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Submission by Sustainable Population Australia on the treatment of Agriculture in the UNFCCC

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The agriculture conclusions from SBSTA 38 June 2013 (FCCC/SBSTA/2013/L.20)
"*The SBSTA invited Parties and admitted observer organizations to submit to the secretariat, by 2 September 2013, their views on the current state of scientific knowledge on how to enhance the adaptation of agriculture to climate change impacts while promoting rural development, sustainable development and productivity of agricultural systems and food security in all countries, particularly in developing countries. This should take into account the diversity of the agricultural systems and the differences in scale as well as possible adaptation co-benefits.*

Sustainable Population Australia welcomes the opportunity to submit perspectives on the treatment of Agriculture in the international climate change discourse.

We recommend that the UNFCCC acknowledge that the demands on agriculture, in any region, nation or globally, are proportional to the population to be supported, and that these demands constrain options for protection of environmental values and agricultural biodiversity and resilience. Consequently, climate adaptation for rural systems and communities should include reducing population growth rates with a view to stabilizing human numbers at the lowest achievable level.

A higher peak global population means:
- more land must be converted to agriculture (releasing carbon);
- more likely that soils will be degraded through intensive production (losing carbon);
- less biodiversity of crops as only the most productive varieties can be grown;
- consequently more brittle (vulnerable to change) agricultural systems lacking diversity and redundancy;
- more likelihood of conflict and displacement of populations, disrupting agricultural production in affected areas;
- more likelihood of high global food prices and abrupt spikes in food price in response to climate events, triggering civil unrest in urban communities.

1. *Population growth is reducing food security globally and within less developed countries, faster than climate change, international land grabs and biofuel production combined.*

The population of sub-Saharan Africa has increased by a factor of 4.6 in the past 60 years. The UN's medium projection anticipates a further increase of 4.6 to the year 2100. This would mean 21 Africans in the year 2100 for each African in 1950.

2. *Global population is growing faster than most climate models acknowledge.*

In June 2013, the Population Division of the United Nations Department of Economic and Social Affairs released new projections of the global population, revising upward the mid-century global population by 245 million and the population in 2100 by 729 million. These

changes result from recent growth following close to the previous high projection, rather than the medium projection.

In presenting the new projections, John Wilmoth, the head of the UNPD, stated[1]:
"Our medium-variant projection continues to assume a rapid fall in future levels of fertility for these countries. We continue to calibrate the pace of future fertility decline using the historical experience of countries that underwent a major reduction of fertility levels after 1950, in an era of modern contraception. The medium-variant projection is thus an expression of what ***should be possible*** …
"…These future trends, however, are not guaranteed. In fact, in light of recent trends for some high-fertility countries, this this middle scenario could require additional substantial efforts to ***make it possible***." (emphasis in the original)

3. *Most climate models are under-estimating the impact of population growth both on future emissions and on the challenge of agricultural adaptation.*

Recent climate impact modeling by the Potsdam Institute for Climate Impact Research (RoSE Project: Roadmaps toward Sustainable Energy Futures[2]), reported in a side event at SB38 in Bonn, June 2013, found that assuming the high population projection for Africa resulted in much higher emissions from land use change and much greater extent of deforestation than the standard run models. The modelers assumed high population growth would be associated with economic stagnation (a common fallacy, that economic development controls fertility level, when in fact it is mostly the other way around). Despite this extremely low economic projection, the high population projection overtook the most optimistic economic scenario in terms of energy sector emissions. We are currently following this high population path, but without the stagnation in economic development (thankfully), implying that future emissions path may be higher than the scenarios plotted by RoSE.

The following charts have been copied from the RoSE project brief. The pink line, corresponding to the high population, low economic outcome, is dramatically different to the lines which vary economic growth only. It can be seen that the accuracy of population projections will strongly influence the accuracy of emissions projections. The current combination of population growth and economic growth exceeds the pink line shown here.

[1] Press briefing upon publication of World Population Prospects: The 2012 Revision
Statement by Mr. John Wilmoth, Director, Population Division, Department of Economic and Social Affairs, United Nations, Thursday, 13 June 2013, 11 a.m. UN Headquarters, New York
http://esa.un.org/wpp/Documentation/pdf/WPP2012.press.briefing_Directors.remarks.pdf
[2] RoSE Project: http://www.rose-project.org/

