

NATIONAL
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ETHIOPIA 2021



GENERATION AND MOBILIZATION OF NUTRITION
EVIDENCE TO TACKLE MALNUTRITION: FROM DATA TO ACTION

Keynote Speech on “Linking Research and Innovation on Food Products with Industry”

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Addis Ababa, Dec 8-10, 2021





Outline

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2. Linking Food Product Research and Innovation with Industry
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4. Technology Transfer
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GENERATION AND MOBILIZATION OF NUTRITION
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1. Development of Research on Nutrition and Food in Ethiopia

Food is a basic need and a primary concern for **all humans** to make sure that their **food supply** is **guaranteed**.

✓ Food is source of nutrition from primary produce in the world.

Are food sources in Ethiopia well researched and developed?

Are research outcomes and food industry well linked?

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1. Development of Research , ... Cont'd

Existing Ethiopian scenario:

- ✓ Agriculture & pastoral systems are major sources of food
- ✓ Food and nutrition security challenge
- ✓ Seasonal food supply fluctuation
- ✓ Malnutrition as a public problem
- ✓ **Food industry is at its infancy and play less role**

These call for **research** and **innovation** with linkage to **industry** that can narrow the gaps in food sector development.



1. Development of Research , ... Cont'd

I. Research institutions

Nutrition:

Children's nutrition unit founded (1962) and Ethiopian nutrition institute in 1968. Now, EPHI (missed nutrition or food).

2. Agriculture/ EIAR:

Food science and postharvest technology (FSPT) in 2004.

II. Academia

- ✓ 14 universities launched food sci. and/or nutrition programs since 2002
- ✓ HU is pioneer of FSPT (2002) and HuNu departments in Ethiopia



1. Development of Research , ... Cont'd

Example, HU: BSc in FSPT (2002), MSc in AHN (2007), BSc in HuNu (2010), MSc in FSPT (2010), MSc in FST (2017), PhD in HuNu (2017), MSc in FSQM (2019), and PhD in FST (2020)

➤ other universities launched too later on

➤ **Few & less** organized **research & innovation** on food products

Why child & maternal nutrition is still problem for 62 years?

Are the academia and research institutions **communicated** with **stakeholders** for proven **technology transfer** to next users?

Why less attention paid on scale up and technology transfer?

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2. Linking Food Product Research and Innovation with Industry

Where Ethiopia stands in the existing globalized world? +/-

✓ Naturally rich, economically poor, food and nutrition insecure

What would be the best fit to Ethiopian development endeavor in food and nutrition?

✓ Mobilize available indigenous & intellectual agro-food resources

✓ Invest on leading priority research evidences & innovation

✓ understand & promote transition to sustainability - transformation



2. Linking Food Product Research, ... Cont'd

2.1 Why Linking Research on Food with Industry?

Research for development is required to meet the **demand** for **food** and **nutrition** in the face of **climate change**:

- ✓ on less **land**,
- ✓ with less **water**, and
- ✓ with action for low **environmental** impacts

Intellectual **resource mobilization** for research and innovation can:

