

# Planning for Fisheries Development – Relevance and Needs

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# State, National, Regional and International Concerns

## ➤ *Increasing Demand for Fish*

➤ *from population growth*

➤ *urbanisation*

➤ *affluent middle class*

## ➤ *Impact of Climate Change*

## ➤ *Food and Nutritional Security*

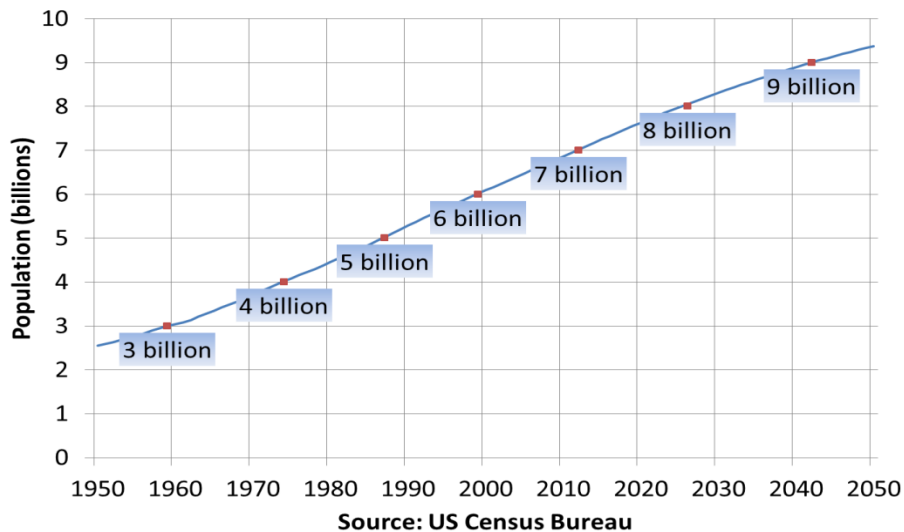
## ➤ *Focus on Eradication of hunger & malnutrition*

## ➤ *MDG vs SDG*

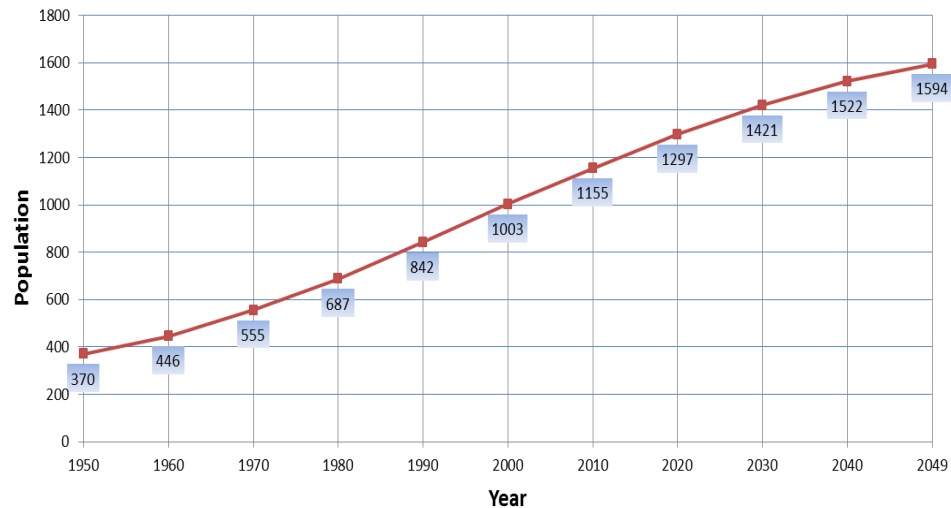
# Population Growth

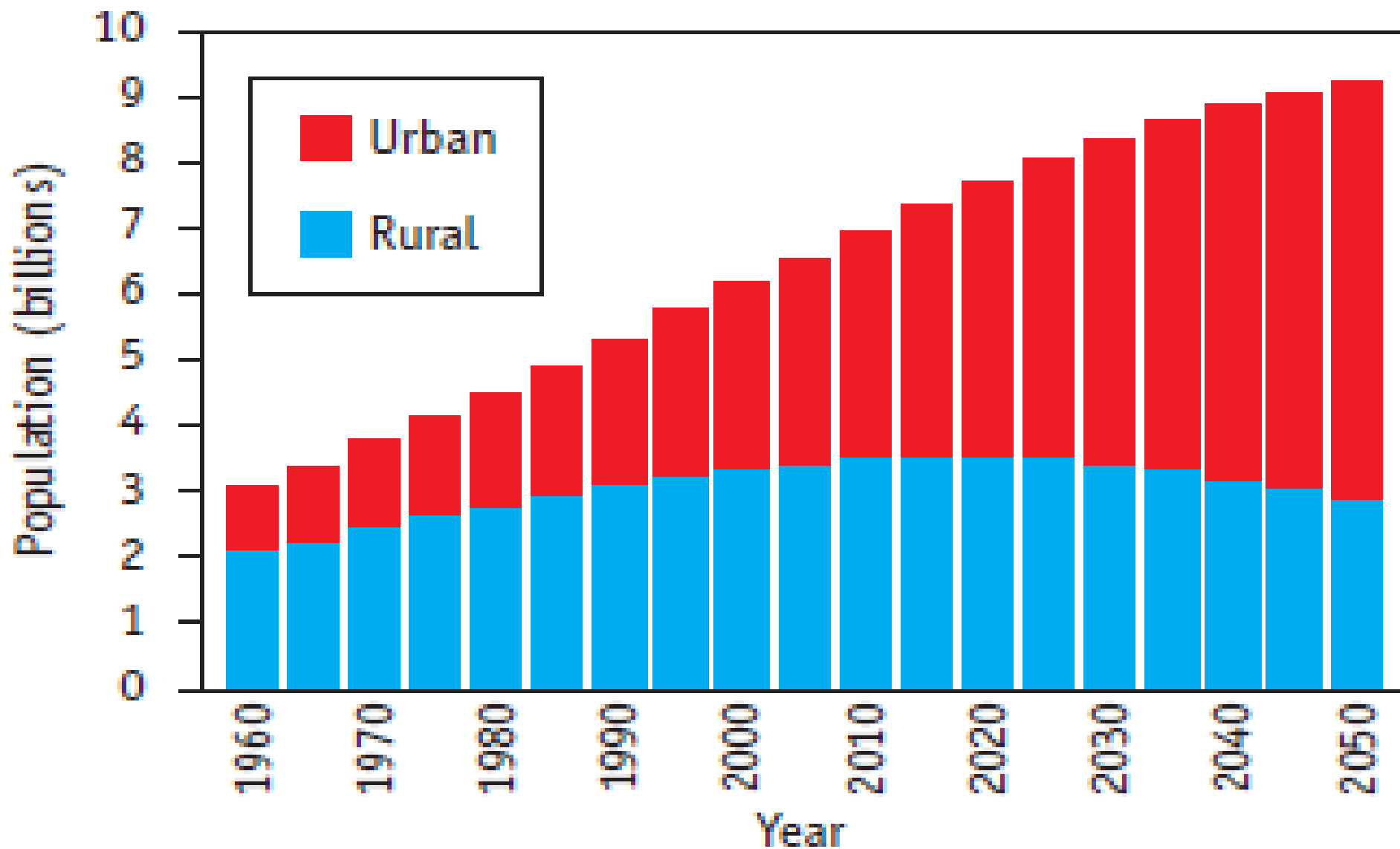
- Global population from 2.5 billion in 1950 to 7.2 billion now and to >9 billion by the year 2050
- Projected trajectory to 2050 indicates need to build a city of 1 million every 5 days in developing countries
- India's population of 370 million in 1950 to 1.2 billion now and to 1.6 billion by 2050