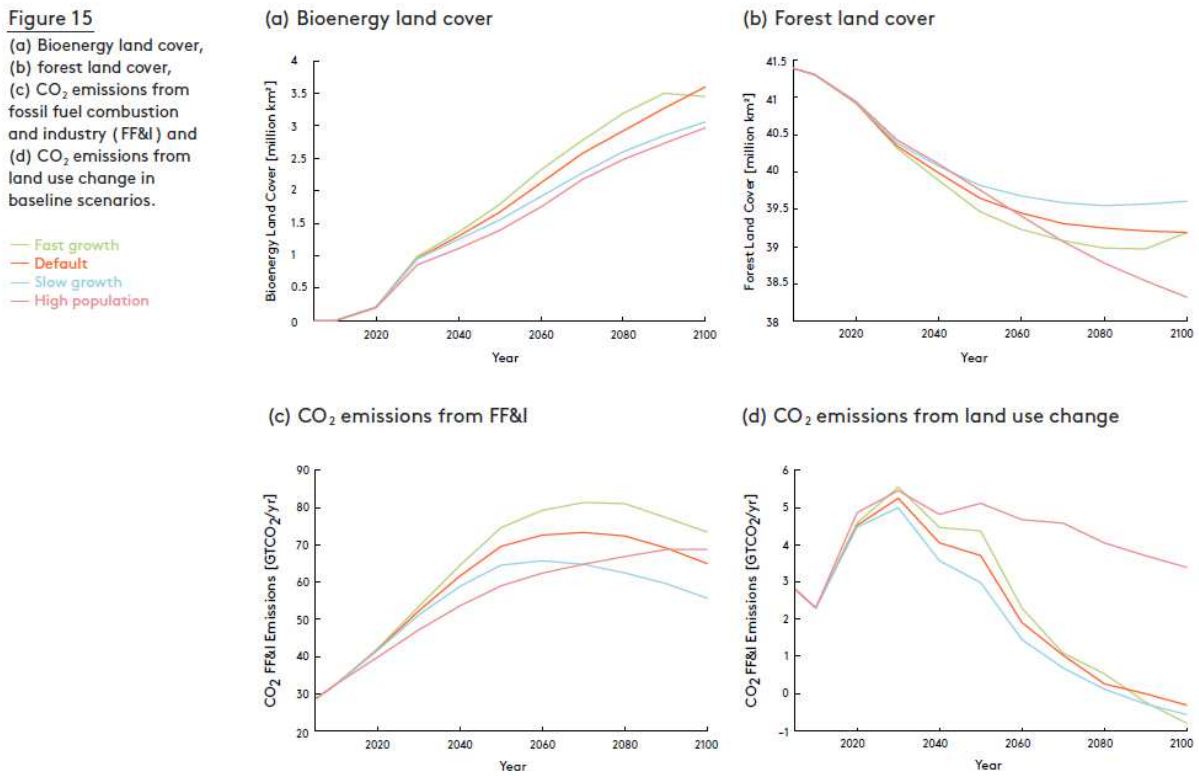

Figure 1. Charts from the RoSE project brief, of the impact on land use change and CO2 emissions of different assumptions of economic growth (assuming the UN's 2008 medium population projection, peaking at 9.4 billion in 2070 – a figure we are now likely to exceed before 2050), and one high population scenario assuming even lower economic growth (the UN's 2008 high population projection, reaching 14 billion by 2100).

The forthcoming IPPC report (AR5) contains new projections for scenarios of population and socioeconomic outcomes.[3] The population projections are provided by the IIASA. The scenarios include peak global populations of 8.6 (SSP1 series), 9.5 billion (SSP2 and SSP 4 series) and a high projection that reaches 13 billion by 2100 and continues to grow (SSP3 series). The high population scenarios yielded no probability of climate change less than 3ºC. The other scenarios, as noted by John Wilmoth above, "could require additional substantial efforts to ***make it possible***." All are well below the UN's current medium projection.

4. *Population growth in less developed countries could be reduced much faster than at present, by prioritizing and integrating voluntary family planning programs within national development agenda.*

Every country that has attempted this has succeeded, not only in reducing fertility rapidly but in gaining a considerable economic stimulus as a result. Every country that has relied on poverty reduction to reduce population growth has failed to achieve either.

[3] Jiang, Leiwen "A new generation of scenarios for climate change: Background and approach" and Samir, K.C. "The human core of the Shared Socioeconomic Pathways: Population scenarios by age, sex and level of education for all countries." Papers presented at the 27th Conference of the International Union for the Scientific Study of Population, Busan, South Korea, 29 August 2013.
http://www.iussp.org/en/event/17/programme/session/964

