

Linking Bioenergy, Natural Resources Management and Climate Change

Sitanon Jesdapipat, Ph.D.
SEA START RC

Let us think for awhile...why?

Some stylized facts

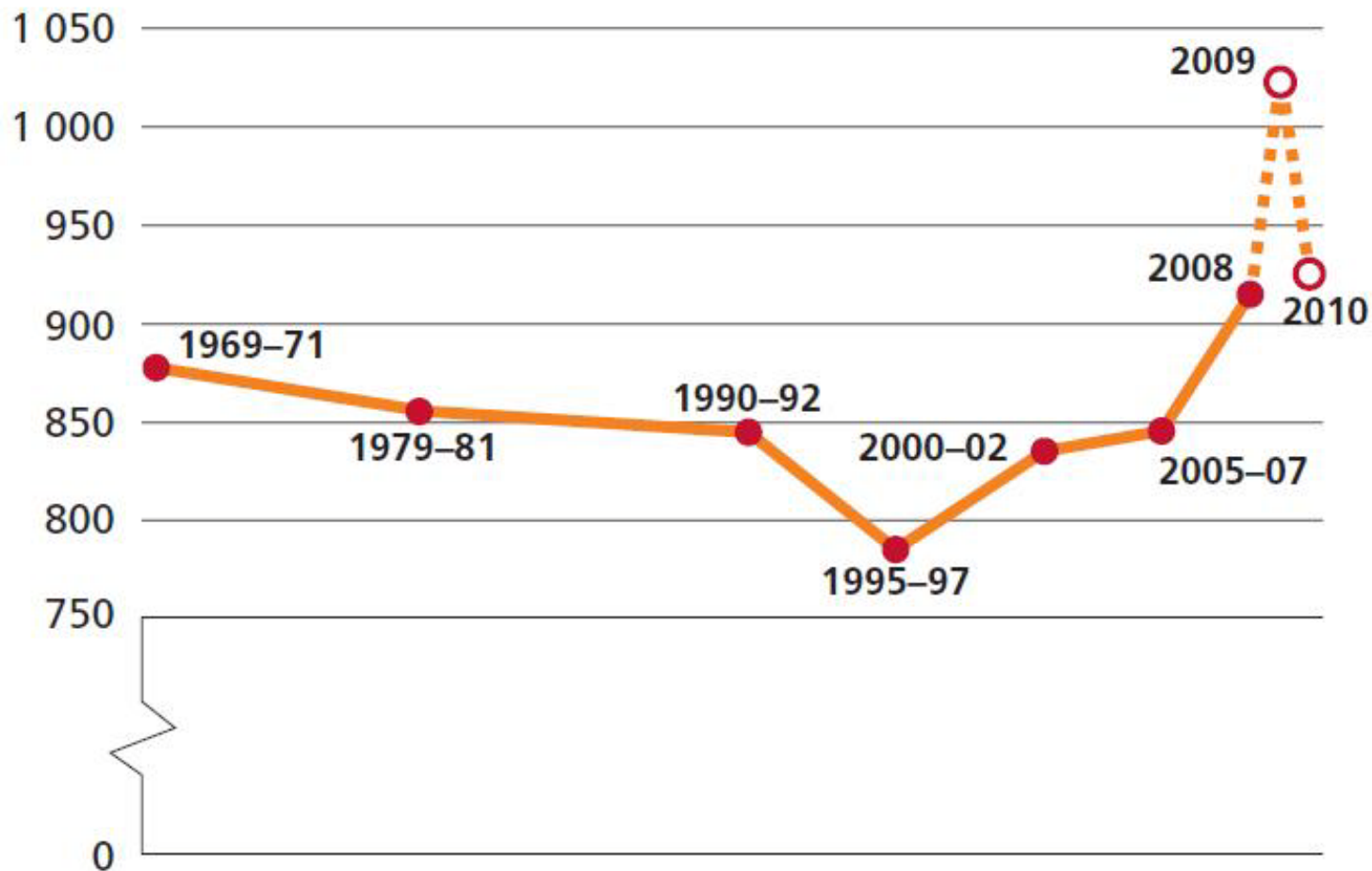
- *Fossil fuels power modernization, and still mainstream sources of supply
- *Rigidity in development, coupled with new demands of emerging large economies, drive global demand for energy further increase risks associated with price and supply
- *While millions are denied access to safe and adequate food and other basic necessities, biofuels emerge as an option
- *Yet, climate change, food security and ailing ecosystems have called for new way of development, including changed mindsets in development

