SMART SUDAN

A Model for AI-Powered Smart Projects Contributing to Sustainable Development and Reconstruction

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Smart Sudan



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Dedication

To the proud people of Sudan, who eagerly await the dawn of a new era after the war, to its promising youth who hold the keys to the future, and to its wise leadership that believes true development begins with minds before money. To all who believe that artificial intelligence is no longer a luxury of knowledge, but an existential necessity and a future imperative for building a smart, sustainable, and resilient nation.

A Word of Thanks and Appreciation

We extend our deepest gratitude and appreciation to the Prime Minister and the Chairman of the Sovereign Council, who have consistently supported every innovative idea and ambitious project aimed at the advancement of our nation. We also express our sincere thanks to all governmental and non-governmental entities that believed in the "Smart Sudan" vision and supported our efforts to lay the foundation for a diversified and sustainable knowledge-based economy. Your unwavering support has been the driving force behind this initiative and the true guarantee of its success.

Introduction

Amidst the rapid transformations sweeping the world, which are reshaping the concepts of economics, development, and the state itself, Sudan stands at the threshold of a critical historical juncture. This necessitates bold and innovative choices, moving beyond outdated and ineffective solutions. The global landscape today is witnessing an unprecedented knowledge revolution, driven by artificial intelligence and the technologies of the Fourth Industrial Revolution. These are no longer mere entertainment or academic research topics, but rather essential for ensuring national security, economic competitiveness, and achieving the Sustainable Development Goals.

The challenges facing Sudan today—foremost among them achieving food security, providing employment opportunities for youth, building a modern educational system, and establishing the foundations of transparency and good governance—demand a qualitative shift in thinking and implementation. This shift must transcend traditional administrative models and embrace smart partnerships that combine the vision of the state with the capabilities of the private sector and the expertise of international institutions. It is from this perspective that the "Smart Sudan for Development and Investment" initiative was conceived: an innovative institutional framework dedicated to fostering and developing a portfolio of smart projects that represent fundamental pillars for the desired digital and economic transformation.

This book's vision is based on the firm conviction that technology, especially artificial intelligence (AI), is not an end in itself, but rather an enabling tool for achieving social justice and comprehensive development. Using AI in smart workplace protection is not merely about developing safety procedures; it can be defined as investing in human capital and protecting our most precious asset. Employing it in

achieving smart food security safeguards the future of coming generations from the specter of famine and dependency. Adopting it in a smart coding system (smart code) to combat fraud and forgery protects rights and enshrines the principle of transparency upon which any modern economy is founded.

The book also prioritizes building the Sudanese individual through "smart education," based on the belief that a generation aware of the capabilities of AI and capable of leading the future is the true guarantee for the sustainability of any developmental renaissance. This integrated system would not be complete without a smart and secure financial system, embodied by the "Gold Code Smart Stable Currency," backed by gold, which offers a model for financial inclusion and economic stability in accordance with national values and Sharia principles.

Presenting this book as a comprehensive professional scientific reference that combines vision and implementation reflects the seriousness of these projects and the solidity of their legal and technical foundations, and confirms that “Smart Sudan” is an ambitious national project that puts Sudan on the map of smart countries, and will seize from the future what it deserves in terms of progress and prosperity, God willing.

Chapter One

Smart Workplace Protection

Occupational Safety and Health Officer Training and Employment Program

First: The Concept of Smart Workplace Protection

Smart workplace protection represents a qualitative leap in the philosophy of occupational risk management. It transcends traditional models based on reacting to incidents after they occur, moving towards a proactive system that leverages artificial intelligence, the Internet of Things, and big data analytics to anticipate risks, prevent their occurrence, and respond to them quickly and efficiently. This new concept integrates the engineering and technical aspects of safety with the administrative and organizational aspects, utilizing immense digital capabilities that enable real-time monitoring, accurate prediction, and decision-making based on timely and precise information.

The smart occupational safety system relies on three main pillars:

1. Continuous Sensing and Monitoring: Through a network of sensors distributed throughout the work environment to measure environmental factors (temperature, humidity, gases), equipment condition, and employee performance indicators.
2. Predictive Analysis: Using artificial intelligence algorithms (especially machine learning) to analyze collected data and identify patterns that precede accidents, enabling early intervention.
3. Automation and Response: Automating certain safety procedures, such as automatically shutting down equipment when safety limits are exceeded, or sending immediate alerts to employees and relevant authorities.

Second: Justifications and Strategic Importance of the Program

The Occupational Safety and Health Officer Training and Employment Program is one of the pivotal projects of the Smart Sudan initiative, for the following reasons:

1. **Addressing Labor Market Challenges:** Sudan suffers from high unemployment rates among graduates, especially in engineering and scientific fields. The program provides a valuable opportunity to employ thousands of young people in high-value, future-oriented jobs that offer job and financial satisfaction and contribute to their social stability.
2. **Compliance with International Standards:** With Sudan's openness to global investments, compliance with international occupational safety and health standards (such as the International Labour Organization's ISO 45001) has become a prerequisite for attracting investments and enhancing the competitiveness of Sudanese products.
3. **Reducing Human and Material Losses:** Occupational accidents and injuries represent significant losses for individuals and the national economy, whether in terms of treatment and compensation costs or production disruptions and equipment damage. According to global studies, smart systems can reduce these losses by 30% to 50%.
4. **Shifting the Economy Towards Promising Sectors:** Occupational safety is closely linked to sectors that will witness steady growth in the Sudanese economy, such as mining, energy, oil and gas, construction, and manufacturing. Having qualified national personnel in this field enhances the country's ability to develop these sectors using national talent.

Third: General Program Objectives

1. Creating a new generation of qualified Sudanese personnel in the field of occupational safety and health, in accordance with the latest standards and smart technologies.
2. Localizing knowledge and transferring expertise from international partners specializing in occupational safety and smart systems.

3. Adopting a smart coding system to document the professional competencies of safety officers, thereby increasing transparency and enhancing trust in operating establishments.
4. Significantly reduce the number of occupational accidents and injuries by adopting a proactive, preventative culture.
5. Reduce the economic and psychological costs resulting from workplace accidents and increase productivity.

Fourth: Implementation Mechanisms and Methods

1. Specialized Qualification and Training: Designing advanced training programs (in-person and remote) in collaboration with Sudanese universities and international training institutes, covering theoretical aspects (laws, standards, risk fundamentals) and practical applications (use of sensors, artificial intelligence data analysis, and safety management software).
2. Smart Code System: Issuing digital codes (QR codes or digital certificates) to each qualified safety officer, including a complete file of their experience, specializations, training, and professional record (valid, expired, suspended). This system will be linked to a national competency management database.
3. Smart Protection Platform: Developing an electronic platform to manage and monitor the performance of safety officers, document accidents, analyze indicators, and prepare periodic reports for relevant authorities (Ministry of Labor, Supreme Council for Safety).
4. Accreditation and Control: Granting the International Consulting Center powers (after official authorization from the competent authorities) to accredit qualified personnel and facilities implementing smart safety systems, while establishing a strict control system that ensures quality and compliance.

