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# Trade, Agricultural Policies and Structural Changes in India's Agri-food System: Implications for National and Global Markets

Synthesis of Policy Seminar held on 30<sup>th</sup> March, 2012

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P.K. JOSHI (IFPRI) and FM Brouwer (LEI Wageningen UR)

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### Indian Agriculture and the World Market - Is it Business as usual?

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# Indian agriculture and the world market - is it Business as usual?

#### **Project background**

Trade, Agricultural Policies and Structural Changes in India's Agri-food system: Implications for National and Global Markets (TAPSIM) is a four year long collaborative project between India and the European Union (EU), which was started in September 2008. Its primary objective is to study the impact of domestic structural changes and trade agreements of India with the European Union. In this regard, the project has traced the overall macroeconomic and trade policies in India since 1980. The trends in Indian agricultural trade have been studied and issues related to comparative advantage of India over other countries in agricultural commodities have been reviewed. The study has also identified the key processes of change and its impact on the agri-food sector of India. In particular econometric analysis has been conducted to assess the consumers purchase behaviour in supermarkets with regard to products and the product attributes. Modelling tools will be developed for analysis of value chain, analysis of demand for and supply of agricultural commodities, and forecasting the impact of policies on future developments of agriculture in India till 2020, 2025 and 2030. The findings will be eventually disseminated within the research and policy makers and key stakeholders in the agri-food sector, both in India and the European Commission.

A policy workshop of the project was organized on 30<sup>th</sup> March, 2012 to share the preliminary results with policy makers, professionals and corporate sector. This meeting was organised to explore various options of scenarios at national and global level. The workshop was organized by the International Food Policy Research Institute (IFPRI) along with project team members of different work packages from LEI, IAMO, IGIDR, CRPA and KULEUVEN (Europe).

# Approach taken for the project

The project has implemented a program of research providing qualitative and quantitative analysis of future developments in Indian supply, demand and trade for main agricultural products. The actions implemented in this project include –

- Identifying the main drivers of change and their interaction, distinguishing between social, demographic, economic environmental and institutional factors
- Linking main drivers with agricultural and trade policies
- Analysing the position of agriculture in India during the period 2000-20
- Comparing supply, demand and trade in India with main producers of the world market with emphasis on the relations between Europe and India.

#### Focus of the policy workshop

The workshop involved a brain storming session, focusing at the following specific points.

- Food demand and supply projections for India
- Key challenges for supply, demand and international trade of agricultural commodities
- Comparative perspective, trends and policy: European Union-India dairy sector
- Implications on trade agricultural products by unfolding revolution in organized retailing of food and grocery
- Challenges for agri-food policies during a decade of continued growth in the national economy

# Organizers and participants

The policy meeting was organized by the International Food Policy Research Institute (IFPRI) at the National Agriculture Science Complex (NASC) Complex, PUSA, New Delhi. It was attended by 52 delegates, representing eminent policy researchers, policy advisors, professionals, corporate leaders, finance experts from different parts of the country. Dr P.K. Joshi welcomed the delegates and Dr Floor Brouwer (LEI) highlighted the project objectives and the structure of the policy workshop.

Discussions were held in four sessions - (1) Food demand, supply projections and international trade agricultural commodities in India (2) Dairy in India and the European Union: prospects of the two largest dairy producers in the world (3) Food retailing and consumers changing preferences in India and (4) Challenges for agricultural policy in India.

# **Summary Proceedings**

#### Session I

# Food demand and supply projections and international trade of agricultural commodities in India

This session was presided over by Dr R.B. Singh, President, National Academy of Agricultural Sciences (NAAS). In his opening remarks, he stressed the need for exploring and understanding the linkages between agricultural policies and their impact on supply and demand of food commodities. This was followed by two presentations, the first being on "Food demand and supply projections for India" by Dr P.K. Joshi, Director, IFPRI-South Asia. The second presentation was on "Supply, demand and international trade of agricultural commodities in India" by Dr Geert Woltjer, Professor, LEI.

