IRENA
International Renewable Energy Agency

21st IRENA Council and related meetings

The Energy Transition and Food Systems for Sustainable Development

Rabia Ferroukhi, Director, KPFC | Gurbuz Gonul, Director, CEP

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The Energy Transition and Food Systems

30%

Share of food systems in world's energy consumption

33%

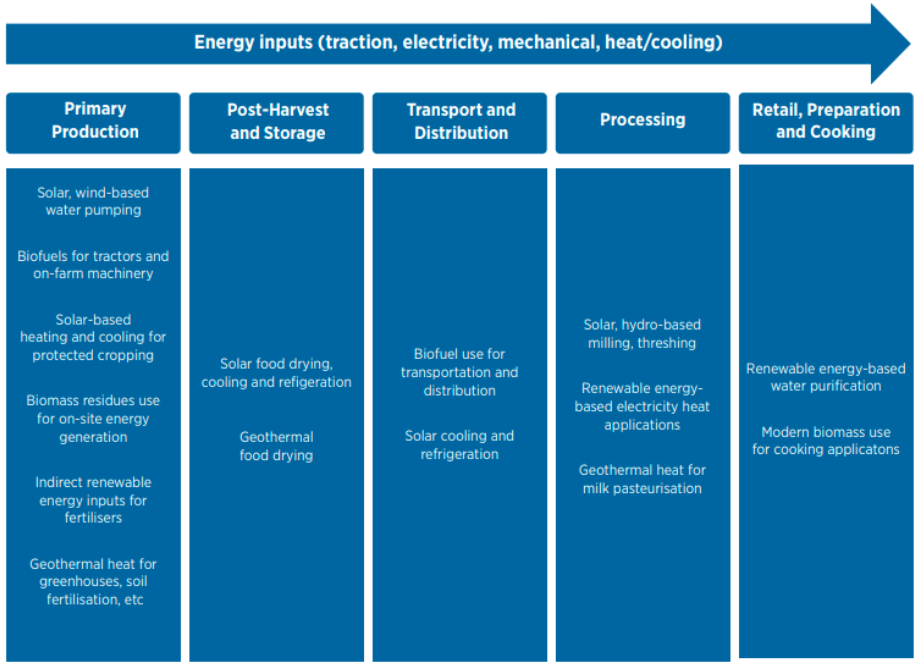
Share of energy-related activities in food systems emissions

2.8bn

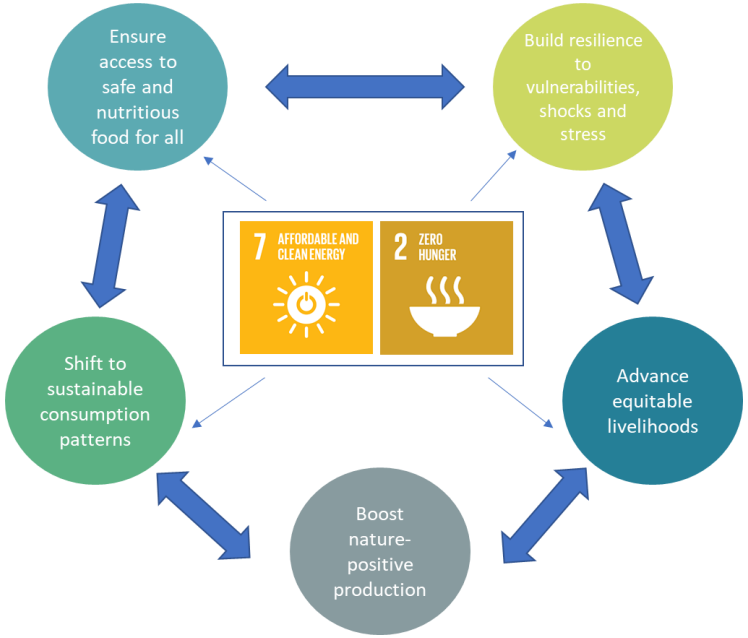
People using traditional fuels for cooking (2018)

