

**Proceedings of the 2nd National Workshop of NAIP sub-project “Harmonizing biodiversity conservation and agricultural intensification through integration of plant, animal and fish genetic resources for livelihood security in fragile ecosystems” under component 3 (SRLS)
Project code: 30036 (GEF funded) held on 23- 24 March 2011 at MPUAT, Udaipur**

The second National Workshop of the NAIP sub-project on “**Harmonizing biodiversity conservation and agricultural intensification through integration of plant, animal and fish genetic resources for livelihood security in fragile ecosystems**” under component 3 (SRLS) Project code: 30036 (GEF funded) was held on 23- 24 March 2011 at MPUAT, Udaipur. The workshop was attended by CoPIs from all consortium partners and RA/SRFs of the project working in all three districts, CAC members, and farmers’ representatives of each cluster. Total 165 participants along with the farmers attended the workshop. The list of participants is attached as Annexure – I.

The Inaugural Session started with the welcome address by Dr. S. R. Maloo, Director Research, MPUAT, Udaipur. Dr Maloo welcomed Chief Guest Dr. C. D. Mayee, Chairman ASRB; Guest of Honour Dr. S. L. Mehta, Chairman RPC, NAIP; Dr. S. S. Chahal, Vice Chancellor, MPUAT and all the participants. Dr. Maloo said that University feels an honour to be the part of this prestigious project and thanked to Dr. Pareek for choosing the Udaipur as venue for the workshop. The Udaipur district is a historic place and the Udaipur city is the city of lakes and its biodiversity in plant, animal and fish are also unique. He said that the stay of participants will be pleasant during two days. A detailed progress report of the project was presented by Dr. S. K. Pareek, the CPI of the project including the achievements and work plan for future. Dr. Pareek said that unique crop landraces like red rice (karad) & sukradhan, maize (popping and sugary type), rajmash, mash, amaranth from Chamba, maize (malan and sathi), sorghum (malan and sathi), rice (dudh mogar, hejni and mouriya) from Udaipur, sorghum (garib sorghum, popping type), black gram, green gram (yellow colour and medicinal value), red gram, and rice (medicinal value) from Adilabad have been taken up for seed chain and quality evaluation. Dr. Pareek said that getting the GI status on these unique landraces, development of biodiversity registers and registration of farmer’s varieties are taken up on priority. In addition, better feed, fodder, nutrition and mangers with health care of animal and fish farming are other important aspects which are taken care in the project. The awareness and sensitization of communities to enhance participation in biodiversity conservation showed the encouraging results by way of large participation of the farmers trainings, fairs etc.

He also mentioned some important issues which are to be taken on priority like procurement of non-recurring and recurring items as per the NAIP guideline, submission of SoEs and AUC on time, need based reallocation of the funds with justification for 2011-12. The other important issues for operational management of the project which were specified by Dr. Pareek covers identity cards to the farmers and resource persons, hiring of place in each cluster to keep all equipment’s, development of community gene bank, internet facility in each cluster, creation of on farm or off farm employment opportunity, creation of sustainability fund with in the stipulated time. The issues of landless labourers, component of nutritional security and distribution of nutri-garden packets to target farmers, creation of rural technology centre, service providers, commodity interest groups, retail commodity outlets and development of marketing capability, proper documentation of all information on inputs given to farmers should be done.

He also advised that the report should be scientifically exciting, development oriented and interesting in reading with findings and new ideas. It should include the success indicators like innovations developed, number of beneficiaries, material produced, technology developed etc. and

also highlight one or two high impact interventions. He also stressed that critical analysis of baseline data may be done and a benchmark document should be developed by each district. Success stories may be produced in the form of films, CD, printed matters etc. He also desired that self-evaluation of the project should be done and success indicator of the project would help to judge and introspect the contributions. It should include number of innovations developed and validated, number of knowledge products developed and use, increase in income, number of varieties registered, number of quality publications. The outcome indicators should include interventions like sustainability, increase in income, health and employment generation and resource conservation, vertical increase in income, horizontal spread of technology (area and no. of farmers) and expansion in areas of key interventions. He also said that there is a provision for consortia partners to visit successful consortia's to have learning experience. The progress report of the project for the year 2010-11 is given in Annexure II.

Prof. S. L. Mehta, the Guest of Honour, congratulated Dr. S. K. Pareek, CPI, and his team for their sincere efforts made under the project. Dr. Mehta recalled that under NATP the NBPGR successfully implemented a mega project in mission mode on sustainable management of plant biodiversity and Dr. Pareek was PI at National level. This NATP project brought out several good things and when the present NAIP project was thought of then again NBPGR was chosen as leader. The GEF identified some areas and among these, one was related to Biodiversity. The ICAR wanted a project which can demonstrate the harmonizing the bio-resource conservation and agrarian reforms because the advancement in agricultural technologies has a negative impact on bio-resource conservation but for sustainability both the components (agricultural reforms and bio-resource conservation) should go hand in hand. We have lost enough but we can't afford to lose more of the biodiversity and this is not only the national requirement but the global mandate that we can't think of a growth without conservation of bio-resource and in this context plant, animal and fish has to go together. He said that this is a unique project and probably first in the world of its own kind, therefore, it requires lot of efforts and coordination and address all issues related to the project. This will show the visibility to all scientists working in the project, their organization, ICAR and country and it will also serve as a model to Ministry of Environment and Forest. He expressed his happiness on the progress made so far and his best wishes for the success of the programme.

Dr. Mehta stressed upon the survey of bio-resource and appreciated the efforts made by NBPGR in developing the proforma for survey of plant genetic resources. However, he opined that the proforma of PGR survey seems to be too long it can be relooked if possible. He emphasized on several crops meriting GI status for empowering local communities. He hailed the maiden effort of formally linking biodiversity with farmer livelihood. Dr. Mehta stressed that landraces of vegetable like ridge gourd (Turai) 5-6ft long and also karela (bitter gourd) from Salumber tehsil of Udaipur district and other vegetables and cucurbits of the area should be conserved and can be taken up by NBPGR for GI status. These landraces are the treasure of our country. The on farm conservation of such landraces and similar efforts in identification of the specific material and the area can be done in other districts also. He emphasized that processing, production and marketing is an important aspect which should be taken care and more efforts required in animal component as livestock is integral part of traditional farming and important for income to farmers. The Rajasthan is rich in world famous animal breeds and the animal components should have high priority and can have a positive impact on livelihood of the farmers. Therefore, the animal component may be relooked and the interventions which are showing good impact should be up scaled. The NAIP will support any good programme under the project.