#### Presentation 1 - Food demand and supply projections for India

#### Objectives and methodology

The broad objectives of Dr Joshi's presentation were (i) to understand the changing dietary patterns and the key sources of calorie intake in India, (ii) to estimate the demand of food commodities by 2020 and 2030 in India, iii) to estimate the supply of key food commodities by 2020 and 2030 and (iv) to determine whether India would be deficit or surplus in key food commodities by 2020 and 2030.

The methodology followed for estimating demand and supply projections employed comparison of demand and supply elasticities using various models (such as Linear Expenditure System, Almost Ideal Demand System, Quadratic Almost Ideal Demand System, Normalized Quadratic Demand System, Food Characteristic Demand system, Transcendental Logarithmic Demand System, IFPRI's IMPACT Model).

#### Demand projection, stages of demand projection and demand elasticities

The approach employed specifically for estimation of demand projection, involved demand estimation for (i) direct and indirect household food, (ii) indirect demand such as for seed, feed, wastage and industrial uses and (iii) home away food demand by different consumers. Besides this, projections of urban and rural consumer population growth for 2030 were also made. Both these exercises were carried out in six regions across 35 Indian states. Further,

the elasticities and stages of demand projections were investigated for different income groups (poor, middle income group and rich) and for 22 key commodities. The demand projections were made under three scenarios - (i) existing economic growth rate, (ii) when the economic growth rate would be 25 per cent higher than the existing growth rate, and (iii) economic growth rate would be 25 per cent lower than the existing growth rate. The income elasticities were studied by food characteristics demand system and disaggregated elasticities by state, domicile and income groups for each of the 22 commodities.

#### Supply projection

As in the case of demand projections, the supply projections were also made under three scenarios - (i) input prices and their use as per the base line assumptions, (ii) 50 per cent highest total factor productivity growth than the base line assumption, and (iii) 50 per cent lower total factor productivity growth than the base line assumption.

# Presentation 2 - Supply, demand and international trade of agricultural commodities in India

#### Objectives and methodology

A presentation was made on the results of the global model by Dr Geert with following objectives, (i) to determine the importance of India as an agricultural exporter in the future, (ii) to determine whether the Indian agricultural productivity would enable the boosting of the agriculture trade sector, (iii) to determine the growth of the agricultural sector in future.

The approach for this study involved two methods. The first method involved consideration of only net trade (supply-demand) while the second involved consideration of world prices as well as world market. The primary difference between this study and the former is that this study considers the world prices and world market scenario. The GTAP database was aggregated to 32 sectors and 22 regions in the world and includes data taken from the Modular Applied General Equilibrium Tool (MAGNET). His results were based on growth rates of different sectors or agriculture products, with the assumption that the Indian GDP will grow at 6, 8 and 10 per cent.

#### **Key message (Presentation 1 and 2)**

It was projected that the annual per capita demand for cereals is either stagnating or declining but increasing for high value commodities among rich and poor consumers in rural as well as urban rural areas. The study concluded that India would be comfortable in food grain demand and supply by 2020 and 2030. However, India may be deficit in edible oils and pulses. India's surplus and deficit will have implications on global trade and prices. It was shown that for all three GDP growth rates, the GDP shares will increase only in service sector but not in agriculture and industry sectors.

Projections indicate that as far as crops are concerned, all will show an increase in production with maximum increase in case of cotton followed by other crops, sugarcane, oilseeds and wheat. The growth in rice and other grain crops will be relatively lower. For example in cotton, with GDP increase of 6, 8 and 10 per cent, the production of cotton will rise by 4.2, 5.9 and 7.7 per cent respectively. On the other hand the corresponding figures for rice would be 0.9, 1.2 and 1.5 per cent respectively. Considering the growth in production of animal products (2010-2020), the poultry/pork sector will witness the highest growth, with the growth at with 6, 8, 10 per cent GDP being 2.5, 3.5, 4.5 per cent respectively. The study also presented that growth of exports will be negative even at all three different rates viz. 6, 8, 10 per cent in 2010-2020 with - 2.2, -1.6, -0.7 per cent respectively in agriculture sector. And this will affect results in growth of imports in agriculture at 6, 8 and 10 per cent GDP as 10.6, 11.2 and 12.2 per cent respectively.

