UPSCALE

UPSCALING THE BENEFITS OF PUSH-PULL TECHNOLOGY FOR SUSTAINABLE AGRICULTURAL INTENSIFICATION IN EAST AFRICA

PROJECT OVERVIEW

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 861998.

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UPSCALE FACTS & FIGURES

18 PARTNERS FROM 4 EUROPEAN AND 6 AFRICAN COUNTRIES

7 Universities (LUH, UWUE, JKUAT, MU, UKN, ULUND, SLU, UZH)

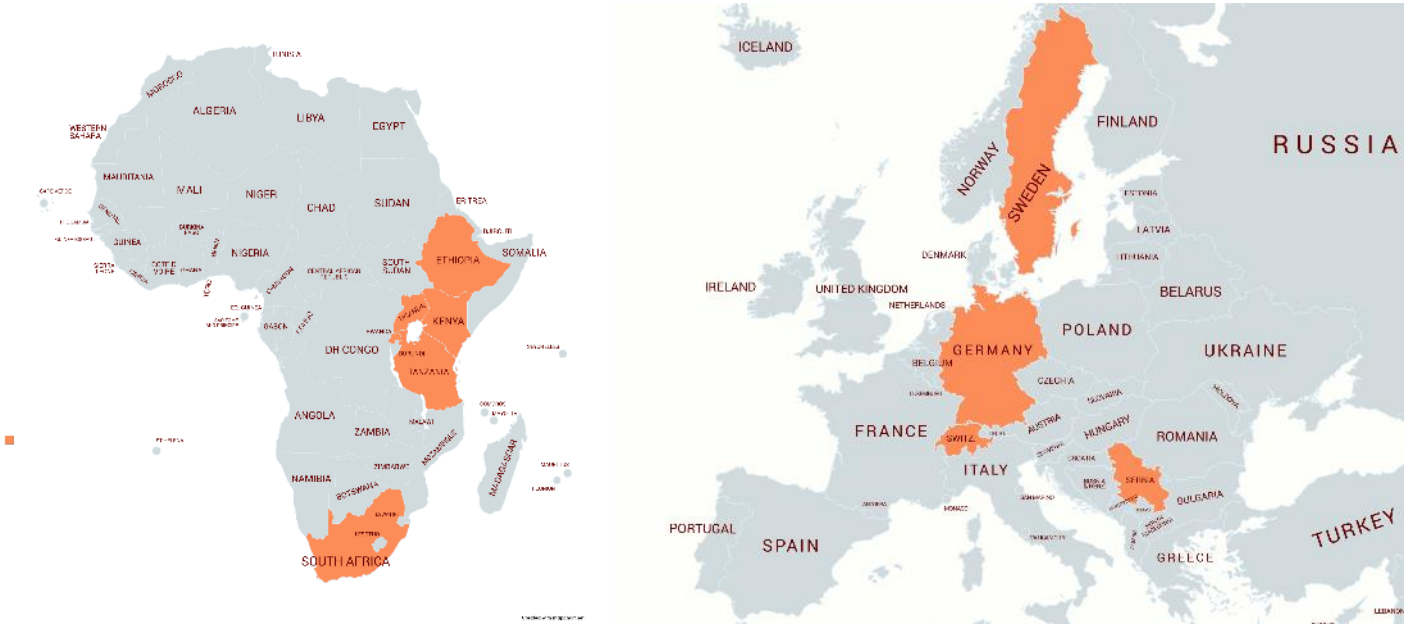
1 SME (INOSENS)

10 Associations, Federations and Research institutes (ICIPE, BayFOR, EAFF, KALRO, FH, RAB, TARI, NARO, ISD).

PROJECT COORDINATOR: Leibniz University of Hannover

DURATION: **60 months (11/2020 - 10/2025)**

EU FUNDING: **€7.66 million**



UPSCALE OBJECTIVES

UPSCALING THE BENEFITS OF PUSH-PULL TECHNOLOGY FOR SUSTAINABLE INTENSIFICATION IN EAST AFRICA

ADDRESS FOOD SECURITY , LIVELIHOODS & CLIMATE CHANGE RESILIENCE IN EAST AFRICA WHILE REDUCING THE ENVIRONMENTAL IMPACT OF AGRICULTURAL PRACTICES

FOSTER THE DESIGN, ADAPTATION AND ADOPTION OF STRATEGIES FOR INTEGRATED AGRO-ECOLOGICAL MANAGEMENT BASED ON PUSH-PULL TECHNOLOGY FOR WIDE-SPREAD AND CLIMATE-RESILIENT SUSTAINABLE INTENSIFICATION IN EAST AFRICA

