

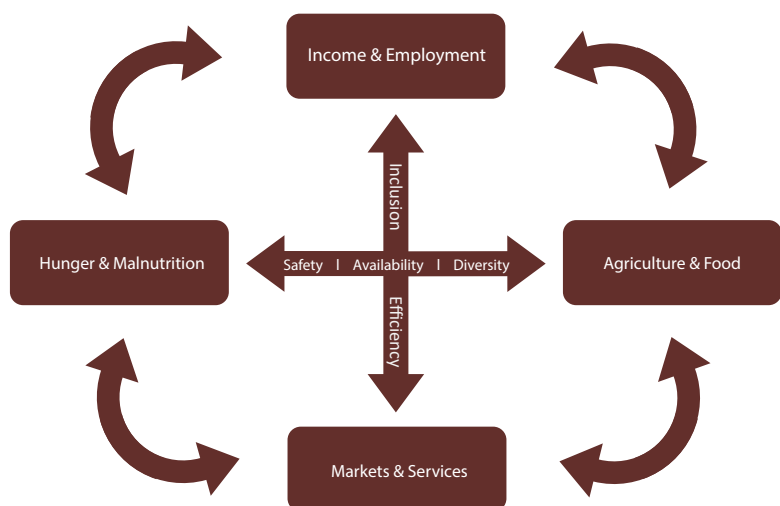
# INNOVATIONS TO OVERCOME THE INCREASINGLY COMPLEX PROBLEMS OF HUNGER

## Alternative Pathways towards Food Security

Transforming rural areas and increasing the productivity of smallholder farms are indispensable to meet the goal of overcoming hunger and malnutrition. After years of improvements, hunger levels rose again in 2016. Of the 815 million undernourished people, 20% are small children. ‘Hidden hunger’ also remains a serious concern; micronutrient deficiencies affect around 2 billion people and pose significant social, political, and public health challenges. As hunger and malnutrition grow increasingly more complex, it must be countered by sophisticated policies and innovative thinking. In this regard, food and agricultural innovations play essential roles to overcome hunger sustainably and effectively.

### Innovation in a Conceptual Framework of Food and Nutrition

An effective policy to end hunger needs a framework that helps in understanding causal relations of hunger determinants and in shaping priorities for action. Political economy determinants of nutrition and structural issues, such as discrimination, marginalization and conflicts, have long been absent as variables within existing conceptual frameworks for food and nutrition security. Contextual changes such as urbanization, the transformation of smallholding agricultural economies, and the growing rates of hunger stemming from complex emergencies and political conflict, are important drivers shaping food security in positive or risky ways.



### Innovations in Policy and Food Systems to Fight Hunger

Historically, big innovations in food and agriculture, such as cooperatives, the “Green Revolution” or microfinance, have usually had two things in common: they included not only technological innovations but also policy and institutional innovations, and they required many years of research and experimentation before eventually being implemented and scaled up.

#### Policy Recommendation:

- Expand social protection and child nutrition action to protect the basic nutrition of the most vulnerable
- Take protective actions to mitigate short-term risks (e.g. cash transfers, pension systems and employment programs)

### Innovations in Markets and Trade for Reduction of Hunger

A lack of access to markets and excessive price volatility are two major problems for poor consumers and farmers. There are only a few protective mechanisms for the most vulnerable segments of the population against price shocks and seasonality. Due to a lack of training and tools, product standards often exceed the capabilities of farmers, which further diminishes their ability to enter into these markets.

#### Policy Recommendation:

- Improve the resilience of agricultural markets, including early warning systems for better preparedness
- Integrate different markets for improved risk-sharing among them
- Equip farmers with the tools and training necessary to enable their participation in markets.



## Innovations to Address Hunger in Complex Emergencies and Wars

Abrupt and strong food price increases can lead to social unrest, violent conflicts and political instability. Not only does this inhibit economic growth, it also challenges public confidence in governments for failing their mandate of providing adequate food security. Of increasing relevance at an international scale is hunger in complex emergencies, i.e. when political conflicts, war, terrorism and environmental emergencies interact.

### Policy Recommendation:

- Innovate in emergency relief operations such as cash cards programs or mobile phone-based money transfers to stimulate local purchases
- Identify policies that combine conflict prevention and peace building with food and agriculture development and employment creation

## Innovations to Cope with the Fast Farm Transformations

Many of the 570 million people on family owned smallholder farms are not food secure. The development of their small businesses is critical for ending poverty and hunger. These farmers increasingly seek part time employment opportunities outside of agriculture, while many youth are abandoning farming altogether when they do not see a promising future.

### Policy Recommendation:

- Promote the dynamism within the family farm sector itself and its dynamic interactions with and integration into the rest of the economy
- Protect land rights of smallholder farmers by recording and enforcing ownership against powerful international and domestic investors

## Innovation from and for Farmers

Long before formal science institutions were established, innovation was changing and improving productivity of farming and food systems. It must not be forgotten that this type of bottom-up initiative is still an important force of innovation in which farmers are investing. Until today, farmers have been a promising source for locally adapted innovations suitable for rapid and cost-effective dissemination (see PARI Policy Brief No. 2).

### Policy Recommendation:

- Innovation should be a combination of top-down and bottom-up to capture both farmer's ingenuity as well as opportunities offered by the research community
- Appropriate incentives should be provided to farmers to stimulate innovative behavior, knowledge sharing

## Innovation in Digital Technologies for Food Security

From monitoring hunger situations to offering information about market opportunities or nutrition, there is great potential and abundant opportunities for their application in this area. Mobile devices and other information and communication technologies can aid in collecting, sharing, and analyzing data as well as building social networks.

### Policy Recommendation:

- Harness current digital trends, such as the social networks, the Internet of Things or satellite imagery, to developed services that are better adapted to the needs and capacities of small-scale producers

This Policy Brief is based on the study: von Braun, J. (2018): *Innovations to Overcome the Increasingly Complex Problems of Hunger*. ZEF Working Paper No. 167. Bonn: Center for Development Research.

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**PARI implementing partners:** ZEF/University of Bonn, University of Hohenheim, Technical University Munich, the Forum for Agricultural Research in Africa (FARA) and its national partners, the African Growth and Development Policy Modeling Consortium (AGRODEP) facilitated by the International Food Policy Research Institute (IFPRI, Africa Office), and research collaborators in India.

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### IMPRINT

Center for Development Research (ZEF)  
Genscherallee 3 | 53113 Bonn | Germany  
E-Mail: [presse.zef@uni-bonn.de](mailto:presse.zef@uni-bonn.de)  
Phone: +49-(0)228 - 73 18 46

Brief prepared by: Nicholas Haluska

Layout: ZEF PR

