



# World Food Day

Global Challenges and the 'NextGen'

OR

The future ain't what it used to be



Australian Centre  
for International  
Agricultural Research



# But first, ACIAR's niche remains...

An independent agency in the Foreign Affairs portfolio.

Mandate: to **amplify the impact of Australia's outstanding capabilities in agricultural science** by brokering and funding agricultural research-for-development partnerships in East Asia, Pacific, South Asia and East & Southern Africa **for the benefit of partner countries and Australia.**



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## Victoria is substantially engaged in this effort...

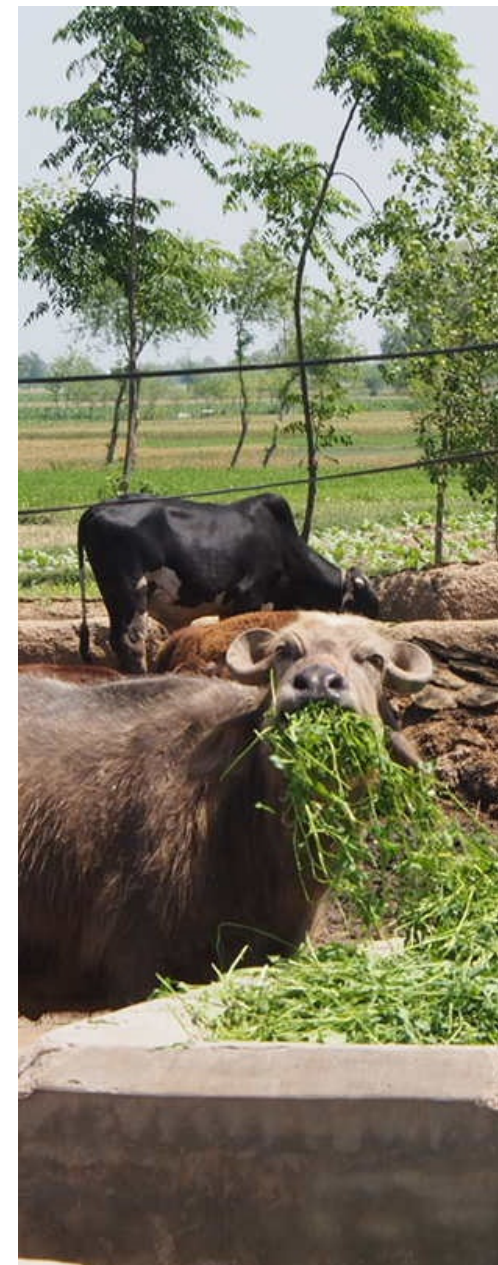
Nine Victorian research agencies leading 18 projects and partnering with an additional 10 projects worth \$20million in 13 countries

### One example: University of Melbourne and Dairy in Pakistan

Pakistan is the world's third largest dairy producer. Eight million families with herds of less than five animals producing an average of 4 litres a day.

Research on nutrition, health and management is delivering **large gains in milk productivity and calf survival** and helping develop a new beef industry.

Critical to this was outcome novel ways to fully **engage women farmers in the research.**