The baseline report and the work under the project has been done nicely. The report after synthesis will be a very good document. He suggested that planning for increase of income of farmers should be done in advance. How much income of farmer's can be increased in one year

should be planned because by increasing income only smile can be brought on the faces of tribal farmer's. He said that the interventions under the project are in right direction and definitely will have a positive impact on livelihood security. Dr Mehta desired from the CAC members to define properly the term livelihood security that is the details of livelihood security for the benefit of farmers. He showed his serious concern on how to increase livelihood security in the present agriculture system and how the project can be linked with livelihood security. He also informed about CAC and CICs power of budget reallocation to the tune of 15% and 10%, respectively. Dr. Mehta further said that the required financial support to this project will be provided and there is no problem of funds, lot of funds are available which can be sanctioned if required for the noble cause. He also informed that World Bank has agreed 18 month extension to the NAIP project and congratulated the team for 18 months extension. He expressed his happiness on the progress made so far and his best wishes for the success of the programme.

Dr. C. D. Mayee, the Chief Guest, said it is a happy moment for him to be a part of this 2nd National Workshop of NAIP project on biodiversity. This project which ICAR has commenced with World Bank funding has been itself a great innovation where farmers are linked with SAU's and ICAR institutions to bring out all such innovations for the growth of agriculture. Dr. Mayee agreed with Dr. Mehta's statement that the advancement in agricultural technologies has a negative impact on bioresource conservation but for sustainability both the components (agricultural reforms and bioresource conservation) should go hand in hand. We have lost enough but we can't afford to lose more of the biodiversity and this is not only the national requirement but the global mandate that we can't think of a growth without conservation of bioresource and in this context plant, animal and fish has to go together. The on farm conservation through use has unique advantage in the whole evolutionary process where the bio-resources are in use and farmers are the breeders, conservators and users. Therefore, through farmers participation this project has given a mandate to develop a model on harmonizing agrarian reforms and biodiversity conservation. Realizing the uniqueness of India in biodiversity, three distinct agro climatic zones represented by Chamba, Udaipur and Adilabad are selected. The landraces in these districts are unique, animals are predominantly non - descript types and richness of fish resources. These resources after value addition will not only find the good market but will further placed in various studies for gene discovery and allele mining.

He appreciated the good work being done under the project. He mentioned that lot of bio-diversity is still managed and maintained by the tribal farmers and they are real conservator, innovator and user. This is a unique project where the farmers are at focal point. Due motivation to farmers is required and the project will prove to be a good case study in this direction. He further said the innovations in the project will play a crucial role in shaping the agricultural policies and up liftment of rural livelihood.

Inventions do not occur daily but innovations can and several small innovations can bring in developmental change in agriculture sector and livelihood of farmers. He realized the need to recognize such innovations and appreciated that this project is a platform where upliftment of rural people can happen. He further emphasized on critically analysing as to who is the ultimate beneficiary. We need development and also wish to conserve our crop landraces. He expressed his happiness on the progress made so far and his best wishes for the success of the programme.

Dr. S. S. Chahal, VC, MPUAT, Udaipur welcome all the dignitaries, CPI, CoPIs and farmers and expressed his happiness that under this project the team of scientists from plant, animal and fish component are working at grassroots level. He said that climate change is taking place where, the temperatures are fluctuating and rainfall pattern has also changed which are affecting both the agriculture and also the agro- biodiversity. To address the issues emerging from

agrarian reforms and biodiversity conservation, the sanctioning and implementation of this project is timely and will address the problems of agricultural intensification and biodiversity conservation. Dr. Chahal said that the on farm conservation through use has unique advantage in the whole evolutionary process where the bio-resources are in use and farmers are the breeders, conservators and users. Therefore, through farmers participation this project has given a mandate to develop a model on harmonizing agrarian reforms and biodiversity conservation. Realizing the uniqueness of India in biodiversity, three distinct agro climatic zones represented by Chamba, Udaipur and Adilabad are selected. He advised on specific issues for betterment of the project and appreciated the achievements made so far. He said we can get happiness only when income of farmer's increases and smile comes on their faces and this can be done only when the university join hands with farmers and work for their economic development through regular interactions with farmers. Dr. Chahal said it is not that we scientists know more we also learn many things from farmers. The innovative farmers introduced strawberry and kesar in Rajasthan and trying for olive cultivation also. In this context he emphasised that India is a biodiversity rich nation and it has a unique place due to hot spots, endemic and uniqueness of biodiversity which is spared in tribal dominated forest villages and Udaipur is a tribal district. The tribal farmers need a basket of technology which can be provided by our team. Dr. Chahal express his happiness and congratulated Dr. Pareek CPI of the project and all project partners for excellent work done so far and hoped that the team will continue to do it for the project period and through sustainability fund it can be taken further. Sustainability fund in this project is a necessity so that the work continues with this fund even after completion of the present project. He said that Udaipur has taken a lead in this matter.

Five publications on ornamental fish practices, improved poultry practices, improved buffalo keeping and improved goat keeping and baseline report of Udaipur district were released by Chief Guest Dr. C. D. Mayee, Chairman ASRB; Guest of Honour Dr. S. L. Mehta, Chairman RPC, NAIP; Dr. S. S. Chahal, Vice Chancellor, MPUAT, Dr. S. K. Pareek, CPI, NBPGR, New Delhi and Dr. S. R. Maloo, Director Research, MPUAT, Udaipur. The inaugural session ended with a vote of thanks to the Chair and all other participants presented by Mr. Shailendra Tiwari, CoPI, Seva Mandir. An exhibition on crop, animal and fish diversity was also inaugurated by Chief Guest Dr. C. D. Mayee, Prof. S. L. Mehta and Dr. S. S. Chahal and congratulated the project team for their good effort.

