



Global Food Security: COVID -19 and Beyond

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Outline of the presentation

- Global Food security – Definitions and concepts
- Pre COVID-19 situation
- COVID-19 and Post- COVID-19 Scenarios
- Analysis of food security under Food System Approach
- Country level case studies for the Course

Evolution of the Concept of Food Security

- I. World Food Conference 1974: Food security focused on food availability
- II. World Food Summit 1996: Food security focused on Availability, Access, Utilization, and Quality of food (WFP, 1996)
- III. Food crisis of 2007-2008: Food security also focused on stability of food availability and prices
- IV. Resilience of the food systems (Babu and Blom, 2014)

Food Security as a Human Right

At United Nations General Assembly in 1966, it was defined and formalized the right to food as a basic human right.

States have the obligation to provide assistance for members of society unable to meet their food needs through their own efforts.

India's Food Security Bill

Government of India passed the National **Food Security** Act in September 2013 to address food insecurity in the country. The bill provides subsidized **food** grains to approximately two thirds of **India's** 1.2 billion people

Food Security: How is it defined?

Food security exists when all people, at all times, have physical and economic access to:

- Sufficient food
- Safe food, and
- Nutritious food

to meet their dietary needs and food preferences for an active and healthy life

(FAO, 1996)

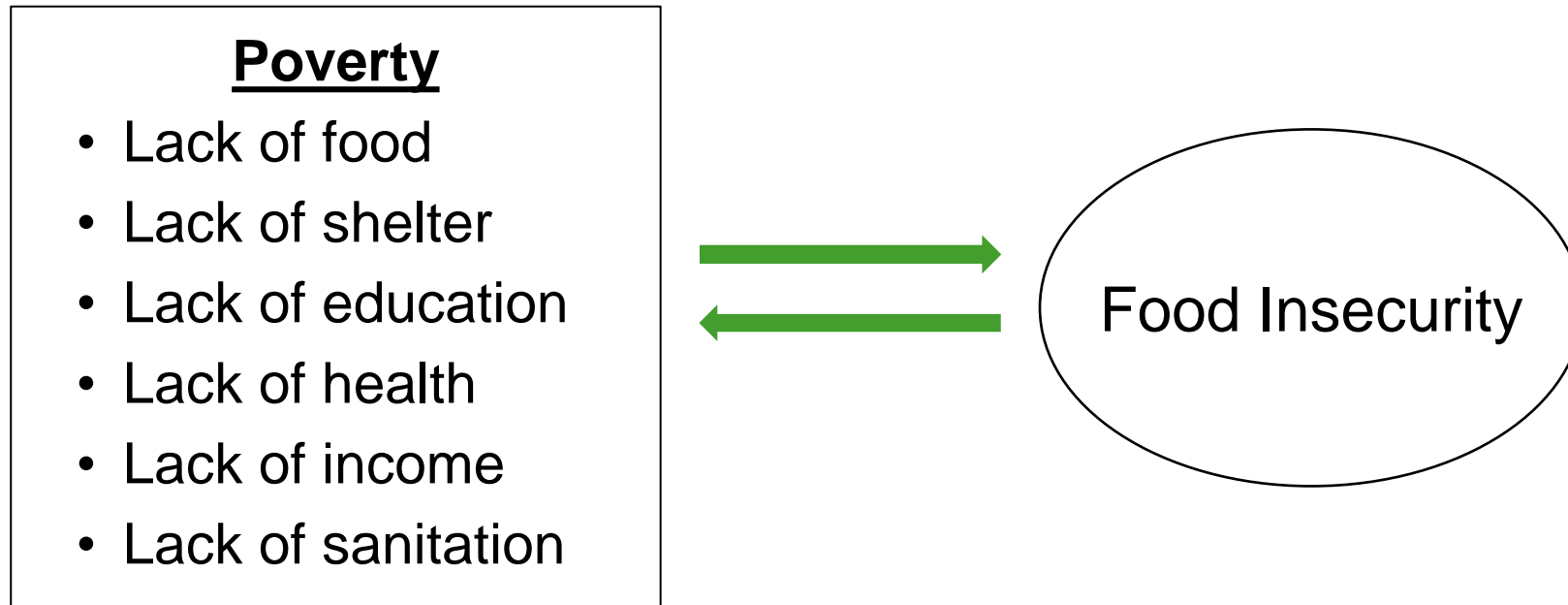
Five Aspects of Food Security

- I. **Availability:** Production + Imports + Stock Change + Food Aid
- II. **Access:** Own production + Cash income + In-kind-transfers of food
- III. **Quality of the diet:** Consumption of calories + proteins + micronutrients in proper balance
- IV. **Utilization:** Safe and nutritious food can be utilized
- V. **Stability:** Food is available at all times for all people

Challenges to achieving food security are large and complex

- Changing population and demographics
- Income growth, rising demand, and diet changes
- Natural resource constraints
- High and volatile food and energy prices
- Higher frequency and intensity of extreme weather events
- Climate change and resilient food systems

