Proceeding of
CGIAR Site Integration
India Consultation Meeting

Venue: NAAS Auditorium, NASC Complex, New Delhi
Tuesday 22nd March 2016

Contents

The first multi-partner India-CGIAR consultation meeting was held on 22 March 2016 in the National Agricultural Science Complex, New Delhi. The consultation was well attended by 71 participants, including representatives of various stakeholder groups led by Government of India's Secretary to the Department of Agricultural Research and Education Dr T Mohapatra. The CGIAR was also well represented at the consultation, led by the DG of ICRISAT Dr David Bergvinson. Leaders of the CG Centers in India lead small group discussions on CRPs. A list of consultation's participants is annexed (Annexure-I).

Meeting objectives

The consultation was planned at a meeting of the site integration steering committee held in February 2016, and had the following objectives:

i. Review current CGIAR research in India;
ii. Present the planning for Phase 2 CGIAR Research Programs (CRPs);
iii. Seek input from partners in India on the CRP plans;

iv. Submit consolidated feedback to CRP and CGIAR Centers;
v. Commit to on-going consultation with partners in India.

Agenda for the meeting that was drawn up by Dr Peter Carberry, ICRISAT's Deputy Director General and Chair of the site integration steering committee chair, is as follows:

Time	Item	Who
0900 - 0910	Welcome and Introductions	PK Joshi (IFPRI)
0910 - 0925	Overview of CGIAR reforms	D Bergvinson (ICRISAT)
0925 - 0940	ICAR-CGIAR collaboration	JS Sandhu (ICAR)
0940 - 1000	CGIAR research in India	PK Aggarwal (CCAFS)
1000 - 1015	Chairman's remarks	T Mohapatra (ICAR)
1000 - 1010	Vote of Thanks	R Varshney (ICRISAT)
1015 - 1045	Group photo & coffee	
1045 - 1215	Proposed CRP work in India	D Bergvinson (ICRISAT)
Small groups	CRP-Maize, CRP-Wheat	Etienne Duvallier (CIMMYT) RK Gupta (DWR)
	CRP-Rice	US Singh (IRRI) CRRI Director
	CRP-Livestock, CRP-Fish	A Jha (ILRI) H Rahman (ICAR)
	CRP- Forests, Trees, Agroforestry (FTA), CRP-Roots, Tubers, Bananas (RTB)	J Rizvi (ICRAF) OP Chaturvedi (ICAR)
	CRP-Agriculture for Nutrition & Health (A4NH), CRP-Policies, Institutions and Markets (PIM)	PK Joshi (IFPRI) NS Rathore (DDG Education)
	CRP-Climate Change, Agriculture & Food Security (CCAFS), CRP-Water, Land and Ecosystems (WLE)	PK Aggarwal (CCAFS) AK Sikka (ICAR)
	CRP-Dryland Cereals & Legumes (DCL)	R Varshney (ICRISAT) JS Sandhu (ICAR)
1215 - 1300	Report back from each project group (5 min /gp)	D Bergvinson (ICRISAT)
1300 - 1400	Lunch	
1400 - 1500	Site integration in India	R Varshney (ICRISAT)
Small groups	Northern States: J&K, HP, Punjab, Uttaranchal, Haryana	PC Sharma (CSSRI)
	Central and western states: Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Maharashtra, Gujarat	NP Singh (IIPR)
	Southern States: Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Kerala, Goa	HS Talwar (IIMR)
	Eastern States: West Bengal, Bihar, Orissa, Jharkhand, Arunachal Pradesh, Meghalaya, Triupara, Sikkim, Nagaland	Rajib Nath (BCKVV)
1500 - 1530	Report back from each project group (5 min /gp)	R Varshney (ICRISAT)
1530 - 1600	Coffee	
1600 – 1615	Synopsis of emergent ideas for better integration of CGIAR activities in India	D Bergvinson (ICRISAT)
1615 - 1630	Concluding remarks	T Mohapatra (ICAR)
1630	Meeting close	

Inaugural Session

Introduction – Dr PK Joshi

The consultation began with a welcome address by Dr PK Joshi Regional Director of IFPRI. While welcoming the stakeholders and CG center representatives to the consultation Dr Joshi mentioned that:

- India was a high priority country for the CG system.
- The CG system reform that started in 2012-13 is learning and would like to align with the national priorities like the PM's call to double farmers' income by 2022.
- The 2nd stage of CG system reform focuses on developing strategies for:
    - meeting CG aspirations and strategic actions
    - finding new creative solutions
- Improving the efficiency of research solutions.
- The CG believes in partnering for improving food security sustainably.

