

ENABLERS FOR EFFECTIVE STI-LED INDUSTRIALISATION: *Critical Reflections*

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On-Behalf of the Consortium

ACKNOWLEDGEMENT

THANK YOU

**TO YOU ALL WHO SUPPORT AND WORK
SO HARD TO MENTOR OTHERS AND
MAKE UGANDA THE BEST**

**Sustainability:
Future is coming, Future is Here
Every child deserves better destiny!**



It doesn't matter how many resources you have



If you don't know how to use them,
it will never be enough.

STI Uganda System: Re-Organize Your Ladders

INFORMALITY IN AFRICA - A TIME-HONORED CULTURE:

> 200 Yrs After the 1st Industrial Revolution, Africa is Still Stack in Informal Socio-economic (SE) and STI Models

1. **INFORMAL** = Untargeted Value amplification
2. **UN-INTENTIONAL** to change
3. **COMMODITY-BASED** - Narrow base, primary segment of value-chain.
4. **DISJOINTED VALUE-CHAIN**
5. **FRAGMENTED & SCATTERED** production units
6. **OUTDATED SE-model**

Uganda is Predominantly Informal. Informality Ecosystem implies Uganda's STI System is largely Informal.

Informal economy (UBOS 2020):

- ❑ 80% of national economic activities
 - ❑ 60% of skills & innovations generated
 - ❑ 75% of total employment
 - ❑ 54% of GDP
-
- **Uganda's immediate socio-economic revolution lies in transforming from "informality."**
 - ***TRANSFORM THE "INFORMAL"***

Uganda's Fresh Model of Targeted STI Delivery: Anchored in 9 Pillars, Intentional and Targeted

1. Export Promotion
2. Productivity Acceleration
3. Import Substitution
4. Infrastructure Innovations
5. Pathogen Economy
6. Industry 4.0+
7. Mobility
8. Aeronautics and Space
9. Human Capital Development

➤ *Uganda has made a deliberate decision to take the path of an STI - driven industrial value chain development*



➤ *Has embarked on **accelerated** industrialization through 9 industrial value chains.*



Rationale: Shift From Commodity-based to Industrial Value-chains-based Socio-economic Model."

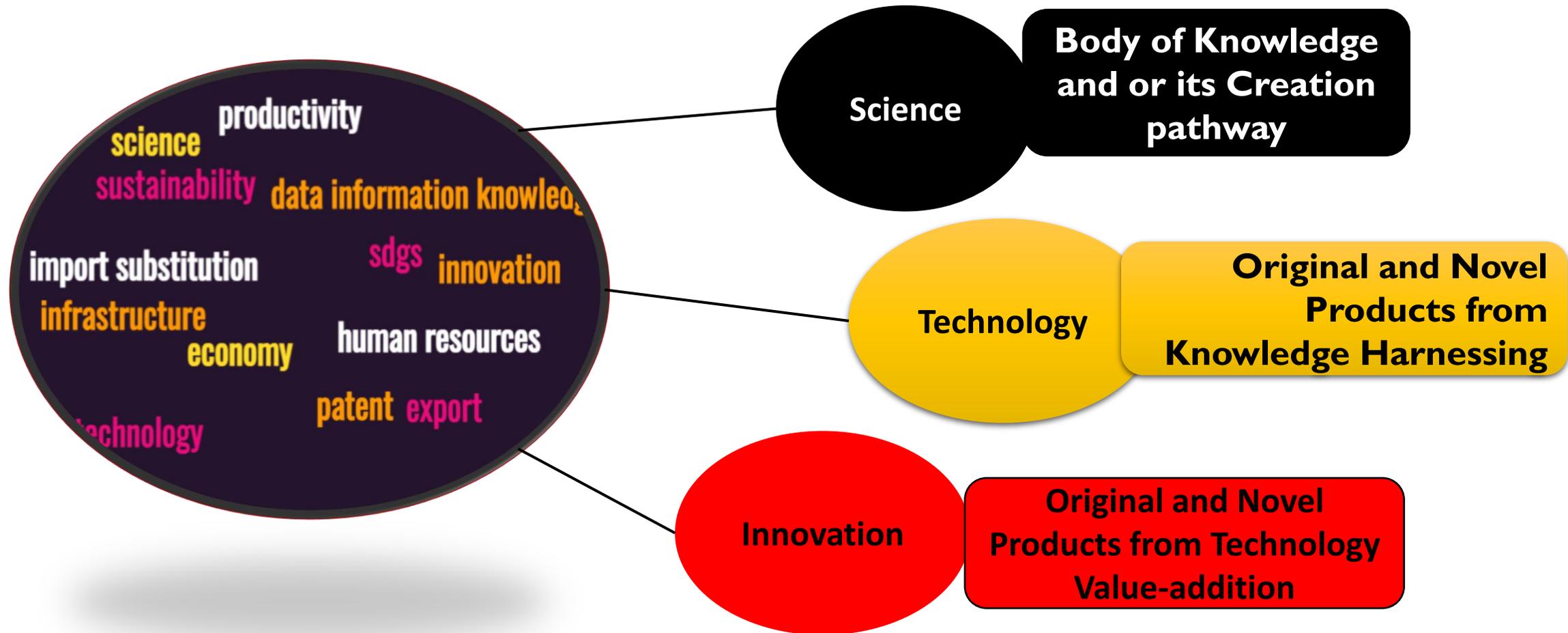
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Recent