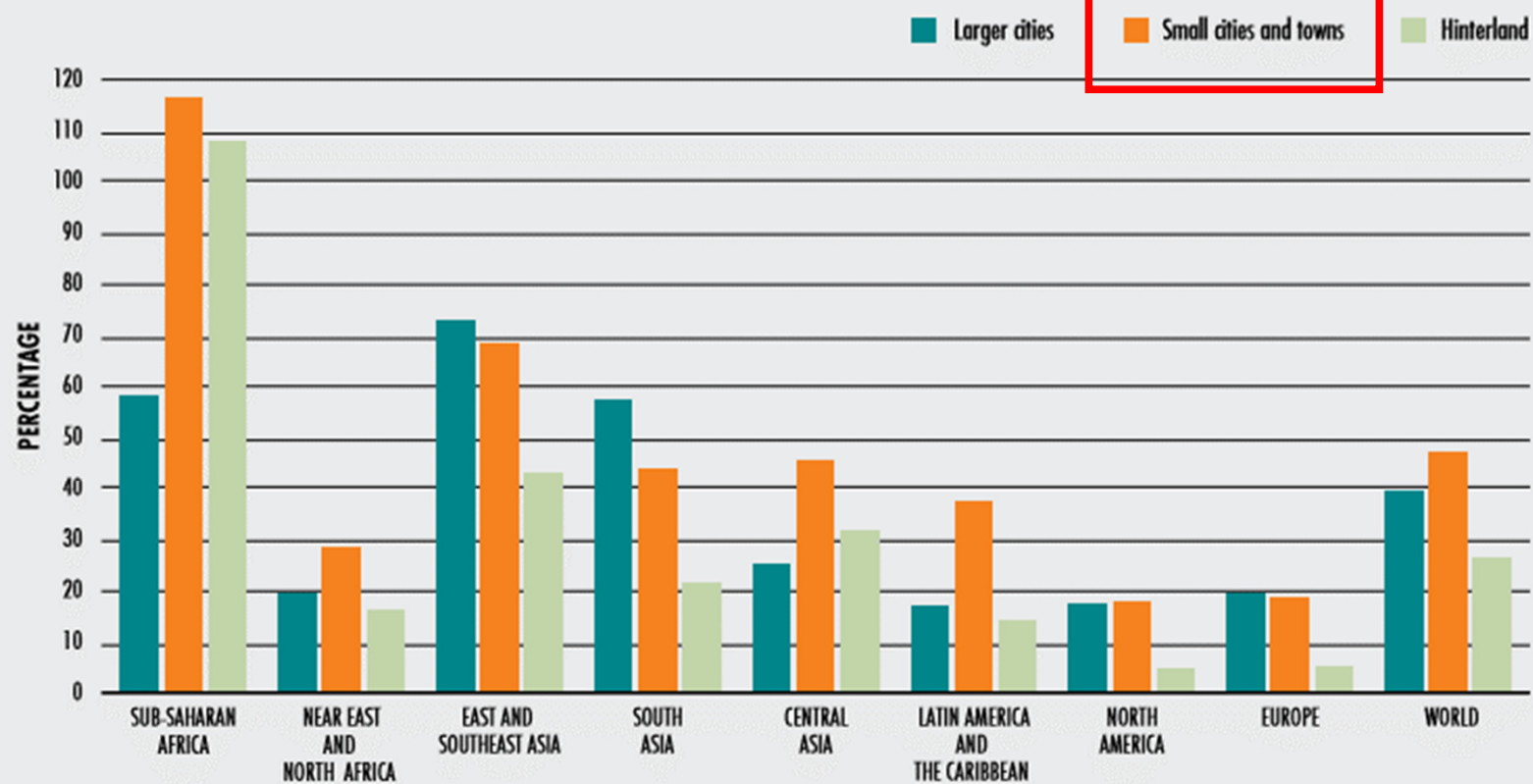


**If the future ain't what it used to be, what's different?**

Urbanisation, population growth, rapidly changing economies



## RATIO OF RURAL TO URBAN POPULATION FOR SMALL CITIES, LARGER CITIES AND RURAL HINTERLANDS, GLOBALLY AND BY REGION



Source: FAO 2017 The state of Food Security and Nutrition in the World





Source: Google Earth





## If the future ain't what it used to be, what's different?

Urbanisation, population growth, rapidly changing economies

Leading to rapidly changing food issues and demand



## OUT OF A WORLD POPULATION OF **7 BILLION**



About **2 billion** people suffer from micronutrient malnutrition



Nearly **800 million** people suffer from calorie deficiency

## OUT OF **5 BILLION** ADULTS WORLDWIDE



Nearly **2 billion** are overweight or obese



**One in 12** has type 2 diabetes

## OUT OF **667 MILLION** CHILDREN UNDER AGE 5 WORLDWIDE



**159 million** under age 5 are too short for their age (stunted)



**50 million** do not weigh enough for their height (wasted)



**41 million** are overweight

From Promise to Impact. Ending malnutrition by 2030. (IFPRI 2016)





