NATIONAL POLICY INTERFACE OF SDGS AND SUSTAINABLE AGRICULTURE

Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

Agriculture, severely impacted by climate change, requires significant focus to ensure food security, preserve the environment, and stabilize economies. The effects of climate change transcend national boundaries and demand significant resources for sustainable agriculture. Global collaboration allows nations to combine their resources for investment in sustainable agricultural practices, research, development, and infrastructure enhancements (Sustainable Agriculture Network, 2019). International collaboration enables the consolidation of knowledge, skills, and cutting-edge research across diverse regions and fields.

As per the Technology and Innovation report by UNCTAD (2023), there is a clear gap in R&D expenditure between developed and developing countries. Several European Union countries allocate around 3% of their GDP to R&D, whereas leading global performers invest approximately 5%. In developing countries, the percentages are considerably lower. On average, lower-middle-income countries invest around 0.53% on R&D (UNCTAD, 2023). Countries with varying socio-economic statuses and ecological landscapes prioritize different areas within their policy and R&D agendas. For instance, in developed countries, where food availability is no longer a concern, R&D in the agricultural sector has decreased. In contrast, middle-income nations experiencing population growth and rising incomes require agricultural R&D to enhance productivity. The global community can bridge these priority gaps by transitioning research for green innovations from national to multinational level.

Research organizations can foster new skills and capabilities by forging partnerships between unconventional collaborators. For instance, connecting agricultural scientists with technology firms creates innovative 'technology ecosystems' that drive development (Shepherd, et al., 2018). Knowledge sharing at the multinational level enables efficient natural resource management and coordinated farming practices by operating on scales better suited to the spatial scope of ecological processes across the globe, going beyond the conventional focus on field or farm scales (Velten, et al., 2021). Global partnerships enable the consolidation of knowledge, skills, and cutting-edge research across diverse regions and fields. South–South and triangular cooperation in agriculture enable interactions between countries with similar agro-ecological systems, amplified by the support of an even greater number of actors, creating a unique potential for improving coordination and sharing experiences. Through the exchange of information, effective farming methods, and technological progress, farmers gain access to enhanced crop varieties, inventive agricultural approaches, and climate-specific adaptive measures.

International cooperation allows nations to establish unified policies and standards for sustainable agriculture and environmentally conscious practices. When regulations are aligned, it can streamline market entry for agricultural goods, fostering equitable trade and bolstering the economies of involved countries. Additionally, international alliances can fortify resilience against market fluctuations caused by climate influences, thereby ensuring a more stable and secure food supply chain (Sustainable Agriculture Network, 2019).

National Policy and Stakeholder Mapping

Policies/Schemes	Stakeholders	Pre-production	Production	Post-production

Foreign Direct Investment (FDI) Policy	• Ministry of Commerce and Industry	X	X	X
India – Australia Bilateral Economic Partnership	• NITI Aayog	X		
Foreign Trade Policy 2023	• Ministry of Commerce and Industry			X
International Treaty on Plant Genetic Resources for Food and Agriculture	• United Nations	X	X	
WTO Agreement on Agriculture	• World Trade Organization			X
Carbon Border Adjustment Mechanism (CBAM)	• European Union	X	X	X
e-National Agriculture Market (e-NAM)	• Ministry of Agriculture and Farmers Welfare			X
International Fund for Agricultural Development	• United Nations	X	X	X

Synergies and Trade-off

Foreign investments in the agricultural sector can bring in advanced technologies, best practices, and knowledge that contribute to improved agricultural productivity, resource efficiency, and sustainable land management. Efficient channelizing of agriculture finance through international partnerships can empower poor farmers to increase their income and help to provide market-based financial services, and fund long-term and green investments to support sustainable agriculture and agri-food value chains (World Bank, 2022). Investing in agriculture and food systems in a responsible manner has a positive impact on food security and nutrition. This is achieved by increasing sustainable production and productivity of safe, nutritious, diverse, and culturally acceptable food. Responsible investment also helps in reducing food loss and waste. It prevents and minimizes negative impacts on air, land, soil, water, forests, and biodiversity. Furthermore, it improves the management of agricultural inputs and outputs. This leads to enhanced production efficiency and minimizes potential threats to the environment and to plant, animal, and human health, including occupational hazards (CFS, 2014).