World Population: 1950-2050



India Population (in Millions)

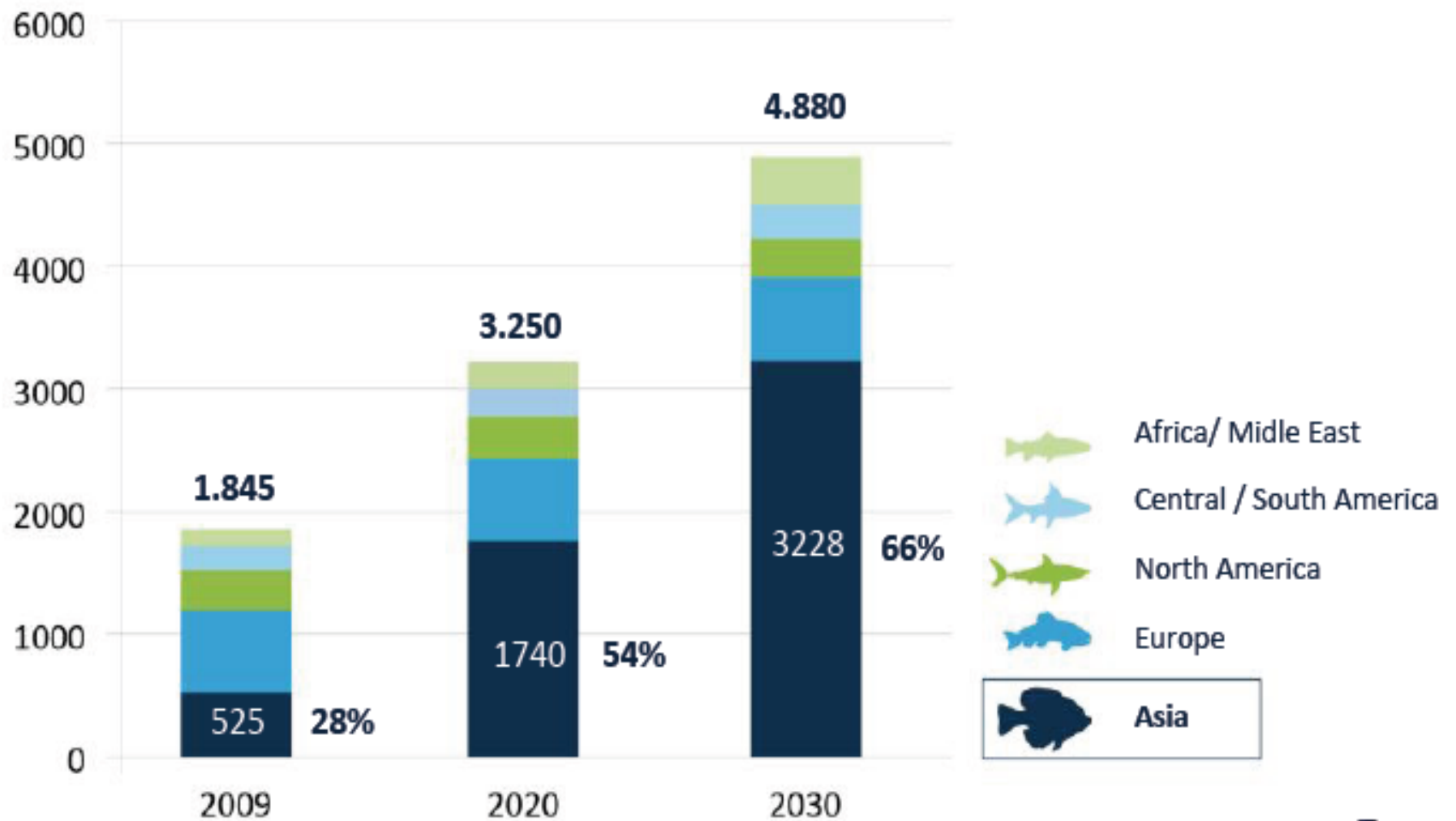




## World urban and rural population 1960-2050

Source: FAOSTAT; Teng et.al, 2011

# Tsunami of middle class consumers (millions of people)



# Growing Economic Power, Growing Middle Class

Numbers (millions) of global middle class

	2009	2020	2030
North America	338	333	322
Europe	664	703	680
Central and South America	181	251	313
<b>Asia-Pacific</b>	<b>525</b>	<b>1740</b>	<b>3228</b>
<b>Sub-Saharan Africa</b>	<b>32</b>	<b>57</b>	<b>107</b>
Middle East and North Africa	105	165	234
World	1845	3249	4884