Service sector will witness the highest growth in comparison to other two sectors, viz. agriculture and industry. It was also observed that livestock net exports of production will be highest for cattle/sheep/goat by 2020. Dr Geert's presentation concluded that the importance of India as an agricultural exporter will not increase and that the country will however be a big importer for agricultural products. Therefore, only raising agricultural productivity can change the picture like by making agricultural sector more attractive for farmers. He concluded that influence on the Indian agriculture depends on the extent to which agriculture is included in the growth process.

Discussant Dr Manoj Panda, Director, Center for Economic and Social Studies (CESS) commented on the gap analysis conducted in the study. Dr A. Ganesh Kumar inquired on the

reliability of the projections done in the study. Dr Shashanka Bhide expressed doubts on GTAP model as he noted industrial sector is a bit overestimated as from last 20 years rate has been ranging from 20 per cent to 28 per cent. Dr R.B. Singh suggested that the study should go beyond assessing calorie intake and examine the issue of nutritional values which are important for human being. He also suggested that the study should also assess how farmers at the end would be benefitted when it comes to getting the prices.

#### **Session II**

#### Dairy in India-EU: prospects for the two largest dairy producers in the world

The session was chaired by Dr R.B. Singh and the presentation was made by Dr Roel Jongeneel, Professor, LEI on prospects for dairy in India and the European Union. The presentation focused on the changing structure of the dairy sector in European Union and India. The objective of the study was to analyse how the European Union and India affect the world market (agricultural and trade policy choices) and how are they in turn affected by the world market.

The trends in milk production in India and European Union were presented. The approach taken for both the countries, involved analysis of milk supply and demand as a function of milk yield and herd size of animals for the former and domestic and foreign demand and public and private stocks for the latter, and the impact of agricultural and trade policies on these two aspects.

With respect to the European Union, Dr Roel highlighted the important role that food safety standards. Besides this he dwelt on the possibly prohibitive nature of high import tariffs as well as the export refunds which support the milk price in the European Union. Similarly, in the Indian context, he presented the importance of agricultural policy, trade policy and food safety standards and laws.

#### Key message

The presentation concluded that European Union is normally not competitive at world market prices. India however has some competitiveness with the neighbouring markets. Besides this, it also emerged that India and European Union are world's largest dairy producers and for both countries domestic markets are highly important; while the European Union is dominant dairy exporter, India aims to preserve its self-sufficiency. It was also noted that tariffs, especially bound tariffs are high for both European Union and India but applied tariffs (India) or export refunds (EU) are much lower.

Discussant Dr. Pratap. S. Brithal, Principal Scientist, NCAP, suggested that India needs to give more focus on buffalo and increase investment in livestock sector, insurance facilities for its improvement. Dr Purvi Mehta, Head-Asia Region, ILRI pointed out that higher

emphasis is needed for processing than production. She also suggested that the focus should be given for preservation of surplus milk in order to avoid wastage. Dr K. S. Ramchandra, Technical Expert, NRAA addressed the general overview of Indian dairy sector, including production, consumption, per capita availability, livestock composition. Dr A.K. Bandhopadhya, Chairman, IDA (East Zone) agreed with the comments addressed by Dr Pratap S. Brithal and suggested that investments should be increased in the livestock sector for its higher growth.

#### **Session III**

#### Food retailing and consumers changing preferences in India

This Session was chaired by Dr Ramesh Chand, Director, NCAP. Dr Devesh Roy, Research Fellow, IFPRI, gave the presentation on retailing in India. He argued that the Indian food marketing is transforming and modernizing with the evolution of modern food retailing. Within organized retail, grocery, fruits, vegetables, dairy and processed commodities segments have been growing, although the exact numbers on its growth differ widely (16-50 per cent). It was noted that in the recent years the concept for shopping has altered with its scale and convenience. In terms of providing non price attributes like hygiene, certification and food safety character of retail may not have changed significantly.

