

# INTERNATIONAL WORKSHOP

## INVESTING IN ENERGY SUSTAINABLE TECHNOLOGIES IN THE AGRIFOOD SECTOR (INVESTA)

FAO Headquarters, 23-24 November 2017



[www.fao.org/energy/agrifood-chains/INVESTA](http://www.fao.org/energy/agrifood-chains/INVESTA)

## CONCEPT AND DRAFT AGENDA

## THE CHALLENGE

Energy-smart and climate-smart agrifood systems can be viable solutions for development and bring significant structural change in rural areas relying on clean energy solutions. However, addressing these challenges calls for better evidence to target actions and promote solutions. This concerns in particular, the amount and types of energy required at particular stages of the agrifood chain and their viability.

At each stage of the food supply chain, current practices can be adapted to become less energy intensive and therefore smarter. Such efficiency gains can often come from modifying existing farming and processing practices at little or no cost. Options include the use of more fuel efficient engines, the use of compost and precision fertilizers, irrigation monitoring, the adoption of no-till farming practices and the use of less-input-dependent crop varieties and animal breeds. After food has been harvested, improved transportation and infrastructure, better insulation of food storage facilities, reductions in packaging and food waste, and more efficient cooking devices offer the possibility of reducing additional energy use in the food sector. These investments, although significant, often pay back from a financial and from an economic point of view.

The challenge is to decouple fossil fuel energy inputs (both for production and processing as well as for indirect inputs) from the increasing demands for food supply in the short term while ensuring food security and access to modern energy. According to latest FAO estimates, 49% more agricultural production will be needed to meet the demand by 2050 and, in spite of the current efficiency gains, energy consumption in agriculture is set to increase over the next decades.

The FAO *Investing in Energy Sustainable Technologies in the Agrifood Sector* ([INVESTA](#)) project supports new and sustainable approaches to accelerate the development of clean energy solutions in agri-business in developing countries and emerging regions that lack access to reliable, affordable clean energy.

The project is a follow up of the study [Opportunities for Agri-Food Chains to Become Energy-Smart](#), it is funded by the *Gesellschaft für Internationale Zusammenarbeit* (GIZ) and contributes to the international initiative *Powering Agriculture – an Energy Grand Challenge for Development*.

The main challenge addressed by the project is how to enable the development of clean energy interventions in agrifood chains in developing and emerging countries. This issue has been addressed and discussed with stakeholders from the private, public and financing sector in order to identify appropriate business models, financing and institutional arrangements.

## THE INVESTA PROJECT

The INVESTA developed a methodology tailored to energy technologies in food value chains to analyze their financial, economic, social and environmental costs and benefits. The approach has been applied to specific technologies in the milk, vegetable and rice value chains. A report illustrating the methodology and the results of the analysis at intervention level (e.g. at the farm or food processor level) has just been co-published by FAO and GIZ.

The objective is to assess costs and benefits associated with renewable energy and energy efficiency practices, in order to show the hidden socio-economic and environmental costs and benefits to highlight the 'real net benefits', beyond financial benefits. Indeed, in some cases, investments leading to negative financial returns are positive overall if co-benefits are incorporated. This could justify public support to the investment to cover the positive externalities.

The approach has been piloted in four countries (Kenya, Philippines, Tanzania and Tunisia). In each pilot country, the project organized scope missions to collect information and data and a national stakeholder workshop with the main actors for the selected value chains. The findings of the four national stakeholder meetings will be discussed at the international workshop.

## THE INTERNATIONAL WORKSHOP

The international workshop represents an opportunity to discuss barriers and means to foster investments in technologies including milk cooling systems, biogas for electricity, solar-powered water pumps, solar cold storage of vegetables, rice husk gasification and solar-powered rice processing. It gathers stakeholders from the public, private and financial sector, as well as experts on rural development, and will result in general recommendations for policy-makers and investors on how to improve the enabling environment for investments. It will also be an opportunity to propose and discuss concrete means of collaboration among participants.

