

## Partnership and Linkages

The International Cooperation in ICAR/DARE has been operating through the Memoranda of Understandings/Work Plans signed with various countries/International organizations with ICAR/DARE as the Nodal Department and through participation of ICAR/DARE in the MoUs/Work Plans signed by the Department of Agriculture and Cooperation as the Nodal Department. Besides, Ministry of Science and Technology has developed Programme of co-operation with various countries and international organizations in which ICAR/DARE is the participating agency in agricultural research. The Joint Commissions/Working Groups constituted by the Ministry of External Affairs and the Ministry of Commerce have the component of agriculture/agricultural research. The Joint Commissions/Working Groups constituted by the Ministry of External Affairs and the Ministry of Commerce have the component of agriculture/agricultural research in which DARE participates directly or through the Department of Agriculture and Co-operation. India is donor member to CGIAR and contributes 0.75 US million \$ under unrestricted funding of CG Institutes. The Scientists /Officers were sent on International deputation and training during 2009–10 funded by CG centers or covered. The Department is also organizing visits of foreign nationals under “*Ad hoc* Category”. The Department also receives proposals for customized training courses for foreign nationals.

### MEMORANDUM OF UNDERSTANDING

- Memorandum of Understanding was signed on 24 April, 2009 between the ICAR and Biodiversity International for Scientific and Technical Cooperation at NASC Complex, New Delhi.

### COLLABORATIVE PROJECTS

During 2009–10 a number of foreign collaborative

projects were received and considered. However, following projects were approved for implementation by the various institutes of the ICAR.

**Promoting sustainable livelihood development:** With the aim to improve access to knowledge and technology for poor people whose livelihoods depend on natural resources the ICAR Research Complex for Eastern Region, Patna is implementing ‘Promoting sustainable livelihood development’ project. The sponsoring agency for this project is DFID, Ministry of External Affairs, United Kingdom for which GY Associates United Kingdom has been contracted to implement DFID Innovation Challenge Fund Project. Besides ICAR-RCER, Patna, 7 other organization are also involved in the project. The total budget for the project is UK £ 1,801,246 and the funds meant for the ICAR-RCER is UK £ 68, 871 for 2 years and 7 months i.e. from 5 November, 2008 to 30 June, 2011. There is no financial liability on the part of the institute/ICAR/DRE. However, the contribution of the institute will be in kind.

**Conservation and sustainable use of cultivated and wild tropical fruit diversity: promoting sustainable livelihood, food security and ecosystem services:** ICAR alongwith Bioersity International is participating in the above project along with are CISH, Lucknow, IIHR, Bengaluru, NRCC, Nagpur and NBPGR, New Delhi. The other foreign organizations participating in the project are:

- (i) Indonesian Centre for Horticultural Research and Development Jakarta, Indonesia,
- (ii) Malaysian Agricultural Research and Development Institute, Kuala Lumpur, and
- (iii) Department of Agriculture, Chatuchak, Bangkok.

The project has been re-endorsed by the Ministry of Environment and Forest for 5 years ie from 1

January, 2009 to 31 December, 2013. The total cost of the project is US\$ 1,03,75,748 which includes cash funding from Global Environmental Facility through UNEP and co-financing from the 4 partner countries. "India's co-funding in cash and in-kind is US\$ 19,09,041. The Global Environmental Facility funding is US\$36,61,674 out of which ICAR will get US\$ 9,43,465 for 5 years for undertaking activities in India."

**Indo-Swiss collaboration in Biotechnology:**

With the aim to characterize the resistance gene(s) against fungal diseases, viz. rusts (leaf and stripe rusts), powdery mildew and terminal heat tolerance in wheat for mitigating the effects of climate change the Directorate of Wheat Research, Karnal participated in the Indo-Swiss collaboration in Biotechnology Project, "Molecular characterization and genetic enhancement of fungal disease-resistance and terminal heat tolerance in wheat" that was conveyed on 15 January, 2009. Besides other collaborative institutions in this project are Punjab Agricultural University, Ludhiana and Institute of Plant Biology, University of Zurich, Switzerland for 3 years w e f 9 March, 2009, the date the project is approved by Indo-Swiss collaboration in Biotechnology. The total cost of the project is Rs 6.95 millions out of which Swiss Agency for Development and cooperation, Switzerland component is Rs 2.450 millions and Department of Biotechnology is Rs 4.5 millions. However, the contribution of Indo-Swiss Directorate of Wheat Research is as time sharing of its scientific staff and other infrastructure facilities and the same has been quantified to the tune of Rs 0.75 million.

**Sustainable management of marginal dryland:**

The Central Arid Zone Research Institute, Jodhpur is participating in the second phase of the UNESCO-MAB approved project Sustainable Management of Marginal Dryland. In all 12 countries are participating in the project for 5 years (2009–13) and the total estimated project budget is Rs US \$ 8,608,5090: (i) Flemish Government of Belgium (US \$ 1,480,050), (ii) Counterpart contributions by project sites (SUMMAD Member States, US \$ 7,048,450 this includes in kind contribution of India to the tune of US \$ 150,000), (iii) UNESCO-MAB (US \$ 40,000) and (iv) UNU-INWEH (US \$ 40,000). Collaborating agencies are UNESCO with its Man and the Biosphere Programme, the United Nations University International Network on Water, Environment and Health (UNU-INWEH) and Flemish Government of Belgium. India will be receiving US \$ 96,000 from UNESCO and India's in kind contribution is US \$ 150,000. The overall objective of the second phase of the project (2009–13) is to focus on building the capacity of the

dryland researchers to transfer their scientific findings for use both by local communities and for policy.

**Foreign National studies in India**

Foreign Deputation cases of Scientists for Training/Fellowship/Scholarship/Associateship/Position/Assignment were 42 and 176 foreign candidates from Iran, Sri Lanka, Ethiopia, Rwanda, Myanmar, Bhutan, Botswana, Iraq, Nepal, Vietnam and Nigeria etc. have been admitted for pursuing Ph.D/M.Sc/M.V.Sc/M.Tech/B.Sc/B.Tech/B.V.Sc and A.H degree programme and short-term training programme in the State Agricultural University/Deemed Universities during 2009–10 upto 21 October, 2009.

