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Bridging the nexus between food & human security

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G20

The Group of Twenty (G20) Finance Ministers and Central Bank Governors was initially established in 1999 to connect leading industrial and developing economies to discuss key issues that are affecting the global economy. The first Leaders' Summit was held in Washington in November 2008.

The G20 replaced the older and more exclusive Group of Seven (G7) nations and Group of Eight (G8) nations and has now established itself as the premier forum for international economic development, particularly in the wake of the economic crisis that affected the world in 2008.

The constituent nations of the G20 are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom and the United States of America. The European Union is also represented, with the Managing Directors of the International Monetary Fund (IMF) & World Bank participating in an ex-officio capacity.

Australia's role in the G20 has grown significantly since 2009, with former Prime Minister and current Foreign Minister, Kevin Rudd, noting the transition to the G20 marked the 'first time ever that [Australia] has had a place at the top economic table of global economic decision-making'.

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Abstract

Human and food security are mutually reinforcing and the accomplishment of these two objectives can reduce poverty levels and lift development worldwide. The UNDP defines human security as freedom from fear and freedom from want,¹ where all basic needs are met, including food, shelter and education². Food security, on the other hand, is the basic 'right of everyone to have access to safe, sufficient and nutritious food',³ including physical and economic access.⁴ The clear nexus between these two objectives indicates how their achievement may assist in raising the standard of living of those in the developing world. The recent food crisis in 2008 increased the number of food insecure people to 925 million people,⁵ and in the Asia-Pacific this number increased to 582 million.⁶ Rising food prices contributed to the recent food crisis, reasons for which included rising energy prices and increased usage of biofuels and their flow-on effects to food prices. Increasing food prices leads to greater social instability and malnourishment, which further perpetuates the poverty cycle. Actions can be taken to mitigate these negative effects including greater investment in agriculture and agricultural research and development, as well as looking towards alternative programs such as small-scale agriculture. Achieving greater food security is crucial for achieving human security which can lead to greater stability and security worldwide. Given Australia's location in the Asia-Pacific region alleviating food security is central for poverty reduction and enhancing regional security.

¹S. Smith, 'The contested concept of security', in Ken Booth, *Critical security studies and world politics*, Boulder & London: Lynne Rienner Publishers, 2005, p. 53.

² C. Thomas, *Global Governance, Development and Human Security*, London, United Kingdom, Pluto Press, 2000, p. 6.

³ Meeting of G20 Agriculture Ministers, *Action Plan on Food Price Volatility*, Paris, France, 2011, p.1.

⁴ United Nations ESCAP, *Sustainable Agriculture and Food Security in the Asia and the Pacific*, Bangkok, Thailand, April 2009, p.20.

⁵ N. Brown, J. Laffan, and M. Wigt, *High food prices, food security and the international trading system*, DFAT (Department of Foreign Affairs and Trade), Sydney, Australia, September 2008, retrieved 6 May 2012 from http://www.dfat.gov.au/trade/focus/081017_food_security.pdf.

⁶ ESCAP, *Sustainable Agriculture and Food Security in the Asia and the Pacific*, 2009, p. 22.

Introduction

For a rural family with two children living in Jharkhand in Eastern India, each day is a struggle. This family lives on less than 70% of the daily-recommended calorie intake, without access to running water and their two children are stunted and anaemic. While for many, greater global integration has delivered numerous benefits in the international arena, for others like this Indian family, this continued globalization has led to increased social and economic inequalities and insecurity.⁷ This can be seen in the increasing volatility of food prices which is overwhelmingly affecting poorer households and is leading to greater food insecurity. This in turn can lead to social instability, including riots, protests and even falls of governments.⁸ Outcomes such as these prevent the accomplishment of human security which, according to the United Nations Development Program (UNDP), is defined as freedom from fear and freedom from want.⁹ According to Caroline Thomas, human security is an existence where all basic needs are met, including food, shelter and education as well as the accomplishment of human dignity.¹⁰

Despite an increased focus on human security and development in recent years, and their connection to economic development, achieving a state of freedom from want and a position of economic security is still an intangible goal for many. This is no clearer than in the domain of food security. Food security, according to the G20 is the 'right of everyone to have access to safe, sufficient and nutritious food.'¹¹ Although there has been an increased focus in recent years on eliminating food insecurity, culminating in the inaugural World Food Summit (WFS) in 1996 which

⁷ N. K. Poku, 'Globalisation, Development, and Security,' in Alan Collins, *Contemporary Security Studies*, Oxford, Oxford University Press, 2010, p. 264.

⁸ H. Kharas, *The G-20 Cannes Summit 2011: Is the Global Recovery Now in Danger?* Washington, Brookings Institute, 2011, p. 9.

⁹ S. Smith, 'The contested concept of security', in Ken Booth, *Critical security studies and world politics*, Boulder & London: Lynne Rienner Publishers, 2005, p. 52.

¹⁰ C. Thomas, *Global Governance, Development and Human Security*, p. 6.