After inaugural session the progress report for 2010-11 and the work plan for the year 2011-12 for three districts namely Chamba, Udaipur and Adilabad were presented by respective CoPIs dealing with plant, animal and fish covering biodiversity and agricultural intensification components in three different technical sessions. This was followed by open house discussion and CAC meeting. The brief presentation of each CoPI are given below:

Chamba District

Dr. J.C. Rana, NBPGR, RS, Shimla presented the work done on PGR in Chamba district. He said that three surveys were undertaken for PGR collection and 219 accessions of crops were collected from Tissa, Bharmour and Mehla block. He further said that the target crops and their landraces in Bharmour block are amaranth, rajmash and mash; in Salooni block maize, rajmash, and red rice in Bhatiyat block. The special attributes of these crops are that they have very good taste, aroma and cooking quality. They get better price and have more demand in the local market for red rice, rajmash and desi maize but there is no facility for grading, packaging, shelling and assured marketing. He also told that technical programme for characterization and evaluation of crop landraces has been planned and will be done as per the schedule and planned location. Characterization of amaranth, buckwheat, chenopod, finger millet, prosomillet, rajmash, pea and adzuki bean will be undertaken at NBPGR Shimla; wheat and barley at IARI Shimla; maize,

vegetables and other pulses at Palampur, and rice at Malan. Besides this nutritional parameters of crops will be estimated for starch content and starch properties, protein and fat, cooking properties (hydration capacity, hydration index, swelling capacity, cooking time), textural parameters (hardness, cohesiveness, gumminess, springiness and chewiness), Minerals (Cu, Zn, Fe, P, Mn etc.) and antioxidant activities.

Dr. Anand Jain, NBAGR, Karnal presented the progress made in animal component in Chamba district. He told that baseline survey has been completed. Information on AGR will be added in community registers. Proforma for characterization of biodiversity has been developed. Characterization of biodiversity initiated in Chamba district. He informed that process initiated for purchase and supply of semen doses of Surti buffalo and Gir cattle and 1500 doses of semen of genetically superior Murrah bulls have been supplied to Dy. Dir. (AH), Chamba for use in the project area. Survey conducted for procurement of Gaddi bucks. Livestock competition was organized wherein the prizes were awarded to the owners of best animals. Prepared and exhibited posters highlighting the AnGR of Chamba and their management. An exhibition on indigenous breeds and their scientific management was also arranged. A fair was scheduled for 5th March, 2011 in Sanghini village of Salooni block but couldn't be held due to adverse weather. Recording of utility of various livestock species/breed and documentation of indigenous technical knowledge related to animal genetic resources is in progress besides these selection of genetically important populations of Gaddi Goat & Local Buffalo and farming systems for value addition, improvement of the local Murrah buffalo and Gaddi bucks for improvement of farmers' flocks, increasing consumer demand through identification, procurement and dissemination of superior germplasm will be taken this year. Breed shows/ diversity fairs will be organized of for awareness generation amongst the farmers/stakeholders. Extension material will be prepared and distributed to the farmers and sustainable fund generation to continue improvement activities by the farmers.

Dr. P. Punia, NBFGR, Lucknow presented a detailed report on work done in Chamba district. He said that baseline survey for the evaluation of socio-economic status and selection of the beneficiaries in 3 blocks have been completed whereas 15 sites for fish species were explored in Chamba (altitude 6000 ft - 1800 ft) in main stream of Ravi, 4 streams (Sahoo, Bhandal, Chanaed and Bijal) and 2 reservoirs (Ranjeet Sagar and Chamera). Fish species recorded were *Schizothorax*, *Crossocheilus*, and *Aspidoparia* and 3 exotic species i.e., *Oncorhynchus*, *Salmo* and *Cyprinus* and 79 tissue samples of 7 species collected. He said that 30 DNA Isolations has been isolated of 7 species and PCR amplification (mitochondrial gene regions) COI (28 samples) and Cytob (28 samples) have been done in Chamba besides this Sperm cryopreservation protocol development of fish species *Schizothorax richardsonii* will be undertaken this year.

Dr. J. K. Sharma, CSKHPKV, Palampur, presented the progress made so far in Chamba district. He told that technological interventions for adding-value initiatives have been undertaken in 250 households (Bhatiyat and Salooni each), and 100 household in Bharmaur block. In plant, red rice, maize and rajmash; migratory gaddi goats, buffalo and desi cow in animal, and snow trout in fish identified as potential species for interventions. He also told that about 3q rice seed have been multiplied; maize seed (Chitku) multiplied at RWRC Malan- 5 kg (Stock seed); rajmash was evaluated at Salooni; Bharmaur local from farmers was pure and procured for seed production. Produce from farmers (rajmash and red rice) was procured and after value addition, sold through farmers, at 60% high premium price. Agronomic trials formulated for amaranth- rajmash intercropping/ pure crop of rajmash in Bharmour block. He mentioned that the area is organic by default. Blast resistant landrace of red rice germplasm is being identified for introduction. Agronomic trials have been planned. Based on two years performance, multiplication will be carried out next year. Agronomic interventions to increase productivity (150 FLDs and 50 seed

production activities proposed for 2011) through participatory mode. Seed and other inputs procured for FLDs and seed programme. Demonstrations to increase productivity of local maize planned seed material and other inputs procured and farmers identified. Polyhouses established for crop diversification through introduction of protected off-season vegetables, water storage tanks built for rainwater water harvesting, vermicompost sheds ready for utilizing local animal and plant waste products. He further told that 4q rajmash produce purchased from farmers of Praghala panchayat of Bharmour in November, packing and marketing got done at Palampur. Farmers paid 40% (Rs 1500/q) more premium price; besides, purchased 2q red rice from Dadriyada farmers, dehulling, packing and marketing got done at Palampur. Farmers were paid 40% (Rs 2000/q) more premium price. Samples of all the collected biodiversity sent for quality analysis to Hyderabad and of karad rice also to Home Science College, CSKHPKV.

