



SAARC AGRINEWS

A Quarterly Newsletter of SAARC Agriculture Centre (SAC)

Issue Highlights

	Page
10 th Governing Board Meeting of SAC	1
Regional Training on Advances in Animal Reproductive Biotechnology	3
SAARC Regional Training on Climate Change Impact on Soil Carbon Storage, Turnover Under Different Land Use Systems and Adaptation Strategies	4
Regional Training on Herd Health Management of Dairy Buffalo: Nutrition, Breeding, Reproduction, Diseases, Management and Record Keeping	5
Agro-processing as a Key Component of Rural Mass Employment and Rural Development in SAARC Region	6
Regional Consultation Meeting on Regional Coordinated Cotton Technology Exchange Program	8
Memorandum of Understanding (MoU) between SAC and ICRISAT	9
Memorandum of Understanding (MoU) between SAC and ISC	11
Orientation Workshop on SAARC Food Bank Information System	12

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10th Governing Board Meeting of SAC

The 10th Meeting of the Governing Board (GB) of SAARC Agriculture Centre (SAC) was held during 24-26 September 2016 in SAC, Dhaka, Bangladesh. The inaugural ceremony of the meeting was held at Officer's Club, Dhaka, Bangladesh on 24 September 2016. Mr. Mohammad Moinuddin Abdullah, Secretary, Ministry of Agriculture, Government of the People's Republic of Bangladesh graced as chief guest at the inaugural occasion while Dr. Abul Kalam Azad, Executive Chairman, Bangladesh Agricultural Research Council (BARC) was present as special guest. Dr. Md. Kabir Ikramul Haque, Member of SAC GB for Bangladesh & Member Director (Fisheries), BARC presided over the ceremony. Mr. MJH Javed, Director (Agriculture and Rural Development), Kathmandu, Nepal was present as the representative of the SAARC Secretary General. Dr. S. M. Bokhtiar, Director, SAC delivered the welcome address.

Dr. S. M. Bokhtiar, Director, SAC extended his warm welcome to the Honorable Secretary, Ministry of Agriculture, Honorable GB members and other distinguished guests present in the inaugural session of the meeting. He explained the role of SAC to foster research and development and dissemination of technologies in the region.





All Governing Board Members with Honorable Guests

Director, SAC Sharing his Views in the Meeting

He underlined the significance of the 10th GB meeting in reviewing of previous activities and formulating future programs and addressing emerging challenges in the agriculture and allied disciplines in South Asia. He emphasized that SAC is in a transition period of collaborating with many regional and international development partners and specialized bodies in order to enhance the quality of programs and increase the visibility of the SAC. Finally, he conveyed his sincere gratitude to all for accepting the invitation and to grace this important event.

Mr. MJH Javed, Director, SAARC Secretariat in his inaugural remarks conveyed the good wishes and warm greetings of His Excellency Secretary General, SAARC for a successful holding of 10th GB meeting. He thanked SAC for taking all possible attempts to propose a very balanced agenda and extremely important programs for the year 2017. He requested all GB members to share the recommendations of the GB meeting and closely coordinate with national focal points of respective member countries for facilitating the clearance of proposed programs at the programming committee. While anticipating the participation of good number of GB members in future GB meetings, on behalf of the Secretary General, he thanked the GB members for their valuable guidance in carrying the SAC activities.

Dr. Abul Kalam Azad, Executive Chairman, BARC appreciated SAC for undertaking a number of diverse programs addressing the emerging challenges in the region. Further, he pointed out the importance of implementation of regional adaptive trails which impart the tangible outcome for development of agriculture. He requested SAC to take up such action research which can be implemented with farmer's participation in respective Member States.

Mr. Mohammad Moinuddin Abdullah, Secretary, Ministry of Agriculture, Bangladesh extended warm welcome to all the distinguished members of the SAC Governing Board and wished them a very successful meeting. He referred to speech made by Her Excellency Sheikh Hasina, Honourable Prime Minister, Government of the People's Republic of Bangladesh at the 3rd meeting of the SAARC Agriculture Ministers held in Dhaka on 7 April 2016 regarding the importance of joint initiatives of SAARC Member States to eradicate poverty and hunger from the region. He appreciated that SAC has broadened its capabilities by working in partnership and collaboration with international and regional organizations. He believed that suggestions and recommendations arrived at this important meeting would greatly help SAC in designing need-based and demand driven programmes which would contribute in fulfilling the objectives of the Centre.

Dr. Md. Kabir Ikramul Haque, Chairman of the GB of SAC stated that over the years SAC has evolved as one of the vibrant

regional institution and most successful regional platform. He mentioned that in the recent past the formal collaboration with IRRI, ICRISAT, International Sericulture Commission, and World Agroforestry Centre further provides SAC for new windows to gear up regional program. The SAC will needs immense support to initiate and implement the programs, he urged. He assured that SAC-GB will support the centre in developing need-based programs and implementing them in the true spirit of SAARC to benefit all the farming families of the region