**CENTRAL AGRICULTURAL UNIVERSITY**

The Central Agricultural University working under DARE, has started postgraduate programmes in the faculty of Veterinary Science, Fisheries and Horticulture leading to masters degree in the discipline of microbiology, aquaculture, fishery extension, fruit science and vegetable science respectively. The admission capacity of undergraduate and postgraduate programmes have been increased to 331 and 140 students respectively. The University at present has 902 students on roll for undergraduate and postgraduate programmes. The 137 students have completed the bachelors and 24 students postgraduate degree programme in 2009. The students from Central Agricultural University performed well in Junior Fellowship Examination conducted by ICAR during 2009. Students from CAU (21) have been selected for the award of Junior Research Fellowship. The 26 students from CAU have been admitted in National Institutes, viz. IARI, IVRI, NDRI, IASRI and CIFE. Another 68 students got admission for Postgraduate studies in different universities in the country.

To boost up the research in the region the ICAR has sanctioned 19 Centers of All India Co-ordinated Research Projects at different colleges of Central Agricultural University. In the AICRP (Voluntary Centre) on Tuber Crops (Other than Potato), 33 germplasm of sweet potato, 27 of colocasia, 25 of cassava and 3 of arrow root were collected. Most of them performed well under agro-climatic condition of Manipur.

Studies suggested that intercropping of maize with cowpea can yield 91.9 q fodder/ha and can overcome the fodder deficiency in areas that are suitable for maize-cowpea intercropping. The 4 different pathotypes of *Escherichia coli* (STEC/EPEC/EHEC) were detected from the faeces of diarrhoeic and non-diarrhoeic piglets in Mizoram.



Presence of *stx*<sub>1</sub>, *stx*<sub>2</sub>, *eaeA*, *ehxA* and other putative virulence genes were detected from both diarrhoeic and healthy piglets. Common porcine pathogens under serogroup O8, O103, O108, O138, O141 and O147 were also isolated. On the basis of studies on bacterial contamination of boar semen, it was found that use of chloramphenicol and ciprofloxacin is more effective in checking the bacterial contamination than aminoglycosides. A location specific fish-based farming system is being developed at College of Fisheries, Lembucherra, Agartala, Tripura by harnessing runoff water and integration of existing farm practices (Agriculture, Horticulture, and Animal Husbandry) with Aquaculture. The efficacy of the model is being evaluated on farm as well as in the farmers' field. The University is actively engaged in extension education activities. The University has organized an exhibition for North-Eastern Hills Region and a National Seminar on 'Integrated Pest Management strategies to combat emerging pests in the current scenario of climate change' was organized at College of Horticulture and Forestry, Pasighat, Arunachal Pradesh at the exhibition.

The villages (10) have been linked with e-governance in the East Siang district under the College of Horticulture and Forestry, Pasighat. A National Seminar on 'Information and Communication Technology for Agriculture and Rural Development' was also organized at College of Horticulture and Forestry, Pasighat. Under the extension programme efforts are being made for producing quality seeds, planting material and fish seed. During 2009–2010, 65 tonnes of truthful seed of rice CAU R1 has been produced under farmers participatory seed production programme. This seed is being processed and will be made available to the farmers during the next *kharif*. More than 0.1 million grafts of virus free *Khasi* Mandrins are being prepared. The fingerlings (0.5 million) of Indian major carp and five thousands post larvae of fresh water prawn have been produced and being distributed to the farmers in Tripura. The university has established good infrastructural facility for the smooth functioning of education programme. Library building at College of Veterinary Science, Aizawl, Mizoram, administrative and academic block at College of Horticulture and Forestry, Pasighat, sports complex at College of Fisheries, Lembucherra, Agartala, Tripura and Guest House at College of Agricultural Engineering and Post-harvest Technologies, Ranipool (Sikkim) have been completed.

## PROTOCOL ACTIVITIES

### Delegations abroad

- Dr Suresh Kumar, Senior Scientist, IGFRI, Jhansi

visited University of Missouri, College of Agriculture Food and Natural Resources, USA from 11 April to 25 May, 2009 for undergoing training on "Deployment in MiRNAs for enhancing abiotic stress tolerance" under the Indo-US AKI programme.

- Dr Manoj Kumar Yadav, Assistant Professor (Agril. Biotech), S.V. Patel University of Agriculture and Technology, Meerut visited University of Missouri-Columbia, USA from 11 April to 23 May, 2009 for undergoing training programme under the project "Plant tissue culture transformation and molecular biology" under the Indo-US Norman Borlaug Fellowship AKI.
- Dr Rakesh Kumar, Scientist (SS), CIFT, Cochin visited Michigan State University from 1 May to 30 June 2009 for undergoing training in the field of "Gene Knowk out, Gene expression and regulation in food borne bacterial pathogens" under the Norman E. Borlaug Fellowship Programme, 2008 under Indo-US Knowledge Initiative in Agriculture.
- Dr P.K. Joshi, Director, NCAP, New Delhi visited Rio de Janeiro, Brazil from 14 to 16 July, 2009 to attend the Working Group Meeting on Agriculture as a representative from DARE as part of the delegation led by Secretary (Agriculture).
- Dr Nihar Ranjan Sahoo, Assistant Food Microbiologist, Orissa visited Kansas State University, USA from 2 August to 12 September, 2009 under Norman E. Borlaug Fellowship Programme, 2008.
- Dr Suresh Pal, Head, Division of Agricultural Economics, IARI, New Delhi visited IFPRI, Washington, DC, USA from 15 September to 15 October, 2009 for the Norman Borlaug International Agricultural Science Technology Fellowship Programme, 2009 under Indo-US AKI in Agricultural Economics.
- Dr Anjani Kumar, Senior Scientist, NCAP, New Delhi visited USA to the Norman Borlaug International Agricultural Science Technology Fellowship Programme, 2008 under the Indo-US AKI in Agricultural Economics from 12 October to 26 November, 2009.
- Dr S.P. Tiwari, DDG(Edn.), ICAR visited Afghanistan from 29 September to 1 October, 2009 to explore the possibilities of establishing the Afghan University of Agriculture and Technology with Indian Assistance.
- Dr A.K. Misra, Project Director, CIRB, Meerut visited Afghanistan from 29 September to 1 October, 2009 to explore the possibilities of establishing the Afghan University of Agriculture and Technology with Indian Assistance.
- Dr S.L. Mehta, Vice-Chancellor, MPUAT, Udaipur visited Afghanistan from 29 September to 1 October, 2009 to explore the possibilities of establishing the Afghan University of Agriculture and Technology with Indian Assistance.
- Dr (Mrs) Lalita Batra, Principal Scientist and Dr P.K. Joshi, Principal Scientist, Central Soil Salinity Research Institute, Karnal, visited All-Russia Science Research Institute of Hydrotechnics and