Photo credits: Food for Hungry Rwanda

UPSCALE OBJECTIVES: 5 key axes

AXIS 1: EXPAND PUSH-PULL ADOPTION TO AS MANY FARMERS AS POSSIBLE

IMPROVE SOIL AND WATER MANAGEMENT, REVERSE LAND DEGRADATION AND INCREASE YIELDS OF FARMS

ESTABLISH A KNOWLEDGE EXCHANGE HUB AND COMMUNITIES OF PRACTICE FOR OPTIMAL FLOW OF INFORMATION BETWEEN STAKEHOLDERS

IDENTIFY AND TARGET APPROPRIATE REGIONS AND METHODS FOR PUSH-PULL EXPANSION

IDENTIFY BARRIERS TO IMPLEMENTATION AND OPPORTUNITIES FOR IMPROVEMENT OF PUSH-PULL TECHNOLOGY

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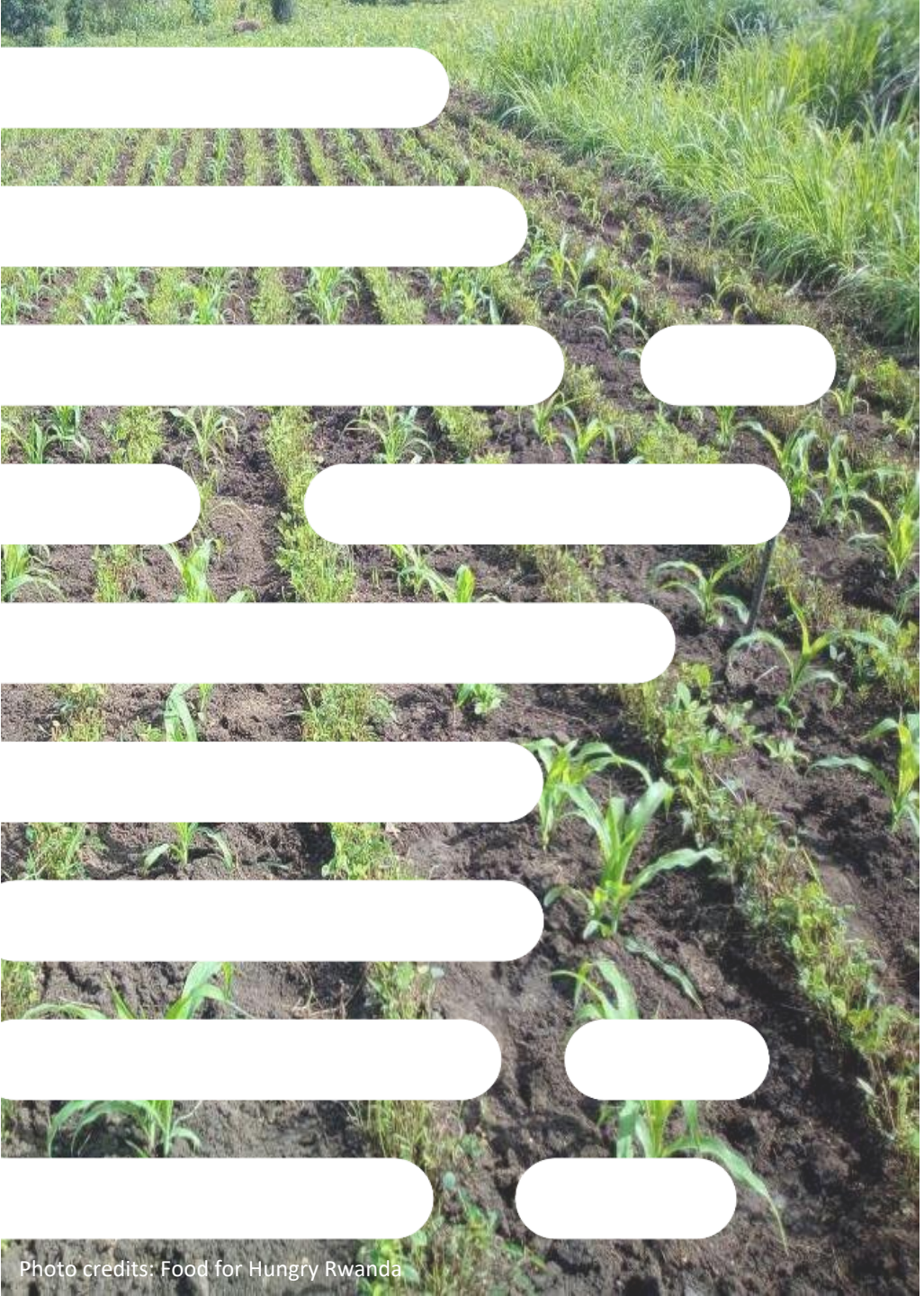
Photo credits: Food for Hungry Rwanda