Important Recommendations of 10th GB meeting 2016

1. In the light of the Dhaka statement on Agriculture and Rural Development emanating from the 3rd SAARC Agriculture Ministers' Meeting held on 7 April 2016 in Dhaka, the 10th SAC-GB unanimously approved the proposed programs. The Meeting urged the SAC to ensure implementation of the program which are time-befitting and impact oriented action research.
2. The meeting agreed that the concerned SAC-GB Members will closely coordinate with the respective national focal points for SAARC (Ministry of Foreign / External Affairs) in respective member states to facilitate the approval of SAC programs for 2017 at the Programming Committee Meeting
3. The meeting directed SAC to initiate programs that are time-befitting integrating grass root level extension workers and farmers to reach out and generate wider visibility of SAC programs. In this respect board recommended that SAC should carry out need based action research programs as reflected in Dhaka statement issued at the 3rd Agriculture Ministers Meeting
4. There were nineteen (19) regular programs and twenty nine (29) need based programs proposed by the centre and subsequently approved by the GB meeting and finally recommended for the approval of Programming Committee Meeting.
5. The GB meeting of SAC well recognized the effort of SAC to establish linkages with international organizations and specialized bodies as recommended by the 3rd SAARC Agricultural Ministers' Meeting. The GB approved the SAC to initiate collaboration and establishing MoU with different development partners in line with the approved programs:

Regional Training on Advances in Animal Reproductive Biotechnology

Biotechnology is being harnessed in various aspects of the livestock production system to hasten breed development for improved animal health and welfare, enhanced reproduction, and improved nutritional quality and safety of animal-derived foods. Various techniques have been developed and refined to obtain a large number of

offspring from genetically superior animals or obtain offspring from infertile (or sub fertile) animals. These techniques include: artificial insemination, cryopreservation (freezing) of gametes or embryos, induction of multiple ovulations, embryo transfer, in vitro fertilization, sex determination of sperm or embryos, nuclear transfer, cloning, etc. To take full advantage of the benefits of assisted reproductive technologies, one must understand the basic physiology of the female and male reproductive systems as well as various methods to synchronize reproductive cycles. This will improve the health and genetics of livestock animals. Specifically, better treatment regimens are needed to induce estrous cycles in anestrus (not cycling) beef cows, synchronize the time of ovulation in lactating dairy cows, and accurately time insemination with ovulation when estrus is not detected in animals.

South Asia is blessed with high diversity of animal genetic resources. South Asia is home for about 745 million of dairy animal populations that accounts 21% of global dairy animals. About 25% of world's cattle and buffaloes, 15% of the sheep and goat, and 7% of the camel are inhabitant in SAARC region. Livestock has been playing an important sector for employment generation and livelihood improvement in south Asian countries since time immemorial. The contribution of livestock in agricultural GDP in South Asia varies from 8-56%. In this region, India and Pakistan are rich in good quality elite germplasm and quantity of livestock population. The ancient civilization of mohenjo daro and harappa is witnessed the genesis of many high quality livestock resources like Red Sindhi, Sahiwal, Nili Ravi and Murrah in this region. The customs and culture of the region are very much congenial for livestock farming. The major challenges of the livestock in the region are low productivity as well as outbreak of diseases. Biotechnology is one of the important tools to combat the threats and challenges of livestock. The application of biotechnology is the demand of time to enhance the productivity of the farm animals.

SAARC Agriculture Centre (SAC), Dhaka, Bangladesh in collaboration with ICAR-National Dairy Research Institute (ICAR-NDRI), India organized a six days regional training program at NDRI, Karnal, Haryana, India from 25-30 July 2016. A total of twenty participants from six member states namely



Inaugural Function of the Training Program

Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka were attended the training program. An inaugural ceremony was held at the conference room of NDRI with the presence of higher dignitaries and officials. Dr. A. K. Gahlot, Vice Chancellor, Rajasthan University of Veterinary and Animal Sciences, India graced the occasion as the chief guest while Dr. Md. Nure Alam Siddiky, Senior Program Officer, SAARC Agriculture Centre, Dhaka,

Bangladesh was present as the guest of honour. Dr. A. K. Srivastava, Director, National Dairy Research Institute, Karnal, India chaired the inaugural function. The inaugural function was also graced by Dr. R.R.B. Singh, Joint Director (Academic) and Dr. R. K. Malik, Joint Director (Research) of the institute. Dr. T. K. Datta, Course Coordinator and Dr. Rakesh Kumar, Course Joint-Coordinator, National Dairy Research Institute, Karnal, India were also present in the dais.

The training encompasses theoretical as well as practical hands on practices for various cross cutting issues of animal biotechnology. The training covered the following topics

- Oocyte aspiration, in-vitro maturation (IVM), oocyte genomics
- Production, establishment and characterization of embryonic stem cells
- Bioinformatics, RNA isolation and cDNA preparation, RT-PCR assay
- Progeny testing programme, postpartum uterine infection and impaired ovarian function
- In vitro produced embryo evaluation
- Endocrinology, estrus behaviour, oocyte competence and follicular fluid proteomics in repeat breeder cows
- Testicular fine needle aspiration cytology and semen proteomics for development of bull fertility prediction tools
- Gene cloning, generating a big phenomics data set: stepping stone for genomics selection
- Competent cell preparation, transformation and transgenesis in animals
- Understanding high throughput gene expression profile by DNA microarray and NGS approaches
- Ultrasonography in large animals
- Mass spectroscopy, early pregnancy diagnosis and proteomic approach
- Hand guided cloning, genetic defects in males and embryo transfer technique
- Genomic selection and sperm sexing



Regional Training on Climate Change Impact on Soil Carbon Storage, Turnover Under Different Land Use Systems and Adaptation Strategies

SAARC Regional training on “Climate change impact on soil carbon storage, turnover under different land use systems and adaptation strategies” was held at Indian Institute of Soil Science, ICAR, Bhopal, India during 16-23 August 2016. The training was jointly organized by SAARC Agriculture Centre, Dhaka, Bangladesh, Indian Institute of Soil Science, ICAR, Bhopal, India and ASP (FAO-RAP). A total of 14 participants from 6 Member States namely Bangladesh, Bhutan, India, Maldives, Pakistan, and Sri Lanka were attended the training program. Dr. S. M. Bokhtiar, Director, SAC inaugurated the training program.

