Virtual Conference on Strengthening Agricultural Resilience for the Global South

31 July 2025

Report

DAKSHIN
Development and Knowledge Sharing Initiative
GLOBAL SOUTH CENTRE OF EXCELLENCE

RIS
Research and Information System for Developing Countries
विकासशील देशों की अनुसंधान एवं सूचना प्रणाली

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Zone IV B, 4th Floor, India Habitat Centre
Lodhi Road, New Delhi 110 003, India
Tel.: +91-11-24682177-80; Fax: +91-11-24682173-74
E-mail: dgoffice@ris.org.in
Website: www.ris.org.in

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Concept Note

Background

Countries across the Global South including regions in Asia, Africa, and Latin America & the Caribbean (LAC) face common agricultural challenges such as climate variability, land degradation, low productivity, and limited access to scalable technologies. These challenges are compounded by fragmented innovation ecosystems and underutilized opportunities for cross-regional collaboration .For the countries of the Global South, the challenge and opportunity lies in identifying what works, adapting it to local needs, and creating cross-regional platforms that enable shared learning, co-development of solutions, and strategic partnerships. The Global South is rich in indigenous knowledge, grassroots innovations, and agroecologically suited farming practices. Countries with similar agro-climatic conditions and socio-economic realities are well positioned to engage in the exchange and co-adaptation of context-specific, cost-efficient, and scalable solutions for resilient agricultural development.

To address these issues and facilitate collaboration, ICRISAT through its International South-South Centre for Agriculture (ISSCA), and the DAKSHIN-Global South Centre of Excellence at RIS are collaborating to strengthen South-South Cooperation (SSC) in agriculture by promoting technology transfer, knowledge exchange, and collaborative innovation across the Global South. This partnership is going to bring a series of strategic engagements, beginning with the virtual conference on building agricultural resilience for the global south nations.

The conference is being conceived as a dialogue opportunity to bring together policymakers, researchers, think tanks and institutional leaders from Asia, Africa, and LAC for insights on regional technology needs, policy priorities and explore opportunities for technology adoption and co-development of scalable agricultural solutions for the global south. The conference will broadly cover topics including integrated natural resources management, seed systems, digital solutions in agriculture, and innovations for dryland farming.

Objectives

1. To assess the agricultural technology priorities and resilience needs of countries across the Global South in rainfed and climate-vulnerable regions.

2. To identify and share scalable technologies, best management practices (BMPs), and institutional models for resilient agriculture
3. To facilitate peer learning and cross-regional dialogue among policymakers, researchers, and development partners on adapting and co-developing agricultural innovations.
4. To explore opportunities for collaboration among Global South countries to strengthen agricultural transformation through South-South Cooperation.
5. To strengthen institutional networks and partnerships that enable knowledge exchange, joint research, and technology dissemination for resilient agriculture.

Key Topics:

1. How can countries of the Global South act as knowledge partners and technology providers to one another for strengthening agricultural resilience?
2. What institutional mechanisms and innovations can support co-development and demand-driven partnerships across the Global South?
3. What forms of strategic support such as financial, policy-based, or institutional are needed to sustain cross-regional collaboration and scale agricultural transformation efforts?
4. How can rainfed areas be made more resilient and productive?
5. What are some Emerging Indian innovations in water-use efficiency, soil health, and climate-smart practices?
6. How can institutions across the Global South collaborate more effectively for agricultural transformation?

Agenda

Virtual International Conference

Strengthening Agricultural Resilience for the Global South

3:00 PM to 6:00 PM IST
31 July 2025

Jointly organised by ICRISAT Center of Excellence for South-South Cooperation in Agriculture (ISSCA) and RIS-DAKSHIN