Overview of CGIAR Reform – Dr David Bergvinson

Dr David Bergvinson the Director General of ICRISAT presented to the participants an overview of the CG system reform mentioning that:

- The consultation is an effort for coordination and communication.
- That the CGIAR is a unique public organization to transform agricultural research into impacts and thereby benefit 500 million farmers.
- The consultation is for better positioning CRPs and to serve the needs of farmers and to also make food systems sustainable.
- Investment in agricultural research is good investment.
- However the challenge is integration of CRPs, both commodity based programs and cross cutting platforms.
- There are 3 System Level Objectives of CGIAR namely:
    i. *Reduced Poverty* by having 350 million more farm households adopt improved varieties, breeds or trees, and/or improved management practices and 100 million people, of which 50% are women, being assisted to exit poverty.
    ii. *Improved food and nutrition security* by enabling 150 million more people, of which 50% are women, meet minimum dietary energy requirements, ensure that 500 million more people, of which 50% are women, without deficiencies of essential micronutrients and a 33% reduction in women of reproductive age who are consuming less than the adequate number of food groups.
    iii. *Improved Natural Resource Systems and Ecosystem Services by* a 20% increase in water and nutrient use efficiency in agro-ecosystems, reduction of agriculturally-related greenhouse gas emissions by 0.8 Gt CO2-e yr–1 (15%) compared with a business as usual scenario in 2030, restoring 190 million hectares (ha) degraded land and saving from deforestation7.5 million ha of forest land.

- David also emphasized the need to bring stakeholders on board, with urgency. He said "*The Indian Prime Minister has called for the doubling of income of smallholder farmers by 2022 or before. This can only be achieved if we work in concert towards improving the lives of smallholder farmers. All of us must come together to offer integrated solutions that are sustainable and equitable to improve the nutritional status of all consumers and to improve the welfare of farmer families*."

Suggestions for Collaborative Work – Dr T Mohapatra

Dr T Mohapatra, Director General, Indian Council for Agricultural Research (ICAR), emphasized the importance of convergence to be successful in alleviating poverty in the country: "*In certain areas we are suffering and unable to make headway. We need to identify what can be done together, in a time-bound manner by defining our roles and responsibilities clearly*". He also wanted other partners such as the Department of Agriculture to be involved in collaborative work.

Some of the areas he identified for action and where all CGIAR centers can contribute:

- Breaking the yield barrier in pulses
- Using big data and genomics for crop improvement especially in the dryland areas
- Improving water use efficiency
- Developing heat tolerant varieties for the Gangetic plains, taking into consideration the national program on conservation agriculture, and in convergence between the Government of India and the state Governments.
- Promoting animal health initiatives with ILRI's help, especially the sexing of semen, and
- Defining ways and means for assessing the impact of technologies, especially natural resource management technologies, in order to justify investments in agricultural research.
- Bioversity can help in accessing germplasm lines from China.

Dr Mohapatra appreciated the work of Dr Ashutosh Sarkar of ICARDA for supporting Indian research with good pulses germplasm and that of Dr US Singh of IRRI in bringing stress tolerant rice to Indian farmers.

He said that the CG centers and NARS need to discuss in greater detail, on effective ways of dealing with the challenges faced by India.

Emphasis on Building of Existing Efforts for Collaboration – Dr JS Sandhu

Dr JS Sandhu, Deputy Director General of the Indian Council for Agricultural Research (ICAR), underscored the importance of building upon substantial number of landmark events for collaboration between the CGIAR and stakeholders in India, which included:

- ICAR's January meeting with CG Centers.
- ICAR's Vision 2020 and 2050.
- Work plans of CG centers, such as the recent good work plan developed between ICAR and ICRISAT.