2.5bn

People whose livelihoods depend on agriculture



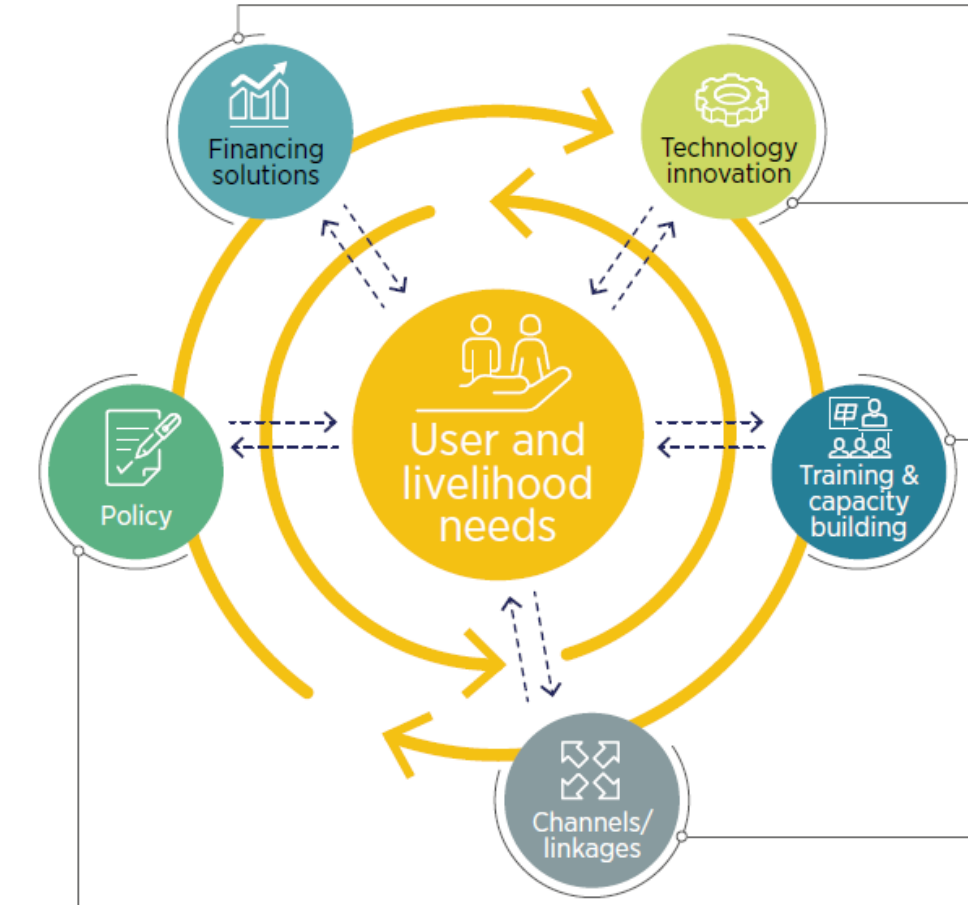
Source: IRENA



Source: IRENA based on FSS

The Energy Transition will directly impact, and be supported by the Food Systems, and vice versa. A joint approach needed to achieve food and energy security while meeting the SDGs and climate goals.

Building the ecosystem to scale-up adoption



- Access to finance
- Cost of capital
- Ownership models

- Efficient technology
- Caters to specific needs
- Last mile supply chain

- Awareness of solutions
- Training
- Knowledge transfer

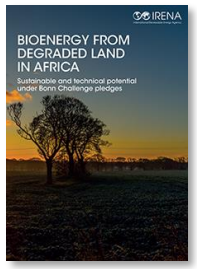
- Access to new or existing markets to sell products
- Stable input sources
- Access to information

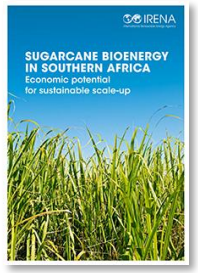
- Cross-sector assessments
- Dedicated policies
- De-risking tools

