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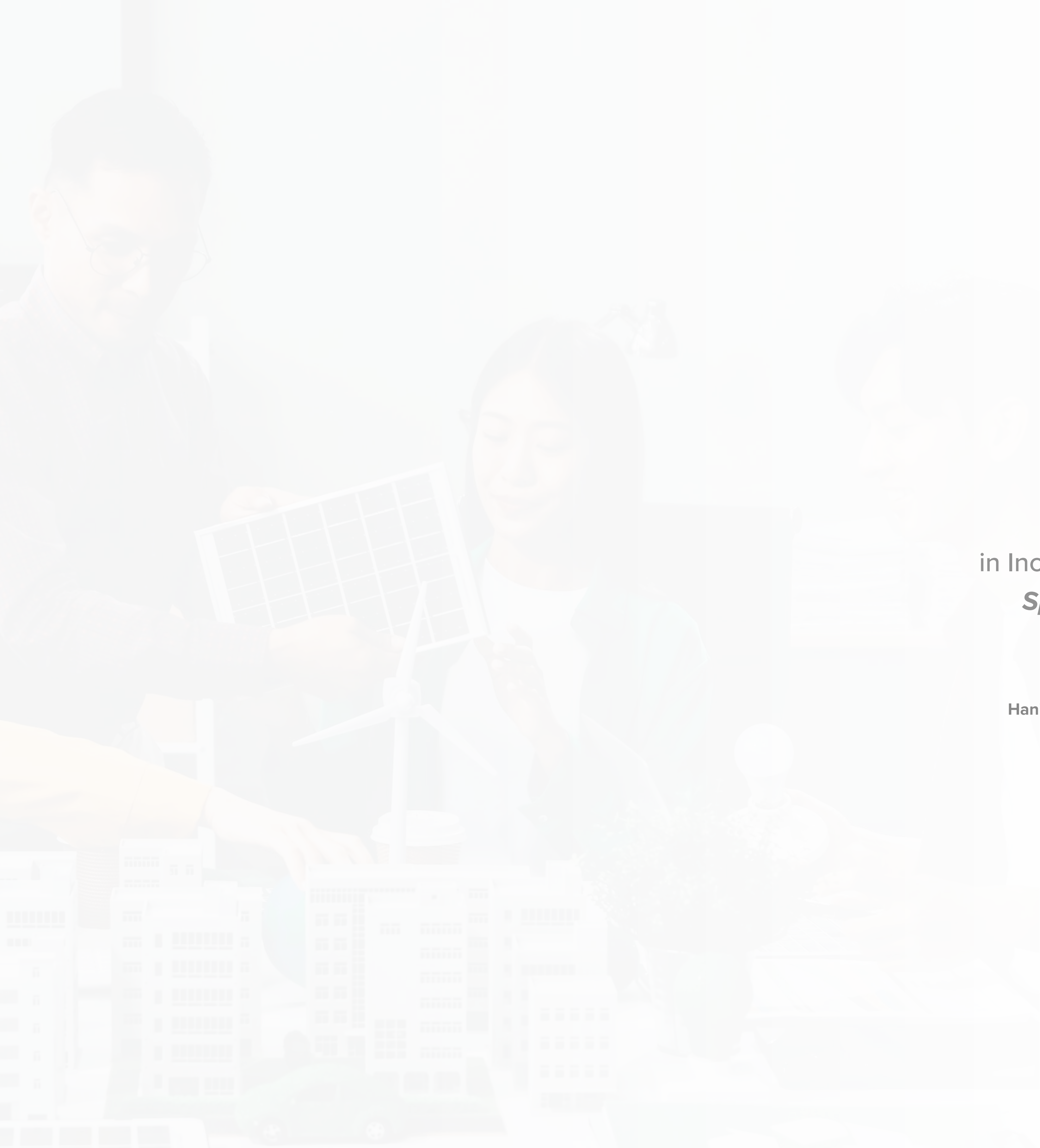
# The Role of Digital Technologies in Inclusive and Sustainable Development:

