



**Achieving the Millennium Development
Goals in South Asia
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Defining and Measuring Food Security

- Food security concept considerably evolved over time. Approximately 200 definitions and 450 indicators available in the literature (Hoddinott, 1999; Chung *et al.*, 1997).
- The widely used definition of food security is: “Year-round access to the amount and variety of safe foods required by all household members in order to lead active and healthy lives, without undue risk of losing such access”. By this definition, perhaps no country anywhere in the world is food secure.
- The generally accepted definition of food security is “access of all people at all times to the food needed for healthy life”.
- Dimensions of food security issue (Stamoulis and Zezza, 2003)
 - **Food availability** --- sufficient (domestic production \pm trade), good quality. Availability of food is determined by domestic production, import capacity, existence of food stocks and food aid.
 - **Food access** --- adequate access on the part of individuals. Access to food depends on levels of poverty, purchasing power of households, prices and the existence of transport and market infrastructure and food distribution systems.
 - **Stability/sustainability of access** --- Stability of supply and access may be affected by weather, price fluctuations, human-induced disasters and a variety of political and economic factors.
 - **Food Utilization** --- meeting nutritional requirements, healthy diet. Safe and healthy food utilization depends on care and feeding, food safety and quality, access to clean water, health and sanitation.

Importance of Food Security

- Importance of food security is growing over time in the world
 - **Food security and economic growth** mutually interact in **reinforcing** manner in the development process
 - **Reducing hunger and food security** are essential for national and international development
 - **Population increase** will be more pronounced in **developing countries** than developed nations
 - **Agricultural policies** affects **food security** directly and indirectly
 - **Agri. growth** may not always generate strong impacts on **poverty & food security**. But still it is only major source in agro-based developing countries
 - **Majority of population** live in rural areas
 - **Urban food security** will be more important in future due to more rapid expansion of cities

Per Capita Daily Consumption versus Production of Total Food in Rural Pakistan

	Punjab	Sindh	NWFP	Balochistan	Northern Areas	AJK	FATA	Total
Extreme deficit	3	2	17	12	4	7	7	52
High deficit	1	1	3	5	-	-	-	10
Low deficit	3	1	3	4	1	-	-	12
Sufficient prod.	6	2	1	3	-	-	-	12
Surplus Prod.	21	11	-	2	-	-	-	34
Total	34	17	24	26	5	7	7	120

Source: World Food Program of UN and SDPI, 2003

Per Capita Daily Consumption versus Production of Cereals in Rural Pakistan

	Punjab	Sindh	NWFP	Balochistan	Northern Areas	AJK	FATA	Total
Extreme deficit	1	2	4	12	1	6	5	31
High deficit	2	1	9	4	3	1	1	21
Low deficit	1	1	10	3	-	-	1	16
Sufficient production	7	8	1	4	1	-	-	21
Surplus Production	23	5	-	3	-	-	-	31
Total	34	17	24	26	5	7	7	120

Source: World Food Program of UN and SDPI, 2003

Per Capita Daily Consumption versus Production of Wheat in Rural Pakistan

	Punjab	Sindh	NWFP	Balochistan	Northern Areas	AJK	FATA	Total
Extreme deficit	1	3	9	10	1	5	6	35
High deficit	1	2	8	3	3	2	-	19
Low deficit	2	4	5	5	1	-	1	18
Sufficient production	10	2	2	5	-	-	-	19
Surplus Production	20	6	-	3	-	-	-	29
Total	34	17	24	26	5	7	7	120

Source: World Food Program of UN and SDPI, 2003

Per Capita Daily Consumption vs Production of Livestock Based Food in Rural Pakistan

	Punjab	Sindh	NWFP	Balochistan	Northern Areas	AJK	FATA	Total
Extreme deficit	1	-	-	5	-	-	7	13
High deficit	1	2	-	3	5	7	-	16
Low deficit	1	6	1	1	-	-	-	11
Sufficient production	21	7	5	4	-	-	-	37
Surplus Production	10	2	18	13	-	-	-	43
Total	34	17	24	26	5	7	7	120

Source: World Food Program of UN and SDPI, 2003

Factors Behind Food Insecurity

- Fluctuating wheat production, generally below the domestic needs dictates the food insecurity at national level
- Poor infrastructure --- inputs marketing (quality & timely availability)
- Highly imbalanced use of inputs particularly fertilizer
- Low genetic potential of varieties and slow varietal replacement
- Majority of farmers operate in low input-low output scenario
- High yield/productivity gaps
- No seed marketing system for pulses and fodder crops
- Governance issues in food procurement and distribution systems
- Resource poor farmers are unable to respond to food price hikes. Level playing field should be provided to these farmers in order to generate food surpluses from them
- Small and fragmented land holdings --- most of the food marketable surplus is generated by medium and large farmers
 - Less than 5 acres ---> 58% by pop. ----> cultivating 18% area (poor)
 - 5 to 12.5 acres ---> 28% by pop. ----> cultivating 30% area
 - Less than 12.5 acres represent 86% farmers cultivating 48% area
- Recent use of food items in fuel production (maize, sorghum) --- international scenario

Food Security Challenges

- World population will rise from 6.5 billion to 8.2 billion by 2030. Pakistan's population would be 230 to 260 million by that time (Vision 2030). Pakistan would be 5th largest country in the world.
- Pakistan agriculture need to provide healthy feed this population with some modest surpluses exports.
- Future food demands would be different from today, because of:
 - **Increased proportion of older people due to age longevity**
 - **Greater urbanization and big cities' emergence**
 - **Changes in family composition and structure**
 - **Changes in food consumption patterns and habits**
 - **Special types of foods required for Cardiac, Diabetic and Hepatitis patients**
- At present, our total production of wheat, rice, sugarcane, fruits, pulses, oilseeds, meats and milk falls at 21.8, 5.6, 62.5, 6.01, 1.1, 5.1, 2.75 and 37.1 million tons, respectively (Govt. of Pakistan, 2008).
- The corresponding production levels of these crops should increase to 30.0, 7.5, 63.4, 10.8, (pulses were ignored), 8.12, 4.2, and 52.2 million tons, respectively by 2015 (MTDF, 2005).
- The national production of these crops has to increase ranging from 1.4% in case of sugarcane to 79.7% in case of fruits and vegetables, emphasizing on high value agriculture in future.