Global agendas, global responsibility, **new approaches needed**

- Poverty and Hunger
- Energy security
- Ecosystem degradation

Number of undernourished people in the world, 1969-71 to 2010

Millions

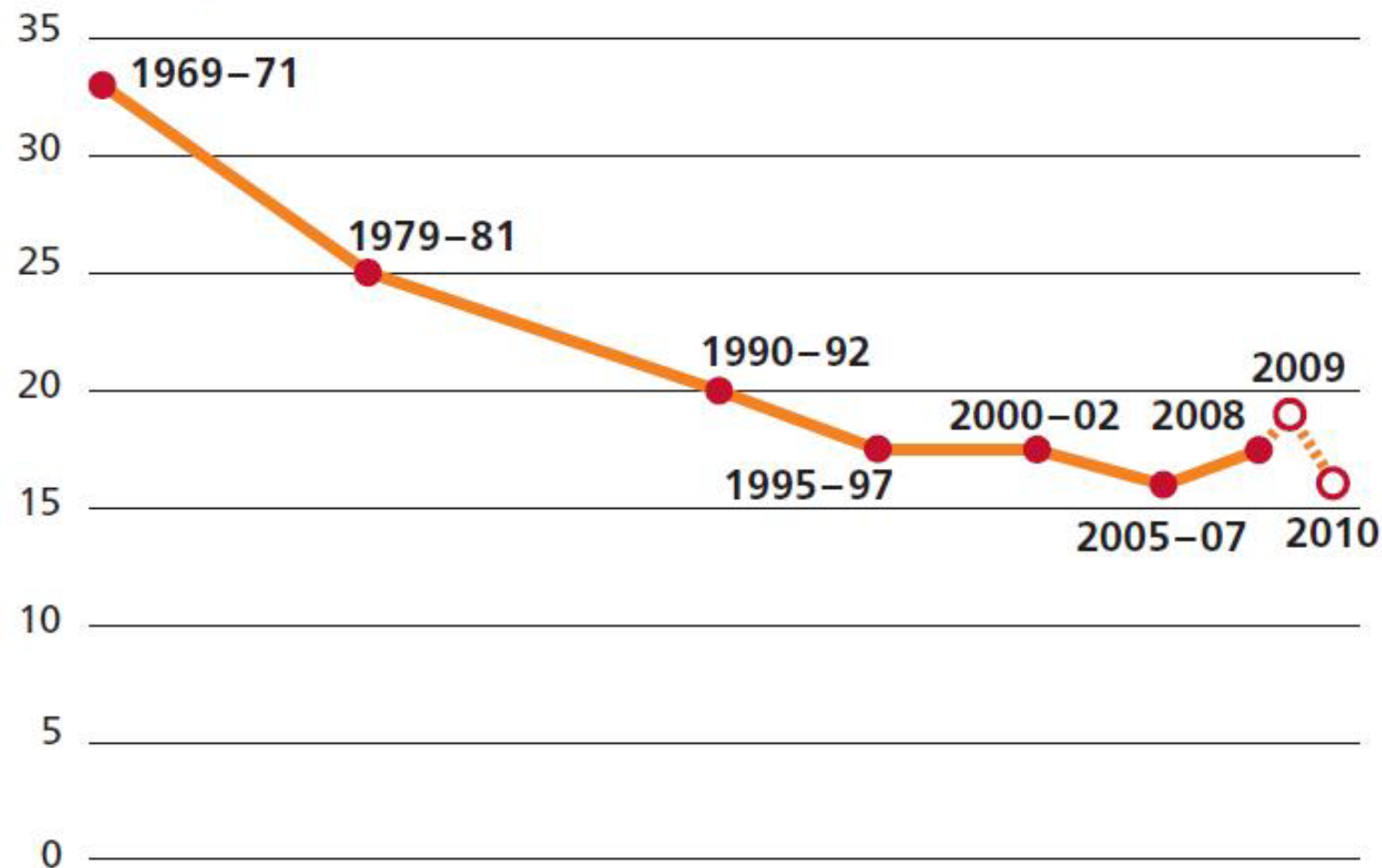


Note: Figures for 2009 and 2010 are estimated by FAO with input from the United States Department of Agriculture, Economic Research Service.