UPSCALE OBJECTIVES: 5 key axes

AXIS 2: EXPAND PUSH PULL EFFECTIVELY USING OPTIMAL CONDITIONS FOR SUCCESS

IMPROVE UNDERSTANDING OF THE DRIVERS OF CEREAL PUSH-PULL EFFECTIVENESS AND CLIMATE RESILIENCE AT THE FARM, LANDSCAPE AND REGIONAL LEVELS

IDENTIFY SUITABLE REGIONS AND LANDSCAPES FOR TARGETED EXPANSION OF PUSH-PULL

EVALUATE 'SPILL-OVER EFFECTS' OF PUSH-PULL TECHNOLOGY OUTSIDE THE FIELDS AND FARMS WHERE IT IS IMPLEMENTED

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Photo credits: Food for Hungry Rwanda

UPSCALE OBJECTIVES: 5 key axes

AXIS 3: FURTHER IMPROVE EXISTING TECHNOLOGY, INCREASE PUSH-PULL FLEXIBILITY AND ADDED-VALUE

EXPAND PUSH-PULL TECHNOLOGY USING MULTI-STAKEHOLDER PRIORITY SETTING AND FARMER-LED EXPERIMENTATION

IDENTIFY BARRIERS TO IMPLEMENTATION AND OPPORTUNITIES FOR IMPROVEMENT OF PUSH-PULL TECHNOLOGY

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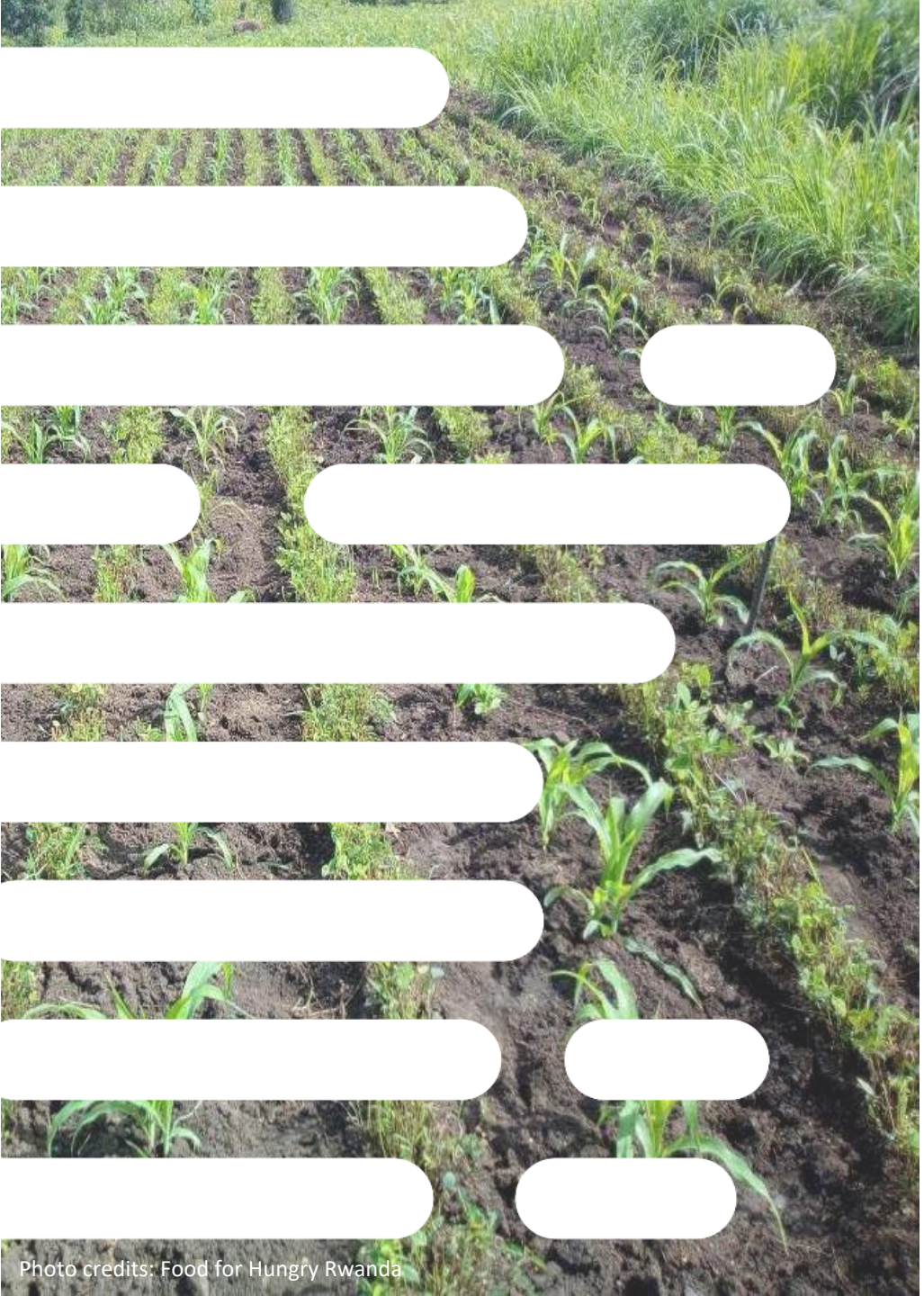