Dr Sandhu emphasized on the need for effectively dealing with the problems of rain-fed areas, which constitute 45% of the country's area. He also wanted a reduction in overlapping programs, such as those for dealing with heat stress in wheat.

Overview of CGIAR Research in India – Dr Pramod Aggarwal

Dr Pramod Aggarwal (CCAFS Regional Director) presented an overview of CGIAR research in India. In his presentation Dr Agarwal highlighted the following:

- ICAR and CG centers have been involved in crop improvement programs for a long time.
- The typical strategy is to work with partners, as in the examples of ICRISAT's initiatives in Karnataka and the climate change initiatives that involve a large number of partners.
- CG undertakes about 300 activities in India, working in almost every part of India.

- CG centers are working extensively in Karnataka, Telangana, AP and increasingly in Odisha and MP.
- CG centers now have maximum activities in Odisha and Karnataka.
- CG's areas of activities in decreasing order of importance are: Breeding→ Farmers→ Climate management→ Climate Smart Initiatives→ Productivity→ Systems.
- Emerging Areas of CG work in India: Data, Training and Capacity Building.

Small Group Discussions on Proposed CRP work in India

After the inaugural plenary the participants clustered together in the following small groups for intensive discussions on the proposed CRP work in India:

- CRP-Maize, CRP-Wheat
- CRP-Rice
- CRP-Livestock, CRP-Fish
- CRP- Forests, Trees, Agroforestry (FTA), CRP-Roots, Tubers, Bananas (RTB)
- CRP-Agriculture for Nutrition & Health (A4NH), CRP-Policies, Institutions and Markets (PIM)
- CRP-Climate Change, Agriculture & Food Security (CCAFS), CRP-Water, Land and Ecosystems (WLE)
- CRP-Dryland Cereals & Legumes (DCL)

Small group discussions started with a presentation on the proposed CRP work in India, followed by intensive discussions, and each of the small groups then came back to the plenary for a presentation on their suggestions for improving the proposed CRP work in India. Suggestions that were earlier circulated to the participants for facilitating the discussions are as follows:

Suggestions for facilitating the morning small group discussions on CRPs:

- Nominated CGIAR representative to facilitate discussion; can invite partner to co-Chair.
- A Rapporteur will be appointed to take notes for reporting back.
- Groups can cover the following issues:
    - Introduction of participants
    - A brief introduction to the CRP, its objectives, Theory of Change and proposed activities in India
    - Confirmation of existing partnerships in India working on CRP research
    - Request to identify other research in India not connected but relevant to the CRP
    - Seek input from group members on each of the following issues:
        1. How to carry out ongoing dialogue and engagement with partners and stakeholders to understand and align with the national priorities and actions and to establish and maintain partnerships?
        2. How to collectively meet the goals and targets of the Strategic Results Framework (SRF) related to India?
        3. How to align research activities (also consider combined systems work; gender and inclusive growth)?
        4. Can we make use of a common set of research sites?
        5. Suggestions for sharing facilities, infrastructure and equipment?
        6. Can we coordinate policy engagement?

- Seek feedback on the process of this consultation meeting and how it can be improved.

Rapporteurs for Small Group Meetings

Group	Rapporteur	Presenter
CRP-Maize, CRP-Wheat	Dr RK Sharma for Wheat; Dr Singh for Maize	
CRP Rice	Dr Padmavathi	
CRP-Livestock, CRP-Fish	Dr Alok Jha	Dr Alok Jha
CRP- Forests, Trees, Agroforestry (FTA), CRP-Roots, Tubers, Bananas (RTB	Dr Sunil Londe	
CRP-Agriculture for Nutrition & Health (A4NH), CRP-Policies, Institutions and Markets (PIM)	Dr Pratap Birthal	
CRP-Climate Change, Agriculture & Food Security (CCAFS), CRP-Water, Land and Ecosystems (WLE)	Drs Paresh and Natasha	Dr Pramod Agarwal
CRP-Dryland Cereals & Legumes (DCL)	Dr GP Dixit	Dr NP Singh

