



CONFERENCE/WORKSHOP ORGANISER'S REPORT

"Feeding more than 9 Billion: Challenges and Choices by 2050"

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Brief Description of what the conference/workshop was about

Since the food price spike of 2008 there has been increased interest in the challenges of feeding more than 9 billion people by 2050. The next 35 years represents a critical transition period in terms of food, energy, the environment and water. While markets provide some of the solutions, policies and governance arrangements are needed to ensure that markets operate efficiently, and effective governance arrangements are required to respond to the multi-dimensional nature of food security and to ensure that domestic and international institutions coordinate across policy domains. At this special event, experts from Australia, Bangladesh, Canada, China, Denmark, France, the Netherlands, New Zealand, UK, and US presented their perspectives. The event was run simultaneously in both Canberra, Australia and Copenhagen, Denmark and included a two hour video link session.

Participation – details of total number of participants, countries they came from, backgrounds (academia, industry, etc.)

There were 105 participants at the event in Canberra and 36 in Copenhagen. In Canberra, these participants represented academia, students, commonwealth government and various embassies including the USA, Mexico, Bangladesh, India, Vietnam, Pakistan, Egypt and Ethiopia. In Copenhagen, participants were from academia, students and government.

Major highlights from the presentations (listed in presentation order)

Sustainable intensification could help deliver 70% increase in food production required for growing population, while reducing environmental impact.

There has been much work in women and agriculture, but not much on nutritional study. It found food availability does not translate to better nutrition, but distribution of food within household is crucial.

We need to integrate natural resources and agriculture, and view agriculture as part of the solution and as transforming agent. It is important to recognise that food production is about energy and water management.

Feeding more than 9 billion requires policy linkages between food and energy.

Farmers are major stakeholder in food security and environmental problems. Educating farmers, labelling scheme, regulations and economic incentives could help addressing environmental issues.

The global hunger index shows over half of the world population has the wrong diet; we have the problems of hunger and obesity which might co-exist in same family.

Soil degradation is the key constraint to productivity increases, posing a threat to food production and delivery of ecosystem services.

Remote sensing can help farmers improve nutrient use efficiency by applying nutrient precisely in the landscape, which is traditionally done by physical sampling with higher cost.

Undernourishment has been reduced in China and India. The two countries have similar policies but they implement them differently, which explains more severe food insecurity at household level in India. Policies in these countries have important consequences for the world markets.



Fish has huge potential to contribute to food security, albeit this potential is not recognised by most of the strategies to achieve future food security.

Major outcomes/conclusions in terms of policy relevance

Research and monitoring:

- We need more empirical evidences to address issues underpinning food security such as the use and management of water, nutrient and soil, taking advantage of recent increase of public investment in agriculture.
- Research should be targeted in improvement of crop productivity and yield. Genomic breeding technology is promising.
- Assessment of current and future state of water, nutrient, and crop production via Global Food and Water System platform, WATERSIM model and Phosphorus Security Indicators enable us to identify challenges and opportunities.

Farm-level:

- Economic incentives have been shown to change behaviour of farmers without changing their attitudes. We need to help maximise farmer's adaptation to changing weather and changing market.
- Strategic focus on women empowerment in farming community is required to overcome limited access. Nutrition-specific program and enabling environment help addressing stunted growth among girls.
- Sustainable intensification, integrated landscape system and precision agriculture could overcome limitation in water, land and fertiliser for food production, these require a paradigm shift.
- Huge potential of fish in achieving food security, however inequalities and inequities in fish production pose some challenges.

Policy and governance:

- Public policy that supports food security is crucial to development because market mechanism alone is insufficient. Market is good at efficiency but at the cost of equity. The multidimensional nature of food security means integrated public policy is needed to address issues underpinning food security. Strategic focus on women empowerment in farming community is required to overcome limited access faced by smallholder farmers.
- Inefficiencies and larger fiscal cost in India as result of the use of price-based instrumentation and public distribution system, in contrast to China's direct transfers. Lessons learned for China, India and other middle income countries.
- Multidimensional nature of food security means integrated public policy is needed, linking food, energy, water and the environment.
- Recognition of trade-offs is crucial when managing food, energy, environment and water. Case study of Mekong dam, Murray Darling basin shows perverse action in energy sector has side effect in food and water sectors.
- Global private governance is the main driver in food sustainability. The gaps in international regimes with respect to trade, food security and environment need to be filled by stronger political leadership and more collaborative and inclusive form of governance.



- Example of new arrangement based on multi stakeholder platform (Global Agenda for Sustainable Livestock) illustrates that multi stakeholder processes take time but will proceed through repeated small wins.
- The role of international agreement in food security, trade and environment is challenged by national self-interest which is mainly driven by state politics. The gaps in international regimes with respect to trade, food security and environment need to be filled by stronger political leadership and more collaborative form of governance.
- Conventional government arrangements do not seem to work to address the wicked problem of food security, which lead to new arrangement based on multi stakeholder platform, as in the case of Global Agenda for Sustainable Livestock.

Website for further details – please also indicate if the presentations are/will be available on the website

All of the presentations were filmed in both Canberra and Copenhagen. Most of these are available at the youtube playlist <https://goo.gl/sqjHFt> they are also available through a blog post on the FE²W Network site: <http://www.fe2wnetwork.org/content/feeding-more-9-billion-2050-challenges-and-opportunities>.

All the presenters are providing a paper considering the policy implications of their topic that are/will be published on www.policyforum.net.