | 100 | 0.6                 | -1.8  | -2.4  |  |
| <b>Sugarcane</b>        |                    |     |         |     |         |     |                     |       |       |  |
| Odisha                  | 0.4                | 0.2 | 0.4     | 0.4 | 0.2     | 0.2 | -4.3                | -19.5 | -15.8 |  |
| All India               | 100                | 100 | 100     | 100 | 100     | 100 | 2.8                 | 2.6   | -0.2  |  |
| <b>Cotton</b>           |                    |     |         |     |         |     |                     |       |       |  |
| Odisha                  | 0.5                | 0.5 | 0.5     | 0.7 | 0.8     | 1.0 | 37.8                | 30.0  | -5.6  |  |
| All India               | 100                | 100 | 100     | 100 | 100     | 100 | 9.3                 | 2.0   | -6.7  |  |
| <b>Jute &amp; mesta</b> |                    |     |         |     |         |     |                     |       |       |  |
| Odisha                  | 0.5                | 0.4 | 0.3     | 0.4 | 2.0     | 0.9 | -5.2                | -6.3  | -1.0  |  |
| All India               | 100                | 100 | 100     | 100 | 100     | 100 | 5.0                 | 9.7   | -89.6 |  |

A: Area; P: Production; Y: Yield.

Source: Ministry of Agriculture, Government of India.

degeneration and degradation of land and forest resources, lack of capacity development and structural support for entrepreneurship.

17. Despite several policy measures, Odisha remains one of the most agriculturally backward states of India. Agricultural productivity in Odisha remains quite low due to traditional farming practices, low use of high yielding variety seeds, chemical fertiliser, organic manure; uneconomic size of operational holding, incidence of high tenancy, low capital formation and investment in agriculture, inadequate rural infrastructure and services and inappropriate policy environment. The low application of two important yield enhancing inputs like irrigation and fertiliser are considered to be the most immediate and important determining factors responsible for low agricultural productivity in Odisha.

18. In brief, agricultural development of Odisha is faced with several challenges which are more or less common with issues being faced at the national level except in certain areas. Thus, the SWOT analysis of agriculture in Odisha would reveal both common and idiosyncratic features (Exhibit 1). I would briefly dwell

on a few of the features relating to weaknesses and threats.

### ***Poor Land Utilisation Pattern and Soil Quality***

19. Over the period of 10 years between 1999-2000 and 2009-10, the total cultivable area has reportedly gone down from about 72 lakh hectare to 68 lakh hectare, with net sown area reducing from 61 lakh ha to 56 lakh ha. The current fallow lands, however, have grown from 6.8 lakh ha to 8.35 lakh ha during this period. About two thirds of the cultivable land is acidic with varying degree of acidity. Further, about seven per cent of the cultivable land is affected with salinity. Despite 117 per cent growth in area under irrigation during the same period and average cropping intensity having gone up from 137 per cent to 163 per cent, there is overall stagnancy in gross cropped area as also the agricultural production and productivity in the State.

20. Present infrastructure for soil testing is grossly inadequate and farmers do not have a culture for undertaking soil testing. The process of deterioration of the quality of soil is further hastened by unscientific usage of fertilisers. This clearly underlines the need for one-stop solutions for soil testing, diagnosis and

**Exhibit 1: SWOT Analysis of Agriculture in Odisha**

| Strengths   | Weaknesses  |
|---|---|
| a) Ten agro-climatic zones                                      | a) Poor land utilisation and soil quality                                       |
| b) Abundant inland water  | b) Preponderance of small/marginal size of land holdings                        |
| c) Wide network of KVKs and RSETIs                              | c) Low level of crop diversity  |
| d) Favourable terrain for water reservoirs and power generation | d) Low levels of mechanisation  |
| e) Large coverage of KCCs                                       | e) Low level of irrigation  |
| f) Diverse forest wealth  | f) Low fertilizer usage   |
| g) Low cost of living   | g) Low seed replacement ratio   |
| h) Active involvement of the State Government                   | h) Low productivity   |
| i) Long coastline   | i) Low capital formation  |
| j) Preponderance of rural branches of commercial banks          | j) Inadequate extension support   |
|   | k) Inadequate agriculture financing   |
|   | l) Low usage of power for agriculture   |
|   | m) Poor post-harvest management   |
|   | n) Poor marketing, transport and physical infrastructure facilities             |
|   | o) Exploitation by middlemen in market chain                                    |
|   | p) Poor quality livestock – inadequate coverage of artificial insemination (AI) |
|   | q) Poor risk management and insurance coverage                                  |
|   | r) Absence of agripreneurs  |