## If the future ain't what it used to be, what's different?

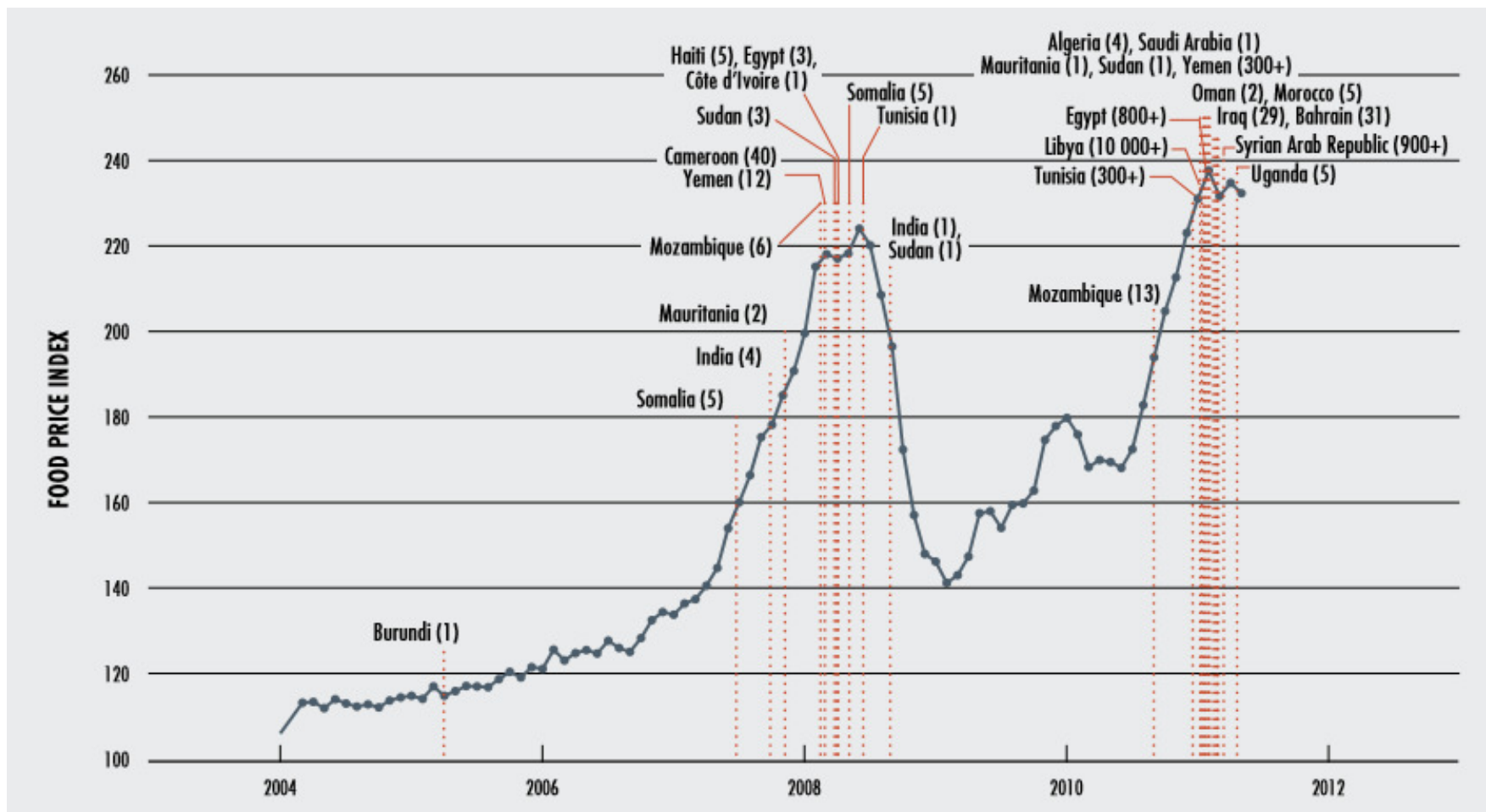
Urbanisation, population growth, rapidly changing economies

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Climate change



## Food prices rise and social unrest rises



Red dashed vertical lines correspond to beginning dates of “food riots” and protests associated with overall death toll reported in parentheses

Source: FAO 2017 The state of Food Security and Nutrition in the World

## Will climate change make us go hungry by 2050?



A farmer tends his tomato plants near Rupa Lake, Pokhara, Nepal. Photo: N. Palmer (CIAT/CCAFS)  
([view original](#))

*New meta-analysis highlights that a significant increase in investment, policy and institutional support to agricultural adaptation can limit the challenge of climate change to food production till the 2050s.*







## If the future ain't what it used to be, what's different?

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Partner countries are more diverse