## *Spotlight on SMEs & Cooperatives*

*Co-authors:*

**Hanin Yahaya | Mohamed Rashwan | Dr. Issam Krimi**

Sector of Science and Environment



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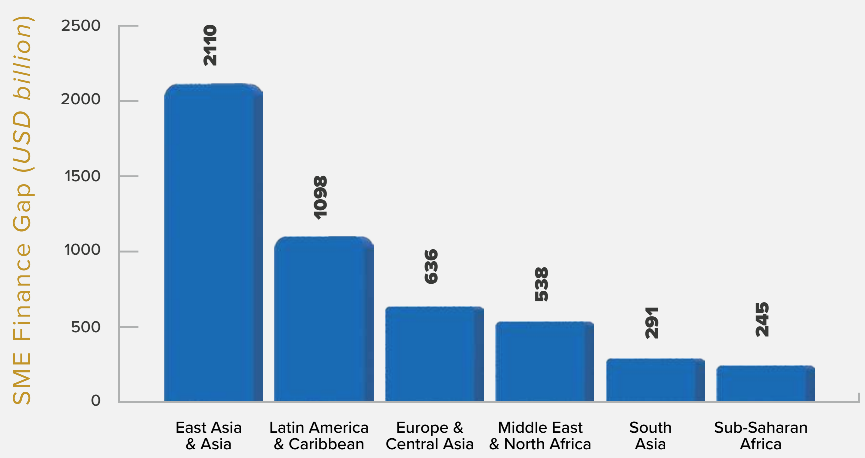
## 1. BACKGROUND AND RATIONALE

Small and Medium Enterprises (SMEs) and cooperatives are among the important pillars of many economies in the Islamic world, contributing to inclusive economic growth through employment opportunities and the development of domestic resources. Around the world, SMEs make up about 90 percent of all businesses and generate over 50 percent of employment (according to World Bank, SME Finance, and SME Support publications) *[1]*. This trend is even more pronounced in developing countries, which constitute the majority of ICESCO Member States.

However, in such countries, these economic actors are still facing challenges that include, but are not limited to, lack of access to financial and technological capital and weak integration into global value chains. The estimated SME finance gap in developing regions, highlighted in Figure 1 shows the financial challenges these business face *[1]*.

**Estimated SME Finance Gap in Developing Regions**




*Source: Adapted from World Bank & IFC, MSME Finance Gap Report (2025)*

ICESCO recognizes the important role that technology can play in enabling SMEs and cooperatives to contribute to economic development and gain better access to international markets. Under this framework, a Masterclass was conducted by ICESCO on November 3, 2025, with the goal of introducing digital technology in a way that promotes inclusive and sustainable development. The Masterclass focused on increasing awareness with a special attention towards ensuring access to technology by small and medium enterprises and cooperatives in the member states of ICESCO. Speakers from academia, startups, consulting firms, and cooperatives and associations highlighted the inter-link between sustainability, digitalization, and inclusion. As revealed in the Masterclass, access to capital and global markets could be assured for cooperatives with verified data, embedded in an enabling digital infrastructure that can spread benefits better and reduce socio-economic disparity.

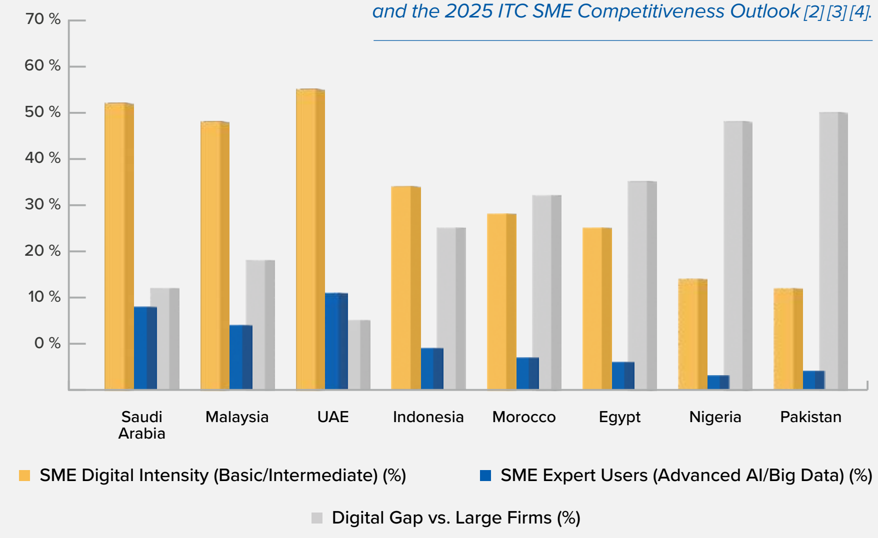
The discussions further highlighted informality in dealing with sustainability compliance, among SMEs and cooperatives, as one of the biggest contributors to fragmented global value chains. At the same time, these entities provide valuable alternatives for governments seeking to support inclusive employment.

