Leading agriculture organizations from Africa and Asia have joined hands to take on a bold initiative to create a big new industry, with the intent of bringing some Smart Foods back on the plate as major staples. Targeting staples lays the foundation to generate major impacts on health and the agri-food system. The inaugural meeting and signing of agreements by the largest agriculture associations in Africa and Asia took place on 13th January, 2019.

This culminated in the formation of the Smart Food Executive Council led by - the Asia-Pacific Association of Agricultural Research Institutions (APAARI), Forum for Agricultural Research in Africa (FARA), West and Central African Council for Agricultural Research and Development (CORAF), Food Agriculture and Natural Resources Policy Analysis Network (FANRPAN), along with ICRISAT which set in motion the Smart Food initiative in 2013.

This partnership is part of a new effort to make a major contribution to the Sustainable Development Goals (SDGs). The approach is to focus on diversifying staples. Given that staples may typically constitute 70% of a meal and are often eaten three times a day, diversifying them can have a pronounced impact on overcoming malnutrition and poverty and coping with climate change and environmental degradation. This will contribute to the SDGs for overcoming poverty and hunger (SDG 1 and 2), responsible consumption and production (SDG 12), along with adaptation to climate change (Goal 13). The approach taken will include gender equality (SDG 5) and action through partnerships (SDG 17).

**Insights from the Smart Food Executive Council members:**

“I see how we can make Smart Food a household name. We need to link and synergize other existing programs along the whole value chain. Capacity building will be one opportunity especially in taking a holistic Smart Food approach where issues around nutrition/health, environment and farmer welfare can be tackled.”

– Dr Ravi Khetarpal, Executive Secretary, APAARI

“We see history unfolding before us as this is how big things emerge. Smart Food resonates with the desire to see the power of science translate into reality. I am happy that Smart Food is now institutionalized. FARA is excited to cooperate in this partnership and hold this partnership responsible for the success.”

– Dr Yemi Akinbamijo, Executive Director, FARA

“This approach is a fitting response to today’s major global issues. We want to add to the big crops; not displace them. Moving from the Big 3 staples (rice, wheat and maize) to having more, the Big 5 and later the Big 7, is an important aim. Now we have to go from a pitch to reality. Key to this are the nutrition and climate change adaptation needs and this is core to Smart Food. Smart Food crops have been neglected for reasons other than value as they are inherently nutritious and adaptable to diverse farming systems. We need to promote these inherent values.”

– Dr Abdulai Jalloh, Director of Research and Innovation, CORAF

“Smart Food is a noble and novel idea and well thought through. The major staples did not get to where they are by accident. There are benefits and financial viability, but this viability varied for different value chain players. We need to learn from these successes and ensure financial sustainability. Engaging with large players is a part of making this come to reality to ensure benefits to smallholder farmers and the environment.”

– Mr William Asiko, Board member, FANRPAN

“This new partnership strengthens collaborations between Asia and Africa and can open up opportunities to join forces at any point along the value chain, from consumers through to processors, chefs through to farmers, researchers and others.”

– Dr Peter Carberry, Director General, ICRISAT
Extended partnership to deliver high-yielding, disease-resistant finger millet to farmers

Farmers harvest finger millet in Busia County, Kenya.

Farmers can soon access finger millet varieties that not only withstand drought but are also resistant to parasites and diseases. This is due to the boost received from a finger millet Crop Wild Relatives (CWR) pre-breeding project led by ICRISAT and funded by the Crop Trust which ensures funding until 2020.

Finger millet is highly valued for its nutritional qualities and recognized as a Smart Food, yet its production remains below its potential. Farmers claim that the two key constraints to increased production are the blast disease and a parasitic weed called Striga. “Blast is the most destructive disease of finger millet,” said Dr Henry Ojulong, a cereals breeder at ICRISAT. “Blast can occur at all stages of plant growth and can affect the leaves, neck, and fingers.” In Kenya, blast can cause an estimated average yield loss of about 30%. Similarly, Striga, a sap-sucking weed, can lead to a complete loss of crops and once it’s in a farmer’s field, it is nearly impossible to eradicate.

“This project involves working with crop wild relatives of finger millet since some of those have developed tolerance to either blast or Striga,” reported ICRISAT’s Dr Damaris Odeny, who is the principal investigator of the five-year CWR finger millet pre-breeding project.

“We are delighted with the progress shown by the team during Phase 1,” said Dr Benjamin Kilian, the Crop Wild Relatives Pre-breeding Project Coordinator. “Thanks to the support from the Government of Norway we will be supporting the project further. Our goal is to raise finger millet production by providing farmers with access to varieties that not only withstand drought but are also resistant to blast and Striga.”

The team started by collecting wild finger millet samples and screening them for resistance to blast and Striga. “We used wild relatives of finger millet because we observed that some of them growing alongside cultivated finger millet on farmers’ fields were not affected by either Striga or blast disease,” explained Dr Odeny. The wild types, however, lack many traits that cultivated varieties may have, such as grain size and color, early maturation or high yield.

During the first phase of the CWR project, the team, which included researchers not only from ICRISAT but also from the Kenya Agricultural and Livestock Research Organization (KALRO) – Kisii Center and Maseno University, was successful in identifying wild finger millet samples showing resistance to Striga and blast disease as well as drought tolerance. The team also identified finger millet qualities preferred by farmers and consumers so that the project would ensure that new varieties maintained these qualities.

“In Phase 2 of the project (2018 - 20) we will now introduce these unique characteristics into cultivated varieties with the support of the Crop Trust,” said Dr Odeny. The team will work towards releasing farmer-preferred varieties that have been improved using the superior traits from wild finger millets.

Crop improvement work of finger millet is important due to the millet’s high nutritional and health qualities. The high levels of calcium, iron and amino acids in finger millet make it exceptionally nutritious. It is an ideal food for diabetics since it has high amounts of slowly digestible starch and resistant starch that contribute to a slow release of sugar into the bloodstream.
Collaborating to innovate for India’s agriculture research: ICAR – ICRISAT finalize 5-year action plan

Improved crops, nutrition-sensitive agriculture on the cards

A five-year plan for Indian agricultural research was finalized with the signing of a Memorandum of Agreement (MoA) between one of the largest national agricultural research, education and extension systems in the world, the Indian Council of Agricultural Research (ICAR), and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). This plan will focus on technologies especially suited to harsh conditions of the drylands, covering grain legumes and dryland cereals – groundnut, chickpea, pigeonpea, finger and pearl millet and sorghum.

The MoA representing action plans for 2019 to 2023 was signed by Dr Trilochan Mohapatra, Secretary, Department of Agricultural Research and Education, and Director General, ICAR, and Dr Peter Carberry, Director General of ICRISAT.

