

SUPPORTING TANZANIA'S FYDP III OBJECTIVES REALIZING COMPETITIVENESS AND INDUSTRIALISATION THROUGH THE DIGITAL ECONOMY



Background information

FYDP III is the final of three medium-term national development agendas designed to deliver on Tanzania's Development Vision (TDV) 2025 industrialisation objectives. FYDP III aims to realise competitiveness-led export growth by harnessing Tanzania's advantageous geographical location and deepening its position in global markets. FYDP III takes into consideration new avenues for growth and development as presented under the digital and blue economies – expanding on three key objectives i.e. industrialisation, human development and implementation effectiveness. The digital economy can play an important catalyst in this process through its enablement of other domestic sectors and activities.

Advances in technology and innovation offer a wide range of solutions that cut across various sectors. These technologies can also widen access to business services and information that help to reduce costs or increase productivity, and provide data for planning and innovation. The acceleration of internet access usage and advancement of digital technology through a holistic approach of committed collaboration between the public and private stakeholders can shape and execute a national digital agenda, enabling progress and driving economic growth.

It is important to unlock the use of digital technology in targeted areas that yield high developmental returns and ensure catalytic growth. Whilst Tanzania has made strides in introducing technological innovations such as the National ID, critical infrastructure developments which underpin the digital economy still require further development. The enhanced development of technology-related skills and business skills will raise the productivity of operating businesses within the digital economy, as well as improve the income and wellbeing of labour market participants.

Unlocking competitiveness and industrialisation through the digital economy requires cross-cutting and sector-specific actions. This will require actions be taken immediately, in the next three years, and over the next five years by a diverse group of accountable parties.

In Tanzania, there are three priority opportunities where the digital economy can play this role:

- Scaling income generating opportunities for Tanzanian youth; where approximately 1 million youth enter the labour market each year, however, youth face challenges of limited availability of jobs and underemployment. Improved coordination between government and the private sector will help to develop the appropriate enabling environment to achieve youth employment in areas with low barriers to entry,
 - Boosting value addition across the Tanzanian economy; where Tanzania's extractive sectors provide important sources of income, however, the industrialisation process is currently dominated by primary activities. By incorporating digital technologies along all parts of key domestic value chains, the economy will be transformed to a broad and diverse base of secondary activity which services local, regional and foreign markets, and
 - Utilisation and protection of Tanzania's marine and freshwater resources; where there is significant potential for maritime industries to contribute to job creation and economic growth in Tanzania.
- If unlocked, these three opportunity zones will transform the Tanzanian economy and support the realisation of TDV 2025 vision of inclusive industrialisation.

Importance of the study

This report was developed through extensive stakeholder engagements across various sectors, wide-spread desktop research and engagements and discussions to identify the focus areas on harnessing digital technologies, while outlining three distinct areas under digital economy, to serve as the foundation to the cross-cutting solutions across industries under Digital Core and Digital Enablers, and action specific to opportunity zones detailed in Digital Solutions.

The report presents a digital economy strategy base to complement FYDP III and deliver on its objectives by identifying how responsible digitalisation can accelerate industrialisation in Tanzania's key sectors to achieve export-led, inclusive growth in the next 5 years. This base identifies the key opportunities the digital economy presents for Tanzania's industrialisation objectives and details the actions required to realise them.

The report established these findings by identifying and prioritising the most critical digital economy opportunities for Tanzania, identifying gaps in precise areas where action is required to enable these opportunities, and developing targeted policy-level recommendations to close gaps and realise opportunities.

Goals of the study

1. Investigate how to create 40,000+ job opportunities for youth in the global business services sector.
2. Investigate how to increase the average monthly income of informal workers and entrepreneurs from USD130 to USD180.
3. Investigate how to catalyse a rich and dynamic innovation ecosystem that creates 100 medium sized technology start-ups by 2025
4. Investigate how to increase agricultural productivity by 10% and increase smallholder incomes by 15%,
5. Investigate how to increase productivity and output of finished goods by 4% of GDP
6. Investigate how to increase mining output by 15% and enhance working conditions for mine labourers through decreased injuries over the next five years.
7. Investigate how to accelerate export-led industrialisation through port efficiencies that reduce vessel waiting time by 25%
8. Investigating how to maintain effective and sustainable fishing and aquaculture practices that empower fishers and increase profitability.
9. Investigating how to support the recovery of tourism to pre-COVID tourism levels and close the gap between the number of tourists visiting mainland Tanzania and Zanzibar.