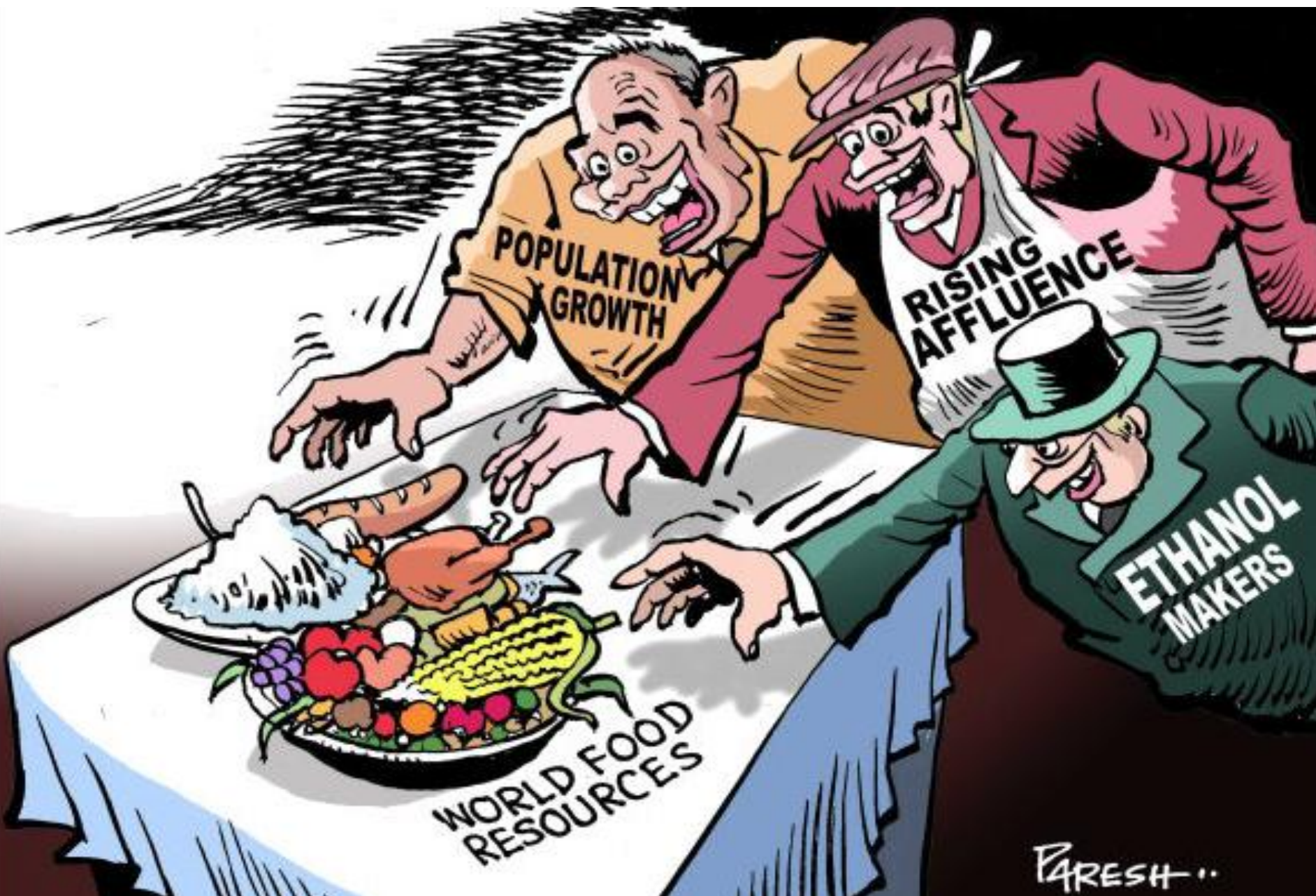
# Future Food Demand

- Global food production need to increase by 70%, while developing countries need to double production by 2050, to meet the demand of additional 2.3 billion people and increasing affluent middle class
- Estimates:
  - cereal production need to increase to 3.0 billion t from present 2.1 billion T;
  - Meat production to increase by 200 million t to 470 MMT
  - Fish production to increase by 30 to 40 MMT by 2030
  - India: Fish production need to increase by 5-6 MMT by 2020

# Challenges for Increasing Fish Production

- Declining resources: land, water, productivity
- Over-exploitation of capture fisheries resources
- Impact of Climate change
- Feed shortages (grains and fishmeal)
- Fish health management