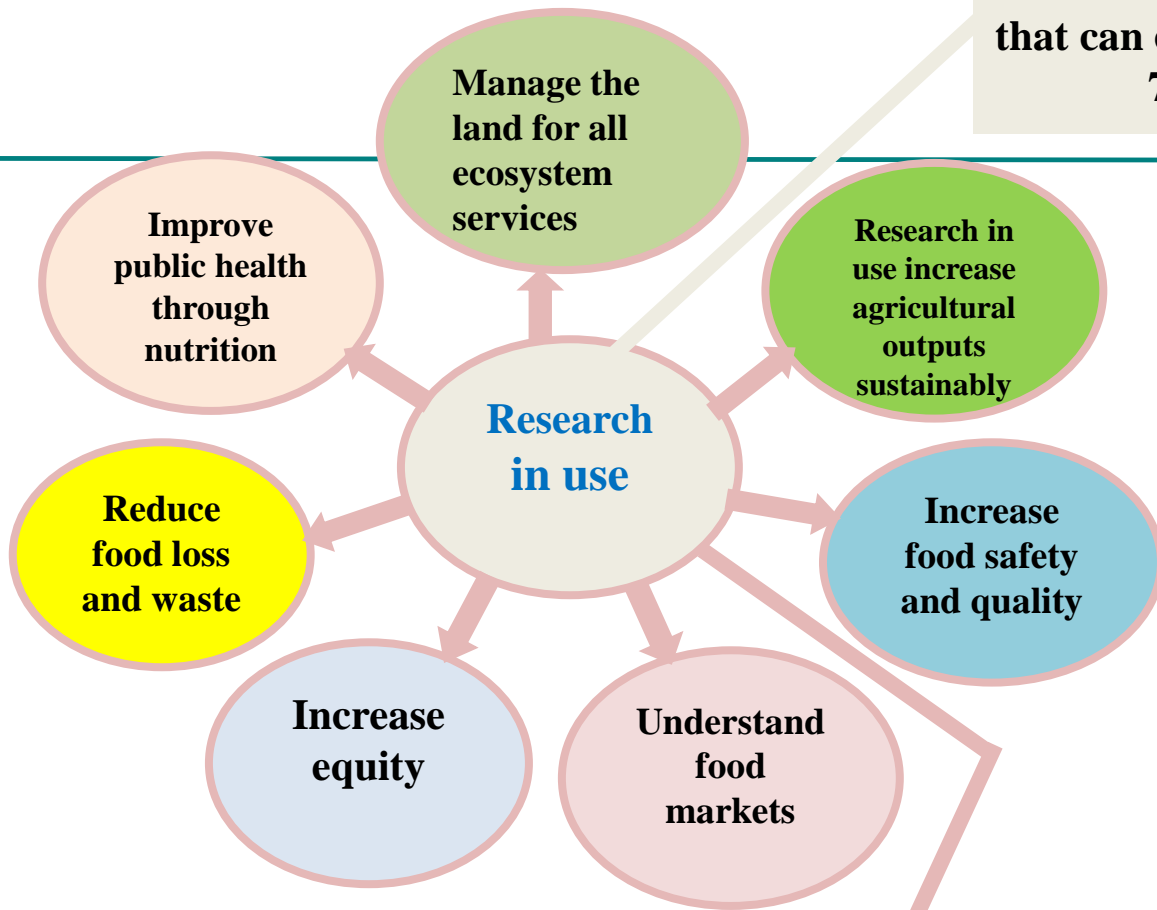
- ✓ Use its rich food sovereignty, biodiversity & bioeconomy potentials
- ✓ mitigate the **risks** associated with food **insecurity** & **malnutrition**
- ✓ lead to economic growth, public health and environment impacts

How?

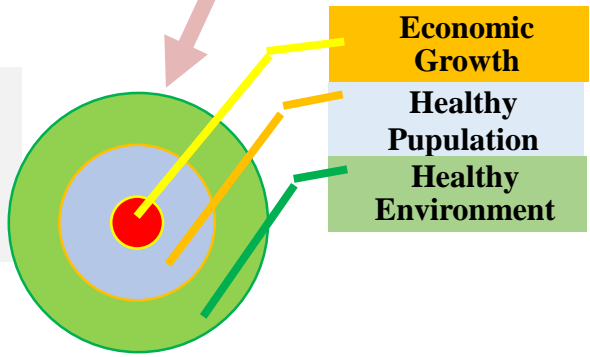
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Research generates knowledge that can create change across the 7 key challenges



National Food Security:
sustainable, nutritious food for all



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2. Linking Food Product Research, ... Cont'd

Thus, research in use can address:

- ✓ Food and nutrition insecurities
- ✓ Food loss and waste reduction
- ✓ Food safety and quality
- ✓ Food markets and consumer education
- ✓ Sustainable nutritious food for all
- ✓ Strengthening the one health approach & bio-economy of **Ethiopia**



2. Linking Food Product Research, ... Cont'd

2.2 Research on Food Product Development (FPD)

Research on FPD – depends on a **country's scenario**

Research yields knowledge to change **challenges** into **opportunities**

- ✓ Need of evidences for action on food & nutrition improvement
 - Call for scale up innovations to commercial food production and wider consumption
 - ❖ Highest employing sector (HHs to *space*) at all sectors

Why did we invest on food & nutrition research, if no scale up?