The DGs of both organizations highlighted the long-standing partnerships between ICRISAT and ICAR and emphasized convergence on mutually enriching collaborations to evolve, lead and innovate in agricultural technologies. “I value the ICAR-ICRISAT partnership greatly in the interest of farming communities of India,” said Dr Mohapatra, adding that this would help adapt to the changing agriculture landscape in India as well as contribute towards the country priority of doubling farmers’ income.

Speaking on the partnership, Dr Carberry said, “This is a significant event for our work in India. Our science teams in ICRISAT have worked hard to develop these plans with support from ICAR partners. These collaborations are critical to deliver on our mission to improve livelihoods of millions of smallholder farmers across Asian and African drylands”.

The two organizations work together towards creative disruptions by thinking outside the box of existing paradigms. This requires maximizing impact of existing technologies and generating new ones to increase efficiency of dryland agriculture production systems. Key projects include – improved crop varieties, new breeding and enabling technologies, and systems and modeling tools for better farm systems and nutrition-sensitive agriculture value chains.

ICRISAT and ICAR have a long-standing partnership of several decades, collaborating on agriculture research agenda. The science at ICRISAT is guided by the needs and priorities of the country, that is set by the national agriculture research program. ■
Sehgal Foundation is aligning some big initiatives with the Smart Food Endowment Fund to help create a bigger movement. This will bring more attention to Smart Foods like millet, sorghum and grain legumes.

Sehgal Foundation started 20 years ago, and its current mantra “Together we empower rural India,” will further be enforced with this new partnership. Dr Surinder (Suri) M Sehgal, Founder, with his wife Edda and Chair of the Sehgal Foundation Board of Trustees, highlighted that, “Through collaborations we can do more and bring more attention to the needs of smallholder farmers and make agriculture more profitable and desirable to grow foods that are more nutritious and more suitable to the drier, tougher regions.”

Sehgal Foundation signed an agreement with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) for their joint endowment fund to become a component of the Smart Food Endowment Fund that was established in April 2018. This will take the total funds to US$6 million.

“Our aim is to grow the Fund by attracting additional investments to create a significant endowment as long-term commitment toward developing the value chains of Smart Food. Such investments are vital at a time when food insecurity, malnutrition, obesity, diabetes and iron deficiency anemia are impeding good health and livelihoods of millions of people globally. ICRISAT has had decades of collaboration with the Sehgal Foundation and is pleased to take this partnership to another level,” said Dr Peter Carberry, Director General, ICRISAT.

ICRISAT launched a Smart Food initiative in 2013 that stemmed from the strategic thinking around the need for food that fulfils the criteria of being good for the consumer (nutritious and healthy), good for the planet (environmentally sustainable) and good for the farmer (profitable and lower risk). A major objective under the initiative is to diversify staples that can have a strong and durable impact on nutrition, the environment and farmer welfare. Millets, because of their higher iron, calcium and overall mineral content compared to wheat and rice, have the potential to help address malnutrition problems in India, other parts of Asia and Africa.

“Addressing nutrition security and sustainable diets is key to solving some of the biggest global issues like hidden hunger and rural poverty. We are pleased with the Smart Food Initiative of ICRISAT; this effort will help to achieve a turnaround in environmental degradation and diversify food systems,” said Dr Sehgal.

Ms Joanna Kane-Potaka, Assistant Director General-External Relations, ICRISAT, and Smart Food Executive Director, explains, “Given that staples across Asia and Africa can be about 70% of a meal, and often consumed in a refined form, this may result in little nutrition being available. However, the major staples have well-developed value chains and are well supported. As a result, farmers have the incentive to grow these crops in agro-ecologies not suitable for their production, further straining the environment. The Smart Food approach is to start with driving consumer demand to diversify staples with nutritious alternatives like millets, and work along the whole value chain, while making efforts to ensure that farmers benefit.”
Collaboration to introduce new varieties and technologies to farmers in western India

MoU signed between ICRISAT and Agricultural Development Trust-Baramati

A ‘live’ agriculture expo provided the perfect venue for an MoU signing to introduce new technologies for farmers in Maharashtra, in western India. The technologies will help move towards doubling farmers’ incomes as part of India’s ‘Mission 2022’. The MoU was signed between Agricultural Development Trust (ADT)-Baramati and ICRISAT. Farmers, national and state government officials and political leaders attended the event.

The technologies in pigeonpea as well as intercropping of pigeonpea with sugarcane, hold promise for better incomes and nutritious crops. Mr Sharad Pawar, Member of Parliament, Rajya Sabha, (India’s Upper House) and President, ADT-Baramati, assured ICRISAT of ADT’s support in introducing innovations to farmers in India and appreciated the organization’s contribution to agriculture worldwide. Dr Peter Carberry, Director General, ICRISAT, said that he was looking forward to this collaboration where new varieties and technologies introduced to farmers’ fields would benefit them. For her work in the region, Dr Anupama Hingane, Scientist - Pigeonpea Breeding, Crop Improvement Asia Program, ICRISAT, received special mention.

In view of ‘Mission 2022’ for doubling farmers’ income, ADT’s Krishi Vigyan Kendra organized the 4th edition of its annual exhibition “Krushik-2019” from 17-20 January. Field demonstrations of crops (cereals, pulses, vegetables, fodder, horticulture crops, flowers, etc.), technology solutions, agricultural inputs, farm implements and machinery, irrigation demonstrations, and protected cultivation on 44 ha area were some of the attractions at the expo. Dr Carberry, who inaugurated the expo, said that farmers from Australia and Africa, who work in similar dryland conditions and face the same climate constraints, could benefit from visiting exhibitions like these.

Dignitaries who attended the expo include Ms Supriya Sule, Member of Parliament; Mr Rajendra Pawar, Chairman, Agriculture Development Trust, Baramati; Mr Burzis Taraporevala, CFO and Company Secretary, Tata Trust; Mr UD Shirsalkar, Chief General Manager, National Bank For Agriculture & Rural Development; Dr Lakhan Singh, Director, ICAR-Agricultural Technology Application Research Institute, Pune; senior officers from the Department of Agriculture, Mahatma Phule Krishi Vidyapeeth, Rahuri and trustees of ADT.

ICRISAT in partnership with Krishi Vigyan Kendra-Baramati is working towards –

- Developing technologies for intercropping of super-early pigeonpea with sugarcane. This research aims to find out if growing of pigeonpea (a leguminous crop) will reduce fertigation costs for sugarcane and provide farmers the additional benefit of growing a protein-rich crop like pigeonpea.
- Demonstrating hybrid pigeonpea technology to farmers.
Now, get critical seed data in one click

A modern digital seed ‘catalog’ and seed ‘roadmap’ tool is now available for information about the quality and availability of seeds in one click. This innovative tool will ultimately enable farmers in several African countries to access seed varietal information quickly and help them plan seed production over a long period. The online catalog provides information on all seed varieties available nationally and regionally over a long period.

