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of Animal Science*

Food vs Feed: The Livestock Equation in Food Security

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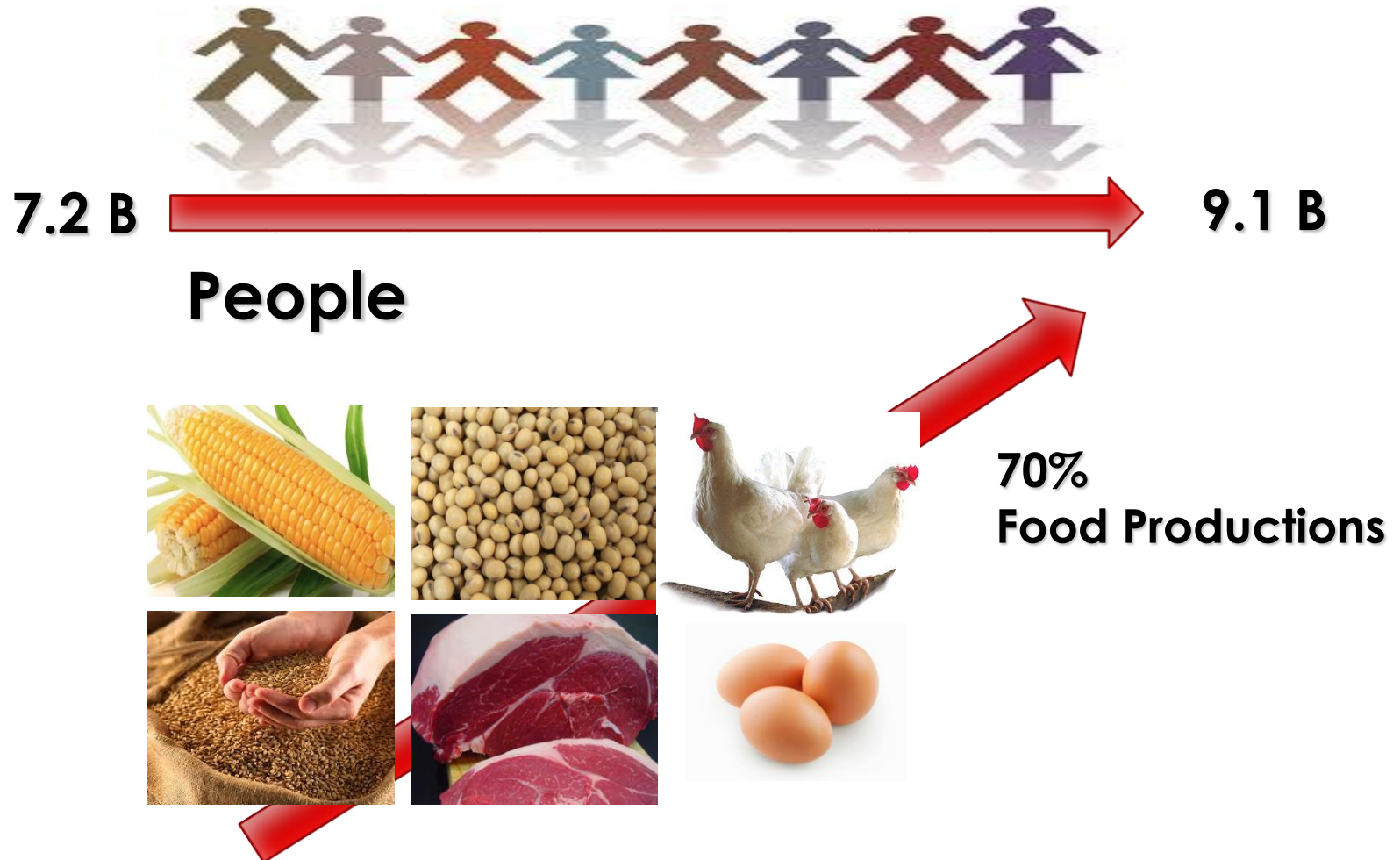
President Indonesian Society of Animal Science