- ✓ This calls for research directive on scale up/ technology transfer.
- ✓ **GOE must audit research outcomes vs. financial spending!**



2. Linking Food Product Research, ... Cont'd

- ✓ **Research outcomes** strengthen innovation for
 - Piloting, product testing, business modeling, adaptation
 - Scale up food and nutrition through commercialization
- ✓ **Technology transfer** - expansion for industrial utilization impacts
- ✓ Sustainability **transition process** for **transformation**



2. Linking Food Product Research, ... Cont'd

2.3 The Purpose of Scaling up Research and Innovation on Food

Why to scale up food and nutrition research outcomes?

- ✓ Innovation scale up play **critical** roles in building **sustainable linkage** of food industry with nutrition for **health** outcomes and **economic growth**.
 - To expand, adapt & sustain successful technologies/ food products for commercial food production and wider consumption



2. Linking Food Product Research, ... Cont'd

How?

Mobilize natural food and intellectual resources through:

- ✓ Startups, SMEs, industries, services, etc. for **economic** growth
- Commercial production of safe nutritious food, import substitution, distribution, and consumption
- Value addition on local produce, job creation, food markets, etc.
- Strengthen sustainability transition to Agro-food system **transformation**



3. Role of Stakeholders in Food Research and Innovation Scale up

Scaling must be an **integral** part of research & product development from the outset, and **not** a **disconnected future** phase to come.

- ✓ For scaling to succeed, “the public & private sectors need to **find new, better** and more **creative ways** of working **together**.”
- ✓ The **best way** to successfully **scale up** is to build a system of actors with the necessary **capabilities, influence** and **shared vision**.
- ✓ Most food and nutrition innovations require a **blend** of **commercial** and **non-commercial** support to successfully **scale**.
- ✓ Where ecosystems to support scaling food product innovations are weak, be **innovative**.



3. Role of Stakeholders in Food, ... Cont'd

1. How do we successfully engage the **private sector** to scale up these innovations?
 2. What is the role of **government** and other actors in establishing an enabling environment for food and nutrition scaling to occur?
 3. How do we accelerate the scaling of innovations and **commercialization** pathways?
- ✓ **Answers** to these questions are increasingly **emerging** from:
- research,
 - private sector,
 - government, and
 - funders



3. Role of Stakeholders in Food, ... Cont'd

- ✓ Nutritious food product **innovators** must identify and pave appropriate **pathways** for effective **scaling** of innovations for widespread **diffusion** to occur.
- ✓ **Innovations** that are **unused**, or used **only** by an exclusive **few**, are of **little** to **no value**.
- ✓ To be useful, **innovations** must be **available**, **accessible** and **affordable** to a significant number of stakeholders, commercial food processors, and consumers.

What is next?



3. Role of Stakeholders in Food, ... Cont'd

Establish the **value proposition** for all **stakeholders** that include:

- ✓ farmers,
- ✓ private sector,
- ✓ distributors,
- ✓ consumers and
- ✓ the public sector

Transmit **value** for **improvements** in food & nutrition that include:

- ✓ strengthening regulatory systems,
- ✓ developing and implementing grading, testing and sorting technologies, and
- ✓ increasing consumer awareness on the importance of nutritious food



3. Role of Stakeholders in Food, ... Cont'd

Intermediation: A successful commercialization approach to **scaling up** innovations with **social impact** rests on strong **connections** between **innovators**, **governments** and **businesses**.