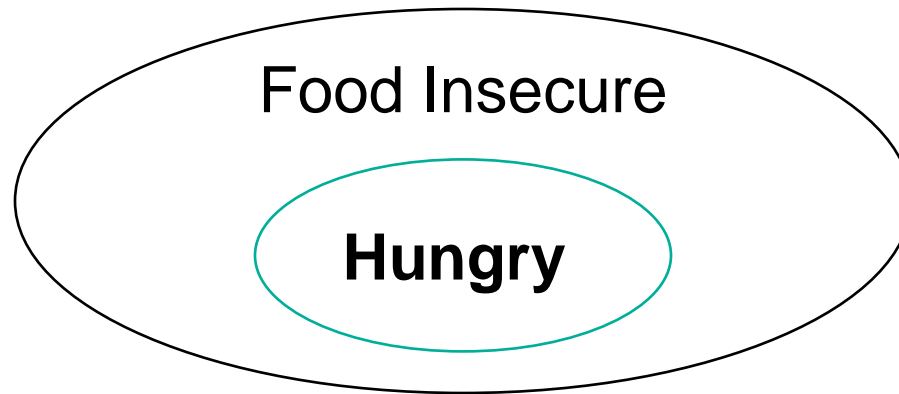
Food Insecurity as a Symptom of Poverty



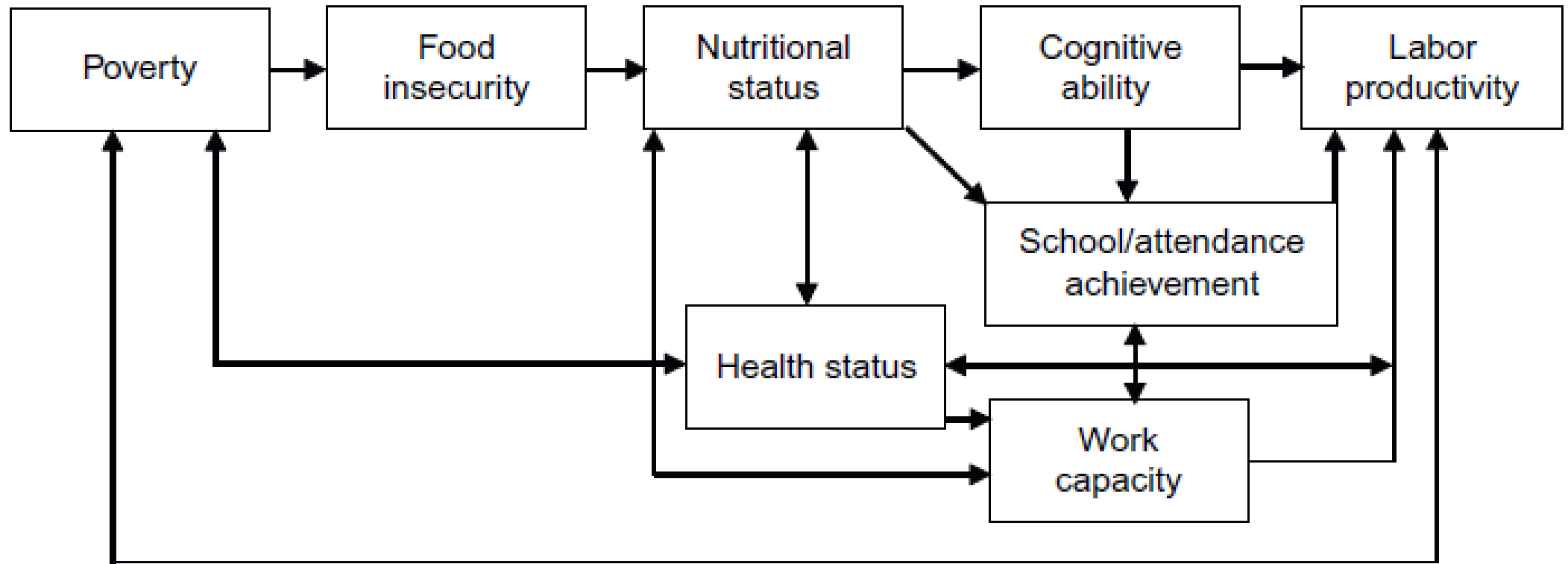
Food Security and Hunger

Hunger: lack of food intake necessary to provide energy and nutrients for fully productive and healthy lives.

Hunger is an outcome of food insecurity



Interconnectedness of poverty, food security, and nutrition



Source: Babu et al, 2017

International Commitment to end hunger: MDGs

Goal: “Eradicate extreme poverty and hunger”

Target for 2015: to halve the number of those who suffer from hunger by 2015

In 1990 about 800 million people were hungry. Therefore by 2015 no more than 400 million should be hungry



Where do we stand now?

FAO Hunger Map 2015

Millennium Development Goal 1 and World Food Summit Hunger Targets

Produced by the FAO Statistics Division
For additional information: <http://www.fao.org/econcomities>

1 About 793 million people in the world still lack sufficient food for conducting an active and healthy life.

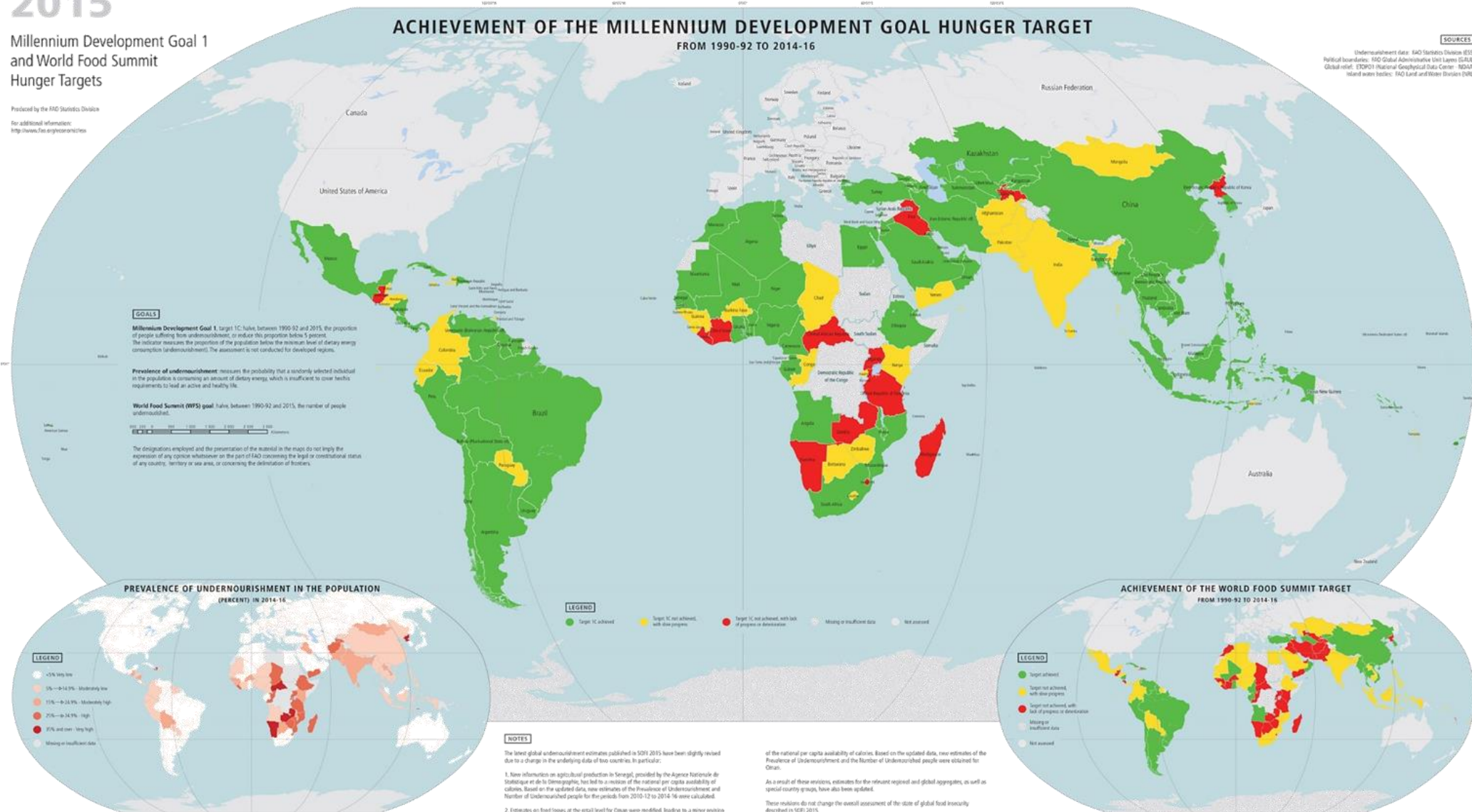
2 Yet progress has been made, even in the presence of significant population growth. Approximately 218 million fewer people suffer from undernourishment than 25 years ago and 169 million fewer than a decade ago.

