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# › INCLUSIVE INNOVATION FOR SUSTAINABLE GROWTH

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**TNO** innovation  
for life

## MY MESSAGE

- › Inclusive innovation: new tech, existing tech in new context and business models
  - › Transformational partnerships: system innovations, complementarity in roles!
  - › Link national and international alliances
  - › Work on integrative programs with concrete projects
  - › Establish an (investment) fund for Inclusive Innovation – govt/ social investor
  - › Organise an enabling environment
  - › Precompetitive knowledge development
  - › Custom made: IP and licencing
- › Innovation - business - scale - impact !



Inclusive Innovation

Inclusive Business

# TNO - THE NETHERLANDS

- › better world through applied research
- › Independent institute – established by law
- › innovative with 3,400 professionals
- › turnover of 564 M€ in 2013
- › 25% government funding, 75% business
- › one third international business

**INDUSTRY**  
**HEALTHY LIVING**  
**DEFENCE, SAFETY & SECURITY**  
**URBANISATION**  
**ENERGY**



**FLEXIBLE & FREE-FORM PRODUCTS**  
**SPACE & SCIENTIFIC INSTRUMENTATION**  
**SUSTAINABLE CHEMICAL INDUSTRY**  
**SEMICONDUCTOR EQUIPMENT**  
**NETWORKED INFORMATION**

**FOOD & NUTRITION**  
**PREDICTIVE HEALTH TECHNOLOGIES**  
**PREVENTION, WORK & HEALTH**

**MISSIONS & OPERATIONS**  
**FORCE PROTECTION**  
**INFORMATION SUPERIORITY**  
**HUMAN EFFECTIVENESS**  
**CYBER SECURITY & RESILIENCE**  
**NATIONAL SECURITY & CRISIS MANAGEMENT**

**MOBILITY & LOGISTICS**  
**ENVIRONMENT & SUSTAINABILITY**  
**BUILDINGS & INFRASTRUCTURES**  
**SMART CITIES**

**SUSTAINABLE ENERGY**  
**GEO ENERGY**  
**GEOLOGICAL SURVEY OF THE NETHERLANDS**  
**MARITIME & OFFSHORE**

- › multidisciplinary
- › focused on smart solutions to complex issues
- › with the aim of sustainably strengthening the competitiveness of enterprises and the well-being of our society

# THE POWER OF TNO

## FROM IDEA TO INNOVATION

### DEVELOPING FUNDAMENTAL KNOWLEDGE



With universities

### KNOWLEDGE DEVELOPMENT



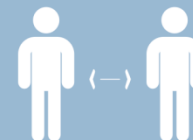
With partners in  
the golden triangle

### KNOWLEDGE APPLICATION



Contract research  
for and with customers

### KNOWLEDGE EXPLOITATION



Embedding in the market  
(with TNO companies)

# THREE ROLES OF TNO



## **TNO ACTS AS A CATALYST IN PUBLIC-PRIVATE PARTNERSHIPS**

- › Through open innovation
- › Mix of private & public funding



## **TNO PERFORMS CONTRACT RESEARCH FOR CUSTOMERS**

- › Funding: 100% customer financed



## **TNO UNDERTAKES DESIGNATED TASKS**

- › Geological Survey of the Netherlands
- › Research for the Dutch Ministry of Defence
- › Research for the Ministry of Social Affairs and Employment

# TNO INNOVATION FOR DEVELOPMENT

- › Socio-economic **impact at low-income groups** in developing countries and emerging economies: poverty reduction, wealth and entrepreneurship
- › **Inclusive Innovation** – Inclusive Business
  - **market-based solutions** for low income groups
  - with low-income groups as producer, supplier, consumer
  - new business opportunities for Dutch entrepreneurs
- › **Sustainable**: products, services, business model, scaling strategy
- › Co-creation in public private partnerships

# PROJECTS: DECENTRALIZED ELECTRIFICATION

Biogas Socket  
Rwanda, Bangladesh  
22 euro



Solar Socket  
Madagascar  
95 Euro





# PROJECT: FLYING FOOD

- › Access to affordable proteins to at least 1.000.000 consumers
- › Commercial rearing of crickets in Kenya and Uganda
- › 4000 small scale insects farms - 4 processors for new food products
- › Entrepreneurs committed for technology, rearing and marketing