President Asian Australasian Association of the Animal Production Society

Crawford Fund 2014 Annual Conference

Canberra, August 27th 2014

WORLD 2050, Population, Cereal & Meat Production (FAO, 2009)



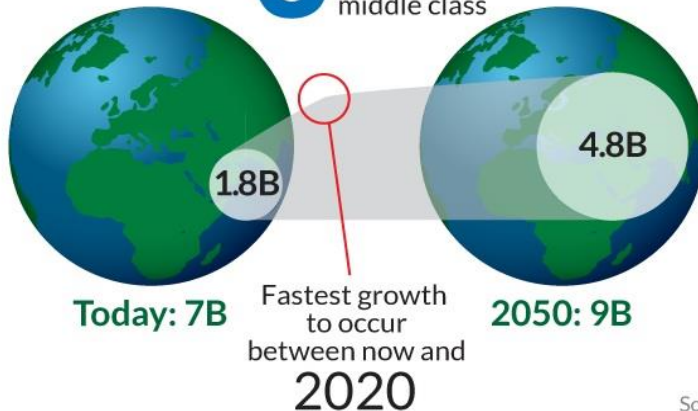


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Growing Middle Class Increase Demand Animal Sourced Foods (FAO, 2009)

GROWING MIDDLE CLASS

3 BILLION
join the
middle class



Source: FAO, OECD¹

INCREASING DEMAND FOR MEAT, MILK & EGGS

We will need
60% more animal-
sourced
foods



Source: FAO³



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Half of World's Populations Live in 6 Countries (UN, 2012)



Note: 2014 Medium fertility variant estimates.

Source: UN Population Division's World Population Prospects: The 2012 Revision



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INDONESIA

(Mc Kinsey Global Institute, 2012)

Indonesia today ...

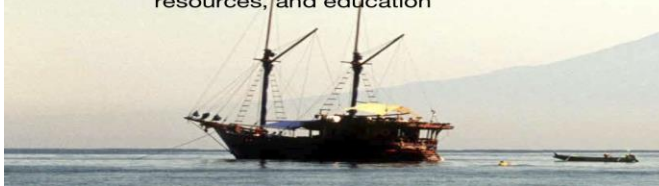
16th-largest economy in the world

45 million members of the consuming class

53% of the population in cities producing **74%** of GDP

55 million skilled workers in the Indonesian economy

\$0.5 trillion
market opportunity in consumer services, agriculture and fisheries, resources, and education



... and in 2030

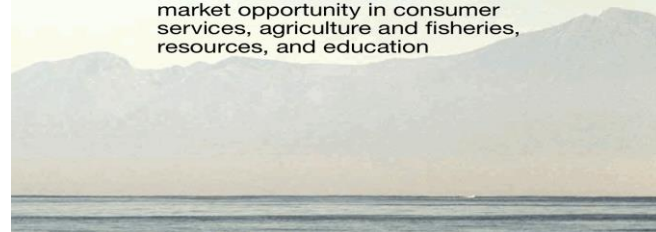
7th-largest economy in the world

135 million members of the consuming class

71% of the population in cities producing **86%** of GDP

113 million skilled workers needed

\$1.8 trillion
market opportunity in consumer services, agriculture and fisheries, resources, and education



Cattle Production System In Indonesia



**Farmers in Java, Intensive,
Feeds using Native Grass, Rice
Straw, etc.**



**Farmers in NTB & NTT,
Extensive, Grazing in
Pasture**



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Indonesian Feedlot Industries

