RE4FOOD PROJECT KEY FINDINGS FOR KENYA

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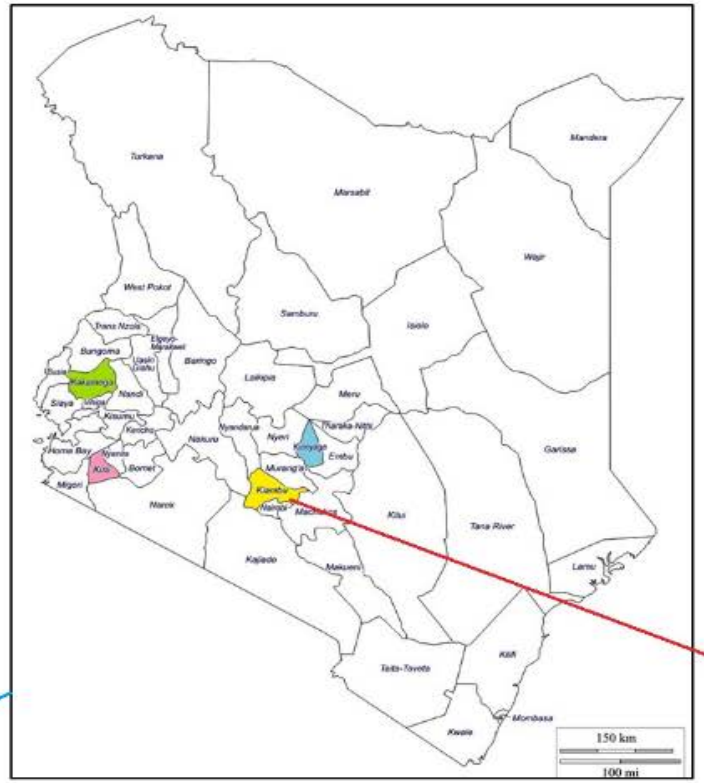
Presentation Outline

- Introduction
- Work done
- Key outputs
- Key findings
- Way forward

AFRICA



KENYAN MAP AND THE PROJECT SITES

JOMO KENYATTA UNIVERSITY

KIAMBU COUNTY

Introduction

- WP1: Post-harvest food chain, loses, wastage and current energy demand analysis (Lead: JKUAT)
- WP2: Existing rural food processing and renewable energy use (Lead: NJALA)
- WP3: Innovative post-harvest food processing approaches utilising renewable energy (Lead: KNUST)
- WP4: Multi-stakeholder engagement, dissemination and knowledge transfer. (Lead: EFA)

Tasks Accomplished

- Review of potential crops with overlap, technologies and energy use (19th Feb 2014)
- Stakeholders forum (20th March 2014)
- Baseline survey (May 2014)
- Review of exiting techno-economic business models and developed one for RE4Food
- Conducted drying tests using solar tunnel dryer (Jan-March 2015)
- Market survey (24th March- 4th April 2015)
- Farmers survey (14th - 18th September 2015)

STAKEHOLDERS WORKSHOP ON RE4FOOD
HELD AT AICAD ON 20TH MARCH 2014

PRACTICAL ACTION

WP1: Post-Harvest Food Chain Losses, Wastage and Energy Demand

- Assess and identify products of potential benefits to livelihood
- Analyze post-harvest food chain losses
- Evaluate energy inputs along the food chain for each product

Key Outputs

- Identified cabbages, kales, tomatoes & indigenous vegetables as crops with potential benefit to rural livelihoods, esp. among women
- Crops mainly grown in Kiambu, Kirinyaga, Kisii and Kakamega counties
- Levels of cumulative losses in identified vegetables are as high as 50% and occur at all stages of the value chain
- Current renewable energy use in post-harvest value chain is low (<10%)
- Hence, there is potential of renewable energy use along the value chain


MAMA

WP2: Existing Rural Food Processing and Renewable Energy Use

- Identify existing SMEs/cooperatives, & technical & human resources that address renewable energy and food security
- Assess extent of rural food processing, technologies utilised energy mix and level of inputs required
- Identify potential for various forms of renewable energy
- Examine business models used for rural food processing & exploitation of renewable energy
- Identify success and limitation of the business models
- Identify best practices and learning opportunities/barriers for both food processing and renewable energy