Photo credits: Food for Hungry Rwanda

UPSCALE OBJECTIVES: 5 key axes

AXIS 4: ADDRESS THE INTEGRATION OF PUSH-PULL IN LONG-TERM SUSTAINABILITY AND CLIMATE RESILIENCE STRATEGIES

- IMPROVE UNDERSTANDING OF THE DRIVERS OF CEREAL PUSH-PULL EFFECTIVENESS AND CLIMATE RESILIENCE AT THE FARM, LANDSCAPE AND REGIONAL LEVELS
- IDENTIFY SUITABLE REGIONS AND LANDSCAPES FOR TARGETED EXPANSION OF PUSH-PULL
- EVALUATE 'SPILL-OVER EFFECTS' OF PUSH-PULL TECHNOLOGY OUTSIDE THE FIELDS AND FARMS WHERE IT IS IMPLEMENTED
- IDENTIFY BARRIERS TO IMPLEMENTATION AND OPPORTUNITIES FOR IMPROVEMENT OF PUSH-PULL TECHNOLOGY
- EXPAND PUSH-PULL TECHNOLOGY USING MULTI-STAKEHOLDER PRIORITY SETTING AND FARMER-LED EXPERIMENTATION

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Photo credits: Food for Hungry Rwanda

UPSCALE OBJECTIVES: 5 key axes

AXIS 5: MAINSTREAM WOMEN AND YOUTH IN TECHNOLOGY DISSEMINATION AND ADOPTION

- IDENTIFY BARRIERS TO IMPLEMENTATION AND OPPORTUNITIES FOR IMPROVEMENT OF PUSH-PULL TECHNOLOGY
- EXPAND PUSH-PULL TECHNOLOGY USING MULTI-STAKEHOLDER PRIORITY SETTING AND FARMER-LED EXPERIMENTATION
- ESTABLISH A KNOWLEDGE EXCHANGE HUB AND COMMUNITIES OF PRACTICE FOR OPTIMAL FLOW OF INFORMATION BETWEEN STAKEHOLDERS
- IDENTIFY AND TARGET APPROPRIATE REGIONS AND METHODS FOR PUSH-PULL EXPANSION