In Asia and sub-Saharan Africa, smallholder farmers still face challenges in obtaining good quality seeds on time, mainly due to lack of access to information about them. To address this need, ICRISAT’s Digital Agriculture team, as part of the HOPE II and Tropical Legumes III projects, has created an online seed catalog and a digital seed roadmap tool. At the national level, seed roadmaps enable governments, small-scale seed producers and the private sector to plan, produce, monitor and provide quality seed to smallholders, no matter what the locality. Both the seed catalog and digital seed roadmap are now available to actors and stakeholders in the seed system.

However, no tool is effective until the stakeholders actively adopt it and use it as part of their regular tasks. With this in mind, ICRISAT, through the HOPE II and TL III projects, organized a series of workshops to demonstrate the use of the tool to various seed system stakeholders including NARS partners, extension workers, and staff of research institutes and seed companies. So far, these workshops have been conducted in Addis Ababa, Ethiopia; Kampala, Uganda; and Arusha, Tanzania. The fourth workshop was conducted in Bamako, Mali, during 11-12 December 2018, in order to better plan seed production in Mali.

“The common goal is access to quality seeds, in adequate quantity and in a timely manner by smallholders, which is important for the transformation of agriculture in Africa,” said Dr Aboubacar Touré, sorghum breeder, acting on behalf of Dr Ramadjita Tabo, ICRISAT Regional and Research Program Director for West and Central Africa.

Mr Satish Nagaraji, Senior Manager, Digital Agriculture (M&E & Tools), ICRISAT, and Mr Krishnam Raju, Keansa Solutions, introduced the participants to the basics of the online seed catalog, including changing the language of the tools (from English to French) for better management. They demonstrated how to update the seed catalog by adding newly registered varieties and varietal characteristics. “The online catalog is a memory bank for young researchers looking for characteristics of even old varieties,” said Mr Alfousseiny Maiga, a PhD student in plant breeding. “It allows us to focus our research as well,” he added.

In Mali, this online varietal catalog takes into account four main crops (sorghum, millet, groundnut and cowpea). By the end of the training session, registered information on

<table>
<thead>
<tr>
<th>Crops</th>
<th>Before training</th>
<th>During training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorghum</td>
<td>58</td>
<td>99</td>
</tr>
<tr>
<td>Millet</td>
<td>48</td>
<td>94</td>
</tr>
<tr>
<td>Groundnut</td>
<td>91</td>
<td>99</td>
</tr>
<tr>
<td>Cowpea</td>
<td>23</td>
<td>87</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
<td>95</td>
</tr>
</tbody>
</table>

“Data coverage (%) in the Mali seed catalog.”
these crops went from 55% to 95%. The percentages of sorghum and millet data covered in the seed catalog increased from 58% and 48% to 99% and 94%, respectively. Impressively, online data capture about cowpea went from 23% before the training to 87% after the training.

The workshop saw enthusiastic involvement from over 60 participants. After the hands-on training session on the use of the digital seed roadmap tool, many of them felt that the tool would be very useful for planning their seed production cycles. They expressed the wish that the catalog be extended to farmers. “It’s a great experience for me and my company. From now on, we will not be afraid of losing our data because we will be able to find them in the online catalog,” said Mrs Oumou N’tji Coulibaly, Deputy Director of the Faso Kaba Seed Company, who is attending such a training for the first time.

Modernizing seed management tools is important for the transformation of agriculture in Africa. Digital solutions such as the online variety catalog and computerized seed production planning guide are major steps forward against poverty and hunger in the world.

Click here to read about the workshop in Ethiopia last year.

The next workshop in this series will be conducted in Kano, Nigeria, during 31 January – 1 February 2019.

Charles Renard Analytical Laboratory now a part of SEALNET

ICRISAT’s Charles Renard Analytical Laboratory (CRAL) has joined the South-East Asia Laboratory NETwork (SEALNET) of the Food and Agriculture Organization (FAO).

FAO launched SEALNET in 2017 to strengthen the performance of laboratories and support harmonization of soil data sets and information towards development of standard operating procedures (SOPs) for key soil tests. This is critical for soil information to be made comparable and interpretable across laboratories, countries and regions.

This network will also support workshops, technical communications, training and capacity building of lab staff. CRAL is the only the second lab in India to be on this network. Click here for location on the network map.
Scientists from Asia and Africa called for sustaining research efforts to reap greater gains given that global chickpea production, buoyed by recent increases in India’s output, is inching towards the 15 million ton mark.

“India was producing 5.5 million tons and now it is 11 million tons. Chickpea has become a mega crop and its growth in the last five years is unlike any other crop’s in the country,” said Dr NP Singh, Director, ICAR-Indian Institute of Pulses Research (IIPR). He was speaking at the Chickpea Scientists’ Meet held recently at ICRISAT. The meet is organized biennially at ICRISAT-Patancheru.

Being the largest producer of chickpea, India is also its biggest consumer and imports the local variety, commonly referred to as ‘desi’. The ‘kabuli’ variety, with larger seeds, is produced in surplus, warranting export. Production has increasingly shifted from northern India to central and southern India, where vast tracts of land came under chickpea cultivation since the Green Revolution. ICAR’s collaboration with ICRISAT resulted in breeder seeds for most varieties that are now in use with three varieties being released in the last two years alone.

The meeting saw representatives from Ethiopia, Kenya, Myanmar, Nepal and Tanzania present progress in chickpea improvement in the last two years.

Outlining the hurdles to cultivation of chickpea, Dr Tun Shwe and Dr Mar Mar Win from Myanmar’s Department of Agriculture Research said that new and agronomic research helped improve productivity. They said that increased utilization of fallow lands for cultivating short-duration chickpea varieties and improved market interventions for the pulses could further boost chickpea efforts in Myanmar.

Dr Pooran Gaur, Research Program Director – Asia, said that ICRISAT’s collaborations with Myanmar’s Department of Agriculture and with national partners in Africa had resulted in the release of most varieties that are currently in use in those countries. He also noted that the number of female chickpea scientists had steadily increased over the years.

“Chickpea research is helping the agriculture research landscape find gender balance. Steps taken for that at all levels of education are showing results. There now are more women in chickpea breeding than ever before,” he said.

Dr Robert O Kileo from Tanzania’s Agricultural Research Institute said that chickpea production, yield and area under production increased significantly after the second phase of the Tropical Legumes project. Further research was needed to combat biotic and abiotic stresses, and to address socio-economic challenges, he said.

