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Digitizing Africa’s Fish Value Chain: Building Efficiency, Market Access, and Inclusive Growth

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Fish is one of the world’s most traded food commodities, sustaining over **800 million livelihoods globally** and contributing significantly to food security. According to the FAO, global fish production has surpassed **178 million tonnes**, with aquaculture accounting for more than half of this output. As demand continues to rise, driven by population growth, urbanization, and shifting dietary preferences, the need for resilient, traceable, and market-driven fish value chains has never been more urgent.

Globally, countries are embracing digital ecosystems to modernize fisheries management, improve market transparency, enhance food safety, and integrate small-scale fishers into formal markets. Asia leads in digital fisheries innovation, with China, Vietnam, and India deploying real-time monitoring systems, digital certification tools, and e-commerce platforms that streamline the movement of fish from source to consumer. These advancements are improving compliance, boosting export readiness, and reducing post-harvest losses.

Yet, when compared to these global transformations, Africa’s fisheries sector remains largely traditional, fragmented, and under-digitized.

Global vs. Kenya’s Fish Value Chain: A Growing Digital Divide

While global fisheries integrate digital solutions to manage stock, track quality, and facilitate trade, **Kenya’s fish value chain faces systemic gaps** that limit competitiveness. Kenya contributes approximately **150,000–200,000 tonnes of fish annually**, mostly from small-scale inland fisheries concentrated around Lake Victoria. In contrast, global leaders use high-tech systems to manage millions of tonnes through digital traceability, IoT-enabled cold chains, and e-marketplaces.

Globally, countries have digitized:

- Value chain mapping
- Inspection and certification
- Market linkages
- Logistics and cold chain management
- Data-driven governance

However, Kenya’s systems remain heavily manual. According to regional assessments, **over 70% of small-scale fisheries in East Africa operate outside formal digital ecosystems**, resulting in inefficiencies, low earnings, and limited access to regional markets.

This stark gap between digital progress globally and slow adoption in Kenya highlights the need for a modern, unified ecosystem that supports fishers, traders, processors, regulators, and exporters.

Pain Points in the Fish Value Chain

Kenya’s fish value chain faces long-standing challenges that limit efficiency, income, and competitiveness. Market access remains fragmented, with small-scale fishers often reliant on intermediaries due to the lack of transparent trading channels. Manual and disconnected data systems hinder effective regulation, planning, and traceability, while paper-based SPS inspections slow down certification and restrict export readiness.

High spoilage rates, driven by weak cold chain infrastructure, result in significant losses, especially for women and youth who dominate post-harvest activities. Limited digital adoption further prevents fishers from accessing e-commerce, digital payments, or real-time market information, forcing them to operate with little insight into demand or pricing. These systemic issues highlight the need for a modern, integrated digital framework to unlock the sector’s full potential.

Why a Digital Fish Value Chain Matters for Kenya?

A digital fish value chain offers Kenya a powerful pathway to improve transparency, strengthen compliance, and expand market opportunities. Digitization enhances traceability and food safety, enabling the country to meet regional and global standards while improving confidence among traders and regulators. Real-time data and digital SPS processes reduce losses, speed up certification, and support more informed decision-making across the value chain.

For women and youth, digital platforms create new avenues for entrepreneurship, financial inclusion, and market participation. By connecting fishers to accurate price information, logistics systems, and digital payments, Kenya can build a more efficient, competitive, and resilient fisheries sector that supports sustainable livelihoods and drives inclusive growth.

CSM Technologies’ Expertise in Transforming the Fish Value Chain

CSM Technologies brings deep domain expertise and a proven track record in developing digital ecosystems that enhance transparency, efficiency, and inclusiveness across fisheries value chains. Through the **Digital Solutions in Fish Value Chain Project**, led by TradeMark Africa (TMA) across Kenya, Uganda, Tanzania (including Zanzibar), DRC, Zambia, and Nigeria, CSM is delivering an integrated suite of systems designed to unify all actors and processes.

The solution includes enhancements to the **iSOKO platform**, which supports e-commerce, logistics, payments, and business management, enabling small-scale fishers and traders, especially women and youth, to expand their market reach. It also integrates the PropaData registry, a centralized participant data and analytics platform that strengthens monitoring, evaluation, and planning efforts.

Most critically, CSM is developing a **Digital SPS Inspection and Certification System** for the Kenya Fisheries Service, replacing paper-based workflows with mobile-enabled digital inspection, real-time data capture, and automated certificate generation. This strengthens traceability, risk-based inspections, compliance, and trade facilitation. Built on a modular, microservices-based architecture, the platform ensures interoperability with national, regional, and global systems such as the ePhyto Hub, national single windows, and integrated payment gateways. CSM’s approach emphasizes agility, local capacity-building, and co-creation, ensuring scalability, security, and long-term sustainability.

These capabilities position CSM as a key partner for driving inclusive growth, improving governance, and enabling a future-ready digital fisheries ecosystem.

Conclusion & Way Forward

The global fisheries sector is undergoing rapid transformation, and Kenya cannot afford to be left behind. A digitally integrated fish value chain can unlock unprecedented opportunities: stronger governance, improved market access, enhanced traceability, and inclusive economic empowerment for millions who depend on fisheries for their livelihoods.

With technology partners like CSM Technologies bringing robust, scalable, and regionally adaptive digital solutions, Kenya has the opportunity to leapfrog structural barriers and build a world-class fisheries ecosystem. The way forward lies in collaborative investments, policy alignment, capacity-building, and sustained commitment to digital transformation.

A future where every fish harvested, traded, transported, and exported in Kenya is captured within a transparent, traceable, and efficient digital ecosystem is not just possible; it is within reach.

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