**Exhibit 1: SWOT Analysis of Agriculture in Odisha**

| Opportunities   | Threats/Challenges  |
|---|---|
| a) Huge scope for groundwater exploitation as only 18 per cent of the potential has been exploited  | a) Recurrence of natural calamities   |
| b) Scope for mixed/integrated farming   | b) Improper water management systems  |
| c) Varied agro-climatic conditions and abundant highlands conducive for horticulture  | c) Reducing area under cultivation  |
| d) Scope for crop diversification   | d) Absence of suitable cropping patterns for various agro-climatic zones      |
| e) Special schemes like Bringing Green Revolution in Eastern India, National Horticulture Mission, Rashtriya Krishi Vikas Yojana (RKVY), MGNRES, Integrated Scheme for Oilseeds, etc. | e) Poor dissemination of agri-technology                                      |
| f) Farm mechanisation is on the rise as labour availability is constrained  | f) Changing food habits and preference for wheat and corn based eateries      |
| g) Agro-based industries  | g) Climatic changes and its impact on agriculture                             |
| h) Leveraging large number of KCCs  | h) Uncertainty about market stability and non-remunerative prices for farmers |
| i) Scope for organic cultivation due to low usage of chemical fertilizers   | i) Exploitation by middlemen in market chain                                  |
| j) Scope for setting up organic waste based composting units and green fertilizers  | j) Increasing degradation of soil   |
| k) Cluster approach for dairy development enterprises   | k) Increasing labour shortage   |
| l) Encouraging PACS (who are showing signs of improvement) and farmers' organisations   | l) Excessive focus on credit rather than credit plus approach                 |
| m) Pro-active institutional arrangements – SLBC/DCCs  | m) Concerns relating to credit culture  |
| n) Financial inclusion plans of the banks   |   |
| o) Development of inland, brackish water and marine fisheries   |   |
| p) Abundant water resources for fisheries and irrigation  |   |

amelioration advice to farmers. There is a strong case for encouraging setting up of agri-clinic & agri-business centres by private entrepreneurs. Also, organic and green manures have to be encouraged to make up the stagnant supply of chemical fertilisers. Various projects to encourage composting and linkages for production of green manures, bio-fertilisers and bio-pesticides have to be supported by various agencies of the governments and banks.

### ***Preponderance of Small/Marginal Size of Land Holdings***

21. The agriculture sector in the State is characterised by the preponderance of small/marginal farmers/agricultural labourers with more than 86 per cent farmers holding land less than 2 hectares and 60 per cent of the farmers having less than 1 hectares land or no land at all. As per the latest available figures of Agricultural Census, about 26 lakh marginal farmers (constituting 60 per cent of farmers) are holding 33.50 lakh acre land (constituting 27 per cent of total land)

with an average of around 1.3 acre land per holding. Similarly, 11.60 lakh farmers in the small farmers category hold about 40 lakh acre land (constituting 31 per cent of total land). Thus, 58 per cent of the land is held by 86 per cent farmers while the rest about 6 lakh farmers (constituting 14 per cent of total number of farmers) hold about 52 lakh acre land (constituting 42 per cent of total land) with an average of about 8.67 acres. This indicates towards the skewed assets distribution of land and calls for appropriate strategies in favour of the small and marginal farmers.

22. The situation is further aggravated by the rising land fragmentation on account of disintegrating family systems in rural Odisha and continuing dependence of large population on the sector. This is a pointer towards the need for legislation to check large scale land fragmentation in near future. The small land holdings also lead to low levels of risk taking capacity, technology adoption, farm mechanisation and fertiliser application, resulting in low levels of investment as also the low farm productivity.

### Low Level of Crop Diversity

23. The crop diversity is very minimal in the State though some efforts have been initiated in some parts of the State. Some farmers are adopting floriculture, onion, turmeric and mushroom cultivation as a diversification away from traditional crops. The diversification in crops, however, is suffering from inappropriate market linkages, lack of infrastructure like cold storages/onion storages/rural godowns, etc. despite the Government of India Scheme for supporting Agricultural Marketing Infrastructure. As on date there are only around 300 rural godowns/storages set up under this scheme in Odisha with limited storage capacity with no accreditations (only one storage of Central Warehousing Corporation in Rayagada is having accreditation in the whole State of Odisha).