Amelioration named A.N. Kostyakov; All-Russia Sciences Research Institute of Feed named V.R. Williams, Lobnya and All-Russia Sciences Research Institute of Agro -and Forest- Amelioration, Volgograd from 18 to 31 August, 2009 to study under ICAR-RAAS Work Plan for 2009–2010 for “Reclamation of Salt Affected Soils – Bio-amelioration for saline and alkaline soils”.

### Foreign delegations

- His Excellency Dr Marc Fortin, Assistant Deputy Minister of Research, Canada visited Indian Agricultural Research Institute and Indian Council of Agricultural Research (Hqrs.), New Delhi on 20 and 21 August, 2009.
- His Excellency Mr Mizengo Kayanza Pinda (MP), Prime Minister of the United Republic of Tanzania visited Indian Agricultural Research Institute/ National Bureau of Plant Genetic Resources/ National Agricultural Science Museum, New Delhi on 14 September, 2009.
- Mr Ranjith Wijethilake, Secretary, Ministry of Agriculture Development and Agrarian Sciences, Sri Lanka visited Indian Council of Agricultural Research did observation visit from 13 July, 2009 for discussing the formulation of the Work Plan for 2010–11 thereafter the delegation visited at IASRI/NCAP/IARI/NRCPB/NBPGR/NARM, Pusa, New Delhi.
- Mr Parashuram Lal Karna, Director, Financial Administration and Mr Narendra Lakhe, Administrative Officer from Nepal Agricultural Research Council, Nepal visited National Academy of Agricultural Research Management, Hyderabad from 7 to 11 September, 2009 under the Work Plan for 2010–11.
- A 4-member delegation from Sri Lanka Council of Agricultural Research, Sri Lanka visited National Centre for Agricultural Economics and Policy Research (NCAP), New Delhi from 21 to 27 September, 2009 to study in the field of Agricultural Risk Management and Extension’ under the ICAR-CARP Work Plan for 2008–09.
- A 4-member delegation from Sri Lanka Council of Agricultural Research Council, Sri Lanka visited Central Sheep and Wool Research Institute, Avikanagar; Central Institute for Research on Goats, Makhdoom; Central Institute for Research on Buffaloes, Hisar; National Research Centre for Equines, Hisar; National Dairy Research Institute, Karnal; National Bureau of Animal Genetic Resources, Karnal; and Guru Angad Dev Veterinary and Animal Husbandry University, Ludhiana to study in ‘Livestock Production Research and Development under the ICAR-CARP Work Plan for 2008–09.
- Dr Kosolapov Vladimir, Director and Dr Trofimov Ilya, Deputy Director, All-Russia Sciences Research Institute of Feed named V.R. Williams, Academics of Russian Academy of Ecology Science, Moscow, Russia visited National Dairy Research Institute, Karnal; Central Institute for Research on Buffaloes, Hisar and Central Sheep and Wool Research Institute, Avikanagar from

10 to 21 June, 2009 to study “Animal Production, Health and Processing – Feed processing technology like complete feeds, feed block etc.” under ICAR- RAAS Work Plan for 2009–2010.

### Indian scientists on foreign assignments

The scientists were deputed in foreign countries and it includes visits under collaborative project of ICAR.

- Dr Shiv Kumar, Head, Division of Crop Improvement, IIPR, Kanpur was deputed as Lentil Breeder on Deputation basis at ICARDA, Aleppo, Syria.
- Dr M. S. Ramesha, Sr. Sci., Directorate of Rice Research, Hyderabad was deputed as ‘Scientist-Rice Breeder’ at IRRI, Philippines.
- Dr M. L. Jat, Sr. Sci., Directorate of Maize Research, Indian Agricultural Research Institute Pusa Campus, New Delhi was deputed for the position of ‘Hub Manager- Haryana’ at IRRI India Office under CSISA.
- Dr S.K. Bandyopadhyay, former Joint Director (Academic), IVRI, Izatnagar (presently on deputation as Animal Husbandry Commissioner to Department of AH, Dairying and Fy., Krishi Bhawan, New Delhi) was deputed for the position of ‘Senior Technical Coordinator (P-5) Grade- I (Fixed Term)’ at FAO OF THE United Nations, Hanoi, Vietnam.