The following is a gist of the suggestions made by these small groups for improved site-integration and impact in India:

CRP-Maize, CRP-Wheat

Wheat Priority areas for research

- Biotic stresses specially Karnal bunt, blight and blast in addition to stripe rust
- Abiotic stresses specially lodging, water logging along with heat and drought
- Breeding for CA (G x E x M)
- Precision water and nutrient management
- BIG data- platform for BMS
- Quality and bio-fortification, including enabling policy
- Cross-cutting: Capacity development, gender & youth

Wheat Opportunities for site integration:

- Sharing precision phenotyping facilities at the Indian Institute of Wheat and Barley Research and CIMMYT-Hyderabad and the Indian Agricultural Research Institute.
- Precision water and nutrient management platform at BISA-CIMMYT Ludhiana and IIWBR Karnal
- High throughput DH (Future)
- BIG data Hub, for sharing large data between the national system and the CGIAR.

Maize-Alignment with national priorities

- FP3, Fp5 and CoA 2.1 were flagged to be a priority
- Stress resilient maize germplasm enhancement both for biotic and abiotic stresses.
    - Abiotic: Drought, heat, water logging and salinity
    - Biotic: Site specific but BLSB , Aflatoxins and PFSR are emerging priorities
    - Dedicated rain fed trials to be conducted
- DH technology for enhanced genetic improvement
- Trials under various management regimes (G x E x M interaction) to identify suitable hybrids
- Value addition for enhancing profitability to farmer
- Hub for data management

Maize-Opportunities for Site Integration

- State agricultural universities/ICAR/CIMMYT collaborative trials with common set of entries
- Extending and sharing research and phenotyping facilities to various partners for maize at Karnal, CIMMYT-Hyderabad
- Maize as feed for the target ecologies of Rajasthan and Gujarat.

CRP-Rice

Objectives

- Reduce poverty and hunger among rice producers and consumers by reducing production risks, improved access to financial and other services, diversifying enterprise opportunities and increasing livelihood opportunities, and increasing value capture by producers.
- Improve food and nutrition security for health by reducing pre- and postharvest losses, closing yield gaps in production, enhancing genetic gain in rice, increasing conservation and use of genetic rice resources, and increasing access to productive assets and diverse, nutrient-rich foods.
- Improve natural resource systems and ecosystem services by fostering more productive and equitable management of natural resources and reducing GHGs from agricultural activities.

Cross cutting approaches

- Climate change concerns will be addressed through technologies to reduce GHG emissions from farms and enhanced adaptive capacity to climate risks.
- Gender equity and youth employment in the rice sector will be achieved through increasing the capacity of women and youth to participate in decision making, developing technologies that reduce women's drudgery, and promoting equitable control of productive assets and resources.
- Policy and institutional concerns will involve ways to help beneficiaries adopt research outputs and help partner organizations enhance their research and development efforts.
- Capacity development will be carried out at different levels, from poor and vulnerable communities to partner organizations and institutions, through education, training, and exchange.
- Sharing facilities for intensification of pulses in rice fallows.

CRP-Livestock, CRP-Fish

Priority Areas

1. Antimicrobial resistance and antibiotic residues (AMRAR) in livestock and livestock products(Partners: IVRI, NIVEDI).
2. Sero-epidemiological and molecular detection of Brucellosis, assessment of economic costs and control options in India (Partners: IVRI, NIVEDI).
3. 3.Multi – dimensional improvement of food – feed crops & planted forages for nutrition, including deconstruction of lignocellulose bonds for improvement of digestibility of crop residues (Partners: IGFRI, NIANP, NDRI, CIRG, CIRB, CSWRI).
4. Genomic techniques to profile & improve productivity and resilience in buffalo & dairy cattle (Partners: CIRB, CIRC, NDRI, NBAGR, CIRB).
5. Assessment and strengthening of dairy value chain (Partners: NDRI, BAU, BHU).