Dr. Alok Sharma, CSKHPKV, Palampur in his presentation told that majority households had milk yield of 1 -2 litres /cow in target clusters/blocks. Almost 9.5 % households reared cows yielding 2-5 l milk. In Gola cluster (Bhatiyat block), cow was the most important animal reared followed by buffaloes; cow and buffaloes were in small herds of either 1-2, few rearing from 3-5; few farmers owned goats above 100 as stationery flocks. In Pranghala cluster (Bharmour block) cows are most important animal reared and no household reared buffaloes; almost one fourth of the households were rearing sheep with average flock size 20-100 units whereas few families also kept stationary flocks of more than 100 sheep and goats. In Sanghani cluster (Salooni block), cows were reared by all the target households but buffaloes are also kept in larger herds 10-20 and 20-50, indicating their economic importance for livelihood through milk production and sale. Practice of vaccination has been unsystematic and irregular by the farmers (esp. Migratory Sand G flock owners). De-worming was also done only in the event of animal falling sick due to parasitic infestation. Mineral mixture feeding was rarely done. He further mentioned that, the scientific animal health practices like clean milk production, deworming, vaccination, health management and general management were selected for on- farm demonstrations as base-line survey showed absence of clean milk production practices in target cluster villages, vaccination was unsystematic and irregular, deworming was absent and routine livestock management was poor at the livestock owners' level in selected villages. The following scientific animal production practices were selected for on farm demonstrations: urea molasses enrichment of straw as the livestock owners did not have awareness about UMB feeding, so the demonstration was aimed for mass adoption of this technology; value addition in milk, though the villager used to prepare milk products but they lack hygiene and quality due to absence of scientific practices. Extension training material which includes Farmers friendly folders on selected animal husbandry topics have been prepared for capacity building in agro biodiversity management for livelihood security. Theme based 3-D teaching aids got prepared for use during *in- situ* training/ technological interventions. Flex/ Vinyl banners for display during fairs/exhibitions/ trainings/demonstrations were got prepared. Five grassroot level trainings on biodiversity conservation were organized, 469 farmers got benefited. Local panchayat functionaries and officials of the line- departments were involved during training programs and banners in local language (Hindi) to sensitize farmers about indigenous animal rearing were displayed. Following activities are proposed for the year 2011-12 in all target blocks / village clusters genetic up-gradation of local livestock through use of superior germplasm of indigenous livestock. Diagnostics and preventive health coverage: vaccination against FMD, HS, PPR and De-worming, Sensitization and trainings on scientific housing and management for profitable animal husbandry. Training, practical demos for urea-enrichment of local crop residues; UMB feeding, MM, supplementation of feed additives for balanced feeding and demonstration of processing of different milk products with enhanced shelf life besides these 5 grass root level trainings are also planned.

The work carried out by Dr. R. C. Chauhan, CSKHPKV, Palampur was presented by Dr. J. K. Sharma and he apprised that the entire farming community of the area was of the opinion that fishes are not to be cultured but only to be captured from the wild aquatic environment as and when needed. The construction of 7 trout culture ponds and 8 carp culture fish ponds in all the three target blocks is complete. Fingerlings distributed to farmers. However, after a lot of motivation and personal efforts, 35 families in Bharmour, 60 in Salooni and 98 families in Bhatiyat block have finally been selected for intervention. Till date out of these 193 fish farmers families 1 family at Dand, 3 families at Bhandal in Salooni and 1 family at Holi in Bharmour block were selected for trout farming. Similarly, 1 farm family at Lahroo, 2 farmers at Khanora and 1 farm family at Dadriyara and 1 at Garnota in Bhatiyat block were selected for integrated carp fish farming.

Udaipur District

Dr. N.K. Dwivedi, NBPGR, Jodhpur in his presentation reported that four Exploration and Germplasm Collection trips were undertaken till date (Kharif 2010) and 144 accessions collected (Mawli, Gogunda and Bargaon, Jhadol, Vallabhnagar, Girwa), 312 Farmers families contacted during survey. Characterization of maize landraces has been done at NBPGR, RS, Jodhpur. He further said that, in remaining five blocks, 10% of the villages (rich plant diversity) will be selected and in each village 10%, households will be selected which would include diverse farm households. The detail information will be documented as per the proforma. This information will be used for developing village biodiversity register.

Dr. Anand Jain, NBAGR, Karnal presented the progress made in animal component in Udaipur districts. He told that baseline survey has been completed. Information on AnGR will be added in community registers. Proforma for characterization of biodiversity has been developed and characterization of biodiversity initiated in Udaipur district. 50 kg mineral mixture was given and 100 vaccination done in Menar village of Udaipur district. He also told four trips were undertaken for survey of superior local germplasm. Ten superior Sirohi bucks were purchased and distributed to the farmers in Vallabhnagar and Jhadol blocks. Sustainability fund of Rs. 5000 generated through breed improvement. Livestock competition was organized wherein the prizes were awarded to the owners of best animals. Recording of utility of various livestock species/breed and documentation of indigenous technical knowledge related to animal genetic resources is in progress besides these selection of genetically important populations of Local Cattle, buffalo, goat, sheep, poultry and farming systems for value addition, improvement of the Gir cattle, Surti buffalo, Sirohi goat, Sonadi sheep, indigenous poultry, increasing consumer demand through identification, procurement and dissemination of superior germplasm will be taken this year. Breed shows/ diversity fairs will be organized for awareness generation amongst the farmers/stakeholders. Extension material will be prepared and distributed to the farmers and sustainable fund generation to continue through breed improvement activities.

Dr. P. Punia, N B F G R, Lucknow presented a detailed report on work done in Udaipur district and said baseline survey for the evaluation of socio-economic status and selection of the beneficiaries in 3 blocks has been completed. 5 Rivers/Lakes- Som, Mansi, Phalasia, Banas, Jaismand, Fatehsagar and Nadeshwar were explored. 30 species belonging to 20 genera and 10 families collected and major habitat attributes were recorded. Sample collected from Jaismund lake (Udaipur) were morphologically compared to other closely related species of the genus. Significant differences recorded (body ratios and scales counts) and 72 DNA Isolations has been isolated of 30 species in Udaipur district besides this PCR amplification (mitochondrial gene regions) COI (42 samples) and Cytob (46 samples) and 88sequence analysis have been done in Udaipur district.

Sperm cryopreservation protocol development of fish species *Labeo gonius* and /or *L.rajasthanicus* will be taken up this year.

Dr. Arvind Verma in his presentation told that demonstration of improved agronomic management on production of native landraces of maize, sorghum, foxtail millet, horse gram, mustard, fenugreek and gram has been done. These trials were monitored regularly and farmers were trained for improved cultivation practices of crop production and also for varietal selection work. 17 Trials on seed multiplication of different local landraces with improved cultivation practices in Kharif (2010) on maize, sorghum, foxtail millet, horsegram and in Rabi (2010-11) 45 trials on mustard, fenugreek, gram were planted. He also said that trials have been conducted on comparative performances of local landraces of maize, sorghum, foxtail millet, horse gram (Kharif) and mustard, fenugreek and gram in Rabi. Seed graders installed, one each in Som, Chanawda and Netawala villages. Five units in each selected village of vermicompost for utilizing animal and plant waste products are proposed. Compost pit preparation work is in progress. It shall be over by the end of this month. He said that in 2011-12, trials on comparative performances of local land races are planned. In Kharif, 54 trials on 3 crops (maize-malan, maize-sathi and sorghum) in 5.4 ha area and in Rabi 45 trials on 3 crops (mustard, methi, gram) in 4.5 ha area will be laid. One demonstration of 2000 sq m area on fodder crop with improved agronomic practices in each adopted village will be taken in Kharif (Sorghum) and Rabi (Berseem or alfa- alfa). Grain produced from trials will be purified from seed graders with some technological interventions for “adding value” and their marketing for enhancing the livelihood security and empowerment of local people. Vermicompost produced from units will be marketed for enhancing the livelihood security and empowerment of local people. This will add to sustainability fund.