Furthermore, the Masterclass indeed showed a clear pathway to achieve sustainability compliance among SMEs through tailored digital solutions. Against this background, these recommendations elaborate on expert discussions during the Masterclass supported by local and global data to develop evidence-based recommendations for the ICESCO Member States.

Based on data from the World Bank, SESRIC, and the 2025 ITC SME competitiveness outlook, Figure 2 synthesized the digital adoption rates for SMEs across a selection of member states.

**Estimated SME Digital Adoption Rates (2023-2025)**

*Figure 2 Synthesized from World Bank, SESRIC, and the 2025 ITC SME Competitiveness Outlook [2] [3] [4].*



## 2. BUILDING INCLUSIVE ECONOMIES: THE CONTRIBUTION OF SMES AND COOPERATIVES

Small and medium-scale enterprises, together with cooperatives, are the mainstays for achieving sustainable and inclusive economic growth in most countries, especially developing ones. They have a central role in fostering innovation, competitiveness, and social resilience across national economies.

In many Member States, they are instrumental in keeping the economies attractive and competitive in international markets and global value chains. They are also major sources of employment and local value creation, driving the process of inclusion and the lifelines of local economies and communities [5].

For example, the contribution of SMEs to gross domestic product varies greatly in the Arab region from a low 4 to a high of 40 percent with great potential for further growth. In the United Arab Emirates alone, they make up more than 60 percent of non-oil GDP [6]. The number of micro, small and medium enterprises is estimated to be the main businesses that make up 80-90% of the MENA region's businesses and about 97% in the Arab world (MSME Country Indicators, 2014) with density (enterprise per 1,000 people) being more inclined towards micro enterprises [7]. For instance, the density of MSMEs in Jordan and Tunisia in 2011 was about 25 and 56 MSMEs per 1000 correspondingly, out of which 23 and 55 were microenterprises (Figure 3). Beyond their economic contribution, SMEs and cooperatives increase resilience during economic downturns and contribute to social stability in their areas of operation [8].

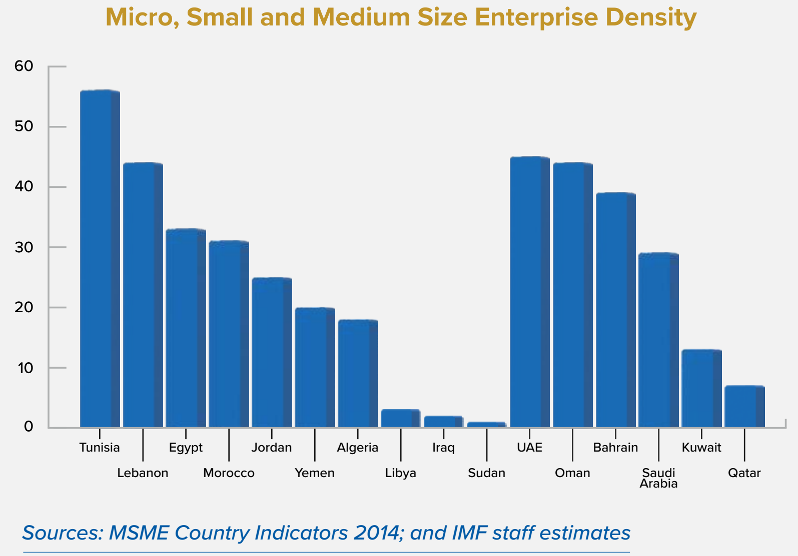



Figure 3 Adapted from International Monetary Fund [7]