### Scientist to foreign countries on deputation funded by CG Centres

- Dr R. Viswanathan Sr. Sci., Sugarcane Breeding Institute, Coimbatore visited Wageningen University, the Netherlands for Department of Biotechnology Overseas Associateship Award (Short-term), 2007–08 for 3 months up to 15 May, 2009.
- Dr M Kailasam, Sr. Sci., Central Institute of Brackishwater and Aquaculture, Chennai visited University of Tokyo, Japan for Department of Biotechnology Overseas Associateship Award (Short-term) 2007–08 for 6 months, i.e. up to second week of August, 2009.
- Dr Bhupinder Singh, Sr. Scientist, Nuclear Research Laboratory, IARI, New Delhi visited for DBT Overseas Associateship Award 2007–08 at Institute of Plant Nutrition, University of Hohenheim Stuttgart, Germany for 86 days i.e. 17 March to 13 June, 2009. His local living cost, boarding lodging etc. was given by Host Academy in Germany-50% air fare by INSA- remaining 50% by the Scientist himself or DST or CSIR.
- Dr Dinesh Kumar, Sr. Sci., IARI, New Delhi visited New Castle Upon Tyne University, United Kingdom for UGC’s sponsored commonwealth Academic Staff Fellowship, 2008 for 6 months from 01 February to 31 July 2009. He got Commonwealth Scholarship Commission, London, United Kingdom.
- Dr D.R. Malaviya, Pr. Scientist, IGFRI, Jhansi visited Wagga, Australia for the study of Pasture Genetics and Improvement, E.H. Graham Centre for Agricultural Innovation (NSW Department of

Primary Industries and Charles Sturt University), Wagga between 25 March and 24 June, 2009 pertaining to DBT Overseas Associateship Award 2007–08.

- Dr Anil Kumar Nair, Sr. Scientist (Agronomy), IIHR, Bengaluru visited Egyptian International Centre for Agriculture from 15 February to 30 April, 2009
- Dr A.K. Samanta, Sr. Sci., NIANP, Bengaluru visited Department of Education, Science and Training, Government of Australia for availing Endeavour Research Fellowship, 2009 from 16 April to 15 October, 2009
- Dr (Mrs) G. Nirmala, Sr. Scientist, CRIDA, Hyderabad visited Host Institute in USA for Hubert H. Humphrey Fellowship.
- Dr P. G. Patil, Scientist (SG), GTC Nagpur of CIRCOT and Dr V. Santhy, Scientist(SS), Seed Technology CICR, Nagpur visited EICA, Egypt for undergoing training course titled “Cotton Production and Technology” Organized by EICA, Giza, Egypt for approx. 2 months and 15 days (April-June 2009).
- Dr Ashish Saha, Sr. Sci., CIFA, Bhubaneswar visited France for undergoing training under the area of ‘Life Science’ under DST’s BOYSCAST Fellowship Award, 2008–09 for 12 months i.e. from 2<sup>nd</sup> week of May, 2009.
- Dr H.C. Prasanna, Sr. Scientist, IIVR, Varanasi visited Department of Plant Sciences, University of California, Davis, USA for “Crop Biotechnology” under DST’s BOYSCAST Fellowship, 2008–09 for 12 months from any date in May before 31 May, 2009.
- Dr T. Mohapatra, Principal Scientist, NRCPB, New Delhi visited Li-Cor, INC, 4647 Superior Street, Lincoln, Nebraska, USA 68516 for TILLING application for LI-COR, 4300 DNA Analyser from 6 to 8 July, 2009
- Dr Anil Kumar, Principal Scientist, IGFRI, Jhansi visited University of Guelph, Canada for training under the area of ‘Life Science’/Plant Genetic Resources under DST’s BOYSCAST Fellowship Award, 2008–09 for 4 months w.e.f. 25 May, 2009
- Dr Pankaj Kaushal, Principal Scientist, CRRI, Cuttack visited Institute of Plant Genetic, Perugia-CNR, Italy for training on the subject titled “Agriculture Biotechnology” under DBT Overseas Associateship Award, 2007–08 for 6 months w.e.f 26 March, 2009.
- Dr K. Giridhar, Sr. Scientist, NIANP, Bengaluru visited University of New England, Armidale, Australia for availing 2009- Endeavour Research Fellowship Award for 6 months w.e.f 10 July 2009.
- Dr Tapas Kumar Das, Sr. Scientist, IARI, New Delhi visited EICA, Egypt for training on “Agricultural Sciences” Organized by EICA” for 2 months and 15 days i.e 1 April to 15 June, 2009.
- Dr E. Sreenivasa Rao, Sci.(SS), IIHR, Bengaluru visited AVRDC, P.O. Box 42 Shanhua, Taiwan, 74199 for “Molecular mapping and Molecular maker assisted Plant Breeding” under DST’s BOYSCAST Fellowship 2008–09 for 12 months w.e.f 31 May, 2009.
- Dr M. Sankaran, Scientist, ICAR Research Complex for NEH Region, Umiam visited International Centre for Tropical Agriculture, Cali, Colombia for ‘Molecular Marker Assisted Breeding in Cassava under DST’s BOYSCAST Fellowship- 2008–09 for 12 months w.e.f 31 May, 2009.
- Dr Ashwin Ashok Raut, Sci.(SS), IVRI, Izatnagar visited Texas Tech University Health Science Centre, El Paso Texas-79905, USA for ‘Biotechnology (Animal Sciences) under DST’s BOYSCAST Fellowship- 2008–09 for 12 months w.e.f any date in May before 31.5.2009.
- Dr G.R. Patil, Joint Director, NDRI, Karnal visited University of Texas at Austin, USA to participate in the Technology Commercialization Program-Indo-US Science and Technology forum (IUSSTF), Fulbright House, New Delhi for 16 days, i.e. from 15 to 30 May, 2009.
- Dr P. Naveen Kumar, Sci.(SS), IARI, New Delhi visited The Hebrew University of Jerusalem, P.O. Box 12, Rehovot 76100, Israel for modification of flower color in tuberose (*Polianthes tuberosa* L.) under DST’s BOYSCAST Fellowship, 2008 for 12 months w.e.f any date in May before 31 May 2009.
- Dr Sultan Singh, Sr. Sci., IGFRI, Jhansi visited Institute of Animal Sciences, University of Bonn, Germany for INSA’s International Scientific Collaboration and Exchange of Scientists Program 2009–2010 for 3 months w.e.f any date in September, 2009. The local living cost, boarding lodging etc. was given by Host Academy in Germany-50% air fare by INSA- remaining 50% by the Scientist himself.
- Dr A. Sahoo, Principal Scientist. IVRI, Izatnagar visited DEEWR, Government of Australia for availing, 2009 Endeavour Research Fellowship Award for 6 months w.e.f. November, 2009.
- Dr Samrath Lal Meena, Sci. (SS), CAZRI, Jodhpur visited University of Nottingham, UK for availing the Post-Doctoral Research in Agronomy under the National Overseas Scholarship for ST candidate sponsored by the Ministry of Tribal Affairs, Government of India for 18 months w.e.f 5 October, 2009.
- Dr A.S. Yadav and Dr Raj Narayan, Sr. Scientists, CARI, Izatnagar visited EICA, Giza, Egypt for ‘Poultry Production and Health’ organized by EICA, Giza, Egypt for 2 months, i.e. from 10 July to 17 September, 2009.
- Dr Souvik Ghosh, Scientist(SS), WTCER, Bhubaneswar visited EICA, Giza, Egypt for training on ‘Rural Development’ organized by EICA, Giza, Egypt for 2 months and 7 days i.e from 10 July to 17 September, 2009.
- Dr Prikshayat Singh, Head, Division of Biochemistry, IARI, New Delhi visited Institute for Pflanzen- ernahrung, leibniz University of Hannover, Germany under INSA’s International Collaboration/Exchange Program 2009–2010.
- Dr (Mrs) Pameela Krishan, Sr. Sci, CRRI, Cuttack visited USA for availing USEFI Fulbright Senior Research Fellowship Program 2009–2010 for 6