Overall findings

1. Approximately 5,000 youth are currently employed in the Tanzanian Global Business Services industry, which predominantly comprises Business Process Outsourcing (BPO) service providers. This industry has the potential to create significant youth employment opportunities in the short and medium term, as has been the case in Kenya, Egypt and South Africa. Research indicates an opportunity to significantly grow the nascent BPO market in Tanzania which currently generates USD 80 million of annual turnover.
2. Informal trade and entrepreneurship are central parts of Tanzania's economic activity with the OECD estimating that 76% of the non-agricultural workforce exist within the informal sector. The sector is difficult to tax because of the dependency on cash and the lack of business and VAT (Value Added Tax) registration. Financial inclusion mechanisms facilitated by digital platforms such as mobile payments technology have been shown to increase firm sales of MSMEs (Micro, Small and Medium Enterprise) by approximately 28.7%. Tanzania currently has 64 digital platforms spanning a multitude of sectors, with half located in transport, retail and wholesale, with a lack of trust in digital platforms slowing the transition to more modern forms of payments in eCommerce.
3. Tanzanian technology start-ups are predominantly located in the agriculture sector. However, entrepreneurship in general is often driven by necessity as opposed to opportunity due to limited availability of jobs and access to innovative technologies. Given this trend, the duration of these kinds of entrepreneurial endeavours is often short. Another crucial challenge relates to lack of access to funding which often results in technology entrepreneurs leaving their start-ups for salaried work. the Campaign for Female Education e-reader programme which saw 98% of girls in the program progress from Form 1 to Form 2 in early 2017 against a national dropout rate of 27% in 2013. Further, the COVID-19 pandemic has in-part accelerated the introduction of online learning platforms for students and teachers as well as the creation of virtual library repositories. Although universities have introduced courses relating to technology and innovation, the institutions do not have adequate ICT facilities, with many graduates requiring more on-the-job training to be workplace and start-up ready.
4. Since Tanzania's independence in 1964, the country's population has increased from 11.7 million to 58 million in 2019. Agriculture is an important local sector and is the largest contributing sector to GDP, growing at 3.5% annually. The sector is critical to the livelihoods of most Tanzanians as it comprises 65% of the workforce. It is also an important source of support for the vulnerable given that 70% of the poor population live in rural areas.

5. Manufacturing contributes 8% to GDP in Tanzania. Africa's share of global manufacturing exports is 1% but it is expected that Africa will capture part of the 100 million labour-intensive manufacturing jobs said to leave China by 2030. Emerging manufacturing firms face a number of challenges in Tanzania including unreliable electricity supply, legacy machinery, and inadequate workforce skills and access to information. Stiff regional and international competition with price-competitive imported goods further compromise the industry.

6. Mining contributes 15% to GDP and comprises 30% of the country's total exports. The industry is largely dominated by established players, with 90% of extraction done by Multinationals and consortiums. While artisanal and small-scale mining (ASM) contribute significantly less output, the sector is an important source of income, employing 1.5 million individuals. ASMs face several challenges including unsafe mining practices, imperfect connections to markets and informality of business operations. The informal nature of the sector has led to imperfect oversight and monitoring from authorities in the areas of health and safety, production monitoring, and environmental impact.

7. The port of Dar es Salaam handles about 95% of Tanzania's international trade. Dar es Salaam is a key transport node in the central transport corridor connecting neighbouring landlocked states with international markets. Tanzania's other Indian Ocean ports are important in supporting the local economy, despite handling significantly less freight than Dar es Salaam. The latest World Economic Forum Global Competitiveness Report ranks Tanzania as 71 of 141 countries in terms of the efficiency of seaport services.