¹¹ Meeting of G20 Agriculture Ministers, *Action Plan on Food Price Volatility*, Paris, France, 2011, p.1.

aimed to 'eliminate hunger and malnutrition, and to achieve sustainable food security for all people',¹² the number of malnourished people has increased since 1996.¹³ According to Tarrah, in 1996 there were 823 million undernourished people in the world. If the aims of the WFS had been met, today there would be 583 million.¹⁴ However, in 2010 there were 925 million undernourished people in the world, 906 of which were in the developing world.¹⁵

This essay will firstly consider what has led to increased food insecurity and an increasing number of undernourished people. One of the major reasons for the current levels of malnourishment is the rising level of food prices. The World Bank notes that food prices had a price increase of 83% in the 36 months to February 2008.¹⁶ There are a multitude of reasons accounting for the recent rise in food prices. These include fluctuation of commodity prices as well as the weaker US dollar in the global markets,¹⁷ weather shocks (such as in Australia and Russia), financial market speculation and increasing demand from China and India.¹⁸ However, this discussion will focus on the reasons of rising energy prices resulting from concerns about energy security, leading to the transformation of food crops into energy supplies resulting in increased food prices.¹⁹ According to Heady and Fan, these arguments are more 'theoretically' convincing than other reasons for the recent rising prices.²⁰ Following this discussion, the consequences of rising food prices will be considered. Increasing food

¹² Food and Agriculture Association, *World Food Summit 13-17 November 1996 Rome Italy*, Retrieved 27 March 2011 from <http://www.fao.org/wfs/index_en.htm>.

¹³ H. Tahereh, 'Global Food Crisis: Food versus Fuels', *Competition Forum*, 7:2, 2009, p. 420.

¹⁴ *Ibid.*

¹⁵ Food and Agricultural Organisation, *The State of Food and Agriculture. Women in Agriculture: Closing the gender gap for development*, Rome, Italy, 2010-11, p.42.

¹⁶ The World Bank, *Rising Food Prices: Policy Options and World Bank Responses*, Washington, Washington DC, 2008, p.1.

¹⁷ K. M. Weinberger, W. J. Easdown, R. Yang, J. Donough and H. Keatinge. 'Food Crisis in the Asia-Pacific Region', *Asia Pacific Journal of Clinical Nutrition*, vol. 18(4), 2009, p. 508.

¹⁸ D. Headey, S. Fan. 'Anatomy of a Crisis: the Causes and Consequences of Surging Food Prices', *Agricultural Economics* 39, 2008, p. 378.

¹⁹ *Ibid.*

²⁰ D. Headey, S. Fan, 'Anatomy of a Crisis', p. 382.

prices and the role they play in preventing the accomplishment of food security leads to social instability as well as undernourishment. As two thirds of those going hungry in the world live in the Asia-Pacific region,²¹ and due to Australia's location, ensuring food security in the region is of great concern to Australia to ensure domestic and regional stability. Finally, what steps can be taken to enhance global food security will be examined. While much has been done, including an action plan on food price volatility presented at the G20 in Cannes in June 2011, more steps can be taken to ensure greater food security and the opportunity for more people to enjoy basic human security. This includes increasing agricultural productivity, as well as increasing investment in agriculture and agricultural research, especially in poorer countries which can lead to greater agricultural output.²² Small-scale agriculture projects, with an emphasis on female producers, will also be examined illustrating how this can also lead to greater food security.

Thus, despite the continued efforts of the global community to work together to ensure greater food security throughout the world, challenges continue in ensuring basic food security. Huge social and economic inequalities continue to exist in our globalising environment and food security demonstrates one crucial area in which the goal of basic human security is yet to be fully realised.

Causes of food insecurity

As rising food prices disproportionately have adverse effects for middle and lower income countries compared to high income countries,²³ the recent rise in food prices can assist in explaining the increasing food insecurity facing many in the developing world. These rises in food prices have prevented many in the developing world from achieving basic freedom from want.

²¹ AusAID, *Sustainable Economic Development: Food Security Thematic Strategy*, retrieved 12 May 2012 from <http://www.aisaid.gov.au/keyaid/food_security.cfm>.

²² Weibberger et al., 'Food Crisis in the Asia-Pacific Region', 2009, pp. 508; Tahereh, 2009, p. 424.

²³ G. R. Timilsina, J. C. Beghin, D. van der Mensbrugghe, S. Mevel, 'The Impacts of Biofuels Targets on Land-Use Change and Food Supply: A Global CGE Assessment,' *Agricultural Economics*, no. 43, 2012, p. 325.

