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**SIR JOHN CRAWFORD MEMORIAL LECTURE**  
**Effective, efficient, ethical solutions to feeding**  
**9 billion people: Invest in women**

Professor Catherine Bertini  
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The Chicago Council on Global Affairs

*Paper prepared for presentation at the “Ethics, Efficiency and Food Security” The Crawford Fund 2014 Annual Parliamentary Conference, Parliament House Canberra ACT, Australia  
26-28 August 2014*

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## SIR JOHN CRAWFORD MEMORIAL LECTURE

### **Effective, efficient, ethical solutions to feeding 9 billion people: Invest in women**

Professor Catherine Bertini  
Global Agricultural Development Initiative,  
The Chicago Council on Global Affairs

#### **Abstract**



Most of the world's expected population increase will be in South Asia and sub-Saharan Africa. Growing more food in these regions is imperative, and smallholder farmers are critical to this effort. Women are the core of the agriculture workforce, and their improved productivity is key to this increase. Women are also responsible for feeding their families; feeding growing populations is impossible without significant emphasis on and support for the roles of women and girls.

Sir John Crawford was one of the founding fathers of modern international engagement, especially in agricultural research and development. He made, and the Crawford Fund continues to make, critical contributions to a peaceful and prosperous world.

This is my fourth visit to Australia but the last one was too long ago, during my World Food Programme (WFP) tenure. When people ask: 'Catherine, you have been to probably 100 countries: which do you like the best?', I say 'Well the food is best in Italy, the colours people wear are most striking in West Africa and Guatemala, and the friendliest people are Australians ... and Cubans'.

I have had many wonderful Australian colleagues, including John Powell, Alan Wilkinson, John Bailey, Anthea Webb and Mike Sackett at WFP, and Catherine Walker at AusAID<sup>1</sup>. I worked extensively with then Minister Alexander Downer and at the United Nations with Ambassador John Dauth, but the Australian to whom I owe my biggest debt and gratitude is my predecessor at the WFP, James Ingram.

After a distinguished career in the Australian foreign service, Jim served ten years as executive director of WFP. Not only did he have to run that large development and humanitarian organisation, but he did so while leading an important effort to institutionally divorce WFP from the FAO (Food and Agriculture Organization of the United Nations). This was much like changing the engine on a train while it is running fast down the tracks. He succeeded,

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<sup>1</sup> Australian Agency for International Development

effective 1 January 1992, and passed the CEO reins to me three months later. Given that the USSR<sup>2</sup> fell in December 1991 and the world was beginning to be enveloped with massive new humanitarian needs, Jim's achievements were critical to the WFP's future success in having the flexibility to quickly feed tens of millions of people. Jim has written a book about this, *Bread and Stones* (Ingram 2007), still available on Amazon. I highly recommend it to you; in fact, I assign it to graduate students in the classes I teach on the United Nations at Syracuse University. Jim Ingram put into action principles that Sir John Crawford established. Thank you Sir John; thank you Jim.

### **Solutions to feeding 9 billion people**

Many times during the conference we will hear about the 9 billion people who will inhabit the earth, God willing, in 2050. Our mission is to discuss how to ensure that they have food security, which can be expressed as 'reliable access to sufficient quantities of affordable nutritious food to maintain healthy active lives'. I want to share five points with you, including:

- where these people will live, and the projected growth;
- how many are hungry;
- the nature of future food needs;
- highlights of related challenges.

Most importantly, I will address the role of women and girls as crucial contributors, and how important it is for us to address gender roles in agriculture if we are to support a workforce to feed 9 billion people.

### **Where 9 billion will live, and the growth patterns**

Today, worldwide, approximately 4.2 billion of the 7 billion humans are Asian, or more than half. By 2050, there are expected to be 1 billion more people in Asia, and 1 billion more Africans – double that continent's current population.

### **How many are hungry**

There is good news: the numbers of desperately hungry, food insecure and chronically hungry people are not keeping up with population growth (percentage-wise). The numbers FAO states are that 870 million people suffer from acute and generational hunger. Though there was a spike in this number during the food price crises in 2008 and in 2011, the current numbers are roughly the same as they were in 1970. The world population in this timeframe (1970–2010) has doubled.