Food Security Challenges

- The fact is that to achieve this substantial increase in crop productivity is to be targeted using lesser land and water resources than are available for agriculture today.
- *"Food security will be under threat not from too little production but from a growing challenge of higher demands, differing nutrition requirements, and of course degraded land. This will be met, first through science and technology for better management of water and land and other inputs, and secondly by a skilled population to manage the infrastructure" (Vision 2030, p. 8).*
- *"Given these targets in National Vision 2030 of Pakistan, one is not sure of achieving these individual milestones in the fast changing dynamic world, but one thing is to be believed that agriculture must maintain a growth rate of more than 5% in order to ensure a rapid growth of national income, attaining macroeconomic stability, effective employment of growing labor force, securing improvement in distributive justice and a reduction in rural poverty in Pakistan" (SSD, PARC, 2008).*

Sources of Food Secure Agricultural Growth

- Higher and more efficient use of conventional inputs for
 - making medium and large farmers more producer of marketed surplus of cash and exportable crops
 - Making small farmers an efficient producer of high value commodities along with producing food staples at subsistence levels
- Increase in total factor productivity by shifting production function
 - Promoting more applied agricultural research and technology transfer
 - Special concentration on comparative advantage areas for cheaper food produc.
 - Research efforts to increase productivity of food crops in Sindh, NWFP, Baloch.
 - Climate in technology generation --- favorable weather duration is narrowing
- Targeted transformations in the institutional setup to assist agriculture sector more effectively
 - Reforms in Agricultural Policy Institute and provincial departments of agricultural extension
 - Establishing Food and Nutritional Policy Research Institute (FNPRI)
 - Establishing a "National Commission on Farmers (NCF)"
- Infrastructure to support diversification and high value agriculture
- Promoting rural non-farm sector by imparting skills for successful migration and efficient contribution in diversification and high value agriculture → improved and diversified livelihood of rural AHH
- Changes in the policy focuses

Agricultural Policy for Food Security

- Policies that food supplies through changes in production technologies; increasing irrigation efficiencies and adoption of better water harvesting measures; improving natural resource management and their rehabilitation; and
- Improving access to food requires strengthening marketing and agribusiness, and investment in rural infrastructure
- Integrating food security and nutrition policy into rural development
- Policy of self-financing of food groups like pulses, cereal, hort. crop
- Regional food deficit issues need food management policy
- Due consideration of agriculture in following policies
 - **Public investment policies**
 - **Fiscal and financial/credit policies**
 - **Inputs price and supply policies**
 - **Food price and marketing policies**
 - **Technology development policies**
 - **Land development policies**
 - **Foreign exchange and trade policies**

AVAILABILITY AND ACCESS POSITION OF THE FOOD CROPS/COMMODITIES

WHEAT:	Production	=	24.000 million tonnes.
	Availability (Production + Carry over stock) =		24.876 million tonnes
	Domestic consumption	=	23.500 million tonnes
	Surplus	=	1.380 million tonnes
RICE:	Production	=	6.952 million tonnes
	Requirements	=	2.500 million tonnes
	Surplus	=	4.452 million tonnes
MAIZE :	Production	=	4.040 million tonnes
	Requirments	=	3.300 million tonnes
	Surplus	=	0.740 million tonnes
SUGAR :	Production	=	3.200 million tonnes
	Availability (production+carry over stock) =		4.399 million tonnes
	Requirements	=	4.300 million tonnes
	Shortfall	=	0.800 million tonnes
PULSES :			
Gram:	Production	=	760.0 thousand tonnes
	Requirements	=	600.0 thousand tonnes
	Surplus	=	160.0 thousand tonnes
Masur:	Production	=	21.1 thousand tonnes
	Requirements	=	50.0 thousand tonnes
	Shortfall	=	28.9 thousand tonnes
Mung:	Production	=	157.4 thousand tonnes
	Requirements	=	102.0 thousand tonnes
	Surplus	=	55.4 thousand tonnes
Mash:	Production	=	13.5 thousand tonnes
	Requirements	=	45.0 thousand tonnes
	Shortfall	=	31.5 thousand tonnes
EDIBLE OIL:	Production	=	0.833 million tonnes
	Requirements	=	3.056 million tonnes
	Shortfall	=	2.223 million tonnes

Increasing Agricultural Productivity

Yield gap can be bridged by following measures:

- **Enhancing Certified Seed Coverage**
- **Balanced Fertilizer Use**
- **Promotion of Farm Mechanization**
- **Improving Water Use Efficiency**
- **Effective Extension Service**

Agriculture Sector Targets – 2015

Annual Growth :	4–5 %
➤ <u>Crops</u>	4%
➤ <u>Cotton</u>	5.3 % (20.7 m bales)
➤ <u>Wheat</u>	3.5% (30 m tons)
➤ <u>Rice</u>	3.4 % (7.5 m tons)
➤ <u>Horticulture</u>	8%
➤ <u>Livestock</u>	6.5%
- <u>Milk</u>	8%
- <u>Meat</u>	5%
➤ <u>Fisheries</u>	4.8%