- a) **Commodity Prices → Few Jobs & Development Benefits**
- b) **Formula for amplifying value of huge natural resources through industrial value-chains development will grow industries, employment, the economy & other benefits more rapidly.**
- c) **Industrial VC STI model is therefore key formula to amplify value**

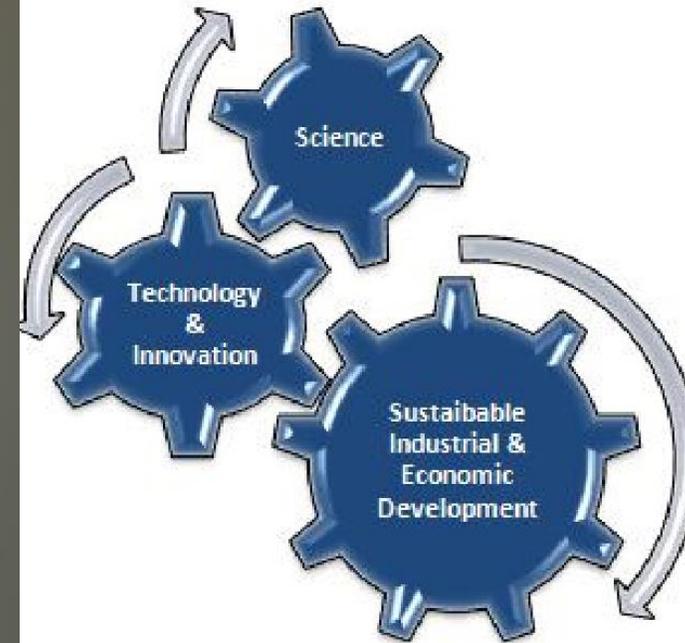
DEMYSTIFY SCIENCE, TECHNOLOGY AND INNOVATION (STI). STI IS SIMPLY KNOWLEDGE AND KNOWLEDGE PRODUCTS



UGANDA'S STI SYSTEM: WHERE WE ARE IN BRIEF

- a) **STI consumption is largely everywhere - every sector & discipline.**
- b) **STI consumed is predominantly imported.**
- c) **Domestic STI is largely informal.**
- d) **Domestic Technology & Innovation is largely done at Industry and Research level; with limited support, regulation and standards.**
- e) **UNCST regulatory emphasis is largely on Bio-STI; Physical STI is weakly guided and regulated**
- f) STI-OP system has been mandated to direct, guide, regulate, and control STI system in Uganda