## *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

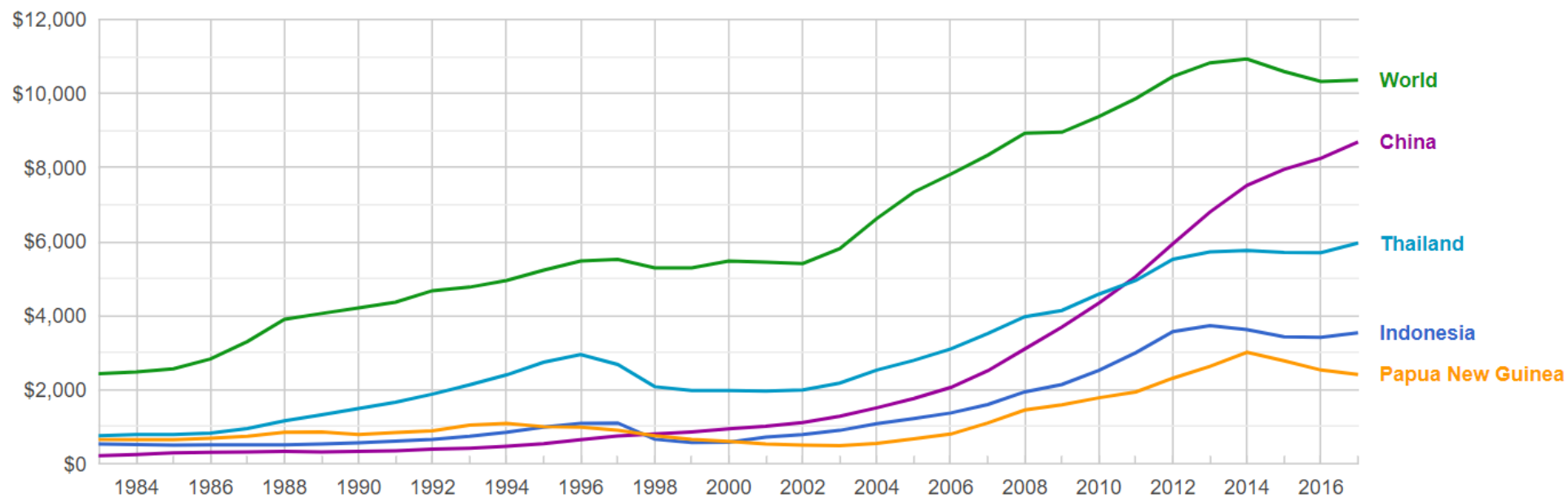
113 million skilled workers needed

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



Source: McKinsey 2012 The Archipelago economy – Unleashing Indonesia's potential

