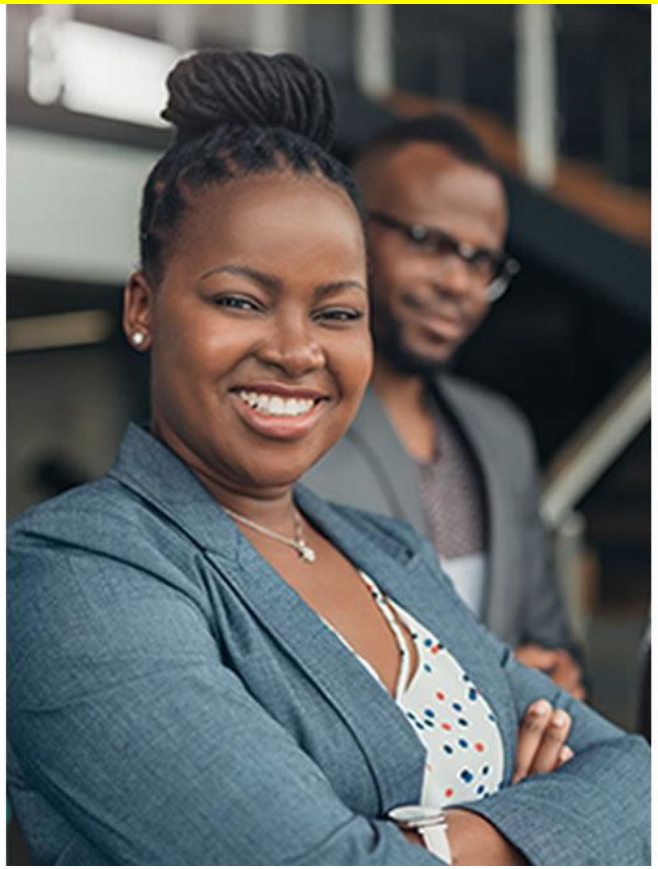
AUDA-NEPAD
AFRICAN UNION DEVELOPMENT AGENCY

NATIONAL WORKSHOP ON
"APPLICATIONS OF JUNCAO TECHNOLOGY AND ITS CONTRIBUTION TO THE ACHIEVEMENT OF SUSTAINABLE AGRICULTURE AND THE SDGs AND IN ZIMBABWE"

Harare, Zimbabwe; 2-3 November 2021

Leveraging science, technology and innovation to boost agricultural productivity in Africa