### Low Farm Mechanisation – Insignificant Use of Power

24. Mechanised agriculture is the process of using agricultural machinery to mechanise the work of agriculture in order to increase farm output and farm worker productivity. The productivity measures warrant intensive farm mechanisation which needs to be supported with adequate supply of power and other infrastructures. In this context, the low level of consumption of power which is critical for mechanisation of agriculture indicates the lack of modernisation of the agriculture sector in the State (Table 5).

As maybe seen power consumption for agriculture has been less than two per cent against all-India figure of about 30 per cent.

**Table 5: Sectoral Power Consumption in Odisha**

| (in million unit) |               |                          |
|-------------------|---------------|--------------------------|
| Year              | Industry      | Irrigation & Agriculture |
| 2000-01           | 2,622 (43.06) | 186 (3.05)               |
| 2004-05           | 3,742 (49.25) | 147 (1.93)               |
| 2009-10           | 6,114 (50.02) | 153 (1.25)               |

Figures in brackets are percentage to the total consumption of power in Odisha.

Source: Economic Survey 2010-11, Government of Odisha.

**Table 6: Irrigated Area India and Odisha**

| Crops     | (per cent) |       |               |       |
|-----------|------------|-------|---------------|-------|
|           | 1999-2000  |       | 2008-09       |       |
|           | Odisha     | India | Odisha        | India |
| Rice      | 40.7       | 53.9  | 46.8          | 58.7  |
| Wheat     | 100.0      | 87.2  | Not available | 91.3  |
| Pulses    | 6.6        | 16.1  | 7.7           | 16.0  |
| Oilseeds  | 12.9       | 25.2  | 18.7          | 27.1  |
| Sugarcane | 100.0      | 92.0  | 100.0         | 93.7  |
| Cotton    | 3.6        | 35.2  | Not available | 35.3  |
| All Crops | 29.5       | 40.8  | 35.0          | 45.3  |

Source: Ministry of Agriculture, Government of India

### Low Level of Irrigation

25. The extent of usage of fertilizers, rainfall, per cent gross cropped area irrigated and size of operational holding have a positive bearing on the yield of crops. Compared with all India averages, progress in extending areas under irrigation in the State has been faster. During 1999-2000, 29.5 per cent of areas under all crops in the State were irrigated which increased to 35.0 per cent by 2008-09. The respective all-India levels were, however, much higher at 40.8 per cent and 45.3 per cent. As regard irrigated area for rice production increased from 40.7 per cent to 46.8 per cent during this period as against 53.9 per cent to 58.7 per cent at all-India level (Table 6).

### Low Usage of Fertilisers

26. Fertiliser consumption in the State, in terms of kilogram per hectare during 2008-09 was very low 61.6 kg as against 128.6 kgs at all-India level (Table 7) i.e. Odisha's per hectare consumption of fertiliser is less than 50 percent of all India consumption. Similarly,

**Table 7: Fertiliser Consumption: India and Odisha**

| (Kilogram per hectares) |            |         |       |       |        |         |       |       |        |
|-------------------------|------------|---------|-------|-------|--------|---------|-------|-------|--------|
| State/<br>India         | Fertiliser | 2007-08 |       |       |        | 2008-09 |       |       |        |
|                         |            | N       | P     | K     | Total  | N       | P     | K     | Total  |
| Odisha                  | kg/Hec     | 31.22   | 13.40 | 7.23  | 51.85  | 34.32   | 17.05 | 10.28 | 61.64  |
|                         | Ratio      | 4.3     | 1.9   | 1.0   |        | 3.3     | 1.7   | 1.0   |        |
| All India               | kg/Hec     | 74.79   | 28.60 | 13.67 | 117.07 | 77.90   | 33.69 | 17.10 | 128.58 |
|                         | Ratio      | 5.5     | 2.1   | 1.0   |        | 4.6     | 2.0   | 1.0   |        |

N: Nitrogen P: Phosphorus K: Potassium.

Source: Ministry of Agriculture, Government of India.