**POPULATION  
GROWTH**

**RISING  
AFFLUENCE**

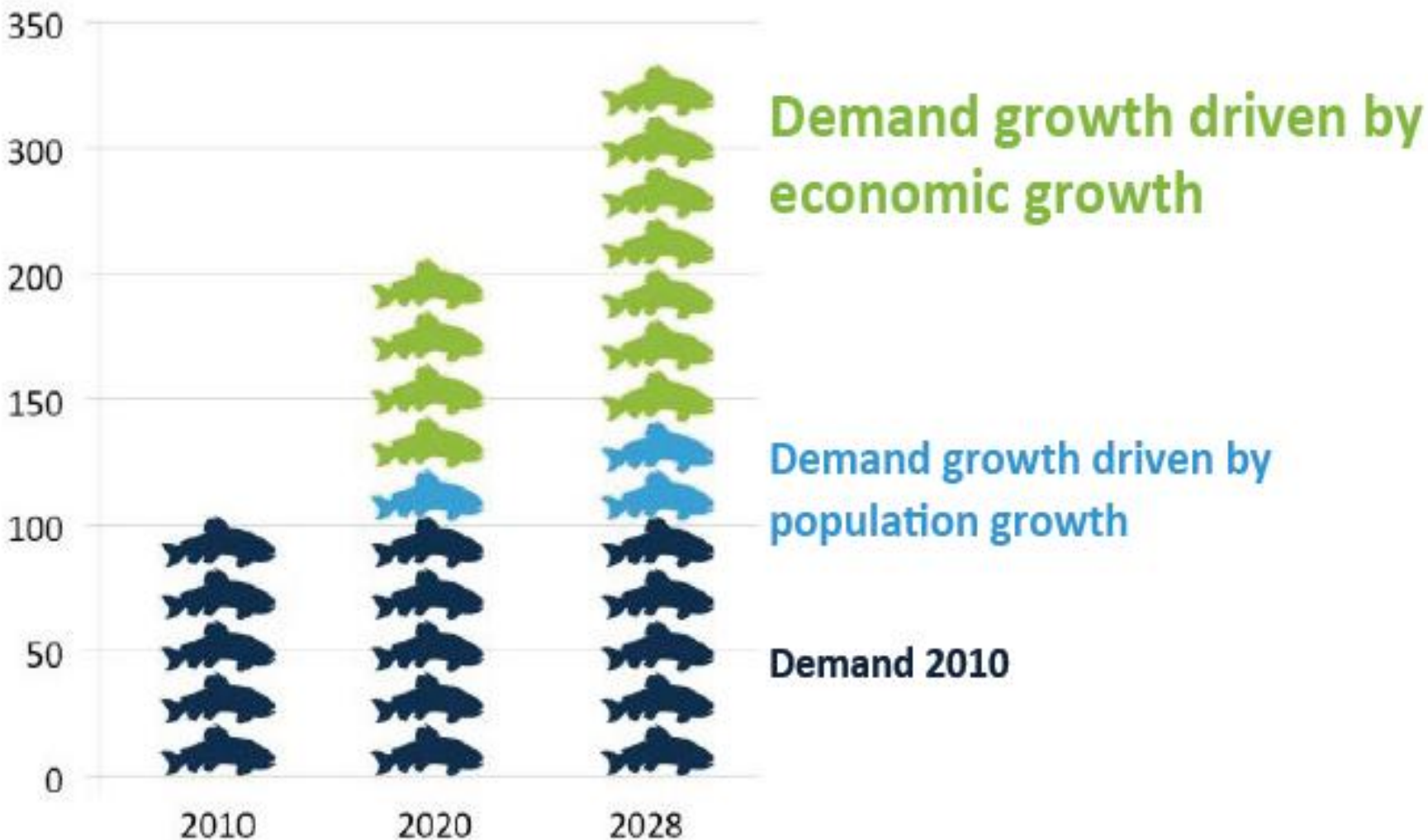
**ETHANOL  
MAKERS**

**WORLD FOOD  
RESOURCES**

PARESHT..