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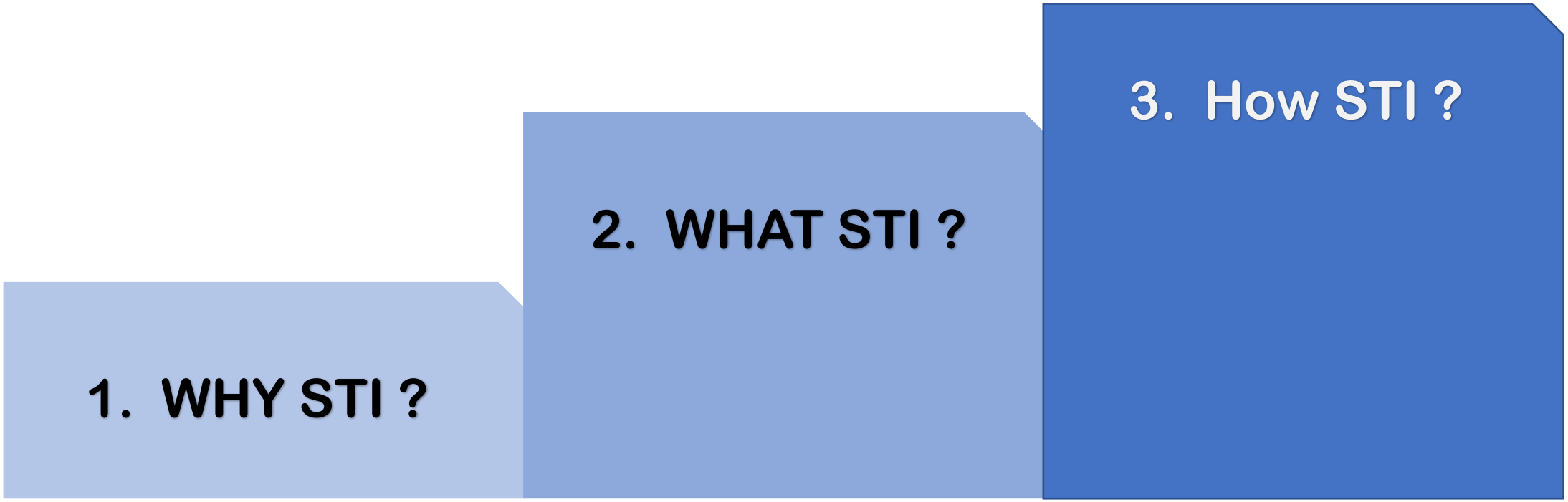
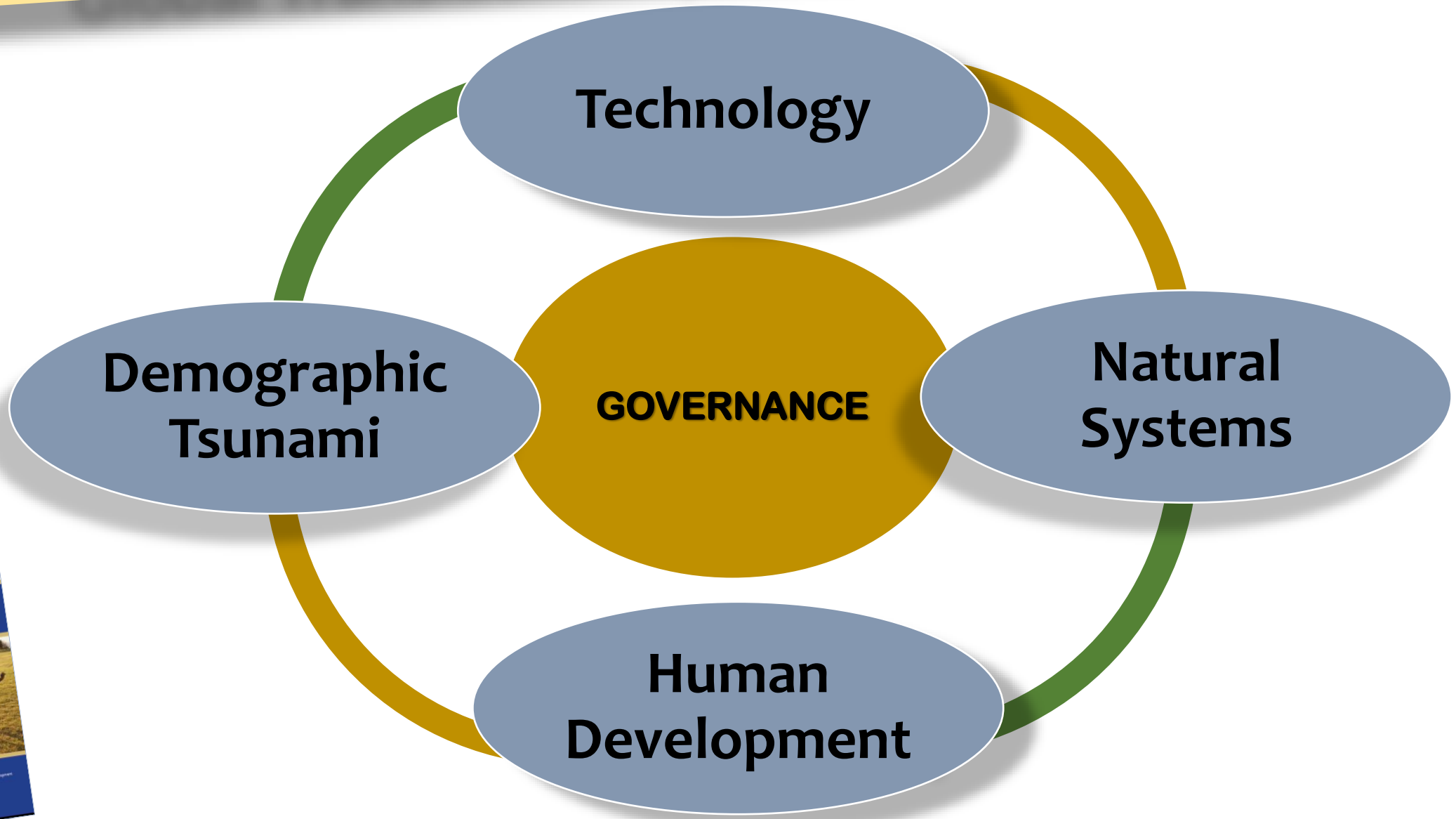


Global Transitions impact development !!