3 The year 2015 marks the end of the monitoring period for the Millennium Development Goal targets. Seventy-three out of 129 developing countries – more than half the countries monitored – have reached the MDG 1C hunger target of halving the proportion of the chronically undernourished.

4 In developing regions the target was almost achieved, with the share of undernourished having decreased during the monitoring period from 23.3 to 12.9 percent.

5 Some regions, such as Latin America, the east and southeastern regions of Asia, the Caucasus and Central Asia, and the northern and western regions of Africa, have made fast progress. Progress was also recorded in southern Asia, Oceania, the Caribbean and southern and eastern Africa, but at too slow a pace to reach the MDG 1C target.

6 In many countries that have failed to reach the international hunger targets, natural and human-induced disasters or political instability have resulted in protracted crises, with increased vulnerability and food insecurity among large segments of the population.



Sustainable Development Goals for 2030

Focus of SGDs on Food Security

1 NO POVERTY

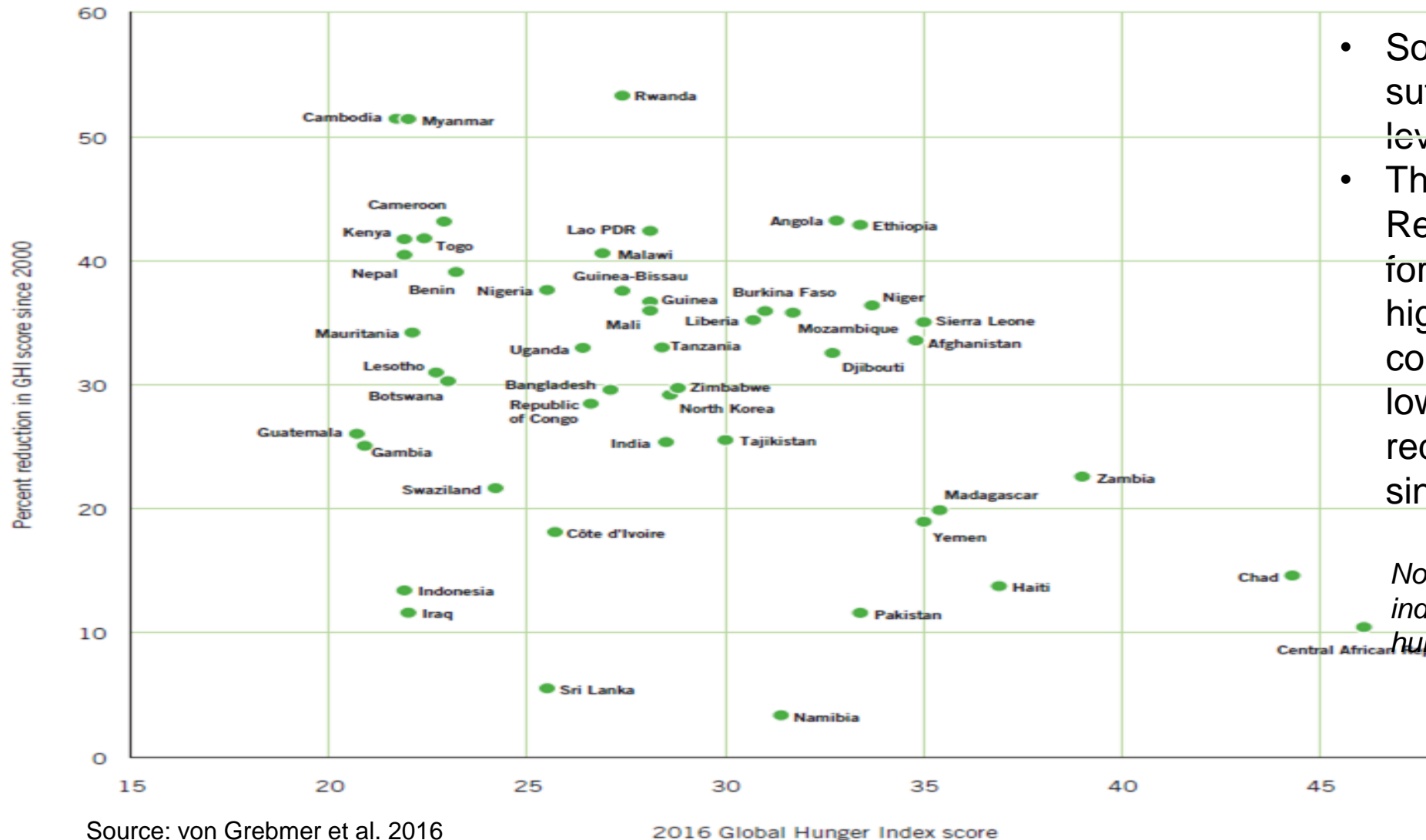
2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

<p>1 NO POVERTY</p>	<p>2 NO HUNGER</p>	<p>3 GOOD HEALTH</p>	<p>4 QUALITY EDUCATION</p>	<p>5 GENDER EQUALITY</p>	<p>6 CLEAN WATER AND SANITATION</p>
<p>7 RENEWABLE ENERGY</p>	<p>8 GOOD JOBS AND ECONOMIC GROWTH</p>	<p>9 INNOVATION AND INFRASTRUCTURE</p>	<p>10 REDUCED INEQUALITIES</p>	<p>11 SUSTAINABLE CITIES AND COMMUNITIES</p>	<p>12 RESPONSIBLE CONSUMPTION</p>
<p>13 CLIMATE ACTION</p>	<p>14 LIFE BELOW WATER</p>	<p>15 LIFE ON LAND</p>	<p>16 PEACE AND JUSTICE</p>	<p>17 PARTNERSHIPS FOR THE GOALS</p>	<p>THE GLOBAL GOALS For Sustainable Development</p>

Source: United Nations, 2015

Food security is a major issue for many countries across the globe...