Earth’s steadily rising temperatures are the result of the build-up of greenhouse gases, such as carbon dioxide, in the planet’s atmosphere. These gases cause the atmosphere to warm, and a large chunk of that warmth is absorbed by the world’s oceans. The rise in temperature has been accompanied by increased frequency of droughts, floods, cyclones and heat-waves.

Agricultural impacts of climate change will manifest in terms of changes in land and water resources, insect pest populations, diseases, etc. which ultimately translate into a change in productivity and profitability of agriculture. Consequences of climate change are likely to be more severe for developing countries because of their heavy dependence on agriculture and ecosystems, rapid population growth, and low health levels.

To capitalize on the beneficial management practices (BMP) and mitigation of greenhouse gas emissions in the agriculture, there is a need to enhance knowledge and capacity on carbon management and accounting at all levels. Therefore, there is a need to enhance understanding and strengthening national capacity to implement BMP and take advantage of the investment and carbon trading. The objectives of the training were:

Objectives :

- I. To develop skill of researchers to study and better understand the impact of climate change of soil carbon sequestration;
- II. To facilitate better understanding and appreciation of soil carbon sequestration in different agricultural land use systems for developing adaptation strategies;
- III. To develop concept for regional project on identifying best practices on soil carbon storage and turnover under different land use systems;

The training covered the following topics:

A. Theory

- Climate change and GHGs – overview and general principles
- GHGs and Agricultural mitigation-overall perspective

- Elevated atmospheric CO₂ and temperature: indirect effects on soil processes
- Carbon sequestration in soil across agro-ecosystems of India and issue of permanence
- Impact of elevated CO₂ and temperature on crop ET and plant water productivity
- Soil carbon sequestration mechanisms and concepts of SOC stabilization and saturation
- Potentials and prospects of biochar in sequestering soil carbon
- Temperature dependence of soil organic matter decomposition and the effect of global warming on soil organic storage
- An overview of use of stable isotopes in soil organic carbon turnover and soil carbon priming studies
- Application of Century soil carbon model to predict Soil organic carbon
- B. Practical**
 - Field procedures and sampling for soil carbon determination
 - Estimation of soil C stock and C sequestration
 - Greenhouse gas sampling methodology in field
 - Greenhouse gas measurement in Gas chromatograph
 - Physical fraction of soil organic matter (POM-C)
 - Analytical procedure and methodology for measuring chemical fraction of soil organic carbon pools
 - Hands on soil carbon mineralization studies in laboratory
 - Farmer field visit to see diversity of landuse and adaptation strategies



Participants Attending Training Program

Regional Training on “Herd Health Management of Dairy Buffalo: Nutrition, Breeding, Reproduction Disease Management and Record Keeping”

Buffalo is considered the dairy animals for 21st century for its higher productivity as well as wider range of adaptability in the changing climatic conditions. South Asian countries are blessed with buffalo diversity and buffalo farming is becoming popular day by day. Most of the South Asian countries are not self sufficient in its dairy production. Yet it is witnessed that India, Pakistan and Nepal have a large population of dairy buffaloes and their productivity is also promising. Buffalo contributed more than 50 percent of total milk production in India, Nepal and Pakistan while the share of buffalo milk is very minimal in Bangladesh, Bhutan and Sri Lanka. So, to promote modern buffalo farming is a demand of time to achieve self sufficiency in milk production. Murrah and Nili Ravi are the superior dairy buffalo breeds in the region for their higher productivity and wider distribution.

The herd health management of buffalo is very much important to maximize higher productivity. Disease management, reproductive intervention and proper nutrition are crucial for beneficial buffalo farming. The success of buffalo husbandry lies in optimal reproductive rhythm as well as disease control of animals round the year. Reproductive function may be affected by the poor management, disease and genetic constituent of the animal. Although much advancement have been made in controlling reproductive diseases in cattle and buffaloes, serious losses are still going on and as such infertility remains a major economic problem and its incidence appears to be rising. The farmers and extension personnel appear lack of skills and knowledge in improved buffalo breeding and husbandry practices. This training imparted to the professionals on buffalo breeding and improved buffalo husbandry practices.