Research into agricultural varieties and techniques, such as biotechnologies, holds significant promise in aiding developing nations to achieve food security and rural development by overcoming limitations in crop yield. These advancements can be instrumental in developing crop varieties resilient to conditions like salinity and alkalinity, thereby supporting the growth of low-input agriculture—a crucial factor for countries with a substantial population of small and marginalized farmers (Kumar, 2009). Additionally, looking at successful instances in countries like Brazil, China, and India, the industrialization of integrated food-energy systems stands as a viable model that could be emulated elsewhere. (Kumar, 2009). To enhance this

progress, collaborative efforts among developing nations through South-South cooperation can involve joint research, knowledge exchange, higher education partnerships, and the establishment of standards concerning food systems.

Targets	Synergy	Trade-off
Target 17.1: Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection		
Target 17.2: Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7% of gross national income for official development assistance (ODA/ GNI) to developing countries and 0.15 to 0.20% of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20% of ODA/GNI to least developed countries		
Target 17.3: Mobilize additional financial resources for developing countries from multiple sources		
Target 17.4: Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress		
Target 17.5: Adopt and implement investment promotion regimes for least developed countries		
Target 17.6: Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism		
Target 17.7: Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed		
Target 17.8: Fully operationalize the technology bank and science, technology and innovation capacity building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology		
Target 17.9: Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation		
Target 17.10: Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda		
Target 17.11: Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020		
Target 17.12: Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least		

developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access		
Target 17.13: Enhance global macroeconomic stability, including through policy coordination and policy coherence		
Target 17.14: Enhance policy coherence for sustainable development		
Target 17.15: Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development		
Target 17.16: Enhance the Global Partnership for Sustainable Development, complemented by multistakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries		
Target 17.17: Encourage and promote effective public, public private and civil society partnerships, building on the experience and resourcing strategies of partnerships		
Target 17.18: By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts		
Target 17.19: By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries		

Gaps and Barriers

Due to a lack of data and inadequately utilized methodologies, measuring progress and accountability with respect to governmental assistance remains a challenge (UN, 2009). As a result of under-reporting, the progress of schemes focusing on women empowerment and gender equality also cannot be tracked (Centre for Budget and Governance Accountability, 2021). Moreover, the SDG India Index captures only three out of seven targets, i.e., Target 1.2, Target 1.3, and Target 1.4. This creates a problem for India as the only metric for keeping track of the performance of the SDGs does not cover all the aspects of SDG 1 (Bhambu, 2020). The impacts of sustainable agriculture on multidimensional aspects of poverty are an area that needs more attention.

Unfortunately, most of the existing sovereign debt restructuring programmes do not incorporate climate-change risk and biodiversity loss, even if they are potential risks to macroeconomic and financial stability, which may not cover all the aspects of sustainable agriculture (Jena, 2023).

The dissemination of agricultural technology is influenced by the speed and impact of the technologies. Currently, developing countries are putting more effort into innovating single agriculture technologies while having relatively few supporting technical achievements and lacking effective technological support (Wang, et al., 2020). The success of agricultural, innovative, or environmental policies may be hampered by incoherence, which can be caused

by a lack of coordination or inadequate ex-ante and ex-post assessments in some circumstances (OECD, 2019).

There are inherent challenges in South–South cooperation, including a lack of adequate funding and institutional capacity, different regional conditions, and vulnerability to economic and political shocks (United Nations, 2009). This hinders the stability of the smooth flow of sustainable practices at all value chains.