- Some countries still suffer from alarming levels of hunger
- The Central African Republic and Chad, for example, have the highest GHI scores coupled with relatively low percentage reductions in hunger since 2000

Note: An increase in GHI indicates worsening of the hunger situation

Measuring Food Insecurity

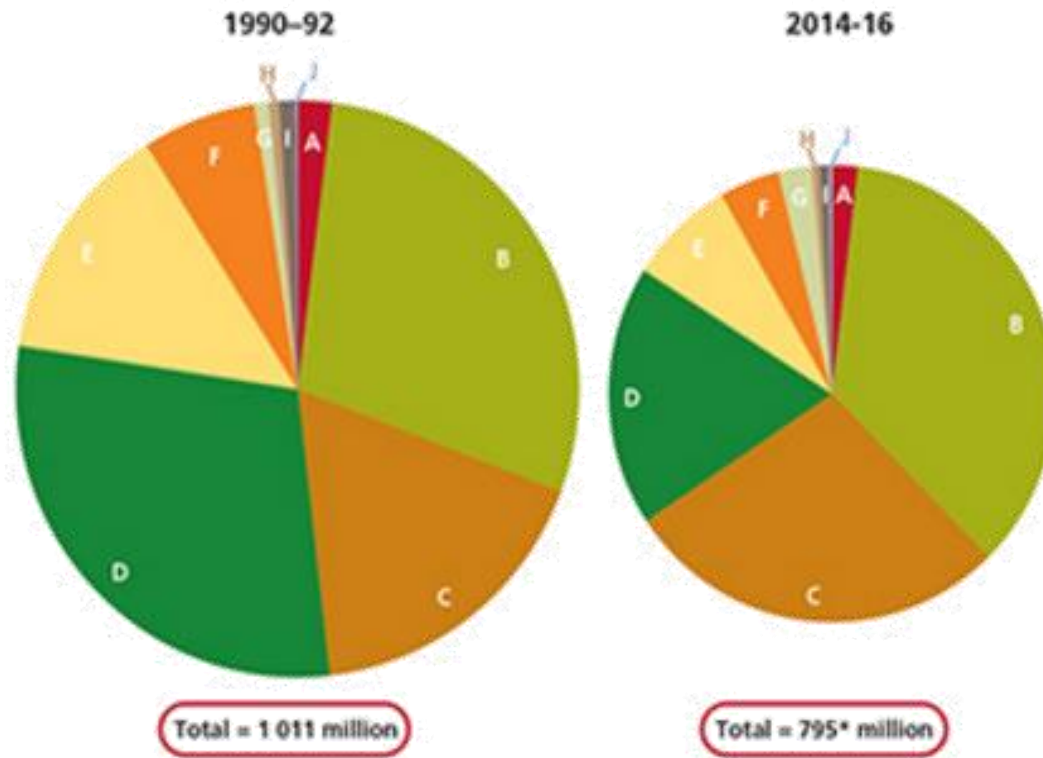
Most widely used indicator is **Chronic Undernourishment** developed by FAO

The indicator uses 3 statistics:

1. Daily per capita dietary energy supply: the energy (in kilocalories) available for human consumption per day from the food supply, divided by the population.
2. Coefficient of variation in dietary energy consumption: an estimate of the variability in dietary energy intake across a country's population.
3. Minimum daily per capita dietary energy requirement: a cut-off point below which the average person in the country would not be meeting his or her minimum daily dietary energy requirements.

Regional Variation in Food Insecurity

Changing distribution of food insecure population



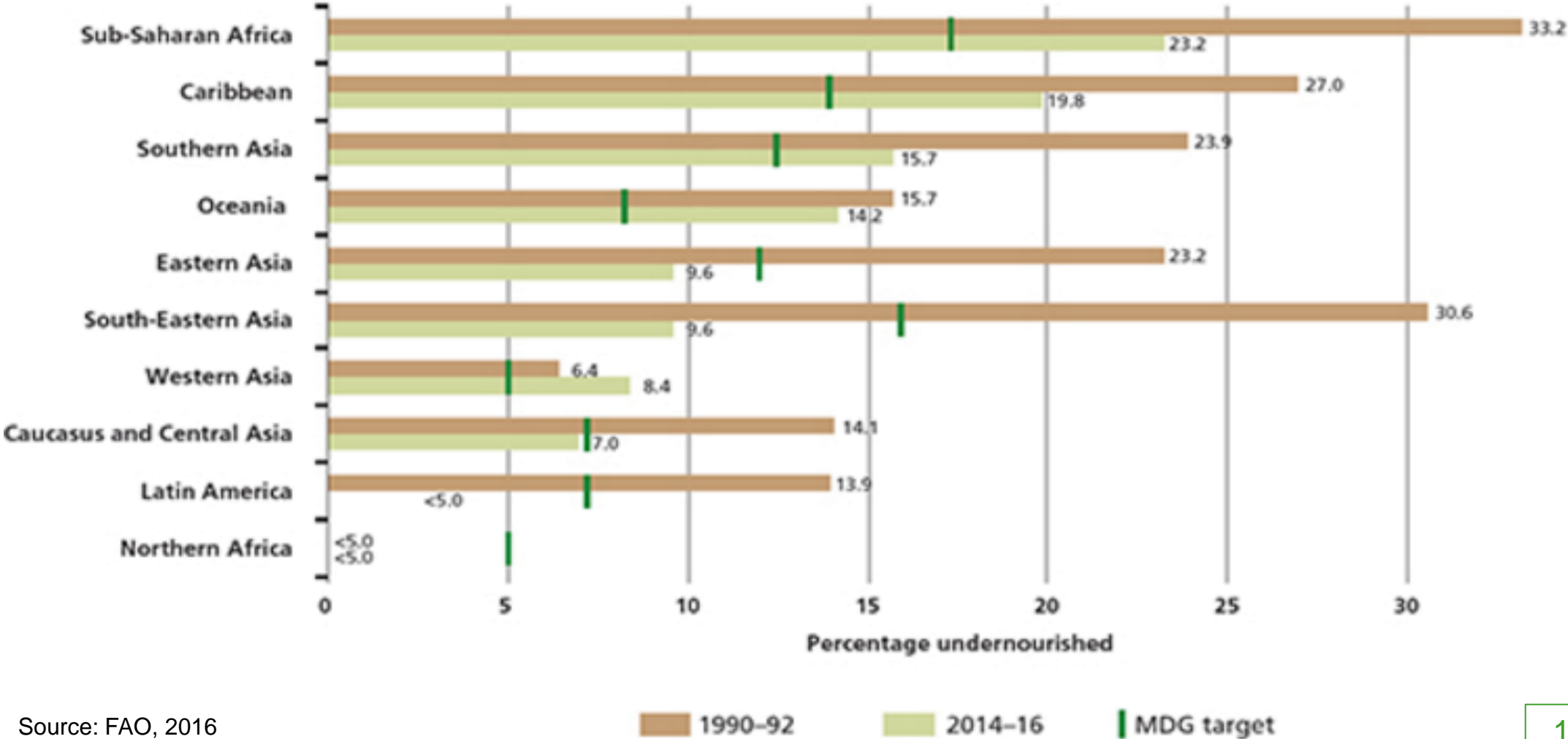
	Number (millions)		Regional share (%)	
	1990-92	2014-16	1990-92	2014-16
A Developed regions	20	15	2.0	1.8
B Southern Asia	291	281	28.8	35.4
C Sub-Saharan Africa	176	220	17.4	27.7
D Eastern Asia	295	145	29.2	18.3
E South-Eastern Asia	138	61	13.6	7.6
F Latin America and the Caribbean	66	34	6.5	4.3
G Western Asia	8	19	0.8	2.4
H Northern Africa	6	4	0.6	0.5
I Caucasus and Central Asia	10	6	0.9	0.7
J Oceania	1	1	0.1	0.2
Total	1 011	795*	100	100

Notes: The areas of the pie charts are proportional to the total number of undernourished in each period. Data for 2014-16 refer to provisional estimates. All figures are rounded

*Includes data for Sudan, which are not included in the figure for sub-Saharan Africa, following the partition of the country when South Sudan became an independent state in 2011

Where are the food insecure?