SAARC Agriculture Centre (SAC), Dhaka, Bangladesh in collaboration with ICAR- Central Institute for Research on Buffaloes (CIRB), Hisar, Haryana, India organized a six days regional training program at CIRB, Hisar, Haryana, India from 22-27 August 2016. A total of seventeen participants from five member states namely Bangladesh, India, Nepal, Pakistan and Sri Lanka attended the training program. An inaugural ceremony was held at the conference room of CIRB with the grace of higher dignitaries and officials. Dr. Trilochan Mohapatra, Secretary, Department of Agricultural Research and Education (DARE) as well as Director General, Indian Council of Agricultural Research (ICAR), Govt. of India graced the occasion as the chief guest while Dr. H. Rahman, Deputy Director General of ICAR was the special guest. Alongside Dr. Md. Nure Alam Siddiky, Senior Program Officer, SAARC Agriculture Centre, Dhaka, Bangladesh was also present as the guest of honour. Dr. Inderjeet Singh, Director, Central Institute for Research on Buffaloes, Hisar, India chaired the inaugural function. The scientists and faculty of the institute were



present in the inaugural function. A formal valedictory session was held with the gracious presence of Dr. S. M. Bokhtiar, Director, SAARC Agriculture Centre as the chief guest.

The training encompasses theoretical as well as practical hands on practices for various cross cutting issues of modern buffalo farming. The training

covered the following topics:

- Performance recording in the field for enhancing the productivity of dairy buffaloes
- Molecular and genomic selection tools for superior buffaloes
- Selection and genetic improvement of dairy buffaloes
- Digital imaging for buffalo performance evaluation
- Buffalo herd management and farm records
- Nutrient requirement and feeding of buffaloes at different stages of life
- Assessment of nutritional quality of ruminant feeds
- Fodder resource management for round the year green fodder supply including silage making
- Micronutrients supplementation during different life stages of buffalo
- Ultrasonography in the management of buffalo reproduction
- Application of oestrus induction and synchronization protocols in buffalo
- Methods of early pregnancy diagnosis in dairy animals
- Seasonality of reproduction in buffalo and strategies for round the year breeding
- Infectious diseases affecting buffalo reproduction with their diagnosis, control and prevention
- Frozen semen production and bull management
- Stress management through housing and nutrition in buffalo dairy farm
- Vaccination, deworming, herd health management and emergency care
- Udder hygiene, health monitoring, prevention of mastitis and therapeutics
- Clean milk production, milking techniques and induced lactation in dairy animals

Agro-processing as a Key Component of Rural Mass Employment and Rural Development in SAARC Region

A regional expert consultation meeting on Agro-processing as a key component of rural mass employment and rural development in SAARC Region was held at Amrita School of Business, Amrita University, Coimbatore, Tamilnadu, India during 18-20 August 2016. SAARC Agriculture Centre (SAC) and Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP) in collaboration with Amrita University, Coimbatore organized the meeting. The Amrita University facilitated discussion, sharing of experiences and success stories on agro-processing as a key component in rural development models. The objectives of the meeting were

- (i) To assess the role of agro-processing as a key component of rural mass employment and development models, and
- (ii) To establish a shared framework of rural development through small scale agro-business focusing on value chain development.

The meeting was attended by 7 SAARC Member States, except Pakistan. Three experts from Thailand, Malaysia and Indonesia also participated to share the South East Asian (SEA) regional experiences in rural development. Officials and professionals from SAC, CIRDAP and Amrita University also actively participated in the meeting.

Across the region and globe there are various successful sustainable models of rural development regime. For example 'Ekti Bari, Ekti Khamar' or (One house, one farm) of Bangladesh, "One geog one product" of Bhutan, "One village one product" of Nepal and "One village one product" of Pakistan, and many more can be a useful models to revisit and potentially pick the best elements and formulate models that can be sustainable rural development models. Within each model the value addition and agro-processing has become the most crucial step in promoting the rural employment, income and integration of rural economies to the mainstream supply chain.

Agro-processing technologies

The agro-processing is defined as the sector that processes raw materials and intermediate products derived from agriculture, fisheries and forestry. In turn, agro-industry forms part of the broader concept of agribusiness that includes suppliers of inputs to the agricultural, fisheries and forestry sectors and distributors of food and non-food outputs from agro-industry. As the production of agriculture produces is increasing rapidly, agro-processing has a tremendous scope in the region. Further agro-processing can also be a catalyst to the weak supply chain in the region and also for regional integration through trade and exchange of technologies.

In most countries traditional food processing technologies still persists. Some of the popular practices are pickling, drying, boiling, curing, and smoking of fruits and vegetable. With the

support of public sector in all the countries integrated fruit and vegetable processing has been promoted. Some of the popular agro-processing technologies include frying, drying, grinding, dehydration and fermentation process.

One of the strategies is to expand income generating opportunities by introducing appropriate agro-processing technologies which can help in value addition of the primary agricultural produces. In addition, to agro-processing can be reduced wastage, enhance food security, improve livelihoods for low-income groups and helps to empower women. The development of agro-industry can also fulfill the rising demand for agricultural products locally, regionally and globally as well.

Successful models of agro-processing for rural employment and rural development

The success of rural development initiative through any interventions would depend on the improvement of the living standards, productivity in rural areas and reduce poverty, participation in decision making, and opportunities in the society. It is evident from the successful models in the region that cooperative model is widely successful in the region. One-product one-village model has been reported as a successful model in Afghanistan and Nepal.