## GNI per capita, Atlas method (current US\$) [?](#)



Data from [World Bank](#) Last updated: Jul 6, 2018







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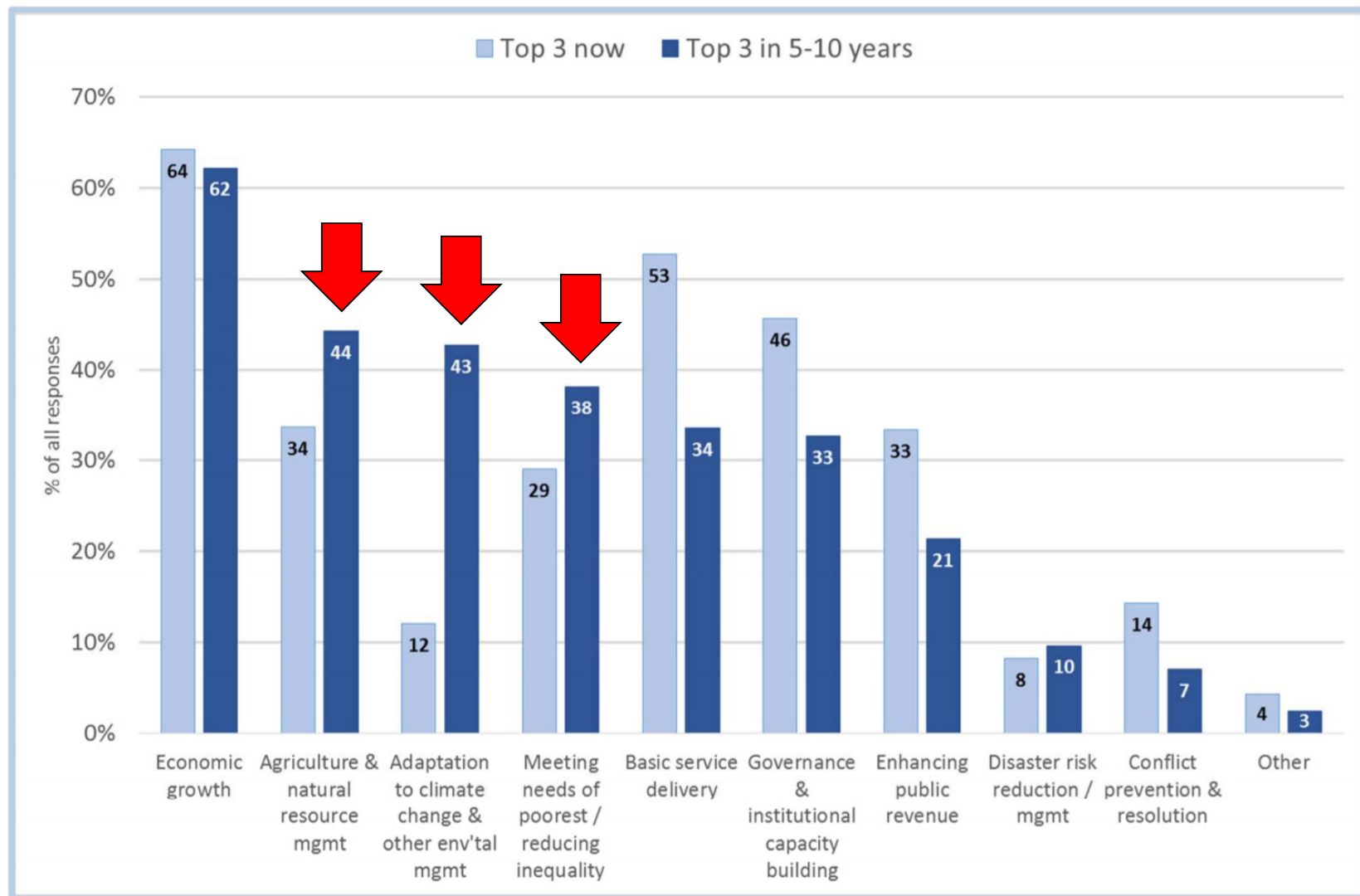
Leading to rapidly changing food issues and demand

