Agricultural Co-operatives Meeting

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IFFCO Initiative - AgTech
Krishi Dev Gyan and Kisan-Chatbot

- Web and mobile app platform capable of diagnosing diseased Crop and pests through an image, subsequently disseminates advisory solution as voice call to the user on near-real time
- Uses machine learning, artificial intelligence to detect the image, finds the best matched solution from IFFCO Kisan agri-library
- Digitally records farmer and farm profiling, crop history, soil profiles, diagnostic history, fertilizer, chemical application pattern, sowing and harvesting dates, yield estimations, etc.
- Innovative Agri-chatbot to resolve farmers queries on the go
Facts about India

Agriculture livelihood to 58% of the country's population. Country has 2\textsuperscript{nd} Largest Arable land.

Monsoon Dependent. Rainfall influences fertilizer consumption & agriculture production.

Agriculture share: 17.1% in country’s GVA.

Sustainable use of Agri-nutrients playing an important role in increasing productivity.

Demography on increasing trend. 17% of World population.

Income avenues, increasing average absorption and rise in average calorie intake.

Largest destination for FDI among developing countries with FDI inflows of US$ 62 Billion in 2017-18.
Indian Agritech startups have raised over US $124 million since 2013, excluding Debt, grant and post IPO funding rounds.

Almost 50% of that investment happened in 2016.

Majority of the investment has gone to Biotech firms (43%) and companies providing market linkages (49%).

Limited activity in learning of Crop quality parameters.

Horticulture Will Dominate Agtech Innovation in India in Next Decade

<table>
<thead>
<tr>
<th>Funding Year</th>
<th>Total Funding (US$ Million)</th>
<th>No. of Deals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>13.7</td>
<td>11</td>
</tr>
<tr>
<td>2014</td>
<td>6.8</td>
<td>10</td>
</tr>
<tr>
<td>2015</td>
<td>7.1</td>
<td>9</td>
</tr>
<tr>
<td>2016</td>
<td>57.7</td>
<td>29</td>
</tr>
<tr>
<td>2017</td>
<td>53</td>
<td>17</td>
</tr>
</tbody>
</table>
Bottlenecks Demanding Innovation

Small and fragmented land-holdings – 93 Million out of 140 Million Landholding below 1 hectare.

Higher Agriculture Productivity - Key challenge.

Fertilizer Use per hectare significantly lower than neighbouring countries.

Yield constant at ~ 2150 kg/ha.

Productivity gaps in states having higher crop production and contribution towards National food grain production.

Cultivation Cost rising @ 3.7% p.a.

Average Annual income of the median farmer, net of production costs from cultivation is less than US$ 300 in 17 States.
India – A high value Food Power House

Food grain production record output at 284.8 Mill MT (2017-18).

Horticulture Production has outpaced Food grain production.(Est. 306.8 Mill MT in 2017-18)

Global leader in production of Pulses (~25 Mill MT) and Milk (~176 Mill MT).

One of the largest producer of Coarse Cereals (~47 Mill MT) and Oilseeds (~31 Mill MT) in the World.

Strength of high acreage of farming (~194 Mill ha) and involvement of major chunk of population in farming (~263 Million).

<table>
<thead>
<tr>
<th>Commodities</th>
<th>% Share Globally</th>
<th>Rank</th>
<th>Behind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>13</td>
<td>Second</td>
<td>China</td>
</tr>
<tr>
<td>Rice</td>
<td>21</td>
<td>Second</td>
<td>China</td>
</tr>
<tr>
<td>Pulses</td>
<td>26</td>
<td>First</td>
<td></td>
</tr>
<tr>
<td>Groundnut</td>
<td>15</td>
<td>Second</td>
<td>China</td>
</tr>
<tr>
<td>Potatoes</td>
<td>12</td>
<td>Second</td>
<td>China</td>
</tr>
<tr>
<td>Onion (Dry)</td>
<td>22</td>
<td>Second</td>
<td>China</td>
</tr>
<tr>
<td>Vegetables &amp; Melons</td>
<td>11</td>
<td>Second</td>
<td>China</td>
</tr>
<tr>
<td>Fruits</td>
<td>13</td>
<td>Second</td>
<td>China</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>19</td>
<td>Second</td>
<td>Brazil</td>
</tr>
<tr>
<td>Milk</td>
<td>18</td>
<td>First</td>
<td></td>
</tr>
</tbody>
</table>

Source: FAO 2014
Policy Support FDI – Agriculture (100% Under Automatic Route)

- Plantation of Tea
- Services related to Agro and allied sectors.
- Animal Husbandry, Pisciculture, Aquaculture
- Marketing of Food products produced
- Development of Seeds.
- Floriculture, Horticulture, Apiculture & cultivation of Vegetables and Mushrooms
- Storage and Ware housing

FDI since last 15 years in Agriculture Services and Agricultural Machinery has been US$ 2.5 Billion.