#### **Key messages**

The study used ordered probit model and revealed that the consumers prefer supermarkets for better quality, higher food safety, better availability, convenience and greater value for money or do not have credit as an important consideration. On the policy front, it was emphasized the need for improving non-price competition, grading, certification, traceability etc.

Dr Sukhpal Singh, IIM-Ahmedabad expressed concern on how from the policy angle will study help farmers, as farmers still don't receive the actual price for their produce. Dr Chand pointed out that Indian consumers are very price sensitive, and do not give much importance to non-price attributes. Miss Sarda Sunanda, Head Corporate Affairs, PI Industries Ltd., mentioned that there is some feedback from consumers to supermarket but price attributes are dominant but they do try to get preference for non-price attributes like packaging.

#### **Session IV**

#### Challenges for agricultural policy in India

The session was chaired by Dr Mruthyunjaya, Former National Director, NAIP. Dr Brouwer gave a presentation on challenges for agricultural policy in India, which aimed to identify the main challenges for food grains and high valued commodities and subsequently determine whether the agricultural policies play a complementary role in addressing the identified challenges.

Dr Brouwer presented the key policy challenges for Indian agri-food system to achieve the targeted agricultural growth of 4 per cent. A growth of 4 per cent would in turn imply a growth of 1-2 per cent per annum, for rice, wheat and pulses. It was pointed out that the agricultural growth has to come from high-valued commodities like horticulture, poultry and livestock (up to 6 per cent per annum). He listed challenges faced by the Indian government. These are (i) growing fiscal deficit, (ii) low growth in agriculture, (iii) high inflation, especially of HVCs, (iv) lack of market integration and high food waste, (v) lack of timely supply of inputs, (vi) growing wages and rising prices of energy, and (vii) excessive fertilizer subsidy.

Dr Brouwer raised the issue of subsidies versus investment programs. He expressed concern on growing subsidies, especially for fertilizer, irrigation and power, and noted that fertilizer subsidy is largely going to the industry.

#### **Key messages**

The presentation concluded that majority of government resources are going to subsidies, and affecting investment in agriculture. Dr T. Haque, Director, CSD, called for developing an investment road map for accelerating agricultural growth. Dr Surabhi Mittal, CIMMYT, Senior Economist emphasized the need for encouraging private sector and link farmers with markets. Dr Mruthyunjaya concluded the session and called for evolving pro-poor policies and more investment in agriculture.

## **Plenary and concluding Session**

The Plenary and concluding session was chaired by Dr Mruthyunjaya, Former National Director, NAIP. He concluded with the remarks that the study is providing useful policy recommendations on demand-supply projections, dairy sector, international trade and rise of supermarkets. He felt that the recommendations of the study will significantly influence policies and promote trade between countries. He appreciated the work of TAPSIM and gave his best wishes to come up with high impact reports. The session was wrapped up with the vote of thanks delivered by Dr Brouwer and Dr Joshi.

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#### **Annexure**

#### Annexure I – Workshop Agenda

Indian Agriculture and the World Market-Is it a Business as usual?
Friday, 30 March 2012
Venue: Committee Room I, NASC Complex, Pusa, New Delhi

9:30-10:00 hrs Registration

10.00-12.15 hrs Session I

Chairperson: Dr R B Singh, NAAS

Welcome
Dr P K Joshi, IFPRI

Opening remarks and project background Dr Floor Brouwer, LEI

10:10-10:35 hrs Food demand and supply projections for India: 2020 & 2030

Dr P K Joshi, IFPRI and Dr Praduman Kumar, AERA

**10.35-11:00** hrs Supply, demand and international trade of agricultural commodities in India Dr Geert Woltjer and Dr Roel Jongeneel, LEI