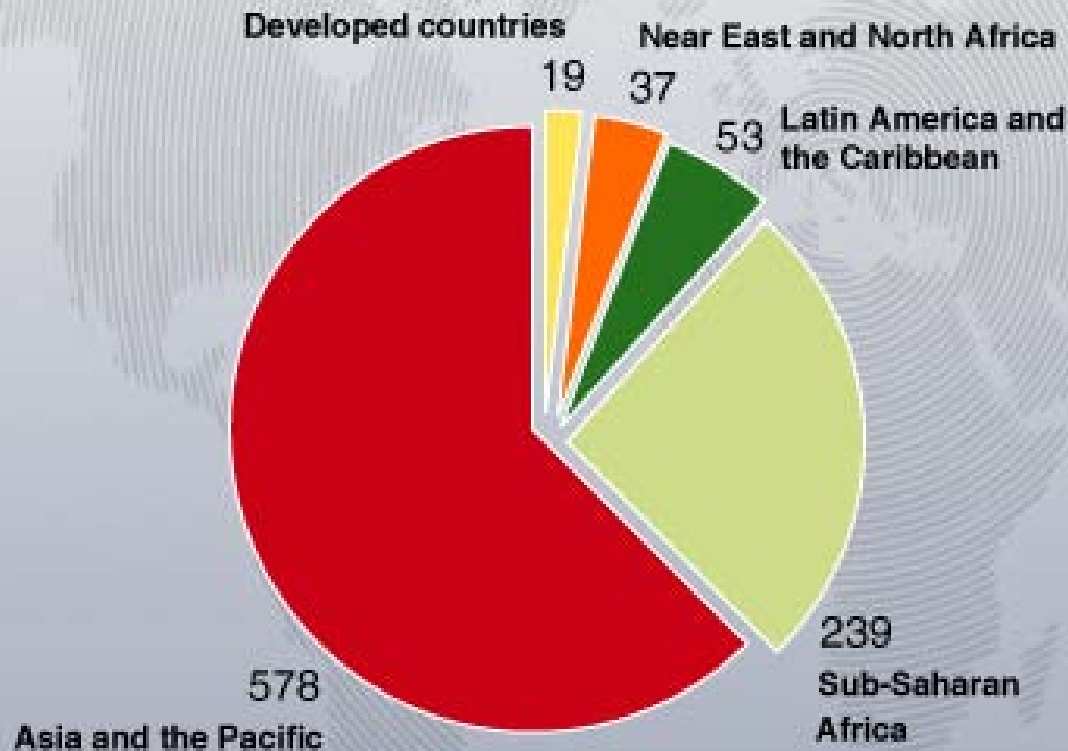
Source: FAO.

Proportion of undernourished people in developing countries, 1969–71 to 2010

Percentage of undernourished



Global hunger declining, but still unacceptably high



Millions of people (as of 2010)



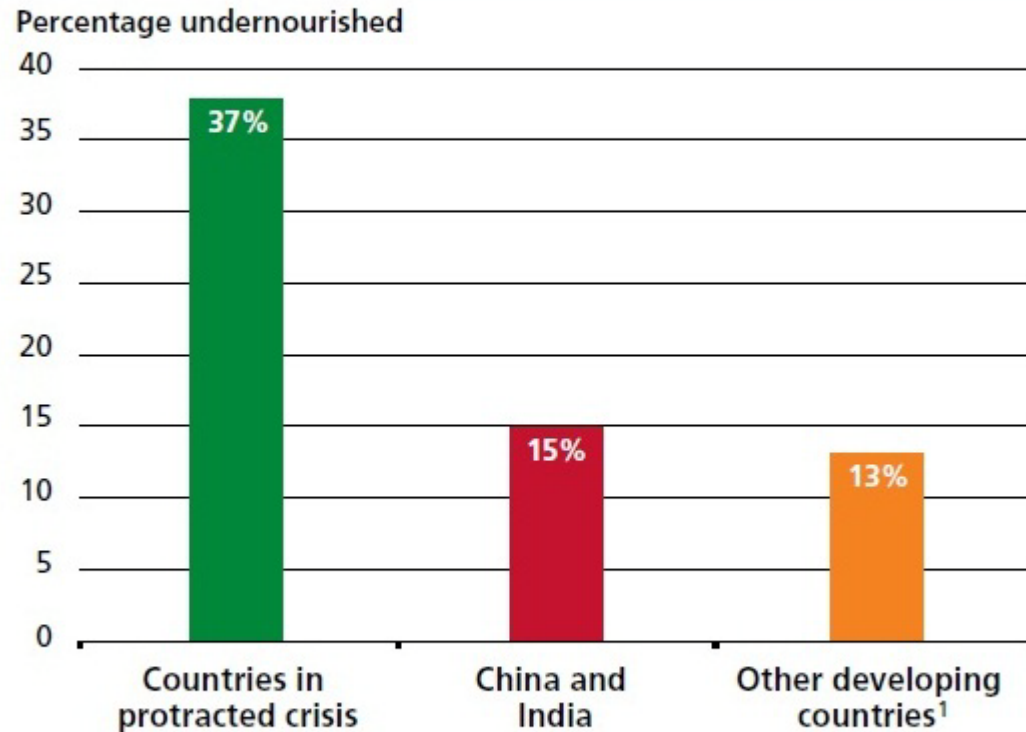
FAO estimates that globally 925 million people are undernourished in 2010. While this figure marks an improvement compared to 2009, it remains unacceptably high.

