

Panel discussion on policy and institutional requirements flagged some critical issues required to be addressed if CA has to become a way of farming. The session raised farmers concerns with WTO. Arun Bhakoo, a farmer emphasized that in the absence of appropriate incentives farmers were unlikely to get enthused with only 'potential benefits' over long period in terms of resource base quality improvement. This would call for a relook at policy incentives which encourage certain crops and cropping systems, resource use practices and consequent short and long-term impact in terms of productivity and ecosystem health. Joginder Singh (Punjab Agricultural University) emphasized the need for reshaping the price policy, which is encouraging certain crops only (rice/wheat). Diversification to other crops along with effective procurement, infrastructure for providing services for resource conservation technologies at the local level and monitoring of resource base were the main policy and institutional requirements suggested. S. Rajeswari (NISTADS) emphasized that the objectives of agricultural science should shift from increasing yields to enhancing livelihood opportunities. CA marks an evolutionary change through a process of learning that offers the opportunity and a means to achieving policy goals. The session concluded that if CA has to offer a way to address broader livelihood issues the new institutional arrangements must be based on a good understanding of the features that distinguish the principles and practices of CA from the conventional R&D approach. Institutional mechanisms are re-

quired to ensure that CA is seen as a concept beyond agriculture. Institutionalizing the role of research, extension and farmers in such a way that the partnership among these stakeholders might be strengthened right from the beginning of the project, which helps building up sense or enabling of ownership among them. CA must aim at broad livelihood strategies and move towards forming conservation villages, with appropriate agribusiness strategies to increase employment in areas where it is adopted. However, caution must be taken to avoid blanket adoption of CA just everywhere, it should be site-specific and need-based. It is therefore a challenge both for the scientific community and the farmers to overcome the past mindset and explore the opportunities that CA offers for sustained agriculture.

The last session came out with specific recommendations for CA research and development. This represented an integrated view of focused group discussions to define priorities for R&D under the heads, IPM and weed management, machinery and crop management, soil cover-residue management, genetic enhancement, water and nutrient management, social science/policy research and networking, linkages and information exchange in CA systems.

Recommendations for CA research and development

- Promoting CA will call for moving away from the conventional linear, compartmentalized and hierarchical arrangement

from research and extension to the farmers who passively adopt it. All the stakeholders involved would need to be brought together on a common platform to conceive end-to-end strategies.

- The stakeholders, working in partnership mode, will be critical in developing and promoting new technologies. Understanding system interactions and developing management strategies will call for teams of scientists across disciplines working together. This will also call for new ways of managing and funding research.
- There is a need for policy analyses to understand how conservation technologies integrate with other technologies, policy instruments and institutional arrangements that promote or deter conservation agriculture.

As CA practices result in resource improvement only gradually and benefit in terms of crop yields may not come about immediately, evaluation and impact of CA practices therefore needs a longer term and a broader perspective which goes beyond yield increases only. CA is now considered a route to sustainable agriculture. Spread of CA, therefore will call for a greatly strengthened research and linked development efforts.

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India Science Award and Dan David Prize for C. N. R. Rao



C. N. R. Rao, Linus Pauling Research Professor at the Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore,

and former Director, Indian Institute of Science has been awarded the **India Science Award** and the **Dan David Science Prize for 2005**.

The India Science Award, which carries an amount of Rs 25 lakhs, is the highest and most prestigious national recognition for outstanding contribution to science. He is the first recipient of this award.

The Dan David Science prize is one million dollars and is given by an Israel based foundation. Each year, the subject

of the award changes and for 2005, the prize is for research in materials science. Rao shares the Dan David Prize with George Whitesides of Harvard University and Robert Langer of Massachusetts Institute of Technology. The citation states that 'Rao is the world's foremost solid state and materials chemist'. The award ceremony is being held on 23 May 2005 in Tel Aviv. Rao is currently Chairman of the Science Advisory Council to the Prime Minister.