Rising energy prices is one of the primary reasons which has led to the recent increase in food prices. As the majority of the energy used in agriculture production is oil, the recent rise in oil prices has increased the costs of agriculture production which has flow-on effects to food prices.²⁴ US food production is particularly oil-intensive and as it is a major contributor to global production and export markets,²⁵ rising oil prices which adversely affect US agriculture production will also affect global supply of food. For example, Mitchell found that the increase in oil prices led to a 15-20 per cent increase in US food commodities, with production costs for corn, soybeans and wheat increasing by 17.0, 24.1 and 6.7 per cent respectively.²⁶ As fertilisers and other chemicals necessary for crop production, account for 15-20 per cent of agricultural total operating costs and due to the fact energy costs can account for 90% of the cost of fertiliser production, as energy prices increase fertiliser prices will also increase, further augmenting food prices.²⁷ Additionally, transport is the industry with the highest intensity of oil usage and due to the 'bulky' nature of agricultural products; transportation is required for the export market. Thus, growing transportation costs may also have a strong influence over agricultural prices.²⁸ According to Headey and Fan, in the US, the combined impact of increasing fertiliser production and increased transportation costs due to rising energy prices, led to a 30-40 per cent increase in the production costs of food and so of food prices between 2002-2007.²⁹

²⁴ D. Headey, S. Fan, 'Anatomy of a Crisis', 2008, p. 380.

²⁵ *Ibid.*

²⁶ D. Mitchell, 'A note on rising food prices,' *World Bank Policy Research Working Paper 4682*, Washington, Washington DC, 2008, p. 5.

²⁷ D. Headey, and S. Fan, *Reflections on the Global Food Crisis: How did it happen, how has it hurt and how can we prevent the next one?* IFPRI Discussion Paper, International Food Policy Research Institute (IFPRI), Washington, Washington DC, 2010, p. 25.

²⁸ *Ibid.*, p. 25.

²⁹ *Ibid.*, p. 27.

Increasing energy prices not only increases the production costs of food, but also increases the demand for biofuels which then leads to an increase in food prices. As Heady and Fan observe, once oil prices increase to more than \$US60 a barrel, biofuels become more competitive against oil prices leading to higher demand for biofuels.³⁰ Thus, the recent increase in oil prices since 2002 has led to an increased demand for biofuels. For example in the US, the primary producer of ethanol from maize worldwide,³¹ the amount of maize used to produce ethanol increased by 53 million metric tons between 2002 and 2007, accounting for a 30 per cent increase in global grain use and leading to an increase upon global food prices.³² Not only does the sale of maize stocks for biofuels lead to an increase in food prices, but the conversion of farmland to land suitable for biofuel production also increases food prices. For instance, in the US in 2007 the spread of farmland for maize production led to a 16 per cent decrease in land for soybeans resulting in a price increase of 75 per cent in soybean prices between April 2007 and April 2008.³³ According to one study simulating the long-term impacts of increasing biofuel production in the US, it was found maize prices would increase by 47 per cent, wheat by 26 per cent and rice prices by 25 per cent.³⁴ While certain studies note these increases are overestimated, Heady and Fan conclude that the increase in biofuel production is having an important effect upon maize and soybean production.³⁵

In some countries such as the EU, Brazil, India, Thailand and South Africa growing demand for biofuels also leads to conversion of pastures and forests into crops resulting in land being reallocated to products for biofuels such as coarse grains and corn, and away from rice and other

³⁰ D. Headey, S. Fan, 'Anatomy of a Crisis', 2008, p. 379.

³¹ P. Abbott, C. Hurt, and W. E. Tyner, *What's driving food prices?* Farm Foundation Issue Report, Oak Brook, Illinois, 2008, p. 41.

³² R. Trostle, *Global Agricultural Supply and Demand: Factors Contributing to the Recent Increase in Food Commodity Prices WRS-0801*, Economic Research Service, United States Department of Agriculture, 2008, p. 18.

³³ D. Headey, and S. Fan, *Reflections on the Global Food Crisis*, 2010, p. 29.

³⁴ *Ibid.*

³⁵ *Ibid.*, p. 31.

crops, as this is more financially rewarding.³⁶ This changing composition of crops worldwide would lead to a decrease of between 8-29 million tonnes of food by 2020, in percentage terms 0.29-1.21 per cent.³⁷ While this seems small in percentage terms, according to Timilsina et al. it would be lower income countries that would be adversely affected by this, as they are more reliant on agriculture and food products.³⁸ Thus, rising energy prices and the increased demand for biofuels would adversely affect middle to lower income countries and as these countries may already experience greater human insecurity, rising food prices would further exacerbate this. According to AusAid these increased food prices are likely to continue for the next 10 years which may prevent those in developing countries from achieving 'freedom from want', preventing the achievement of a state of human security.

Impacts of food insecurity:

Social Instability

Thomas argues that human security must 'have at its core the satisfaction of basic material needs of all humankind'.³⁹ As food security underpins all future development,⁴⁰ it is evident that rising food prices would prevent many in the developing world from meeting their basic material needs which would have severe consequences upon their human security. According to the World Bank, the rising food prices between 2005 and 2007 increased the number of people living in poverty by 73-105 million people.⁴¹ In light of this the German chancellor Angela Merkel declared that rising food prices

³⁶ G. Timilsina et. Al. 'The Impacts of Biofuels Targets on Land-Use Change and Food Supply', 2012, pp. 322, 325.