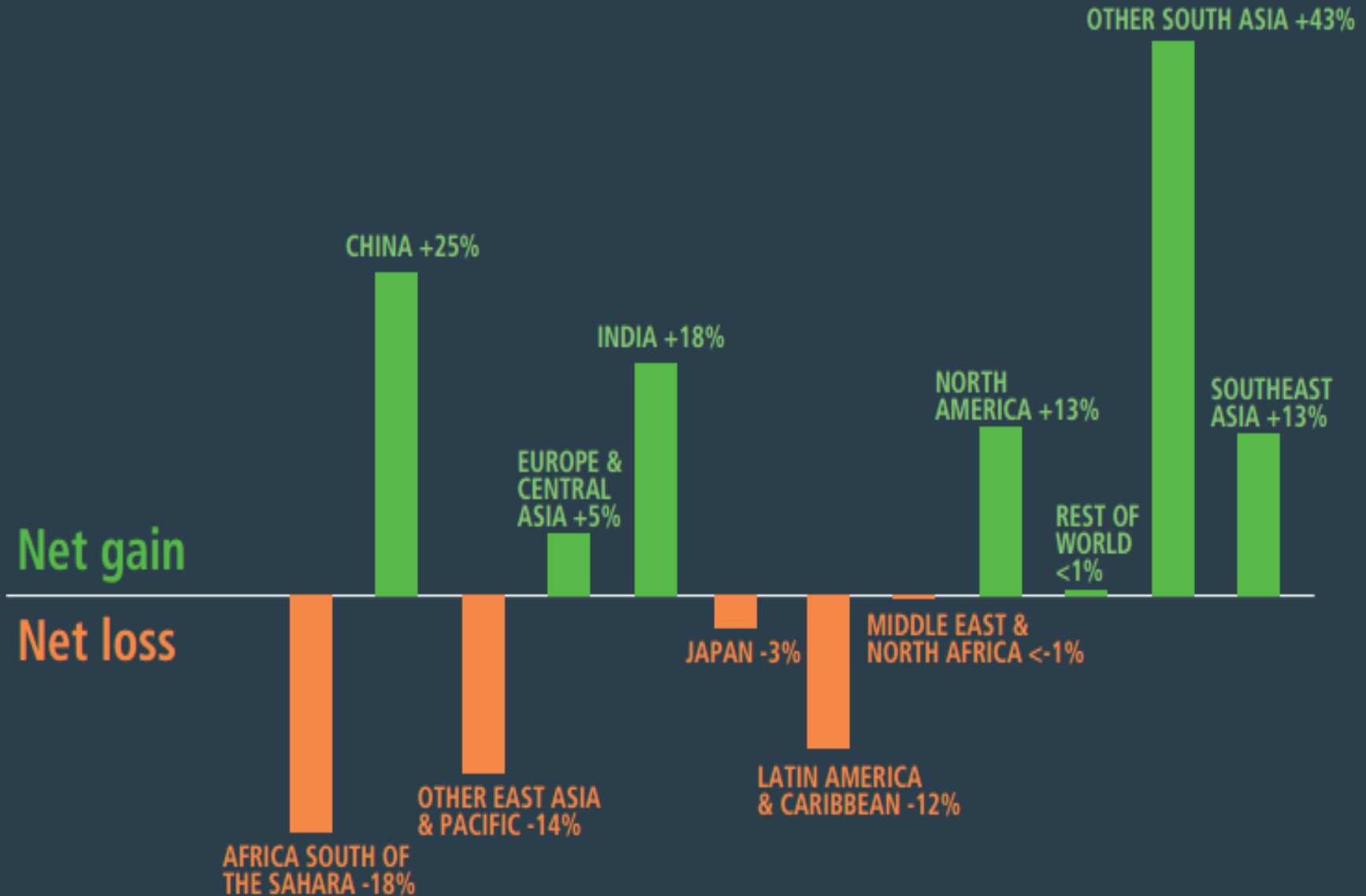
# Food Fish Demand

Millions of metric tonnes



# Projected per capita intake protein from fish 2010-2030

Source: World Bank report no. 83177-GLB, 2013



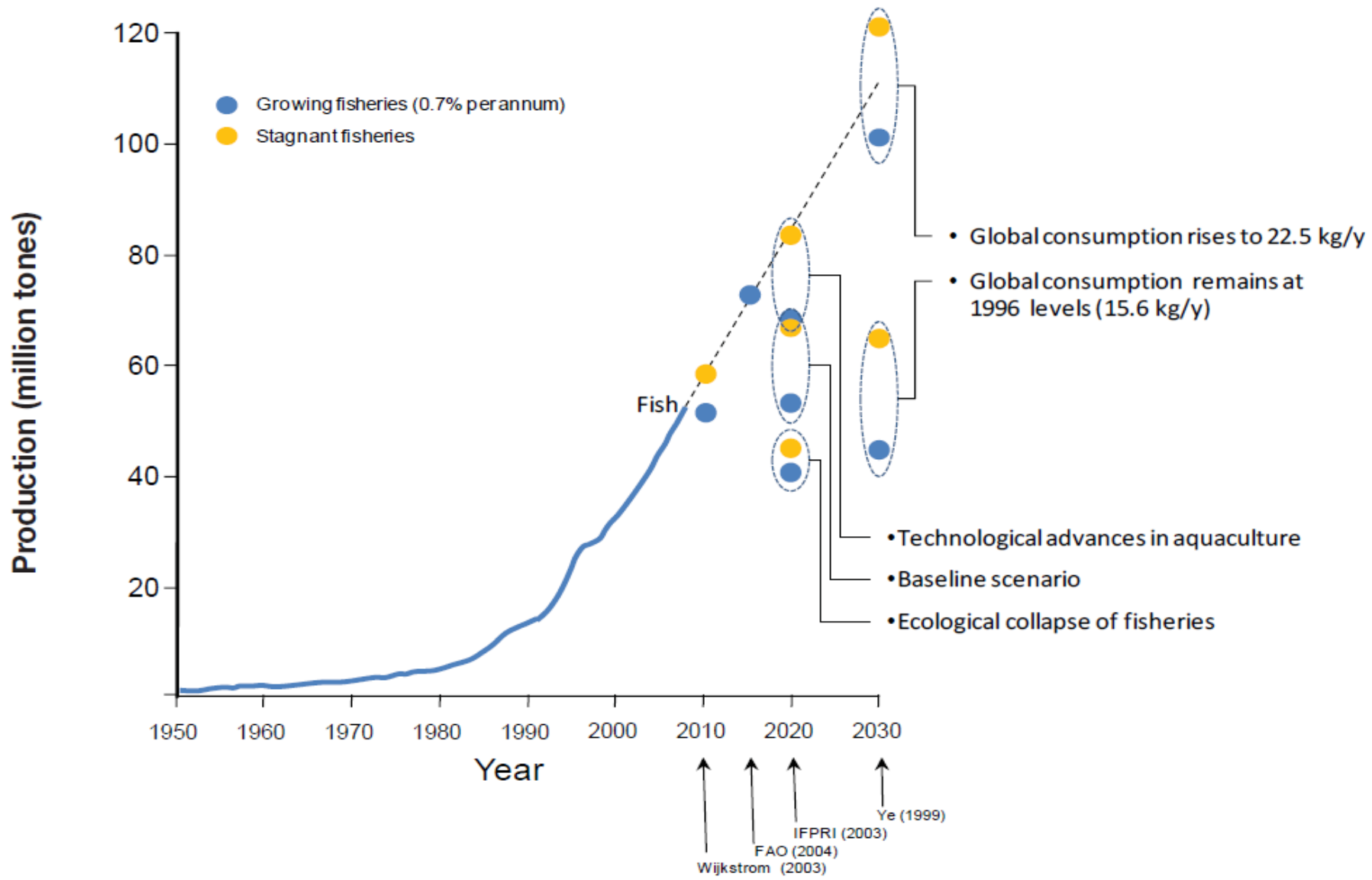




Only in China, per  
capita seafood  
consumption will

Grow **40%**

between 2010 and  
2020



Historical trends in farmed fish production and projections of future production: 65-85 million tons by 2020 and 79-110 million tons by 2030 (Source: S. Hall et.al. 2011)

- **In 2012, quantity of fish produced is twice that of poultry and 3 times of beef**  
**Global fish trade exceeds value of international trade in all other animal source foods**