Undernourishment trends: progress made in almost all regions, but at very different rates

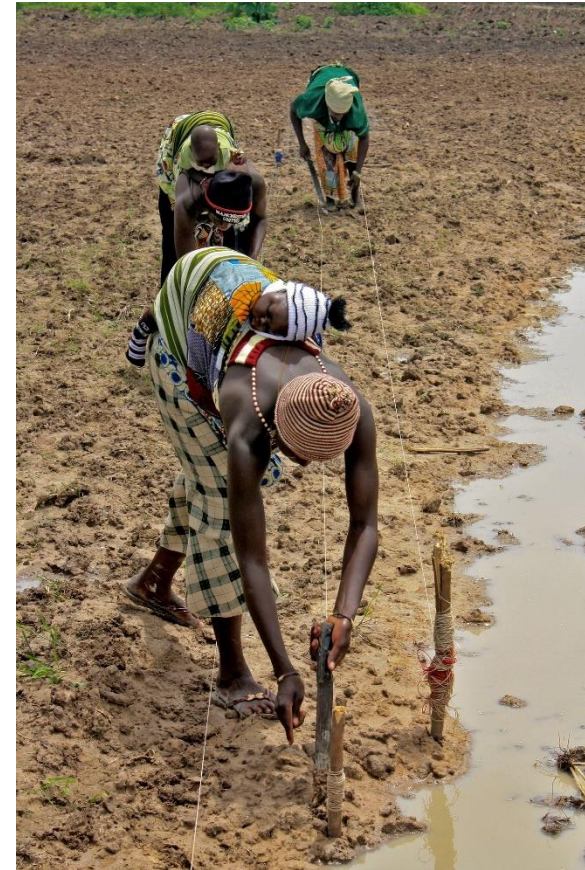


Source: FAO, 2016



Challenges to Food Insecurity

- Food Production and Price Risks
- Natural Disasters
- Conflict
- Natural Resources Degradation
- Food security and health



Food Production and Price Risks

What are the key issues?

- Land and labor productivity is low
- Farmers are risk averse and do not adopt modern technologies
- In some countries farmers are moving back to using traditional technology

What do we need?

- Mechanisms for reducing risks
- Building resilience of food production systems

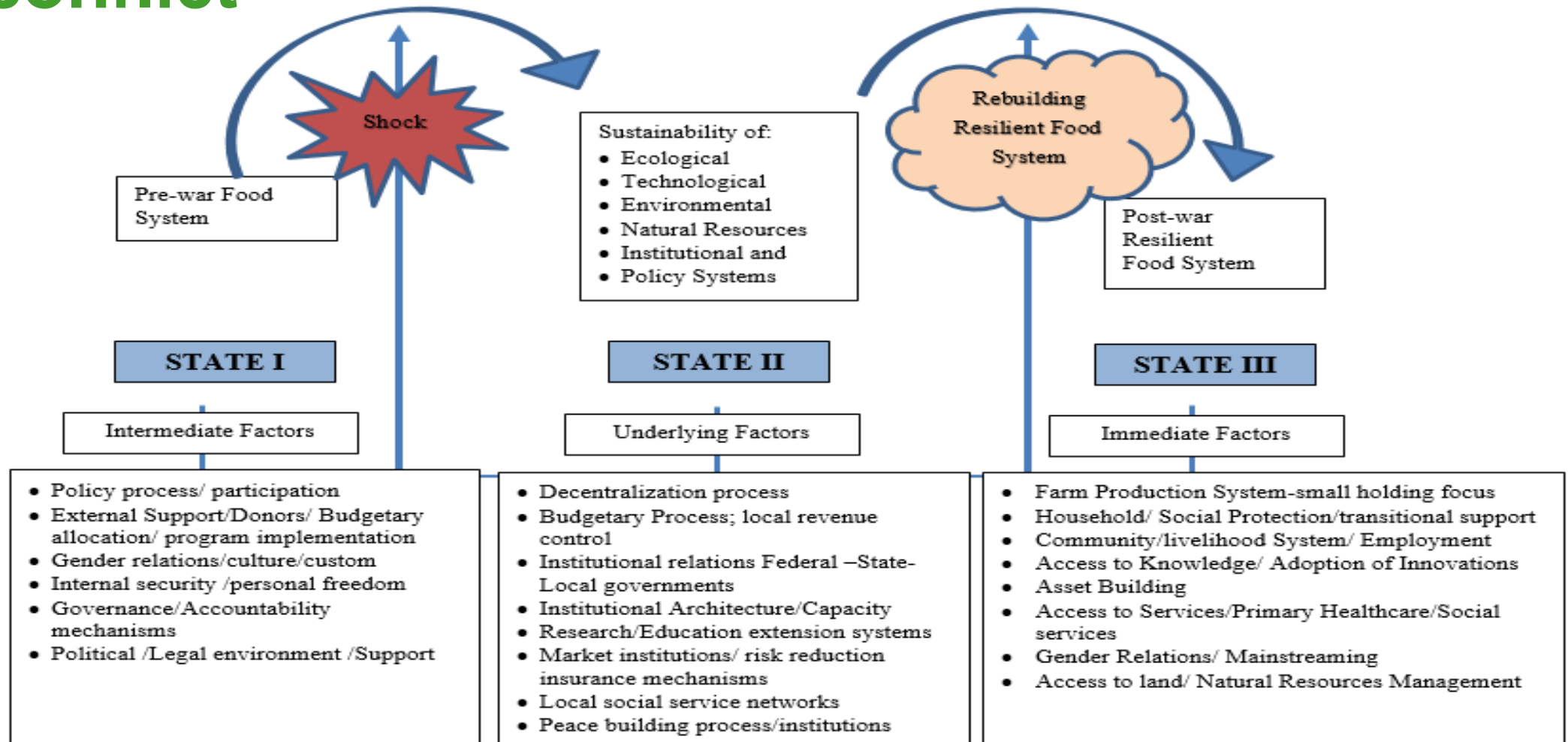
Natural Disasters and Food Security

- Mainly droughts and floods affect food security
- These emergencies overwhelm local capacity and require national or international external assistance.
- International assistance in the form of food aid plays a crucial role in restoring food security
- Building resilience to natural disasters is important