**Table 8: Comparative Crop Productivity during 2009-10**

| State             | (kg per hectare) |       |        |            |          |           |
|-------------------|------------------|-------|--------|------------|----------|-----------|
|                   | Paddy            | Wheat | Pulses | Foodgrains | Oilseeds | Vegetable |
| West Bengal       | 2,611            | 2,650 | 760    | 2,561      | 989      | 17,153    |
| Andhra Pradesh    | 3,056            | 900   | 722    | 2,441      | 760      | 16,230    |
| Bihar             | 1,138            | 2,078 | 801    | 1,570      | 1,036    | 16,188    |
| Jharkhand         | 1,505            | 1,550 | 734    | 1,320      | 480      | 15,023    |
| Odisha            | 1,609            | 1,561 | 460    | 1,258      | 776      | 12,910    |
| All India Average | 2,130            | 2,830 | 625    | 1,798      | 955      | 16,177    |

Source: NABARD

pesticide consumption in the State is much lower than the all-India levels.

### Low Productivity

27. Though some of the districts of the State have achieved much higher productivity levels, the agricultural productivity remains a matter of concern as the productivity of some of the major crops in Odisha vis-à-vis some neighbouring states is relatively low (Table 8).

### Low Capital Formation

28. It may be noted that the share of capital outlay on agriculture in the total capital outlay declined at the consolidated States level and, more sharply, in Odisha during the second half of 2000s as compared to first half of the decade. The declining trend in the share of capital outlay on agriculture in Odisha as well as for the consolidated States continued during 2010-11 (RE). The capital formation in agriculture remains at around 12 per cent in the State as against national figure of around 20 per cent. However, the share of capital outlay on agriculture in total capital outlay is budgeted to increase 2011-12 both for Odisha and for the consolidated States (Table 9).

**Table 9: Share of Capital Outlay on Agriculture in Total Capital Outlay**

|                         | (per cent)        |                   |              |              |
|-------------------------|-------------------|-------------------|--------------|--------------|
|                         | 2000-05 (Average) | 2005-10 (Average) | 2010-11 (RE) | 2011-12 (BE) |
| Odisha                  | 6.0               | 3.1               | 1.7          | 2.7          |
| All States consolidated | 5.1               | 4.3               | 2.4          | 2.8          |

BE: Budget Estimates.

## E. Inadequate Agriculture Financing Banking Network

29. As at end-June 2011, there were 46 scheduled commercial banks operating in Odisha including 25 public sector banks, 14 private sector banks, five regional rural banks (RRBs) and two foreign banks. The total number of branches of scheduled commercial banks (excluding RRBs) in the State was 2,136 at end-June 2011. The population group-wise distribution of these branches indicates that rural branches accounted for 45.5 per cent of the total number of branches in the State, as against their share of 29.2 per cent at the all-India level (Table 10).

### CD Ratio and Credit Profile

30. The credit-deposit (C-D) ratio of scheduled commercial banks (excluding RRBs) in Odisha stood at 49.2 per cent, at end-June 2011 which was lower than at end-June 2010 level and was lower than the all-India level position of 75.6 per cent. Further, urban branches accounted for the maximum share of 65.6 per cent in outstanding bank credit of scheduled commercial banks in Odisha, followed by semi-urban branches (17.6 per cent) reflecting skewed credit flow to the agriculture sector in the State despite preponderance of rural branches.

### Agriculture Credit

31. As per the latest available data in Odisha, the share of agriculture in the total credit deployed recorded an increase to 16.5 per cent from 14.8 per cent as at end-

**Table 10: Banking outreach in Odisha**

|                        | (Amount in Rupees billion) |        |        |        |
|------------------------|----------------------------|--------|--------|--------|
|                        | Total                      |        | Rural  |        |
|                        | Odisha                     | India  | Odisha | India  |
| Business/Branch        | 0.52                       | 1.04   | 0.19   | 0.24   |
| Deposit/Office         | 0.35                       | 0.60   | 0.13   | 0.15   |
| Credit/Office          | 0.17                       | 0.45   | 0.07   | 0.09   |
| Population/Branch      | 13,936                     | 13,425 | 20,168 | 24,859 |
| Per capita deposit (₹) | 25,116                     | 44,379 | 6,355  | 5,967  |
| Per capita credit (₹)  | 12,469                     | 33,369 | 3,303  | 3,571  |

Source: Quarterly Statistics on Deposit and Credit of Scheduled Commercial Banks

March 2010 while the share of industry stood highest at 32.7 per cent followed by personal loans (23.8 per cent) during the same period. The flow of credit to the agriculture sector during the last decade, however, remained highly volatile *vis-à-vis* the trend exhibited at the national level. This partly reflects the unstable agricultural production in Odisha and can be partly explained by recurrence of natural calamities like droughts and floods and insufficient and inadequate support system (Chart 1).