**But still represent low per capita consumption**



# Global Fish Production in 2013

Global fish production : 160 MMT

Capture: 90 MMT

Aquaculture: 70 MMT

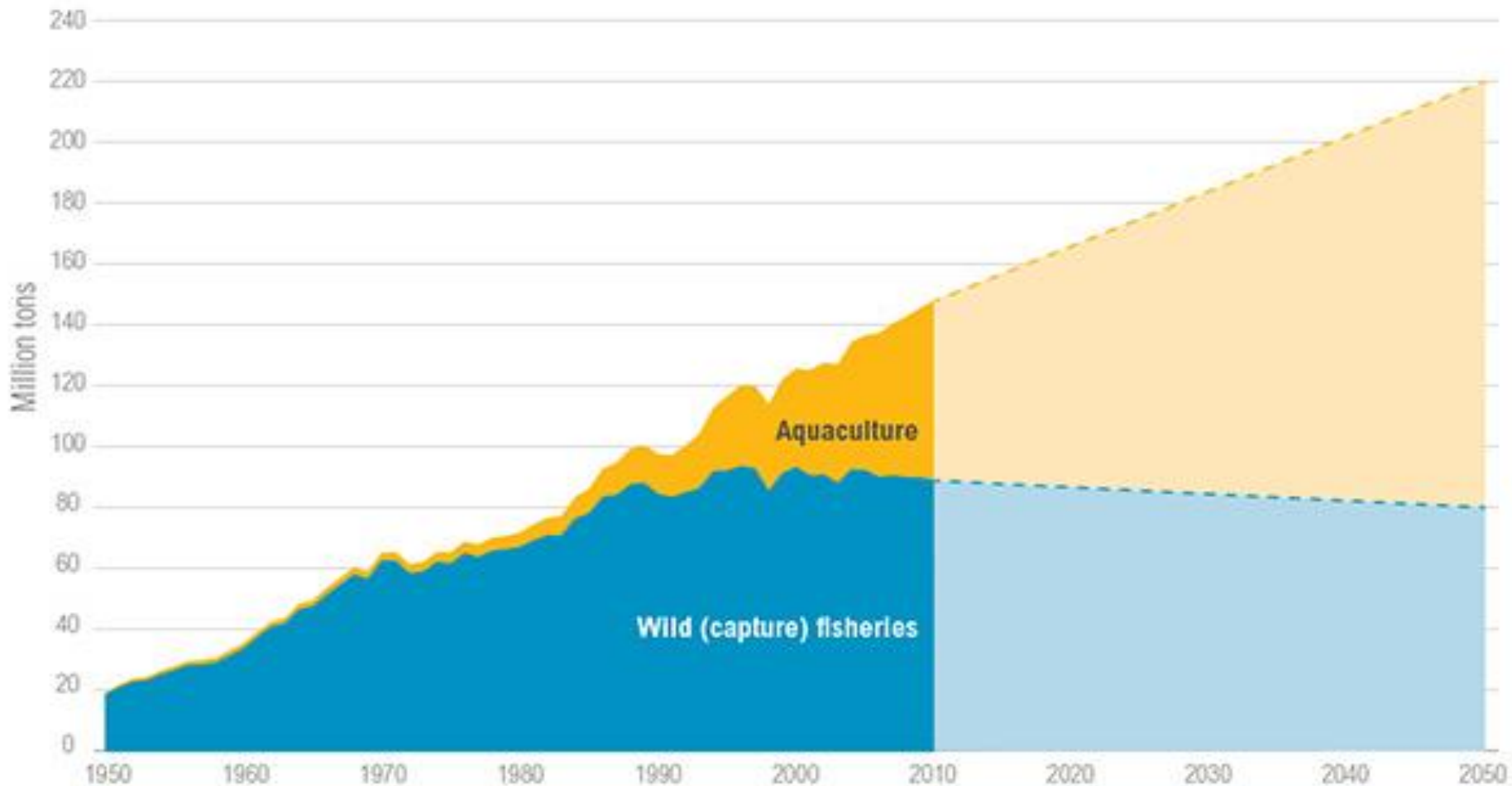
Freshwater: 44.7 MMT

Marine: 25.5 MMT

Asia: Aquaculture: 62.5 MMT (89.1% of global)