Key Outputs

- Report on various SMEs/cooperatives prepared and submitted
- Report on current and potential food processing technologies and energy mix prepared and submitted
- Business model reports (viz., KWFT, BIMAS, MoA, SCODE, SoMCODI) prepared and submitted
  - Above reports based on review of documents and 1st stakeholders meeting

WP3: Innovative Post-harvest Food Processing Approaches Utilising Renewable Energy

- Evaluate innovative renewable energy sources for food processing and practices
- Develop techno-economic models for integration of renewable energy and food processing
- Assess potential impact of changes on capital investment, job creation, income generation, decrease of postharvest losses and energy cost

Key Outputs

- One (1) solar technology (solar tunnel dryer) for drying of the vegetables successfully evaluated
- One (1) business-technology transfer model developed and documented by combining the models suggested by the stakeholders
- Identified charcoal and brick coolers as potential technologies for on-farm and trading points preservation of the vegetables


TECHNO TANK


A
B

WP4: Multi-stakeholder engagement, dissemination and knowledge transfer

- Identify key stakeholders and established post-harvest food chain multi-stakeholder network to support the project
- Hold multi stakeholder knowledge gathering event
- Hold multi-stakeholder knowledge dissemination event

Key Outputs

- 36 stakeholders (viz., financial, researchers, food processors, energy players, policy organisation, farmers) identified and network formed
- One (1) knowledge gathering event held (stakeholders forum)

Other Achievements

- Various reports written and submitted (viz., **overlap crops, stakeholders, baseline survey, business models, market survey**)
- Three (3) journal papers submitted to Food Chain, which is a Practical Action Publishing journal (31/7/2015) for possible publication:
  - i) Potential renewable energy mix for traders in reducing post harvest handling
  - ii) Technologies used by traders in reducing post harvest losses of high moisture content vegetables in Kenya
  - iii) Determinant of post harvest losses among high moisture content vegetable traders in Kenya