1. Why STI in boosting Africa's Agricultural productivity

- ❑ The WHY and incentive to generate, adapt and adopt
- ❑ Examine the assumptions in the light of local realities
- ❑ Implications beyond agriculture productivity
- ❑ Identify/Understand trade-off and hence plan to address them

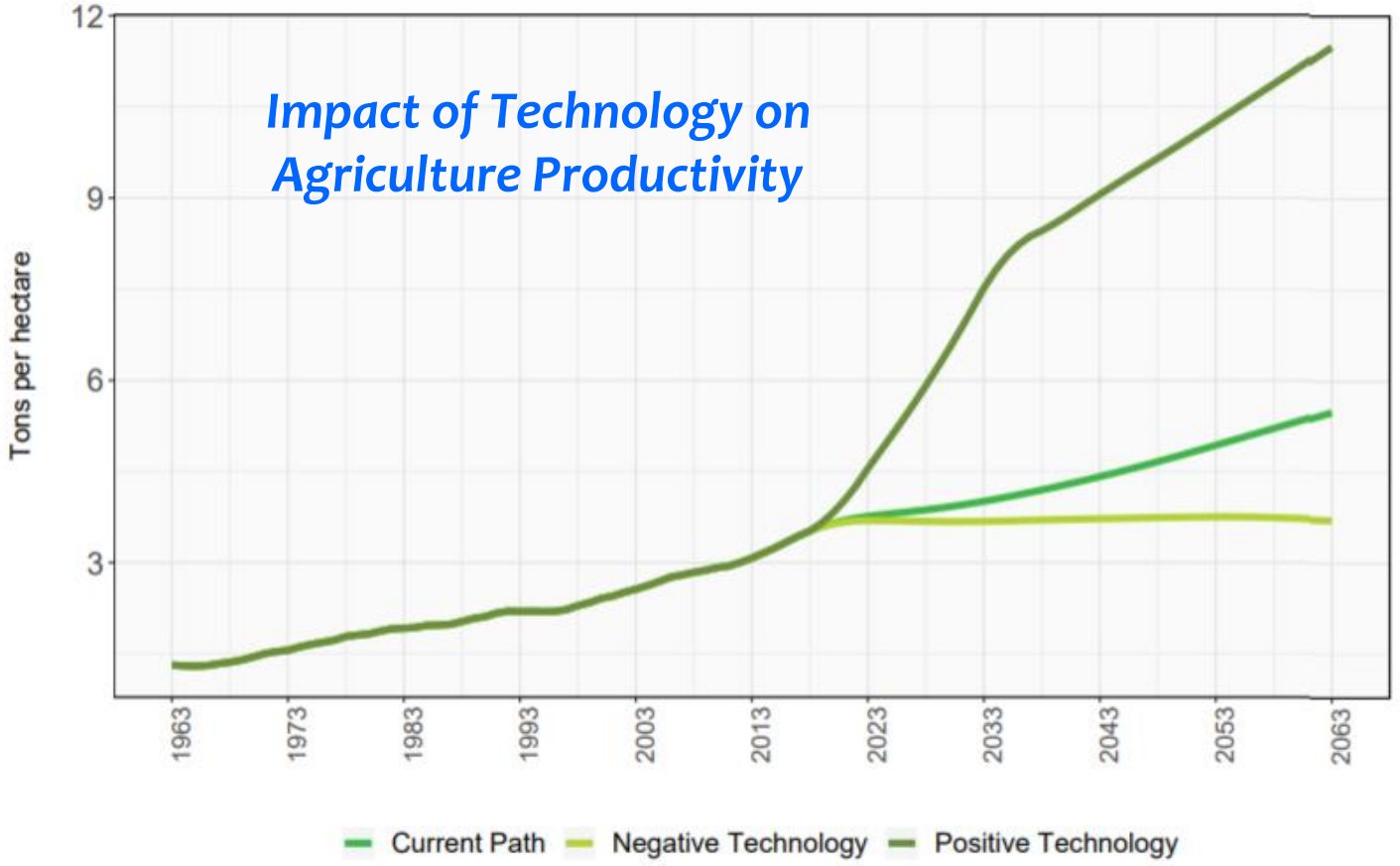


Figure 19: Average agricultural yields in Africa, history and forecast across three scenarios (negative technology, current path, positive technology).