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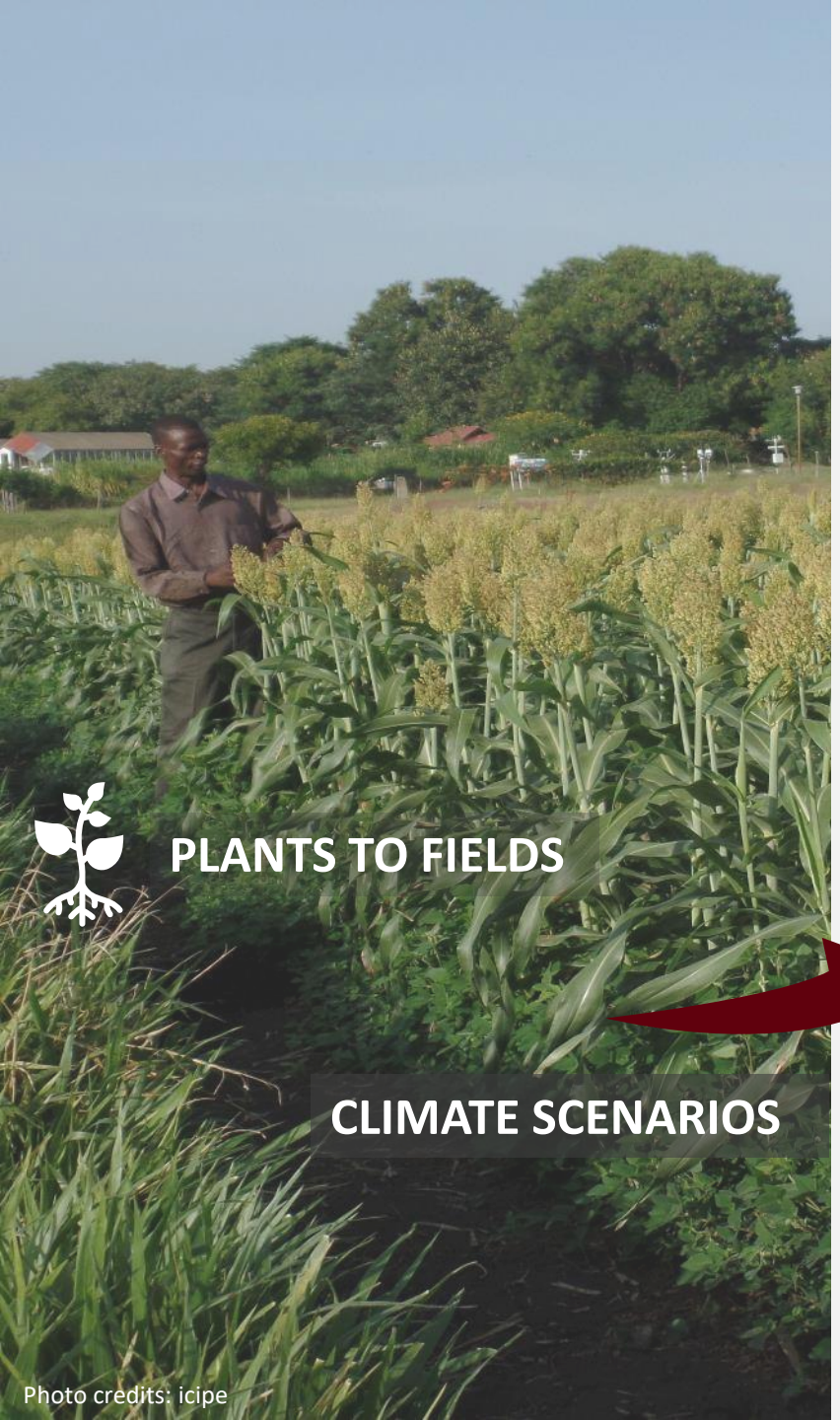
UPSCALE CONCEPT