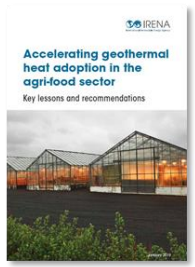
Partnerships | Gender | Knowledge

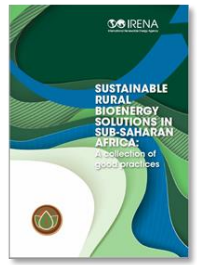
Source: SELCO Foundation and IRENA (forthcoming)

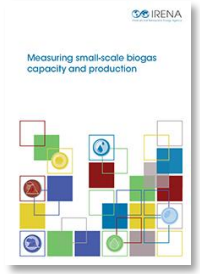
Advancing the food-energy nexus: IRENA activities











Technology-specific analysis

Knowledge work and policy analysis

Regional agri-value chain assessments

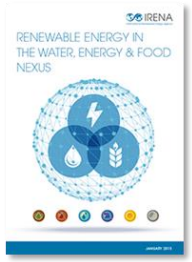
Capacity building and advocacy

Data and statistics

Assessment of benefits

7 AFFORDABLE AND CLEAN ENERGY

2 ZERO HUNGER



ICIMOD

SELCO FOUNDATION

Food Systems Summit 2021

High-level Dialogue on Energy New York, 2021

HIGH-LEVEL POLITICAL FORUM ON SUSTAINABLE DEVELOPMENT

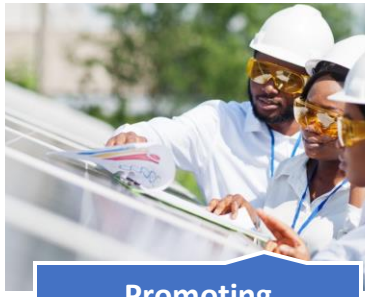
IOREC International Off-Grid Renewable Energy Conference & Exhibition

GLOBAL GEOTHERMAL ALLIANCE

Decentralized Renewables in Cross-Sectoral Settings

Energizing Primary Healthcare

Energizing Agri-Food Value Chains



Promoting Entrepreneurship

Global Report
Assessment for Electricity in Healthcare (WHO, WB, SE4ALL)

Global Report
Renewable Energy in Food Systems (FAO)

Global Advocacy
IOREC International Off-Grid Renewable Energy Conference & Exhibition
International Off-grid RE Conference and Exhibition
Ghana, Philippines, Kenya, Singapore

Regional Assessment
DRE Solutions in Agri-Food HKH Region

Regional TA/CB
ECOWAS RE Entrepreneurship Support Facility 2015

Regional TA/CB
SADC RE Entrepreneurship Support Facility 2017

Country Assessments
DRE Solutions in Healthcare
Burkina Faso, Mali, Sao Tome & Principe, Cameroon

Strengthening Partnerships

Food and Agriculture Organization of the United Nations
World Health Organization
POWER AFRICA
ICIMOD
SACREEE SADC CENTRE FOR RENEWABLE ENERGY & ENERGY EFFICIENCY
ECREEE TOWARDS SUSTAINABLE ENERGY
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
THE WORLD BANK
SELCO FOUNDATION
Alliance for Rural Electrification
Shining a Light for Progress

Disclaimer: Boundaries and names shown on this map do not imply any official endorsement of acceptance by IRENA.