Successful models of agro-processing for rural employment and rural development in the Region:

Afghanistan	• Empowering rural women • One village, one production model
Bangladesh	• Production and marketing of tamarind and olive chutney • Agro processing preservation and marketing unit of rural development academy • Cooperative/group based agro processing entrepreneurship development
Bhutan	• Farmers' cooperative • Khengrig nyamsum cooperative
India	• APC on extraction of apricot kernel oil • Aloe vera processing unit by self help group of tribal population
Maldives	• Cooperative model • Funaadu development cooperative society (FDCS)
Nepal	• G.A. Gemanafushi cooperative society • Group approach and Cooperatives
Sri Lanka	• One village one product • Finger millet food promotion program • "Hela Bojun" local food promotion program

Challenges in development of agro-processing in rural areas

In South Asia, the variations in social, economic, technological, physical, and political often pose a serious challenge to most development efforts. The country papers present a series of challenges in development of agro-processing in rural areas. A sustainable agro-processing sector is one created by an abundance of quality raw

material supply, efficient processing unit, and sound market. There are several challenges that hinders development of agro-processing sector. For instance, in all the countries, low productivity, small volume of produce, quality and scattered production both in terms of location and season are major challenges in generating desired level of raw materials. It is also necessary to consider that the quality of final product is dependent on the raw material. In rural areas the agro-processing technologies are still limited to traditional and old technologies which also associated with the skill and knowledge. For any agro-processed products, linking to market and market information is a major concern in the region.

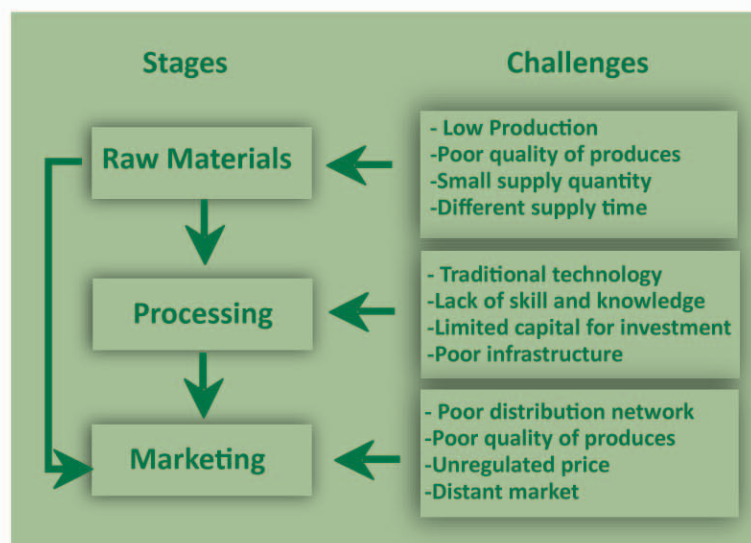


Figure. Challenges in development of agro-processing in South Asia

Way-forward

The meeting in Amrita University, Coimbatore identified actions in three areas of policy, research, extension and development as listed below:

Policy:

1. Harmonization of standards – (i) food safety of agro-processed products and (ii) agro-processing equipments
2. Regional cooperation on promotion of agro-processing for employment generation and livelihood enhancement
3. Set a target how to increase GDP from agro-processed products
4. Clearly identify the focus of Rural Development policy (grassroot economy or poverty alleviation).
5. Develop umbrella policy for agro-processing and rural development (in countries who do not have one)
6. Introduce seed money for agro-based MSEs/SMEs start-up and phased release of loan.
7. Membership with CIRDAP (Bhutan and Maldives) can avail support in Rural Development

Research:

1. Establish 1-2 technology incubation centres in all the SAARC Countries under the ICAR Program (SAC and ICAR)
2. Conduct review the research findings on agro-processing to identify the research gap
3. Agro-processing and product development research

need to be done at local level by educating and engaging the farmers

Extension and Development:

1. All agro processing skill development should be hands-on
2. Target the capacity development program to extension
3. Organize the SAARC Regional exposition on agro-processing technologies
4. Development extension and development centre for education, awareness, technology transfer and linkage with research, government and market.
5. Capacity development of researchers needs to be addressed
6. Develop knowledge portal on agro-processing (CIRDAP)
7. SAC will coordinate with CIRDAP and AU to develop idea and concept for Action Research to be discussed with CGIAR Centre for support.



Group Photo Session in the Inaugural Function



Director, SAC Conveying his Observation in the Technical Session



View of the Expert Consultation Meeting

Consultation Meeting on “Regional Coordinated Cotton Technology Exchange Program”

A regional expert consultation meeting on “Regional Coordinated Cotton Technology Exchange Program” was held at ICAR-Central Institute for Cotton Research, Nagpur, India during 29-31 August 2016. The meeting was jointly organized by SAARC Agriculture Centre (SAC), Dhaka Bangladesh and ICAR-Central Institute for Cotton Research (CICR), Nagpur, India. The meeting was attended by national focal persons from Afghanistan, Bangladesh, Bhutan, India, Nepal and Pakistan.

Dr. C. D. Mayee, Former Chairman, Agricultural Scientists Recruitment Board (ASRB), New Delhi was the chief guest in the inaugural session of the meeting. Dr. C. D. Mayee called upon for production and productivity technologies to the SAARC countries. He recalled the historical transitions in cotton cultivation patterns over decades and suggested three strategies for lint productivity enhancement in SAARC countries viz., a target cotton yield of 1000 kg per hectare, strong extension network for efficient technology transfer and better resource utilization. He also suggested SAARC countries to take advantage from the network of Indian Council of Agricultural Research (ICAR) institutes including CICR and All India Cotton Improvement Programme (AICCIP).

