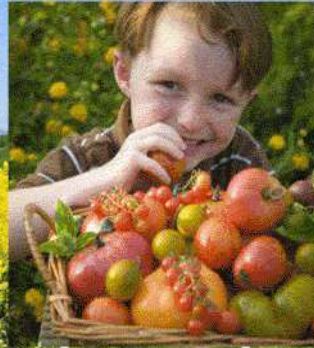


Growing a 21st Century



Agricultural REVOLUTION

Collaborating across boundaries for sustainability.

THE HISTORY OF AGRICULTURE REVOLUTIONS

An **agricultural revolution** is a period of transition from the pre-agricultural into an agricultural period characterized by a diet of cultivated foods resulting into a transition from a more advanced living and more productive form of agriculture.

- The **Neolithic Revolution** (around 10,000 B.C.), the initial transition from hunting and gathering to **settled agriculture** in prehistory and developing the ability to farm crops. This period is commonly referred to as the 'First Agricultural Revolution'.
- The **Arab Agricultural Revolution** (8th–13th centuries), diffusion of many crops and farming techniques across Arab and Muslim world during **Islamic Golden Age**.
- The **British Agricultural Revolution** (1750–19th centuries), an increase in agricultural productivity in Great Britain which helped drive the Industrial Revolution.
- The **Green Revolution** (1943–late 1970s), a series of research, development, and technology transfer initiatives that increased industrialized agriculture production in India and other countries in the developing world (**the 'Second Agricultural Revolution'**).

**THE CHALLENGE
OF MEETING
FUTURE FOOD
DEMAND**

1. FOOD AND OVER POPULATION

- The world's population, at 7 billion in 2011, is expected to reach 9 billion people by 2050 and may exceed 10 billion by the end of the century.



WORLD POPULATION GROWTH



2 Billion



3 Billion



5 Billion



6 Billion



7 Billion



= 9 billion (89% Dev. Region)

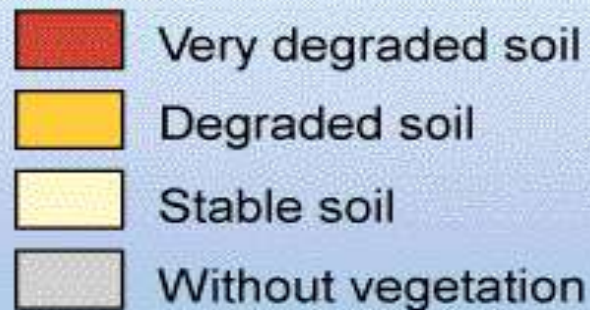
GLOBAL FOOD PRODUCTION MUST INCREASE
70% BY 2050 TO MEET OUR NEEDS.



Annual Cereal production must rise by **42%**

Soil degradation

- The global agricultural land is shrinking and also turned into waste land by soil degradation.



PRIMITIVE FARMING

- Primitive farming is still practiced in many parts of the developing world.



- Land are wasted planting unhealthy food like sugar cane which pollutes the environment and causes damage world health.



SUGAR CANE PLANTATION DAMAGES OUR ENVIRONMENT AND OUR HEALTH

2. THE WORLD FOOD PROGRAM



2009 WORLD HUNGER MAP

Category	1	2	3	4	5	Insufficient data
Undernourished	<5%	5-9%	10-19%	20-34%	≥35%	
Description	Extremely low	Very low	Moderately low	Moderately high	Very high	