The visiting scientists toured chickpea fields on ICRISAT campus to identify and select lines for subsequent breeding. Plant type, suitability for machine harvesting, and resistance to Fusarium wilt were among the traits researchers sought.

Dr Peter S Carberry, Director-General, ICRISAT, lauded the multi-institutional efforts in chickpea improvement and mentioned that the crop was now being preferred over others like wheat owing to productivity and profitability. The meet was organized on 4-5 January 2018 by ICRISAT’s Research Program-Asia and was supported by the CGIAR Research Program on Grain Legumes and Dryland Cereals.
Three new improved sorghum varieties have been released in Malawi after extensive trials. Pilira 3, Pilira 4 and Pilira 5 have been released by the Agricultural Technology Clearing Committee (ATTC), under the Ministry of Agriculture and Food Security in Malawi, in December 2018.

The sorghum varieties (Pilira 1 and Pilira 2) currently in the market in Malawi were released about two decades ago following collaboration between ICRISAT and the Department of Agricultural Research Services (DARS). As farmers diversify their production systems in the face of climate variability, to meet different domestic and market needs, plant breeding must deliver stable, locally adapted and highly productive varieties.

Therefore, to replace the old varieties with new superior farmer- and market-preferred varieties, ICRISAT-Malawi (with backstopping from the sorghum breeder in Nairobi) and DARS have, over the past three years (2015/16, 2016/2017 and 2017/18 cropping seasons), conducted on-station and on-farm/participatory variety selection (PVS) trials with farmers. The test material was bred by the ICRISAT-ESA sorghum breeding program in Nairobi. Among the high-yielding sorghum varieties that outyielded the check Pilira 1 were: IESV 23006 DL, IESV 23004 DL, IESV 23005, IESV 23010 DL and KARI-Mtama 1. Of these, IESV 23010 DL, IESV 23006 DL and KARI-Mtama 1 were found to be high-yielding and stable across the four test locations (Chitedze, Chitala, Ngabu and Baka Research stations). KARI-Mtama 1, which has white grains, recorded a mean yield of 4.0 t/ha outyielding the check by 48%. IESV 23010 DL recorded a mean grain yield of 4.2 t/ha outyielding the check by 56%. IESV 23006 DL recorded a mean yield of 4.5 t/ha outyielding the check by 64%. All the three varieties flowered within 84 days and attained maturity in 100-120 days. These varieties were also selected by farmers as the best in terms of performance and palatability (nsima) through participatory variety selection. IESV 23010 DL was also preferred for its good brewing qualities (local sweet beer).

Consequently, the three varieties were selected by the ATTC for release and renamed as follows:

- KARI-Mtama 1 → Pilira 3
- IESV 23010 DL → Pilira 4
- IESV 23006 DL → Pilira 5.

The release of these three new varieties is expected to improve incomes and livelihoods of smallholder farmers in Malawi.

For more on ICRISAT’s work in Malawi, click here.
Two-fold increase in varietal adoption in seven years – a chickpea tale from Ethiopia

Adoption of improved chickpea varieties increased more than two-fold in seven years, shows data from more than 600 households in Ethiopia. “In just seven years, the percentage of households growing the new varieties rose from 30% to 80%. Improved chickpea varieties are assumed to be a key pro-poor and environmentally friendly technology,” state the authors of the study ‘A recipe for success? Learning from the rapid adoption of improved chickpea varieties in Ethiopia’.

The authors, whose study was published in the ‘International Journal of Agricultural Sustainability’ suggest that the case of improved chickpea adoption in Ethiopia demonstrates how new technologies can be made acceptable to the smallholder farmer.

The study questions the introduction of technologies that make big tradeoffs; the authors argue that smallholder farmers will not adopt new technologies unless innovations come with significant benefits.

For the study, researchers Simone Verkaart, Kai Mausch, Lieven Claessens and Ken E Giller analyzed data collected in the Shewa region located in the heart of Ethiopia. The capital city of Addis Ababa falls in the region. Data was collected during the Tropical Legumes II Project, led by ICRISAT, through a survey of households in 2006-07, 2009-10 and 2013-14.

The authors showed that rising domestic and export demand, higher price of kabuli varieties over desi varieties which were earlier cultivated by farmers, among others, drove the adoption of newer varieties.

Researchers also depicted the role of household traits, like education levels, in determining adoption. Despite the increase in input costs when new varieties were taken up for cultivation, the adoption rates were high as farmers anticipated higher returns. The study linked adoption of improved varieties with reduced household poverty.

“People will only adopt a new technology if they expect benefits from it. As adoption involves risks, learning and investments, these benefits need to be substantial, particularly in the case of resource-poor smallholders. In the end, only innovations that clearly outperform locally available technologies and manifest limited downside risks are likely to be adopted on a large scale,” the study concludes.

This study was made possible by funding from the Bill & Melinda Gates Foundation.

The study can be accessed at http://oar.icrisat.org/11035/

Upcoming events

Indian Seed Congress 2019

11-12 March 2019
Hyderabad, India

The Indian Seed Congress (ISC), an annual event organized by the National Seed Association of India, is scheduled for 11-12 March 2019 at Hyderabad, often known as the seed capital of India. This is the ninth edition of the annual global seed industry event and is expected to project the latest news, trends and views of the seed sector, and more.
Scientists from varied areas of crop research called for a mix of molecular techniques to accelerate genetic gains and meet the growing global demand for food.

“The world population is growing and by 2050 there will be 10 billion people. We need to speed up development of productive crops under climate change. Plant scientists discover new traits but the problem is it takes a long time to put those traits into varieties farmers can grow,” said Dr Lee Hickey of the University of Queensland.

Speaking during the keynote of the symposium ‘Advanced Genomics & Breeding Technologies for Accelerating Genetic Gains, at ICRISAT, Dr Hickey spoke about ‘Speed Breeding’, a set of techniques to hasten plant growth in controlled environments. Speed Breeding can help accomplish crossing and inbreeding in 1 to 2 years while it takes as long as 7 years to complete this phase with conventional practices.

Emphasizing the need for accelerated genetic gains, Dr Arvind Kumar, Director for the International Rice Research Institute’s (IRRI) South Asia Regional Center, in his keynote address said, “We cannot now afford the time taken in the past to develop traits like drought tolerance and disease resistance.”

For solutions to key issues in agriculture technology and policy, two panel discussions were held during the symposium. Both panels comprised senior scientists and administrators from the Indian Council of Agricultural Research (ICAR), state agricultural universities, ICRISAT and other partner organizations.

Advocating demand-driven technologies, Dr V Praveen Rao, Vice Chancellor, Professor Jayashankar Telangana State Agriculture University, and Dr K P Viswanatha, Vice Chancellor, Mahatma Phule Krishi Vidyapeeth, emphasized the need for a repository of technologies to lower research costs.