Emerging Policy Solutions

To bolster sustainable agriculture and align it with the objectives of SDG 17, a comprehensive policy framework must include finance, capacity-building, technology, and multi-stakeholder partnerships.

Finance and investment: The policy adopted by direct investment (FDI) focuses on the back-end infrastructure of the agricultural value chain. To further enhance its impact, it could introduce tax incentives, streamlined permit processes, and regulatory support to attract more FDI. Additionally, the policy might include provisions to encourage FDI in R&D related to sustainable agriculture, thus fostering innovation in the sector. Furthermore, it should promote the adoption of agroecological approaches and biodiversity-friendly farming practices through grants, subsidies, and extension services, ensuring that these practices are accessible to all farmers.

Ensuring policy coherence and coordination: In terms of policy coherence, the creation of an inter-ministerial committee is a positive step, but it should be empowered to enforce policy alignment. Regular assessments and stocktaking should be mandatory, and mechanisms to resolve conflicts among policies must be established. A central repository for policy documents and data sharing could further improve coordination among government agencies. While India has engaged in bilateral and multilateral partnerships in agriculture, there is room for improvement in harnessing the full potential of North-South, South-South, and triangular cooperation. Existing efforts tend to be fragmented, with limited coordination among various ministries and agencies responsible for agriculture, international cooperation, and development.

Developing and strengthening global partnerships: India can formulate a comprehensive national strategy that outlines clear objectives, targets, and timelines for North-South, South-South, and triangular cooperation in agriculture. This strategy should involve stakeholders from multiple ministries, research institutions, and the private sector. It is important to partner with international research institutions to develop innovative, science-based schemes that align with SDG 17 for sustainable agriculture. It is also recommended to encourage land tenure reforms in collaboration with international organizations to promote secure land ownership, which can boost investment in sustainable agriculture.

One way to improve India's agricultural sector is by facilitating the transfer of agricultural technology and expertise from developed countries. This can be achieved by establishing joint research and development projects, technology-sharing agreements, and capacity-building programmes for Indian farmers and agricultural scientists. India can take a leadership role in South-South cooperation by sharing its successful agricultural practices with other developing countries facing similar challenges. This could include knowledge-sharing platforms, joint research initiatives, and technical assistance programmes. Collaboration with international organizations like the Food and Agriculture Organization (FAO), the International Fund for

Agricultural Development (IFAD), and the World Bank to facilitate triangular cooperation. These organizations can help mobilize resources and expertise for sustainable agriculture projects. India can actively engage in international platforms and initiatives that promote sustainable agriculture, such as the UN Food Systems Summit as part of its commitment to the global partnership for sustainable development.

Strengthening e-NAM: Existing practices in India's agricultural value chain, such as the Kisan Credit Card scheme and eNAM, have begun to streamline processes and enhance transparency. However, there is an opportunity to prioritize sustainability within value chains. Policies can incentivize the adoption of sustainable practices by offering premium prices for sustainably produced goods and facilitating the certification and labelling of such products.
e-NAM primarily focuses on staple crops, and there is a need to broaden its coverage to include a wider range of agricultural commodities. This would ensure that farmers producing diverse crops can equally benefit from the platform. However, there are challenges in achieving seamless integration between e-NAM and existing Agricultural Produce Market Committee (APMC) systems. This lack of interoperability can result in inefficiencies, as data exchange and communication between different platforms may not be smooth. In some regions, inadequate infrastructure, including transportation and storage facilities, poses challenges in efficiently moving and storing agricultural produce. Addressing these bottlenecks is vital for the smooth functioning of e-NAM. Harmonizing and standardizing agricultural marketing laws and regulations across states is essential. Inconsistent regulatory frameworks can create obstacles to the seamless operation of e-NAM on a national scale.

Robust monitoring and evaluation: Establish a monitoring and evaluation framework to track the progress and impact of international cooperation initiatives in agriculture. Regular assessments should be conducted to ensure that the partnerships are achieving their intended objectives and making a meaningful contribution to sustainable agriculture and SDG 17.