³⁷ *Ibid.* p. 325.

³⁸ *Ibid.*, p. 326.

³⁹ C. Thomas, *Global Governance, Development and Human Security*, p. 6.

⁴⁰ AusAID, *Sustainable Economic Development: Food Security Thematic Strategy*, retrieved 7 May 2012 from http://www.aisaid.gov.au/keyaid/food_security.cfm.

⁴¹ The World Bank, *Addressing the food crisis: The need for rapid and coordinated action*, Background paper for the Group of Eight Meeting of Finance Ministers, June 2008, retrieved 8 May 2012 from http://www.worldbank.org/html/extdr/foodprices/pdf/G8_food%20price%20paper.pdf. p.3.

and consequent crisis could 'threaten democratization, destabilize countries and lead to international security problems',⁴² factors which would prevent the accomplishment of human security. Similarly, the IMF declared that if prices continued to rise then some governments might not be able to feed their people and maintain growth in the economy.⁴³ As food insecurity and lack of growth in a nation's economy can lead to social instability, this illustrates the clear nexus between food and human security and the necessity of one for the other. For example, according to Weinberger et al., between June 2007 and July 2009, during the period of increased food prices, food related protests were recorded in 43 counties.⁴⁴ This included violent protests in Cameroon, Indonesia and Thailand, as well as non-violent protests in China, India and Brazil.⁴⁵ Additionally, there are claims that the rising food prices played a role in the recent Arab uprisings.⁴⁶ The table and graph below illustrate the correlation between the spike in food prices and the resulting increase in protests. Graph 1 indicates the large spike in food prices which occurred between 2007 and 2009. Consequently, table 1 illustrates the number of violent and non-violent protests which occurred under the period of increased food prices. This indicates how increasing food prices leads to greater insecurity, preventing many in the developing world from enjoying a basic level of human security.

⁴² Deutsche Welle, 'Merkel to G8: Food Crisis is Global Security Risk', 2008, retrieved 8 May 2012 from <<http://www.dw-world.de/dw/article/0,2144,3462743,00.html>>.

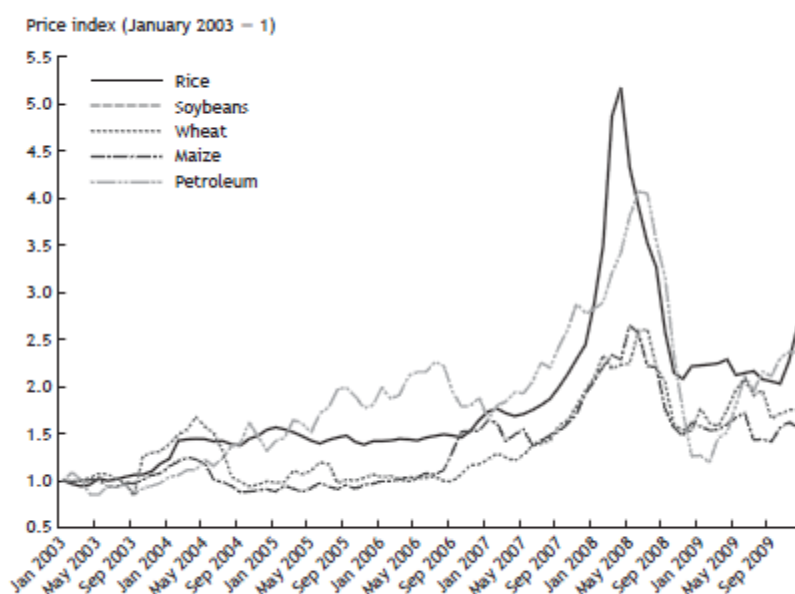
⁴³ International Monetary Fund, 'Price Surge Driving Some Countries Close to Tipping Point – IMF', *IMF Survey Magazine*, 2008, retrieved 9 May 2012 from <<http://www.imf.org/external/pubs/ft/survey/so/2008/new070108a.htm>>.

⁴⁴ Weinberger et al., 'Food Crisis in the Asia-Pacific Region', 2009, p. 512.

⁴⁵ K. von Grebmer, H. Fritschel, B. Nestorova, T. Olofinbiyi, R. Pandya-Lorch, and Y. Yohannes, *Global Hunger Index: The Challenge of Hunger 2008*, International Food Policy Research Institute (IFPRI), Washington, Washington DC, 2008, p. 25.

⁴⁶ IFPRI, *Global Hunger Index*, 2008, pp. 25., E. Fraser, and A. Rimas, 'The Psychology of Food Riots: When do Price Spikes Lead to Unrest?', *Foreign Affairs*, January 30, 2011, retrieved 9 May 2012 from <<http://www.foreignaffairs.com/articles/67338/evan-fraser-and-andrew-rimas/the-psychology-of-food-riots>>.