Facilitating and harnessing these **connections** are never a job done: they are dynamic, finely tuned to **changing needs** and based on trust and accountability across **partners** who historically have not worked together.



3. Role of Stakeholders in Food, ... Cont'd

The **convergence** of **sectors** is crucial for sustainable **transformation** of food systems.

- ✓ True and lasting **transformation** requires a demand-driven approach that draws from **cross-sectoral convergence**.
- ✓ Food convergence innovation is a **science-** and **data-driven** approach that enables a holistic response to complex problems.

Innovations will have to be developed as part of a **human-centered** system, and sit at the **intersection** of **health**, **economy** and **environment**.



The **agro-food system** needs a genuine sustainability transition to achieve sustainable **food** and **nutrition** in the face of **climate** change, **population** growth, ecosystem **degradation** and increasing **resource** scarcity.

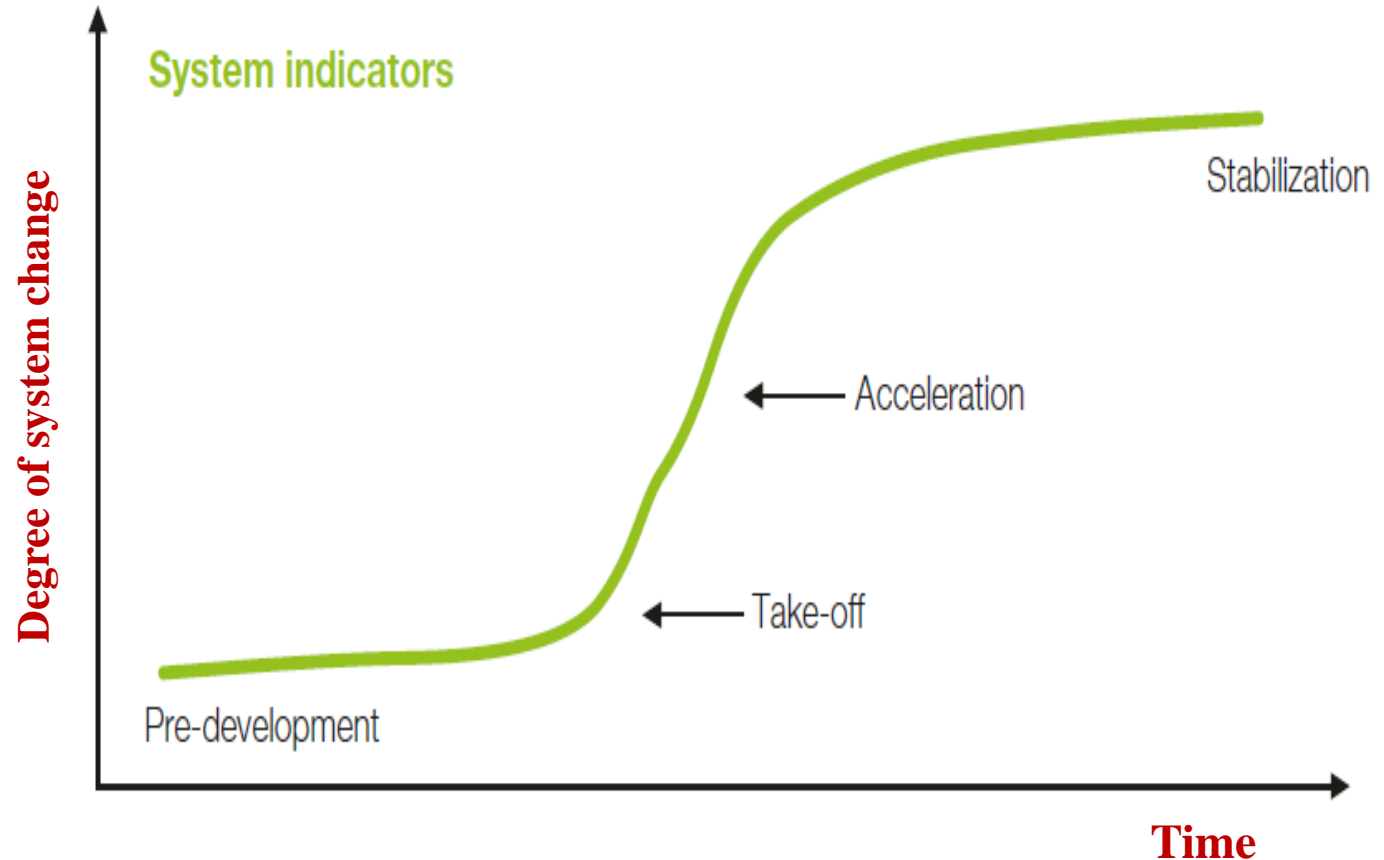
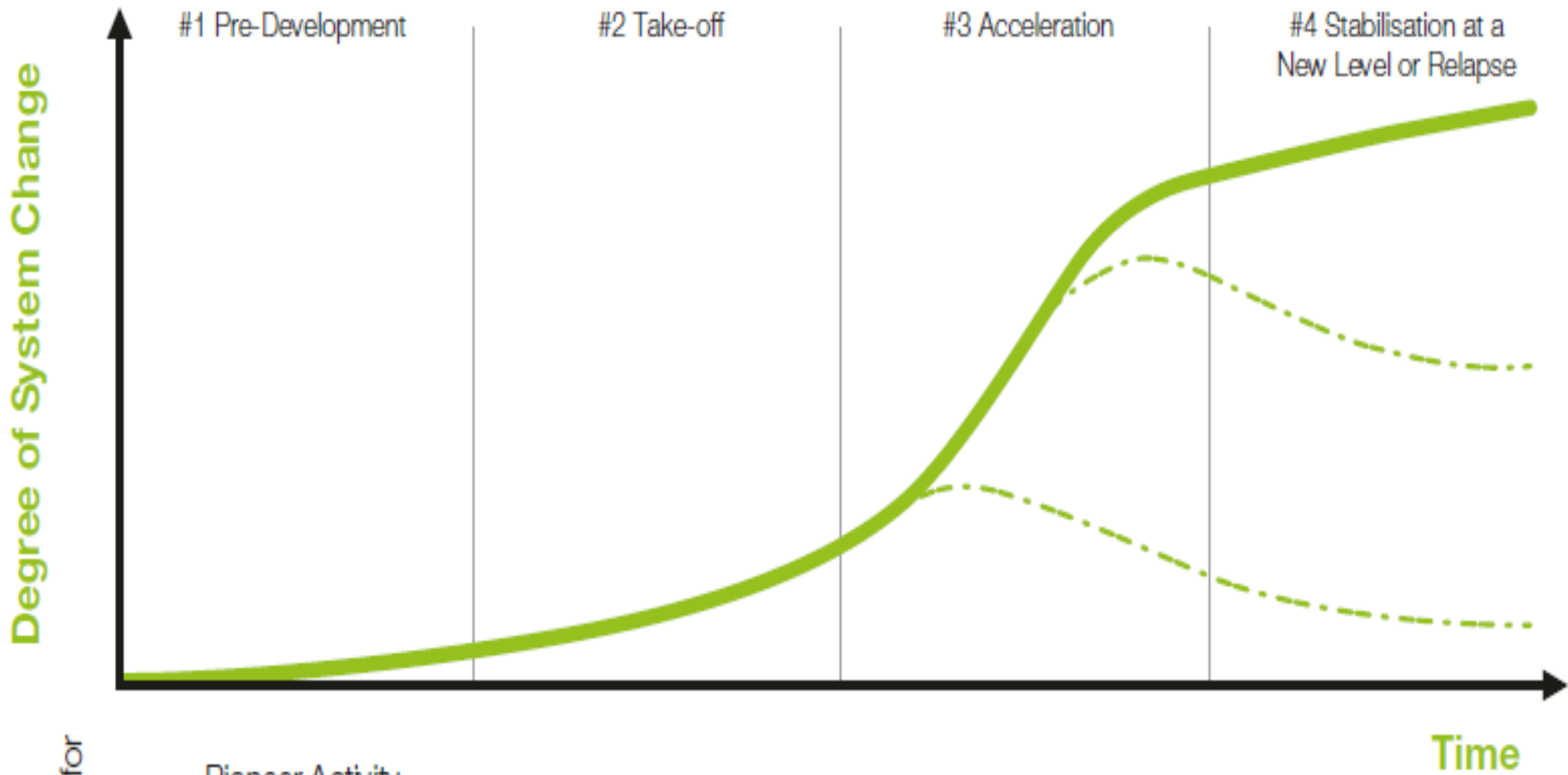