Time	Session
15:00 - 15:05	**Context Setting and Conference Overview** • **Mr Ramon Peachey**, Director - Communications, ICRISAT
15:05 - 15:15	**Leadership Insights – ICRISAT** • Dr Himanshu Pathak, Director General, ICRISAT
15:15 - 15:25	**Leadership Insights: RIS – DAKSHIN** • **Professor Sachin Chaturvedi**, Director General, RIS-DAKSHIN
ISSCA in Focus: Technologies, Partnerships, and Pathways to Impact	
15:25 - 15:35	**Thematic Overview of ISSCA &its Knowledge Portal** • **Dr Rebbie Harawa**, Global Research Program Director (RFFS) & Director - Africa Program, ICRISAT
15:35 - 15:45	**Theme 1: Digital Agriculture Technologies** • **Dr P. K. Meherda**, Additional Secretary - M/o. Agriculture Government of India
15:45 - 15:55	**Theme 2: Crop Technologies** • **Dr Shiv Kumar Agrawal**, Regional Coordinator for South Asia and China Regional Program & Head - Food Legumes Research Platform, ICARDA
15:55 - 16:05	**Theme 3: Livestock & Fisheries** • **Dr Shubhadeep Ghosh**, Assistant Director General (Marine Fisheries), ICAR • **Dr Yogesh Gadekar**, Senior Scientist, ICAR
16:05 - 16:15	**Theme 4: Post Harvest & Food Processing Technologies** • **Dr Rabe Yahaya**, Senior Scientist, IRRI • **Dr Hameeda Banu Itagi**, Scientist, IRRI
16:15 - 16:25	**Theme 5: Natural Resource Management** • **Dr Ramesh Singh**, Principal Scientist, ICRISAT
16:25 - 16:40	**Q&A session** (Participants)

Global South Dialogue: Understanding Technology Needs of the Global South to advance South-South Cooperation in Agriculture	
16:40 - 17:25	**Moderator:** • **Professor Gulshan Sachdeva**, Chief Coordinator, DAKSHIN **Panellists:** • **Mr Zali B. Chikuba**, Executive Director,Zambia Institute for Policy Analysis and Research (ZIPAR), Zambia. • **Dr Javier Aliaga Lordemann**, Senior Researcher, INESAD & Executive Director, Institute of Socio-Economic Research (IISEC), Universidad Católica Boliviana (UCB), Bolivia • **Dr Aliou Barry**, Director General, Stat View International, Republic of Guinea • **Ms Loreto Leyton**, Executive Director, Fundación Chilena del Pacífico (FCDP), Chile
17:25 - 17:35	**Reflections on Strategic Support for Agricultural Transformation** • **Dr Srivalli Krishnan**, Deputy Director- Agricultural Development, Gates Foundation
17:35 - 17:50	**Q&A session** (Participants)
17:50 - 18:00	**Closing Remarks & Vote of Thanks** • **Mr Sanjay Agarwal**, Assistant Director General, ICRISAT

Proceedings/Outcomes

DAKSHIN-Global South Centre of Excellence at RIS together with ICRISAT's Centre of Excellence for South–South Cooperation in Agriculture (ISSCA), organised an enriching virtual conference on 31st July 2025, focused on "Strengthening Agricultural Resilience for the Global South." The event brought together leading experts, policymakers, and researchers to explore collaborative pathways for sustainable agricultural transformation. The conference featured thematic insights from prominent institutions across global south on five key areas: Digital Agriculture, Crop Improvement and Production Technologies, Livestock Improvement and Production Technologies, Agribusiness and Market Systems, and Natural Resource Management & Climate Resilience.

The Virtual International Conference commenced with **Mr. Ramon Peachey**, Director of Communications at ICRISAT, welcoming participants from over 56 countries. In his opening remarks, he highlighted the common agricultural challenges faced by countries of the Global South, including climate variability, low productivity, fragmented innovation ecosystems, and limited access to scalable technologies. Mr. Peachey emphasized that the primary objective of the conference was to foster South-South knowledge exchange, facilitate co-development of context-specific agricultural solutions, and strengthen institutional partnerships across regions.

Opening the conference, **Dr Himanshu Pathak**, Director General of ICRISAT, the first leadership insight, underlining the wealth of indigenous knowledge, grassroots innovations, and homegrown technologies present across the Global South. He stressed that agricultural solutions must be tailored to local agro-climatic and socio-economic conditions, drawing lessons from the Green Revolution that demonstrated the importance of local adaptation for scaling scientific innovations. Dr. Pathak highlighted examples such as India's integration of micro-irrigation with digital advisory platforms and the Philippines' localized mechanization models, advocating for peer-to-peer sharing of such innovations among countries facing similar challenges.

