



**RIS**  
Research and Information System  
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विकासशील देशों की अनुसंधान एवं सूचना प्रणाली

# DAKSHIN Workshop

## Digital Public Infrastructure and Financial Inclusion

22 August 2024

# Report



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# Concept Note

DAKSHIN- Global South Centre of Excellence works towards the identification and implementation of scalable and sustainable solutions for the Global South. It supports the exchange of ideas, best practices, capacity building, and opportunities for development under the South-South Cooperation framework. To facilitate idea sharing and continuous dialogue among the countries of the Global South, DAKSHIN organized workshops on topics of common interest. The latest in this series was a workshop on cybersecurity, with a specific focus on Digital Public Infrastructure (DPI) in the countries of the Global South.

With the increasing complexity in governance, deploying Digital Public Infrastructure (DPI) has become a useful way of bringing transparency, efficiency and quality in good governance in countries of the Global South. DPI forms the technology base for e-Governance. It includes the systems for biometric identification of citizens, e-payments, and tools for digitalization of sectors such as agriculture and health. DPI can be designed for ease of deployment, maintenance and sustenance. Developing countries benefit from the sharing of knowledge and expertise in developing the technological resources and capabilities to further e-Governance.

DPI supports governance models that are transparent, accountable, and participatory in nature by employing appropriate technologies and processes. In India, a range of large-scale DPIS have been created, including Aadhaar- a citizen identity system, UPI- a digital payment system, Electronic Know Your Customer (e-KYC) system for electronically verifying credentials, ONDC- an e-commerce marketplace platform and many others.

The technical architecture of DPI consists of 5 basic principles:

Interoperability ensures the easy flow of information among different technical systems built with some other hardware and software capabilities.

- Minimalistic in design and built with open protocols and technical components that can be reused for integrating additional features over the period of time, as the need arises.

- The architecture of DPI allows both private and public entities to join hands and build solutions around DPI, fostering innovation.
- The data is stored in a federated and decentralised fashion instead of aggregated databases and a centralized system.
- Enhanced security and privacy through tokenization/masking and end-to-end encryption of data.

## Aim of the Workshop

This workshop on Digital Public Infrastructure and Financial Inclusion showcased the architecture of DPI and shared experiences of Global South Countries in the benefits of its deployment. The workshop provided an opportunity for the Global South countries to leapfrog their governance and further stimulate economic growth. The workshop aimed to:

- Enhance the understanding of DPI architecture.
- Explore the best practices and digital solutions from India and other Global South countries.
- Discuss the role of DPI in enhancing financial inclusion.
- Facilitate partnerships and collaborations to share best practices and drive the global adoption of DPI.

# Agenda

5:30 pm - 5:35 pm	Welcome Remarks
5:35 pm - 5:45 pm	Keynote address on Digital Public Infrastructure (DPI) <ul style="list-style-type: none"><li>• <b>Mr. Anish Kumar</b>, Ministry of External Affairs, Government of India</li></ul>
5:45 pm - 5:55 pm	Implementation of DPI <ul style="list-style-type: none"><li>• <b>Mr. Nagarajan Santhanam</b>, Chief Dissemination Officer, Modular Open Source Identity Platform (MOSIP), India</li></ul>
5:55 pm - 6:05 pm	Changing the financial inclusion landscape <ul style="list-style-type: none"><li>• <b>Ms. Maria Francis</b>, Incharge - Business Development, Americas, NPCI International Payments Limited (NIPL), India</li></ul>
6:05 pm - 6:40 pm	Representatives from Global South countries <ul style="list-style-type: none"><li>• <b>Mr. Barnabe Okouda</b>, Executive Director, Cameroon Policy Analysis and Research Center (CAMERCAP-PARC), Cameroon</li><li>• <b>Mr. Zali B. Chikuba</b>, Executive Director, Zambia Institute for Policy Analysis and Research (ZIPAR), Zambia</li><li>• <b>Dr. Zaw Oo</b>, Executive Director, Centre for Economic and Social Development, Myanmar</li><li>• <b>Mr. Deependra Chaulagain</b>, Samriddhi Foundation, Nepal</li><li>• <b>Dr. Alexander M. Rusero</b>, Zimbabwe Institute of Diplomacy, Zimbabwe</li></ul>
6:40 pm - 6:55 pm	Open Discussion
6:55 pm - 7:00 pm	Concluding Remarks

# Summary Report

DAKSHIN organized the fifth virtual workshop titled “Digital Public Infrastructure and Financial Inclusion” on 22 August 2024. This was the second workshop under the digital solutions theme, held as part of DAKSHIN’s ongoing efforts to promote knowledge exchange, best practices, capacity building, and development cooperation under the South-South Cooperation framework. The workshop focused on showcasing the architecture of Digital Public Infrastructure (DPI) and sharing experiences on its deployment and benefits across the Global South. It aimed to enhance participants’ understanding of DPI frameworks, explore its role in advancing financial inclusion, and facilitate partnerships and collaborations to promote the global adoption of DPI.