Chapter Two

Smart Food Security

Towards an Integrated and Sustainable Food System

Part One: Concept and Challenges

First: The Concept of Smart Food Security

The concept of smart food security goes beyond simply providing sufficient quantities of food. It encompasses ensuring its quality, safety, and the sustainability of its production, while also achieving economic efficiency and social justice. This concept is based on the integration of supply chains (from farm to fork) using Fourth Industrial Revolution technologies, primarily artificial intelligence, the Internet of Things, big data, and blockchain. The aim is to maximize productivity, reduce waste, guarantee product quality, and enhance the resilience of the food system in the face of climate and geopolitical shocks.

Second: Components of a Smart Food Security System in Sudan

1. Smart Markets in Sudan: Establishing smart electronic and physical markets that serve as collection and marketing centers for agricultural and food products. These markets rely on digital trading systems that connect producers directly with consumers, eliminating intermediaries that inflate prices and cause losses.
2. Smart Food Basket for Government Employees: Developing an alternative system to traditional food rations, based on the use of smart cards loaded with credit that employees can use towards a pre-defined food basket (high quality and guaranteed for health). This basket is managed through an electronic application that allows employees to select goods from approved outlets, with tracking and monitoring capabilities to prevent manipulation. This program is funded through salary deductions or direct government subsidies, with the government stipulating the quality and safety of the goods.
3. Smart Cooperatives: Transforming traditional agricultural and consumer cooperatives into smart entities that manage their activities through digital platforms. These platforms include managing agricultural inputs, providing

microfinance, organizing joint marketing operations, and implementing early warning systems for agricultural risks.

Third: The Role of Artificial Intelligence in Achieving Food Security

1. Precision Agriculture: Using satellite imagery and drones to monitor crops, assess their health, water and fertilizer needs, and predict yields. Applying artificial intelligence algorithms to provide farmers with customized recommendations for every square meter of their land.
2. Smart Supply Chains: Tracking food products from source to consumer using blockchain technology and smart tokens ensures food safety and quality, and detects any manipulation or fraud.
3. Demand and Price Forecasting: Using artificial intelligence models to analyze historical, climatic, and economic data to forecast food prices and demand levels, and to guide storage and import decisions, thus contributing to market stability.
4. Risk Management and Early Warning: Developing predictive systems to warn farmers and decision-makers of the risks of drought, floods, or pest outbreaks, thereby enhancing resilience to climate change.

Chapter Three

Proactive Smart Consumer Protection

Smart Code: Coding Competencies, Goods, and Services

Part One: Concept and Scope

First: The Concept of Proactive Smart Consumer Protection

This is an advanced consumer protection model that transcends the traditional approach based on post-sale monitoring and complaint handling. It adopts a preventative system that empowers consumers with accurate and transparent information about competencies, goods, and services before they make a purchase or contracting decision. Smart code technology—specifically, a smart and updatable QR code—is the primary tool for implementing this model. It grants consumers the ability to instantly verify the identity of a product or supplier, its specifications, professional record, ratings, production processes, and supply chains.

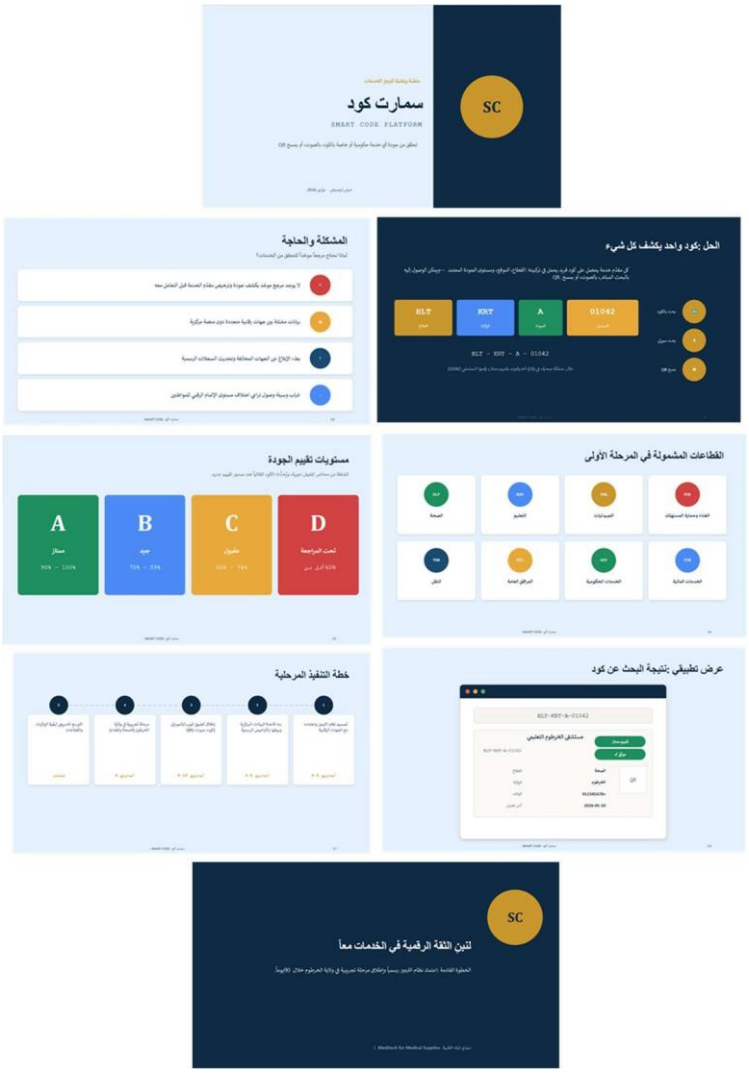
Second: Objectives of the Smart Code System

1. Combating Fraud, Forgery, and Misappropriation: To this end, the system will provide an instant verification mechanism enabling consumers to confirm the origin of a product, the authenticity of a document, or a professional qualification. This will make forgery more difficult and reduce opportunities for fraud. The system will also create a digital record for each product, service, or competency, generating a digital trace that is easily trackable.
2. Empowerment and Transparency: Empowering consumers to make informed purchasing decisions through instant comparisons of products and services based on objective criteria, thus stimulating competition for quality.
3. Supporting Customer Decisions: Providing a digital platform that allows consumers to compare products and services in real time based on their price, quality, peer reviews, and availability, transforming them from passive recipients into active market participants.
4. Building Market Trust: By creating a transparent and trustworthy business environment where everyone (producer, intermediary, consumer) knows that information is available and accessible, thus reducing disputes and enhancing the reputation of the Sudanese market.