Figure 2.3 Trends in nominal prices of cereals and oil, January 2003–November 2009



Graph 1: Source: D. Headey, and S. Fan, *Reflections on the Global Food Crisis*, 2010, pp. 12

GHI BY SEVERITY AND FOOD PROTESTS, JANUARY 2007–JUNE 2008				
< 4.9 (low)	5.0 to 9.9 (moderate)	10.0 to 19.9 (serious)	20.0 to 29.9 (alarming)	≥ 30.0 (extremely alarming)
Non-violent	Non-violent	Non-violent	Non-violent	Non-violent
Argentina	China	Bolivia	Bangladesh	Ethiopia
Brazil	El Salvador	Guatemala	India	Niger
Jordan	Peru	Nicaragua	Madagascar	
Lebanon	South Africa	North Korea*	Nepal	
Mexico	Trinidad and Tobago	Philippines		
		Uzbekistan	Violent	
	Violent		Burkina Faso	
	Egypt, Arab Rep.	Violent	Guinea	
	Malaysia	Cameroon	Haiti	
	Morocco	Côte d'Ivoire	Mozambique	
	Russia	Honduras	Pakistan	
	Thailand	Indonesia	Yemen, Rep.	
	Tunisia	Kenya		
		Mauritania		
		Senegal		

Note: For the 2008 GHI, data on the proportion of under-nourished are for 2002–2004, data on child mortality are for 2006, and data on child malnutrition are for the latest year in the period 2001–2006 for which data are available. For countries marked with an asterisk, the underlying data are unreliable.

Table 1: Source: IFPRI, *Global Hunger Index*, 2008, pp. 25.

According to IFPRI, social unrest can hamper economic growth⁴⁷ which further prevents the accomplishment of food security continuing the vicious cycle of food insecurity. Conflict which stems from rising food prices and food insecurity, leads to decreased human welfare and capabilities

⁴⁷ IFPRI, *Global Hunger Index*, 2008, p. 25.

preventing the basic accomplishment of human security. Riots and protests associated with food insecurity affect regional security,⁴⁸ which may affect Australia's own national security in the region. Achieving greater food security for the region (and indeed worldwide) will assist Australia and its neighbours to enjoy greater security and stability.

Undernourishment

While social instability is one consequence of food insecurity, rising food prices also leads to undernourishment which disproportionately affects already poverty-stricken areas.⁴⁹ As the Indian family in the introduction demonstrated, undernourishment is a real and active threat to families in developing nations. Poor households spend three quarters of their income on food staples, and as food prices increase a larger proportion of their income would be spent on food supplies increasing their exposure to poverty.⁵⁰ As prices increase, poor households cut down their expenditure on 'non-staple food items' which reduces the diversity, quality and nutritional status of their diets as families strive to maintain a minimal level of food intake.⁵¹ In 2007 as a result of the recent rise in food prices the number of malnourished in the world increased by 75 million people, bringing the total number of malnourished people worldwide to 923 million.⁵² This resulting poor nutrition perpetuates poverty as malnourished adults have a decreased capacity to work, while for malnourished children they have an increased exposure to health dangers, leading to illness and deaths related to malnourishment.⁵³ Families may also cut down on other expenditures in the family budget such as

⁴⁸ AusAID, *Sustainable Economic Development: Improving Food Security*, Canberra, Australia, November 2011, p. 3.

⁴⁹ Weibberger et al., 'Food Crisis in the Asia-Pacific Region', 2009, p. 509.

⁵⁰ M. Ivanic, and W. Martin, *Implications of Higher Global Food Prices for Poverty in Low Income Countries*, Policy Research Working Paper 4594, 2008, pp. 1, 20.

⁵¹ Weibberger et al., 'Food Crisis in the Asia-Pacific Region', 2009, pp. 509-510.

⁵² Food and Agricultural Organisation (FAO), *The State of Food Insecurity in the World 2008: High food prices and food security— Threats and Opportunities*, Rome, Italy, 2008.

⁵³ United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) *Sustainable Agriculture and Food Security in the Asia Pacific*, 2009, pp. 21-22.

health care and education, and this according to the FAO, may prevent them from ‘climbing out of poverty’.⁵⁴ As poverty is a security threat nationally, regionally and globally, increasing poverty may lead to further protests which may further hamper economic growth. This would further prevent the material entitlement, necessary for human security.

What can be done?

Increasing Agricultural Productivity

Increasing agricultural productivity is essential for increasing food security. This would promote economic growth and reduce poverty leading to an enhancement of human security through assuring the achievement of basic human needs. According to Bezemer and Heady, increased agricultural growth is a ‘precondition to broader growth’ which in turn lowers food prices for the urban and rural poor.⁵⁵ As these groups typically spend most of their money on food (as discussed above), lower food prices would lead to a reduction in their poverty levels. Additionally, many African countries have lower food production than they are capable of and by increasing agricultural productivity in these countries, this would lead to greater food security.⁵⁶ For example, in developing countries agriculture is the major source of growth, and according to AusAID a 1 per cent increase in agricultural yield reduces the number of people living on less than one USD a day by 0.6 to 1.2 per cent.⁵⁷ This is evidence of what Heady and Fan state, is the necessity to ‘refocus foreign aid on agriculture’ which would assist in improving the global food system augmenting food security.⁵⁸

⁵⁴ FAO, *The State of Food Insecurity in the World 2008*, 2008.