Dr. K. R. Kranthi, Director, CICR welcomed the participants who came from SAARC member states and different institutes of India. He briefed the importance of the meeting in different aspects covering cotton crop, textile industry and foreign exchange earnings. He also stressed the dynamic cotton cultivation patterns across the countries which affects the global trade through imports and exports. He explained the need of synchrony between crop management practices and critical stages of cotton crop. He strongly opined that there is tremendous scope to improve the yield levels of the cotton in SAARC region which can be achieved through narrowing the window period of flowering and fruiting and high density planting.

Dr. Tayan Raj Gurung, Senior Program Specialist, SAARC Agriculture Centre (SAC), Dhaka, Bangladesh explained the initiatives of SAARC Agriculture Centre as well as initiatives of Cotton program. He expressed his gratitude to Director General (ICAR), Director (CICR), Asian Cotton Research and Development Network (ACRDN) for facilitating the regional consultation meeting and ministries of the respective SAARC countries for nominating the participants. He opined that outcomes of the meeting in terms of policy and technology guidelines will keep consideration for further intervention. Ms.



Participants Discussing in the Technical Session

Fatema Nasrin Jahan, Senior Program Officer (NRM), SAC had a brief presentation about the activities of SAC. The participants were visited the Ginning Training Centre, Nagpur. The authority of the training centre demonstrated the technologies, the art ginning facilities and the means by which value could be added to the cotton stalk lying waste after harvest. Later the participants were visited to the Bagirathi Mills to

site a hands-on experience about the spinning technologies. The teams also visited the Institute farms and the HDPS fields of cotton MGIRI, Wardha.

The expert consultation meeting recommended the following areas for further intervention:

1. In biotic stress segment, the six member states put their four major priority area simultaneously and it shows that boll worm insect and cotton leaf curl virus are the main stress of this region.
2. In abiotic stresses area drought and salinity variety is the main problem. In case of production and post harvest problem variety scarcity takes the first place for all member states.
3. In case of policy related problem pricing is the main issue, then production cost, then credit and Human Resource Developments is the chronological issues of all Member States.
4. SAARC Varietal Adaptability Trials under the leading of Cotton Development Board, Bangladesh, all 6 Member States takes the participation in this program.
5. In country training (Afghanistan, Bhutan and Nepal) will be given by ICAR, India and CCRI, Pakistan.
6. Ex country training will be given by ICAR, India and CCRI, Pakistan for 6 countries.
7. For technology dissemination, SAC & CDB, Bangladesh will take necessary action.
8. Training: Areas for Training
 - i. Training on cotton production, & irrigation systems, lead by CCRI, Pakistan
 - ii. Training on cotton production, protection and improvement, lead by CICR, India
 - iii. Inter and intra specific hybridization lead by CCRI, Pakistan
 - iv. Training on crop protection lead by CICR, India and CCRI, Pakistan,
 - v. Training on post-harvest (Ginning etc.) leads by CICR, India

Memorandum of Understanding (MoU) between SAC and ICRISAT

On 23rd August 2016, The SAARC Agriculture Centre (SAC) and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) signed the MoU for reducing poverty, hunger, malnutrition and environmental degradation in the dryland tropics in South Asia. Dr David Bergvinson, DG, ICRISAT and Dr. S. M Bokhtiar, Director, SAC on behalf of their respective organization reiterated the need to integrate national, regional and global agricultural research agenda and build cooperation on synergies of institutions to enhance relevance, efficiency and out-reach.



Delightful Moment After Signing the MoU between SAC & ICRISAT

and raise income in areas of limited water;
e) Capacity building of SAC officials, and national scientists, trainers, extension workers and farmers in improved technologies; especially enhance capacity of agricultural service providers to support smallholder farmers in areas with limited water;

A. Areas of Collaboration

1. SAC and ICRISAT inspired by their common goals and objectives, hereby agree to envision a prosperous, food-secure and resilient dryland tropics that is capable of overcoming erratic rainfall, degraded soils and biodiversity, water scarcity, droughts, floods and very poor physical and social infrastructure in South Asia in order to enhance food and nutritional security as well as the livelihoods of the poor farmers through active participation in the following areas:
 - a) Undertaking joint study / research on topics of mutual interest by using /sharing the existing facilities and sharing the results reciprocally;
 - b) Facilitating exchange of information, experiences, views, experts between the Parties;
 - c) Facilitating policy changes in NARS to speed up the process of varietal release and dissemination in the region, These include:
 - o exchange of germplasm, breeding lines and released varieties for research purpose;
 - o sharing of advanced breeding materials, released varieties and technologies;
 - o joint evaluation and early release of varieties and seed multiplication in more than one country for similar agro-ecological conditions; and
 - o pre-release promotion (across countries) and seed multiplication.
 - d) Promotion and extension of improved technologies through SAARC resource mechanism and networking; new and improved production technologies developed and adopted by smallholder farmers in areas of limited water widespread adaptation and delivery of new and improved technologies to increase food production

- f) Exchange of scientific literature, information, material and methodologies on research and development generated through SAC in member countries; enhanced regional knowledge base, information sharing and policy development mechanisms;
- g) Joint organization of trainings, meetings, consultation, workshops etc.;
- h) Participation of officials/scientists in the training, meeting and workshop organize by ICRISAT and SAC;
- i) Regular review of the progress and recommendations for its improvement;
- j) Translation of scientific literature into local languages for better understanding of the information;
- k) Any other issue mutually agreed upon by both the Parties.