Dr S P Tailor in his presentation mentioned that Genetic up-gradation of Goat has been done. 16 Sirohi Breeding Bucks supplied to farmers. Artificial Insemination Centres (3) created Netawala (2) and Som (1). Besides cocks (125) and chicks (1902) were supplied to farmers. Mineral mixture to 221 animals was given in which mineral deficiency was observed. Sustainability funds generated (Rs. 33,210.00) from animal component.

Dr. V.P. Saini in his presentation said that no scientific fish culture is practiced in Udaipur. 7.50 lacs spawn of *L. rajasthanicus* produced. This was stocked in Som river (Donadi) system and lake Jaismand. One crop of ornamental fish in cage was successfully reared and harvested. A profit of Rs 6200.00 was received in a rearing period of 2.5 months by one cage only and additional fund of Rs 5.0 lacs has been approved by CAC for up- scaling this activity. Besides, FLD on carp culture in two micro water sheds done, harvesting will start in April, 2011.

Adilabad District

Mr. Jairam (SRF), NBPGR RS, Hyderabad presented the work done so far on PGR component in 4 clusters/ mandals in Adilabad district. He told that baseline survey of 4 clusters/ mandals (Bheemini, Indervelly, Kerameri and Khanapur) in Adilabad districts were completed. 1,060 farmer beneficiaries identified in 4 clusters for technological interventions. Social/cultural and economic information of 1,060 farmers in 45 villages documented. Linseed germplasm INGR 10028 registered for high oil content (42.6%). Assessment of variability for seed characters of 78 Farmers' varieties completed, local diversity of 346 accessions were assessed through agromorphological characterization and evaluation taken up during Rabi, 2010-11. Besides, augmentation and documentation of farmers' varieties of 99 accessions has been completed. Four Plant Biodiversity surveys undertaken in Adilabad district: villages surveyed (107), farmers surveyed (407), diversity sampled (697 accessions.). Passport data for 697 accessions with an IMS

completed, MTM Conservation of 796 accessions of landrace diversity of 53 agri-horticultural crops completed. Work to be undertaken in 2011-2012 identification/improvement of farmers' varieties through participatory approach, establishment of community seed banks, creation of self-help and cooperative groups, access to genetic material (Paddy released varieties suitable for upland conditions, organizing diversity fairs, developing organic cultivation/ labeling/ marketing linkages. Grassroot level trainings for awareness and technology backup and post-harvest marketing support for agriculture, livestock and fisheries.

Dr. Anand Jain, NBAGR, Karnal presented the progress made in animal component in Adilabad district. He told that baseline survey has been completed. Information on AnGR will be added in community registers. Proforma for characterization of biodiversity has been developed. Recording of utility of various livestock species/breed and documentation of indigenous technical knowledge related to animal genetic resources is in progress besides this improvement of the local Indigenous cattle, buffalo, poultry and Nellore sheep, increasing consumer demand through identification, procurement and dissemination of superior germplasm will be taken this year. Breed shows/ diversity fairs will be organized for awareness generation amongst the farmers/stakeholders. Extension material will be prepared and distributed to the farmers and sustainable fund generation to continue through breed improvement activities.

Dr. P. Punia, NBFGR, Lucknow presented a detailed report on work done in Adilabad district. He said that baseline survey for the evaluation of socio-economic status and selection of the beneficiaries in three blocks 3 blocks has been completed and 5 Rivers/reservoir/ wetland – Penganga, Satnala, Godavari, Sriram Sagar Dam and Kondapur wetland area were explored and following fish species were recorded – Carps (*Labeo rohita*, *Cirrhinus mrigala*, *Labeo calbasu*, *Tor putitora*); Catfishes (*Mystus sp*, *Wallago attu*) eel (*Monopterus chuchia*, *Mastacembellus armatus*), featherback (*Notopterus notopterus*), small indigenous species (*Chanda nama*, *Salmostoma bacila*) and freshwater prawn (*macrobrachrium rosenbergii*) in Adilabad district 46 species belonging to 36 genera and 17 families were collected. Sperm cryopreservation protocol development of fish species *Labeo calbasu* will be taken up this year.

Dr. P. Ramesh KVK, ANGRAU, Adilabad presented the progress made so far in Adilabad district and informed that some of the landraces were collected and identified based on their qualities. Baseline survey and beneficiaries selection completed. Different cropping systems identified, identified landraces were multiplied and seed chain formed. Traditional water harvesting systems were strengthened. Grass root level training programmes were conducted. For characterization, importance of the following landraces was gathered based on the experience of the consumers. Nutraceutical value – Balantha Pesalu (greengram for lactating women), Pasupujonna (yellow sorghum), and Hunger reduction quality - Errabudimelu (red paddy) and Tellabudimelu (white paddy) and cooking quality and taste- redgram (white with brown spots) and red gram (reddish black). Besides, Gareeb Jonna a sorghum variety that performs well under adverse climatic conditions with minimum input was selected.

Mr. G. Shailu (SRF), APSBDB, Hyderabad presented the work done so far in Adilabad district. He told that surveys were conducted for animal genetic resources in 4 Mandals. Livestock of Adilabad district identified: Cattle (Murrah, Nagpuri buffalo, Jersey cow, HF cross), Goat (Osmanabadi, Konkankanyal), Sheep (Nellore Ram), Bull (Ongole Bull, Red Kandaramudhole). Various locations to purchase the genetically important varieties have been identified. Artificial Insemination was done to 5-Buffalos and 2- cows in Bheemini mandal. Ongole Bull procured at Pembri, Khanapur in Adilabad district. Conducted two vaccination programmes in 20 villages of 4 mandals. A health- cum- awareness programme organized in 20 villages of four mandals in Adilabad with the support of line-departments of Adilabad district. Training given by the veterinary

doctor explained about the rearing of cattle health and best management practices for improving yield. The doctor also enlightened about the development of the indigenous species of local area because they have more resistance to the local climate and local diseases. Distributed 1400 kg mineral mixer in four mandals and purchased SSG seeds for production of fodder grass for feed of cattle.