## 3. KEY CHALLENGES FACING SMES AND COOPERATIVES

The complicated set of challenges constrains the growth and resilience of SMEs and cooperatives in the ICESCO Member States. Particularly, the most binding constraints are related to the limited access to innovative finance and shortage of early adopters of technology that increase naturally the levels of technological adoption [9] [10].

Experts noted that SMEs and cooperatives continue to struggle with structural and operational bottlenecks that limit their ability to scale and adapt. Access to affordable and inclusive technology remains limited. As a result, many of these economic actors are unable to adopt digital tools such as e-commerce platforms and data-driven sustainability compliance systems, due to the exclusivity of digital infrastructure that tends to favor large corporations. This, in turn, reduces their capacity to innovate and participate effectively in national and regional value chains. Recent assesSMEnt data, presented in Figure 4, from different member states continue to confirm this trend and reveal a very clear order of the barriers to digital adoption which go from lack of strategies to high infrastructure costs and which impact small actors most of all in disproportional manner [11] [12] [13].

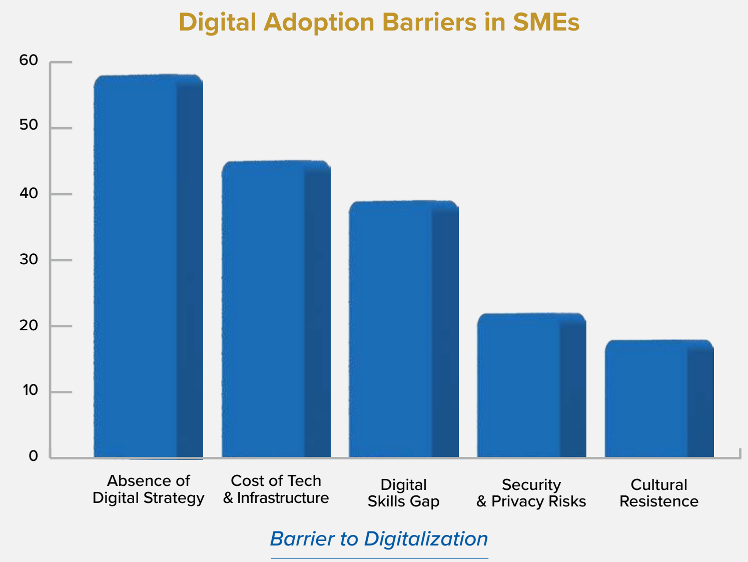



Figure 4 Synthesized from 2024-2025 research on Moroccan, MENA, and Sub-Saharan ICESCO member states

The regulatory and administrative constraints pointed out included complex registration procedures, inconsistent taxation systems, and limited access to government support schemes. All these are exacerbated by a lack of digitization in relevant administrative services, thus continuing the inefficient processes for SMEs and cooperatives. This is more critical for SMEs and cooperatives in remote areas, which are particularly affected by poor infrastructure and a lack of training and advisory services.

Cumulatively, such barriers lower the capability for SMEs and cooperatives to further expand, be more innovative, and make full contributions towards national development and job creation.

## 4. WHY ICESCO CONSIDERS INCLUSIVE INNOVATION A KEY ENABLER FOR SMES AND COOPERATIVES

During the Masterclass, invited experts strongly emphasized that addressing the structural and operational limitations affecting SMEs and cooperatives highlights the strategic importance of inclusive innovation for emerging economies. These two economic actors form the backbone of most ICESCO Member States' economies, serving as primary drivers of employment, local value creation, and inclusive economic growth.

When SMEs and cooperatives face barriers in accessing finance, adopting appropriate technologies, or upgrading their capacities, Member States experience slower economic diversification, reduced private sector competitiveness, and a diminished ability to withstand shocks, such as those caused by climate change, market volatility, or supply chain disruptions.