Third: Areas of Smart Code Application

1. Coding Competencies and Institutions: Issuing a smart code to each professional (doctor, engineer, lawyer, teacher, safety officer, etc.) that includes their qualifications, experience, disciplinary record, and performance evaluations. A code is also issued to each institution (company, factory, restaurant, pharmacy, etc.) that includes its license, classification, records, and quality certifications.

2. Product Coding: Providing each consumer product with a code that allows consumers to verify its production date, ingredients, origin,
3. quality certifications, and supply chain, thus protecting them from counterfeit, expired, or substandard products.
4. Service Coding: Applying the system to government and private services (electricity, water, education, healthcare, etc.) to provide immediate feedback on service quality, waiting times, and customer satisfaction, contributing to the improvement of both public and private services.



Chapter Four

Smart Education

Smart Sudan Schools and Academy for Science and Artificial Intelligence

Second: The Philosophy of Smart Education (S^2-S^3 Model)

The educational model at Smart Sudan Schools and Academy is based on an integrated philosophy that focuses on:

1. Early Technology Education: Introducing the principles of artificial intelligence and programming from kindergarten, using age-appropriate educational tools and games, to plant the seeds of computational and creative thinking from a young age.
2. Linking to the Labor Market: Designing curricula that are not limited to abstract theoretical knowledge, but directly linked to practical applications and productive projects. So that students are able to provide added value (software production, design, technological solutions) from an early age, preparing them for the job market or entrepreneurship immediately upon graduation
3. Cognitive Integration: Combining basic sciences (mathematics, physics, biology) and humanities (Arabic language, history, geography) with modern technology, while considering the Holy Quran and national heritage an integral part of the educational identity.
4. Languages and International Openness: A strong focus on foreign languages (especially English and Chinese) to enable students to engage with the international scientific community and access the latest knowledge resources, while preserving Arabic as the language of identity.

Third: Educational Structure

1. Smart Sudan International Schools (General Education Stages): A chain of model schools spread across the states of Sudan, from kindergarten to secondary school, offering a developed national curriculum integrated with global best practices in digital education and artificial intelligence. These schools aim to be beacons of educational excellence,

producing a generation united by national values, capable of innovation and critical thinking.

2. Smart Sudan Academy/College/University for Science and Artificial Intelligence: A higher education and research institution specializing in providing academic and professional programs in the fields of computer science, artificial intelligence, data science, cybersecurity, and robotics. The academy focuses on:

- Applied Scientific Research: Solving national challenges in agriculture, health, energy, and water using artificial intelligence.
- Industry Partnership: Training students in real-world projects and aligning research outputs with market needs and the needs of the government
- Knowledge Transfer: Serving as a regional hub for training and developing talent in advanced technologies, thereby reducing reliance on foreign expertise.

SMART
SUDAN
SCHOOLS

Chapter Five

Encoded Gold System – Gold Code

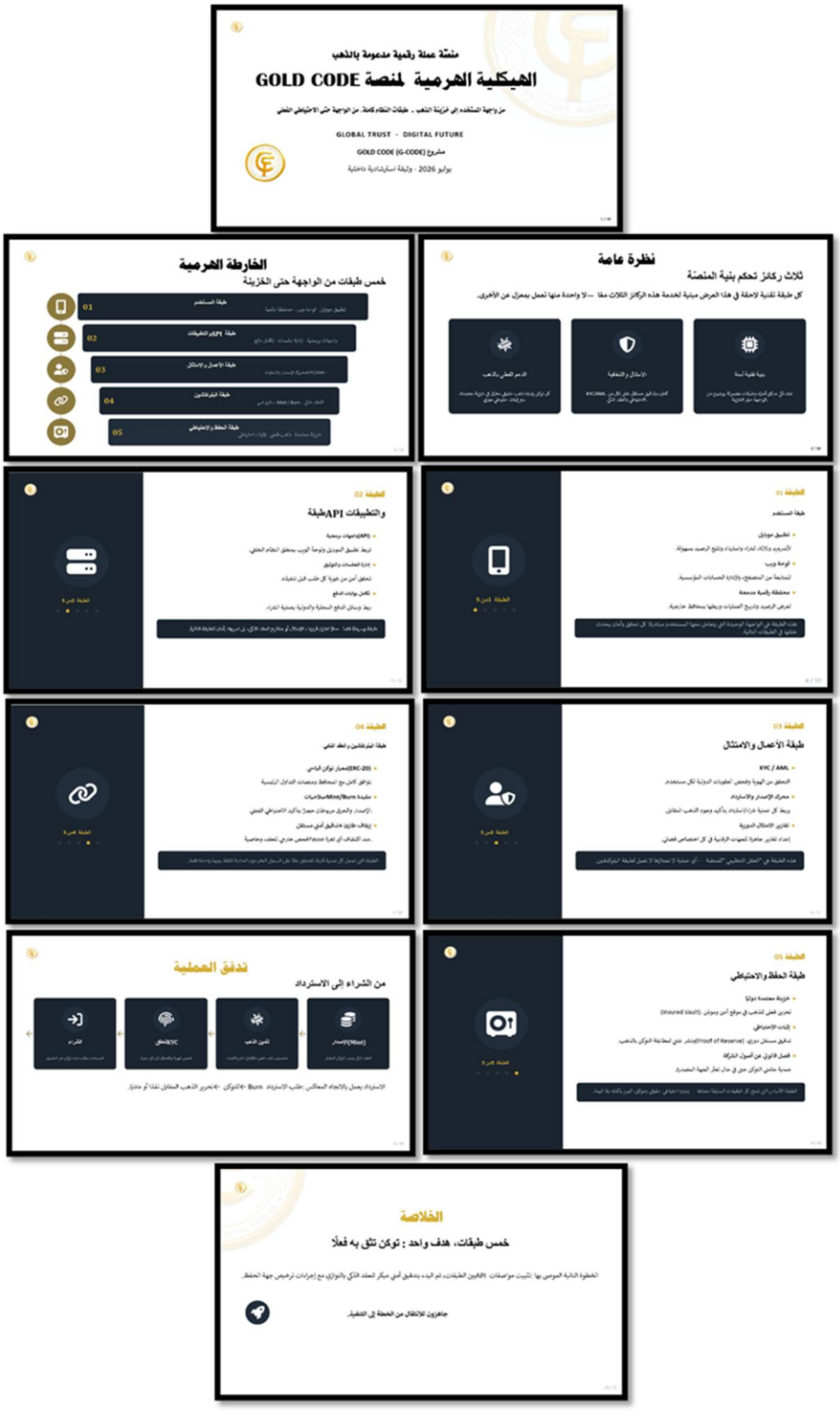
Gold Code Smart Stable coin

Part One: Concept and Fundamentals First: General Concept

Gold Code is a stablecoin issued and traded electronically. It is fully (100%) backed by a physical gold reserve stored in vaults and monitored by sovereign entities (such as the state or central bank). This currency combines the advantages of cryptocurrencies (speed, low cost, programmability, transparency) with the advantages of gold as a real asset (stability, inflation protection, global value).