Dr C Tara Satyavathi, Project Coordinator, All India Coordinated Research Project on Pearl Millet, recounted recent policy initiatives aimed at nutrition security. “In 2018, the government changed the nomenclature of millets to ‘nutri-cereals’. This is to convey to the public that they may increase their consumption,” she said, while adding that advanced genomics technologies would be required to enhance crop production and nutritional value of these nutri-cereals.

“In today’s world, the plant breeding community is privileged as they have access to new genomics tools and molecular breeding methods. It is important to see that these technologies are utilized in a way that translates genomic information into molecular breeding in the shortest time possible,” said Dr Rajeev K Varshney, Research Program Director - Genetic Gains and Director, Center of Excellence in Genomics and Systems Biology (CEGSB), ICRISAT.

The symposium was held during training courses that ICRISAT’s CEGSB organized between 10 and 21 December 2018. The courses were supported by CRP-Grain Legumes and Dryland Cereals, Excellence in Breeding Platform and the Government of Karnataka-funded Genomics Consortium. The Bill & Melinda Gates Foundation-funded Tropical Legumes III and HOPE II projects also supported the trainings.

Over 270 participants mainly researchers, policymakers and private sector representatives, from 13 countries participated in the symposium. The training courses were attended by 83 trainees from across the world.
Can we beat the fall armyworm with lessons from India’s groundnut battle of the 80s?

In the mid-80s, scientists battling the pest Spolit (Spodoptera litura) in India chanced upon an unsprayed groundnut field where the invading moth’s eggs were shredded. A closer look revealed ladybugs as the predators. This finding led to a natural pest management approach which could have lessons for the ongoing battle against the Fall Armyworm (FAW).

Spodoptera frugiperda (FAW), a distant cousin of Spolit, has been laying waste to maize fields in Africa from 2016. Since then, FAW’s presence has been confirmed across the globe, including in India. An equal number of other plant species including sorghum, rice, sugarcane and cotton, are also now known to be susceptible, the Centre for Agriculture and Bioscience International (CABI), states. Nearly two dozen international organizations have joined hands to combat FAW.

In a recently published article in ‘Outlook on Agriculture’, Dr John A Wightman, who led the Groundnut Group at ICRISAT, detailed the approach used to battle Spolit in India. Cattle egrets and King crows, were instrumental, he notes, while highlighting the scope of natural predators in pest management. The birds pecked adult caterpillars, significantly helping control pest numbers. Interspersed sunflower plants served as perches for the birds while serving the purpose of crop diversification.

Scientists also taught extension workers the use of Nuclear Polyhedrosis Virus (NPV) and the bacterium Bacillus thuringiensis, Dr Wightman says, emphasizing the role extension played in tackling Spolit in pre-internet India.

To counter FAW, Dr Wightman calls for measuring its resistance to insecticides and more research to understand the moth’s survival during dry season when there are no crops. He suggests exploring pesticidal plants and entomopathogens like NPV to manage the pest, besides identifying natural predators. He wonders if land preparation after harvest can destroy FAW pupae when they burrow underground during the hot or dry season. He also states that a crop’s leaf damage does not necessarily indicate loss of yield.

“Approaches to FAW management need to be flexible and should respond to local situations, including or especially changes in weather patterns. Going into the fields with predetermined solutions ready to be implemented (perhaps because they work somewhere else) will probably not be of long-term benefit,” he says.

The publication that details ICRISAT’s work during the period can be accessed at: https://journals.sagepub.com/doi/10.1177/0030727018814849

FAW feeding on sorghum in Niger.

Photo: ICRISAT
Decoding increased disease and insect-pest attacks on crops

ICRISAT reaches out to farmers in four Indian states

Challenged by the recent increase in insect pest attacks on staple crops, especially in the drylands, scientists are trying to map the incidence of such attacks to factors such as seasonal climate variability.

With an aim to record the occurrence and distribution of pests and diseases in chickpea and pigeonpea, a real-time survey of insect-pest incidences on these crops is being conducted in four Indian states – Maharashtra, Andhra Pradesh, Telangana, and Karnataka – under the aegis of the Department of Science and Technology (DST), Government of India, Center of Excellence on Climate Change Research for Plant Protection.

The Legumes Pathology team, guided by Dr Mamta Sharma, Theme Leader – Integrated Crop Management, ICRISAT, is gathering information on soil type, crop history, agronomic practices and more, by interacting with farmers in about 70 villages in 20 districts in the four states. They are, in the process, also visiting three agricultural universities and nine Krishi Vigyan Kendras (agriculture knowledge resource centers of the Government of India).

"This study will help to identify risk areas for mapping spatial and temporal distribution of diseases and insect-pests under a changing climate scenario," says Dr Sharma. "In the long run, it will be helpful in the development of better, more accurate disease- and pest-prediction models."

Pop sorghum, doughnuts and hammer mills: Nigerian teens see the fun side of agriculture

If the teenagers studying in a secondary school in Nigeria ever thought that agriculture was not ‘a teen thing’, they were in for a surprise! A group of 133 students (75 girls and 58 boys), who signed up for a training session with experts from ICRISAT and other partners, got to use farm implements, create tasty sorghum-based dishes and learn about making profits in agriculture.

The students of The Intercontinental Secondary School, Kano, Nigeria, participated in a hands-on training program on producing and processing sorghum as a viable business venture, with inputs from several industry experts.

The special capacity-building program comprised three key activities:

This work contributes to UN Sustainable Development Goals
1. Talks on sorghum product development
Dr Hakeem Ajeigbe, Country Representative-Kenya, ICRISAT and Dr Ignatius Angarawai, Senior Scientist, Sorghum Breeding, ICRISAT, presented talks to the youngsters about sorghum processing and product development for better nutrition and higher incomes.

2. Demonstration of small-scale agricultural machines to reduce drudgery and post-harvest losses
Dr Ajeigbe emphasized the importance of mechanization in agriculture, saying, “Mechanization will reduce the drudgery associated with agricultural activities; almost all activities can be mechanized even at a small scale.”

Also, Engr. Aliyu Adinoyi, Scientific Officer, ICRISAT, demonstrated the hammer mill with cyclone for income generation and food safety.

3. Hands-on lessons on sorghum-related product preparations
Mrs Hafsat I Sulaiman, Ms Bilkisu Adeshina and Ms Shatinyan Christopher (ICRISAT extension officers) demonstrated the preparation of sorghum- and groundnut-based products such as pop sorghum, pap (*Kunun Gyada*), *Hallaka Kobo*, cakes, doughnuts, bread and crisps. The students also tried their hand at preparing some of the above recipes.

ICRISAT along with the ATASP-1* program and the Agricultural Promotion Policy (APP) of the Federal Government of Nigeria conducted this training program on 29 November 2018.