32. At end-March 2011, the share of priority sector advances in total bank credit in the State was 49.2 per cent as compared with 32.8 per cent at the all-India level. Within the priority sector advances in Odisha, the share of advances to agriculture was highest (41.6 per cent), followed by small enterprises (37.3 per cent) and housing loans (15.3 per cent). Recovery performance for advances to agriculture in the State was lower as compared with the all-India position during 2009-10. The percentage of recovery to total demand for direct advances to agriculture by all scheduled commercial banks in Odisha decreased to 56.5 per cent at end-June 2010 from 63.7 per cent at end-June 2009. It needs to be emphasised that steady and sustainable flow of credit to the sector would critically depend on a healthy credit culture. Recovery performance needs and can be improved, among others, if (a) banks take proactive

steps for continuous and meaningful engagement with the borrowers, (b) State machinery plays a proactive role, (c) necessary amendments are effected in Odisha Public Debt Recovery Act (OPDR Act), and (e) establishment of agri-risk fund.

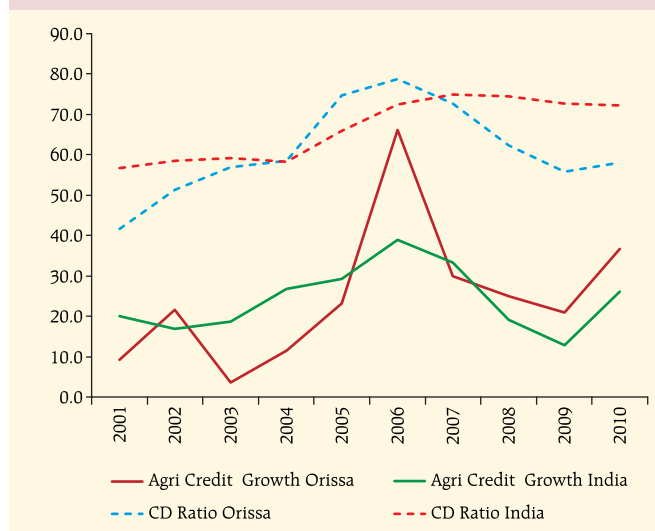
33. It would be essential for the banks to provide finance for the entire cash flow requirement of the farmer family – both short-term and long-term purposes and for purposes such as debt swap and for other personal and business requirements. It is also necessary that banks look at opportunities for financing agri-business entities, niche agriculture, allied sectors and supply chains for strengthening forward and backward linkages. Here a critical factor would be the availability of trained and committed manpower with the financing institutions and visible thrust and commitment of senior management of these institutions rather than mere stress on achievement of the targets.

34. Another aspect of urgent relevance in the State is the lack of access of the bank credit to the tenant farmers and oral lessees. Andhra Pradesh and West Bengal have taken initiatives for making the tenant farmers/oral lessees eligible for bank credit through joint liability group (JLG) mode and Licensing Mode. Though the JLG movement has picked up in the State yet it is observed that the off-take of credit by such JLGs is still not substantial enough and the JLG farmers are able to access small amount of loans only and the landless people are being given loans on no-farm activities rather than in proportion of the land they cultivate on account of the fact that their land cultivation is not being recognised in absence of any records of their tillage.

## F. Way Forward

35. Having highlighted some of the major issues and challenges facing the State for developing the sector, let me try and suggest a broad framework which may form the way forward for enhancing agriculture production and productivity in the State and income level of farmers and make the sector viable and sustainable. The strategy should, among other things, focus on improving upon the existing crop system,

**Chart 1: Trends in Agriculture Credit by Scheduled Commercial Banks**



diversification of crop pattern and curing the less fertile lands. The strategy should also be aim at addressing the issues related to supply management of critical inputs like seeds and fertilisers, appropriate cost effective farm mechanisation, appropriated post-harvest arrangements to tackle incidence of distress sale and ensuring adequate flow of credit. We may also consider adopting models for synergising the efforts of farmers, more particularly small and marginal farmers. One such approach could be a congregation model which ensures grouping of farmers, particularly the small and marginal farmers, who do not have individual capacities by way of producer companies/co-operatives/JLGs.