In Fisheries, existing species of Adilabad district like (carps/catfish/murrel/featherback) identified for aquaculture, indigenous species of Adilabad were identified, ornamental fish marketing facility identified in Hyderabad. A fish society in Pembri Khanapur mandal selected. For intervention 03 locations in Khanapur has been identified. Development of 20 BMCs in 20 villages of 4 mandals has been planned in 2011-2012.

Mr. K. Subodh Kumar, Head APTDC Confederation of Indian Industry, Hyderabad made an elaborate presentation on Intellectual Property Protection through Geographical Indications. He explained the basic steps to be followed for GI Protection, who can Register, Procedure to be followed for Registration and Advantages of GI Registration.

Recommendations

1. Baseline survey report should serve as a benchmark. Based on baseline data 3-4 benchmark indicators must be identified for each component in each cluster/district (which will not change later), based on these parameters, the progress of each component will be reported and monitored periodically.

(Action: all concerned)

2. One person has been identified in each district for providing online information for monitoring and evaluation of the project:

Chamba: Dr. J. C. Rana (Plant component), Dr. P. K. Viz (Animal component)
Dr. K. K. Lal (Fish component).

Udaipur: Dr. N. K. Dwivedi (Plant component), Dr. Anand Jain (Animal component),
Dr. K. K. Lal (Fish component)

Adilabad: Dr. Someshwar Rao (Plant component), Dr. K. N. Raja (Animal component),
Dr. P. Punia (Fish component).

(Action: all concerned)

3. Each consortium partners should have one scientist identified for reporting to the CAC through CPI.

(Action: all concerned)

4. Dr. S. L. Mehta desired that one day meeting should be organized where he would like to participate and interact with all the CoPIs of NAIP Biodiversity project.

(Action: NBPGR)

5. Identity cards of the farmers and resource persons should be created and distributed in each district.

(Action: CSKHPKV, Palampur; MPUAT, Udaipur; ANGRAU, Hyderabad)

6. All the practices of good agronomic managements be followed along with the integrated nutrition management based on soil test report in on-farm demonstration of landraces and farmers' varieties.

(Action: all concerned)

7. While assessing the yield potential of the local bio-resources, the cost of production and the associated risk factor should be minimum and ascertain.

(Action: all concerned universities)

8. For characterization and evaluation at farmer's field and research stations specific observations are to be recorded for uniqueness of germplasm, registration of farmer's varieties and GI status to important landraces.

(Action: all concerned)

9. It was decided that using the funds for group meeting a meeting of plant component be organized involving all CoPI's dealing with plant component to develop the strategies for getting GI status, registration of farmer's varieties, Biodiversity register, village level seed gene bank, quality evaluation, documentation of ITK, IPR issues and exploring market avenues etc along with up scaling of interventions and their horizontal spread.

(Action: all concerned)

10. Similar efforts be made for animal component under the leadership of Dr. B. K. Joshi (PL Animal Component) at Karnal. The team should workout enhancement in improvement of

animal component through increasing the intervention levels, upscaling of desired interventions (fodder component needs to be addressed), horizontal spread of such interventions.

(Action: Dr. B. K. Joshi, PL AGR)

11. Similar efforts be made for fish component also under the leadership of Dr. J. K. Jena (PL Fish Component) at Lucknow. The team should workout enhancement in improvement of fish component through increasing the intervention levels, upscaling of desired interventions, horizontal spread of such interventions.

(Action: Dr. J. K. Jena PL FGR)

12. Some of the important activities which are already initiated in the project are welcome step. The activities such as creation of biodiversity register, (the project should have linkages with State Biodiversity Board and NBA) community seed bank and museum in each district, training of resource persons, and procurement of seed (local landraces) by respective universities to develop seed chain, seed production at farmers' fields are the priorities and value addition through quality evaluation.

(Action: all concerned universities)

13. In September the Co PIs of one consortia can visit any other consortia where good work is going on as part of a learning process. Similarly a small group of farmers may also be invited to visit different districts. It mean that the innovative farmers from one districts should visit other two districts.

(Action: all concerned)

14. Mr. Sundaram Verma, CAC Member suggested that Biodiversity competition should be held at village level for school children in order to create greater awareness among school children for biodiversity in their surroundings.

(Action: all concerned)

15. The proper documentation of farmers data, input supplied along with all relevant records be maintained systematically in each district.

(Action: all concerned)

16. A film of 7-10 minutes should be made this year as success story in each district.

(Action:all concerned)

Programme

2nd National Workshop of NAIP sub-project “Harmonizing biodiversity conservation and agricultural intensification through integration of plant, animal and fish genetic resources for livelihood security in fragile ecosystems” under component 3 (SRLS) Project code: 30036 (GEF funded) held on 23-24 March 2011 at MPUAT, Udaipur

23, March 2011

09.30-10.00

Registration

10.00-11.00

Inaugural Session

Welcome

Dr S R Maloo

Brief report of the project

Dr. S. K. Pareek

Address by Guest of Honour

Dr. S. L. Mehta

Release of Publication

Address by Chief Guest

Dr C D Mayee

Address by Chairman

Dr S S Chahal

Vote of Thanks

Mr Shailendra Tiwari

Inauguration of Exhibition by Chief Guest

High Tea

Technical Session –I: (11:30 – 13:00)

Chairman: Dr. B. P. Singh CAC Member

Co- Chairman: Dr. B. D. Sharma

- Presentation by Dr. Subodh Kumar APTDC, Hyderabad on GI status

Presentation on progress (2010-11) and technical programme 2011-12 for Chamba district.

- Dr. J.C. Rana, NBPGR, RS, Shimla : PGR component
- Dr. Anand Jain, NBAGR, Karnal : AGR component
- Dr. P. Punia, NBFGR, Lucknow : FGR component
- Dr. J.K. Sharma, CSKHPKV, Palampur : Plant component
- Dr. Alok Sharma, CSKHPKV, Palampur : Animal component
- Dr. J. K. Sharma, CSKHPKV, Palampur : Fish component

13:00-14:00

Lunch

Technical Session-II: (14:00-15:30)

Chairman: Dr. B. P. Singh CAC Member

Co- Chairman: Dr. B. D. Sharma

Presentation on progress (2010-11) and technical programme 2011-12 for Udaipur district.