The primary cause of this decrease is economic development. The clearest examples are here in the Indo-Pacific neighbourhood. Indonesia, for instance, now the fourth largest economy in Asia, has had an increase of per capita income from US\$890 in 1994 to US\$3580 in 2013. Though hunger exists, it is far less extensive than it has been. Incomes in Bangladesh have tripled in the same timeframe, though from a very low base, but poverty has dramatically decreased,

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<sup>2</sup> Union of Soviet Socialist Republics, also called the Soviet Union

life expectancy has increased, and statistics for improvements in maternal and child mortality rates are now better than those from India.

How is this related to agriculture? Think of every economically growing or successful country you can, and name one (well perhaps Singapore) where the economy did not start with agriculture: Australia's, America's, the Republic of Korea's, Switzerland's ... . Now this is occurring in developing countries, with agricultural growth rates in many countries now greater than the growth rates in OECD<sup>3</sup> countries. This, in turn, helps alleviate poverty and hunger. The World Bank writes that 'agricultural production is two to four times more effective at alleviating poverty' than any other activity.

### **The nature of food needs**

If the population is rising by 30% then we need that much more food, right? No. The lowest estimates are that we need at least 60% more food.

Why is double – or more than double – food required? There are many reasons, but a primary reason is that, as people become less poor, they change their eating habits. They move from inexpensive, minimal calorie foods to a more diverse diet. More meat, more fish, more vegetables. It takes more grain to raise beef, chicken and fish, and more investments and infrastructure to grow, store and ship more fruits and vegetables.

### **Highlights of related challenges**

Even after this conference we will not have a complete list of all the challenges facing farmers and producers. I will highlight just a few.

#### *Climate / nutrition / research / smallholder farmers / education*

This discussion is impossible without raising the issue of the world's changing weather patterns, sometimes called climate change. Any farmer anywhere in the world can tell us about her or his new challenges because of more rain or less rain, or hotter temperatures or cooler ones, or more weather disruptions. Farmers, in Australia and worldwide, must be even more adaptable to change than they have been in the past.

Nutritional challenges are becoming a priority, as they should be, in development programming. For instance, the most important time in a person's life is his or her first 1000 days – from conception to age 2. If a baby does not have adequate nutrition during this period of life, he can never make up for it. He will be stunted, physically and intellectually. She will give birth to a baby whose chances of being born healthy are minimal at best.

Are we growing, and producing, the correct type of baby friendly foods in every community around the world, and making sure pregnant and breastfeeding mothers and their infants have access to it? Far from it yet, but it is possible.

Adults need more diversity in their diets as well, which argues for more fruits and vegetables especially, as well as a wider variety of food available and affordable.

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<sup>3</sup> The Organisation for Economic Co-operation and Development

Children need food to be able to learn. Study after study shows that if children are able to eat in school, for instance, they are less absent and tardy, they progress faster, and they perform better on tests.

Adequate crops and food do not all happen by themselves. Research and development (R&D) as well as infrastructural development are key contributors to progress. Kanayo Nwanze, the current president of IFAD, the International Fund for Agricultural Development, said: 'It is no coincidence that in countries where agriculture has taken off, there have been large investments in research and infrastructure'. China and Brazil, for instance, have increased R&D significantly since 2000, and have productivity increases to prove it. This is one of Australia's strengths, and an extremely impactful way to use your country's expertise to help build local capacity in your geographic space and in Africa as well.

Globally, we should think beyond national programs and to what the international network could look like in the future. In August 2014, Brian Keating of CSIRO in Australia was the keynote speaker at the Food Science Congress in Montreal. Paraphrased, he said:

During the doubling of population growth from 1960 to 2000 we had the benefits of the 'green revolution' – advances in science, technology, innovation, policy changes, business investment – but not without some controversy. Now we face a range of issues: environmental, nutritional, scientific, waste, over-consumption, etc. As a result we should think in terms of a 'rainbow revolution'.

A recent study by IFPRI, the International Food Policy Research Institute, co-authored by Shenggen Fan who is IFPRI's President and a distinguished speaker at this conference (see Fan 2014), discusses smallholder farmers in the developing world, and the need for specific and differing policies to optimise support for those for whom farming continues to make sense (Fan *et al.* 2013). It is well worth a read. While it reminds us that all smallholder farmers are different and should not be treated as a homogenous group, the role of productive farmers of this type is critical throughout the world. The world is counting on smallholder farmers to help meet those huge increases in food production.

Separately, IFPRI writes of education: that educated farmers are more productive than uneducated farmers. Of course. They also write that women farmers are more likely to follow the lead of other women farmers than of men farmers.