Prof. Sachin Chaturvedi, Director General of RIS-DAKSHIN, followed with insights on institutional collaboration. He highlighted the critical role of research institutions, think tanks, and development organizations in facilitating cross-regional knowledge exchange and joint innovation. Prof. Chaturvedi emphasized DAKSHIN's role in policy engagement and in creating structured mechanisms for co-development and replication of scalable agricultural solutions. Notable examples included collaborative networks between South Asian and African institutions on climate-resilient technologies and seed networks sharing

drought-tolerant crop varieties between Latin America and Asia. Prof. Chaturvedi also emphasized the urgent need to develop cost metrics for climate change adaptation.

Dr. Rebbie Harawa, Global Research Program Director and Director for Africa at ICRISAT, presented the thematic overview of ISSCA and its Knowledge Portal. The portal, which hosts over 85 curated innovations across crops, livestock, fisheries, post-harvest management, digital agriculture, and natural resource management, is designed to facilitate matching of technologies to specific geographies, crops, and climate challenges. Dr. Harawa emphasized that ISSCA functions as a neutral platform for South-South technology transfer, joint research, and co-development. She encouraged participating countries to contribute region-specific innovations and case studies to further enhance the portal as a dynamic tool for knowledge exchange.

The first thematic session focused on Digital Agriculture Technologies, led by **Dr. P. K. Meherda**, Additional Secretary, Ministry of Agriculture, India. He discussed precision agriculture, decision-support systems, mobile advisories, and e-extension services as essential tools for climate-smart farming. He highlighted India's innovations in soil health monitoring, water-use efficiency, and farm mechanization, recommending their adaptation in other Global South countries. Dr. Meherda emphasized that digital tools can enhance productivity, reduce risk, and enable smallholder farmers to adopt best practices in real-time, citing Kenya's e-extension services as a successful example of remote advisory adoption.

The session on Crop Technologies was presented by **Dr. Shiv Kumar Agrawal**, Regional Coordinator for South Asia & China at ICARDA. He focused on climate-resilient crops, improved seed systems, and innovations suited for dryland and rainfed agriculture. Dr. Agrawal emphasized that successful adoption depends on alignment with local socio-economic conditions and recommended piloting climate-resilient crop varieties across multiple agro-ecological zones. Examples highlighted included the transfer of drought-tolerant legumes from South Asia to African semi-arid regions and the trial of high-altitude quinoa varieties from Bolivia in South Asian mountainous areas.

Livestock and fisheries solutions were addressed by Dr. Shubhadeep Ghosh and Dr. Yogesh Gadekar of ICAR. They discussed sustainable livestock management, disease control, optimized feeding practices, and the integration of fisheries with agricultural production systems. They also highlighted strategies to manage livestock-wildlife interactions while maintaining ecosystem health. Recommendations included the promotion of smallholder-friendly livestock and aquaculture technologies, supported by training modules and extension services. Illustrative examples included Guinea's rotational grazing systems combined with digital monitoring tools and Zambia's small-scale aquaculture linked to community-based water management.

Post-harvest and food processing technologies were presented by Dr. Rabe Yahaya and Dr. Hameeda Banu Itagi from IRRI. They emphasized reducing post-harvest losses, enhancing value addition, improving processing efficiency, and linking smallholders to markets. Nutrition-sensitive processing was highlighted as a critical strategy to strengthen food security. Recommendations included establishing farmer cooperatives for storage and processing, and strengthening market linkages. Examples included smallholder fruit-processing units in Chile and rice and pulse milling centers in India integrated with digital market platforms.