⁵⁵ D. Bezemer and D. Heady, ‘Agriculture, Development and Urban Bias’, *World Development*, no. 36(8), 2008, pp. 1345-1364.

⁵⁶ D. Headey, and S. Fan, *Reflections on the Global Food Crisis*, 2010, p. 99.

⁵⁷ AusAID, *Sustainable Economic Development: Improving Food Security*, 2011, p. 3.

⁵⁸ *Ibid.*, p. 100.

Raising Investment in Agriculture Research and Development

Key to increasing agricultural productivity is lifting investment in agricultural innovation. The world's population is expected to grow from the current level of 7 billion people and reach between 9 and 10 billion people by 2050⁵⁹, and according to Lele, in order to feed these extra people global food production will need to double increasing cereal output by 70%.⁶⁰

However, food production is reliant upon finite resources, and meeting this increased demand is contingent upon finding new ways to increase agricultural output. For example, one litre of water is needed to produce one calorie of food, thus, 9000 cubic metres of water will be needed to feed the growing population, however water resources are finite suggesting agricultural research will be needed to produce more food.⁶¹ Similarly, the climatic changes from global warming and rising greenhouse gas emissions will also call for new agricultural methods to ensure sufficient crop output continues.⁶² Ejeta concludes that in light of these changing climatic occurrences agricultural innovation bringing new methods and knowledge is crucial ensuring agriculture 'become[s] part of the solution ... not just part of the problem.'⁶³ Indeed, Australia's ODA organisation, AusAID, places great importance on lifting agricultural productivity through research and development and has made it one of their three pillars of increasing food availability.⁶⁴ Consequently, AusAID works together with local and international agricultural research organisations (such as the Commonwealth Scientific and Industrial Research Organisation and Consultative Group on International Agricultural

⁵⁹ United Nations, *World Population Expected to reach 10 billion by 2100 if Fertility in all Countries Converges to Replacement Level*, New York, United States, 3 May, 2011, retrieved 10 May 2012 from <http://esa.un.org/wpp/Other-Information/Press_Release_WPP2010.pdf>.

⁶⁰ U. Lele, 'Food Security for a Billion Poor', *Science*, 26 March, 2009, retrieved 10 May 2012 from <<http://www.sciencemag.org/content/327/5973/1554.full>>.

⁶¹ G. Ejeta, 'Revitalizing Agricultural Research for Global Food Security', *Food Security*, no. 4(1), 2009, p. 397.

⁶² *Ibid.* p.396.

⁶³ *Ibid.* p.397.

⁶⁴ AusAID, *Sustainable Economic Development: Food Security Thematic Strategy*, retrieved 10 May 2012 from <http://www.ausaid.gov.au/keyaid/food_security.cfm>.

Research) to both lift agricultural productivity through environmentally sustainable means, and strengthen international agricultural research.⁶⁵ This indicates the need for increased investment in agricultural research to lift agricultural productivity, which would lead to increased food security and would assist in reducing the number of people thrust into poverty and unable to enjoy human security.

Minimising Biofuel Mandates

As discussed above, the impacts of diverting grain and other food stocks to biofuels is a key factor in food price volatility which is a major contributor to increasing food insecurity. For example between 2007-2009, 20% of sugarcane, 9% of vegetable oil and coarse grain and 4% of sugar beet stores were used for biofuel production which led to significant upward pressure on food prices.⁶⁶ According to the 'Price Volatility in Food and Agriculture Report', as long as mandates exist for biofuel production food stocks will continue to be diverted towards biofuels leading to upward pressure on food prices.⁶⁷ The report concludes that governments should 'remove provisions of current national policies that subsidise (or mandate) biofuels production'.⁶⁸ This position was supported by the Think20 Summit held in February which also supported the recommendation to end mandates for biofuel production, as this contributes to greater food price volatility and has adverse effects upon food security and human rights.⁶⁹ Thus, the continued diversion of food crops for biofuel production is increasing food prices which affects the food security of consumers in at-risk communities. Removing mandates which encourage biofuel production would assist in decreasing food insecurity

⁶⁵ *Ibid.*

⁶⁶ OECD, *Price Volatility in Global Food and Agriculture Markets: Policy Responses*, 2 June, 2011, retrieved 10 May 2012 from <<http://www.oecd.org/dataoecd/40/34/48152638.pdf>>, p. 10.

⁶⁷ *Ibid.*

⁶⁸ *Ibid.* p. 27.