The main goal of the training session was to trigger interest in youth and to get them to be more passionate about agriculture and related activities as viable business and livelihood options.

For more on ICRISAT’s work on sorghum, [click here](#).

For more on ICRISAT’s work in Nigeria, [click here](#).

**Project:** Agricultural Transformation Agenda Support Programme, Phase One (ATASP-1)
**Funder:** Federal Government of Nigeria through Africa Development Bank (AFDB)
**Partners:** Institute for Agricultural Research (IAR), Kano State Agricultural and Rural Development Authority (KNARDA), Zonal ATASP-1 offices, and sorghum processors.

This work contributes to UN Sustainable Development Goals

*ATASP-1: Agricultural Transformation Agenda Support Programme, Phase One (ATASP-1)*
Flames flew off the pans at the finale cook-off between young chefs in the Smart Food Culinary Challenge. Thousands of visitors of the trade fair, including kids, joined in for the countdown as the teams set off to plate their dishes to perfection. The chefs had to go bolder, bigger and better for the attention of the judges.

Celebrity chefs traded aprons for gavels, just for the day, to judge the finale of India’s first such Culinary Challenge. Chef Anahita Dhondy, Chef Manager, SodaBottleOpenerWala; Chef Ramasamy Selvaraju, Executive Chef, Vivanta by Taj and Chef Vinod Bhatti, Range and Commercial manager, IKEA Food, India, kept the budding chefs on their toes with constant inputs on using millets.

The electrifying finale cook-off between the top two teams was video documented as a reality show for a cause by ICRISAT. The gripping moments of the entire challenge were captured as a five-part documentary reality series that will be part of both national and international endeavors to give the image of millets a makeover. The winners of the culinary challenge will be announced in the video series to be released online soon. Sign up for updates at - http://www.smartfood.org/culinarychallenge/

The student chefs surprised the visitors of the Organic and Millet International Fair – 2019 by using millets as rice, as crust, as beverage, as dessert and even as fillings.

“I was amazed and pleased indeed to learn different ways of substituting rice and wheat for millets,” said Ms. Suchitra, a visitor cheering from the stands.

The live audience were exposed to innovative, healthy and easy-to-cook recipes such as the Jowar Crusted Pomfret, Barnyard Millet Vegetable Terrine, Kebabs with Millet Fillings, Proso Millet Paella, Deconstructed Ragi Carrot Cake, Foxtail Aam Royale Beverage and Coco-pearl smoothie.

“The first thing I shall do after I go home is cook up some of these recipes. The exciting part of this exercise is the cook off between young chefs, it’s quite a novel idea,” said Ms Caroline Radhakrishnan, a food blogger.
Krishnappa, a young millet farmer from Karnataka brought along his two kids to the millet product showcase to share the excitement. “This is very exciting. Wish there was a cook off for the visitors or farmers. Looking forward to more events such as these in the future,” he said.

The preliminary cook-off had 28 teams held at MS Ramaiah University of Applied Sciences, which were then reduced to six teams for the finale on 19 January. Watch the journey of finalists Deepa KM and Rohan Singh from NITTE Institute of Design and Culinary Art, Bangalore, here - https://www.youtube.com/watch?v=c1Zn_rw0IUM

Each team cooked up one traditional and a one contemporary dish including recipes such as Biryani, Dal Bati Churma, Pooris, Noodles and Sri lankan Hoppers made with millets.

The judges scored the preparations on the usage of millets, taste, portion size, platting and time management and selected the top two teams to compete in the finale round.

This live show of the Smart Food Culinary Challenge was organized through a partnership among Government of Karnataka, ICRISAT and MS Ramaiah University of Applied Sciences. Overseeing the live show were Dr Shivashankara Reddy, Minister of Agriculture, Government of Karnataka, Ms Joanna Kane-Potaka, Assistant Director General, Strategic Marketing and Communication, ICRISAT, Dr Vilas Tonapi, Director, IIMR and Dr K G Jagadeesha, Commissioner for Agriculture, GoK.

The judging panel held a debriefing session at the end of the live show and encouraged the budding chefs to continue experimenting with millets. Concluding the event, Chef Vinod Bhatti said, “The challenge brought out the best in each chef, forced them to experiment. Here, today, we discovered the new future foods.”

Chef Anahita Dhondy @anahitadhondy - a food geek, a Smart Food Ambassador and a global advocate of millets. “Millets are vital to sustainable food. The Smart Food Culinary Challenge is about teaching the young chefs how food and the industry around it should evolve for a better environment.”

Chef Ramasamy Selvaraju - a man on a mission, a pioneer in introducing millets to fine dining. He was awarded the title of Chef of the year by the ministry of tourism in 2014. “It is common belief that millet are hard to cook and time consuming. For the finale, young chefs cooked two complex millet recipes in half an hour in the presence of a live audience. They are up for the challenge and you should too.”

Chef Vinod Bhatti @chef_vinod_b - a top culinary critic and a masterchef pushing boundaries in culinary science. “I am delighted to see student chefs enjoying while mastering the art of cooking millets. This effort will go a long way in pushing millets to be included in healthy yet tasty diets and daily consumption.”

Audience cheering for young chefs.
In the media

**BusinessLine**

**Action plan drawn up for improved crops**

(Also published in Agriculture Post, Rural Marketing, Telangana Today)

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**Organisation launches online seed informational tool to enable farmers access critical data in one click**

A capture of the ICRISAT digital seed roadmap.

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), an international agricultural research organization has launched modern digital seed catalog and seed roadmap tool to enable farmers access information about the quality and availability of seeds in one click.

**Adopting AI in Agriculture Eases the Risk of Changing Patterns**

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**ICRISAT Stall at Organic and Millet Fair, 18 – 20 Jan 2019, Bengaluru**

Display of processing machinery by Perfura Technologies, Agribusiness Innovation Platform (AIP).

Mr Krishna Byre Gowda, Minister of Rural Development, Law and Parliamentary Affairs, Government of Karnataka at ICRISAT exhibit.

Live waffle counter and display of millet food items by Housing and Food Services, ICRISAT.

Display of improved varieties of sorghum, millets, groundnut, chickpea and pigeonpea by IDC.

Photos: S Ponna, ICRISAT
Where agriculture is religion: Preaching about improved sorghum in Burkina Faso

Improved sorghum varieties are finding new champions in unusual places. In Andemtenga, a remote village about 150 km east of Ouagadougou (capital of Burkina Faso), Mr Fidel Yameogo, the local catechist, is famous for testing improved sorghum varieties. He is a staunch supporter of improved sorghum varieties and has persuaded many in his village to adopt the same for better harvests.