Second: Justification and Strategic Objectives

1. Promoting Financial Inclusion: Integrating the unbanked (those without bank accounts) into the digital financial system through user-friendly digital wallets on smartphones, thereby expanding the economic base and reducing the use of undocumented cash.
2. National Currency Stability: Providing a safe and smart alternative to volatile paper currency, allowing citizens and investors to hold their savings in a stable currency pegged to gold, thus protecting them from inflation and devaluation, and contributing to macroeconomic stability.
3. Combating Corruption and Tax Evasion: Digitally and securely recording all transactions on blockchain technology (or a secure centralized system), creating a transparent digital footprint that hinders money laundering, facilitates tracking funds (especially in government transactions and major tenders), and enhances financial governance.
4. Reducing Printing and Transportation Costs: Digital currency eliminates the costs of printing, transporting, storing, and protecting paper currency, saving the public treasury significant sums.
5. Facilitating International Trade and Transfers: The currency enables faster and much cheaper international money transfers than traditional channels, supporting remittances from Sudanese expatriates and enhancing the competitiveness of exports.


منصّة عملة رقمية مدعومة بالذهب
الهيكلية الهرمية لمنصة GOLD CODE
من واجهة المستخدم إلى خزينة الذهب — طبقات النظام كاملة: من الواجهة حتى الاحتياطي الفعلي
GLOBAL TRUST · DIGITAL FUTURE
مشروع GOLD CODE (G-CODE)
يوليو 2026 · وثيقة استراتيجية داخلية
نظرة عامة
ثلاث ركائز تحكم بنية المنصة
كل طبقة تقنية لاحقة في هذا العرض مبنية لخدمة هذه الركائز الثلاث معًا — لا واحدة منها تعمل بمعزل عن الأخرى.
بنية تقنية آمنة
الأمن المالي بالذهب
الخارطة الهرمية
خمس طبقات من الواجهة حتى الخزينة
01 طبقة المستخدم
02 طبقة API وتطبيقات
03 طبقة الأصل والامتثال
04 طبقة البلوكتشين
05 طبقة الحفظ والاحتياطي
الطبقة 01
طبقة المستخدم
تطبيق موبايل
لوحة ويب
محفظة رقمية مدمجة
الطبقة 02
والتطبيقات APIطبقة
الطبقة 03
طبقة الأصل والامتثال
KYC / AML
محرك الإصدار والاسترداد
تقارير الامتثال الدورية
الطبقة 04
طبقة البلوكتشين والعقد الذكي
(ERC-20)عملار توكن الرئيسي
مكتبة Mint/Burn/Pause
الطبقة 05
طبقة الحفظ والاحتياطي
خزينة معتمدة دوليًا
إثبات الاحتياطي
فصل قانوني عن أصول الشركة
تدفق العملية
من الشراء إلى الاسترداد
الشراء
التحقق KYC
تأمين الذهب
الإصدار (Mint)
الخلاصة
خمس طبقات، هدف واحد : توكن تثق به فعلًا
جاهزون للانتقال من الخطة إلى التنفيذ.

- Principle: One "gold code" is issued for one gram (or fractions of a gram) of physical gold that is actually deposited in secure vaults belonging to the state or the central bank. These vaults are under the supervision of an independent regulatory body.
- Minting and Burning Mechanism:
- Minting: Upon depositing a quantity of gold, the system automatically issues an equal number of codes (based on the daily gold exchange rate) and adds them to the depositor's digital wallet, recording the transaction in a tamper-proof ledger.
- Burning: When the code holder wishes to redeem its true value, the system digitally "burns" (destroys) the code and orders the treasury to deliver the corresponding amount of gold to the holder (or its equivalent in the national currency according to the exchange rate). This transaction is also recorded.

Second: Types of Gold Code Currency

To maximize benefits and facilitate transactions, the currency will be issued in several denominations pegged to the most widely traded national currencies in Sudan, while maintaining a gold backing. These denominations include:

- Gold Pound (EGP-G): pegged to the Sudanese/Egyptian Pound.
- Gold Dollar (USD-G): pegged to the US Dollar.
- Gold Euro (EUR-G): pegged to the Euro.
- Gold Riyal (SAR-G): pegged to the Saudi Riyal.

(Other currencies may be added upon request and depending on economic conditions)

The price of each denomination is determined according to the following formula: Currency price in local currency =

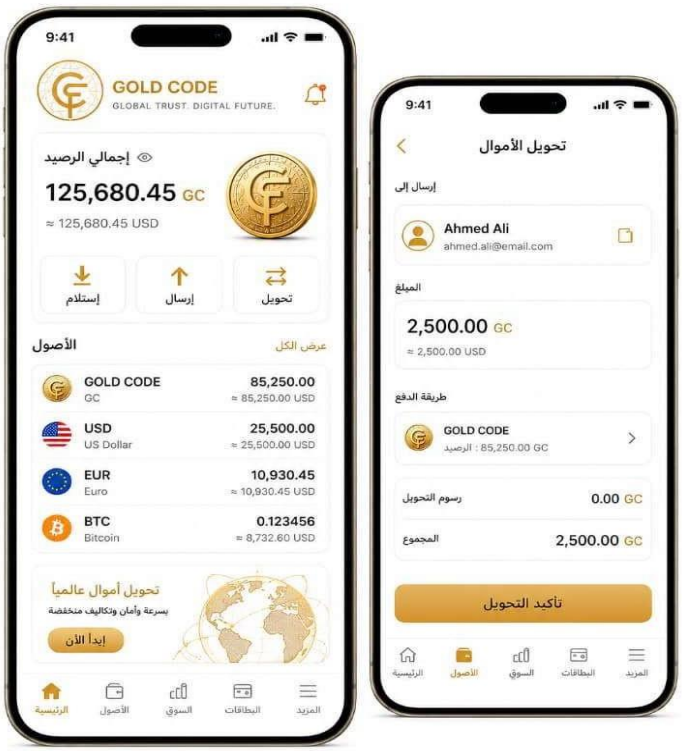
Price of an ounce in local currency / 31.1035 (weight of an ounce in grams).



Third: Applications and Banking Services of the System

1. Gold Account: A bank account (at the Central Bank or licensed commercial banks) used for storing and investing gold digitally. It can be opened for individuals, companies, and institutions, and allows for easy transfers, deposits, and withdrawals.
2. Gold Wallet: A smartphone application (or e-wallet) for managing gold tokens and making daily payments and transfers. It is characterized by its ease of use and high security.
3. Gold Guarantee Letter: A document (digital code) issued by the system to guarantee a financial commitment to a specific entity, backed by a gold reserve. This enhances confidence in major commercial transactions (tenders, contracts) as an alternative to traditional bank guarantee letters.
4. Gold Deposit: A service that allows individuals and institutions to deposit gold with banks (through the system) in exchange for an investment return (profit) that complies

with Sharia principles. This encourages saving and provides banks with investable gold liquidity.