Conclusions from the Group's Discussions

- ILRI should look at National Priorities such as semen sexing technology and genomic selection for enhancing livestock productivity.
- ILRI and National partners can share facilities, infrastructure and equipment instead of multiple spending.
- More investments needed in South Asia and India in proportion to livestock population.

The group was of the view that the above mentioned issues for the CRP on livestock also hold good for the CRP-Fish.

CRP- Forests, Trees, Agroforestry (FTA), CRP-Roots, Tubers, Bananas (RTB)

A copy of the group's presentation is annexed as Annexure-IV, and the suggestions given by the group for site integration are as follows:

S No.	Points	FTA RTB
1	How to carry out the ongoing dialog and engagement with partners and stakeholders to understand and align	Needs to be discussed with the identified national partners

	with the national priorities and actions and to establish and maintain partnerships?	from public and private sectors.
2	How to collectively meet the goals and targets of the Strategic Results Framework (SRF) related to India?	Develop a time bound joint workplan with the partners and constant monitoring/review,
3	How to align research activities (also consider combined systems work; gender and inclusive growth)?	System mode research for integration of annual and perennial crops, livestock, fodder and involving women in production, marketing and value addition.
4	Can we make use of a common set of research sites?	Yes
5	Suggestions for sharing facilities, infrastructure and equipment?	Should be fully explored
6	Can we coordinate policy engagement?	Yes by PPP mode

CRP-Agriculture for Nutrition & Health (A4NH), CRP-Policies, Institutions and Markets (PIM)

The group's presentation is annexed as Annexure-V. The group identified the following areas of priority for improved collaborative work for the CRP- Policies, Institutions and Markets (PIM):

Flagship 1: Technological Innovation and Sustainable Intensification

- Capacity building in foresight modeling, impact assessment and valuation of technologies
- Adoption and impact assessment of improved crop technologies
- Assessment of NRM and livestock technologies
- Prioritizing and investment in agricultural research

Flagship 2 Economy wide Factors Affecting Agricultural Growth and Rural Transformation

- Prioritizing public investment for efficient and inclusive agricultural transformation
- Center-state relations: uptake and implementation
- Political economy of subsidies in agriculture and implications on smallholder
- Regulatory framework for GM crops.

Flagship 3 Inclusive and Efficient Value Chains

- Inclusive, efficient and sustainable value chains
    - Pulses, horticulture and livestock
- Financing of inclusive value chains for MSMEs in rural areas
- Backend services
    - Seed sector, farm machines, pesticides, extension

Flagship 4 Social Protection Strategies and Programs

- Targeting social safety net programs
    - Food, employment, insurance
- Financial inclusion and financial literacy

Flagship 5 Governance of Natural Resources

- *Piloting land and water pooling for scaling and conserving*
- *Policies and institutional arrangement for land tenurial system*
- *Flagship 6 Cross Cutting Gender Research and Coordination*
- *Farm mechanization to reduce drudgery among women farmers*
- *Role of women in production, processing and marketing of high value commodities.*

The following priorities were identified by the group for the CRP on Agriculture for Nutrition & Health (A4NH):

- Diversification for food and nutrition security
- Public policies for improving nutritional security
- Effective targeting for improved nutrition security
- Nutri-rich food value chain and food safety
- Bio-fortification
- Self-help groups for improved nutrition security
- Partnerships and convergences for improved nutrition programs.

CRP-Climate Change, Agriculture & Food Security (CCAFS), CRP-Water, Land and Ecosystems (WLE)

The group made the following suggestions for improved collaboration and site integration:

- We should link CRPs with the national priorities—e.g., for solar, land degradation, PMKSY, etc.
- Within CG, there is a need for more synergy across CRPs. It will improve efficiency.
- We need a more focused program to come up with a roadmap to increase production of pulses and oilseeds. Both these crops are grown in stressed areas. So, they are relevant to both CCAFS and WLE.
- Scaling up is very important. Both CG and ICAR have big programs. How do we bring convergence? CCAFS can help with it. We will call a meeting to evolve a common theory of change and impact pathways.
- How can we have common sites and how do we share. This is important and we will continue to discuss this.