11:00-11:30 hrs Group photo and Tea/Coffee

11:30-11:50 hrs Comments by discussants Dr Manoj Panda, CESS Dr Shashanka Bhide, NCAER Dr A Ganesh-Kumar, IFPRI Dr Anjani Kumar, NCAP

11:50-12:10 hrs General discussion

12:10-12:15 hrs Chairperson's remarks

12:15-13:15 hrs Session II

Chairperson: Dr R B Singh, NAAS

12:15-12:40 hrs Dairy in India and the EU: prospects for the two largest dairy producers in the world Dr Roel Jongeneel, Dr PK Joshi, IFPRI, Dr Anjani Kumar, NCAP and Ms Shwetima Joshi, IFPRI

12:40-12:55 hrs Comments by Discussants

Dr K S Ramchandra, NRAA

Dr Pratap S Birthal, NCAP Dr A K Bandyopadhyay, Indian Dairy Association Dr Purvi Mehta, ILRI

12:55-13:10 hrs General Discussion

13:10-13:15 hrs Chairpersons' remarks

13:15-14:15 hrs Lunch

14:15-15:15 hrs Session III

Chairperson: Dr Ramesh Chand, NCAP

14:15-14:40 hrs Food retailing and consumers changing preferences in India

Dr Devesh Roy, P K Joshi and Shwetima Joshi, IFPRI

14:40-14:55 hrs Comments by Discussants

Dr Sukhpal Singh, IIM-A Ms S Sunanda, P I Industries Mr Tushar Pandey, Yes Bank

14:55-15:10 hrs General discussion

15:10-15:15 hrs Chairperson's remarks

15:15-15:30 hrs Tea/Coffee

15:30-16:20 hrs Session IV

Chairperson: Dr Mruthyunjaya, APAARI

15:30-15:50 hrs Challenges for agricultural policy in India

Dr Floor Brouwer, LEI, Dr Vijay Laxmi Pandey, IGIDR and Dr P K Joshi, IFPRI

15:50-16:05 hrs Comments by Discussants

Dr T Haque, CSD

Dr Surabhi Mittal, CIMMYT

16:05-16:15 hrs General Discussion

16:15-16:20 hrs Chairperson's remarks

16:20-16:30 hrs Wrap-up Session

Dr Floor Brouwer, LEI Dr P K Joshi, IFPRI

# **Annexure II - List of Participants**

| Name                                | Designation  | Organization   | <b>Email address</b>                                  |
|-------------------------------------|--|--|---|
|                                     | Program Officer-Rural  |  |   |
| Dr Chandrakant Pradhan              | Development  | Aga Khan Foundation (India)                            | chandrakant.pradhan@akdn.org                          |
|                                     |  | Asia-Pacific Consortium on Agricultural Biotechnology  |   |
| Dr J.L Karihaloo                    | Cordinator   | (APCoAB)   | j.karihaloo@cgiar.org                                 |
|                                     | Counsellor   |  |   |
| Ms Slava Zeman                      | (Agriculture)  | Australian High Commission                             | Slava.Zeman@dfat.gov.au                               |
| Dr Manoj Panda                      | Director   | Centre for Economic and Social Studies (CESS)          | manoj@cess.ac.in                                      |
| Dr Surabhi Mittal                   | Senior Scientist   | CIMMYT   | s.mittal@cgiar.orf                                    |
| D                                   | <b>D</b>   | Council for Social                                     | haquecacp@yahoo.com                                   |
| Dr T Haque                          | Director   | Development  | haque@rdiland.org                                     |
| Mr M S Rao                          | CEO  | CSISA  | m.s.rao@cgiar,org                                     |
| Mr Mukanjay Singh                   | Project Officer –<br>Product Board of<br>Livestock and meat. | Embassy of the Kingdom of the Netherlands              | agri.nl.nde@gmail.com                                 |
| ini makanjay singii                 | Senior Assistant   | the rectionality                                       | agi i.iii.iide@giiidii.eoiii                          |
| Ms Ruchira Saini                    | Director- Agriculture  | FICCI  | ruchira@ficci.com                                     |
| Prof.Bhushana Karandikar            | Professor  | Gokhale Institute of Politics and Economics            | kbhushana@gmail.com                                   |
| Dr.S.S. Kalamkar                    | Professor  | Gokhale Institute of Politics and Economics            | dearshri@gmail.com                                    |
| Dr Deepak Shah<br>Dr Praduman Kumar | Faculty Member<br>Professor                                  | Gokhale Institute of Politics<br>and Economics<br>AERA | deepak.ds.shah@gmail.com<br>pkumariari@rediffmail.com |
|                                     | 11010001   |  | p   |