During the stakeholder workshops, the main findings of the INVESTA project will be presented. The results include the lessons learned from the national stakeholder discussions held in Kenya, Tanzania, Tunisia and the Philippines and an overview of barriers, suitable business models and financing mechanisms to foster the adoption of energy technologies in the agrifood sector. Experiences from investors and financiers on financing energy technologies in agrifood will be presented and solutions to upscale investments in the three value chains will be discussed.

The aim is to find indicative answers to the following key questions:

- Which **conditions** can enable the development of energy interventions in developing and emerging countries?
- Which **financial tools and support mechanisms** are available that target specifically the energy technologies in agrifood?
- Which are the **experiences** and **main policy and regulatory barriers** encountered?
- Which business models, financing and institutional arrangements can promote and up-scale the adoption of clean energy technologies in the **milk, rice and vegetable value chains**?
- What can be learned regarding the **prospects** for energy interventions in agrifood in developing countries?
- What **capacity** is needed and **who should take the lead** in building it locally?
- What are the **next steps**?

**Targeted participants** of the workshop are policy makers, companies and practitioners of the milk, rice and vegetable value chains, equipment suppliers, energy and rural development experts and associations, donors, investors and international financing institutions.

The INVESTA project is a contribution to



Thursday, 23 November 2017

## INVESTA International Workshop - Day One

German room (C-269), building C, 2<sup>nd</sup> floor

08:30 – 9:00	Delegates registration
09:00 – 9:30	<b>Introduction Session</b>
Welcome and opening remarks	<b>Alex Jones</b> , Director, Climate and Environment Division, FAO <b>Maria Weitz</b> , Project Coordinator, GIZ
Objectives of the workshop	<b>Günther Feiler</b> , Capacity Development Officer, FAO (workshop moderator)
9:30 – 10:30	<b>Session 1 – The INVESTA Cost-Benefit Analysis methodology and findings</b>
Objectives	<i>This session will present the results of the INVESTA project which includes lessons learned from the stakeholder discussions in Kenya, Tanzania, Tunisia and the Philippines. It will also provide an overview of barriers, suitable business models and financing mechanisms to foster the adoption of energy technologies in the agrifood sector.</i>
Introduction to the INVESTA project and tool	<b>Alessandro Flammini</b> , Natural Resources Officer, FAO
Methodology and findings	<b>Stefania Bracco</b> , Expert in Energy-Smart Food, FAO <b>Alessandro Flammini</b> , Natural Resources Officer, FAO <b>Jeanette Cooke</b> , Gender expert, FAO
10:30 – 11:00	Coffee break
11.00 – 12.30	<b>Session 2 – Financing energy technologies in agrifood: experiences from investors and financiers</b>
Objectives	<i>Financing institutions and investors will present and discuss the enabling conditions for the development of energy interventions in developing and emerging countries. The session will focus on experiences, the main policy and regulatory barriers encountered, and available tools and support mechanisms targeting energy technologies for the agrifood sector.</i>
Panelists	<b>Kabir Malik</b> , Economist, World Bank <b>Fuad Siala</b> , Senior Advisor, Strategic Planning and Economic Services, OFID <b>Dana Kupova</b> , Principal Manager, Energy Efficiency and Climate Change, EBRD <b>Samwel Tobiko</b> , Agri-business Extensions Officer, Juhudi Kilimo, Kenya <b>Katalin Solymosi</b> , Senior Consultant, UNIQUE
12:30-14:00	LUNCH BREAK