CRP-Dryland Cereals & Legumes (DCL)

The group members gave the following inputs for more effective collaboration and site integration:

Establishment and maintenance of partnerships

- More clarity on roles and responsibilities in Phase II
- ICAR Platform/ networks need to be integrated with CRP
- AICRP workshops and crop-wise field days, CRP Planning & Review meetings need to continue to provide opportunity for integration
- Biosafety related issues (e.g. transgenics) need to be done together

Meeting the goals and targets of SRF

- Research partners need to work/ link with DAC, State Governments, State agricultural universities, Seed Agencies, NGOs, for development work to meet the national goals.

Align research activities (combined system work, gender, etc.)

- Already happening but needs to be reported/ strengthened further
- This needs to be implemented in each and every step of CRP.

Common set of research sites

- Already happening, can be strengthened further,
- AICRP and other platforms are already bringing partners together.

Sharing facilities, infrastructure and equipment

- Already happening
  - Off season nursery by ICAR
  - High-throughput sequencing and genotyping by ICRISAT
  - Implementation of data management.

Policy engagement

- Already happening

- Consultation required, before submitting policies, so that same voice can go to the Government.

Suggested Improvements for the Consultation Meeting

- Use all existing plaftforms
- Communicate continuously.

Small Group Discussions on Site Integration in India

Post lunch the participants gathered again in small groups for discussions on site integration in India. The following suggestions were circulated to the participants for facilitating discussion in these groups:

Suggestions for facilitating the afternoon small group discussions on integration at State level:

- Nominated partner to Chair
- A Rapporteur will be appointed to take notes for reporting back.
- Groups can cover the following issues:
    - Introduction of participants
    - Confirm that this session is to review current and possible integration in agro-ecologies at the State level.
    - Seek input from group members on the following issues:
        1. What are the R&D priorities at the State level?
        2. Do States have current mechanisms for facilitating research collaboration?
        3. Where are the main research facilities, infrastructure and equipment in each State? Do they have spare capacity for collaboration with the CGIAR?
        4. What on-farm research is undertaken by the States? How can the CGIAR leverage these on-farm scale out efforts?
        5. Are there existing R&D initiatives in which the CGIAR could partner?
- Seek feedback on the process of this consultation meeting and how it can be improved.

Following discussions, these small groups again made presentations to the plenary on their suggestions for improved site integration in India. A gist of the suggestions made by these groups is as follows:

Northern States: J&K, HP, Punjab, Uttaranchal, Haryana

These states which constitute the food bowl of the country, are plagued by present day agricultural problems which render farming in these states unprofitable and leads to suicides etc. The group identified the following:

R& D Priorities

- Emphasis on promotion of indigenous livestock especially cattle & buffalo and reducing stray cattle population.
- Improving digestibility of fodder and crop residues.
- Improving integrated water and nutrient use efficiency.
- Diversification & intensification or RWCS
- Breeding for CA
- Effective residue management
- Multi-stress tolerance in crop varieties with emphasis on salinity, lodging and waterlogging tolerance.

- Biotic stress - Karnal bunt, stripe rust, blast (new); BLB; white fly
- Banded leaf and sheath blight, post flowering stalk rot, turcicum leaf blight (hill maize)
- Natural Resource degradation
- Soil/water health issues-
- increasing salinity in underground water in good quality water regions
- Poor quality water use for irrigation
- Nutri-cereal promotion in hills – small millets
- Enhancing Drought tolerance in crops -hills
- Pre- breeding for genetic enhancement
- Reducing GHGs
- Promotion of organic agriculture
- As salinity of underground water is increasing, there is a need for water policy.