- Dr. N.K. Dwivedi, NBPGR R/S, Jodhpur : PGR component
- Dr. Anand Jain, NBAGR, Karnal : AGR component
- Dr. P. Punia, NBFGR, Lucknow : FGR component
- Dr. Arvind Verma, MPUAT, Udaipur : Plant component
- Dr. S.P. Tailor, MPUAT, Udaipur : Animal component
- Dr. V. P. Saini, MPUAT, Udaipur : Fish component
- Sh. Shailendra Tiwari, Seva Mandir, Udaipur

15:30- 16:00 Tea

Technical Session-III: (16:00-17:30)

Presentation on progress (2010-11) and technical programme 2011-12 for Adilabad district.

- Dr. Jairam, NBPGR R/S, Hyderabad : PGR component
- Dr. Anand Jain, NBAGR, Karnal : AGR component
- Dr. P. Punia, NBFGR, Lucknow : FGR component

24 March, 2011

Technical Session-III: (09:00-11:00)

- Dr. P. Ramesh, ANGRAU, KVK, Adilabad : Plant component
- Dr. S.N. Jadhav/ Dr. G. Shailu, APSBDB, Hyderabad : Animal and fish components
- Open house discussion

11:00- 11:30 Tea

3rd CAC Meeting

**“Harmonizing biodiversity conservation and agricultural intensification through integration of plant, animal and fish genetic resources for livelihood security in fragile ecosystems”
Under Component 3 (SRLS) Project Code: 30036 GEF funded**

PROGRAMME

24 March 2011, 11:30 – 13:30 P.M

Venue: MPUAT, Udaipur

Agenda of the CAC Meeting and Biodiversity Fair

- Welcome: Dr. S. K. Pareek, CPI, NBPGR, New Delhi
- Opening remarks: Dr. B. P. Singh, Chairman CAC
- Presentations and interaction with farmers : Dr. S. K.Pareek, CPI and Member Secretary
- Remarks by the Members of CAC
- Addition/Deletion of CoPIs
- Minor modifications/recommendation in budgetary provisions of different centers
- Any other item with the permission of chair
- Concluding remarks: Dr. B. P. Singh, Chairman CAC
- Vote of thanks: Dr. I. S. Bisht, CoPI
- **Lunch**

2nd National Workshop of NAIP on BiodiversityScientist Registration
23rd & 24th March 2011

S.No.	Name	Designation	Institute
1.	Dr. S. L. Mehta	Former Vice Chancellor	MPUAT, Udaipur
2.	Dr. C. D. Mayee	Chairman, ASRB	ICAR, New Delhi
3.	Dr. S. S. Chahal	Vice Chancellor	MPUAT, Udaipur
4.	Dr. S. K. Pareek	Principal Scientist, & CPI	NBPGR, New Delhi
5.	Dr. I. S. Bisht	Principal Scientist &CoPI	NBPGR, New Delhi
6.	Dr. J. K. Sharma	Principal Scientist &CoPI	CSKHPKV, Palampur
7.	Dr. Alok Sharma	Professor &CoPI	CSKHPKV, Palampur
8.	Sh. Sunda Ram Verma	CAC Member	
9.	Dr. T. R. Sharma	Professor &CoPI	CSKHPKV, Palampur
10.	Dr. S. Katoch	Assistant Professor &CoPI	CSKHPKV, Palampur
11.	Dr. S. K. Yadav	Sr. Scientist &CoPI	NBPGR, New Delhi
12.	Dr. S. N. Jadhav	Member Secretary &CoPI	APSBDB, Hyderabad
13.	Dr. P. Ramesh	Principal Scientist &CoPI	KVK, Adilabad
14.	Dr. R. Hampaiah	Chairman	APSBDB, Hyderabad
15.	Dr. B. D. Sharma	CAC Member	NBPGR, Shimla
16.	Dr. B. P. Singh	CAC Member	Jaipur
17.	Anita Sharma	CAC Member	Samarpan NGO, Chamba
18.	Dr. N. K. Dwivedi	Principal Scientist &OIC	NBPGR,RS, Jodhpur
19.	Dr. Subodh Kumar	Head APTDC Confederation of Indian Industry	APTDC, Hyderabad
20.	Dr. J. C. Rana	Principal Scientist & CoPI	NBPGR, Shimla
21.	Dr. S. K. Malik	Sr. Scientist &CoPI	NBPGR, New Delhi
22.	Dr. Anand Jain	Principal Scientist &CoPI	NBAGR, Karnal
23.	Dr. Archana Singh	Research Associate	NBPGR, New Delhi
24.	Sh. Shailendra Tiwari	I/C NRD & CoPI	Seva Mandir, Udaipur
25.	Pankaj Paliwal	Coordinator	JJVS, Udaipur
26.	Dr. Navneet Kaur	RA	NBAGR,Karnal
27.	Mr. B. L. Dangi	SRF	MPUAT, Udaipur
28.	Dr. Pancha Ram	SRF	NBPGR, RS, Jodhpur
29.	Mr. Firoz Ahamad	RA	NBPGR, New Delhi
30.	Mr. G. Sailu	SRF	APSBDB, Hyderabad
31.	Mr. R. Jai Ram	SRF	NBPGR, RS, Hyderabad
32.	Mr. Lalit Jaroli	Accountant	JJKS, Udaipur
33.	Mr. Giriraj Kishor Kumar	Office Manager	JJKS, Udaipur
34.	Mr. Bhalani Singh Sisodia	Office Manager	JJKS, Udaipur
35.	Mr. Amit Purohit	SRF	MPUAT, Udaipur
36.	Mr. B. K. Gupta	SRF	NBFGR, Lucknow
37.	Dr. P.Punia	Principal Scientist &CoPI	NBFGR, Lucknow
38.	Dr. K. K. Lal	Principal Scientist &CoPI	NBFGR, Lucknow
39.	Mr. Arvind Kumar Dwivedi	SRF	NBFGR, Lucknow
40.	Mr. Rupesh Kumar	SRF	NBFGR, Lucknow
41.	Mr. Niranjan Ameta	CoPI	Seva Mandir, Udaipur
42.	Dr. Arvind Verma	CoPI	MPUAT, Udaipur
43.	Dr. V. P. Saini	CoPI	MPUAT, Udaipur
44.	Dr. F. L. Sharma	CoPI	MPUAT, Udaipur
45.	Dr. S. Mishra	Assistant Professor	MPUAT, Udaipur
46.	Dr. S. P. Tailor	CoPI	MPUAT, Udaipur