Conflict and Food Security

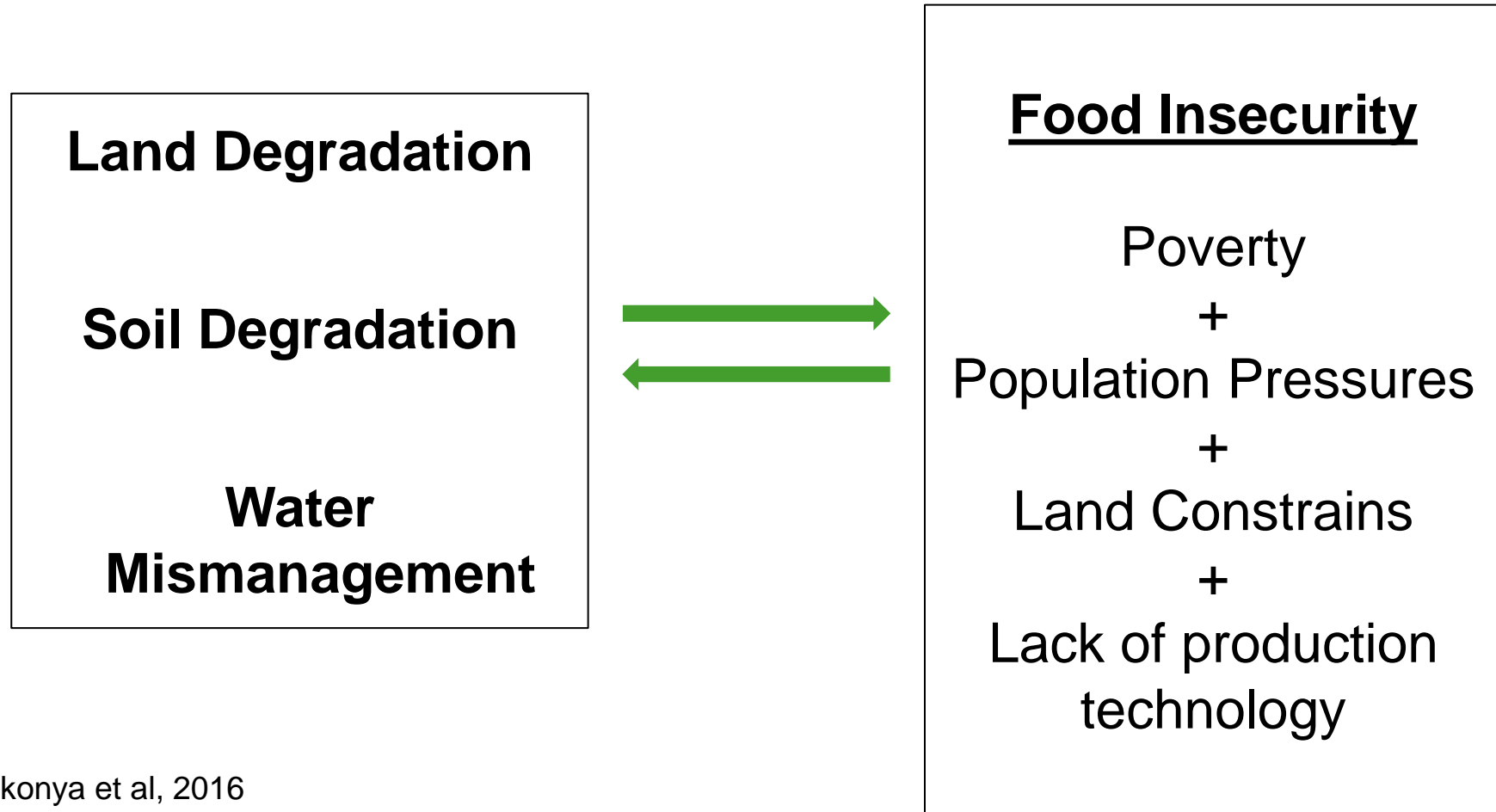
- High correlation between conflict and food insecurity
- Civil war lowers GDP by 2.2% per year (World Bank, 2012)
- Military spending at expense of agriculture and rural development, health, education, food and nutrition
- Displacement of people increases food insecurity

Building a resilient food system under conflict



Adapted from Babu and Blom (2014)

Natural Resources Degradation and Food Security



Source: Nkonya et al, 2016

Food Security and Health

What are the key issues?

- Food insecurity is a major cause of health issues in developing countries
- Agriculture dependent developing country population is the most vulnerable to health issues

What are the consequences?

- Reduces agriculture workforce
- Diverts income from food to health related expenses
- Erosion of agricultural knowledge

COVID-19 and Post- COVID-19 Scenarios

- All countries affected by COVID-19 implement social distancing measures covering on average 40% to 50% of the population for between 2 and 3 months.
- While the agriculture and food sectors have been identified as essential in most countries, we also assume some supply disruption caused by reduced labor mobility (for example, for seasonal migrant labor) and further, that perishable farm products suffer greater postharvest losses of 5% due to logistics problems and demand fallout

- Source: Swinnen and McDermott, 2020. COVID-19 GLOBAL FOOD SECURITY, IFPRI

COVID-19 and Post- COVID-19 Scenarios

- International travel is essentially shut down, closing many tourism-related activities.
- Social distancing measures allow only essential work, such as food production and distribution, under normal conditions. We assume further that, on average, one-third of skilled workers can continue to work effectively via various forms of telecommuting.
- The containment measures cause bottlenecks and delays in international transport, pushing up freight costs by 3%.
- Source: Swinnen and McDermott, 2020. COVID-19 GLOBAL FOOD SECURITY, IFPRI

COVID-impact of Supply Chains

- Direct impacts will overwhelmingly be felt post-farm. Namely, in the “midstream” (e.g., wholesale, logistics, and processing) and “downstream,” in food-service enterprises.
- The impacts are likely to be largest in dense urban and rural peri-urban areas. Given the properties of the novel coronavirus, which is transmitted most easily via human contact, greater population densities tend to facilitate its spread.
- Effects will be strongest in the downstream segments of retail and food service.
- Retail and food service firms in modern FSCs face fewer problems. They are far less vulnerable to mandatory business closures, and also face a lower risk of clients and employees contracting the disease.
- Direct impacts on farm populations and farm production will be much smaller than on the FSC downstream and midstream.
- Source: Swinnen and McDermott, 2020. COVID-19 GLOBAL FOOD SECURITY, IFPRI

COVID-19 Responses by the Government

- Restrictions on population movements - Travel bans, curfews, lockdowns at home, bans on gatherings, public transport limited, schools and religious institutions shut
- Business policies - Restrictions on formal and informal markets, bans on street vending, closures of restaurants, restrictions on mining, restrictions on manufacturing, restrictions on agricultural activities, restrictions on tourism sector
- Health-specific policies - Increased spending on health system, importation of test kits, drugs, ventilators, creation of new facilities for testing, increased hiring of healthcare workers
- Social protection interventions - Food aid, expanded cash transfer/unemployment programs, food subsidies, expanded credit options, wage support, mandated grace period of utility bill payments, mandated grace period of rental payments
- Broad fiscal policies - Nonfood price controls, support for private companies, VAT waivers for businesses, reduction of consumer taxes (e.g., sales/VAT)
- Source: Swinnen and McDermott, 2020. COVID-19 GLOBAL FOOD SECURITY, IFPRI