**Mr. Atul Kaushik**, GDC Fellow at RIS, welcomed the participants, including representatives from various global think tanks. In his opening remarks, he underscored the critical role of technology – particularly Digital Public Infrastructure (DPI) – in addressing the multifaceted challenges confronting the Global South. He provided an overview of DAKSHIN, the Global South Centre of Excellence at RIS, an initiative that emerged following India’s G20 Presidency and the Voice of Global South Summit. Following his introductory address, Mr. Kaushik initiated the discussion with the panelists, setting the stage for an engaging exchange of insights and experiences.

**Mr. Anish Kumar**, Advisor at the Ministry of External Affairs, Government of India, delivered the keynote address on *Digital Public Infrastructure and India’s Approach to International Cooperation*. He highlighted the dual responsibility of governments in DPI development – encompassing both technological and governance dimensions. Technologically, DPI requires strong system integration and software development, often achieved through public-private collaboration. From a governance perspective, he emphasized the need for clear policy frameworks, regulatory safeguards, and data management protocols to ensure security, privacy, and equitable access while preventing monopolization of digital spaces by private entities. Citing India’s digital payment system as an example, he illustrated how government intervention enables the delivery of welfare benefits to remote communities, ensuring last-mile inclusion.

On the global front, Mr. Kumar outlined India’s strategy of partnering with other nations to share experiences, best practices, and technical expertise in DPI implementation. He noted that this collaborative approach promotes mutual learning and the adaptation of digital solutions to local contexts while preserving national data sovereignty. India has signed bilateral agreements with twelve countries to share its digital innovations, such as the Unified Payments Interface (UPI), enabling scalable and replicable solutions across the Global South. Mr. Kumar also highlighted ways of contextualizing India’s DPI models and invited further dialogue on strengthening cooperation in this area. He underscored

that effective DPI deployment hinges on strong government leadership and sustained international collaboration to advance financial inclusion and enhance public service delivery globally.

**Mr. Nagarajan Santhanam**, Chief Dissemination Officer, Modular Open Source Identity Platform (MOSIP), India, discussed global experiences with foundational ID systems, noting that despite efforts by over 60 countries, many faced challenges such as vendor lock-in and poor interoperability. To address these issues, he introduced MOSIP—an open-source, modular platform developed at the International Institute of Information Technology, Bangalore, with support from the Bill and Melinda Gates Foundation.

Mr. Santhanam explained that MOSIP's key components, **e-Signet** for secure login using national IDs and **INJI** for offline authentication, promote flexibility, security, and accessibility. Highlighting its global adoption, he cited the Philippines, where 5.3 million new users joined the banking system through MOSIP, and Ethiopia, where it is enabling access to micro-lending services for millions. Mr. Santhanam emphasized that MOSIP combines technology deployment with capacity building and ongoing technical support, helping countries build sustainable and interoperable ID systems. He concluded by reaffirming MOSIP's commitment to advancing digital inclusion and collaboration across the Global South.

**Ms. Maria Francis**, Incharge of Business Development (Americas) at the National Payments Corporation of India (NPCI), discussed the Unified Payments Interface (UPI) and its transformative role in India's digital public infrastructure. She explained that India's digital inclusion journey was built on three foundational pillars: universal banking access, affordable mobile connectivity, and widespread internet availability. The Aadhaar national ID system played a key role in enabling financial inclusion by simplifying account opening and ensuring that even individuals in remote areas could access banking services.

Ms. Francis provided an overview of NPCI, a not-for-profit organization established under the Payment and Settlement Systems Act by the Reserve Bank of India and the Indian Banks' Association. Starting with a few member banks, NPCI now includes 65 partners and manages multiple payment systems, with UPI being the flagship platform. She highlighted UPI's interoperability and real-time functionality, enabling seamless transactions between banks and non-banking apps. Ms. Francis shared that UPI processed billions of transactions, making it the world's largest payment platform by volume and value. Serving over 600 banks and more than 100 apps, UPI now connects 220 million consumers and 340 million merchants, with merchant payments accounting for 55 percent of total transactions. She emphasized that UPI today handles about 75 percent of India's digital payments, illustrating its central role in driving financial inclusion and digital empowerment. She further outlined NPCI's global vision through its subsidiary, NPCI International Payments Limited (NIPL), which promotes UPI as a model for other countries to develop their own real-time payment

systems and underscored that NIPL offers the UPI source code and technical framework to help nations build sovereign and interoperable payment platforms tailored to local needs.