Suggestions for Improved Site Integration

- States having current mechanism for research collaborations – YES
- Research facilities available – PAU, GADVASU, CCSHAU, LUVAS, SKUAST, GBPUAT, SVBPUAT, UHF, CSKHPU, CSSRI, NDRI, IIWBR, CIRB, BISA
- Enhanced funding for research and capacity building

Central and western states: Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Maharashtra, Gujarat

	UP	**Rajashtan**	**Madhya Pradesh**	**Chhatishgarh**	**Maharashtra**	**Gujarat**
Crops	Wheat, Rice, Sugarcane, Maize, Pulses, Oilseeds, Agroforestry, Cattle, Sheep, Potato	Maize, Wheat, Pearl millet, Pulses, Arid legumes, oilseeds, fruit and fodder based agroforestry, livestock	Duram Wheat, Soyabean, Chickpea, Rice (eastern MP), livestock, agroforestry plantations	Rice, Pulses, fodder, livestock, agroforestry	Sugarcane, Banana, Pomegranate, Cotton, agroforestry	Cotton, groundnut, castor, potato, pulses
R&D priority	Irrigated IGP and Bundelkhand Region; degradation of soil and landscape	Water stressed region, land degradation, degrading natural resources and waste lands	Water deficit region, feed and fodder shortages	Water logging, rice fallows	Rainfed or dryland cultivation, water management	Water management
Mechanisms for faciliating resarch collaboartion	ICAR institutes, SAU-based AICRPs are already in place					
Main research facilities, infrstructure, and equipment? Collaboartion with	CIMMYT, CAFRI, ICRAF (FTA), ILRI, CIP (RTB)	ICRISAT, CIMMYT, ICARDA, CAFRI, RTB, ILRI, ICRAF, ICARDA, CRP on Dryland	CAFRI, ICRISAT, ILRI, ICRAF (FTA)	IRRI, ICARDA, ICRISAT, ILRI, ICRAF	CIP (RTB), ICRISAT, CAFRI, ICRAF	ICRISAT, CIP
What On-Farm research is undertaken? How CGIAR can leverage those on-farm scale out efforts?	Front line demonstrations, Participatory seed production, farmers involvement					
Are there esixsting R & D initiatives in which CGIAR could partner	There is already a good collaboration between CGIAR programs and National program, however, there exists good scope and need to strengthen the ongoing current collaborative activities					

Southern States: Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Kerala, Goa

Site integration- Southern States						
	AP	**Telangana**	**Karnataka**	**Tamil Nadu**	**Kerala**	**Goa**
Commodities	Rice, groundnut, pulses, fish, livestock	Rice, groundnut,, millet, livestock, Maize	Millets, Rice, Oilseeds, Horticulture, vegetable	Rice, millets, oilseeds, maize,	coconut, arecanut, spices and other hortuclutral crops	coconut, arecanut, spices and other hortuclutral crops
R&D priority	Biotic stresses, Blast, BLB and , stem borer and plant hoppers, among abiotic drought and salinity, lodging tolerance, nutrition Double digit growth in agriculture and allied sectors Labour constraint and farm mechanization is urgently.	sorghum grain mold, drought, shootfly, colored sorghum, downy mildew	mechanization for sowing and hrvesting of millets, drought, TLB in maize, downy mildew	Development of waste lands especially in coastal regions, Salinity,	Development of waste lands especially in coastal regions	Development of waste lands especially in coastal regions
Mechanisms for faciliating resarch collaboartion	yes	yes	yes	yes	no inforamtion	no information
Main research facilities, infrstructure, and equipment? Collaboartion with CGIAR?	icar, , SAU	icar, icrisat, SAU	icar, SAU	icar, SAU	icar, , SAU	icar, SAU
What On-Farm research is undertaken? How CGIAR can leverage those on-farm scale out efforts?	OFT, Large scale trials, FLDs, ict, seed production	OFT, Large scale trials, FLDs, ict, seed production	OFT, Large scale trials, FLDs, ict, seed production	OFT, Large scale trials, FLDs, ict, seed production	OFT, Large scale trials, FLDs, ict, seed production	OFT, Large scale trials, FLDs, ict, seed production
Are there esixsting R & D initiatives in which CGIAR could partner	yes	Yes	Yes	Yes	Yes	No

Eastern States: West Bengal, Bihar, Orissa, Jharkhand, Arunachal Pradesh, Meghalaya, Triupara, Sikkim, Nagaland

R&D Priorities

- Water Management
  - -Drought , Flood, Submergence
- Labour availability
  - -Wage, migration
- Non Cereal crops
  - -Horticulture, Live stock, Vegetables
- Infrastructure
  - -Mechanization, Seed, Extension system
- Salinity