COVID -19 Responses

- Farm fiscal policies - Food price controls through procurement, food price controls through regulation, farm input subsidies, targeted rural income support
- Trade policies - Export bans, export quotas, import tariffs, quantitative restrictions, quality controls
- Monetary & financial policies - Exchange rate shifts, lowered interest rates, debt restructuring
- Governance restrictions - Postponement of elections, state of emergency, limiting access to information, bans on political rallies, restrictions on social media platforms
- Source: Swinnen and McDermott, 2020. COVID-19 GLOBAL FOOD SECURITY, IFPRI

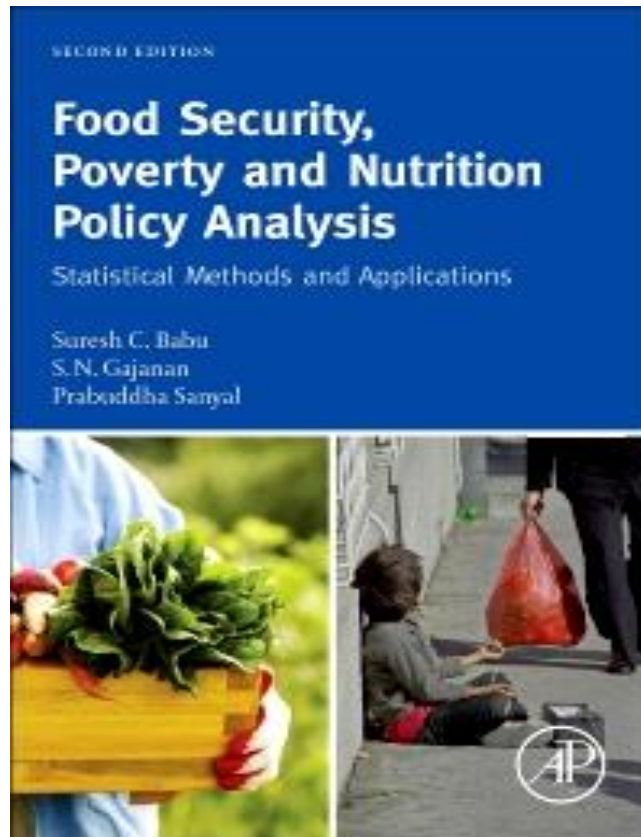
COVID -19 Responses

- Price responses - Major price shifts that may occur as markets adjust to domestic and external policy changes
 - Citizen reactions - Protests/riots, non-compliance with population restriction measures, violent treatment of healthcare workers, destruction of health infrastructure
 - Institutional coordination - Government actors and agencies that are tasked with overseeing COVID-19 responses
 - Foreign aid - Donor commitments and actual disbursements specifically in response to COVID-19
- Source: Swinnen and McDermott, 2020. COVID-19 GLOBAL FOOD SECURITY, IFPRI

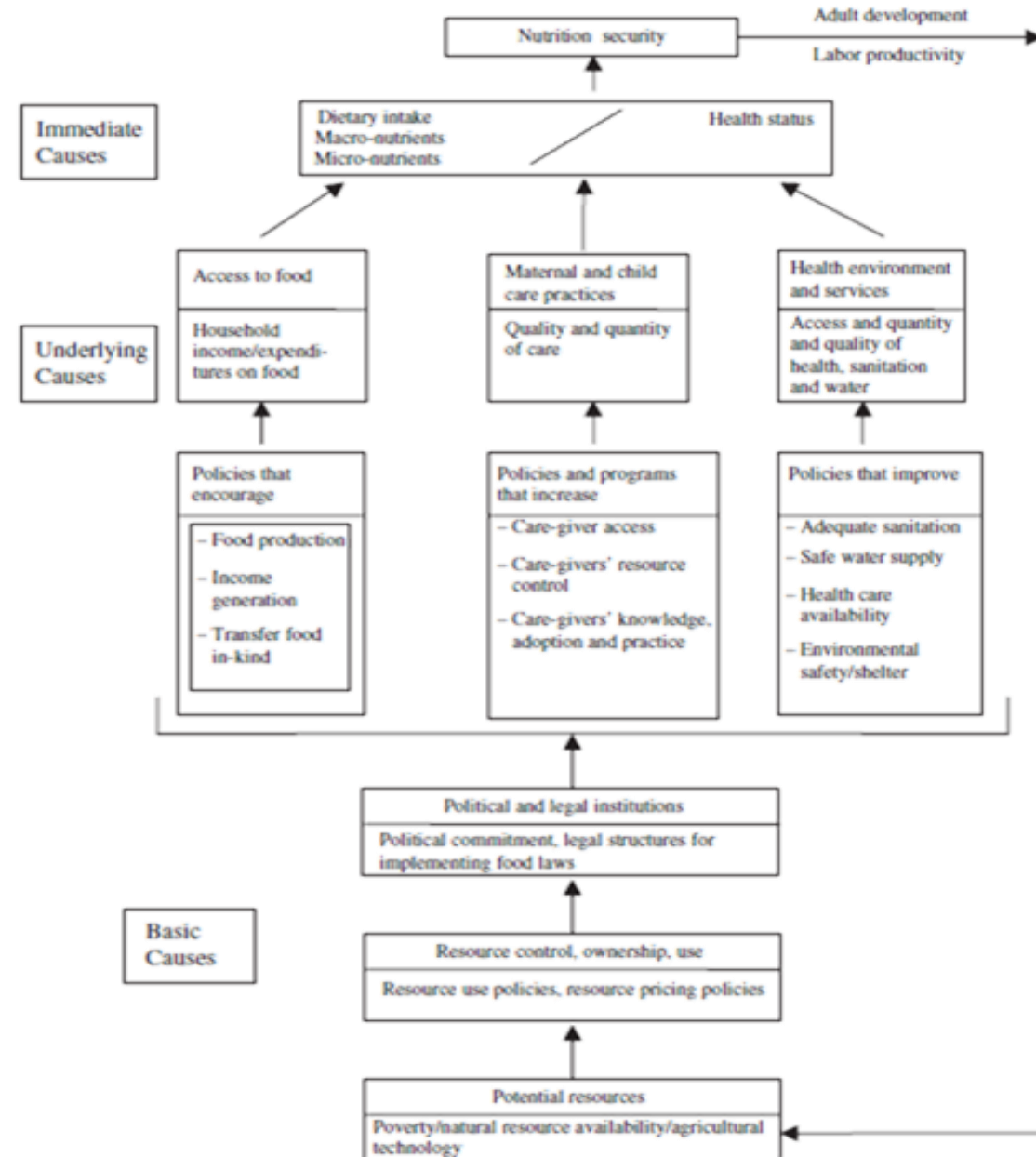
Policies to Improve Food Security

- Investing in human resources
- Improving access to productive resources and remunerative employment
- Good governance
- Improving markets, infrastructure and institutions
- Sound national trade and macroeconomic policies
- Expanding appropriate research, knowledge, and technology

Food Security and Nutrition



Babu, S., Gajanan, S.N. and Sanyal, P., 2014. *Food security, poverty and nutrition policy analysis: statistical methods and applications*. Academic Press.