Figure 1 Transition S-curve (Timmermans, 2006)





Support most needed for

Pioneer Activity

Coalition Building

Regulatory Building

Anchoring of Societal Acceptance



3. Role of Stakeholders in Food, ... Cont'd

Effective scaling requires intentional financing strategies

✓ Many innovations in food and nutrition are overcoming critical market failures that prevent affordable access to safe and nutritious food.

✓ For these innovations, growth on purely commercial terms is often difficult or infeasible.

➤ To shorten the time span between development of an innovation and its widespread impact, improving our understanding of the **scaling process** is **critical**.





4. Technology Transfer

Technology transfer institutions include universities, government ministries, research institutes, and what may be termed the ‘**project sector**’.

✓ Are there proven food technologies, products, and models available; and successfully piloted, scaled up through expansion and adoption to overcome the real challenges?



4. Technology Transfer, ... Cont'd

Technology transfer is a “contact sport” - a complex type of communication.

Technology transfer requires:

1. skilled personnel,
2. appropriate resources,
3. organization structures, and
4. formal recognition (or even an incentivized reward system).



4. Technology Transfer, ... Cont'd

The technology transfer process recognized with five distinct phases:

1. **Knowledge phase** - describes when the technology is known to exist and is relevant to the user's problems or opportunities
2. **Persuasive phase** - key stakeholders are persuaded to examine the technology
3. **Decision phase** - stakeholders decide whether to use the innovation before embarking on the implementation phase
4. **Confirmation phase** - when the technology has been successfully adopted, it is complete - *anchoring*
5. **Clear communication** – important between all parties during all the above phases



4. Technology Transfer, ... Cont'd

- ✓ Thus, technology transfer is a **multi-level process** of **communication** involving a variety of senders and receivers of **ideas** and **materials**.
- ✓ Companies prefer **solutions** which have the biggest impact, least effort and investment, quickest payback, are easiest to implement and have the largest visibility to their key stakeholders.
- ✓ As a response to market failure, or as an effort to accelerate market-driven social change, technology transfer may combine public and private apparatus to identify, develop, and deliver innovations and information.





5. Conclusion

It vitally showed the need to cluster research and innovation on food and nutrition from mandated institutions for collective scale up.

Food products/technologies scale-up is an exciting and challenging multi-sectoral process that requires an organized, flexible and consistent approach for success.

Real success is best measured in terms of profitability and customer satisfaction over time that are the ultimate result of **successful** scale up to sustainability **transition**.





6. The Way Forward

To mobilize Ethiopian rich natural, cultural and available intellectual resources for food industry development, it is necessary to:

- ✓ Pay attention on academia & research institutions for huge research investment vs. return to the public, and set appropriate directives.
- ✓ Invest on impact oriented **research** and **innovation** in agro-food resources for scale up to industrial food production.



6. The Way Forward, ... Cont'd

- ✓ Start scale up process as integral part of research and innovation development from the outset.
- ✓ Reinforce real **connections** among **innovators**, **governments** and **businesses** for scale up of innovation to social impact in a human-centered system
- ✓ Establish business incubation centers to test innovation and transmit value for improvements in food and nutrition





Thank You



For Listening



Stay Safe!