From ICESCO's standpoint, inclusive innovation offers a direct response to these challenges by making innovation systems accessible to smaller and community-based economic actors, rather than concentrating among large firms. The issue extends beyond firm-level performance and touches on the broader trajectory of national development.

Weak SME and cooperative ecosystems result in fewer job opportunities, especially for youth and women, and undermine community-based economic models, which cooperatives have traditionally supported. This erosion has broader social consequences, including increased informality, heightened social vulnerability, and weakened territorial cohesion.



## 5. EXAMINATION OF FINDINGS

Experts emphasized the critical need to establish robust data systems and verification frameworks to promote the inclusion and sustainability of SMEs and cooperatives. Better methods of capturing and processing data were highlighted to be critical tools in ensuring these small players are not left out in official statistics and excluded in support programs.

Functional information systems would make it possible for SMEs and cooperatives to prove their conformity with major sustainability regulatory and financial standards, thus removing barriers to access to finance, standards, and value chains. Increased cooperation among national data platforms to carry out large-scale verification operations, thus improving integration of SMEs and cooperatives in the economy, was another point underscored by experts.

The Masterclass emphasized further the need for a human-centric digital infrastructure, underlining that digital transformation must be conceived in accordance with principles of equity, accessibility, and human well-being. Speakers asserted that a digital infrastructure for basic services such as energy, finance, and water which is not human-centric will most likely worsen inequalities rather than alleviate them.

The lack of inclusive digital services creates a critical factor militating against market access, the spread of ecommerce, and access to financial products for SMEs and cooperatives. Therefore, a critical consideration in national digital strategies will be ensuring inclusive and equitable approaches to make digitalization beneficial to all participants in the economy.

## 6. POLICY RECOMMENDATIONS

### 6.1. Building Regional Digital Data Infrastructure for SMEs and Cooperatives

To resolve the problem of reliable and authentic data, MS are called upon to examine the possibility of creating common digital platforms which will facilitate the consolidation, funding, and processing of operational and ESG information. Such digital platforms can help in creating cost-effectiveness in reporting for SMEs, increasing transparency in their operations, and improving their access to sustainable finance schemes. Therefore, this common platform will assist in improving transparency in SMEs and cooperatives, improve their interaction time, and help in efficient implementation of policies influenced by authentic information.

### 6.2. Transformation towards Inclusive Innovation

The digital transformation should be inclusive in order to allow all possible beneficiaries to share in these benefits, including women-led co-operatives, rural communities, marginalized SMEs, and other underserved segments. It is recommended that a strategy be developed by member countries to deliver affordable digital solutions, support, and capacity-building primarily for these segments. National Digital strategies can include human-centric performance indicators such as balanced access, benefit sharing, and affordability. A strategy can also include encouraging digital payment solutions and digital identity solutions for SMEs and co-operatives to enable them to have full access to the financial system and conduct their operations in a more efficient manner.

### 6.3. Enhancing Access to Sustainable Finance via Digital Proof Systems

It is recommended by specialists that a way to address the problem of a lack of verifiable ESG information would be to promote and support using authenticated data from small and medium-sized enterprises and cooperatives for banks and microfinance institutions in order to draft a loan contract, as well as to create financial products.

A green credit scoring system with digital verification solutions will allow SMEs to prove their conformity to environmental and social principles. This will make it simpler for them to access carbon markets and other financial schemes based on sustainability measures of a business, thus ensuring financial rewards reach activities with proven beneficial impacts.

### 6.4. Develop National SMEs Digital Innovation Programs

SMEs have often faced challenges in incorporating sustainability practices into their business activities. In this capacity, a network of programs within member states can help SMEs gain knowledge and awareness about sustainability with a five-step model based on the World Economic Forum guidelines. Additionally, financial support programs can be used to assist in providing digital tools to help measure sustainability performance and make it easier to report. As such, awareness programs based on ESG principles can assist SMEs in moving towards incorporating sustainability into their future business plans.