Food Security Problems and Solutions – India Case Study

Modified based on: Rob Driscoll and Michelle Nelson



Country Profile

Location: South Asia

- shares borders with Pakistan, China, Nepal, Bhutan and Bangladesh
- on Arabian Sea & Bay of Bengal

Area:

-3,287,263 sq km

Climate:

- North:** Temperate
- South:** Tropical monsoon

Agricultural products: rice, wheat, oilseed, cotton, jute, tea, sugarcane, potatoes, onions, dairy products, sheep, goats, poultry, fish.



Natural hazards:

droughts, flashfloods, severe thunderstorms, earthquakes.

Country Profile

Population: 1,156,897,766
(July 2009 est.): Rural: approx. 70%

Population growth rate: 1.548%
(July 2009, est.)

Labor Force by Occupation (2003):

- 60% Agriculture
- 28% Services
- 12% Industry

Infrastructure (2000):

- 44% of rural hhs have access to electricity
- 40% of rural villages lack access to all-weather roads



Education:

- Total literacy rate: 66% (2008)
- Women's literacy rate: 54% (2001)

Food security challenge

Smallholder farmer: one that has < 2 hectares of land

Major food crops; rice and wheat – meat, milk, and fish increasing

High-value food commodities: vegetables, poultry, fish products, fruits, milk, meat, and eggs.

Policy challenge:

Malnutrition is high

Global Hunger Index is high

Many barriers exist for smallholder farmers to enter into production of high-value commodities.



Stakeholders to Increase food Security

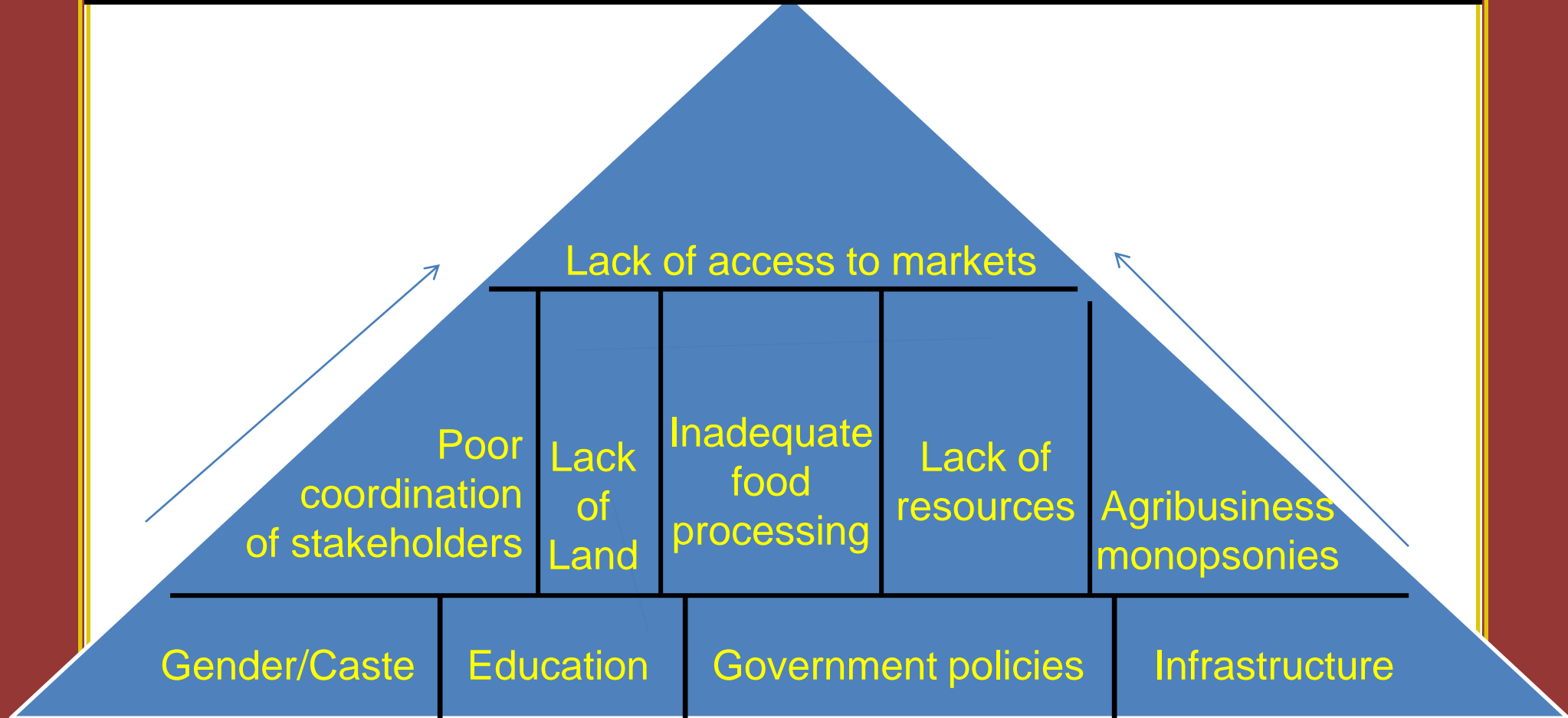
- **Government of India (state and national)**
- **Producers**
- **consumers**
- **Civil society organizations**
- **International buyers**
- **markets**
- **Agribusiness firms**
- **Agricultural research institutes**

High-value commodities

- In 2003, high-value food commodity exports accounted for 35% of total agricultural exports...
 - Fish/ fish products (50%)
 - Fruits and vegetables (35%)
- Contributes nearly half of agricultural income
- Significant female involvement in production of high-value foods
- Food processing industry is underdeveloped, lacking investment
 - Fruits & veg (2.2%), poultry (6%), fish & buffalo meat (21% each), milk (35%) (GOI 2005). Issue—these foods are perishable!
- Agriculture in India is state regulated
 - **Model Agricultural Marketing Act** (2003) allows agribusiness and marketing firms to source raw materials from farmers through contracts or other arrangements
 - easier with large producers



Reasons for smallholders' exclusion from markets



Given the policy challenge...

What would be the advantages/disadvantages of:

- cooperatives,
- producers' associations and/or
- contract farming?

What government policies and other conditions would be required for the success of these institutions?

- social, economic, political & legal aspects

Policy Recommendations

Institutional

1. Strengthen court systems to address issues of discrimination against women and lower-caste members and unscrupulous agribusiness practices
2. Formation of new producers' associations and strengthening of current ones
3. Build up the capacity of the government to enforce contracts

Policy

4. Investments in infrastructure (roads, electricity, & communication)

Technological and Human Capacity

5. Investments in vocational schools and research institutes – training programs for smallholder farmers in agricultural techniques
6. Trainings for illiterate farmers to understand contracts