- months w.e.f. 10 July, 2009.
- Dr A. Kumarsan, Sr. Sci, ICAR Research Complex for NEH Region, Umiam, Meghalaya visited Swedish University of Agricultural Sciences, Uppsala, Sweden for training on “Cryopreservation of semen” under DST’s BOYSCAST Fellowship 2008–2009 for 12 months w.e.f any date September, 2009 to August 2010.
  - Dr Dinesh Kumar, Sr. Sci, IARI, New Delhi visited University of Glasgow, United Kingdom under UGC sponsored Commonwealth Academic Staff Fellowship, 2009 for 6 months w.e.f 1 October, 2009.
  - Dr Parimal Sinha, Sr. Sci, IARI, New Delhi visited University of Warwick, United Kingdom under UGC sponsored Commonwealth Academic Staff Fellowship, 2009 for 6 months w.e.f 6 November, 2009.
  - Dr (Mrs) Nita Khandekar, Sr. Sci, IIHR, Bengaluru visited University of Reading, United Kingdom under UGC sponsored Commonwealth Academic Staff Fellowship, 2009 for 6 months w.e.f 28 September, 2009.
  - Dr B.S. Chandel, Principal Scientist, NDRI, Karnal visited University of Reading United Kingdom under UGC sponsored Commonwealth Academic Staff Fellowship, 2009 for 6 months w.e.f 01 October, 2009.
  - Dr S. K. Kaushik, Sr. Scientist(Plant Breeding), Division of Crop Science, CPRI, Shimla visited St. Louis, Missouri and Washington, DC for training on ‘Enviromental Risk Assessment (ERA)’ in USA under US-India Agricultural Biotechnology Training Programme w.e.f 26 October, 2009.
  - Dr Major Singh, Principal Scientist, IIVR, Varanasi visited Michigan State Univeristy, USA under ‘Indo-US collaboration short-term programme ‘ sponsored by USTDA for 5 days w.e.f. 26 October, 2009.
  - Dr B.C. Ghosh, Principal Scientist, Working in SRS, Bengaluru visited Victoria University, Melbourne, Australia for training on ‘Bioactive peptides from Milk proteins and development of a drink/bevearage with this bioactive peptides for health promotion’ under Endeavour Executive Award, 2009 sposed by Department of Education Employees and Workplace Relations, Government of Australia for 4 months w.e.f November, 2009.
  - Dr Satyanshu Kumar, Sr. Scientist, NRCPRM, Bharatpur visited Ogden College of Science and Technology, Western Kentucky University, USA for Post-Doctoral Fellowship in Research on Medicinal Application of Plant Extract by the Stipend of 30,000\$ US paid to the Scientist for 9 months w.e.f. 02 March, 2009.
  - Dr K. S. Roy, Scientist (SS), NIANP, Bengaluru visited University of Arizona, USA for training on ‘Life Sciences’ under DST’s BOYSCAST Fellowship programme 2008–09 for 12 months w.e.f. any date in May, 2009.
  - Dr P.K. Joshi, Director, NCAP, New Delhi attended the 1<sup>st</sup> Meeting of CCCP Steering Committee ICSU from 29 to 30 April 2009 held at Paris, France.
  - Dr G.P. Singh, Sr. Scientist, Division of Genetics IARI, New Delhi visited CIMMYT, Mexico for attending the training course on “Phenotype for physiological trait based breeding” from 13 April to 8 May 2009.
  - Dr Masood Ali, Director, IIPR, Kanpur participated in Second Annual Tropical Legumes-I project meeting and Chickpea challenge initiative workshop from 16 to 21 April, 2009 held in Lilongwa, Malawi.
  - Dr Praveen Kumar, Sr. Scientist attended training at Germany from 2 to 12 June, 2009 regarding Evaluation of Potato Genotypes to Drought Tolerance being organized by International Potato Centre, (CIP).
  - Dr S.K. Sharma, Director, NBPGR attended the ALIS International Steering Committee meeting at Bioversity International (HQ) at Rome, from 18 to 20 May,2009.
  - Dr H.P. Singh, DDG(Hort) visited Malaysia on deputation to participate in the Project Steering Committee Meeting of UNEP/GEF approved project on “Conservation and Sustainable use of Cultivated and wild tropical fruit diversity: Promoting Sustainable livelihoods, Food security and Eco-system health.”. It was organized by Bioversity International from 14 to16 May,2009 at Serdang, Malaysia.
  - Dr K.K. Vass, Director, CIFRI, Barrackpore visited Cairo, Egypt on deputation in connection with the final Wrap-up meeting of the CP-PN-34 Project from 3 to 8 May, 2009.
  - The ICAR delegates (5) visited Vietnam on deputation to attend the viiith Annual Meeting of the CURE Steering Committee held at Hanoi, Vietnam from 27 to 29 May, 2009.
  - Dr S.K. Dutta, DDG(CS), visited Thailand on deputation to attend the XIII CORRA meeting at Bangkok, Thailand held from 29 to 30 October, 2009.
  - Dr Masood Ali, Director, IIPR Kanpur and Dr Chellapilla Bhardwaj, Senior Scientist, IARI, New Delhi visited ICARDA to study in the field of pulses (Chickpea and Lentil) from 17 to 21 May, 2009.
  - Dr S.K. Sharma, Director, NBPGR, visited Rome on deputation for participation in the Expert Consultation Meeting to finalize the Second State of World’s Plant Genetic Resources for Food and Agriculture (SoW-2) from 9 to 11 June, 2009 at Bioversity International (HQ), Rome.
  - Dr Suresh Pal visited Rome on deputation for attending the workshop organized by Standing Panel on Impact Assessment (SPIA) on 22 to 23 June, 2009.
  - Dr C.S. Reddy, Principal Scientist, DRR, Hyderabad visited IRRI Philippines on deputation for the Joint Analysis of POS data for 1 month w.e.f. 15 September, 2009.
  - Dr Rajendra Prasad, National Fellow, IASRI visited Tashkent, Uzbekistan on deputation New Delhi