Climate change

Partner countries are more diverse and more confident

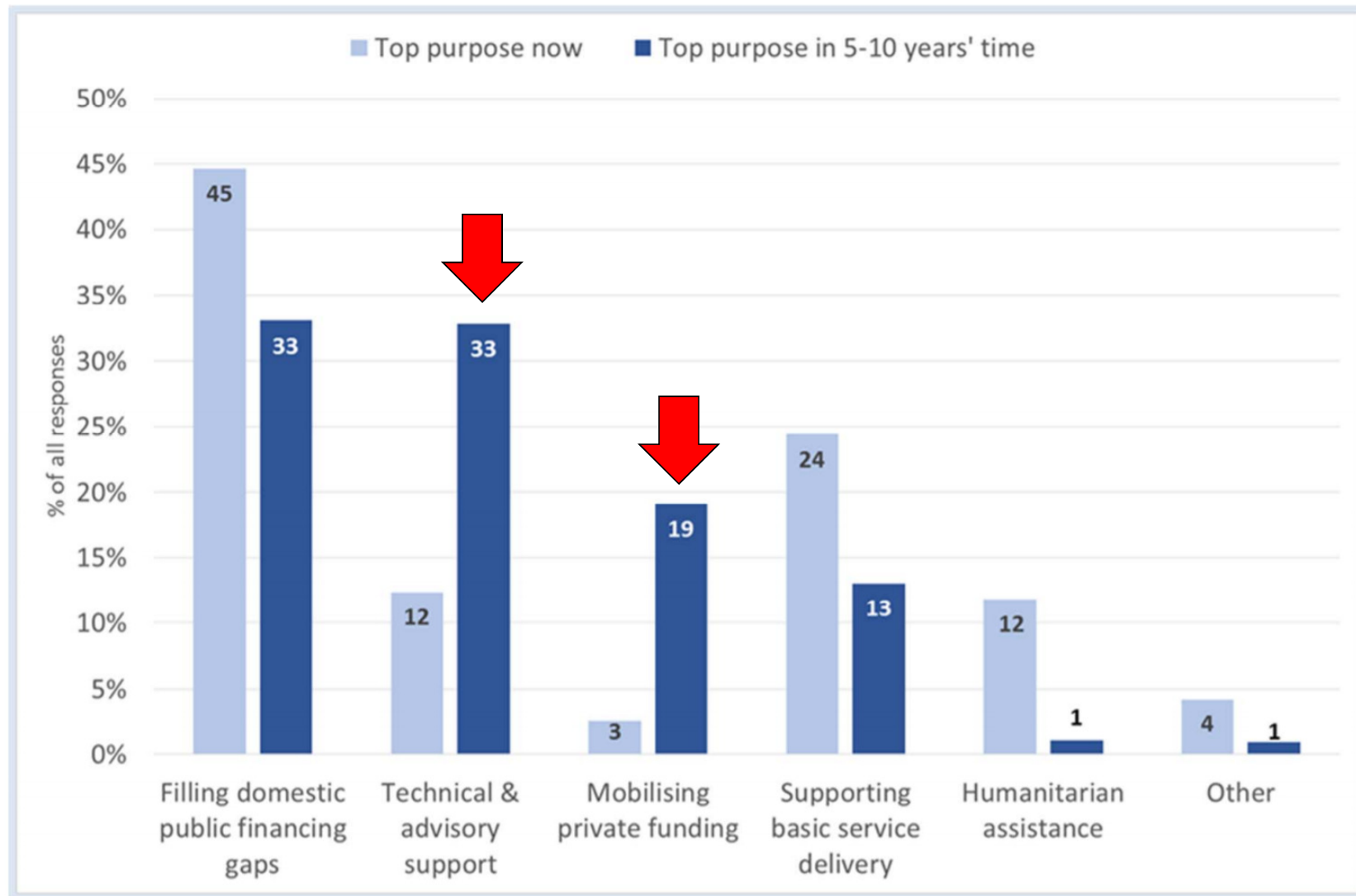


**Figure 1. Development challenges now and in 5-10 years**



From Davies, R. and J. Pickering (2015), "Making Development Cooperation Fit for the Future: A Survey of Partner Countries", *OECD Development Co-operation Working Papers*, No. 20,

**Figure 5. Top purpose of assistance now and in 5-10 years**



From Davies, R. and J. Pickering (2015), "Making Development Cooperation Fit for the Future: A Survey of Partner Countries", *OECD Development Co-operation Working Papers*, No. 20,





## If the future ain't what it used to be, what's different?

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Climate change

Partner countries are more diverse and confident

Commercial private sector is engaging with smallholders in transformational ways



# IFC Global Agribusiness Conference



The banner features a green header with the IFC logo and tagline on the left, and the event location and dates on the right. Below the header, a photograph of a smiling woman in a pink headscarf carrying a wooden pole is on the left. The right side has a yellow background with three icons (drone, smartphone, tractor) and the text 'INNOVATIONS FOR SMALLHOLDER SUPPLY CHAINS' in large green letters, followed by 'IFC GLOBAL AGRIBUSINESS CONFERENCE' in smaller black letters.

**IFC** International Finance Corporation  
WORLD BANK GROUP  
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 **INNOVATIONS FOR  
SMALLHOLDER  
SUPPLY  
CHAINS**