B. Contribution of the Parties

1. Contribution of ICRISAT:
 - a) Share released advanced breeding lines and varieties of pulses, oilseeds, cereals and cultivation technologies on dryland tropics generated through ICRISAT and NARS with SAC;
 - b) Share the data generated through NARS to facilitate varietal release and dissemination;
 - c) Facilitate exposure visits for SAC officials and scientists from SAARC member countries on new agricultural technologies of pulses, oilseeds, cereals and dryland tropics useful to the farmers of the SAARC region;
 - d) Develop capacity of SAC officials and scientist from SAARC member countries by facilitating participation in different training, workshop, seminars organized by ICRISAT;
 - e) Develop and implement projects jointly for SAARC member countries;
 - f) Provide technical assistance and resource persons for the training of SAC officials and scientists in SAARC countries;
 - g) Exchange information on the latest production technologies and dryland tropics and package of practices;

Memorandum of Understanding (MoU) between SAC and ICRISAT

From page no. 9

2. Contribution of SAC:

- a) Share SAARC network for variety evaluation and dissemination in the member countries and data generated there from;
- b) Coordinate to promote the release of varieties across the countries depending on their agro-climatic conditions;
- c) Assist in impact assessment of technology;
- d) Nominate officials for the exposure visit and training organized by ICRISAT with the help of the national system; and
- e) Help in establishing linkages with the governments of member countries for implementation and facilitation of the program.

C. Expected Outcome:

- a) Network developed for promoting pulses, oilseeds, cereals production and dryland tropics adaptation technologies in South Asia;
- b) Accelerated technologies of pulses, oilseeds, cereals as well as functioning in the dryland tropics;
- c) Capacity developed for overcoming the daunting challenges of the dryland tropics and agricultural research & development in South Asia;
- d) Right technologies adopted for maximizing production in the dryland areas by the farmers;
- e) Enhanced and sustained productivity in stress prone areas; and
- f) Enhanced livelihood of rural poor through inclusive market-oriented development: food sufficiency, intensification, diversification, resilience, health and nutrition and empowerment of women in South Asia.

New Professional Joined at SAC



Dr. Pradyumna Raj Pandey has been joined in SAC as the Senior Program Specialist (Crops) on 28 September 2016. Prior joining here, he was the Senior Agricultural Economist and Chief of International Trade Promotion Section, Food Security,

Agri-Business Promotion and Environment Division, Ministry of Agricultural Development (MoAD), Kathmandu, Nepal. He awarded Ph.D from United Graduate School of Agricultural Sciences, Tokyo University of Agriculture and Technology, Tokyo, Japan. He awarded MSc in Agriculture from Graduate School of Agriculture, Ibaraki University, Ibaraki, Japan. Besides that he has done Master's of Arts (MA) in Rural Sociology from Tribhuvan University, Kathmandu, Nepal. He did his Bachelor of Science in Agriculture from Institute of Agriculture and Animal Science (IAAS), Tribhuvan University, Chitwan, Nepal. He published a good numbers of research and review articles in different national and international reputed journal. In his professional career, he worked in diverse area under Department of Irrigation and Ministry of Agricultural Development in Nepal.

Call for Papers

SAARC Journal of Agriculture

SAARC Agriculture Centre invites research and review papers to be published in the SAARC Journal of Agriculture (SJA). It is half yearly journal, i.e. two issues in a year, first issue in June and second in December of each year.

SAARC Journal of Agriculture is a half yearly peer-reviewed and open access online journal that publishes original research articles, review papers and short communications in the fields of agriculture, animal sciences, fisheries, natural resources management and allied disciplines. It is an official journal of SAARC Agriculture Centre (SAC). The scientists and researchers from SAARC countries are encouraged to submit their research and review papers for publishing in this journal.

Authors are requested to submit their manuscript to managing editor through electronic submission process via email- saarcjournal@yahoo.com. Author guidelines and other relevant information are available in the web link of <http://www.banglajol.info/index.php/SJA/index>.

Contribute to



SAARC AgriNews is a widely circulated Newsletter devoted for disseminating agricultural research and development findings as well as information on applied technology for the farmers of South Asian countries.

Please send your articles, success stories and news on applied research, extension activities, proceedings or recommendations of seminars, symposium, consultations and workshops in the field of agriculture with relevant photographs by post or through **E-mail: director@sac.org.bd**. Please note that unaccepted articles are not returned to the authors.

Memorandum of Understanding (MoU) between SAC and ISC

On 25th August 2016, The SAARC Agriculture Centre (SAC) and International Sericultural Commission signed the MoU in the pursuit of developing sericulture and silk industry in SAARC region.