36. For providing the much needed momentum to a new Green Revolution in the State, a framework based on the acronym F.A.R.M.E.R. could be considered. Each letter of the word has a linkage, direct or indirect, to the livelihood of the farmers and development of agriculture (Exhibit 2).

37. As this Conclave has stakeholders from Government, government agencies, financial institutions and research institute. I shall be highlighting the criticality of one of the components, *i.e.*, 'R' which pertains to resources other than finance. This component broadly encompasses seed related issues, extension systems, soil health, farm mechanisation, *etc.* In this context let me highlight a few important issues.

### **Extension System**

38. The State of Odisha has several premier institutions for undertaking research but the Agricultural Extension System in the State remains in almost a dormant stage. Krishi Vigyan Kendra (KVKs) and the Rural Self Employment Training Institutes (RSETIs) are established and in existence in almost all districts. Yet the effective technology extension and adoption is rather limited. The existing system of State Extension Machinery has its limitations of outreach and financial resources and not many efforts have been made for creation of local

**Exhibit 2: Framework based on F.A.R.M.E.R.**

|  |   |
|--|---|
| <b>F</b><br>Finance                      | Credit availability should be timely and adequate. It is not only credit but also a holistic package of financial services including credit (production and post-production), savings and insurance that needs to be kept in view. It is important to note that finance is a critical input which can command all other resources required for farming. Besides crop loan, investment credit would be very critical for long term sustainability of agriculture.  |
| <b>A</b><br>Allied activities            | It is through increased income of the farm families through diversification (for example, a milch cow provides a daily cash flow to the household which can sustain them in the periods of distress arising out of crop loss). Allied activities act as a hedge against the downsides in agriculture. It is also imperative to encourage mixed/integrated farming.  |
| <b>R</b><br>Risk Mitigation              | Risk mitigation measures against price, production and personal risks like crop and weather insurance, health insurance, <i>etc.</i> are very critical for maintaining the health of the rural financial system and ensuring the viability of the agricultural sector. Some of these can be bundled and provided as a package to the farmers as micro insurance. Contract farming, corporate farming and producer companies are some of the models of congregation, integration and linkages which should be explored to safeguard the interest of small and marginal farmers. Crop diversification/mixed/integrate farming and effective extension support are also essential for risk mitigation. |
| <b>M</b><br>Marketing Access             | Efficient marketing which would include innovative approaches, such as, the Producer Companies, Contract Farming, Value Chain Agro Processing and Agri-Business are particularly important for the small and marginal farmers. Price support system would also play a critical role in ensuring remunerative return to the farmers.   |
| <b>E</b><br>Extension & research         | Research and extension linkages should comprise of all the four critical pairs of L's Lab to Land, Land to Lab, Land to Land and Lab to Lab. It needs to be appreciated that the quality extension and research services in a cost effective manner is a sine qua non for productivity enhancement and risk mitigation. There is a great scope to bring about convergence among the schemes/efforts of several agencies, both public and private, banks and NGOs and using ICT based solutions for meaningful extension activities.   |
| <b>R</b><br>Resources other than finance | Timely and adequate availability of other critical resources other than finance, <i>i.e.</i> , inputs like water, seed, healthy soil, fertiliser, pesticides, farm implements, storage and warehousing facilities and skilled and productive human resources, efficient supply chains, <i>etc.</i> are very important to ensure that agriculture remains a remunerative and attractive vocation.  |

skills for technology dissemination. Hence it is important that the alternative/supplementary extension systems are encouraged. The digital/electronic/space technology/mobile telephone systems of providing technology and periodic advisories to farmers have to be examined for cost effective adoption. I would urge the sub-committee of the SLBC set up in this regard should come out early with a monitorable action plan for holistic extension support to the farmers.