### 6.5. Strengthening Cooperative Capacity Through Digital Tools

Cooperatives, especially those in less resourceful regions, have common experiences of inefficient operations and lack of access to markets. Information and communications technology can greatly help these enterprises in overcoming the challenges they face in their operations, such as providing digital extension services, inventory systems, traceability systems, and market-linking systems. The member states ought to allow cooperatives to benefit from such technology and make these systems accessible via e-commerce to boost sales, improve operations, and cut down on waste. Such a strategy will not only improve the competitive capacity of cooperatives but will also make them better contributors to inclusive and sustainable development according to community perspectives.

The following framework outlines how digital technologies, supported by enabling policies, can help SMEs and cooperatives overcome challenges and achieve inclusive and sustainable growth.

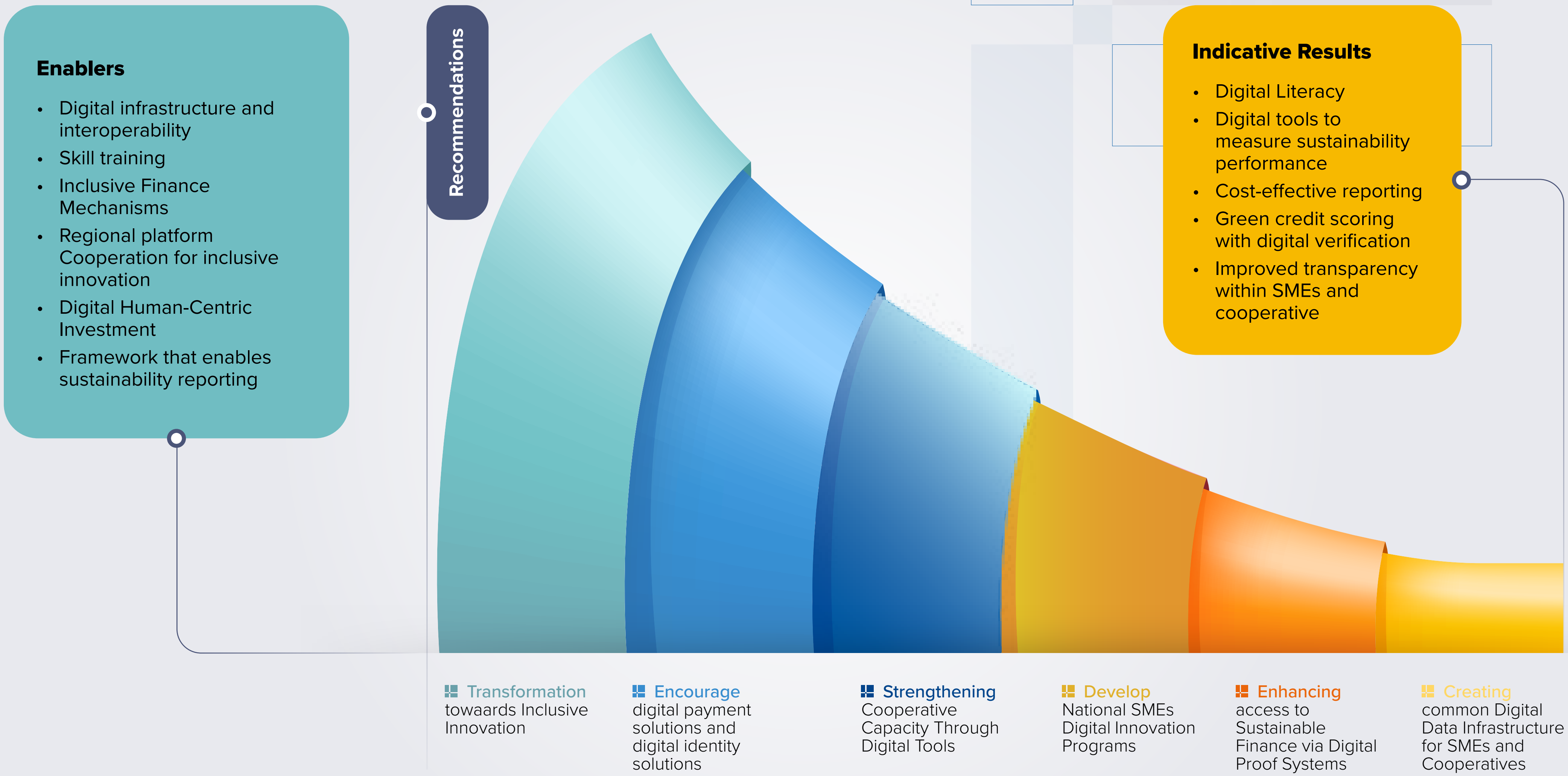



Figure 5 ICESCO Framework on Digital Inclusion and Sustainability for SMEs and Cooperatives

### Digital Transformation in Small and Medium Enterprises (SMES): Challenges and Opportunities in Indonesia

In Indonesia, SMEs make up nearly 61% of the nation's GDP and is responsible for employing 97% of the workforce. Therefore, their significance cannot be understated. After the pandemic, approximately 70% of SMEs accelerated their digital transformation efforts. The importance of adopting and accelerating digital transformation is due to multiple variables. SMEs can increase and diversify their revenue streams by adding digital channels and reducing dependency on traditional sales methods. SMEs had also reported a significant increase in productivity after digital tool integration. Other than operational improvements, SMEs were able to use customer insights and data analytics to become more resilient and adaptable. Finally, since SMEs are significant to the country's GDP, their financial management and competency is crucial for sustainability and growth. A significant amount of time and efforts were reduced which allowed them to focus on core business functions rather than administrative work [14].

### Digital Transformation and SME Resilience in Jordan

A significant number of registered businesses in Jordan are SMEs (98.5%) and is accountable for approximately 60% of employment. Digitally enabled SMEs were better able to respond to economic shocks. Online sales channels supported continuity while cloud systems improved operational efficiency. Cost reductions helped protect jobs. Firms that integrated digital tools into their business strategy exhibited greater revenue stability. Investment in digital literacy is essential for a successful digital transformation [15].