Collaboration and partnerships: Transboundary cooperation is critical in regions like the Indo-Gangetic Plain shared with neighbouring countries. While existing agreements exist, such as the Indo-Nepal Agriculture Cooperation Plan, there is potential for deeper collaboration. A policy entry point could be strengthening and updating existing agreements to promote sustainable land and water management practices, which would benefit all countries involved.

India has taken steps to collaborate with Nepal on various aspects of agriculture, including seed exchange, joint research, and training programmes. However, the focus has primarily been on improving productivity and addressing food security. To enhance transboundary cooperation, India can initiate discussions with Nepal and other neighbouring countries to update existing agreements to prioritize sustainability. This may involve joint efforts in sustainable water resource management, including irrigation efficiency, reducing water pollution, and protecting shared ecosystems. Collaboration on climate-resilient agriculture practices, crop diversification, and pest management can also be explored. Establishing a shared database for monitoring and managing water resources and crop health could facilitate this cooperation. Additionally, cross-border farmer exchange programmes and knowledge sharing can foster a more integrated approach to sustainable agriculture in the region. India's engagement in international partnerships like the Coalition of African, Asian, and Latin American Countries (COMESA) and the International Fund for Agricultural Development (IFAD) demonstrates its commitment to global cooperation. To enhance this engagement, India could consider expanding its support to international research and development initiatives in agriculture, further aligning its efforts with global sustainability goals.

India has been involved in several international initiatives through IFAD, supporting projects related to rural development, climate resilience, and agricultural productivity in developing countries. However, these initiatives have often been focused on individual countries or regions rather than a broader global partnership for sustainable agriculture. To enhance global partnerships for sustainable development, India can consider expanding its support to international research and development initiatives in agriculture. This could involve increasing contributions to organizations such as IFAD and participating in collaborative research projects that address global agricultural challenges. India can also advocate for and contribute to the development of international frameworks that promote sustainable agriculture, including those related to climate change mitigation and adaptation in agriculture.

Boosting trade and its regime: India's trade regulations can sometimes be complex and cumbersome, leading to delays and trade barriers. This could involve simplifying documentation requirements and reducing redundant administrative procedures. One potential solution is to establish a Single Window System for trade, where all trade-related documentation and clearances are available in one place. This would reduce paperwork, improve transparency, and expedite the trade process. Developing and implementing trade facilitation measures such as advance rulings, customs automation, and expedited clearance procedures can minimize trade barriers.

Compliance with sanitary and phytosanitary measures (SPS) can be strengthened. To accomplish this, it is necessary to invest in capacity-building programmes for farmers, producers, and food processing units. Training should cover the safe handling, storage, and processing of agricultural products. Testing laboratories should be upgraded to meet international standards to conduct accurate and timely inspections. This includes equipping labs with the latest technology for food safety testing. A robust risk assessment system should be developed that evaluates and manages risks associated with agricultural products. This can help prioritize inspections and resources more effectively. It is also important to allocate funds for the modernization and expansion of inspection and testing facilities, particularly in regions with high agricultural production. Trade policies can prioritize fair and equitable trade agreements that benefit small-scale farmers and promote the export of sustainably produced agricultural products. This can contribute to economic growth and international cooperation.

Technology advancements: India can upgrade border inspection points to meet international standards for product testing and quarantine measures and strengthen the cold chain infrastructure to ensure the safe transportation and storage of perishable agricultural products. It can also explore the use of blockchain technology and other AI tools for supply chain transparency and traceability. This can enhance trust in the safety of agricultural products.

Capacity-building: Lastly, to bolster capacity-building and research, the policy should allocate dedicated funds for farmer education and training programmes and prioritize research that addresses local agricultural challenges. By strengthening the educational and research aspects, the policy can help ensure that sustainable agricultural practices are well understood and widely adopted.