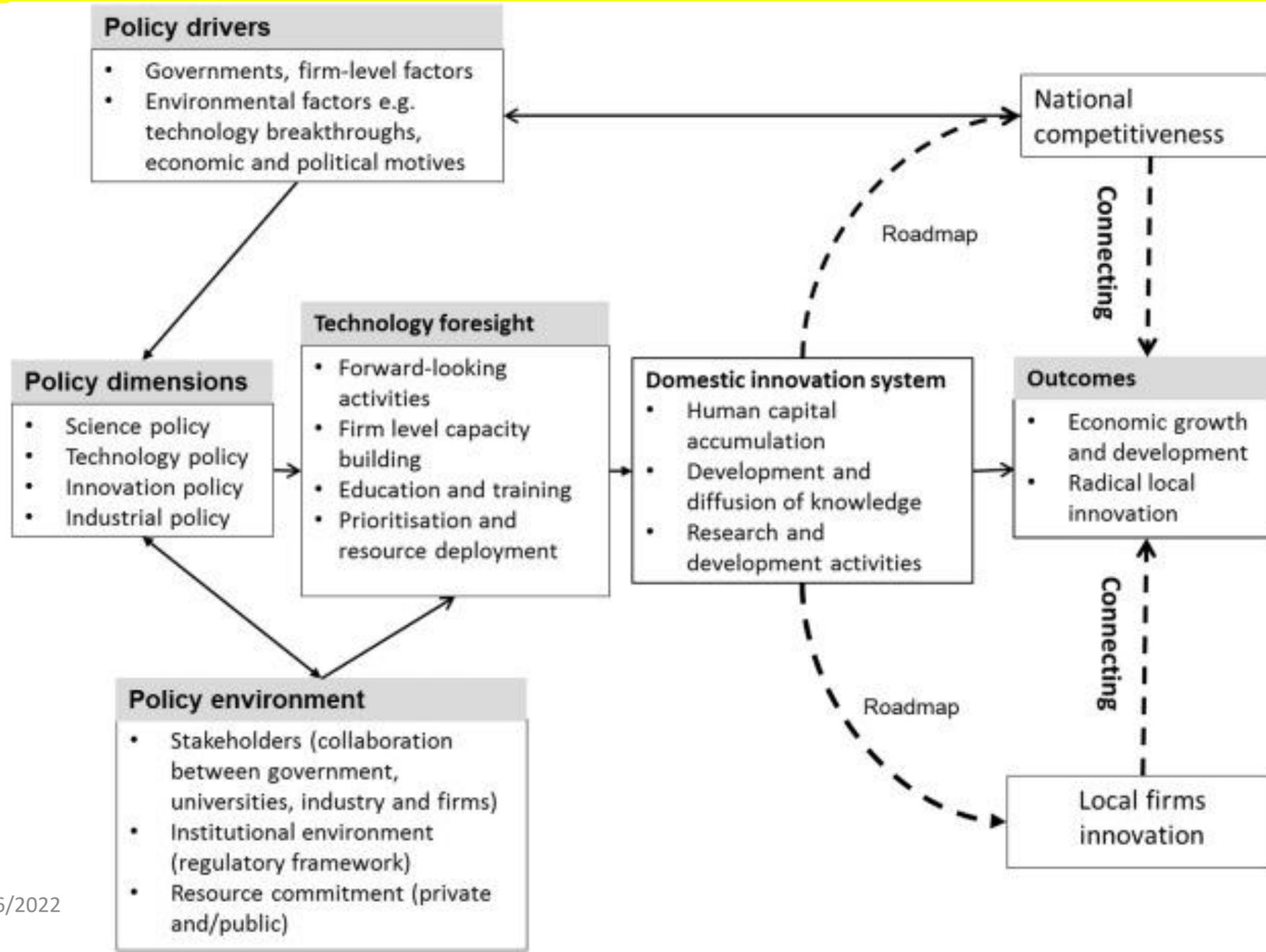
KEY INNOVATION INPUTS FOR INDUSTRIALISATION