8. There are more than 200,000 fishers in Tanzania, with fisheries generating revenues of over USD 6 million annually. There are 34,500 fishers in Zanzibar alone. However, the sector is dominated by freshwater fisheries, which accounts for about 75% of jobs in the sector and about 85% of revenue. Only 4% of industrial marine fishing vessels are local and focusing on the domestic market. Seaweed farming is an important economic activity in Zanzibar, where it employs 25,000 people. The only aquaculture sector that has a significant level of development in mainland Tanzania is freshwater aquaculture (mainly tilapia, but also catfish), which employs 14,100 people, but even this sector is small relative to its potential.

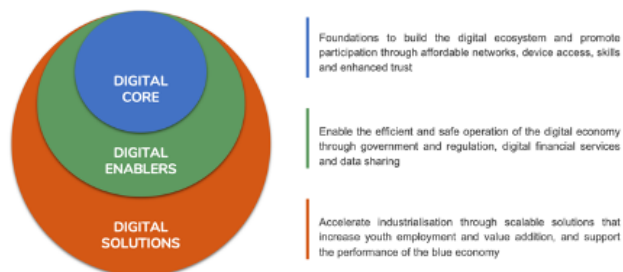
9. The tourism sector accounted for 11.7% of Tanzania's GDP in 2019, and 28% of Zanzibar's GDP, with an estimated 1.5 million tourists visiting the country over the course of the year. For a number of years tourism has been Tanzania's top source of foreign exchange earnings. COVID 19 has caused a 50% reduction in foreign exchange inflows from USD 2.5 billion in 2019 to USD 1.2 billion in 2020 with estimates of a potential 500,000 job losses. Tanzania's tourism sector is dominated by terrestrial and wildlife tourism and connectivity between terrestrial and coastal/marine tourism is not adequately developed. In 2019 only 20,493 tourists visited mainland marine parks, while Zanzibar received over 500,000 tourists.

Key recommendations

1. Improved coordination between government and the private sector will help to develop the appropriate enabling environment to achieve youth employment through digital opportunities.
2. Digital technologies can achieve the creation of meaningful income earning opportunities for the youth through:
 - a. Global business services which can scale youth employment by tapping into enormous sources of global demand.
 - b. The digitalisation of informal trade can drastically improve the operation of self-employed informal business owners; and
 - c. Scaling technology-based start-ups creates alternative opportunities for entrepreneurs and their employees while creating downstream employment opportunities in the sectors where they innovate.
3. Digital technologies can improve value addition across the economy by:
 - a. Utilising digital technologies to transform agricultural production and support market linkages between farmers and processors.
 - b. Introducing production enhancements and automation to the manufacturing sector to increase productivity and achieve sustainable growth; and
 - c. Utilising technology that improves the competitiveness of commercial mines and artisanal and small-scale miners.
4. Digital technologies can promote the efficient and sustainable use of the blue economy through:
 - a. Accelerating the use of smart-port technology and ICT in Tanzania's ports and shipping sector to support export-led growth.
 - b. Using digital technologies to improve the sustainability of fish stocks, empower fishers and increase profitability; and
 - c. Enhancing e-Tourism and digital resource management to accelerate the recovery of the tourism sector and maintain important tourist assets.

Way forward

The following are the cross-cutting and sector specific actions needed to execute on the opportunities identified as reflected in the 3 separate though intimately related components of the digital economy: Digital Core - pertaining to digital access and connectivity, underpins the key drivers of ensuring the scalability of Tanzania's socio-economic development; Digital Enablers - unpack the systematic operation of the digital ecosystem; and Digital Solutions - outline how to transform the performance of industries by providing additive and scalable solutions within the opportunity zones of Youth Employment, Value Addition and the Blue Economy. These components and subsequent actions are captured in the figure and tables below and discussed in depth thereafter.



Implementing the presented recommendations requires support, and a coordinated approach, from all stakeholders; Government, private and public sectors, and policy makers. The right regulation and policies are required across industries to establish an effective enabling environment and ensure Tanzania reaches its goal of a semi-industrialised middle-economy enabled by the digitalisation of key sectors through responsible execution - this will transform the economy from being dominated by primary activities to a broad and diverse base of secondary activity.