14.00 – 16.00	<b>Session 3 – The milk value chain: solutions to upscale investments</b>
Objectives	<i>The panel will share experiences on the successful business models, financing and institutional arrangements to promote and up-scale the adoption of clean energy technologies in the milk value chain, with a focus on Kenya, Tanzania and Tunisia. The presentations will be followed by an open discussion between practitioners, policy-makers and financiers.</i>
Panelists	<p><b>Samwel Matoke</b>, Deputy director of Livestock department, Ministry of Agriculture, Livestock and Fisheries, Kenya</p> <p><b>Emmanuel Kabaki</b>, General Manager, Milk, Procurement and Extension Services, Brookside Dairy LTD, Kenya</p> <p><b>Nelson Kilongozi</b>, Acting Registrar, Tanzania Dairy Board</p> <p><b>Denise Recheis</b>, Knowledge Manager, REEEP</p> <p><b>Sanne Castro</b>, CEO, SimGas</p> <p><b>Afef Ben Rejeb</b>, Deputy Director International Cooperation, Ministry of Agriculture, Water Resources and Fisheries, Tunisia</p> <p><b>Victor Torres Toledo</b>, University of Hohenheim</p>
16:00 – 16:30	Coffee break
16.30 – 17.30	<b>Session 4 – The rice value chain: solutions to upscale investments</b>
	<i>The panel will share experiences on the successful business models, financing and institutional arrangements to promote and up-scale the adoption of clean energy technologies in the rice value chain, with a focus on Philippines. The presentations will be followed by an open discussion between practitioners, policy-makers and financiers.</i>
Panelists	<p><b>Nguyen Van Hung</b>, Sustainable Impact Platform, IRRI</p> <p><b>Bern Tadeo</b>, CEO, Full Advantage Phils International</p> <p><b>Alessandro Peressotti</b>, University of Udine</p> <p><b>Ralph Ripken</b>, Senior Consultant, E4tech</p>
18:00	<b>COCKTAIL RECEPTION</b> (Aventino room, 8 <sup>th</sup> floor)

Friday, 24 November 2017

## INVESTA International Workshop - Day Two

German room (C-269), building C, 2<sup>nd</sup> floor

9:00– 9:10	<b>Opening of day two and keynote address</b>
	<b>Ralph Sims</b> , Massey University and GEF Scientific and Technical Advisory Panel
9:10– 10:30	<b>Session 5 – The vegetable value chain: solutions to upscale investments</b>
Objectives	<i>The panel will share experiences on the successful business models, financing and institutional arrangements to promote and up-scale the adoption of clean energy technologies in the vegetable value chain, with a focus on Kenya. The presentations will be followed by an open discussion between practitioners, policy-makers and financiers.</i>
Panelists	<b>Michele Bruni</b> , Technical Director, InspiraFarms <b>Samuel Karongo</b> , Horticultural Crops Directorate, Kenya <b>Okisegere Ojepat</b> , Director, Fresh Produce Exporters Association of Kenya <b>Olivia Karanja</b> , Program Associate, Rockefeller Foundation <b>Vincent N. Kabuti</b> , Chief Officer, National Irrigation Board, Kenya <b>Bernard Ngetich</b> , Project Manager, Kenya Smallholder Solar Irrigation Project, Winrock International
10:30 – 11:00	Coffee break
11:00 – 12:45	<b>Session 6 – Outcomes of the workshop and the way forward</b>
Guiding questions	<ul style="list-style-type: none"><li>• What have we learned regarding the prospects for energy interventions in agrifood in developing countries?</li><li>• What capacity is needed and who should take the lead in building it locally?</li><li>• How can the international organization and financing institution present here catalyze investments in energy-smart agrifood systems?</li><li>• What are the next steps?</li></ul> <p><i>Note: The session will be organized around relevant issues emerging from workshop sessions.</i></p>
Panelists and facilitators	<b>Divyam Nagpal</b> , Associate Programme Officer, IRENA <b>Olivier Dubois</b> , Senior Natural Resources Officer, FAO <b>Katharina Meder</b> , Hub Manager East Africa, GIZ
12:45 – 13:00	<b>Closure of the workshop</b>
	<b>Maria Weitz</b> , Project Coordinator, GIZ <b>Alex Jones</b> , Director, Climate and Environment Division, FAO

*Note: On Friday, the Nigeria room has been reserved for bilateral meetings among workshop participants.*