- Acidity

Opportunities for research collaboration

- Irrigated ecosystem-NRRI, IIWM,OUAT, BCKV,BAU, AAU, ICAR NEH Complex, CAU
- Rainfed ecosystem-ICAR Research complex. Patna, IIWM,OUAT, BCKV,BAU, AAU, ICAR NEH Complex, CAU
- Coastal ecosystem-NRRI, OUAT, BCKV,ICAR Res Inst. Canning
- Hill ecosystem-UBKV, ICAR NEH Complex, CAU

Opportunities for on farm research collaboration

- With the existing systems of SAU and DoA
- KVK, BGREI, CSAP,
- Demonstration by the innovator/developer
- CG systems should work in convergence approach
- Public Private Partnership
- Market linkage
- Value chain

Concluding Session

Dr David Bergvinson the Director General of ICRISAT gave the concluding remarks, and mentioned the following:

- The consultation examined convergence across CRPs from 2 lenses, namely the system-commodity lens and the geography lens.
- The next steps to the meeting would include:
    - The steering committee meeting on 23 March 2016, to help integrate and better coordinate with stakeholders.
    - A shared and structured framework for accountability.
    - Help achieve CG goals, by working on various fronts.

Concluding statement

- Agriculture is a significant source of livelihood for the Indian population – it contributes ~15% of the GDP and about 50% of the workforce.
- This contribution of Indian agriculture has been made possible by an exceptionally strong National Innovation System that includes the Indian Council of Agricultural Research (ICAR), National and State science agencies and universities, a large NGO sector and a growing private sector.
- Agricultural research in India has also contributed to and benefited from excellent international collaborations.
- The CGIAR has a long presence and history of collaboration in India, with ICRISAT headquartered in Hyderabad, Telangana State and most of the CGIAR Centers and CRPs having Regional Centers and staff based in India.

- Climate Change poses many challenges for dryland agriculture and there's a need for a systems approach to sustainable food production in the country and better natural resource management.
- The Phase 2 CGIAR Research Programs (CRPs) are currently under development and so now is an appropriate time for the CGIAR to look for greater efficiencies in its collaborations and activities conducted in India.
- At this meeting we asked key partners to help us in better delivering benefits to Indian agriculture. Outputs from the meeting include:
    1. A call to action for integration through convergence of the CGIAR and national research systems to improve the productivity, profitability and sustainability of Indian agriculture.
    2. Identify national and state level priorities so we can align the CGIAR Strategic Results Framework (SRF) with those priorities.
    3. Develop more efficient ways to work together in a time-bound manner by defining our roles and responsibilities clearly.
    4. Establish a sustained mechanism for collaboration amongst CGIAR Centers, CRPs and partners especially at the state level.
    5. Define priorities for ways to break the yield barrier of pulses, use big data and genomics for crop improvement and adopt new technology to improve fertilizer or nitrogen use efficiency as well as water use efficiency.
    6. Improve soil organic matter which is declining especially in rice and wheat systems and scale up conservation agriculture which has been promoted for a long time but is not being adopted on a large scale.
    7. Reduce duplication of work by using the site integration process as a framework and vehicle to foster greater collaboration.
    8. Apply new tools and technology to unlock the potential of our under-utilized gene banks to scale up improved pulse varieties through modernizing the seed system.
    9. Define ways and means for assessing the impact of technologies, especially NRM technologies, in order to justify investments in agricultural research.
    10. Commitment to an ongoing dialogue and engagement with partners and stakeholders to understand and align with the national priorities and actions and to establish and maintain partnerships.
    11. A commitment to producing joint research outputs and public goods including knowledge, technologies, tools, methods, evidence, processes and platforms.
    12. Initial plans to make use of a common set of research sites, facilities, infrastructure and equipment to achieve greater delivery of innovation and scaling up of research in India.
- While each CGIAR Center is closely involved with their own partners in India, this is the first Country Consultation in India of all CGIAR Centers and CRPs. With your support, this process needs to continue.