Table 1: The Digital Core

Specific target	Actions	Responsible Party	Time to Execution
Network Access	1. Improve last mile connections to achieve higher fibre-based broadband penetration through decreased Rights of Way charges	TARURA; TTCL (operates NICTBB)	1 year
	2. Support the extension of network coverage in rural areas through active infrastructure-sharing	TCRA; UCSAF	3 years
	3. Encourage 3G network expansion through the optimisation of spectrum and consolidation of Mobile Network Operators	TCRA; FCC	3 years
	4. Review the excise duty charged on mobile communication and services therein	TRA	1 year
	5. Revise broadband and ICT policy to reflect the changing digital landscape	TCRA	3 years
Device Access	1. Offer targeted incentives to scale current and attract new device assembly and production facilities	MoIT	1 year
	2. Eliminate the smartphone excise duty	TRA; FCC	1 year
	3. Support investment in off-grid energy solutions that enable charging of devices for rural communities	TANESCO; REA	3 years
Digital Skills	1. Improve digital literacy to increase uptake of digital platforms	MoCIT; MoEST	3 years
	2. Conduct forums among private sector, government and education institutions to align on GBS requirements and ensure job readiness	ICT Commission; COSTECH; MoIT; MoCIT; MoEST	1 year
	3. Improve the presence of digital apprenticeships in Tanzania to develop appropriate digital and soft skills	MoEST; VETA; ICT Commission; MoLYEPD	3 years
	4. Introduce modules in ICT curricula that develop the skills required in entrepreneurship and eCommerce.	MoEST; COSTECH; ICT Commission; TVET	3 years
	5. Scale the availability of scarce skills needed for the deployment of technology in industry.	MoEST; ICT Commission; SIDO; TIRDO	1 year

Table 2: Digital Enablers

Specific target	Actions	Responsible Party	Time to Execution
Digital Government and Regulation	1. Digitise priority government services that support and motivate informal business registration.	PO-PSMGG; BRELA; NIDA	3 years
	2. Amend Public Procurement Act (2011) to include local content requirements for IT purchases	PPRA	3 years
	3. Change policy regarding the TCRA's Electronic and Postal Communications Regulation	TCRA	1 year
	4. Review existing legislation and regulation to ensure appropriate Employee and Consumer Protection rights	Parliament of the United Republic of Tanzania; MoLYEPD	5 years
Digital Financial Services	1. Reduce Excise duty on mobile money transfers to improve affordability	TRA	1 year
	2. Improve financial literacy surrounding financial and insurance products	BoT; MoEST	3 years
	3. Improve the sharing of customer data to improve the delivery of financial services and lending products	TCRA; NIDA; BoT; Tanzania Deeds Office; MoL	5 years
	4. Improve financial institutions' understanding of agricultural markets and their capacity to optimise their risk assessment process	TBA; MoA	3 years
	5. Develop agile regulatory approaches to governing new innovations and supporting digital businesses	BoT	3 years
	6. Develop a movable assets collateral registry	BoT; RITA	3 years
	7. Develop the venture capital landscape to close key financing gaps and attract local and international investment	MoFP; TRA; TVCN	5 years
	1. Establish a national agricultural data repository to identify priority use cases, sources of data and partners	MoA; TARI; MoIT	5 years
	3. Support the emergence of a drone council that can professionalise data collection and support enabling regulation	TCAA	1 year
	4. Develop an open-data policy that defines data standards and addresses data sharing rights	MoCIT; eGovernment Authority	3 years
	5. Support digital businesses in complying with international best-practices in the management of personal and sensitive data.	ICT Commission; MoCIT	3 years
	6. Expedite programming on nation-wide addressing to improve quality of access to digital platforms	TCRA; PO-RALG	5 years