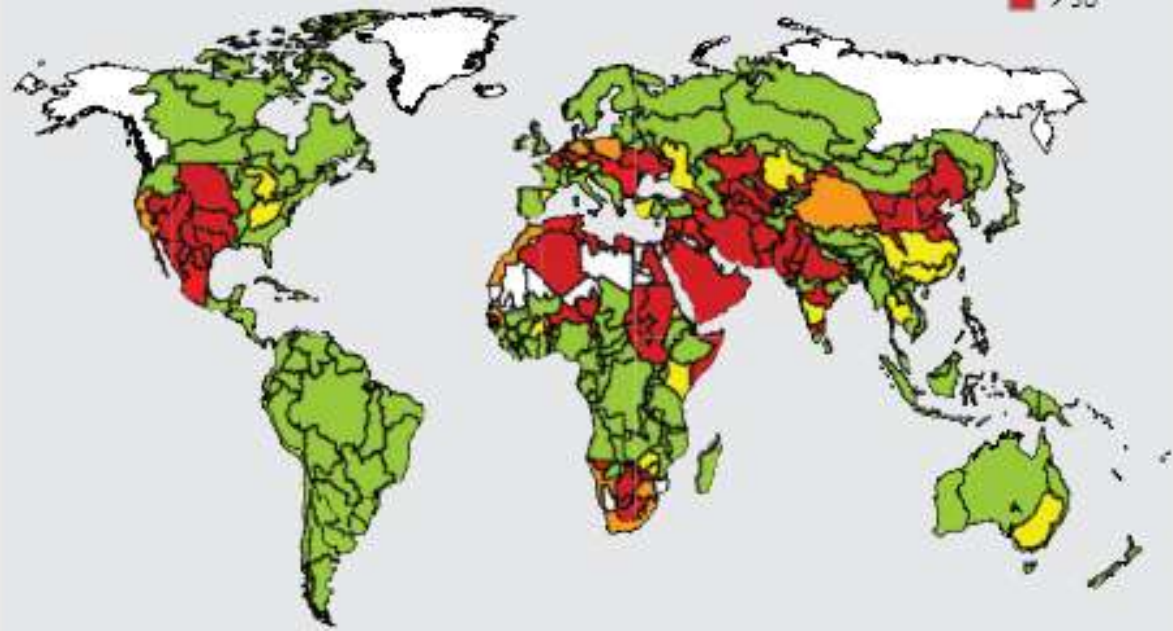
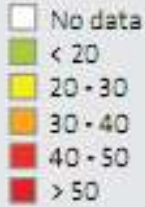
Sources: The State of Food Insecurity in the World 2009, Food and Agriculture Organization of the United Nations and FAO/IFAD
 © 2009 United Nations World Food Programme

- Although most food is consumed in the country where it is produced, not all countries can grow enough food to support their populations.
- We must work together to enable farmers around the world to produce higher yields—and get those crops to market efficiently

- We must tend to a fragile environment and conserve the valuable resources of land and water.

Today's Water Stressed Areas

Water stress, percent of total renewable water withdrawn



How many people live in water short areas (%)?



How much GDP is generated in water scarce regions (%)?

