

Proceedings of 2nd brainstorming meeting of CRP on CA to finalize the project proposal held at NASC Complex during 10-11th May, 2013

The CRP on CA meeting started with welcome address by Dr. B. Mohan Kumar, ADG (A &AF). He delivered the welcome address in the august gathering comprising of Dr. A.K.Sikka, DDG (NRM), Dr. I.P.Abrol, Ex-DDG (Soils) & CASA, Dr. Y.S. Ramakrishna, Ex-Director (CRIDA) and Dr. Raj K Gupta, CIMMYT, Dr. A. Subba Rao, Director, IISS, Bhopal and other delegates from the participating centres across the country. About 36 participants participated in the meeting.

After the welcome, Hon'ble DDG (NRM), Dr. A.K. Sikka has vividly briefed about the origin and development of CRP on conservation agriculture. He has pointed out about the success of RCTs, zero tilled rice-wheat system, raised bed planting and brown manuring and RCT plus technology in the IGP. He also emphasized on various aspects of CRP on CA. He emphasized that degradation of natural resources, reduction in productivity and profitability had forced us to look for alternative strategies. This platform is a better opportunity as well as a great challenge for all of us, through which we can address all the problems/issues. The success stories of zero-tilled rice-wheat in the IGPs need to be extended down to southern states in rice-rice, rice-pulse and rice-fallow systems. He also reiterated the need for integrated soil-crop-water-nutrient management and breeding of varieties vis-à-vis CA.

He also talked about the modalities of the platform. He stressed that our focus should be on major cropping systems and major AER, and this CRP on CA may be implemented through action research, multi-disciplinary and multi-partners approach.

The major CRP on CA component would be categorised into five major components:

1. Short-term impact (on farmers' field): Action research/field oriented activities
For best bet CA technology through involvement of AICRPs and KVKs
2. Medium-term impact (On station/on-farm): Location/farmers specific technology development through on station/on-farm research.
3. Long-term perspective: Using existing long-term CA and establishing new long-term CA experiments for basic and strategic research on carbon sequestration, weed dynamics and management, quantification of GHGs and global warming potentials, etc.
4. CA Machineries: Institutional arrangement for making requisite machineries and equipments available
5. Capacity building and knowledge management encompassing ICAR institutes/ AICRPs/KVKs/ Other institutes.

For dissemination of CA practices, preference must be given where multi-AICRPs are located in one place and these AICRPs will be brought together under one umbrella of CRP on CA.

After that, Dr. I.P Abrol, Ex-DDG (Soils) & CASA, has emphatically pointed out that we the community as a whole had a great challenge ahead of us, we need to do something for the farming community to convince them that NRM matters a lot for overall growth of agriculture. This CRP on CA is our opportunity to address those location specific farming problems through integrated management of soil-crop-water-nutrients for augmenting productivity and ensuring food security. We need to attract our policy makers with

technologies to increase fertilizer use efficiency (FUE) / nutrient use efficiency (NUE), manage weed problems, machinery development, etc. CA should be justified before planning commission as well as to bridge the communication gap between farming community and scientists.

He also urged upon the house for farming system approach and capacity building/training programmes. We need to create strong centres for training trainers on conservation agriculture like CIMMYT, PDFSR- IARI (irrigated area), CRIDA-IISS (rainfed region), IISS (basic research), CIAE (for implements/machinery) and DWSR (for weed management).

DDG (NRM) also emphasized the 3 tier approach in execution of CRP on CA

1. Rainfed (CRIDA, Hyderabad)
2. Irrigated (PDFSR, Modipuram)
3. Basic and strategic work (IISS, Bhopal)

On behalf of lead institute (IISS), Dr. A.K. Biswas, Pr.Sci & HOD had presented the draft proposal of CRP on Conservation agriculture. In that presentation, various points like focus areas of research, strategies, multi-pronged approach have been covered. After the presentation, DDG (NRM) has requested Dr.H.S. Gupta, Director (IARI) to give his remarks.