2. What STI in boosting Africa's Agricultural productivity

i. Direct implications/impact on agriculture productivity / entire food systems

- ✓ Technological interventions on productivity capability, e.g. bio-technologies
- ✓ Resilience: Responsiveness and adapting to climate change *[temperature; growing period duration; diseases; etc…]*
- ✓ Processing (value addition; post-harvest management including storage)
- ✓ Localisation – domesticating and commercialisation of production-processing-consumption

II. Implications/Impact on capabilities

- ✓ Management innovations including digitalisation
- ✓ Communication and access to information
- ✓ Marketing and product/service development, e.g. e-commerce
- ✓ Expanding job and local entrepreneurship opportunities
- ✓ National – Regional – Continental Solutions

3. How STI in boosting Africa's Agricultural productivity

1. **Key conditions for success:**
   - ✓ Start with clarity and within context articulation of Problem / challenge
   - ✓ Mobilise and engage/incentivise local champions
   - ✓ Intentional on transformative results – systemic capacity

3. **Key intervention areas: Policy and Investment choices to drive change in:**
   - ✓ Enhanced and locally adapted/Problem-solving R&D capabilities
   - ✓ Public-Private blended alliances and actions across the value chain
   - ✓ Appropriate / enabling IPRs incentives
   - ✓ Product-market development and commercialisation
   - ✓ Technology Transfer = South-South; South-North [leverage global advances and capabilities]

4. **Some critical levers /incentives ….**
   - ✓ Link to incomes (jobs and entrepreneurship opportunities for local populations)
   - ✓ Responding to climate change and breakdown in biodiversity ecosystems
   - ✓ Diversity and quality food basket / resilient food systems
   - ✓ Land, water and energy security
   - ✓ Direct STI interventions at other segments of the food systems (e.g. agro/food processing)

5. HOW – making it happen: Local capacity

- ✓ Science-fact based technical advisory services informing policy and investment choices
- ✓ Science-Policy-Practice platforms = networking, co-creation of locally adapted solutions
- ✓ Specific monitoring of related initiatives to capture and share lessons, insights
- ✓ Demand-market pull (e.g. tax based funding and investments) for research and commercialisation
- ✓ Aligning relevant service capabilities – e.g. Product-Service Standards; Agro-processing; etc…
- ✓ Training = at all levels/stages in the value chain including at consumption

AUDA-NEPAD Centres of Excellence Programmatic Inter-dependences

Rural Resources and Food Systems [Dakar]

- Rural-Urban Transitions
- African Agriculture as an Industry (as source for national wealth and jobs/entrepreneurship)
- Food systems, Food safety and Food Security
- Biotechnology and natural ecosystems
- Land use and Land policy
- Water security
- Marine Ecosystems and Blue Economies

Problem-to-Solutions links; Application to scale; Commercialisation

Data, knowledge, Science, best practices, proof of concepts

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Energy – Climate Resilience [Cairo]

- Renewable energy
- Green economies
- Environmental disaster risk preparedness and management
- Integrated bio-diversity ecosystems
- Integrated climate, land-use, energy and water systems (CLEWS) within a defined socio-economic context

Science Technology and Innovation [Stellenbosch]

- **Data and Knowledge as a Development resource**
- **ST&I in pursuit of Agenda 2063 (industrial and economic growth and human wellbeing goals**
- **Technology Transfer (south-south/south-north)**
- **Technology-Innovation commercialisation**
- **Global ST&I megatrends – focus on:**
  - **4th IR (AI, digitalisation, robotics, etc…)**
  - **Biotechnology/Agricultural biotechnology**
  - **Waste management**
  - **Biodiversity & Atmospheric Physics**
  - **Space technologies, maritime and sub-maritime exploration & Pharmaceutical**
- **Integrated and responsive Public-Private capabilities in driving ST&I**

Human Capital and Institutions Development [Nairobi]

- Education and Skills development; Employability and Entrepreneurship
- Capable Institutions and Organisational development; e-Govt
- Decent livelihoods: Social Protection; Inclusive Access to livelihood needs: Health, Education, Housing; Energy; Water; Communication; etc…
- Gender development and youth empowerment
- Culture, Arts and Sports

Data, knowledge, Science, best practices, proof of concepts

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Problem-to-Solutions links; Application to scale; Commercialisation

Supply Chain & Logistics Support

- Trade and markets; Standards, Supply chain management: AfCFTA implementation readiness
- Africa Industrial Productivity and Competitiveness (manufacturing & Tradeable Services)
- Enterprise Development – focus on MSMEs
- Development Economics and Policies – Development financing; Jobs, Poverty and Inequality
- Infrastructural development, Technologies and Institutions
- Leveraging Regional and Global Value Chains

I thank you

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