Over the past two years, Mr Yameogo planted three improved varieties: Sariaso 11, Sariaso 22 and ICSV 1049. “I tried a dozen varieties before choosing these,” he says. In this far-flung village, (as in many others in this region), soils are poor and rainfall is often inadequate. Despite these hardships, he remains confident about the current year’s harvest: “I sowed on 27 June and look at my field today (2 October)! Plants are growing well and grains are almost formed,” he explains, pointing at his 1.5-hectare field growing the three improved sorghum varieties.

Very influential among members of his church, the catechist doesn’t miss an opportunity to encourage the villagers to go for improved sorghum varieties, which he considers to be the future of agriculture in the area. Recently, when a church member asked him about his ‘secret’ to cope with the vagaries of climate change and drought, he responded, “Our local varieties are outdated. If you want to have food for your family, you must practice what modern agriculture recommends, including use of improved varieties”. Thanks to last year’s good harvest, Mr Yameogo was able to buy an ox for plowing his field and a dozen of goats for breeding. “After keeping enough for household consumption, I sold the surplus grain for more than 100 kg of seed to about 100 people,” he says. In July 2018, small quantities of seed of the improved sorghum varieties (1 kg per beneficiary) were distributed and planted for the first time by about 20 producers in Andemtenga. Mr Yameogo is a participant of the demonstrations and participatory variety trials implemented by “Association Minim Song Panga (AMSP)” in the area during the past six years.

Click here for more on ICRISAT’s work in Burkina Faso
Click here for more on ICRISAT’s work on sorghum

Project: Harnessing Opportunities for Productivity Enhancement (HOPE II) for Sorghum and Millets in sub-Saharan Africa
Funder: Bill & Melinda Gates Foundation
Partners: Institut de l’Environnement et Recherches Agricoles (INERA), Burkina Faso; Institut d’Economie Rurale (IER), Mali; Institute for Agricultural Research (IAR) of Ahmadu Bello University (ABU) and Usmanu Danfodiyo University of Sokoto (UDUS), Nigeria; Ethiopian Institute of Agricultural Research (EIAR), Ethiopia; Department of Research and Development (DRD), Tanzania; National Semi-Arid Resources Research Institute (NaSARRI) of the National Agricultural Research Organization (NARO), Uganda.

This work contributes to UN Sustainable Development Goals

Photo: M Magassa, ICRISAT

Mr Fidel Yameogo and his wife in their field with improved sorghum variety.

Photo: M Magassa, ICRISAT

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This work contributes to UN Sustainable Development Goals
Women and youth in Nigeria turn to sorghum processing for better incomes

Over 300 women and youth in Nigeria discovered recently that the humble, environment-friendly sorghum can be made into delicious products and, in the process, earn them a better income. These aspiring farmers and agricultural entrepreneurs were trying to make the most of a trend of rising demand for processed sorghum products. They found that training in sorghum production and processing techniques could give them an edge in income generation and employment.

Since 2015, several training programs, conducted by ICRISAT along with ATASP-1* and other partners, have trained over 10,000 youth and women in seven participating states and four Staple Crop Processing Zones (SCPZs) in Nigeria.

Industrial demand for sorghum is growing in Nigeria, with about 20% of the total sorghum produced being taken up by industries. This increased demand is because of rising awareness about sorghum’s health benefits and the government’s policy of high import prices.

The recently conducted training program for women and youth strategically focused on wealth generation through business development, with interactive sessions on micro and small business enterprises, fundamentals of business proposal and business plan development, record keeping, report writing and group formation and development. Experts also delivered special lectures on sorghum production and processing for household use.

The trainees learnt how to prepare processed sorghum products such as composite sorghum flour, kunu drink, sorghum noodles, popped sorghum, cookies, cakes, bread, doughnuts and crisps (with groundnut).

This training, conducted during 29 October–23 November 2018, began in Kano-Jigawa SCPZ and ended at Adani-Omor SCPZ. A total of 329 participants (155 male; 174 female) attended the training which also covered health issues as well as demonstration on storage, cleaning, drying and packaging of sorghum.

Project: Agricultural Transformation Agenda Support Programme, Phase One (ATASP-1)
Funder: African Development Bank (AfDB)
Partners: Federal Ministry of Agriculture and Rural Development (FMARD); International Institute of Tropical Agriculture (IITA); Africa Rice Center (AfricaRice); ATASP-1 National Office, Abuja; and ATASP-1 Zonal Offices in Adani-Omor, Awka Anambra State; Bida-Badeggi, Bida Niger State; Kano-Jigawa, Kano State; and Kebbi-Sokoto, Kebbi State.

This work contributes to UN Sustainable Development Goals

*ATASP-1: Agricultural Transformation Agenda Support Programme, Phase One, a Nigerian Government-funded project through African Development Bank.
Few alternative thoughts to farm loan waivers

Small size of land holdings; land degradation and depletion of ground water affecting natural resources, especially soil and water; multiple risks from increasing cost of inputs to vacillating prices for produce and volatility of markets and above all, the weather variabilities have put Indian agriculture at crossroads. There is no gainsaying the fact that tillers tilling hard to feed the nation need all required support to make farming viable and sustainable, both economically and environmentally. It is in this backdrop, I wish to offer few viable alternative thoughts to the farm loan waivers, keeping in view the crying needs of Indian farming at these critical times and to invest money from the same resource envelope ‘productively and purposefully’.

Expansion of Institutional lending:

Political parties are not talking about loan waivers for the first time. In the past, interest subventions and debt relief through waivers of loans and/or interest have been implemented with limited success. Empirical evidences and studies have clearly established the fact that it is not the majority in the lower rungs of farming community, who benefitted from such waiver schemes. As per available statistics, small and marginal farmers (owning arable lands of 2 hectares or less) amongst the 14 crores farm households in India constitute about 86% with an average land holding size of 1.15 hectares (2016 data).

Read more here...

Originally published in The Times of India

About the author:

Dr Arabinda Kumar Padhee
Director, Country Relations and Business Affairs, ICRISAT

Misuse of the term ‘empowerment’ in daily conversations

In a world where ‘gender integration’ or ‘gender mainstreaming’ is prioritized and practiced, actors from different backgrounds come together in a ‘marriage’ arrangement of sorts, aimed at a joint objective. One outcome of this endeavor is that participants start learning new words from other disciplines. The new terms learnt in this process can become exciting and they easily permeate daily conversations. These cross-discipline interactions can also lead to formation of new terms and acronyms. It is not uncommon to attend a workshop and think speakers are not even speaking in ‘English’– especially in global partnerships like the CGIAR, where acronyms get formed and used until they become familiar terms in daily conversations. Read more...

Dr Esther Njuguna-Mungai during the opening of the GREAT/TLII Customised Gender Training in Kampala.