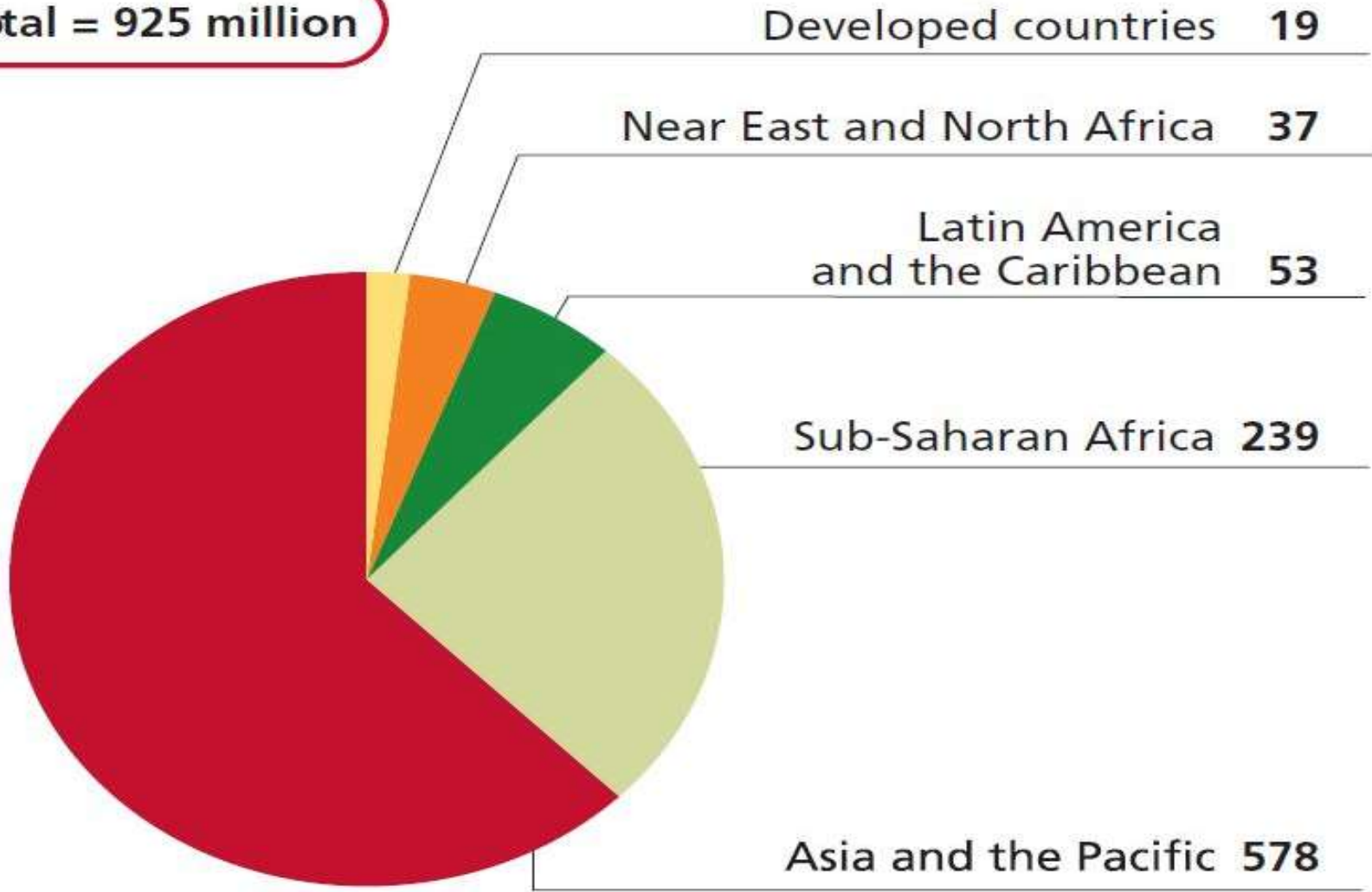


Food losses from global greenhouse gas pollution



UNDERNOURISHMENT IN 2010, BY REGION (MILLIONS)

Total = 925 million



3. THE TREND OF YOUNGER GENERATION TO AVOID AGRICULTURE AS A PROFESSION

Our present generation are not much interested in agriculture, but want to enjoy good food to live without knowing the essence of the food production.



- The metropolis and city thinks that village people are meant for food production, and the metropolis and cities are to sit and enjoy eating. They do not understand the sufferings of the villagers who are agriculturists.
- The middle man and agents eat away the villagers hard earnings. Hence villagers also look for migration to metropolis and cities for modern life.
- **People should be encouraged to take agriculture as their profession to generate sufficient food for our growing generation.**

THE 21ST CENTURY AGRICULTURAL REVOLUTION

To increase production and quality of food the world must adopt the following methods:

a. Industrial Agriculture – Introduction of new agricultural machinery







b. Precision Agriculture



IRRIGATION AND WATER MANAGEMENT



c. Robotic Agriculture – Introduction of GPS and auto self propelled agricultural robots.



GPS GUIDANCE & STEERING SOLUTIONS





CROP SURVEYLENCE DRONES

d. SOLAR POWER GENERATION USING SPACE ABOVE WATER CANAL



SOLAR POWER USED FOR WATER PUMPS



**INNOVATIONS
IN THE
AGRICULTURAL
SECTOR**

- **PRODUCTION OF BIOTECHNOLOGICAL BASED HEALTH FOODS**





URBAN FARMING

Micro
Trend
Aug-13 Update

How city residents are responding to the lack of fresh, organic, quality food in big cities