ELEMENTS FOR MOULDING A SUSTAINABLE HOLISTIC NATIONAL STI SYSTEM

STI PILLAR	DESCRIPTION
<input type="checkbox"/> CLEAR VISION OF STI-LED INDUSTRIALISATION: INFORMAL TO FORMAL.	Clear end state of a fully functional efficient and effective national STI-led industrialisation system ; clarity of vision and process.
<input type="checkbox"/> CLEAR THEORY OF CHANGE	Organise the roadmap and ladders . Where are we coming from, where are we going, how are we going there, what are the building blocks, outcomes and elements of the journey .
<input type="checkbox"/> STI SYSTEM FOR ALL	Holistic STI (Bio, Physical & Virtual). From predominantly Bio-STI regulator → to holistic STI regulator. Holistically address all STI sectors
<input type="checkbox"/> NATIONAL STI IDEOLOGY & PHILOSOPHY: FUNDAMENTS OF NATIONAL STI	The CREED – the National STI lenses – Top values - blue print fundamentals of the national STI system – central DOGMA and doctrine of STI

THEORY OF CHANGE



Continued: ELEMENTS FOR MOULDING A SUSTAINABLE HOLISTIC NATIONAL STI SYSTEM

STI Pillar	Description of the Pillar/element
<input type="checkbox"/> AGGREGATOR SYSTEM	Coordination mechanism (STI-OP) and Network of STI Excellence
<input type="checkbox"/> GOVERNANCE SYSTEM (Laws, policies, regulations, enforcement)	Rules of the game concerning creation of an enabling environment to do STI business
<input type="checkbox"/> INFRASTRUCTURE SYSTEM	STI research and training institutes and incubation centres, manufacturing entities etc
<input type="checkbox"/> HUMAN CAPITAL DEVELOPMENT & MANAGEMENT SYSTEM	Values & culture of the systems, STI-sensitive curricula , i.e. introduce STI early enough- radiate and mentor ethical scientists to go and work and participate in different sectors- a deliberate strategy, Branding of Ugandan scientists
<input type="checkbox"/> FINANCING SYSTEM	Endowment funding mechanisms , investments, government, industry and public subvention

NATIONAL NETWORK OF STI EXCELLENCE



Enabling an STI-Led Industrialization and Economy

Cont... ELEMENTS FOR MOULDING A SUSTAINABLE HOLISTIC NATIONAL STI SYSTEM

STI Pillar	Description of the Pillar/element
INFORMATICS SYSTEM: Data, Information and Knowledge Management and Learning	Projections, MEL, Curation, Creation of a learning organization
TOTAL QUALITY MANAGEMENT SYSTEM	Design and implementation of standards, Quality control, Quality management, Accreditation, Brand Management – Made in Uganda. Harmonize different standards (regional, continental, global). Regulate standards for all kinds of STI
MARKETING SYSTEM	Commercialization of STI products- role of the private sector, patenting
INPUTS SUPPLY CHAIN SYSTEM	Starts with inputs into the system, procurement procedures, gazetted areas of quality products- one stop centre

A MISSION TO SYSTEMATISE

Accelerating Reconstruction of **Informal to Formal STI Ecosystem** and fast-track Translation of STI into Industrial Value, Opportunities, Employment and Development Benefits

In times of turbulence, the greatest danger is not the turbulence; rather, it is acting with yesterday's logic & methods

We Need to embrace ALTERNATIVE:

- 1) Thinking** - Thinking differently
- 2) Learning – Learning to Unlearn and Relearn**
- 3) Innovation** – Re-imagining & co-creating future solutions
- 4) Opportunity** - Resetting the ecosystem from informality
- 5) Mind-setting** - Utilizing failure is a bridge of honor
- 6) Leadership** – show the way, go the way, stay the way