### Digital Transformation in Moroccan SMEs

SMEs make up 93% of enterprises in Morocco and generate more than half of private sector employment. Digital management systems reduced operational delays and improved efficiency. E-commerce expanded customer reach. Several firms reported higher sales and improved job stability. Through customer-centric strategies, effective digital and data-driven marketing has significantly increased rate of growth. Firms with committed leadership achieved stronger outcomes. Public support programs played a facilitating role. Moroccan SMEs can significantly contribute to the national economy and achieve sustained growth [16].

## 7. CALL OF ACTION

SMEs and cooperatives are key building blocks of inclusion in economies, social sustainability, and innovation for all ICESCO Member States. However, such potential is not tapped to capacity because of sustained challenges in access to data systems, digital infrastructure, financing, and sustainability.

To respond to these challenges, it is recommended that Member States put SMEs and cooperatives at the forefront of their digital and sustainability agendas with a view to ensuring their full participation in national agendas.

ICESCO reaffirms its commitment to supporting Member States in:

- Enhancing regional cooperation to support inter-operable digital infrastructure and common data platforms which can improve the visibility of SMEs and cooperatives in national systems.
- Providing technical support with inclusive digital and innovation policy, with a focus on increasing access to technology infrastructure, skills, and expertise, especially for youth and women-led businesses.
- Facilitating the establishment of adapted frameworks for sustainability reporting, which will make it possible for SMEs and cooperatives to be compliant vis-à-vis ESG criteria and participate in global value chains.

In this collaborative vein, Member States are invited to work with ICESCO in co-creating programs and scaling inclusive innovation programs, making way for a sustainability transition for all.

Through our collective actions, we can make sure that SMEs and cooperatives not only benefit but are also engines of innovation, resilience, and inclusive development.

## ACKNOWLEDGMENT

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Acknowledgment is also extended to the audience members who participated in the panel session, whose engagement and insightful questions added value to this masterclass.



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