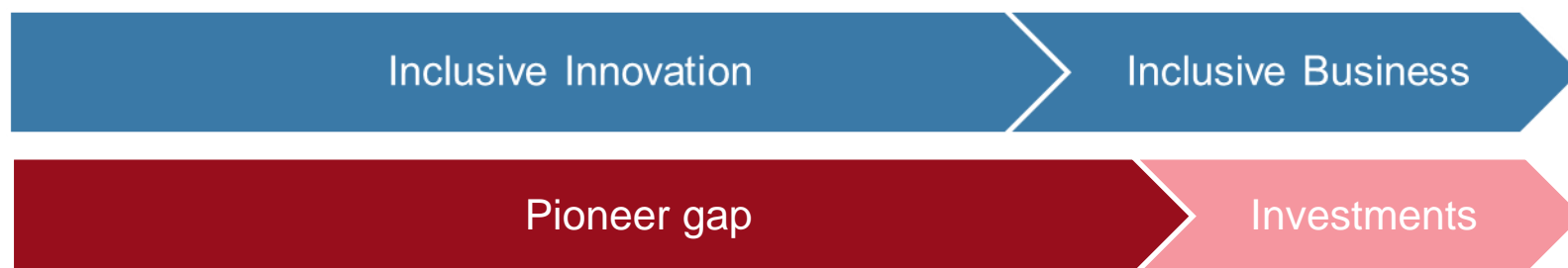


## TEXTILE TECHNOLOGY CENTER - BANGLADESH

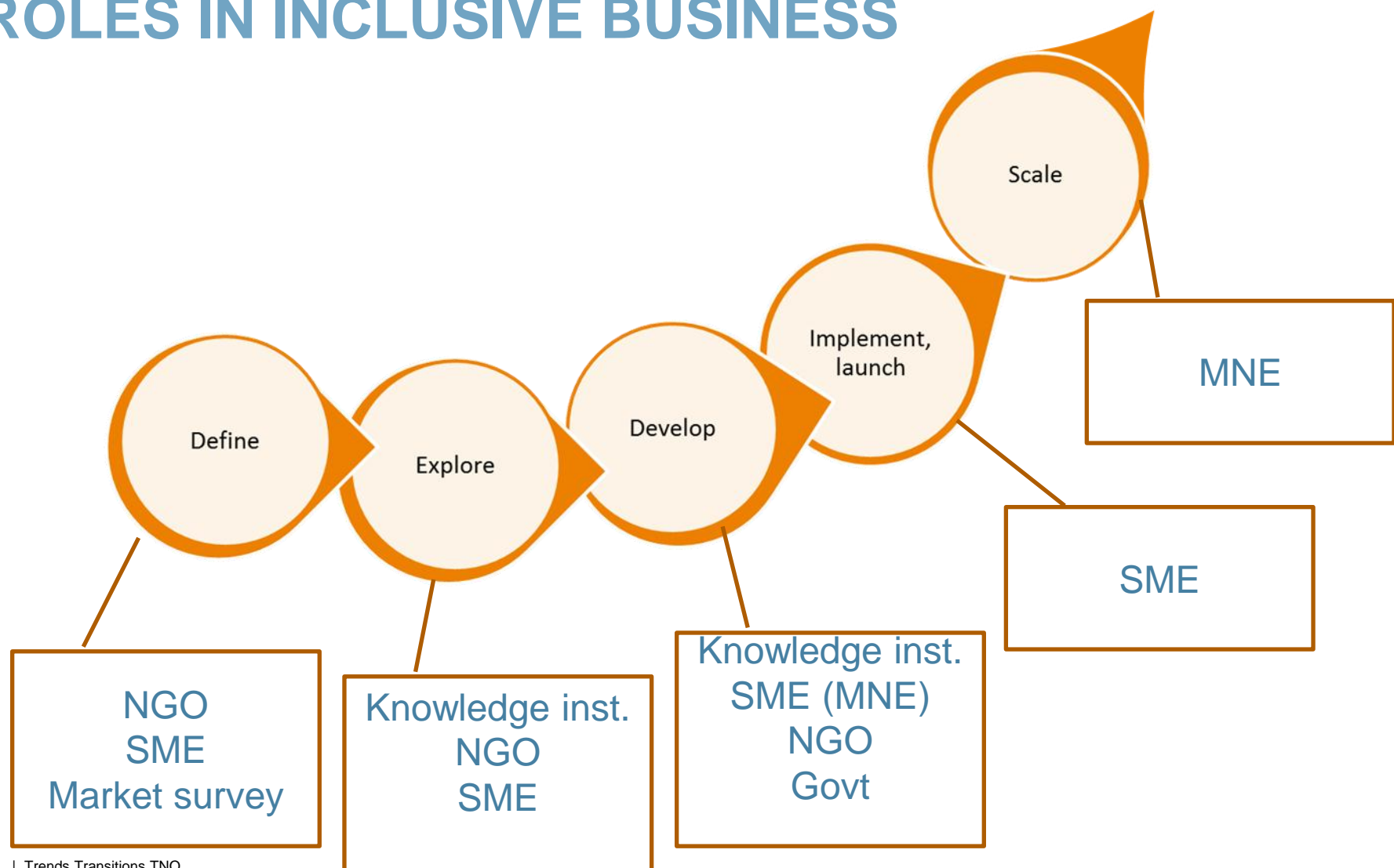
- Cleaner production: efficient use of water and energy at wet processors
- Innovation: technology, knowledge transfer, international value chain
- Project: World Bank IFC, Solidaridad
- Future expansion to Safety in Ready Made Garment sector