PLANTS TO FIELDS

CLIMATE SCENARIOS

FEEDBACK LOOPS

FARMS TO LANDSCAPES

REGIONAL TO INTERNATIONAL

SPILLOVER EFFECTS

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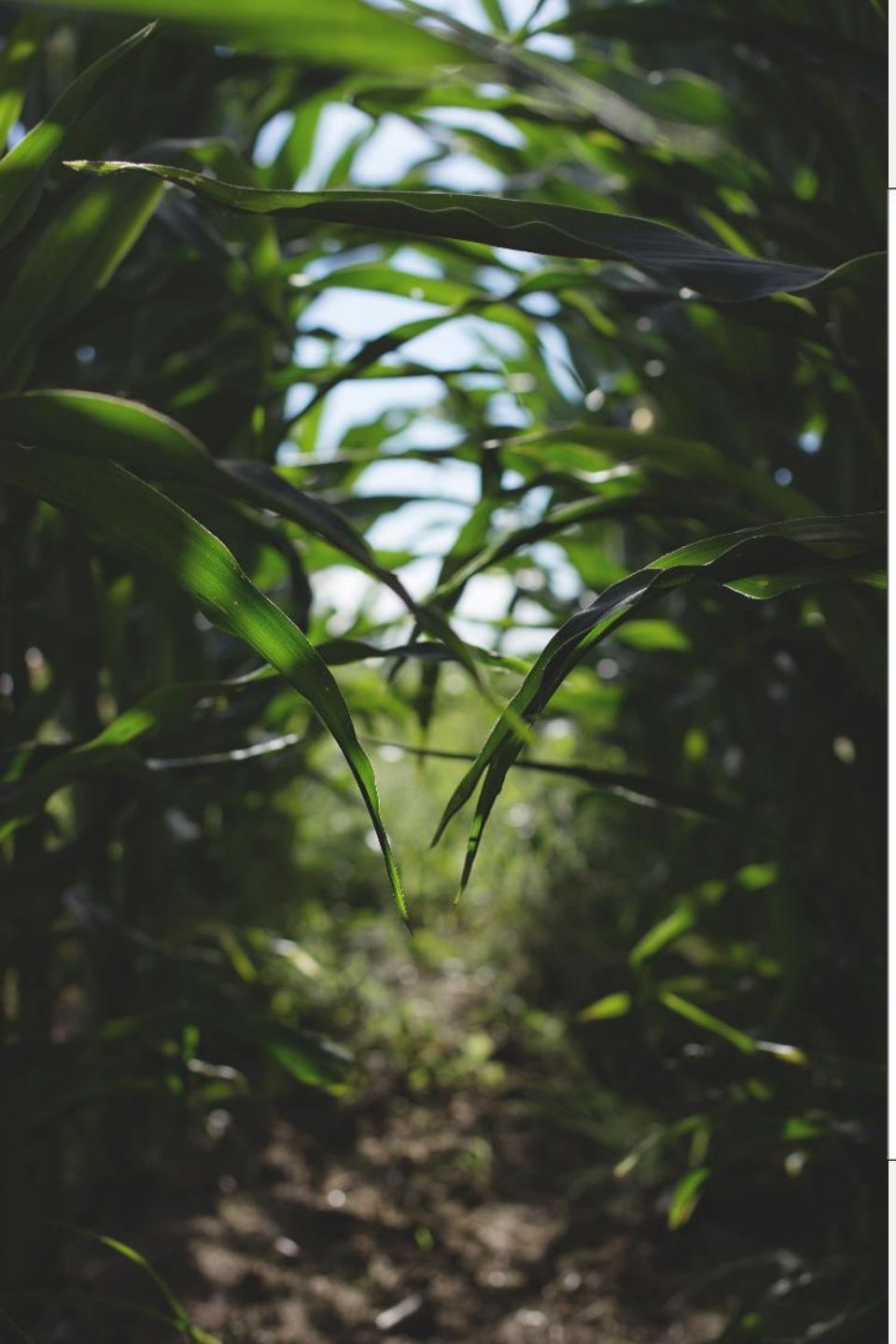
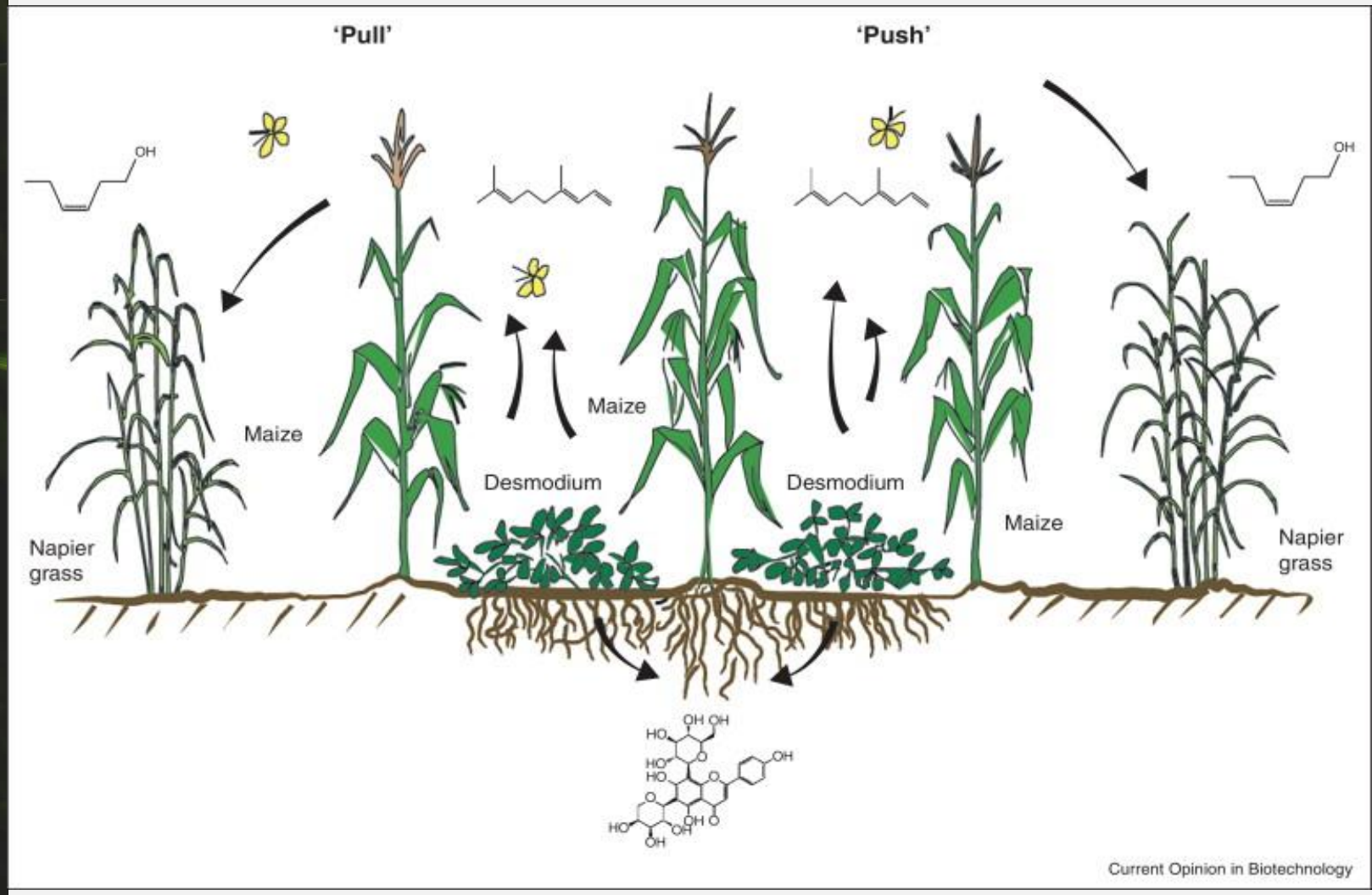
Photo credits: icipe