| Ms Meera Mishra   | Country Co-ordinator   | IFAD   | m.mishra@ifad.org  |
|---|--|--|--|
| Ms Shwetima Joshi   | Research Analyst   | IFPRI  | s.joshi@cgiar.org  |
| Dr. Devesh Roy  | Research Fellow  | IFPRI  | d.roy@cgiar.org  |
| Dr. P K Joshi   | Director South Asia  | IFPRI  | p.joshi@cgiar.org  |
| Dr.Sukhpal Singh  | Professor  | IIM -A   | sukhpal.@iegindia.org  |
| Dr.A K Bandyopadhyay  | President  | Indian Dairy Association                                 | amalk48@yahoo.co.in  |
| Dr. Floor Brouwer   | Senior scientist   | LEI  | Floor.Brouwer@wur.nl   |
| Dr. Geert Woltjer   | Senior scientist   | LEI  |  |
| Dr. Roel Jongeneel  | Senior scientist   | LEI  |  |
| Dr. Ranjit Kumar  | Senior Scientist   | NAARM  | ranjitkumar@naarm.ernet.in   |
| Dr. R B Singh   | President  | NAAS   |  |
| Shiv Kumar  | Senior Scientist   | NACP   | shivkumardull@gmail.com  |
|   | Former National  |  |  |
| Dr Mruthyunjaya Hedge   | Director   | NAIP   | mruthyunjaya1947@gmail.com   |
| Dr. Shashank Bhide  | Deputy Director General  | National Council of Applied<br>Economic Research (NCAER) | shashankabhide@gmail.com   |
|   |  | National Rainfed Area                                    |  |
|   |  | Tractional Training and Ca                               |  |
| Dr. K S Ramachandra   | Member   | Authority  | koodliramu@yahoo.co.in   |
| Dr. K S Ramachandra<br>Dr. Anjani Kumar   | Member<br>Principal Scientists   |  | koodliramu@yahoo.co.in<br>anjani@ncap.res.in   |
|   |  | Authority  | •  |
| Dr. Anjani Kumar  | Principal Scientists   | Authority<br>NCAP  | anjani@ncap.res.in   |
| Dr. Anjani Kumar<br>Dr. Pratap S Birthal  | Principal Scientists Principal Scientists  | Authority<br>NCAP<br>NCAP                                | anjani@ncap.res.in<br>psbirthal@ncap.res.in  |
| Dr. Anjani Kumar<br>Dr. Pratap S Birthal<br>Dr.Ramesh Chand   | Principal Scientists Principal Scientists Director   | Authority<br>NCAP<br>NCAP<br>NCAP                        | anjani@ncap.res.in<br>psbirthal@ncap.res.in<br>diretor@ncap.org  |
| Dr. Anjani Kumar<br>Dr. Pratap S Birthal<br>Dr.Ramesh Chand<br>Dr. K K Datta                                      | Principal Scientists Principal Scientists Director Head  | Authority<br>NCAP<br>NCAP<br>NCAP<br>NDRI                | anjani@ncap.res.in psbirthal@ncap.res.in diretor@ncap.org kkdatta2007@gmail.com  |
| Dr. Anjani Kumar<br>Dr. Pratap S Birthal<br>Dr.Ramesh Chand<br>Dr. K K Datta<br>Dr. P Shinoj                      | Principal Scientists Principal Scientists Director Head Scientist  | Authority NCAP NCAP NCAP NDRI NCAP                       | anjani@ncap.res.in psbirthal@ncap.res.in diretor@ncap.org kkdatta2007@gmail.com pshinoj@ncap.res.in                          |
| Dr. Anjani Kumar<br>Dr. Pratap S Birthal<br>Dr.Ramesh Chand<br>Dr. K K Datta<br>Dr. P Shinoj                      | Principal Scientists Principal Scientists Director Head Scientist Corporate Affairs                            | Authority NCAP NCAP NCAP NDRI NCAP                       | anjani@ncap.res.in psbirthal@ncap.res.in diretor@ncap.org kkdatta2007@gmail.com pshinoj@ncap.res.in                          |
| Dr. Anjani Kumar<br>Dr. Pratap S Birthal<br>Dr.Ramesh Chand<br>Dr. K K Datta<br>Dr. P Shinoj<br>Ms. S S Sunanda   | Principal Scientists Principal Scientists Director Head Scientist Corporate Affairs Senior Development         | Authority NCAP NCAP NCAP NDRI NCAP P I Industries        | anjani@ncap.res.in psbirthal@ncap.res.in diretor@ncap.org kkdatta2007@gmail.com pshinoj@ncap.res.in sarada.sunanda@piind.com |
| Dr. Anjani Kumar Dr. Pratap S Birthal Dr.Ramesh Chand Dr. K K Datta Dr. P Shinoj Ms. S S Sunanda Dr. Suzzane Ross | Principal Scientists Principal Scientists Director Head Scientist Corporate Affairs Senior Development Advisor | Authority NCAP NCAP NCAP NCAP NDRI NCAP USAID            | anjani@ncap.res.in psbirthal@ncap.res.in diretor@ncap.org kkdatta2007@gmail.com pshinoj@ncap.res.in sarada.sunanda@piind.com |