India replaced China as the top destination for FDI by Capital investment.
Farm Machinery - India

Rural Workforce declining @ 2.04% p.a.

Farm Mechanization level @ 40-45%. Developed Economies – Above 75%.

Hill Agriculture – Limited access to Mechanization.

Tractors, Threshers and Power tillers- Major Farming equipment.

Smaller farm holding limits the affordability of Technology due to high Capital load.

Shortage of Skilled Farm labor averse with Technology knowhow.

Emerging Custom Hiring Model: Pay-as-you-use basis on either an hourly or acreage pricing.

Few Start Ups such as EM3, Gold Farm and Trringo (M&M) – Penetration is still low.
India Share in Global Agriculture Exports

Agri Export share in International market has increased from 1% to 2.5% over the period.

Rice, Cotton, Spices, Meat & preparations, Sugar and Oil Meals - Major exportable Agri commodities.

West Asia region under Top 5 destinations for Agri. Exports.

Food processing share - 10% wrt other Country i.e. 30-50%; Developed country - 100%.

Projected Food export from US$ 43 Billion (2014) to US$ 113 Billion by 2030.

Source : APEDA
Increased Focus on Agriculture Sector

Global Economic growth @ 3.9% pa in the Medium Term. Indian economy growing @ 7.3% to 7.8% pa.

Government aggressively focusing on Agriculture.

Soil health and Environmental concerns are being addressed.

Budget allocation of US $ 5370 Million for Agriculture and Farmers Welfare.

Allocation of US$ 777 Mill for Micro-Irrigation and Watershed Development. Bringing 2.85 million hectares under irrigation

Support to Organic Farming/ City Compost.

Allocation of US$ 820 Mill to provide Farmers with Crop Insurance.
About IFFCO


Fertilisers marketed through a Pan India Network of 35,025 Member Cooperative Societies.

Only Fertiliser Institution in India to have surpassed

- **8.6 million** MT/annum in terms of **Production**
- **13 million** MT/annum in terms of **Sales**

Net worth of US$ 2400 Million.
IFFCO Diversification - Overseas

OMIFCO, Oman - JV with Oman Oil Company, SAOC, Oman to produce 1.65 Million MT Urea and Surplus Ammonia.

JIFCO, Jordan - JV with Jordan Phosphates Mines Company Ltd (JPMC) to produce 0.47 Million MT Phosphoric Acid.

JV with JPMC, Jordan to produce Rock Phosphate.

Industries Chimiques Du Senegal (ICS), Senegal to produce 0.6 Million MT of Phosphoric Acid.

Growmax Resources Corp., Canada / Growmax Agricorp., Canada – Rock Phosphate exploration activities in Peru under progress.
New Diversification – Across Supply Chain

**Inputs**
- Farm Machinery
- Finance
- R&D-Centre of Excellence

**Production**
- Specialty Fertilizer
- Bio-Fertilizers
- Bio-Stimulants

**Processing**
- Vegetable Processing
- Poultry & Meat products

**Distribution, Retail and Wholesale**
- E-Commerce
- 403 One Stop Shops

**Customer**
- New Markets
IFFCO – New Diversification

IFFCO e Bazar Limited – Catering Goods & Services required by farmers under one roof (605 Stores). Moving ahead on an e-Commerce module (IFFCO imandi) to facilitate trade for Rural and Urban Consumers.

IFFCO eyeing to set up Vegetable food processing Unit in venture with Congelados De Navarra, Spain at an investment of Euro 40 Million.

IFFCO eyeing to enter into Agriculture Machinery Supply and Agriculture Finance – MoU entered with South Korean firms.

SEZ Unit (2700 acre land), Nellore for setting up Multi-product facilities.