⁶⁹ N. Alexander, *How the G20 Mexico can Promote Sustainable Development*, Think20 Mexico Participant notes, 2012, retrieved 10 May 2012 from <http://www.boell.org/downloads/Think_20_Participant_Briefing_Memos.pdf>, p. 4.

for vulnerable communities, giving them greater opportunities to achieve human security. According to Neil Watkins, the G20 provides an ideal opportunity to take decisive action on this issue, as leaders could agree to 'stop the biofuel incentives', addressing some of the underlying causes of food insecurity which would benefit the world's poor.⁷⁰

Investment in Small-scale Agriculture

Another method to reduce the impact of food insecurity and rising food prices is looking at alternative approaches to development. Neoliberal development policies have accounted for the majority of development policies in the developing world, which aimed to shift developing nations from a traditional subsistence economy to a 'modern industrial economy'.⁷¹ It was believed this system had the possibility of 'unlimited economic growth' which would result in wealth 'trickl[ing]' down through society allowing each member to benefit from this economic growth.⁷² However, as Poku notes, at the start of the 20th century there was growing disillusionment with this neoliberal development model, as the benefits were not being evenly distributed leading to calls for modification.⁷³ This has resulted in an increasing focus on making human security the heart of the security agenda,⁷⁴ and has also led to renewed interest in alternative means of development. According to Thomas, this alternative model is more of a 'bottom-up' approach which includes, satisfaction of basic needs, 'self-sufficiency, self-reliance ... community participation, local ownership and control of policies and projects which are predominantly small-scale'.⁷⁵ In response to the recent increase in food prices and awareness of the possibility of a severe shortfall in food

⁷⁰ N. Watkins, *G20 and Food Security: High Expectations, Few Results ... Yet*, Heinrich Böll Stiftung G20 Update, February 2012, retrieved 10 May 2012 from <[http://boell.org/downloads/G20_Update_February_2012\(1\).pdf](http://boell.org/downloads/G20_Update_February_2012(1).pdf)>, p. 16.

⁷¹ C. Thomas, *Global Governance, Development and Human Security*, 2000, p. 34.

⁷² *Ibid.*, p. 35.

⁷³ N. K. Poku, *Globalisation, Development and Security*, 2010, p. 261.

⁷⁴ *Ibid.*, p. 262.

⁷⁵ C. Thomas, *Global Governance, Development and Human Security*, 2000, p. 37.

supplies, these ideas are receiving attention and one way to increase food and human security is increasing investment in small-scale agriculture projects.

In many parts of the developing world, small-scale farmers are responsible for their own economic and social sustainability and according to Spielmann et al., this method remains a 'viable' method of agricultural production.⁷⁶ Indeed, the "Action Plan on Food Price Volatility and Agriculture" report issued at the G20 summit in Cannes, noted the importance of small scale producers in achieving food security, as improving support to small holders may assist in improving agricultural output which can increase food security. The Cannes report notes that small-scale producers are the dominant group amongst the food insecure, and improving their agricultural production would greatly enhance their access to food.⁷⁷ One way to do this is to increase the participation of women in agriculture which is, according to Jacques Diouf, director-general of the Food and Agricultural Organisation, is 'crucial for agricultural development and food security.'⁷⁸ Reducing the gender gap in agriculture can increase agricultural productivity and output leading to an increased availability of food and lowering of food prices.⁷⁹ According to the State of Food and Agriculture Report, if women received the same access to agricultural resources as men did, this would lead to an increase in agricultural production on their land of 20-30 per cent which would increase agricultural output at the national level in developing countries by 2.5-4 per cent.⁸⁰ This would have a direct flow-on effect to reducing the number of undernourished people worldwide and would reduce the total number of undernourished people in the world by 12-17 per cent, or in numerical terms, 100-150 million fewer hungry people.⁸¹ Increasing support to small-scale farmers, in particular women would assist in

⁷⁶K. Spielmann, A. M. Nelson, S. Ingram, and M. A. Peebles, 'Sustainable Small-Scale Agriculture in Semi-arid Environments', *Ecology and Society*, no. 16(1), p. 26.

⁷⁷ Meeting of G20 Agriculture Ministers, *Action Plan on Food Price Volatility*, Paris, France, 2011, p. 1.

⁷⁸ FAO, 'Closing the Gender Gap in Agriculture: FAO Report makes Strong Business Case for Investing in Women', *FAO News Release*, March 7, 2011, retrieved 10 May 2012 from <<http://www.fao.org/news/story/en/item/52011/icode/>>.

⁷⁹ FAO, *The State of Food Insecurity in the World 2008*, 2008, p.39.

⁸⁰ *Ibid.* p.42.

reducing the number of food insecure people, allowing a greater number of people to achieve a basic material standard of living.