Dr. H.S. Gupta has made the following points

Increase of yield potentials any cultivars/varieties can be addressed through crop improvement (50%) and crop management (50%). In crop improvement, it has already reached a plateau. We need to do something innovatively to break the yield barriers. Land degradation should be arrested through conservation agriculture. He further emphasized integrated soil-crop-water-fertilizer approach. Recently, IARI in collaboration with CIMMYT have started a challenge programme on CA practices and launched breeding programme for CA. IARI has already developed two varieties for CA in collaboration with CIMMYT. Climate smart agriculture is the need of the hour. This CRP on CA is the way to achieve this.

Dr. Raj K. Gupta, CIMMYT has said that CRP on CA is a great opportunity for funding, need to collaborate across various institutes. He also emphasized for short, medium and long-term goals for the project. We need to develop CA practices for major cropping systems (10-12) of the country. Though we have success stories of CA in irrigated areas but development of CA practices for rainfed region is the need of the hour.

We need to address those areas where fallow system were adopted during both *kharif* and *rabi* season for example 1 mha area each during *kharif* and *rabi* season were left as a fallow in MP has to be addressed immediately through CA practices. The rice-wheat system is not sustainable in the long run, therefore, we need to introduce new cropping systems eg pearl millet/sorghum/clusterbean-wheat/mustard/chickpea, pigeon pea based cropping, etc in those areas which can sustain the production system.

Potential facilities of AICRP/KVKs/SAUs have to be utilized for outreach programmes. Integrated approach for soil health and land evaluation is also required. In rainfed agriculture, seeding is another problem for which farm machinery is required. Action

research is required for technology assessment and refinement, varieties for CA should be developed, and cropping system X varietal interaction vis-à-vis is required.

Dr. Y.S. Ramakrishna, Ex-Director (CRIDA) has pointed out the following points

CA platform is in the right track. Though, Dr. I.P Abrol has brought the national attention to the importance of CA for the last 10-12 years, however, it was still in slow pace in terms of implementation in larger scale. And he also stressed upon, why CA is not been pushed so fast?. Farmers first is important, CA should be based on soil for different cropping systems as well as to convince farmers (create interest in farmers) for residue retention. Moreover, focus should be on increasing organic carbon. Through farmers centre approach, scientists should understand and address the farmers problems. New research areas should be identified, usage of waste land for fodder production, so that CRP on CA can reduce the load on other farming systems for trade-off and pay-off between residue retention and livestock.

Dr. Mohan Kumar, ADG (A & AF) has opined in the long-term, fertilizer availability will be exhausted. CA will be substituting chemical fertilizers through residue addition. N fixing crops/trees should be given priority for attaining evergreen agriculture.

In the end of morning session, some points have been discussed like standardization of machinery, decentralized approach for equipment and machinery.

During afternoon, DDG (NRM) has conducted detailed brainstorming session of CRP on CA for finalization of mission of the project, objectives and its activities. During this session, DDG has pointed out for co-ordination committee has to be formulated for operating CRP on CA. Identify the intricate issues of CA across cropping system. Eg. Direct seeded requires narrow tyre. He also stressed upon common protocols and minimum data set for collection and analysis under CA experiments. Selection of farmers site/bench mark site is also very important. We lack data base, therefore developing central data base management/website content is the need of the hour. We need to organize a sensitizing workshop or travelling workshop in collaboration with CIMMYT for providing training at multi-levels and/or cascaded form of training.

Next day (11.05.13) detailed discussion was held objective-wise activities have been finalized for technology dissemination, refinement and quantification of impact of CA. He also emphasized for creation of centre for excellence on CA training at various locations namely irrigated zone (PDFSR-IARI) and rainfed (CRIDA-IISS) in collaboration with CIMMYT. Finally, Budget planning allocation for collaborating institutes were also discussed during the meeting. After the meeting, DDG (NRM) has pointed out that the draft proposal be revised considering all points discussed in the meeting and then submit within a week. The meeting ended with vote of thanks proposed by the lead Institute.