Agriculture by Products as Feeds



Cassava chips



Copra meals



Cassava onggok



Rice straw



Rice bran



Corn silage

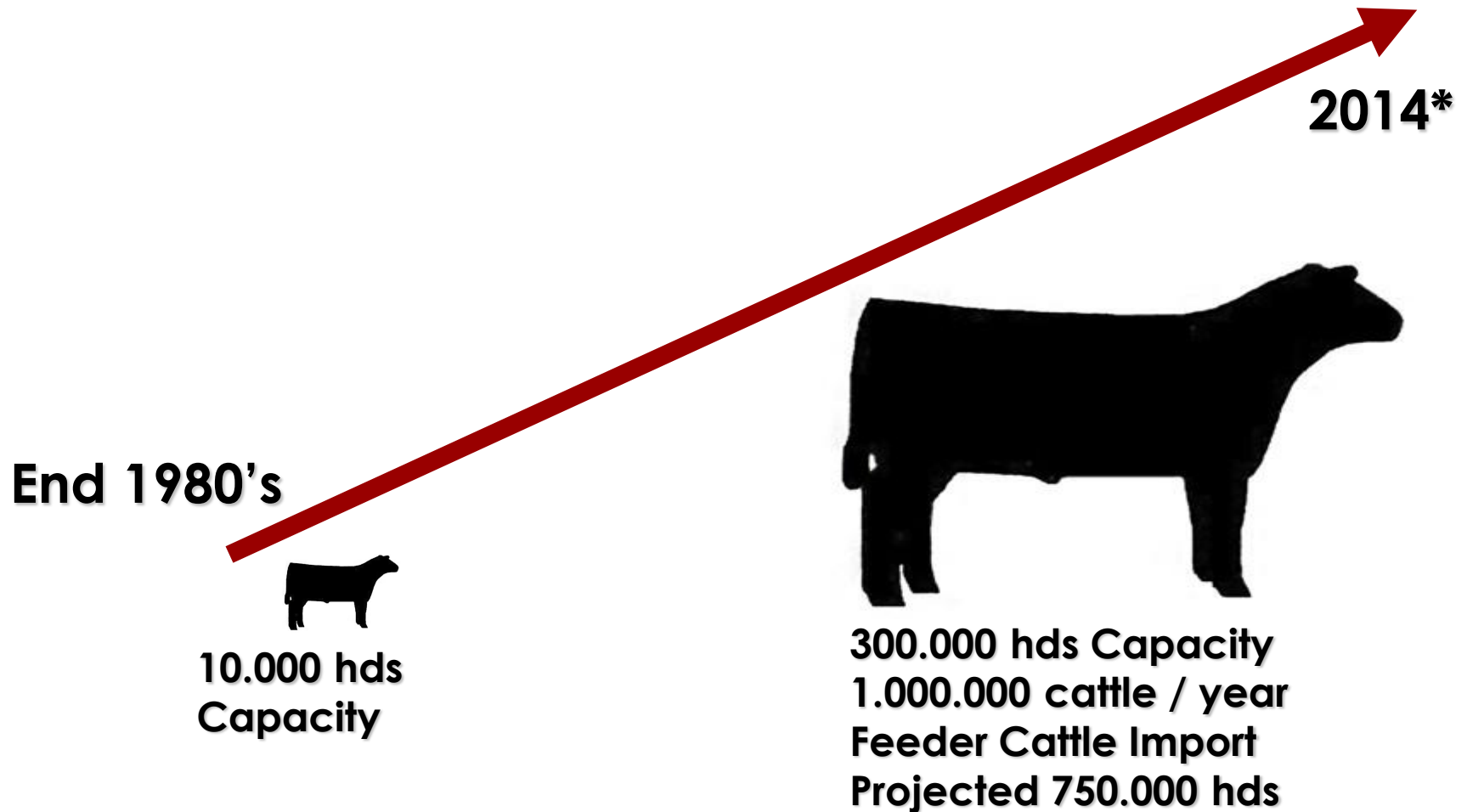




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Indonesian Feedlot Industries

Most Improving Livestock Industries



Cattle Integration Under Palm Plantation



- Cattle and Palm Plantation Integration System.
- Palm plantation area is equatorial zones, enough sunlight and rainfall
- Grow native grass or cover crops (weeds) in the inter row Palm Plantation.
- Palm Plantation use a Chemical Herbicide and Labour to control the weeds, also periodically fertilizing the plantation

Cattle Integration Under Palm Plantation



- Cattle Grazing under Palm Tree, control the weeds, saving cost for herbicide & labor.
- The manure and urine also use as fertilizer.
- Very efficient & sustainable, integrating cattle under palm plantation to optimize available resources



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THANK YOU