Conclusion

Overall, it is manifestly evident that there exists a nexus between food and human security. As development and security discourse moves towards making the individual the referent object, 'esoteric' concerns are perceived as greater threats, and human security allows us to examine new ways to mitigate these threats.⁸² One such concern is food insecurity. The recent rising food prices caused by rising oil prices, fears for energy security and the transformation of crops to bio-fuels illustrated how food insecurity is related to human security. The consequences of food insecurity may lead to social instability and undernourishment, further preventing the accomplishment of human security and leading to the continuation of the poverty cycle. Despite increasing food insecurity methods exist to reduce the severity of food insecurity, such as increasing agricultural productivity, enhancing agricultural research and development, reducing the use of bio-fuels and increasing support to small-scale farmers. This indicates the relation between food and human security and by extension the link between security and development. By addressing the concerns of food security with a new discourse, we can address the poverty and inequality which exists worldwide and start a new path which could lead to 'stability, peace and human security'.⁸³ While food security is just one aspect which prevents the accomplishment of human security, addressing this theme will start us on a journey which may result in a fairer and more secure world and may bring hope to the poor Indian family living in Jharkhand.

⁸¹ Ibid.

⁸² N. K. Poku, *Globalisation, Development and Security*, 2010, p. 262.

⁸³ C. Thomas, *Global Governance, Development and Human Security*, 2000, p. 126.

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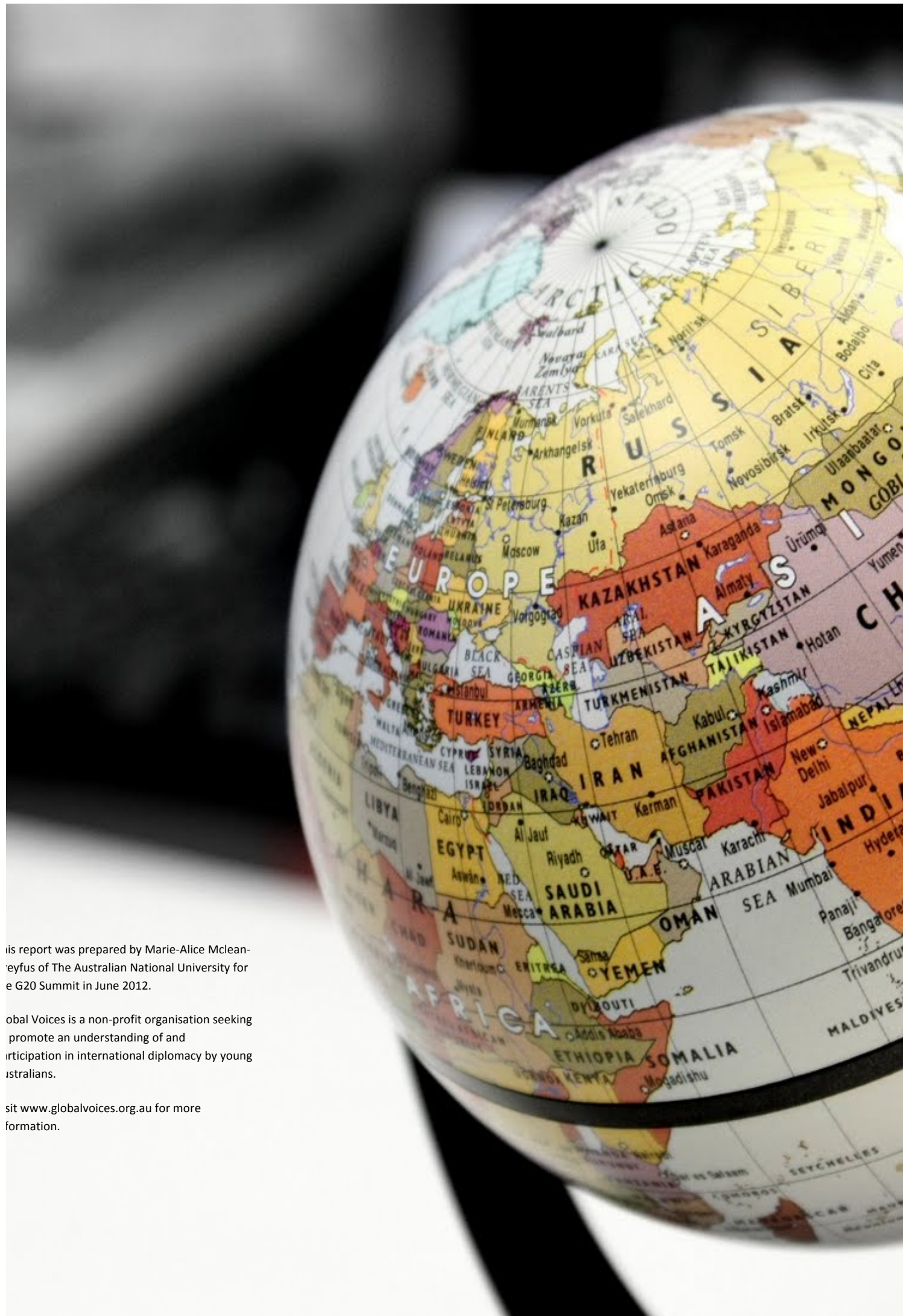
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