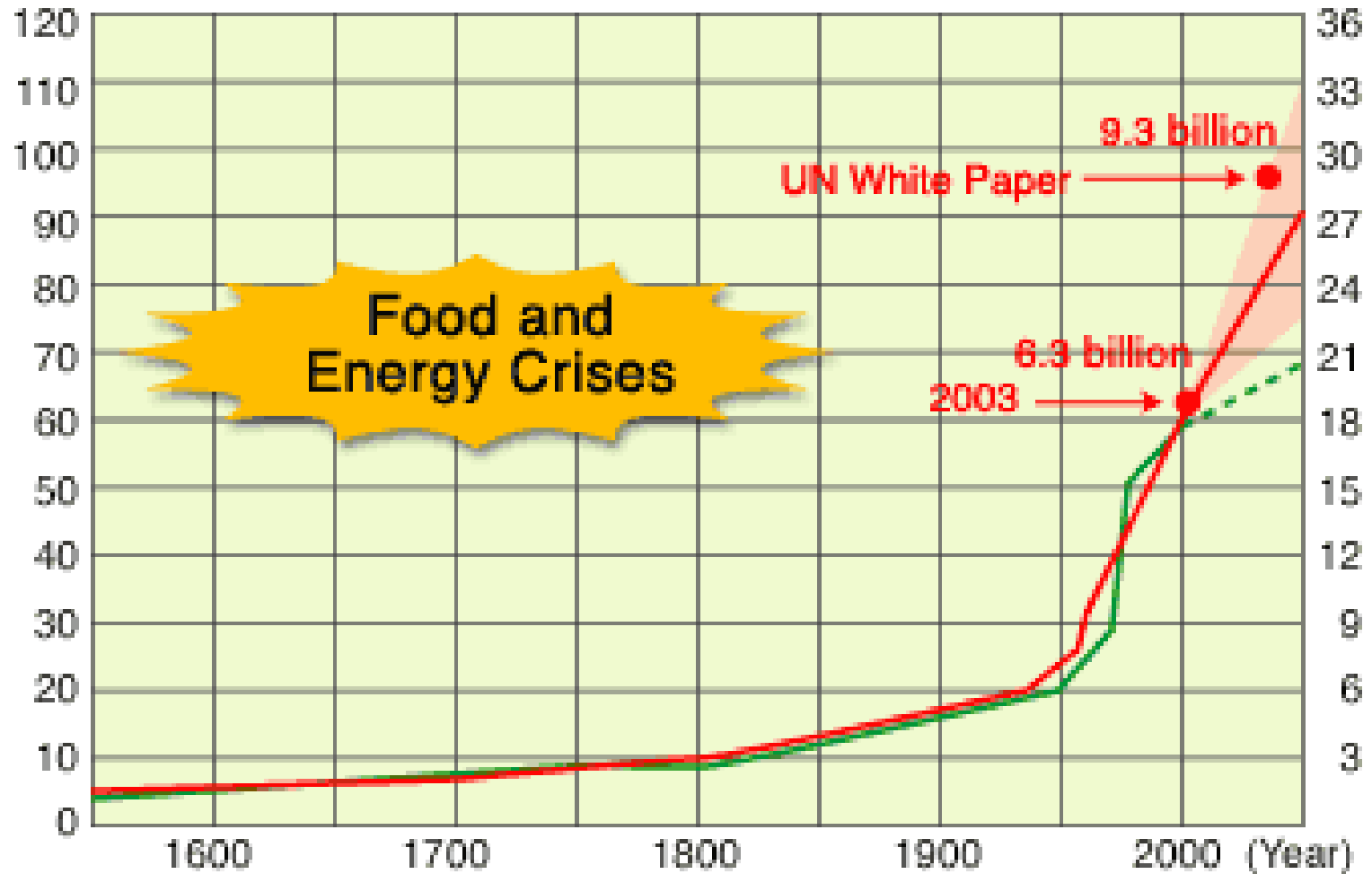
BALCONY GARDENING

ROOFTOP FARMING



World Population
(billion)

Grain Production
(billion tons)



Development of High Yield, Environment-Resistant and/or Disease-Resistant Varieties

HOW TO ATTRACT THE YOUNG GENERATION TO AGRICULTURE

- HIGH INCOME GENERATION
- USE MODERN EQUIPMENTS - ROBOTICS AND AUTOMATION IN AGRICULTURE
 - AIRCONDITION CABS USED IN TROPICAL CLIMATE
- IMAGE BUILDING, RELATE TO THE AGRICULTURAL MILLIONAIRES –
(STRESS AGRICULTURE IS NOT A 2ND CLASS AND DIRTY PROFESSION)
- APPLICATION OF BIOTECHNOLOGY TO PRODUCE AGRI PRODUCTS
- MAKE AGRICULTURE BUSINESS AN EXPORT ORIENTATED BUSINESS

CONCLUSION

- **DEVELOPMENT OF NEW & MODERN AGRICULTURAL MACHINES**



USE REMOTE TECHNOLOGY SYSTEM

DRONES & ROBOTICS



TAKE ADVANTAGE OF ECONOMICS OF SCALE



**Making Globalization
Work Better for the poor through**

CONTRACT FARMING

- **MINIMISE LABOUR DEPENDENCY AND COST**
 - **USING ROBOTICS AND SOLAR POWER**





Production



On-Farm Storage



Trucking

Domestic Users,
Processors
and US Market



Country Elevator



Rail



Terminal and Transfer Elevators



Lakes



Vessel

EFFICIENT

PRODUCTION

STORAGE

TRANSPORTATION

& SHIPMENT

PROVIDE FUNDS TO SUPPLY DEVELOPING COUNTRIES WITH CONTRACEPTIVES

Family Planning



- **STOP USING FOOD TO MAKE BIOFUEL (EXAMPLE PALMOIL)**



Thank u...