### **The role of women**

All of this brings me to my major argument: to increase productivity and food security, invest in women.

Where did we see women in this story so far? Nowhere except as mothers, but they are everywhere. They are the mothers; the cooks; the water and firewood fetchers; the child-caregivers; the housekeepers; many of the marketers; at least half of the farmers, many operating their own smallholder farms. Women produce 60–80% of food in the developing world, according to FAO.

What they are often *not* are the landowners; the inheritors of land; the family bankers; the ones who went to school; the ones who have paid jobs; the people who show up at meetings and training sessions; the people sought out by agricultural extension workers.

In virtually every community and culture, in agriculture there are gender roles as in life. Some are ignored; some overcome; most live on for generations. It might be the case in a certain community that men plant and harvest crops; women weed and water. In another community, that make-up might be different. It is often the case that women are responsible for growing vegetables; often women are responsible for raising small animals, men large animals. Women are almost always working in fields by hand. The more mechanical the inputs get, the more male the workforce becomes.

Women are less educated than men because more boys attend and finish school than girls; yet educated farmers are more productive than uneducated farmers. Women are more likely to follow the lead of other more successful women farmers than of men, according to IFPRI. Yet when given the same inputs, according to FAO, women's farms are 20–30% more productive.

Extension work is an almost exclusively male domain: FAO estimates 85% of extension workers are men. These are the formal government assistance programs to support farming, but often it is culturally unacceptable for strange men to have conversations with women.

What is wrong with this picture?

The world has a goal: double food production. Developing countries, already with agriculture bases, offer prime opportunities for much of that growth. Smallholder farmers in the developing world are an important part of the solution. Many are women. Therefore, half the farmers cannot own their own land, many cannot count or read, have no agricultural experts to talk to them, and no time to invest in new ideas because they are holding down what we would define as at least two full-time jobs – in the fields and in their homes. If one cannot read, one cannot tell what the package of seed or fertiliser says. If one cannot count, one does not know how many rows are planted. If one owns no land, one has less incentive to produce on it. If one is working two jobs, she is not going to drop one to go to training. If extension workers are mostly men, they are not going to easily find and guide women farmers.

Therefore, my major point: to increase productivity, invest time and effort in those labouring in the fields. Be sure they have a basic education, access to resources, financing and land, and time to invest in their own productivity.

To do this, policy makers, aid workers, private sector partners and others must always take into account gender when working in agriculture. Here are some examples.

Years ago, I visited an area of rural Angola that had just been de-mined after the country's war. The community was ready to plant, but they needed hoes. There

were perhaps 100 long-handled hoes leaning against a fence. ‘What is wrong with those?’ I asked. ‘They are male hoes, from an NGO,’ was the answer. ‘Is there a female hoe?’ ‘Yes.’ They produced a shorter-handled hoe with more of a pointed shovel-type metal spade. Did you know there is a gender differentiation in hoes in rural Angola? Why? Because women spent most of the day in the fields with babies on their backs, and the short hoes, which required them to squat, were less back-breaking than the stand-up hoes.

In Ada, Ghana, I visited a local radio station which was soon going to air a program once a week training people on how to grow tomatoes, a new crop being introduced in the area. Local residents all had radios. Farm Radio International, a Canadian non-government organisation (NGO) funded by the Bill & Melinda Gates Foundation, had created the programming as well as developed a survey of families who would be planting tomatoes. They had to speak to each husband and wife to find out: When do you listen to the radio? If you both listen at the same time, who controls the knob? If those information sessions were put on at a time when women could not listen, all the resources would have been wasted.

The progress on human development indicators in Bangladesh has gone hand-in-hand with women’s empowerment, with especially strong NGO work by the Bangladeshi organisations BRAC<sup>4</sup> and the Grameen Bank, among others.

Think about the daily role of girls and women in collecting water and firewood. Did you ever think that they are the people who best know the status of those available resources in any community? Environmental stewards, they are. How can their knowledge be used?

Sometimes, you may hear about ‘gender neutral’ policies: ‘We don’t discriminate. Our policies are all gender neutral’. This is hogwash. Do not trust anyone who tells you their policies are gender neutral. That means that they pay no attention whatsoever to the roles of women and men. Yet in agricultural development, in human development, in life, there are many gender-specific roles. If we do not pay attention to them, if we do not build policies around them, we are wasting our time and the taxpayers’ money – or someone’s money and time.