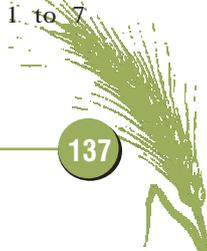
#### Scientists to foreign countries on deputation

from 1 to 5 June, 2009 to give a training course to the Biometrics Services Unit at ICARDA, Syria Staff in Tashkent, Uzbekistan.

- Dr H.P. Singh, DDG(Hort) visited China on deputation from 14 to 18 September, 2009 for participation in ISHS-Pro Musa Symposium on “Global Perspectives on Asian Challenges”.
- Dr R.K. Tyagi, Principal Scientist and Head Germplasm Conservation Division and Dr (Ms) Anuradha Aggarwal, Sr. Scientist, TC and CP Unit, NBPGR, New Delhi visited Belgium on deputation for attending training on “Technological and Management Aspects of Banana Crio Banking at Leuven, Belgium from 7 to 21 June, 2009.
- Dr Sewa Ram, Principal Scientist, DWR, Karnal visited Mexico on deputation for participation in a course on “Wheat Chemistry and Quality Improvement from 3 to 28 August, 2009 at CIMMYT (Hqrs.) Mexico.
- Dr S.K. Chaturvedi, Principal Scientist, IIPR Kanpur visited Spain on deputation to attend training programme on “Marker Assisted Breeding Course from 29 June to 3 July, 2009 at Zaragoza, Spain.
- Shri K.P. Singh, Scientist (Sr. Scale), DMR, New Delhi visited Germany on deputation for training at Hohengein, Germany under BMZ funded ICAR–CIMMYT collaborative project (from 1 to 31 July, 2009) now rescheduled from 15 September to 15 October, 2009.
- Dr N. Shobha Rani, Principal Scientist, visited China on deputation, DRR INGER National Co-ordinator to attend the INGER TAC Meeting at Hangzhou, China from 10 to 11 September, 2009.
- Dr S.K. Pandey, Director, Dr S.V. Singh, Principal Scientist, Dr Govindakrishnan, Principal Scientist and Dr Rajesh Rana, Sr. Scientist of CPRI Shimla visited Uzbekistan on deputation to attend Project Meeting in Tashkent, Uzbekistan from 17 to 19 September, 2009.
- Dr S.K. Luthra, Sr. Scientist, CPRI, Modipuram attended training on ‘Germplasm evaluation for biotics stress’ at International Potato Centre (CIP), Lima from 24 August to 18 September, 2009.
- Dr Raman Sundram, Scientist, Sr Scale, DRR visited Phillipines on deputation to participate in VI<sup>th</sup> International Rice Genetics Symposium RG6 held from 16 to 19 November, 2009 at Manila, Phillipines.
- Dr A.K. Sharma, PI Crop protection and Dr M. Prashar, both Principal Scientist, DWR, Karnal visited Kenya on deputation from 26 September to 7 October, 2009 for participation in “Standardisation of Stem Rust Noye taking and Evaluation of Germplasm”.
- Dr Ravish Chatrath, Principal Scientist DWR, Karnal visited Kenya from 26 September to 7 October, 2009 for participation in “Standardisation of Stem Rust Noye taking and Evaluation of Germplasm”.
- Dr Mangala Rai, Secretary, DARE and DG, ICAR visited Bamako, Mali on deputation to participate in the Governing Board and Committee Meeting of ICRISAT from 14 to 18 September, 2009.
- Dr Mangala Rai, Secretary, DARE and DG, ICAR visited Japan on deputation to attend the September, 2009 Board of Trustees Meeting of the International Rice Research Institute (IRRI) held at Tsukuba, Japan from 28 September to 2 October, 2009.
- Dr T.K. Adhya, Director, CRRI and Dr P.K. Sinha, Principal Scientist/Officer-in-charge, Central Rainfed Upland Rice Research Station visited Philippines on deputation to participate in the Inception Workshop for the “CURE IFAD Project titled “Enabling Poor Rice Farmers to improve Livelihood and overcome poverty in South and South-East Asia through the Consortium for Unfavourable Rice Environment (CURE) at International Rice Research Institute (IRRI), Los Banos, Philippines from 26 to 27 August, 2009.
- Dr Gurjit Singh Mangat, Rice Breeder, Department of Plant Breeding and Genetics visited Phillipines on deputation to attend a training course under CSISA- Collaborating Institutions at IRRI, Philippines from 24 August to 8 September, 2009.
- Prof. K.C. Bansal, NRC on Plant Biotechnology, New Delhi visited Hawai and IJSA on deputation to Hawai and Honolulu, USA for participation in ASBP Conference from 18 to 23 July, 2009.
- Dr J.C Dagar Head, Soil and Crop Management CSSRI, Karnal visited Kenya on deputation from 23 to 28 August, 2009 held at Nairobi, Kenya.
- Dr Achla Sharma, Assistant Plant Breeder PAU, Ludhiana visited Mexico on deputation to attend a coordinated training programme on Wheat Improvement and Durable Resistance of Rust Diseases to be held at CIMMYT (Headquarters), El Batan and Research Station in Toluca Mexico from 3 August to 2 October, 2009.
- Dr V.D. Patil, ADG(OP), ICAR; Dr Arvind Kumar, Director, Dr J.S. Chauhan, Principal Scientist, Dr Maharaj Singh, Sr. Scientist and Dr Pankaj Kumar Sharma, Sr. Scientist all from DRMR, Bharatpur visited Australia from 9 to 16 September, 2009 to attend the final meeting of ACIAR – ICAR Project “Oilseeds *Brassicac*s Improvement in China, India and Australia” at University of Melbourne, Australia from 9 to 11 September, 2009 in conjunction with 16<sup>th</sup> Australian Research Assembly on *Brassicac*s (ARAB) in Ballarat Australia 14 to 16 September, 2009.
- Dr Vinay Singh, Sr. Scientist and Dr Sukhwinder Singh, Sr. Scientist, CPRI Campus, Modipuram visited China on deputation for participation in a training/study Aeropphonic Technology for Seed Production at Chinese Academy of Agricultural Sciences (CAAS) in Beijing China organized by International Potato Centre (CIP) from 26 to 30 September, 2009 instead of 10 to 14 August, 2009.
- Dr R. Selvarajan, Sr Scientist NRCB visited Tanzania on deputation to attend the International Workshop on Banana Bunchy Top Disease (BPTD) and Banana Bacterial Wilt (BXW) from 24 to 29 August, 2009.
- Dr Ajit Kumar Verma, Scientist (SS) and Dr N.K. Chadha, Principal Scientist CIFE, Mumbai visited Australia on deputation to participate in the training at Australian Center for International Research