# PROCESS OF INCLUSIVE BUSINESS



# ROLES IN INCLUSIVE BUSINESS



# HOW DO WE WORK

In public private partnerships – transformational partnerships

- › From projects to programs
  - › In NL platform: Inclusive Business Alliance
  - › Global Research Alliance
- 
- › Trust
  - › Complementarity
  - › Joint ambition
  - › Concrete business and impact



# ROLES

NGO      Local presence – link to market  
             Knowledge of context  
             Inclusive Business Accelerator

Knowl    Innovation – technology/ social/ transition process  
             Catalyst in partnership  
             Business Model

Private   Value proposition  
             Production, sales and distribution  
             Profit and loss

Govt      Supporting the pioneer gap

All can be

- › Initiator
- › Inspirator
- › Partner
- › Project manager
- › Investor
- › Entrepreneur

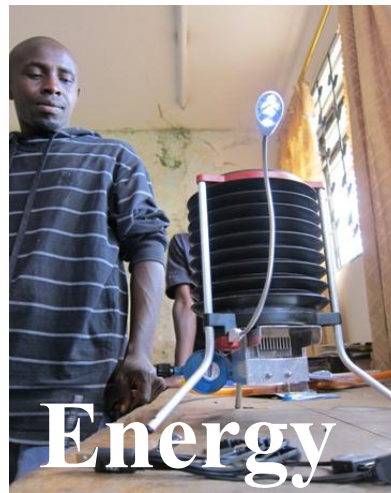


# Inclusive Business Alliance for Sustainable Growth

## OUR AMBITION

Launch a five year strategy to take Inclusive Business to a new level by sharing innovation risks between the main Dutch public private actors

- › 10 Million low-income people reached
- › Increase of 5.000 companies aware of opportunities for IB
- › Increase of 250 SME's active in low-income markets (50/50 Dutch/ Local)
- › Turning the efforts of the 8 MNEs in the Dutch Sustainable Growth Coalition into world leading catalysts for Inclusive Business – link them with SME
- › Involving 2000 employees of Dutch organizations in Inclusive Business activities
- › Invest and unlock 60M Euro into local Inclusive Business facilities and companies, revenue streams with IP portfolio



## Integrated programs

- ❖ Food & Nutrition security
- ❖ Sustainable Food systems
- ❖ Women producers



- ❖ Access to energy for households
- ❖ Sustainable energy for production
- ❖ Access to clean water
- ❖ Sanitation and hygiene
- ❖ Cleaner Production

# Inclusive Business Alliance for Sustainable Growth

## FILLING THE GAPS!

The Inclusive Business Alliance:

- › Facilitate innovations on IB on Nutrition, Sustainable Energy and Wash: creating and realising new market driven initiatives
- › Increase involvement of Dutch private sector in Inclusive Business
- › Increase local entrepreneurship by facilitating SME – with local business and also linked to MNE as supplier
- › Establish an (investment) fund for Inclusive Innovation
- › Innovation – scale - impact

# Inclusive Business Alliance for Sustainable Growth

## WE OFFER THE PRIVATE SECTOR:

- › Entrance to new open networks, knowledge and competences
- › Entrance to markets in developing and emerging countries with local presence
- › Market information of the target group
- › Innovative ideas for new business propositions
- › Participation in concrete custom-made project / business proposition
- › Access to IP and licenses
- › Reducing / Sharing of R&D costs and risks
- › Access to innovation fund

# WHAT IS IN IT FOR US - ALL?

## 1. Impact

- › Socio economic impact at low income groups
- › New business opportunities for Dutch entrepreneurs

## 2. Business

- › Part of core business
- › Multiplying own investment

## 3. Knowledge and Innovation

- › International networks, reversed innovation

## 4. Inspiration of staff

- › Responsibility and proudness: contribution to a better world



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**THANK YOU FOR  
YOUR ATTENTION**

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for life

# CHANGING WORLD

## INNOVATION LANDSCAPE

- › Increasing complexity of issues
- › Demand for sustainable technologies to tackle scarcity
- › Rising costs of innovations
- › Importance of valorization
- › Increasing importance of interdisciplinary approach
- › Greater importance of partnering
- › Need for faster time to market
- › Reduction of structural funding

## INCLUSIVE INNOVATION LANDSCAPE

- We can learn from Inclusive Innovation
- Western demand for proven technologies, local need for new technologies
- Sound business models
- Same, demand for scaling
- System innovation
- Even more important
- Patient capital
- Govt put private sector in the lead