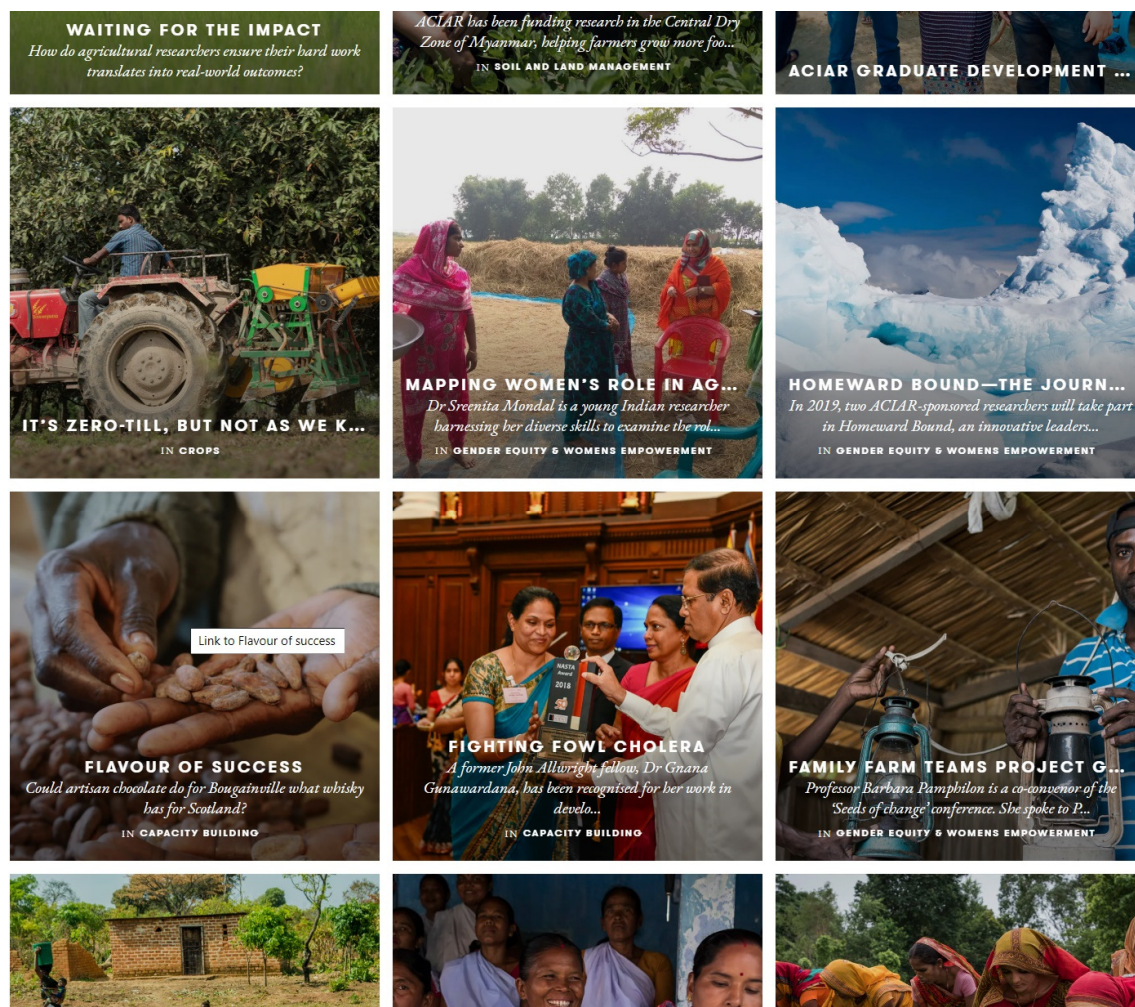
 **SUPPLY  
CHAINS**

 **SUPPLY  
CHAINS**

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# There are many reasons for optimism...



For examples, see  
<https://reachout.aciar.gov.au/>

# ...that need to be tempered with scientific scepticism



## Pacific Week of Agriculture, Oct 19

- Increased **vulnerability to shocks**
- Uncertain impact of **climate change**
- Rapid rise in **food insecurity** and **NCDs**

### But we have...

- Skilled, experienced, committed researchers with...
- Ideas, technologies, opportunities and management systems working in ...
- Established research partnerships that have...
  - Delivered substantial impacts in the past

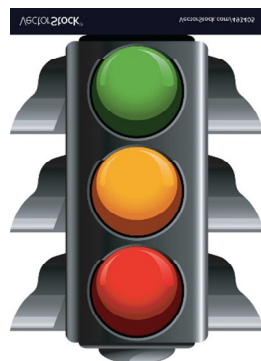


# Where will future food increases come from?...

**1/3 Breeding**  
**1/3 Agronomy**  
**1/3 Policy – PPP**



(Braun and Kropf, TropAg 2017)



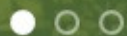
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Aid** 



## Erin Pope from the Eastern Wheatbelt in Western Australia

Erin spent time in Ethiopia in 2016 looking at how basic mechanisation could improve the efficiency of smallholder farmers.



<https://raidnetwork.crawfordfund.org>



# Thank you



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