Dr. Ramesh Singh, Principal Scientist at ICRISAT, addressed Natural Resource Management (NRM), emphasizing integrated water and land management, soil conservation, restoration of degraded lands, and climate-smart agriculture practices. He underlined NRM as the foundation for resilient agriculture, especially in rainfed and climate-vulnerable regions. Recommendations included implementing watershed-based management practices, climate-adaptive irrigation systems, and documenting successful interventions for replication. Country-specific examples included India's integration of tank-based irrigation with drip systems and Bolivia's soil conservation terraces for high-altitude farming.

Following the thematic sessions, the conference hosted a Global South Dialogue, moderated by Prof Gulshan Sachdeva, Chief Coordinator at DAKSHIN – Global South Centre of Excellence (RIS), explored the technology needs of the Global South. The session featured rich insights from Ms Zambwe Shingwele (Zambia Institute for Policy Analysis and Research), Dr Jerome Queste (Centre for Coordination of Agricultural Research and Development for Southern Africa), Dr Javier Aliaga Lordemann (Instituto de Estudios Avanzados en Desarrollo, Bolivia), Dr Aliou Barry (Stat View International, Guinea), and Dr Lalith M. Rankoth (University of Peradeniya, Sri Lanka). Key points included demand-driven, context-specific solutions for irrigation, drought-tolerant crops, livestock productivity, soil fertility, and digital adoption. Financial mechanisms such as blended finance, seed insurance, and regional finance observatories were emphasized as critical enablers. Countries shared practical strategies: Zambia discussed irrigation solutions and drought-resilient crops; Bolivia focused on high-altitude crop adaptation; Guinea highlighted soil fertility and market access; and Chile emphasized digital agriculture adoption and farmer engagement. Recommendations included piloting regional projects, mobilizing finance, and strengthening institutional networks to sustain South-South Cooperation.

Dr. Srivalli Krishnan from the Gates Foundation reflected on strategic support required to enable agricultural transformation. She emphasized the need for institutional coordination, policy alignment, and access to finance for smallholders to adopt climate-smart practices. Peer learning and cross-regional collaboration were identified as key enablers of resilience. Recommendations included developing governance frameworks for South-South initiatives and establishing funding mechanisms to support pilot programs.

The Discussion/Q&A session discussed practical strategies and ground-level innovations from their respective regions. Technology was framed as a key driver for change ranging from digital platforms and climate-smart production practices to the strategic management of agricultural resources. Financing adaptation emerged as a recurring theme, with discussions centred on cost-effective mechanisms to mitigate the economic impacts of climate change. Speakers highlighted their countries' efforts, such as combining traditional tank-based irrigation systems with modern technology, implementing e-voucher platforms for input distribution, and rolling out national mechanization strategies. Other critical priorities included reversing land degradation, promoting nutrition-sensitive agri-food systems, generating jobs through value chains, and improving livestock systems while managing wildlife–livestock interactions and overgrazing.

Unlocking finance was recognized as vital to agricultural resilience. Several proposals were discussed, including the establishment of regional finance observatories, agri-tech investment platforms, seed insurance schemes, and blended finance toolkits. The need for robust institutional mechanisms to support South–South knowledge exchange, benchmarking, and technology transfer was consistently underlined. Participants called for the creation of a Global South Cooperation Fund and urged deeper engagement with national parliaments and ministries to scale innovations.

The conference concluded with closing remarks from **Mr. Sanjay Agarwal**, Assistant Director General, ICRISAT, who summarized the key outcomes. These included the endorsement of ISSCA as a neutral knowledge hub, commitments to pilot South-South collaborations across diverse agro-ecological zones, and reinforcement of peer learning and institutional networking. Follow-up actions were outlined, including the expansion of the ISSCA Knowledge Portal, establishment of regional hubs in Africa and Latin America, and continued engagement in policy forums to ensure sustained impact.

Key Strategies and Recommendations

The conference underscored that building agricultural resilience in the Global South requires a multi-pronged approach, combining technology adoption, institutional collaboration, policy alignment, and knowledge sharing. Drawing on insights from experts, policymakers, and regional stakeholders, a set of key strategies and actionable recommendations was identified to guide countries in co-developing scalable, context-specific, and climate-resilient agricultural solutions.