# LIST OF PARTICIPANTS

Participants		
Name	Surname	Organization
Afef	<b>BEN REJEB</b>	Ministry of Agriculture, Tunisia
Mondher	<b>BEN SALEM</b>	INRA Tunisia
Bernard Ngetich	<b>BII</b>	Winrock International
Michele	<b>BRUNI</b>	Inspira Farms
Sanne	<b>CASTRO</b>	SimGas B.V.
Grace Jepleting	<b>CHIRCHIR</b>	Ministry of Agriculture, Kenya
Jeanette	<b>COOKE</b>	Gender expert
Emmanuel	<b>KABAKI</b>	Brookside Dairy Ltd, Kenya
Vincent	<b>KABUTI</b>	National Irrigation Board, Kenya
Juha Antti	<b>KALEVI SEPPALA</b>	World Bank
Samuel	<b>KARONGO</b>	The Horticultural Crops Directorate, Kenya
Abdessalem	<b>KHAZEN</b>	ANME, Tunisia
Nelson	<b>KILONGOZI</b>	Tanzania Dairy Board
Dana	<b>KUPOVA</b>	European Bank for Reconstruction and Development
Kerstin	<b>LOHR</b>	GIZ
Chiraz	<b>LOUKIL</b>	GIVLAIT, Tunisia
Robert Christopher	<b>LUKUMAY</b>	Match Maker Fund Management
Kabir	<b>MALIK</b>	World Bank
Samwel	<b>MATOKE</b>	Ministry of Agriculture, Kenya
Nathaniel Rajabu	<b>MBWAMBO</b>	Ministry of Agricultural Livestock and Fisheries, Tanzania
Katharina	<b>MEDER</b>	GIZ
Yacob	<b>MULUGETTA</b>	University College London

Fabian	<b>MWAKATUMA</b>	Fabian Mwakatuma and Family Company Limited
Divyam	<b>NAGPAL</b>	IRENA
Samwel Tobiko	<b>NAIMASIA</b>	Juhudi Kilimo
Van Hung	<b>NGUYEN</b>	International Rice Research Institute
Okisegere	<b>OJEPAT</b>	The Fresh Produce Exporters Association of Kenya
Alessandro	<b>PERESSOTTI</b>	University of Udine
Denise	<b>RECHEIS</b>	REEEP
Ralph	<b>RIPKEN</b>	E4tech
Paolo	<b>ROSSI</b>	NewENG srl
Ralph	<b>SIMS</b>	Massey University
Evgenia	<b>SOKOLOVA</b>	Aktivera Grupp
Katalin	<b>SOLYMOSI</b>	UNIQUE forestry and land use GmbH
Bernardo	<b>TADEO</b>	Full Advantage Phils International, Inc.
Feddy	<b>TESHA</b>	Tanzania Milk Processor Association
Victor	<b>TORRES TOLEDO</b>	University of Hohenheim
Maria	<b>WEITZ</b>	GIZ
Arnulfo	<b>ZABALA</b>	The Philippines' Department of Energy
Sana	<b>ZITOUNI</b>	Ministry of Agriculture, Tunisia
Tobias	<b>ZWIRNER</b>	Phaesun
<b>Remotely connected</b>		
<b>Name</b>	<b>Surname</b>	<b>Organization</b>
Raghav	<b>AGARWAL</b>	
David	<b>BERGERON</b>	SunDanzer Refrigeration Inc.
Olivia	<b>KARANJA</b>	Rockefeller Foundation
Betty	<b>KIBAARA</b>	Rockefeller Foundation
Kagwiria	<b>KOOME</b>	Rockefeller Foundation
Fuad	<b>SIALA</b>	OFID

FAO staff		
Name	Surname	Organization
Robert	ALLPORT	FAO Kenya
Stefania	BRACCO	FAO Climate and Environment Division
Arianna	CARITA	FAO Investment Centre
Olivier	DUBOIS	FAO Climate and Environment Division and Leader of the Energy Team
Gunther	FEILER	FAO Investment Centre
Alessandro	FLAMMINI	FAO Climate and Environment / Investment Centre
Iranthi	HERATH	FAO Project Assistant
Alexander	JONES	FAO Climate and Environment Division Director
Ivana	KOKIC	FAO Climate and Environment Division
Jasmine E.	MAGTIBAY	FAO Philippines
Mohamed	MANSSOURI	FAO Investment Centre Director
Lucie	PLUSCHKE	FAO Land and Water Division
Nuno	SANTOS	FAO Investment Centre
Cristina	SCARPOCCHI	FAO Nutrition and Food Systems Division
Ajuaye	SIGALLA	FAO Tanzania
Ryan	ZUNIGA	FAO Tunisia