Project “Developing Aquaculture in Degraded Inland Areas in India and Australia” rescheduled from 14–19 September, 2009 to 18–27 September, 2009.

- Dr Dheeraj Singh, Training Organiser, KVK CAZRI; Pali, Rajasthan visited Kenya on deputation attend the 2<sup>nd</sup> World Congress on Agroforestry held at Nairobi, Kenya from 23 to 28 August, 2009.
- Dr A.K. Handa, Sr. Scientist, NRC on Forestry, Jhansi visited Kenya on deputation to attend the 2<sup>nd</sup> World Congress on Agroforestry held at Nairobi, Kenya from 23 to 28 August, 2009.
- Dr Rajesh Rana, Sr. Scientist, CPRI, Shimla visited Bangladesh on deputation to conduct a baseline survey under CIP CPRI Collaborative Project on “Enhanced Food and Income Security in South-West and Central Asia through Potato varieties from 29 August to 8 September, 2009.
- Dr B. Venkateswarlu, Director, CRIDA, Hyderabad visited Argentina on deputation participate in the International Scientific Conference, “Understanding Desertification and Land Degradation Trends”:part of CST of the UNCCD in Buenos Aires, Argentina from 22 to 24 September, 2009.
- Dr M.M. Mustafa, Director NRCB, Dr S. Uma, Principal Scientist, NRCB, Tiruchirapalli visited China to participate in the International Banana Symposium on “Global Perspective on Asian Challenges held at Guangzhou, China from 14 to 18 September, 2009.
- Dr (Ms) Sukada Mohandas, Principal Scientist, Division of Biotechnology of IIHR, Bengaluru visited China on deputation to participate in the international Banana Symposium on “Global Perspective on Asian Challenges” held at Guangzhou, China from 14 to 18 September, 2009.
- Dr K.V. Ravishankar, Sr. Scientist, IIHR Bengaluru visited Guang Dong, China on deputation from 14 to 18 September, 2009 for presentation of Research Paper in the International Banana Symposium on “Global Perspective on Asian Challenges”.
- Dr M Edward Raja, Principal Scientist, IIHR Bengaluru visited Guang Dong, China on deputation from 14 to 18 September, 2009 for presentation of Research Paper in the International Banana Symposium on “Global Perspective on Asian Challenges”.
- Dr M.S. Saraswati, Sr. Scientist, NRCB, Trichy visited China on deputation to attend the international Banana Symposium on “Global Perspective on Asian Challenges held at Guangzhou, China from 14 to 18 September, 2009.
- Dr Ravis Chatrath and Dr Gyanendra Singh, both Principal Scientist of DWR, Karnal visited Nepal on deputation to participate in workshop on Wheat Breeding (Objective 4) of the project Cereal System Initiative for South Asia (CSISA) funded by BMGF, USAID and the World Bank from 10 to 13 September, 2009 at Kathmandu, Nepal.
- Dr G.P. Singh, Sr. Scientist (Plant Breeding), Division of Genetics, IARI, New Delhi visited Nepal on deputation to participate in workshop on Wheat Breeding (Objective 4) of the project Cereal System Initiative for South Asia (CSISA) funded by BMGF, USAID and the World Bank from 10 to 13 September, 2009 at Kathmandu, Nepal.
- Dr (Mrs) Indu Sharma, Sr. Plant Pathologist, PAU, Ludhiana visited Nepal on deputation to participate in workshop on Wheat Breeding of the project Cereal System Initiative for South Asia (CSISA) funded by BMGF, USAID and the World Bank from 10 to 13 September, 2009 at Kathmandu, Nepal.
- Dr A.N. Mishra, Principal Scientist and Head and Dr S.V. Sai Prasad Sr. Scientist, IARI Regional Station, Indore, participated in workshop on Wheat Breeding (Objective 4) of the project Cereal System Initiative for South Asia (CSISA) funded by BMGF, USAID and the World Bank from 10 to 13 September, 2009 at Kathmandu, Nepal.
- Dr R. Kalpana Sastry and Dr S.K. Soam, both Principal Scientists of NAARM, Hyderabad attended the Annual Meeting of National Partners Initiative at the Hague, Netherlands from 1 to 5 September, 2009.
- Dr Vijay Pal Bhadana, Sr. Scientist, DRR, Hyderabad visited IRRI on deputation to attend the 2009 Rice Breeding course held at IRRI, Philippines from 24 August to 8 September, 2009.
- Dr S.S. Raju, Sr. Scientist, NCAP New Delhi, Dr P. Shinoj, Scientist(Agril Economics), NCAP, New Delhi attended Annual Modeling Workshop of the project “Biofuels and the Poor” to be held at, IFPRI, Washington DC from 26 October to 3 November, 2009.
- Dr S.V. Ngachan (Director ICAR Research Complex for NEH Region), Dr A.K. Tripathi (P.I and Sr. Scientist Agril. Economics) and Dr A. Pattanayak (PS Plant Breeding and Co-PI) participated in the terminal workshop of the project “Managing Rice Landscape in Marginal Uplands for Household Food Security and Environmental Sustainability” to be held at International Rice Research Institute at Los Banos, Philippines from 24 to 25 August, 2009.
- Dr A.K. Singh, DDG(NRM), ICAR Hqrs. visited on deputation to attend Second World Congress of Agroforestry from 23 to 28 August, 2009 held at Nairobi, Kenya.
- Dr R.K. Gupta, Principal Scientist, DWR, Karnal visited Australia from 5 to 12 September, 2009 for a study on “Wheat Quality and Sustainable Dryland Farming in South Asia under ACIAR project No.CIM/2006/094.
- Dr P.K. Joshi, Director, NCAP, New Delhi and Dr JVNS Prasad, Sr. Scientist, CRIDA, Hyderabad participated in a Centre Wide Science Meeting being organized by ICRAF from 31 August to 2 September 2009 at its Hqrs, Nairobi, Kenya.
- Dr Randhir Singh, PI and Principal Scientist, DWR, Karnal attended Annual Project Progress and Planning Meeting under ACIAR project No.CIM/2006/094 to be held from 27 September to 1 October, 2009 at ICARDA, Aleppo, Syria.
- Dr M Prashar, Principal Scientist, DWR, Shimla visited ICARDA Aleppo Syria from 1 to 7