**Mr. Branabe Okouda**, Executive Director of the Cameroon Policy Analysis and Research Centre (CAMERCAP-PARC), provided an overview of Cameroon's digital infrastructure and the challenges it faces. He noted that while Cameroon has made progress in developing its digital economy and expanding public infrastructure, including extensive fibre networks, the country still falls short of international standards for digital public infrastructure.

Mr. Okouda underscored the importance of enhancing digital inclusion, particularly for rural and underserved populations. He emphasized the need for capacity building to improve technological access at affordable costs and advocated for scaling infrastructure projects to smaller communities to ensure broader reach. He also highlighted the necessity of promoting digital literacy and establishing strong legal and regulatory frameworks to protect privacy and govern the use of emerging technologies such as artificial intelligence. Concluding his remarks, Mr. Okouda observed that persistent issues like unreliable electricity and limited internet connectivity continue to hinder digital development in Cameroon, and he called for collective efforts to address these foundational challenges.

**Mr. Zali Chikuba**, Executive Director of the Zambia Institute for Policy Analysis and Research (ZIPAR), shared Zambia's progress and challenges in advancing digital public infrastructure and financial inclusion. With a population of 21 million and a GDP of USD 30 billion, Zambia has expanded its telecommunications sites from 11,000 in 2023 to 12,975 in 2024, marking an 88 percent increase. However, the low site density of 0.017 per square kilometre highlights ongoing accessibility gaps, particularly in rural areas.

Mr chikuba noted that while mobile subscriptions now match the country's population, this figure conceals the disparity between urban and rural regions. Urban users often hold multiple connections, while rural communities remain underserved in both connectivity and electricity. Internet subscriptions currently stand at 12.6 million, roughly one for every two people, again reflecting this urban-rural divide. Mobile money services have grown significantly, with accounts increasing from 1.4 billion in 2021 to 1.6 billion in 2022 and daily transactions reaching about USD 3.45 billion. However, a gender gap persists, with women in low and middle-income groups being 20 percent less likely than men to own mobile money accounts. He underscored that to address these disparities, the Zambian government launched the National ICT Policy and Digital Transformation Strategy in 2023 to promote financial inclusion and bridge the digital divide. The strategy includes expanding mobile and internet services, liberalising ICT licences, and improving bandwidth capacity. Despite this progress, challenges remain in integrating the 67 percent of unbanked adults living in rural areas into formal financial systems, along with addressing cybersecurity risks, identity theft, and the high costs of extending infrastructure across the country's large and sparsely populated areas.

**Mr. Zaw Oo**, Executive Director of the Centre for Economic and Social Development, Myanmar, commended India's remarkable progress in achieving financial inclusion through digital public infrastructure (DPI), noting that such success might take decades for many countries in the Global South to realise. He provided the context of Myanmar, a country of 52 million people situated between India and China, highlighting its economic integration with its eastern neighbours and its socio-cultural ties with India. He suggested that this was an opportune moment for Myanmar to strengthen collaboration with India in developing its digital public infrastructure. He also drew attention to India's success with the CoWIN platform, which managed 2.2 billion vaccine doses, contrasting it with Myanmar's limited digital capacity during the COVID-19 pandemic. He proposed that countries with weak traditional infrastructure could benefit greatly from adopting DPI to bridge service delivery gaps. Referring to the stalled Pan-Asia Highway project, he suggested that digital infrastructure could serve as an alternative means of regional integration for Myanmar and other neighbouring countries.

Mr. Zaw Oo further emphasised the relevance of India's digital payment platforms as models for Myanmar, particularly in reaching underserved and conflict-affected populations. He noted that DPI could play a transformative role in post-conflict recovery by rebuilding social trust and improving access to essential services. Concluding his remarks, Mr. Zaw underscored that while India's DPI success provides an inspiring model for the Global South, effective implementation in Myanmar would require addressing technical and capacity gaps, fostering an enabling policy environment, and promoting inclusive digital and financial systems. He reaffirmed that India's DPI journey stands as a beacon of hope for the Global South, offering valuable lessons for bridging developmental divides through collaboration and local adaptation.