About the author:

Esther Njuguna-Mungai
Gender Scientist, ICRISAT

First appeared on

Budget and farm distress: Budget 2019 should be a balancing act

In the run-up to the general elections later this year, and following the events in the aftermath of recently-concluded elections in a few states, the attention is on farm-loan waivers. However, agriculture-policy analysts, through empirical evidence, have opined that such ‘populist’ write-offs could be a temporary redressal, but not a permanent solution. However, considerations of quick political dividends are expected to dominate logical, evidence-based policy guidance, as has happened in the past.

Budget 2018 had a series of measures to boost the agriculture sector. Promising minimum support prices (MSP) of at least 50% higher than the cost of cultivation for major crops (both kharif and rabi) was a landmark decision of the Union government. However, the implementation of this has left much to be desired. Read more...

Rhythu Bandhu doesn’t directly benefit lessee cultivators or the landless agricultural labourers.
Making waves: Ten Indians among global top 4000 scientists

Ten Indian scientists have made it to the list of the world’s top 4000 scientists. This list was released in November 2018 by Clarivate Analytics, a global organization providing analytics to aid research and innovation. ICRISAT’s Dr Rajeev K Varshney, Research Program Director – Genetic Gains, is one of the ten Indian scientists.

This news has made waves in the media and was featured in several publications recently.

Read more at:

Firstpost.

10 among the world’s top 4000 influential researchers are Indian: report

TOI!

Only 10 Indians on list of world’s 4,000 top scientists, but this is double last year’s

Close to 90% of the ICRISAT collection duplicated

ICRISAT is among the gene banks that have deposited the largest numbers of seed samples in the Seed Vault. “At the moment almost 90% of our seed collection is duplicated in the Seed Vault, and we will continue to ship seeds to Svalbard until copies of the entire collection is deposited there”, says Dr. Vania Azevedo, Head of ICRISAT Genebank.

Millet and Sorghum are Climate-Smart Grains for Farmers in Chad

There are 4 million people with limited access to food in Chad, which ranks as second hungriest of the 119 countries assessed in the 2018 Global Hunger Index (GHI). Chad is also hotter and drier now than it was 40 years ago. The country is highly dependent on small-sized subsistence agriculture, but inadequate or maldistributed rainfalls have reduced crop production, resulting in food shortage and increased undernutrition. Now, the International Research Institute for Semi-Arid Tropics (ICRISAT) aims to provide food security and resilience for people in West and Central African drylands like Chad through more climate-smart crops.

Amid growing homogeneity of crop species worldwide in the past 50 years, major crops like rice, wheat, and maize have dominated markets. But climate-smart crops like pearl millet and sorghum can be incredibly reliable in regions with high temperatures, poor soil fertility, and recurring droughts. They typically do not require as much water to grow as other crops and can grow under challenging conditions. Served mainly as porridge or flat-breads, in addition, pearl millet and sorghum can provide Chadians with energy and micronutrients such as zinc and iron. These nutrients are essential for child growth and development—the future of the country.

The ICRISAT gene bank holds around 126,000 seed accessions. Head of the genebank Dr. Vania Azevedo and Seed Lab Manager Dr. Peerzada Ovais showing around in the medium term seed storage. The long term collection is conserved at minus -18oC.
Opinion: How Smart are “Smart Foods”?  
Coinciding with the launch of the EAT-Lancet “Healthy Diets from Sustainable Food Systems” report, Dr Colin Chartres, the Fund’s CEO, was invited to a workshop on Smart Food, which was discussed in the address by ICRISAT’s Joanna Kane-Potaka, Executive Director of Smart Food at our 2018 conference. In this blog, Colin discusses the importance of ‘smart foods’ and smart people for a healthy population and planet. Read more

Amid global soil crisis, governments struggle to reach farmers

MANILA — To help tackle nutrient deficiency and plastic pollution in India’s soils, the country has one of the best knowledge delivery systems and trained human resource power in agriculture research. And yet, over 59 percent of the farming households receive no assistance from either their government or the private sector, according to the 2013 National Sample Survey conducted by the Indian government, the latest and most authoritative of its kind. Read more

Lecture on climate-smart policies emphasizes India’s efforts to combat climate change

Dr AK Padhee, Director, Country Relations and Business Affairs, ICRISAT, recently delivered a lecture on ‘Climate-smart Policies to Sustain Growth of Indian Agriculture’ at Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan.

Describing climate change as ‘perhaps the most extreme challenge agriculture in India and across the world is facing today and has to deal with in future’, Dr Padhee went on to highlight a couple of policy options.

“The institution of a Panchayat in the Indian context has the capacity to leverage funds from a plethora of schemes. Allocations under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) can be purposefully utilized in climate-proofing projects such as farm ponds; soil and water management... and many other eco-friendly activities that will adapt and build resilience to climate change,” he said.

“India has already submitted its Intended Nationally Determined Contributions (INDCs) to the United Nations Framework Convention on Climate Change (UNFCC) (as a part of its commitments to the Paris Agreement) that inter-alia include the adoption of climate friendly practices for a cleaner path of development. Ministry of Agriculture and Farmers’ Welfare has already delineated its intended climate actions in the agriculture sector, such as increasing water use efficiency; promoting organic farming; conservation agriculture practices and so on, with specific targets to be achieved by 2020.”

Dr Padhee had been invited to deliver the Dr A Rathore Memorial Lecture at an event organized by the Alumni Association of the Rajasthan College of Agriculture (RCA), Udaipur, on 19 January 2019.
Topical news and releases

Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems

Food systems have the potential to nurture human health and support environmental sustainability; however, they are currently threatening both. Providing a growing global population with healthy diets from sustainable food systems is an immediate challenge. Although global food production of calories has kept pace with population growth, more than 820 million people have insufficient food and many more consume low-quality diets that cause micronutrient deficiencies and contribute to a substantial rise in the incidence of diet-related obesity and diet-related non-communicable diseases, including coronary heart disease, stroke, and diabetes. Unhealthy diets pose a greater risk to morbidity and mortality than does unsafe sex, and alcohol, drug, and tobacco use combined.

Read more

Global seed companies are addressing climate change and nutrition needs but reach only 10% of the world’s small farmers

Global seed companies are adapting their products to combat the impact of climate change and address nutrition needs. But limited access to quality seed in many emerging economies persists, with the global seed industry reaching just 10% of the world’s smallholder farmers, according to a new study.

The Access to Seeds Index 2019 – Global Seed Companies, published by the Amsterdam-based Access to Seeds Foundation, evaluates the activities of the 13 leading global seed companies to shine a light on where the industry can do more to raise smallholder farmer productivity, improve nutrition and mitigate the effects of climate change through the development and dissemination of quality seed.

Read more...

https://www.accesstoseeds.org/index/global-seed-companies/