1. South-South Knowledge Exchange
    - Establish and strengthen structured mechanisms for peer-to-peer learning across the Global South.

- Leverage the ISSCA Knowledge Portal as a centralized hub for innovations, case studies, and scalable technologies.
- Encourage contribution of region-specific solutions across crops, livestock, fisheries, post-harvest, digital agriculture, and natural resource management.
- Organize regular virtual dialogues, workshops, and regional hubs for dynamic knowledge exchange and co-development.
- Facilitate replication of proven practices in countries with similar agro-climatic and socio-economic conditions.

2. Climate-Resilient Agriculture & Natural Resource Management
   - Promote integrated water and land management in rainfed and climate-vulnerable areas.
   - Encourage adoption of watershed-based approaches, tank-based irrigation, drip/sprinkler systems, agroforestry, and soil conservation measures.
   - Prioritize rehabilitation of degraded lands through context-specific interventions like terracing, conservation tillage, and organic soil amendments.
   - Support climate-smart crop and livestock systems to enhance productivity and resilience.
   - Provide policy support and financing mechanisms to enable farmer adoption of resilience measures.
3. Digital Agriculture & Technology Adoption
   - Deploy precision agriculture tools, mobile advisories, and decision-support platforms tailored to smallholder farmers.
   - Integrate real-time weather, soil, and crop data for informed decision-making.
   - Promote digital literacy and extension services to ensure inclusivity of all farmers.
   - Pilot and adapt successful digital solutions from India, Kenya, and other countries across similar regions.
   - Ensure affordability and accessibility of digital tools for marginalized and remote farmers.
4. Crop & Livestock Technologies
   - Promote climate-resilient crop varieties and strengthen seed systems for accessibility and quality.
   - Pilot innovations in drought-tolerant grains, legumes, and high-altitude crops across multiple agro-ecological zones.
   - Support sustainable livestock management, disease control, and optimized feeding practices.

- Encourage integration of livestock-fisheries systems while managing wildlife-livestock interactions.
- Document and share successful practices such as Guinea's rotational grazing and Bolivia's high-altitude crop varieties.