A. Areas of Collaboration

Promote the development of regional cooperation in the fields of research and training related to the improvement of production techniques and extension of silk and thereof in South Asia region through:

- a) Undertaking joint study/research on topics of mutual interest through using /sharing the existing facilities and sharing of the results reciprocally.
- b) Facilitating exchange of information, experiences, views, experts between the Parties.
- c) Facilitating policy changes in NARS to speed up the process of technology release and dissemination in the region, the issues like:
 - o exchange of germplasm, breeding lines and released varieties for research purpose;
 - o sharing of advanced breeding materials, released varieties and technologies;
 - o joint evaluation and early release of varieties and seed multiplication in more than one country for similar agro-ecological conditions;
 - o pre-release promotion (across countries) and seed multiplication;
- d) Promotion and extension of improved technologies through SAARC mechanism and networking;
- e) Training of SAC officials, and national scientists, trainers, extension workers, farmer groups and entrepreneur in improved technologies;
- f) Exchange of scientific literature, information, material and methodologies on research and development generated through ISC and NARS through SAC in member countries;
- g) Joint organization of trainings, meetings, workshops;
- h) Participation of officials/scientists in the training, meeting and workshop organized by ISC and SAC;
- i) Regular review of the progress and recommendations for the improvement, thereof
- j) Translation of scientific literature into local languages for better understanding of the information;
- k) Any other issue mutually agreed upon by both the parties



Signing of MoU between SAC & ISC

B. Contribution of the Parties
Subject to the execution of work plans specifying, among others, the research activities, scope of work, and funding, the parties' contribution to, and the expected output of, the collaborative activities may include the following:

1. Contribution of ISC

- a) Share the data generated through NARS system to facilitate the promotion of modern technologies;
- b) Organize exposure visits for officials of SAC and member countries on new sericulture technologies relevant to the region;
- c) Develop and take up joint-projects particularly multi-country projects in the region.
- d) Provide technical assistance and resource persons for the training of SAC scientists;
- e) Exchange information on the latest production technologies and package of practices;
- f) Conduct seminars, symposia and workshops.

2. Contribution of SAC

- a) Share SAARC network for technology evaluation and dissemination in the member countries and data generated thereof;
- b) Coordinate to promote the release of varieties across the countries depending on their agro-climatic conditions;
- c) Assist in impact assessment of technology;
- d) Nomination of officials for the exposure visit and training organized by ISC, with the help of national system;
- e) Help in establishing linkages with the governments of member countries for implementation and facilitation of the program, and
- f) Support the ISC for the enrollment of countries in SAARC region as Member Countries of ISC.

3. Expected Output

- a) Network for sericulture research and development in SAARC region;
- b) Accelerated diffusion of sericultural technologies;
- c) Maximized targeting of farmers in the shortest possible time;
- d) Enhanced silk productivity and production in the region;
- e) Enhance the livelihood of rural poor through development and dissemination of sericulture technologies.

Orientation Workshop on SAARC Food Bank Information System (SFBIS)



Additional Secretary, Ministry of Agriculture Inaugurating the SFBIS Orientation Program

The Fourteenth Summit meeting of the South Asian Association for Regional Cooperation (SAARC) held in New Delhi, India during April 3-4, 2007, agreed to signing of the Intergovernmental Agreement establishing the SAARC Food Bank with the participation of all the SAARC countries, in order to manage emergencies caused by natural and man made calamities and food shortages.

- To act as a regional food security reserve for the SAARC Member Countries during normal time food shortages and emergencies and
- To provide regional support to national food security efforts; foster inter country partnership and regional integration, and solve regional food shortage through collective action.

SAC over the years collated information on food stock of rice and wheat in Member States updated during the Board meeting. In the 7th Meeting of the SAARC Food Bank, SAC was assigned to develop password protected online interactive database system for the SFB to facilitate data inputting at the source (Member States). SAC prepared the framework and contracted a local firm to develop the web-based database. The prototype was presented in the 8th Meeting of the SAARC Food Bank Board in Male. The meeting recommended to SAC to organize an orientation workshop to familiarize the database and operationalize thereafter.

SAC organized the orientation program during 8-11



Secretary, Ministry of Food making his closing remarks and launching the SFBIS website

August 2016 in SAC with the objective to orient the officials on the password protected interactive online SAARC Food Bank Information System (Database structure, database management, trouble shooting). The orientation program was participated by 12 participants from SAARC Member States (2 from Bangladesh, 2 from Bhutan, 2 from India, 2 from Nepal, 1 from Maldives, 1 from Pakistan and 2 from Sri Lanka). In addition 3

officials from SAARC also participated in the program. The program was inaugurated by the Mr. Mohammad Nazmul Islam, Additional Secretary, Ministry of Agriculture, Government of Bangladesh who highlighted the need of reliable and timely data on food situation in the region to rapidly support disaster or food shortage situation. Mr. Tareq Ahmed, Director General (SAARC & BIMSTEC), Ministry of Foreign Affairs, Bangladesh graced the inauguration session as special guest who reiterated the relevance of food information system in the present situation where all countries are interconnected and disasters are so frequent needs support of each other in recovery. Dr. Abul Kalam Azad, Executive Chairman of BARC as the chairperson of the inaugural session expressed his appreciation to all the guests and participants attending the program.

Mr. A. M. Badrudduja, Secretary, Ministry of Food, Government of Bangladesh formally launched the SAARC Food Bank Information Systems site on the 11th August 2016 during the closing of the orientation program.