Part Three: The Sharia and Regulatory Framework First: Sharia Compliance

The "Gold Code" system is designed to be fully compliant with the provisions of Islamic Sharia, through:

1. Verification of the Exchange Contract (Sarf): The exchange (immediate delivery of the token in exchange for its equivalent value) takes place in the same session as the contract, thus fulfilling the condition of immediate exchange in the exchange contract.
2. Real Ownership: The token holder owns a share of the physical gold held in the vault, not just a promise or personal commitment from the bank.
3. Freedom from Deception and Usury: The system contains no elements of deception (uncertainty) or usury (prohibited

interest), as all operations (issuance, transfer, redemption) are transparent and clear, and the gold is not sold on credit.

4. Fraud Prevention Compliance: The system's intelligent mechanisms prevent any manipulation or fraud, whether in the gold backing or in trading operations.

Second: Anti-Money Laundering and Counter-Terrorist Financing (AML/CTF)

The system adheres to the highest standards of anti-money laundering and counter-terrorist financing through:

1. Know Your Customer (KYC): Implementing rigorous procedures to verify the identity of every system user (individuals and institutions).
2. Real-Time Transaction Monitoring: Using artificial intelligence algorithms to monitor all transactions in real time and detect any abnormal or suspicious patterns.
3. Cooperation with regulatory authorities: Establishing immediate communication channels with the Central Bank and anti-money laundering units, and providing them with the necessary reports as soon as they request them.

Chapter Six

Sudan Smart Award - The Golden 99 List

Full Name: First Theme: Identity and Mission

Sudan Smart Award - The Golden 99 List for Institutional Integration

Mission:

"Building a bridge of excellence between the public and private sectors to create an integrated national system that enhances performance efficiency, strengthens trust, and builds a more transparent and innovative future."

Vision:

To become the premier benchmark list in Sudan and the region for institutions that combine operational integrity, innovation, and societal impact.

Slogan: "Where the two sectors meet, the nation is built."

Second Theme: Guiding Philosophy (Why 99?)

- The number 99 symbolizes inclusivity and relative perfection in Sudanese culture.
- The annual distribution creates a dynamic and renewed competitive environment.
- Integrating the two sectors aims to bridge the gap between them and stimulate the transfer of knowledge and expertise.
- The Golden List signifies that excellence is not an event, but a sustainable approach.

Third Axis: Key Criteria (The Five Golden Axes) Axis Number

Operational Definition Point Weight:

1. Integrated Workplace Safety: Physical Safety (Zero Accidents) + Psychological Safety (Absence of Bullying, Workplace Fairness) + Digital Safety (Data Protection) 20%
2. Customer and Citizen Loyalty: Customer Satisfaction (NPS) Measurement + Speed of Complaint Resolution + Citizen Interaction with Government Services (for Public Entities) 20%
3. Preventive Integrity: Absence of Violations + Number of Proactive Measures to Prevent Violations + Transparency of Quarterly Published Reports 20%

4. Innovative Footprint: Number of New Solutions Implemented + Rate of Adoption by Other Entities + Partnerships with Universities and Startups 20%
5. Sustainability of Excellence: Continued Outstanding Performance for 3 Years + Knowledge Documentation and Transfer to Other Entities + Succession Planning 20% Golden Condition: No candidate will be accepted if they are less than 5 points in any axis (Balance is mandatory).

Fourth Axis: Evaluation Mechanism (Absolute Objectivity)

4.1 Sources

- Internal Data: Institutional files (safety, quality, and complaint reports).
- Independent Data: Reports from regulatory bodies (occupational safety, consumer protection, and competition authorities).
- Field Data: Unannounced visits by audit teams.
  Digital Data: Analysis of customer and citizen interactions across online platforms.

4.2 Evaluation System

Phase Duration Procedure Implementing Entity:

Registration: Two months (January-February) Submission of initial files via an electronic portal technical support teams
Initial Filtering: One month (March) Exclusion of those who do not meet the minimum requirement (70%) Automated system + preliminary committee
Field Audit: Two months (April-May) Field visits and data verification Independent (external) auditing firm
Final Evaluation: Two months (June-July) Calculation of final scores by the Supreme Judging Committee A committee of 7 experts (diverse from both sectors)
List Approval: One month (August) Final review and approval of the list Award Board of Trustees
Annual Ceremony: September Official announcement at a grand ceremony Organizing Committee

4.3 Ensuring Integrity

- Announcing the names of the judging committees in advance.
- Right of appeal for excluded institutions with an independent appeals committee.
- Internal audit by a certified accounting firm.

Fifth Axis: Distribution of the 99 (Real Integration):

5.1 Initial Distribution

Category Number Notes:

Public Sector: 45 institutions Ministries, authorities, states, and public universities.
Private Sector: 45 large, medium, and emerging companies.
Combined (Mixed) Category: 9 public-private partnerships (infrastructure projects, shared services).

5.2 Distribution by Gold Tier (within each sector) Tier Number per sector Condition:

High Gold: 5 public + 5 private + 1 joint; 95% or higher in each axis.
Standard Gold: 15 public + 15 private + 3 joint; 85-94%.
Qualified Gold: 25 public + 25 private + 5 joint; 70-84%.

5.3 Dynamic Balancing Mechanism

- If a sector does not meet its allocated number, the vacant positions are redistributed to the other sector.
- Additional points (5%) are awarded to companies that submit joint projects with the other sector.

Axis Six: Winners' Benefits (Golden Incentives)

6.1 For the Public Sector

- Exceptional job grades are granted to outstanding employees.
- Priority is given in new budgets and projects. • Exemption from certain routine procedures (green lane).

6.2 For the private sector

- Tax or customs duty reductions (to be agreed upon with the relevant authorities).

- Free media coverage on official channels.
- Priority in government tenders

6.3 For everyone (shared)

- Internationally recognized electronic signature certificate.
- Commemorative plaque and symbolic monetary prize.
- Invitation to attend the annual Leaders Forum (meeting with ministers and heads of major companies).
- Membership in the "Golden 99 Club" for exchanging experiences and ongoing communication.

Seventh Axis: Media and Marketing Plan (to ensure appeal) Activity Timing Media

Award Launch January Press conference + live television coverage.

Awareness Campaign January-February Advertisements in newspapers, social media, local radio stations.

Awareness Seminars February-March Workshops in each state to explain the evaluation mechanism.

Announcement of the final shortlist September Grand ceremony in the presence of the Prime Minister or relevant ministers.

Live broadcast of the ceremony September Official television and social media platforms.

An annual booklet will be published in October featuring the success stories and experiences of the 99 winners.