Most of the world's hungry live in developing countries, where they account for 16 percent of the population. The region with most undernourished people continues to be Asia and the Pacific. The proportion of undernourished people remains highest in sub-Saharan Africa, at 30 percent in 2010.

The chart on the left shows where the world's hungry people live.

- [Policy brief](#)
- [More graphs](#)

The proportion of undernourished people is about three times as high in countries in protracted crisis as in other developing countries

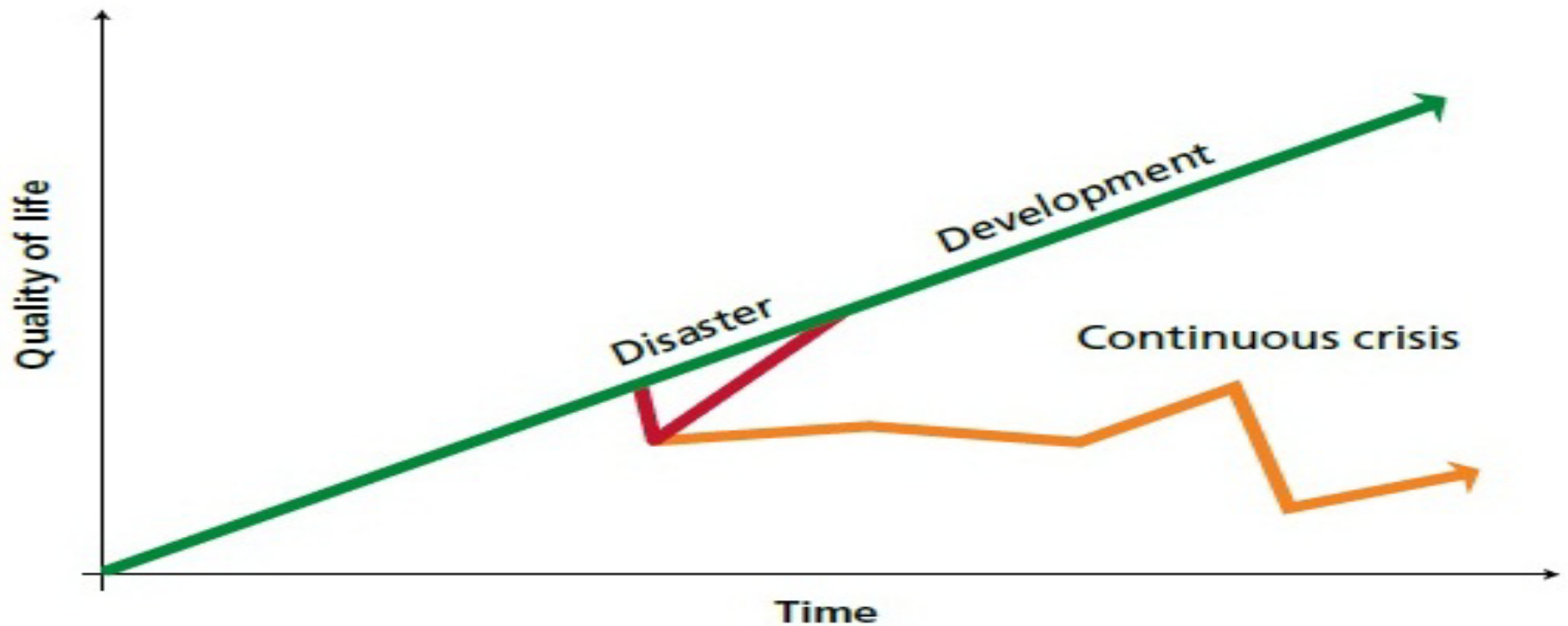


Note: Data are for 2005–07.

Source: FAO.

¹ Excluding countries in protracted crisis, China and India.

Protracted crises are fundamentally different from the model of acute disasters



Source: P. Walker. 2009. How to think about the future: history, climate change and conflict. Presentation to the Harvard Humanitarian Summit, Cambridge, September 2009.