**Mr. Deependra Chaulagain**, Director of Operations and Outreach at Samriddhi Foundation, Nepal, shared insights on Nepal's progress and challenges in digital infrastructure. He noted that Nepal, with a population of around 30 million, has achieved about 63 percent internet penetration and 73 percent smartphone usage. However, the country still depends heavily on Indian internet service providers because of a limited number of local ISPs, which affects its digital autonomy and efficiency.

Mr. Chaulagain highlighted that the private sector, particularly IT companies, has outpaced government efforts in technological advancement. He pointed out that uncoordinated and overlapping initiatives have led to inefficiencies and incomplete implementation of digital projects. He stressed that although Nepal's Digital Nepal Framework (2019) aims to transition from paper-based citizenship to national ID cards, but the progress has been slow, with delays in issuing the cards. He also discussed challenges in identity management, including duplication and inconsistencies that affect financial transparency and service delivery. Despite these issues, Mr. Chaulagain noted encouraging progress in mobile

banking and digital payment systems. He mentioned Nepal's efforts to establish a national payment gateway to unify service providers and highlighted a recent MoU with India that enables cross-border mobile app use – an initiative expected to boost financial inclusion. He also highlighted the Nepal government's attempt to centralize services through the "Nagarik Application" as a positive step, though in need of substantial improvement. In conclusion, he expressed optimism about learning from India's experiences and collaborating on digital initiatives across sectors like agriculture and health to strengthen Nepal's digital transformation.

**Dr. Alexander M. Rusero**, a senior research associate and policy advisor from the Zimbabwe Institute of Diplomacy, highlighted that global conversations on digitalisation, digital sovereignty and reflected on a new form of "data colonialism," where Africa remains a user rather than a controller of digital platforms. He noted that Zimbabwe's digital economy is largely informal, with recent improvements in connectivity driven by the licensing of Starlink, though access challenges persist.

He discussed the Zimbabwe's pronounced rural-urban digital divide, explaining that while Zimbabwe has 5.4 million internet users, most rural areas remain poorly connected. Social and economic barriers further deepen this divide, particularly for women, who have limited ownership of digital assets and are disproportionately affected by climate change. Dr. Rusero also addressed the growing influence of artificial intelligence on digital public infrastructure, stressing the need for gender inclusivity, ethical digital use, and improved digital literacy. He cited recent efforts such as the establishment of a women's bank, initiatives to promote digital literacy, and the Cyber and Data Protection Act, which addresses online harms like cyberbullying. Despite constraints from international sanctions, he expressed optimism that, with cooperation from partners like India, Zimbabwe could transform its digital challenges into opportunities for growth.

# Outcomes

The **key outcomes** of the workshop on *Digital Public Infrastructure and Financial* are:

- The workshop deepened understanding of **Digital Public Infrastructure (DPI)** as a key enabler of **financial inclusion**, showcasing models currently in use in India and adaptable for the Global South.
- Participants recognized that **robust policy frameworks** and **international cooperation** are essential for successful DPI deployment, ensuring security, privacy, and equitable access.
- **India's UPI and MOSIP platforms** emerged as proven examples of scalable, interoperable, and open digital systems that can be contextualized for different national settings to strengthen local capacities.
- Representatives from **Cameroon, Zambia, Nepal, Myanmar, and Zimbabwe** highlighted their ongoing efforts and challenges in building inclusive digital ecosystems, particularly around **rural connectivity, gender gaps, and digital literacy**.
- The discussion underscored the need for **capacity building, affordable infrastructure, and localized solutions**, especially in rural and underserved regions across the Global South.
- Participants agreed on the importance of **open-source platforms, cross-border collaboration, and South-South partnerships** to promote sustainable and sovereign digital ecosystems.
- The workshop reaffirmed DAKSHIN's role as a platform for **knowledge exchange, policy dialogue, and cooperation** to advance inclusive digital transformation and financial inclusion across developing nations.

# Glimpses





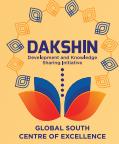


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RIS specialises in issues related to international economic development, trade, investment and technology. It is envisioned as a forum for fostering effective policy dialogue and capacity-building among developing countries on global and regional economic 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.



ASEAN-India Centre at RIS

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.



BLUE ECONOMY FORUM

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.



Network of Southern Think-Tanks

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.



Department of Science and Technology  
Satellite Centre for Policy Research at RIS

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 —

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