Official hashtags: #99Golden #SmartSudan

Eighth (Additional) Pillar: Sustainability and Development

- Annual evaluation of the award by an independent Board of Trustees.
- Addition of new categories every 3 years (e.g., Best Emerging Institution, Best Joint Initiative).
- Future regional expansion to include institutions from neighboring countries (if successful).

Implementation Timeline (Full Year) Month and Activity

- January: Launch of the award, opening of registration.
- February: Closing of registration, beginning of initial review.

- March-April: Initial screening, notification of successful applicants.
- May-June: Field visits and data collection.
- July: Final evaluation and reporting.
- August: [Information missing in original text].

Final Recommendation This approach offers

you:

1. Complete objectivity (clear criteria, independent auditing, transparent points system).
2. Appeal (strong incentives, media coverage, a highly anticipated annual event).
3. Sustainability (annual renewal mechanism, a gold ranking system that motivates institutions to advance).
4. Integration (organic integration between the public and private sectors, with incentives for partnerships).

Judging Committee:

The award chairperson will form an independent committee of 5-7 experienced members (from both sectors) under judicial oversight for enhanced transparency. Executive Team: The award chairperson will appoint specialists to finalize the operational details and then begin designing the digital platform for registration and automated evaluation.

Chapter Seven

Smart Justice – The Smart International Arbitration Chamber

(Towards a Technological Future for the Sudanese and International Judicial Arena)

Introductory Definition:

In the wake of the digital revolution permeating all facets of life, and within the ambitious vision of “Smart Sudan” for comprehensive digital transformation, this unique legal innovation emerges as a quantum leap in the landscape of commercial and investment dispute resolution. The “Smart International Arbitration Chamber” is not merely a conventional arbitration mechanism; it is a fully integrated, dynamic system that marries the solidity of international law with the agility of intelligent algorithms, while preserving the human imprint as a fundamental safeguard for justice and integrity.

This model is predicated on an integrative philosophy: that technology must serve the judiciary, not steer it. By deploying artificial intelligence tools for document analysis, proposing procedural timetables, and rendering preliminary draft awards, unprecedented speed and efficiency are achieved without relinquishing the core principle of “human intervention” as the final sentinel of judicial decision-making. The legal reference remains firmly rooted in the law of the host State for domestic disputes, and in venerable international conventions, primarily the 1958 New York Convention, to ensure the cross-border enforceability of awards.

This chapter aims to present the legal and technical foundations of this Smart Chamber, and its role in bolstering the investment climate in Sudan, offering a secure and transparent dispute resolution platform aligned with the highest global standards, thereby positioning Sudan among the pioneering nations in digital justice, in coordination with international and regional commercial chambers.

The Smart International Arbitration Chamber: Statute and Procedural Rules

Issued by the Founding Authority of the Smart International Arbitration Chamber

(Model of the Smart International Court of Arbitration)

Article (1): Establishment, Seat, and Jurisdiction

1. This Statute establishes the "Smart International Arbitration Chamber" (hereinafter referred to as "the Chamber"), an independent international legal entity, enjoying juristic personality and operating under the provisions of this Statute and applicable international laws.
2. Principal Seat: The principal seat of the Chamber shall be determined by its founding charter, subject to international recognition as a certified center for digital arbitration.
3. Jurisdiction:

a. For Domestic Disputes: The Chamber shall apply the provisions of the law of the host State (the legal situs of the proceedings) with regard to procedural principles, whereas the Rules of the Chamber shall govern as the lex specials regulating the proceedings.

b. For International Disputes: The Chamber shall apply the provisions of applicable international conventions, notably the 1958 New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards, and the UNCITRAL Model Law on International Commercial Arbitration, serving as the fundamental reference for ensuring enforceability.

Article (2): Definitions and Interpretations

In the application of these Rules, the following words and phrases shall have the meanings set forth beside each, unless the context otherwise requires:

- "Chamber": The Smart International Arbitration Chamber and all its operational units.
- "Integrative Artificial Intelligence": A certified algorithmic system functioning as an auxiliary tool for the arbitral tribunal, performing document analysis, proposing procedural timetables, drafting preliminary award structures, and evaluating evidence, provided that the final decision and legal liability remain vested solely in the human arbitrator.
- "Human Intervention": The direct and effective supervision by the arbitrator or arbitral tribunal of all algorithmic outputs, ensuring compliance with the principles of fairness, due process, and judicial independence.
- "Secure Digital Platform": The Chamber's approved electronic arbitration environment through which all proceedings are conducted, featuring high-security classification and authentication measures.

Article (3): Coordination with Commercial and Industrial Chambers

1. The Chamber shall serve as an integrative judicial arm, coordinating with the International Chamber of Commerce (ICC) and regional and international chambers, aiming to harmonize commercial arbitration standards.
2. The Chamber undertakes to maintain a list of arbitrators accredited by itself and its partnering

chambers, subject to accredited training programs in digital arbitration and artificial intelligence.

Article (4): Transparency and Procedural Integrity

1. Arbitration proceedings shall be conducted in compliance with the highest standards of transparency, with all phases documented, including algorithmic search processes, while granting the parties full access to the rationale of the algorithm within the limits of trade secrets.
2. Any technical or algorithmic interference that violates the principle of equality of arms between the disputing parties shall be strictly prohibited.

Article (5): General Arbitration Procedure

1. Commencement: Proceedings shall commence by filing a Request for Arbitration via the digital platform, accompanied by the arbitration agreement and all supporting documents.
2. Constitution of the Tribunal:
   a. Arbitrators shall be selected by the parties or appointed by the Chamber according to its mechanisms, provided they possess legal and technical expertise.
   b. The Artificial Intelligence system shall assist in proposing a shortlist based on arbitrator profiles and the nature of the dispute, with the right of challenge reserved for the parties.

Exchange of Memorials and Evidence: Memorials and evidence shall be exchanged via the platform, with adequate time limits granted to each party; algorithms may propose optimal timeframes, subject to extension by human decision.

Article (6): Role of Artificial Intelligence in Proceedings

Artificial Intelligence shall be employed as a supporting analytical instrument, not as a decision-maker, and shall be limited to:

a. Smart document sorting and extraction of key facts.
b. Analyzing claims, legal documents, and proposing potential questions for the parties or experts.
c. Drafting a preliminary, non-binding draft award, subject to comprehensive human review.

Arbitrators must explicitly disclose their use of AI tools and document in the final award how these tools were utilized, with the arbitrator bearing full legal responsibility for the dispositive and reasoning of the award.

Article (7): Issuance of the Award

1. The Award shall be rendered within a period not exceeding ( ) days from the constitution of the tribunal, subject to extension upon the parties' consent or by reasoned decision of the tribunal.
2. The Award shall be issued in Arabic, with an official English translation provided, and shall include:
   a. The facts of the dispute and its subject matter.
   b. The logical and legal reasons for the Award.
   c. The operative part and enforcement measures.