China: > 40 MMT

India: 4 MMT



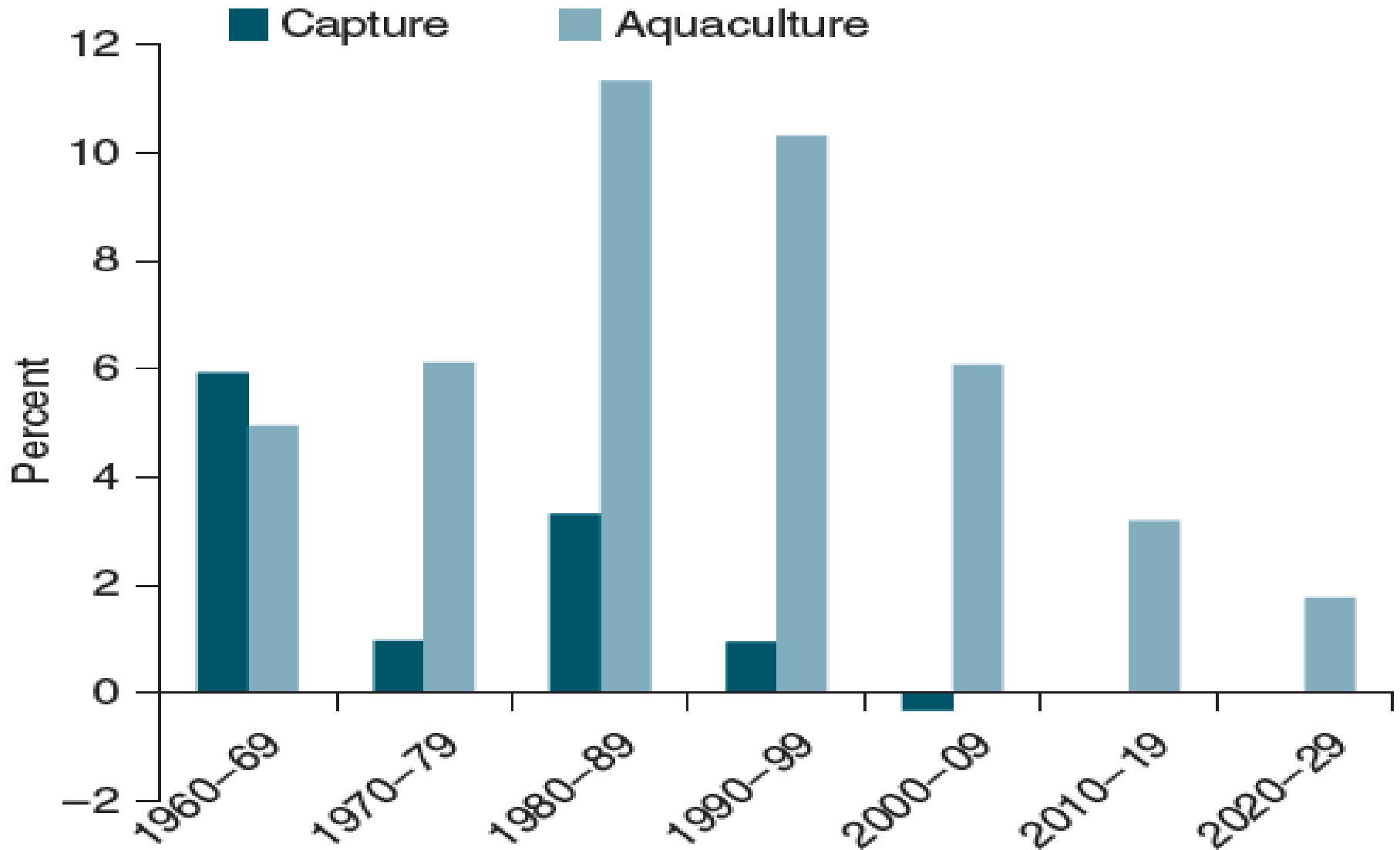
Source: Historical data 1950–2010: FAO. 2014. "FishStatJ." Rome: FAO. Projections 2011–2050: Calculated at WRI, assumes 10 percent reduction in wild fish catch between 2010 and 2050, and linear growth of aquaculture production at an additional 2 million tons per year between 2010 and 2050.

Historical trends in farmed fish production and projections of future production: 65-85 million tons by 2020 and 79-110 million tons by 2030 (Source: S. Hall et.al. 2011)

- Waite, R. et al. 2014. "Improving Productivity and Environmental Performance of Aquaculture."
- Working Paper, Installment 5 of *Creating a Sustainable Food Future*. Washington, DC: World Resources Institute



# Average Annual Growth Rates of Capture and Aquaculture Production, 1960–2029 (Source: World Bank 2013)



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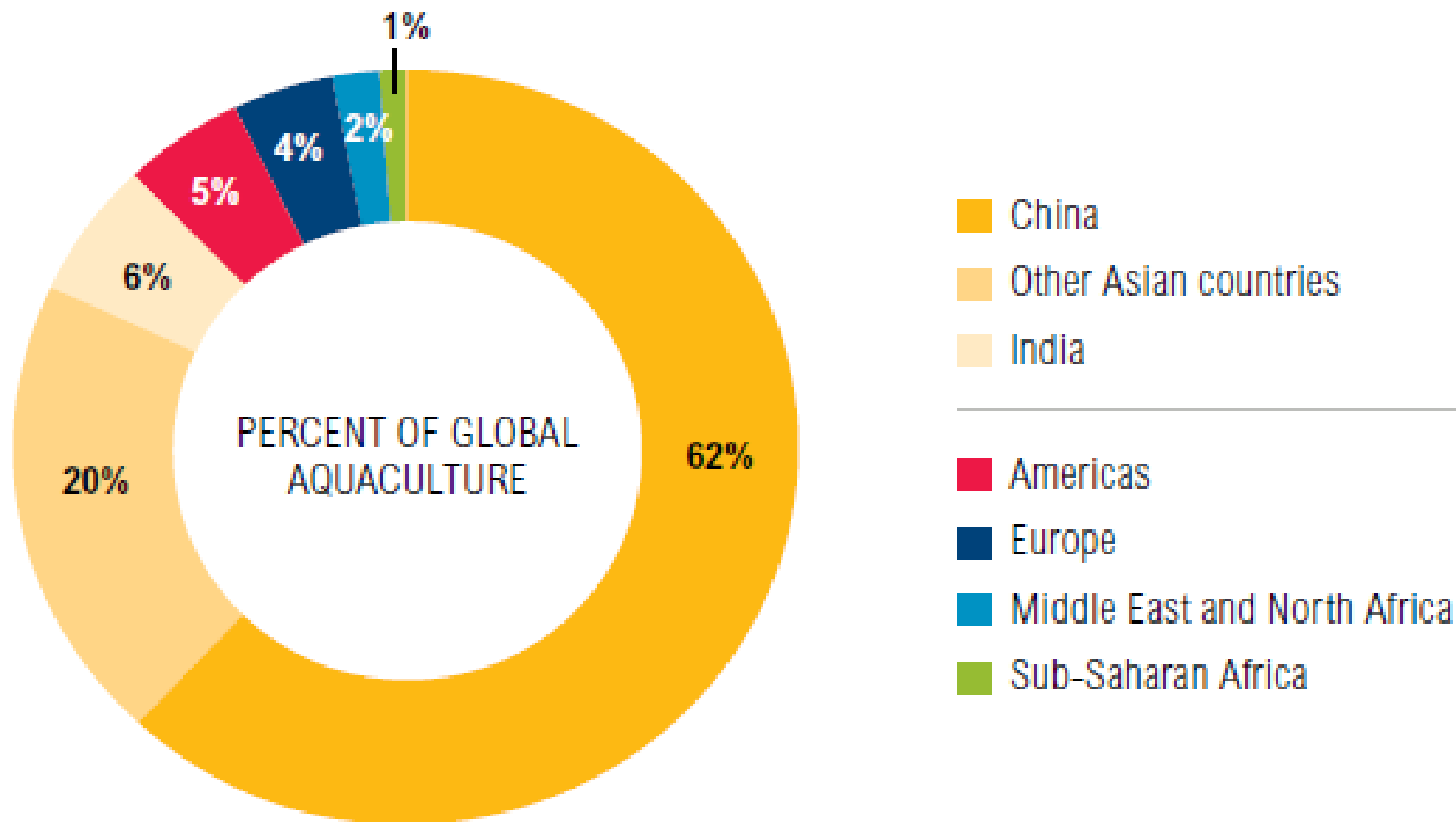
## Blue revolution