PUSH-PULL TECHNOLOGY



Push-pull system image credits: Pickett, John & Woodcock, Christine & Midega, Charles & Khan, Zeyaur. (2014). Push-pull farming systems. Current opinion in biotechnology. 26C. 125-132. 10.1016/j.copbio.2013.12.006.

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UPSCALE INNOVATION POTENTIAL

MACs EMPLOYED IN TRAINING OF THE NEXT GENERATION OF BOTH SCIENTISTS AND FARMERS

NOVEL APPLICATION OF ECOLOGICAL METHODS, MODELLING TOOLS AND SOCIAL-ECOLOGICAL APPROACHES

CAPTURING AND MOBILISING THE INNOVATION POTENTIAL AMONG FARMERS TO STIMULATE LONG-LASTING ENGAGEMENT AND FURTHER DEVELOPMENT OF SUSTAINABLE INTENSIFICATION TECHNOLOGIES.

UNLOCK THE POTENTIAL OF PUSH-PULL TECHNOLOGY FOR OTHER REGIONS AND CULTIVATION SYSTEMS

DEVELOP AND ADAPT INNOVATIVE DISSEMINATION TOOLBOXES : KNOWLEDGE HUB, MOBILE APP, INTERACTIVE INTEGRATIVE MAPS FOR SPATIAL TARGETING OF DISSEMINATION EFFORTS

TWO IMPORTANT PILLARS OF UPSCALE

Multi-actor Communities of practice (MAC)

Unlocking the potential for wider engagement, collaboration and adoption of push-pull technology

- **Multistakeholder** collaborative events, public-private partnerships, linkage to (e-)agri services, support of **participative** and **transdisciplinary** approaches
- Bringing together **existing** and **new** networks & stakeholder clusters around push-pull technology and sustainable intensification of agriculture

Key to a successful upscaling of SI!
MACs = Transdisciplinary facilitation platforms

Photo credits: icipe

TWO IMPORTANT PILLARS OF UPSCALE

Knowledge Exchange Hub (KEH) + e-Granary platform

Creation of a platform for knowledge and best practices exchange, during and beyond the project's lifetime

- **Practical and accessible tool** to enable communication, dissemination of ideas and knowledge around sustainable intensification *including* push-pull
- Information collected through MACs will be fed into the KEH as a **repository** and **interactive platform** for use by farmers, extension agencies, NGOs, communities
- Allow **continuous networking** and **information exchange** for researchers, stakeholders and the broader public.

Photo credits: icipe

UPSCALE STUDY REGIONS

NATIONAL COORDINATORS AS LEADERS AND CONTACT POINTS

COLLABORATION WITH LOCAL STAKEHOLDERS, ESPECIALLY (WOMEN) FARMERS

KNOWLEDGE TRANSFER AND FOLLOW-UP EXPLOITATION WITH STAKEHOLDERS

NOVEL METHODS FOR CHARACTERIZING THE CHEMICAL AND OPTICAL MAKEUP OF FARMS AND LANDSCAPES SURROUNDING FIELDS

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UPSCALE IMPACT

ENABLE PREDICTIVE ASSESSMENT OF PUSH-PULL EFFECTIVENESS

DOUBLE CURRENT ADOPTION RATE

NOVEL PUSH-PULL SOLUTIONS IN DIFFERENT CROPPING SYSTEMS

EMPOWER AFRICAN WOMEN FARMERS

ESTABLISH A NEW, INTEGRATIVE APPROACH

LEAD TO IMPROVED INCOMES AND YIELDS

TRAIN FARMERS

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WHAT DOES UPSCALE PROJECT BRING TO YOU ?