47.	Dr. Shashi Jain	Associate Professor	MPUAT, Udaipur
48.	Dr. S. R. Maloo	Director Research	MPUAT, Udaipur
49.	Dr. A. K. Gupta	DDO	MPUAT, Udaipur
50.	Dr. P. K. Gupta	2 DR	MPUAT, Udaipur
51.	Dr. Y. K Gupta	Retired Professor	MPUAT, Udaipur
52.	Mr. M. L. Ojha	SMS (fish)	MPUAT, Udaipur
53.	Mr. P. K. Jatolia	SRF	MPUAT, Udaipur
54.	Mr. K. S. Lamba	SRF	MPUAT, Udaipur
55.	Dr. H. L. Bugalia	SRF	MPUAT, Udaipur
56.	Mr. D. L. Nagda	Computer Operator	MPUAT, Udaipur
57.	Mr. Chhagan Lal		MPUAT, Udaipur
58.	Dr. B. P. Sharma	Committee Member	MPUAT, Udaipur

List of Farmer's who participated in the 2nd National Workshop of NAIP held on 23-24 March 2011 at MPUAT, Udaipur

Farmer's Name

1	Prithvi Raj S/o Girdhar Lal	44	Prabhu Lal S/o Rang Lal
2	Kanhaiya Lal S/o Roop Lal	45	Manoj Yadav S/o Rajendra Prasad
3	Chunni Lal S/o Kishan Lal	46	Mahaesh Kumar Gujjar S/o Ram Kumar Gujjar
4	Mangi Lal S/o Bheem Lal	47	Bheem Raj S/o Dhan Raj
5	Khunkhar Lal S/o Tulsi	48	Luxmi Lal S/o Nana ji
6	Meethi Lal S/o Bal Kishan	49	Mohan Lal S/o Sag Ram ji
7	Deep Lal S/o Gopi Lal	50	Heera Lal S/o Saju Ji
8	Kanhaiya Lal S/o Tulsi Lal	51	Fateh Lal S/o Nanu
9	Luxman Lal S/o Hindu Lal	52	Bhanwar Kumar S/o Bhura Ji
10	Nana Lal S/o Raju Ji	53	Govind Ram S/o Kanhiya Lal
11	Alkha Ram S/o Bhera Ji	54	Babu Lal S/o Heera Ji
12	Nana Lal S/o Kali Ji	55	Bhera Ji S/o Jagmal
13	Kalu S/o Sava Ji	56	Ram Ji S/o Nathu
14	Luxmi Lal S/o Vaga Ji	57	Kishan Ji S/o Heera Ji
15	Suraj Mal S/o Vaga Ji	58	Kanhiya Lal S/o Moti Lal
16	Manju W/o Kisu Lal	59	Luxman S/o Taru Ji
17	Tulsi Ram S/o Bhera Ji	60	Atma Ram S/o Kalu Ram
18	Vagda Ram S/o Kalu Ji	61	Tulsi Ram S/o Nathu Ram
19	Pitha Ram S/o Bhera Ji	62	Nathu Singh S/o Tanna Ji
20	Chunni Lal S/o Khaman Ji	63	Lala Ram S/o Daula Ji
21	Kanna Ram S/o Ganesh	64	Luxman Lal S/o Hajari
22	Naval Ram S/o Bheena Ji	65	Shanti Lal S/o Sag Ram Ji
23	Som Raj S/o Alkha Ram	66	Kasra S/o Nan Ji
24	Bheem Raj S/o Janu Ji	67	Mangla S/o Kava Ji
25	Ram Singh S/o Vel Singh	68	Alkah Ram S/o Guja Ji
26	Rassi Devi W/o Nana Lal	69	Jamna Devi W/o Alkah Ram
27	Vala Ram S/o Nathu Ji	70	Khura Ji S/o Dula Ram
28	Arjun Singh S/o Dhul Singh	71	Khen Raj S/o Dalu Ji
29	Chain Ram S/o Khuma Ji	72	Mala Ji S/o Moti Ji
30	Uday Lal S/o Hamera	73	Sava Ji S/o Nathu Ji
31	Her Lal S/o Vella Ji	74	Nana S/o Nathu
32	Shambu S/o Mawa Ji	75	Bheru Lal S/o Amra Ji
33	Gautam S/o Heera	76	Narayan S/o Luxman
34	Dhan Raj S/o Indra Ji	77	Gautam S/o Mawa Ji
35	Nathu S/o Ratna Ji	78	Govind Ram S/o Pannkha Ji
36	Uday Lal S/o Heera Ji	79	Rama Ji S/o Nathu Ji
37	Dulla S/o Pema Ji	80	Nanaki W/o Dulla
38	Gopal S/o Roop Lal	81	Hakla S/o Pema
39	Kesar Gaur S/o Pema	82	Jyota Ji S/o Mangi
40	Jeeva S/o Dharma	83	Shankar S/o Mawa
41	Dulla S/o Manga Ji	84	Suresh S/o Kura Ji
42	Rama S/o Bera	85	Vella S/o Nathu
43	Uday Ram S/o Kishor Ji	86	Mani Shankar s/o Mool Shankar

87	Narendar S/o Limba Ji	97	Chunni Lal S/o Hari Narayan
88	Prabhu S/o Babu Lal	98	Shiv Lal S/o Bhagwati Lal
89	Lalu Ram S/o Ram Lal	99	Lalu Ram S/o Bheru Lal
90	Ram Lal S/o Uday Lal	100	Raju S/o Anda
91	Devi Lal S/o Vaga Ji	101	Bheru Lal S/o Chena Ji
92	Bheru Lal S/o Deva Ji	102	Bhanwar Lal S/o Rama ji
93	Mangi Lal S/o Kalu Ji	103	Bhawani S/o Uday Singh
94	Sampat S/o Mangi Lal	104	Nana Das S/o Kalu Das
95	Bhagwan Lal S/o Hem Raj	105	Pratapi Bai W/o Chain Ram
96	Gautam Lal S/o Gaganath		