An Award rendered under these Rules shall be final and binding upon the parties, and enforceable in accordance with the New York Convention and the domestic laws of the host State.

Article (8): Challenges and Remedies

1. Appeals against the Award shall be permissible solely on the grounds provided by the law of the host State and international conventions, notably violation of public policy, excess of jurisdiction by the tribunal, or proven substantial algorithmic influence undermining the fairness of the decision.
2. The Courts of the host State shall have jurisdiction over annulment proceedings, subject to the provisions of applicable international conventions.

Article (9): Confidentiality and Data Protection

1. The Chamber, all its personnel, and arbitrators undertake to preserve the confidentiality of the dispute, and shall not publish the parties' data or case documents.
2. The Chamber shall implement data protection policies compliant with the General Data Protection Regulation (GDPR) and national legislation.

Article (10): Fees and Costs

1. Fees and costs shall be determined in accordance with the Financial Regulations annexed to this Statute, which may be amended annually by a resolution of the Chamber Council.
2. The losing party shall bear the costs of arbitration, unless the parties agree or the tribunal decides otherwise.

Article (11): Final Provisions

1. These Rules shall apply to all requests for arbitration filed after their effective date, unless the parties expressly agree otherwise.

2. The Arabic text of these Rules shall be the authoritative version for interpretation, while the English translation shall serve for informational and documentary purposes.
3. The interpretation of these Rules or any related proceedings shall be governed by the laws of the State hosting the principal seat of the Chamber, in all matters not conflicting with the mandatory rules of international law. Issued in good faith,

The Founding Authority of the Smart International Arbitration Chamber

Chapter Eight

A Comprehensive Technical Study of the Incubated Projects

Presenting the Advantages and Expected Impact

First: The Occupational Safety and Health Officers Project Advantages:

- Training and employing a significant number of young people and graduates according to approved safety standards, creating a new generation of qualified occupational safety personnel. This will enhance safe and smart work environments across all production and service sectors.
- Adopting smart coding systems to document professional competencies, thereby increasing transparency and trust in operating establishments.
- Attracting investments that require safety and quality standards as a prerequisite for entry.
- Localizing knowledge and transferring expertise from specialized international partners, thus reducing reliance on foreign expertise.

Expected Impact:

- Significantly reducing occupational accidents and injuries, protecting lives and property.
- Lowering costs resulting from production downtime, compensation, and treatment, and increasing national productivity.
- Creating a specialized labor market that provides quality and sustainable jobs for Sudanese youth.

Second: The Smart Food Security Project Advantages:

- Applying artificial intelligence in supply chains and agriculture, achieving a qualitative leap in agricultural productivity, reducing waste, and ensuring efficient and high-quality food delivery.
- Utilizing modern technologies to reduce reliance on manual labor for strenuous tasks and increase the productivity of workers in the agricultural sector.

Expected Impact:

- Significantly reducing agricultural production costs and enhancing the ability to achieve food security despite climatic and economic challenges.
- Stabilizing food prices in markets and providing high-quality alternatives for citizens.
- Opening export opportunities for Sudanese products in global markets that require high quality and safety certifications.

Third: The Smart Code Project (Coding Competencies, Goods, and Services)

Advantages:

- Building a comprehensive national database of competencies and institutions using QR code technology and a professional coding system, creating a national identification number for trust and transparency.
- Ensuring transparency, combating forgery and fraud, and empowering decision -makers with accurate data to support national planning across various sectors.

Expected Impact:

Combating tax evasion and money laundering by making the tracking of funds and goods easier and more accessible.

Unifying and documenting goods and services in the Sudanese market, creating an attractive investment environment based on transparency and trust, and enhancing the efficiency of supply chains.

Empowering and protecting consumers from counterfeit products and promoting a culture of quality among producers and suppliers.

Fourth: Smart Sudan Schools and Academy Project Advantages:

Investing in human capital and preparing national cadres capable of leading digital transformation and future development projects.

Providing quality education in the fields of science, technology, engineering, mathematics (STEM), and artificial intelligence, which enhances the global competitiveness of Sudanese talent.

Expected Impact:

Reducing reliance on foreign expertise, localizing technology, and opening new horizons for young people in the global labor market.

Preparing future leaders in digital transformation to manage major technology projects, thus ensuring the sustainability of development gains.

Bridging the gap in qualified technical personnel needed by the local and international markets.

Smart Governance

1. Introduction: Why Smart Governance?

If traditional governance represents the "soul of the state or institution"—regulating organizational cadence through laws and oversight—then Smart Governance constitutes the "mind" that anticipates and outpaces events. In the era of digital transformation, governance has transcended mere administrative formalities; it has evolved into a dynamic, interactive ecosystem that operates on real ¬time data to forge equitable decisions, ensure penetrating transparency, and foster effective societal participation. For the "Smart Sudan" initiative, Smart Governance emerges as the most potent instrument for achieving sustainable development, particularly amidst resource constraints. It does so by optimizing decision-making processes and diagnosing systemic vulnerabilities before they metastasize.

2. Defining Smart Governance

Smart Governance is the advanced evolutionary model of governance that embeds cutting-edge digital technologies—including Artificial Intelligence, the Internet of Things, Big Data analytics, and Cloud Computing—into the very fabric of administrative operations and policymaking. More profoundly, it can be defined as a novel administrative philosophy predicated upon three fundamental pillars:

- Proactivity: Rather than reacting to crises after their onset, this paradigm leverages predictive data analytics to foresee and avert challenges (e.g., forecasting drought episodes or pharmaceutical shortages before they manifest).
- Real-time Transparency: This pillar replaces traditional annual paper-based reports with open, publicly accessible digital dashboards that display governmental performance and fiscal budgets instantaneously.
- Participatory Engagement: This transforms the citizen from a passive recipient of top-down decisions into an active stakeholder, empowered to report issues, propose solutions, and evaluate institutional performance through interactive platforms.

3. The Fundamental Distinction Between Traditional and Smart Governance (A Concise, Comprehensive Overview)

Aspect Traditional Governance Smart Governance
Decision Driver Static legislation and human expertise. Real-time data analytics and predictive modeling.
Primary Tools Regulations, internal audits, and periodic

reports. Digital platforms, AI algorithms, and IoT sensors.

Risk Approach Reactive (crisis management post-occurrence). Proactive (risk mitigation through early-warning signals).

Citizen's Role Service recipient and administrative subject. Collaborative partner, performance evaluator, and oversight agent.

Administrative Structure Rigid, closed, hierarchical (centralized). Flexible, open, and collaborative (decentralized and agile).

Anti-Corruption Relies on human oversight and retrospective investigations. Relies on an immutable digital ledger and real-time anomaly detection.