If you're Farmer

INCREASED AGRICULTURAL PRODUCTIVITY BY MANAGING KEY CONSTRAINTS, INCLUDING INSECT PESTS

ENSURING SUSTAINABILITY THROUGH TECHNOLOGIES THAT ALLOW FOR SUSTAINABLE INTENSIFICATION OF FARMING SYSTEMS AND IMPROVED ACCESS TO PRODUCTIVITY ENHANCING TECHNOLOGIES

MARKET-DRIVEN SOLUTIONS FOCUSED ON VALUE CHAIN OPTIMIZATION

WHAT DOES UPSCALE PROJECT BRING TO YOU ?

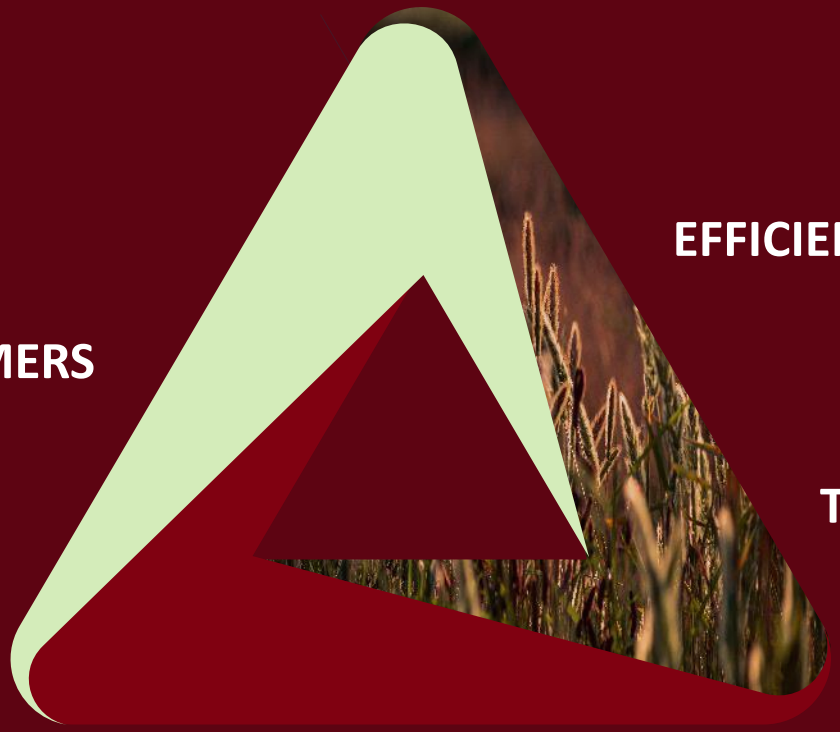
If you are a Research and/or education agency

NEW/IMPROVED METHODS INCLUDING GIS-BASED MODELLING, CHEMICAL ECOLOGY PROCEDURES, LANDSCAPE ANALYSIS, BIODIVERSITY SURVEYS, TOGETHER WITH THE ASSOCIATED ECOSYSTEM SERVICES

ENHANCED UNDERSTANDING OF FARMING SYSTEM INTENSIFICATION, METRICS, IMPACT STUDIES, DRIVERS OF TECHNOLOGY EFFECTIVENESS AND UPTAKE

WHAT DOES UPSCALE PROJECT BRING TO YOU ?

If you are Agricultural Extension Agency



EFFICIENT KNOWLEDGE

TECHNOLOGICAL SOLUTIONS FOR FARMERS

TRANSFER SOLUTIONS

IMPROVED TECHNICAL KNOWLEDGE ON SUSTAINABLE INTENSIFICATION OF AGRICULTURE AND DRIVERS OF THECHNOLOGY ADOPTION, AS WELL AS TECHNOLOGY TARGETING.

WHAT DOES UPSCALE PROJECT BRING TO YOU ?

For EC institution or Policy Maker

KNOWLEDGE TO CURB INVASION OF THE REGION BY EXOTIC PESTS SUCH AS FALL ARMYWORM AND DEVELOP METHODS TO MANAGE SUCH AN INVASION IF IT OCCURS

EVIDENCE - BASED POLICY FORMULATION IN THE AREAS OF SUSTAINABLE INTENSIFICATION OF AGRICULTURE, TECHNOLOGY DEVELOPMENT AND IMPLEMENTATION

INPUT AND OUTPUT MARKETS TO DRIVE TECHNOLOGY ADOPTION

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WHAT DOES UPSCALE PROJECT BRING TO YOU ?

For civic society in eastern Africa and beyond

SUSTAINABILITY OF AGRICULTURAL PRODUCTION AND CONSUMPTION, FOOD SECURITY, NATURE CONSERVATION AND ENVIRONMENTAL PROTECTION

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