### The promise of fish farming



# Global aquaculture production in 2012 (66.6 million tons)

(Source: FAO 2014)



# Optimization of Production with Limited Resources

- ❖ Prioritization of areas for development
- ❖ Identification of projects/programs
- ❖ Formulation of realistic projects/programs taking in to consideration available resources (natural, financial and human)
- ❖ Identify milestones to assess impacts through M&E
- ❖ Include assessment of potential impact on production, livelihoods and environment at local, state and national levels

# Drawbacks in Present Planning

- Focus on short term gains
- Focus on production increases & revenue generation; no market studies; e.g reservoir development & cage culture
- Recent acknowledgement of need to increase farmer incomes
- Scant attention to livelihood & environmental aspects

# Examples from past experience

- Identification of priorities APAARI/GoFAR
- Appraisal importance – World Bank project
- Focus on short term gains of projects/programs – NAIP

# IN CONCLUSION

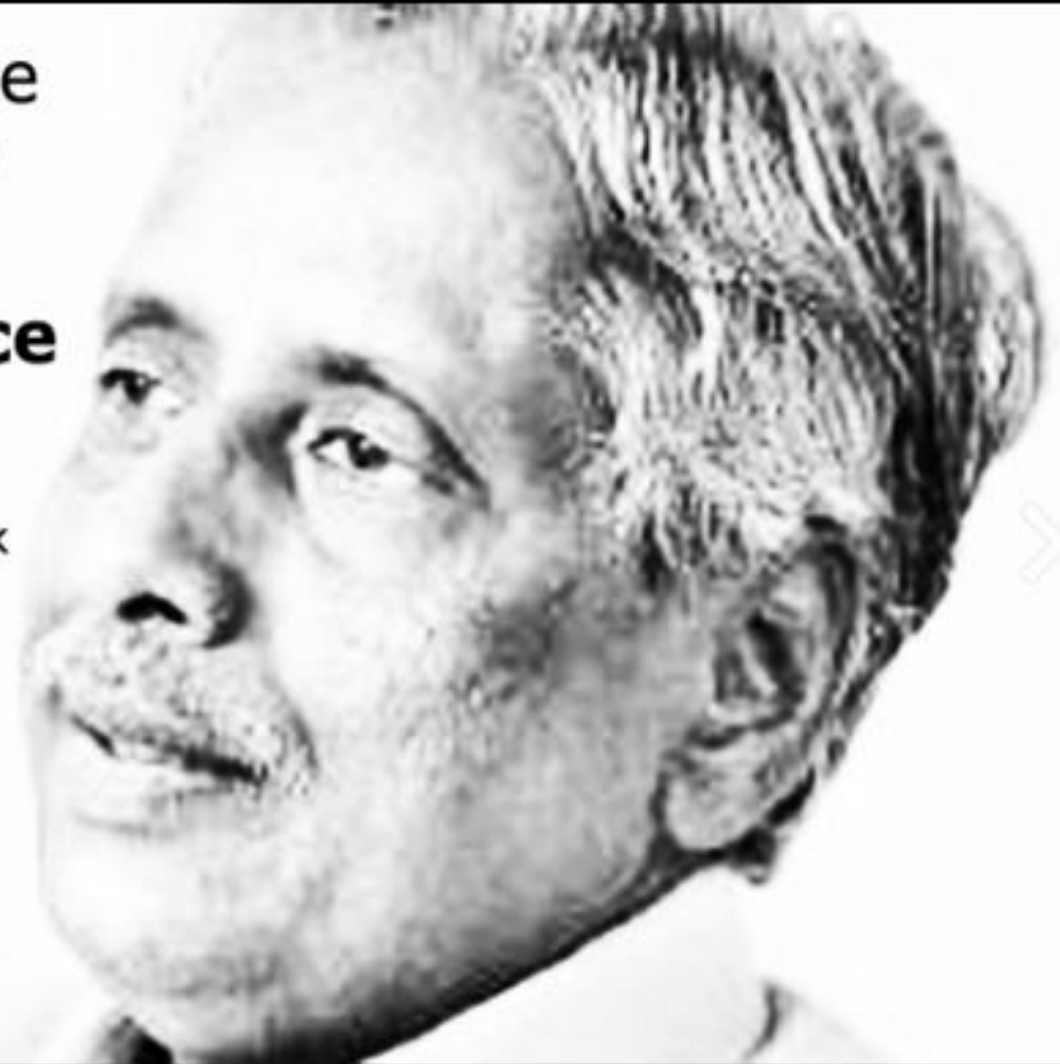
For achieving increased production to meet demand while ensuring sustainable development without/minimum adverse impact on environment/ecosystem/livelihoods, **we need to:**

- Plan projects/programs judiciously
- Take in to consideration not only increased production, but also livelihoods, environmental integrity and sustainability
- Strong monitoring component
- Assess impact of interventions

“There can be no peace  
without food security  
in the world.

**You cannot talk peace  
to a hungry man”**

◀ -Dr. Vijay Gupta, Winner Of Sunhak  
Peace Prize 2015 ▶





Thank You