8 Key messages on world hunger 2010 (FAO)

- **1. The number and the proportion of undernourished people have declined, but they remain unacceptably high.** Undernourishment remains higher than before the food and economic crises, making it ever more difficult to achieve international hunger targets.

Key messages on world hunger 2010

- **2 Countries in protracted crisis require special attention.** They are characterized by long-lasting or recurring crises and limited capacity to respond, exacerbating food insecurity problems.

Key messages on world hunger 2010

- **3 Improving food security in protracted crises requires going beyond short-term responses in order to protect and promote people's livelihoods over the longer term.** Appropriate responses must also recognize the different impacts of protracted crises on men and women.

Key messages on world hunger 2010

- **4 Supporting institutions is key to addressing protracted crises.** Local institutions, in particular, can help address food security problems in protracted crises, but they are often ignored by external actors.

Key messages on world hunger 2010

- **5 Agriculture and the rural economy are key sectors for supporting livelihoods in protracted crises, but they are not properly reflected in aid flows.** While agriculture accounts for a third of national income in countries in protracted crisis, the sector receives only 4 percent of humanitarian aid and 3 percent of development aid.

Key messages on world hunger 2010

- **6 The current aid architecture needs to be modified to better address both immediate needs and the structural causes of protracted crises.** Important areas of intervention (including social protection and risk reduction) are often underfunded.

Key messages on world hunger 2010

- **7 Food assistance helps build the basis for long-term food security, and is particularly important in countries in protracted crisis.** The use of a varied set of food assistance tools, complemented by innovations in how food is procured, will serve as a strong basis for food security in the longer term.

Key messages on world hunger 2010

- **8 Broader social protection measures help countries cope with protracted crises and lay the foundation for long-term recovery.** Key interventions include providing safety nets, insurance when appropriate, and services such as health and education.

Drivers of bioenergy

- Energy security, supported by technology
- Climate change
- Local environmental concerns
- Potential contribution to income of farmers

First-generation Biofuels and food

- Are biofuels taking away food from the poor?
- Are biofuels taking away land from food production?
- Are biofuels taking away water from food production?
- Are biofuels the rescue?

Emissions from agricultural sector

- Is the largest in non-energy sector, hence key to calculation of LCA required for sustainable biofuel
- Links of biofuels to food security need to be established and carefully assessed
- Avoid **Biofuels Paradox**: Costly biofuels for fuel supplement, costly food for poor and large carbon and ecological foot prints

E.g., Monocrop production leads to species erosion

- Concerns for ecosystems should be raised in raw material supply management
- Maximum yield requires monocropping and intensive use of new inputs, and **land suitability** is crucial in terms of natural resources management– which is key to get benefits of avoided emissions from biofuels

Bioenergy: entry points

- Relative high price of oil provides a good entry point for bioenergy, but with conducive environments
- Yet, bioenergy is taking a relatively insignificant ratio of total energy supply– due to prevalence of distortions
- This trend could be as promising as the prices of energy are not distorted
- And, management of bioenergy production does not create food/fuel trade offs– and needs to be sustainable

Discussion points

- Technology needs to be sustainable, and South-South model should be more vigorously promoted
- Technology Need Assessment (TNA) is necessary condition for effective transfer
- Planning and policy formulation needs to see the linkages between food, energy and ecosystems health, and make sure that they are translated into a holistic package of policy intervention
- E.g., bioethanol from cassava fresh roots as risks are identified from upland cultivation

More discussion points

- How to manage trade-offs
- What could be the role of international cooperation to promote biofuels?
 - Simplify trade rules?
 - Allow green subsidies?
 - Promote 2nd generation biofuels through IPR waivers?
 - How could tech transfer in UNFCCC promote this? Role of transitional committee in this matter?
 - Synergy between CBD-UNFCCC-WSSD?

Tools 1

- Biofuel tax reduction to promote use (besides policy to mandate it)
- Mandatory blending/ consumption
- Price support for producers
- Producer payment and tax credit to producers
- Investment incentives: loan guarantee, tax holiday
- Producer subsidy and import tariff

Tools 2

- R&D; standards and labeling
- Cross subsidies, taxing fossil to finance biofuels
- Policy integration, ensuring that impacts across sectors are assessed and considered
- Avoided emissions could be calculated, and factored in to lower cost of biofuels adoption

Applications of tools

- Critically depends on the level of institutional development and capacity
- Capacity of tools to address intended policy targets (e.g., biofuels/ food security/ ecosystem health)

Thank you for your attention