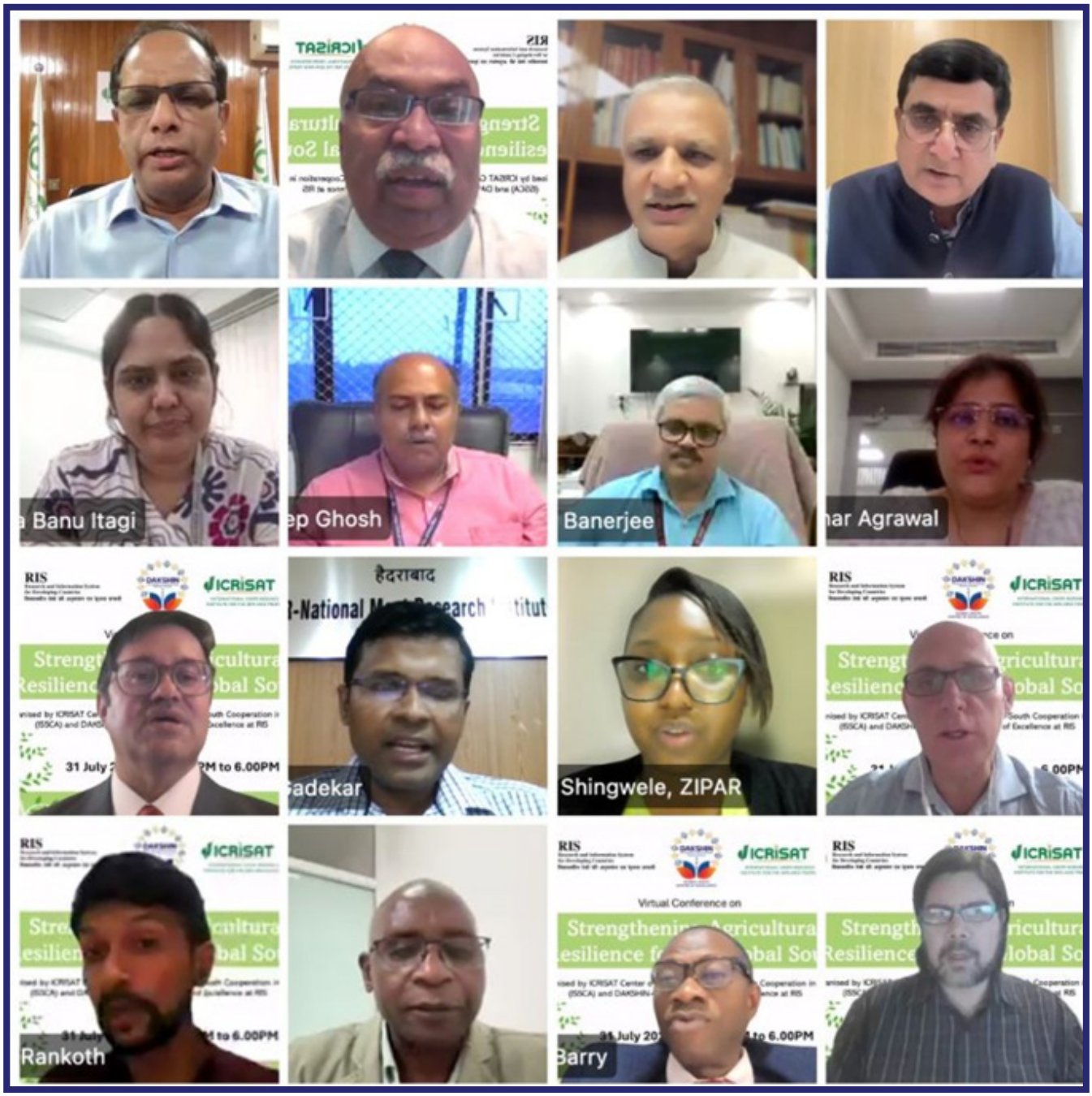
5. Post-Harvest & Value Addition
   - Reduce post-harvest losses through storage infrastructure and collective farmer processing units.
   - Promote nutrition-sensitive value addition and agro-processing technologies.
   - Strengthen market linkages to connect smallholders to urban and regional markets.
   - Encourage cooperative models and digital market integration to enhance farmer income.
6. Financing & Institutional Support
   - Develop blended finance instruments, seed insurance schemes, regional finance observatories, and agri-tech investment platforms.
   - Create a Global South Cooperation Fund to support pilot projects and technology dissemination.
   - Strengthen institutional governance, inter-ministerial coordination, and regional hubs to sustain South-South collaborations.
   - Provide financial incentives to farmers adopting climate-smart technologies.
7. Policy Alignment & Strategic Governance
   - Align national agricultural policies with regional SSC priorities.
   - Integrate South-South strategies into national agricultural development plans.
   - Engage parliaments, local governments, and ministries to ensure effective governance and support.
   - Institutionalize mechanisms for monitoring, benchmarking, and evaluating technology transfer and innovation adoption.
   - Provide incentives for sustainable practices and adoption of locally proven solutions.
8. Cross-Regional Pilots & Co-Development
   - Pilot interventions in digital agriculture, climate-smart crops, livestock, post-harvest management, and NRM across diverse regions.
   - Involve local stakeholders in co-development to ensure practicality, inclusivity, and sustainability.

- Use pilot learnings to scale regionally relevant innovations across multiple agro-ecological zones.

9. Peer Learning & Capacity Building
    - Conduct regional training programs, workshops, and farmer field schools on digital tools, climate-smart practices, and NRM.
    - Develop online learning modules for policymakers, researchers, and extension workers.
    - Establish regional learning networks to document success stories, challenges, and evidence-based guidance.
    - Encourage cross-country exchange visits and knowledge-sharing platforms to foster long-term collaboration.
10. Summary of Actionable Recommendations
    - Leverage the ISSCA Knowledge Portal for knowledge sharing and co-development.
    - Pilot climate-resilient and digital solutions across multiple countries.
    - Strengthen institutional networks, financial mechanisms, and governance frameworks to sustain SSC initiatives.
    - Ensure solutions are context-specific, co-developed, and scalable for smallholders.
    - Promote peer-to-peer learning, capacity building, and regional collaboration as enablers of agricultural transformation.