The Smart Synopsis: If traditional governance is analogous to a driver relying on a rearview mirror to see what they have missed, then Smart Governance is analogous to a pilot utilizing radar and predictive meteorological data to recalibrate their flight path before any deviation occurs.

4. The "Smart Sudan" Imperative in This Context

The implementation of the Smart Governance model in Sudan—and beyond—is not a technological luxury but a strategic imperative for national resilience and the realization of a sustainable, intelligent renaissance. This framework enables us to harness the formidable capabilities of our young programmers, transcend the inefficiencies of centralization, and construct a transparent, institutionalized state where accurate, actionable information is systematically placed at the fingertips of decision-makers. Ultimately, Smart Governance is not merely an end in itself; rather, it stands as the most direct and judicious pathway

toward entrenching justice, fostering inclusive development, and revitalizing our beloved homeland and its institutions across all sectors.

I wish you and the "Smart Sudan" project every success.

Please let me know if you require any further adjustments.

Fifth: Gold-backed cryptocurrency system Project Gold

Code Stable Smart Currency Advantages:

Promoting financial inclusion and providing a safe and smart alternative, with its stability guaranteed by real assets (gold).

Integrating the unbanked into the financial system, thus expanding the economic base and stimulating growth.

Expected Impact:

Enabling the central bank to manage the money supply more accurately, reducing reliance on banknotes that are difficult to trace, and combating counterfeiting.

Reducing the costs of printing, transporting, and storing currency, and providing significant financial resources to the public treasury.

Supporting electronic payment transactions through the unified national platform, achieving a qualitative leap in the speed and efficiency of commercial and financial transactions, and attracting investments in the digital financial sector.

Protecting citizens' savings from inflation and currency fluctuations, thus enhancing economic stability and stimulating national savings.

Concluding Recommendations

Based on the comprehensive and integrated presentation of the "Smart Sudan" smart projects, which represent fundamental pillars for achieving sustainable development and the desired digital transformation in Sudan, and after reviewing the legal, technical, financial, and regulatory

frameworks that ensure their robustness and feasibility, we recommend the following:

Urgent Implementation Recommendations First: Government Adoption of the Projects

We recommend that the Sudanese government, represented by the Council of Ministers, adopt these smart projects as a top-priority national program. It should issue directives to all relevant authorities (ministries, agencies, and banks) to take the necessary steps to facilitate their implementation, remove any administrative or legislative obstacles that may hinder them, and provide a supportive and enabling environment.

Second: Establishment of the Smart Sudan Development and Investment Authority

We recommend the issuance of a presidential decree (or a decision by the Council of Ministers) to establish the "Smart Sudan Development and Investment Authority" as a legal entity with an independent budget, enjoying administrative and financial autonomy. It shall have full authority to contract and partner with the public and private sectors, represented by the International Consulting Center for Safety and Quality Assurance, both locally and internationally. This will serve as the overarching institutional framework for these projects, ensuring their efficient implementation and monitoring.

Third: Directing Technical and Technological Support

We recommend directing the Ministry of Digital Transformation and Communications and other relevant bodies (Digital Transformation Authority, Data and Artificial Intelligence Authority, Cybersecurity Authority) to provide technical and technological support to the agency. This support should ensure integration with national digital infrastructure, unify efforts, prevent duplication, and maximize the utilization of available resources.

Fourth: Approving Establishment Support and Operating Budget

We recommend approving the necessary operating budget for establishing and operating the agency during its first year, and providing the essential requirements (suitable headquarters, transportation, and communication) to ensure its strong launch and the achievement of its objectives within the specified timeframe.

Fifth:

Designating Sudan as the headquarters for the International Smart Arbitration Chamber for Economic and Investment Issues, under the auspices of the agency.

The International Smart Intellectual Property Award:

"The International Smart Intellectual Property Award – Top 99 Innovations and Inventions"

An annual investment platform that hosts the world's top 99 innovations and inventions, transforming them from ideas into protected, marketable commercial assets. We offer innovators a comprehensive package including: legal protection, technical development, marketing, and funding attraction, while connecting them with an international network of investors and industrialists. We work in partnership with national and international institutions to build a sustainable knowledge economy and enhance countries' competitiveness in global innovation indices.

"Top 99 Innovations and Inventions": Incubation, protection, development, and marketing for the top 99 inventions and innovations annually .. from the lab to the market through an intelligent investment pathway.

· Under the concept: "Towards a world where no great idea is lost."

The award aims to enhance competitiveness internationally / regionally / locally.

In concluding this comprehensive guide to the "Smart Sudan" projects, we find ourselves facing an undeniable truth: the future of nations today is not built solely on the efforts of past generations, nor solely on their natural resources, but rather on the creative minds of their youth, their ability to anticipate the future, and their capacity to seize opportunities before they slip away. The "Smart Sudan" projects we have presented are not merely theoretical ideas or emotional appeals; they are projects grounded in sound scientific principles, clear legal frameworks, and sustainable financial models, capable of bringing about a qualitative transformation in Sudan's economic and social landscape.

Empowering smart projects is not limited to providing innovative technological solutions; it requires fostering a culture of creativity and innovation within society and attracting the energies of young people towards new horizons of productive and creative work. The establishment of the "Smart Sudan Development and Investment Authority" is a practical embodiment of the state's directives to strengthen smart partnerships between the public and private sectors, improve government performance, establish the foundations of a knowledge economy, and transition the country from a consumer-based economy to one of production and global competitiveness.

We are confident that these projects, with their sound management and God's blessings, will serve as a model for the region, proving that Sudan, despite all challenges, is capable of rising up, keeping pace with development, and presenting its own unique model of smart development that blends tradition and modernity, science and ethics, and ambition and determination. I ask God Almighty to grant success to those in charge of this great national

project, to make it purely for His sake, beneficial to His servants, and dedicated to the advancement of this beloved nation. He is the All-Hearing, the Responsive.

And God is the source of all success.

About the Author

References

1. Saudi Bar Association. (2026). Professional Accreditation Program for Lawyers (SASL). Riyadh, Saudi Arabia.
2. Food and Agriculture Organization of the United Nations (FAO). (2026). Social Protection for Food Security Purposes. Rome, Italy.
3. Food and Agriculture Organization of the United Nations (FAO). (2026). Food Security in an Evolving Geopolitical Environment. Rome, Italy.
4. Smart code. (2026). Online Brand Protection Services & Solutions. Singapore.
5. Golden Soft Integrated Systems Company. (2026). GS-GOLD Integrated Gold System. Riyadh, Saudi Arabia.

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- Smart Settlement: A Historic Justice for Africa.
- The Smart Methodology for Social and Professional Protection.
- The Digital Transformation Model for Quality and Excellence.
- The International Agency for Smart Consumer Protection

SMART SUDAN

DIGITAL TRANSFORMATION FOR SUSTAINABLE GROWTH

INTEGRATED SMART SOLUTIONS

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