### ***Seed-related Issues***

39. There is an urgent need to design a seed availability program which will include adequate seed replacement strategies, ensuring timely availability of seeds of desired variety in required quantity and finance to seed producers. In order to encourage decentralised production of seeds, authorities may consider setting up of local exchanges and enabling NGOs to play a greater role. Commercial banks should provide higher scales of finance to the seed growers owing to larger cost involved. They should also consider working capital/term loans for seeds processing and marketing societies of farmers or the NGOs promoting such seed production/processing/marketing.

### ***Soil Health and Nutrition***

40. It is a fact that the present infrastructure for soil testing is grossly inadequate and farmers do not have a culture for undertaking soil testing. The consumption of fertilizers is often low and not backed by findings of scientific soil testing reports. To incentivise development of such a culture use of Kishan Credit Cards could be linked to Soil Health Cards. Thus, there is a need for one-stop solutions for soil testing, diagnosis and amelioration advice to farmers. There is a need for the PACS to play an important role in this regard apart from encouraging private agri-clinics & agri-business centres. Organic manures and green manures have to be encouraged to make up the stagnant supply of chemical fertilizers. Various projects to encourage composting and linkages for production of green manures, bio-fertilizers and bio-pesticides have to be supported by the State Government and the financial institutions.

### ***Farm Mechanisation***

41. The data on farm-hands availability indicates declining availability of farm labour. The productivity measures also require extensive farm mechanisation both for the small implements as also capital intensive big farm machines. As small farmers may not be able to afford individual ownership of farm machines, group models or the custom-hiring models need to be considered. PACS can be considered and developed as Farm Mechanisation Hubs to provide farm machines to its members on hiring basis. The Farmers' Clubs, Village Watershed Committees/Wadi Committees should also be encouraged for creating their own farm machines hubs. After-sales services for farm-machines are abysmally poor in most of the parts of the State. Individual trained entrepreneurs have to be encouraged to take up farm-machines servicing enterprises. Banks need to encourage financing of various small farm machines rather than restricting financing to big farmers for tractors and power-tillers.

### ***Irrigation***

42. Irrigation is largely a State initiative in Odisha and very little financing is being done by the commercial banks. The State Government has been providing huge amount of subsidy and tubewells are being established through the state agencies. In some of the schemes the subsidy is as high as 80 per cent. Hence, banks may find it profitable to enhance investment credit by financing such irrigation projects. There is also a need to look beyond the tubewells. Drip and Sprinkler systems is one such alternate which has tremendous potential.

### ***Storage & Marketing***

43. Shortage of storage space often leads to substantial post-harvest losses yet there are a very few initiatives for setting up large storage structures. Terminal markets are almost non-existent and organised mandis/APMCs are also not very active despite amendments in APMC Act. Cold Chain arrangements for vegetables and fruits remain non-existent in the State. Therefore, it is important that the participation of private sector is encouraged in large proportion.

## G. Concluding Thoughts

44. In the last 50 years, Odisha has lost nearly a decade by way of natural calamities. This has severely affected the development of the State and particularly the agriculture sector. Many studies have empirically proved that agricultural growth is more poverty reducing than growth in non-agricultural sectors implying that rural poverty reduction has been associated with growth in agriculture and productivity. A study by Ligon et al (2007) concluded that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating in other sectors of economy. Given the incidence of poverty in Odisha which stood at 46.4 per cent as against the all-India level of 27.5 per cent, the importance of agriculture growth in the State cannot be understated. Here it will be important to stress the proactive role that can be played by existing institutional arrangements like SLBC for continuous evaluation and monitoring of the developments in the sector in a holistic manner.

45. I feel extremely happy to be here to share my thoughts on the issues and challenges for the sector in the state with such a learned and knowledgeable audience. It is fair to set high expectations from such a conclave for setting an exacting yet achievable agenda with concrete action plans which will lead to significant and rapid transformation of the sector in the state in the next few years. I am sure this conclave will provide a stimulating platform for all the stakeholders interested in the development of the agriculture of the State to interact and enable convergence of views. This

conclave should pave way for the development of the agriculture sector in Odisha towards greater production and productivity, higher income levels for the farmer and profitable business opportunities for the financing institutions. The consequent rapid transformation of the agricultural sector should enable all the stakeholders to reap the benefits on a sustainable basis in Odisha which has to play a key role in the scheme of Bringing Green Revolution to Eastern India.

46. I will like to end, rather start, with great expectations about the outcome of the conclave.

47. Thank you all.

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