| Dr. Sumit Roy         |   | WWF                        | sroy@wwfindia.net                 |
|-----------------------|---|----------------------------|-----------------------------------|
| Mr. Tushar Pandey     | President   | Yes Bank                   | tushar.pandey@yesbank.in          |
| Ms. Shashwati Ghosh   | AVP   | Yes Bank                   | shashwati.ghosh@yesbank.in        |
| D D 014               | Chief Agronomy                                      | D GL GL                    |                                   |
| Dr. B C Marwaha       | Advisor   | DCM Shriram                | RajivSinha@dscl.com               |
| Dr. P C Meena         | Scientist   | NAARM                      | pc_meena@rediffmail.com           |
|                       | Senior Manager- Food<br>& Agribusiness              |                            |                                   |
| Ms. Vaishali Chopra   | Research & Advisory                                 | Rabo Bank                  | vaishali.chopra@rabobank.com      |
| Dr. Bharat Sharma     | Head-IWMI New Delhi                                 | IWMI                       | b.sharma@cgiar.org                |
| Dr. Purvi Mehta       | Asia Representative                                 | ILRI                       | p.mehta@cgiar.org                 |
| Dr. Philippe Beyries  | Counsellor (Agriculture and food processing sector) | Embassy of France in India | philippe.beyries@dgtresor.gouv.fr |
| PP - 3                | Project Management                                  | ,                          |                                   |
|                       | Specialist (Climate                                 |                            |                                   |
| Dr. Srivalli Krishnan | Adaptation)   | USAID                      |                                   |
| Ms. Nityashree        |   | NAARM                      | nitya.econ@gmail.com              |
|                       | First Secretary<br>Trade and Economic               |                            |                                   |
| Dr. Renita Bhaskar    | Affairs   | EU Delegation              | renita                            |
| Dr A. Ganesh Kumar    | IFPRI   | Research Fellow            | G.Anand@cgiar.org                 |