Viability Assessment of Decentralized RE Solutions in Agri-Food Value-Chains

Hindukush – Himalayan region:

Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, Pakistan

- ❑ **Identification of value chains with need for DRE interventions**
- ❑ **Estimation of energy supply and demand**
- ❑ **Techno-commercial viability analysis**

Experts Consultation Workshop – DRE Solution for Food Value Chains in HKH, 24 March 2021

Nodal Points for Decentralized Renewable Energy Interventions

Buckwheat

- DRE for Weeding Machine
- DRE for Threshing and Winnowing Machine

Yak

- DRE for Milking Machine
- DRE for butter churning and cream separator

Potatoes

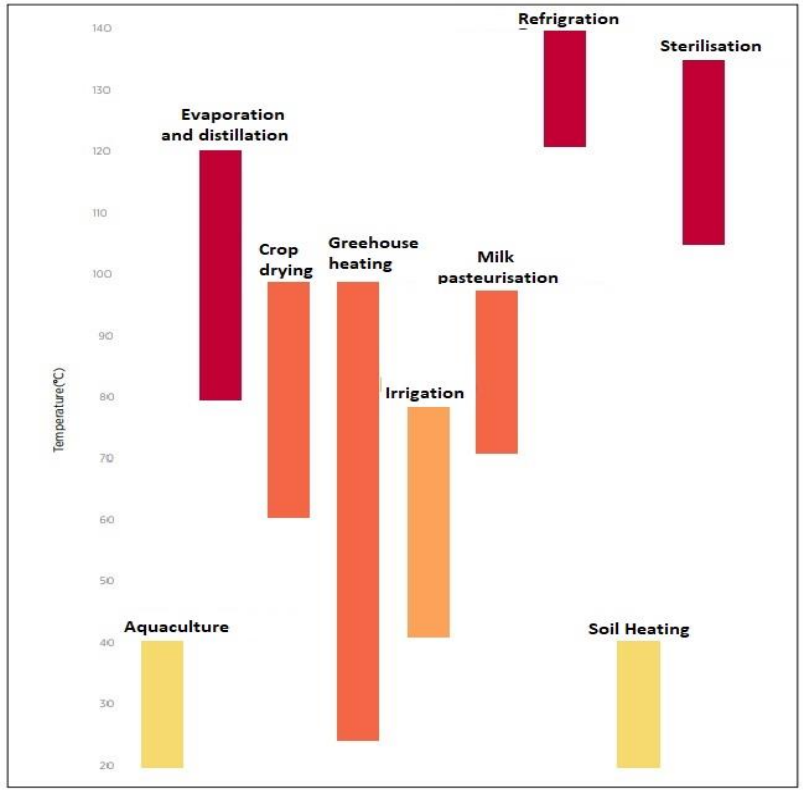
- DRE Pump Irrigation
- DRE for potatoes grading machine

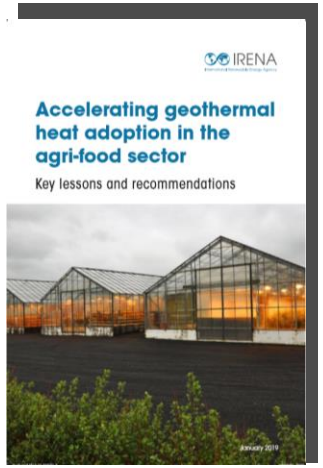
Vegetables

- DRE for drip irrigation
- DRE for cold storage and transportation

Images Source: Online

Geothermal Agri-Food Applications





GGA event on Geothermal Direct Utilisation and Food Security, Reykjavík, Iceland, 24 April 2018

Upcoming publication: Guidelines for policy makers: Scaling up Geothermal Applications in the Agri-food Sector

KEY RECOMMENDATIONS

Establish adequate licensing procedures and policy instruments to mitigate resource risk in the heat sector

Integrate geothermal energy into industrial/rural development plans

In emerging markets, support pilot projects and feasibility studies

Develop capacities for downstream direct use, incl. in countries with long expertise on geothermal power

Ensure good management of the resource to ensure environmental sustainability

Guiding Questions

- How can governments promote RE for critical development priorities such as food security?
- What are the key lessons learned, particularly in the rural context?
- How can both energy and food sector policy formulation fully consider economic, environmental and social benefits of deploying RE in food systems?
- How can international cooperation help enhance resource mobilisation to support RE solutions for climate resilient food systems, in synergies with climate finance and NDC implementation?