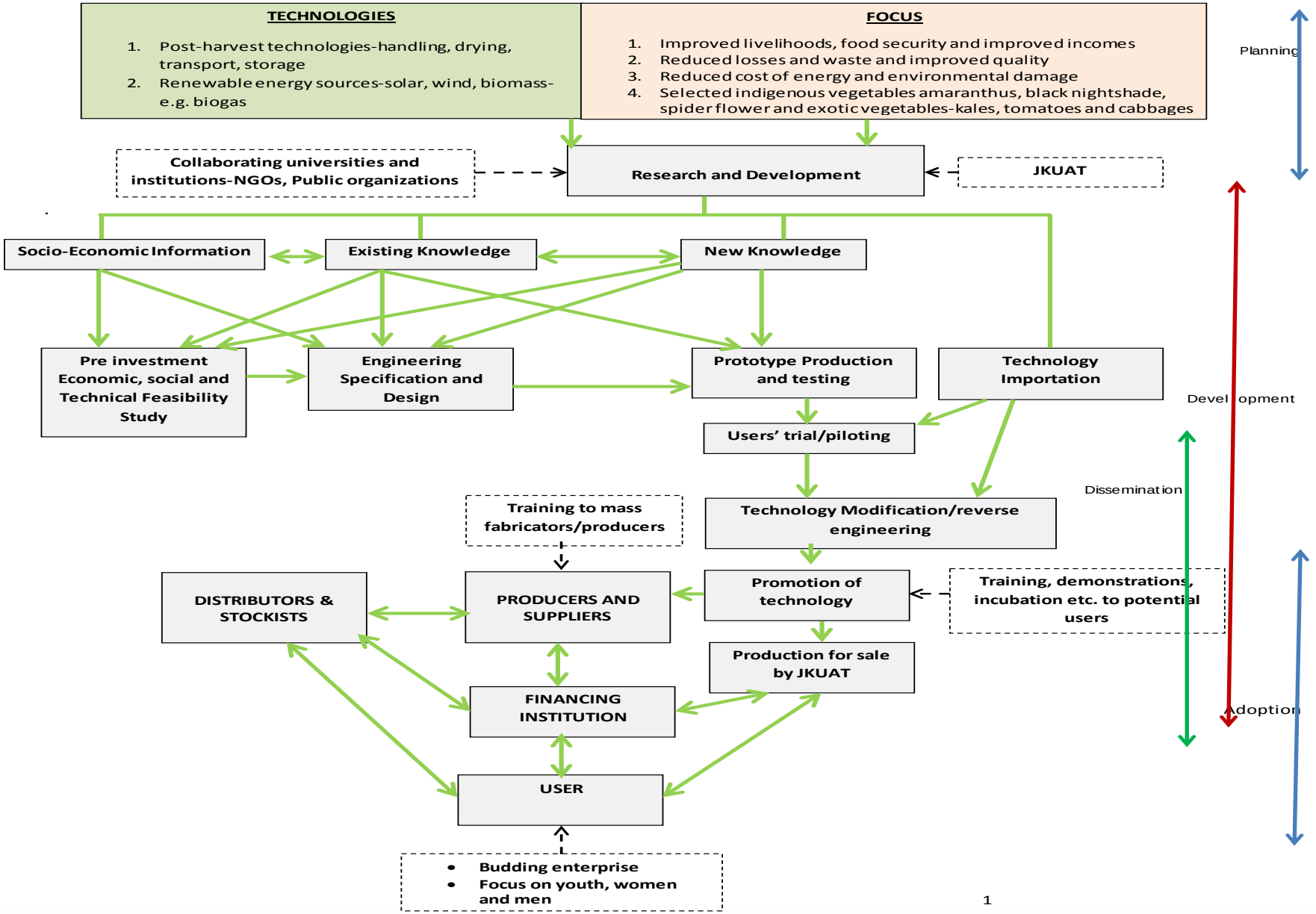
Multi-stakeholder Workshop Key FindingS

- Need for market linkages for horticultural produce-fresh and processed (use of information technology);
- Need for capacity building of stakeholders on proper postharvest handling/processing along the horticultural value chains;
- Need for improved access to postharvest tools, equipment, packages, supplies;
- Most interventions have been around domestic use of renewable energy with little use in agro-processing
- The focus therefore should be on encouraging use of renewable energy for agro-processing.

Key Findings–Business Models

- There are varied models in use for food processing and renewable energy exploitation for the various identified stakeholders
- The identified individual models are biased towards either financial or technical aspects and therefore the need to integrate them

Key Findings–Business Model



Key Findings-Baseline Survey

- Post-harvest loses that occur between the farmer and consumer can be minimised by embracing value addition technologies.
- Renewable energy has not been well utilised in value addition of vegetables and other crops. Hence, there is need for sensitisation and technologies suitable for the same developed.
- Farmers need to be empowered so that they can negotiate better prices for their produce.
- Marketing groups should be strengthened to offer economies of scale when marketing the farmers produce and running of cooling and storage infrastructure.
- Simple cooling facilities should be built in areas with vegetable production to offer prolonged period for vegetables before damage as the product awaits transportation to markets.

Key Findings-Market Survey

- Need for more empowerment of female and youthful traders involved in vegetable trading through intervention that can reduce post-harvest losses.
- Need to encourage farmers and traders to form better marketing strategies.
- RE4 Food project to focus on coming up with innovative ways of improving on value addition and increasing shelf-life of the vegetables.
- Storage and preservation of the vegetables present a big challenge to the traders.
- RE4Food project has a good a opportunity to impact on the farmers through development of drying and cooling/chilling technologies that are easy to use and affordable to the traders and other value chain actors.

Way forward

- Analyse farmer survey data and prepare report (November 2015)
- Completion of techno-economic model (by March 2016)
- Assess potential impact of proposed model and technology interventions on changes in costs, employment, income and losses (March 2016)
- Conduct tests on vegetable cooling/chilling using charcoal and brick coolers in JKUAT (April 2016)
- Multi-stakeholder knowledge dissemination event planned for April 2016
- Creation of awareness through pamphlets and demonstration (May 2016)
- Initiation of up-scaling of drying of high moisture vegetables to the village level (proposed for a second phase)
- Publish 2-3 papers on drying of vegetables in the solar tunnel dryer (March 2016)

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- Local stakeholders

Thank you