

## Foreword

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This has been a momentous year for the National Agricultural Research System and the Indian Agriculture in its entirety. The inspiring address and compliments of the Hon'ble Prime Minister of India on the 83<sup>rd</sup> Foundational Day of the Indian Council of Agricultural Research aroused a sense of pride in the ICAR family. On the other hand, all time high production of nearly 242 million tonnes of food grains is a matter of satisfaction and joy for the agricultural fraternity.

This notable accomplishment speaks of ICAR's efforts for development and delivery of appropriate technological interventions supported by periodic agro-advisories. On the research front, a group of Indian scientists, under the leadership of ICAR, decoded genome of a popular pigeonpea variety, *Asha*, for the first time in the world. The genomic pool thus identified will be a source for development of tolerant and resistant varieties. Further, whole-genome mapping of female Murrah buffalo, best in the world, was also accomplished. To enrich farmer's field, ICAR released and developed 48 improved varieties of food crops and 51 of horticultural crops for different agro-climatic regions. Successful breeding and larval rearing of high-value, market favourite marine tropical finfish (Silver *pompano*), for the first time in the country, may lead to enhanced profitability, as this species is rarely available in marine fish catches. Similarly, successful culture of the banana shrimp (*Penaeus merguensis*) as a prospective species during winter months in brackishwater is another accomplishment for productivity enhancement in aquaculture systems.

Development of starch based films with nanocellulose from cotton waste to enhance safety and shelf-life of packaged food items is an example of innovative approach for conversion of crop wastes into value-added products. Technology for extraction of economically important Omega-3 fatty acid from linseed and its cake was developed and commercialized through 'Linseed Bio-village' concept. Design and development of decentralized power plants utilizing agri-residues for electricity generation holds promise to provide uninterrupted energy in fields.

It is heartening to note that with addition of 18 new KVKs, the number has reached to 607 during the

year which is a testimony to strong commitment for technological backstopping at field level. KVKs provided technology options in major crops through nearly 95,000 Frontline Demonstrations across the country. Further, over 6,000 technology demonstrations for harnessing productivity of pulses were undertaken in 137 districts of 11 states.

Establishment of the AgriInnovateIndia Ltd as a corporate platform of the DARE/ICAR has opened new vista for commercialization of agricultural technologies through business models. Country-wide network of Business Planning and Development Units facilitated commercialization of 30 technologies during the year. The renewed thrust on intellectual property rights resulted in one international and three national patents and another 37 patent applications have been filed.

Collaboration of ICAR with CIMMYT, Mexico, for establishment of Borlaug Institute of South Asia in India and creation of ICAR-Norman Borlaug Chair in International Agriculture are some of the notable endeavours of the Council for strengthening of global linkages. The ICAR has developed 181 partnerships with 95 private sector organizations for transfer and commercialization of technologies.

I am happy to learn that recently concluded series of consultations with stakeholders have led to identification of thrust areas in the XII plan which includes enhancement of productivity and profitability of farming, climate resilient agriculture, secondary agriculture and development of quality human resource to meet the future challenges. I compliment ICAR for its worthy contributions in agricultural R&D and hope that the information presented in the *DARE/ICAR Annual Report 2011-12* will serve as a knowledge resource for all those keen in Indian agriculture.



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