---

September, 2009 for participating in the Borlaug Global Rust Initiative (BGRI) Coordination Meeting.

- Dr S.S. Banga, Sr. Scientist (Oilseeds), Department of Plant Breeding and Genetics attended the programme at Victoria and Sydney NSW from 9 to 30 September, 2009 under ACIAR Collaborative project CIM/1999/072.
- Dr P.K. Joshi, Director NCAP, New Delhi visited ICARDA, Aleppo, Syria from 20 to 22 October 2009 to participate in the 2<sup>nd</sup> Annual Science Week Workshop.
- Dr K.V. Prabhu, Head, Division of Genetics, IARI, New Delhi attended Review Meeting of Generation Challenge programme for 2009 from 20 to 23 September, 2009 at Bamako, Mali.
- Dr S.M. Balachandran, Principal Scientist, DRR attended a short-term course on “Environmental Risk Assessment of G.M Crops at Michigan State University, USA from 24 to 31 October, 2009 under the Indo-US Collaboration (USTDA Project).
- Dr P.K. Aggarwal, National Professor, IARI New Delhi visited Bangkok, Thailand to attend First Annual Review Meeting of the project of “Vulnerability to Climate Change: Adaptation Strategies and Layers of Resilience from 30 September to 1 October, 2009.
- Dr G G S N, Project Coordinator and Dr V U M Rao, Principal Scientist (both from Agriculture Meteorology), CRIDA Hyderabad visited Bangkok, Thailand from 30 September to 4 October, 2009 to attend first Annual Review Meeting of the project of “Vulnerability to Climate Change: Adaptation Strategies and Layers of Resilience and also to participate in the Training workshop as Resource Persons on Agro-climatic Analysis, which contains theory and hand on computer practicals.
- Dr S.K. Pandey, Director, CPRI, Shimla visited C I P, Lima Peru to present a paper in the 15 Triennial Symposium of the International Society for Tropical Root Crops (ISRTC) from 2 to 6 November, 2009.
- Dr M.S. Saharan, Sr. Scientist, DWR Karnal participated in “4<sup>th</sup>” Yellow Rust Conference” held in Antalya, Turkey from 10 to 12 October, 2009.
- Dr Birpal Singh, Joint Director, CPRI campus Modipuram participated in the Beijing Meeting at Bellagio, Italy from 16 to 20 November 2009.
- Dr A.K. Singh, Sr. Scientist (Nematology), DWR, Karnal attended 1<sup>st</sup> International Cereal Cyst Nematode Initiative Workshop at Antalya Turkey from 21 to 24 October, 2009.
- Dr B. Vimala, Principal Scientist, CTCRI, Thiruvananthapuram attended 15 Triennial Symposium of the International Society for Tropical Root Crops (ISRTC) held at Lima Peru from 2 to 6 November, 2009.
- Sh. B. Ganesh Kumar, Sr. Scientist, NCAP visited ICARDA, Syria from 25 October to 5 November, 2009 to attend a “Training course on ‘Household survey Data collection, entry analysis, result interpretation and reporting and value chain analysis”.
- Dr S.K. Naskar, Director, CTCRI, visited Lima, Peru on deputation for participation in the HP Sweet Potato Breeding Meeting, 2009 from 27 to 30 October and 2 to 6 November 2009 (excluding journey time) and the 15<sup>th</sup> International Symposium of the International Society for Tropical Root Crops (ISTRC).

□