Table 3: Digital Solutions

Strategic Targets	Actions required	Responsible Party	Time to Execution
Youth Employment through GBS	1. Revise taxes and mandatory annual contributions for domestic GBS firms to unlock working capital and support scaling	TRA; ICT Commission; MoIT	3 years
	2. Develop and articulate Tanzania's GBS value proposition to attract domestic operation of international firms	MoIT; ICT Commission	1 year
Youth Employment through Technology Entrepreneurship	3. Promote a start-up development strategy that creates a more conducive start-up environment and secures buy-in from all key stakeholders	Tanzania Start-up Association (TSA); COSTECH; MoIT	5 years
	4. Improve linkages between hubs and accelerator programmes and youth via university programmes	MoEST; COSTECH; TSA	3 years
	5. Create a Centre of Excellence that connects start-ups to sources of demand to secure market opportunities in emerging and existing markets	MoIT	3 years
	6. Develop a targeted technology-innovator support programme that supports the scaling of 3 lead firms	COSTECH; MoCIT; TIC	5 years
	7. Secure investment from 5 globally recognised digital companies through the establishment of a tech-park and incentives	MoCIT; MoIT; TIC; TRA	5 years
Value Addition in Agriculture	1. Implement low-cost communication channels to allow individuals to take full advantage of digital benefits.	MoA	1 year
	2. Promote collaboration, and consolidation of industry innovation, between FinTechs, innovators, donors and policymakers for agriculture technology innovation services	MoA; TARI; MVIWATA; SAT	3 years
Value Addition in Manufacturing	3. Invest in fab-labs and laboratories in communities with established and aspiring manufacturing industries	SIDO; COSTECH	3 years
	4. Establish innovation parks to support industrial R&D and knowledge transfer	TIRDO; MoIT	5 years
	5. Sensitise businesses to the opportunities sophisticated technologies offer industrial processes	COSTECH; TIRDO; CTI	3 years
Value Addition in Mining	6. Invest in the establishment of a complete suite of ASM support tools that integrate with government systems and provide feedback	Mining Commission; Ministry of Minerals (GST); IPIS; Mara and Shinyanga Regional Miners' Association; TPSF; STAMICO	5 years
	7. Improve access to digital registration for mines and mining rights and registration for the mining Cadastre.	Mining Commission; STAMICO	3 years
	8. Pilot the establishment of a proof-of-origin system using an appropriate technology stack	Mining Commission; Ministry of Minerals; COSTECH	5 years
	9. Pilot a mining community reporting platform to support and promote community rights	Mining Commission; Ministry of Minerals; IPIS	5 years
Blue Economy - Shipping and Ports	1. Assess current and potential smart port capabilities, applications and needs while incorporating inputs from the private sector and other key actors.	TPA	3 years
	2. Support linkages between 'green port' and smart port technologies, and approaches for enhanced efficiency and sustainability.	TPA; Maritime Gateway Project	3 years
	3. Strengthen awareness and support capacity building related to smart ports within port management authorities and other key governance and management actors.	TPA	3 years
	4. Strategically integrate appropriate smart port solutions across Tanzania's port infrastructure	TPA	5 years
	5. Facilitate lesson sharing and information exchange between Tanzania's ports for enhanced efficiency, and establish platforms for ongoing exchange around port efficiency between port authorities and users.	TPA	3 years

	6. Provide incentives by way of tax relief to shipping businesses adopting IT and investing in ICT training	TRA; Tanzania Shipping Agencies Corporation (TASAC)	3 years
Blue Economy - Fisheries and Aquaculture	7. Assess monitoring, control and surveillance capabilities in light of innovative digital solutions	TAFIRI; MoLF	1 year
	8. Develop appropriate digital reporting mechanisms to support monitoring and reporting of illegal fishing activities	COSTECH; TAFIRI; MoLF	3 years
	9. Implement sensitization and training for beach management units to support co-management response to ICT solutions in support of monitoring, control and surveillance	COSTECH; TAFIRI; MoLF	3 years
	10. Enhance technical and training support to monitoring, control and surveillance officers	COSTECH; TAFIRI; MoLF	3 years
	11. Co-design appropriate platforms that connect supply and demand for fishers and aquaculture producers through an inclusive process	COSTECH; MoLF; TTB; TAFIRI; MoIT	3 years
Blue Economy - Marine and Coastal Tourism	13. Upgrade the Tanzania tourism site to include value-adding functionalities such as online searching, booking, and payments	TTB	3 years
	14. Improve the coverage of marine tourism assets in Tanzania's tourism digital marketing efforts	TTB	3 years
	15. Provide support to small and medium tourism companies to integrate with Tanzania's digital tourism portal and engage in digital marketing	TTB; MoNRT	3 years
	16. Explore and pilot the use of GIS data, remote sensing and IoT to improve conservation of marine assets in the Pemba Channel Conservation Area	MoNRT; TAWA; WCS	3 years