Australia is, as always, in a key position to influence the rest of the world on agriculture. You have huge credibility based on your own history, your current trading levels, and the in-depth expertise you have in R&D, university skill sets, strong NGOs, and governmental experience. The rest of the world always listens when Australia talks about agriculture. On top of that, in 2014 you lead the G20. You are perfectly positioned to lead on a range of policy programming designed to take advantage of your skill sets and reputation in a mission to lead on building the capacity of the people on whom the world is counting to produce more in the developing world: women.

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<sup>4</sup> BRAC stands for Building Resources Across Communities



Here is a basic plan:

- Ensure that every girl has a primary school education.
- Convince governments to create universal secondary school education systems.
- Improve adult literacy programs for women; train girls how to teach their mothers.
- Use the Internet, use cell phones, use the radio, to reach women farmers with information and training.
- Support technical training in agriculture and related programming at basic levels and university education options for women and girls.
- Encourage development of out-of-the-box extension systems.
- Support innovative programming for girls at and outside of school to cut down on their time spent on chores and allow more time for school – like placing wells at schools.
- Encourage national policies that make owning and inheriting land be reasonable opportunities for women.
- Double-down on programs to grow vegetables and fruits – important for nutritional needs – and indigenous crops that women are most likely to tend and from which they can earn income.
- Create systems where the voices of women can be heard – about nutrition, about new crop development, about implements needed to be productive.
- Encourage banks to lend to women and men smallholder farmers.
- Be sure that women and men, girls and boys, are counted – in birth statistics and in any of our own research. Gender and age disaggregation still is not widespread and those data help dramatically when working on policy.
- Hold governments accountable for basic safety of their citizenry and for having real consequences for those who physically abuse the ability of girls and women to participate in work and education.

For years, those of us who have cared about international agriculture have been preaching only to ourselves. Aid levels decreased, interest decreased, support for developing country agriculture decreased. But since the 2008 food price crisis, the world has woken up to the food needs of the current and future inhabitants of this earth.

Australia is extremely well placed to lead these efforts further and will be most effective in doing so if it promotes policies that reflect the relative work and experience of women and of men in agriculture. To have the greatest impact, we could borrow and follow the words of one of America's founding mothers. Abigail Adams was the wife of John Adams – one of those who signed the colonies' Declaration of Independence, and later a United States President. When he was working on that declaration she wrote to him: 'Don't forget the ladies'.

If we ignore the roles of women in agriculture, we can guarantee reduced effectiveness of our efforts.

If we highlight and support the role of women, the world can reach much higher levels of development, productivity and success.

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Professor Bertini is Distinguished Fellow at the Chicago Council of Global Affairs where she co-chairs the Global Agricultural Development Initiative. She serves as a board member of the Stuart Family Foundation, as a juror of the Hilton Foundation Humanitarian Prize, and on the Board of Directors of the Tupperware Brands Corporation. For two years, she was the Senior Fellow of Agricultural Development at the Bill & Melinda Gates Foundation. She is on the Board of International Food and Agricultural Development, which advises USAID, having been appointed by President George W. Bush and reappointed by President Barack Obama. Previously, she served as the Assistant Secretary of Food and Consumer Services at the United States Department of Agriculture where she drove nationwide implementation of electronic benefit transfer programs, created a food package for breastfeeding mothers, and oversaw the design of the Food Guide Pyramid. In 2012, she served as a member of the Accountability Review Board on Benghazi, appointed by Secretary Hillary Clinton. Professor Bertini's leadership of the UN World Food Programme (WFP) transformed WFP into the world's largest humanitarian organisation. As WFP's Executive Director, first proposed by President George H.W. Bush in 1992 and re-endorsed by President Bill Clinton in 1997, Professor Bertini led the efforts to end famine in North Korea, avert starvation in Afghanistan, ensure food was delivered effectively during crises in Bosnia and Kosovo, and prevent mass starvation in the Horn of Africa. Because of her reforms, WFP was held as the model for UN efficiency, effectiveness, and accountability. Professor Bertini was named the 2003 World Food Prize Laureate for her leadership at WFP in ending famine and decreasing hunger. Later, she served as the Under Secretary General for Management and as UN Security Coordinator. Secretary General Kofi Annan also appointed her as his Humanitarian Envoy to the Horn of Africa and to Gaza and the West Bank. Professor Bertini earned a Bachelor of Arts degree from the State University of New York at Albany and has been accorded numerous awards, commendations, and honorary degrees.

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