Glimpses

Figure: Key Speakers and Insights from the Virtual Conference



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RIS specialises in issues related to international economic development, trade, investment and technology. It is envisioned as a forum for fostering effective policy dialogue and capacity-building among developing countries on global and regional economic issues. The focus of the work programme of RIS is to promote South-South Cooperation and collaborate with developing countries in multilateral negotiations in various forums. Through its following centres/forums, RIS promotes policy dialogue and coherence on regional and international economic issues.

The word "DAKSHIN" (दक्षिण) is of Sanskrit origin, meaning "South." The Hon'ble Prime Minister of India, Shri Narendra Modi, inaugurated DAKSHIN – Global South Centre of Excellence in November 2023. The initiative was inspired by the deliberations of Global South leaders during the Voice of the Global South Summits. DAKSHIN stands for Development and Knowledge Sharing Initiative. Hosted at the RIS, DAKSHIN has established linkages with leading think tanks and universities across the Global South and is building a dynamic network of scholars working on Global South issues.

AIC at RIS has been working to strengthen India's strategic partnership with ASEAN in its realisation of the ASEAN Community. AIC at RIS undertakes research, policy advocacy and regular networking activities with relevant organisations and think-tanks in India and ASEAN countries, with the aim of providing policy inputs, up-to-date information, data resources and sustained interaction, for strengthening ASEAN-India partnership.

CMEC has been established at RIS under the aegis of the Ministry of Ports, Shipping and Waterways (MoPS&W), Government of India. CMEC is a collaboration between RIS and Indian Ports Association (IPA). It has been mandated to act as an advisory/technological arm of MoPSW to provide the analytical support on policies and their implementation.

FITM is a joint initiative by the Ministry of Ayush and RIS. It has been established with the objective of undertaking policy research on economy, intellectual property rights (IPRs) trade, sustainability and international cooperation in traditional medicines. FITM provides analytical support to the Ministry of Ayush on policy and strategy responses on emerging national and global developments.

BEF aims to serve as a dedicated platform for fostering dialogue on promoting the concept in the Indian Ocean and other regions. The forum focuses on conducting studies on the potential, prospects and challenges of blue economy; providing regular inputs to practitioners in the government and the private sectors; and promoting advocacy for its smooth adoption in national economic policies.

FIDC, has been engaged in exploring nuances of India's development cooperation programme, keeping in view the wider perspective of South-South Cooperation in the backdrop of international development cooperation scenario. It is a tripartite initiative of the Development Partnership Administration (DPA) of the Ministry of External Affairs, Government of India, academia and civil society organisations.

FISD aims to harness the full potential and synergy between science and technology, diplomacy, foreign policy and development cooperation in order to meet India's development and security needs. It is also engaged in strengthening India's engagement with the international system and on key global issues involving science and technology.

As part of its work programme, RIS has been deeply involved in strengthening economic integration in the South Asia region. In this context, the role of the South Asia Centre for Policy Studies (SACEPS) is very important. SACEPS is a network organisation engaged in addressing regional issues of common concerns in South Asia.

Knowledge generated endogenously among the Southern partners can help in consolidation of stronger common issues at different global policy fora. The purpose of NeST is to provide a global platform for Southern Think-Tanks for collaboratively generating, systematising, consolidating and sharing knowledge on South South Cooperation approaches for international development.

DST-Satellite Centre for Policy Research on STI Diplomacy at RIS aims to advance policy research at the intersection of science, technology, innovation (STI) and diplomacy, in alignment with India's developmental priorities and foreign policy objectives.

— Policy research to shape the international development agenda —

Core IV-B, Fourth Floor, India Habitat Centre, Lodhi Road, New Delhi-110 003, India
Tel. +91-11-24682177-80, Email: dgoffice@ris.org.in, Website: www.ris.org.in

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