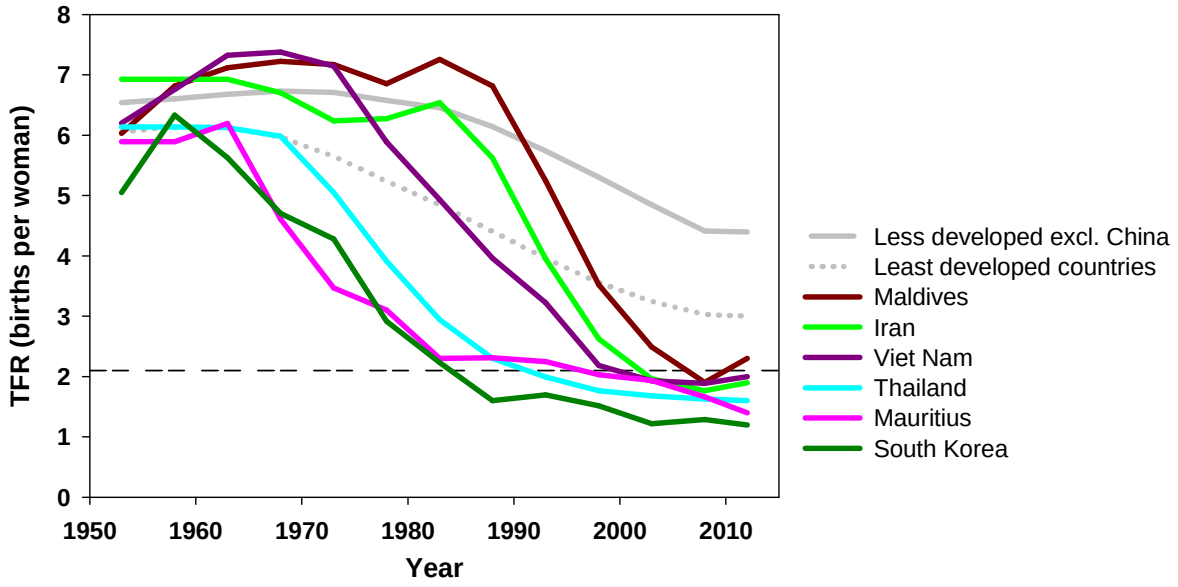

Figure 2. Time course of total fertility rate (TFR, births per woman) for selected countries which implemented population-focused voluntary family planning programs at differing times, showing rapid decline of fertility after program initiation.

The countries depicted in Figure 2 experienced fertility decline of between 2 and 3 units per decade in the first two decades following introduction of the program. Most were very poor and had low levels of female education when the program was initiated. Once fertility fell below around 3 children per woman, economic growth accelerated. The burden of providing for ever more people suppresses economic advancement up to that point.

The impact of population growth on food security can be seen from the following chart.

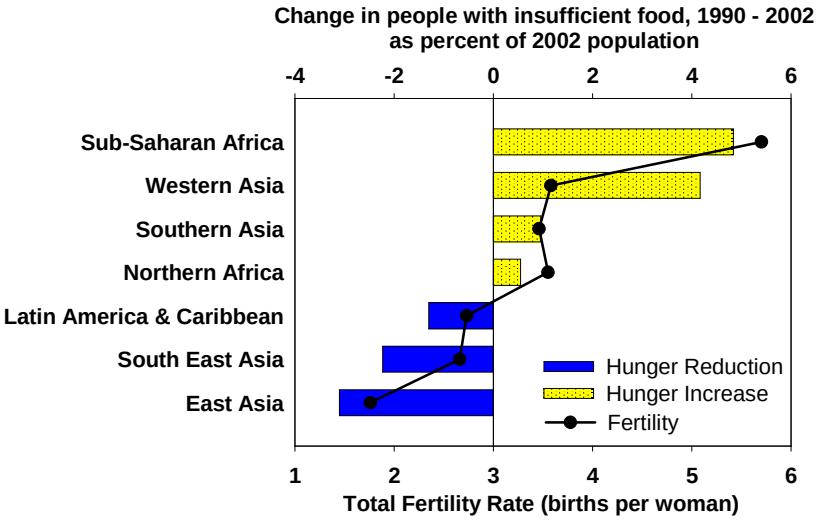

Figure 3. The change in proportion of people with insufficient food (WHO data) in less developed world regions, compared with the total fertility rate in those regions (UN Population Division, 2010). Note that much of Western Asia suffered from the dissolution of the USSR during this period, resulting in significant increase in hunger despite moderate fertility.

Thus, investment in family planning programs has been the most successful form of intervention both for food security and for economic development. Yet over the past ten years, family planning has received merely 0.3% of international development aid to high-fertility countries.

5. *Reducing population growth would greatly enhance community resilience to the agricultural impacts of climate change.*

Simultaneously, maternal health, child health, child access to education, employment opportunities and environmental condition would be enhanced compared with the baseline scenario in which population growth continues strongly through this century in least developed countries.

Reducing population growth by reducing unwanted pregnancies more than pays for itself in direct savings on health services not required by mothers and infants. It simultaneously increases the impact of every other measure taken for climate change adaptation and mitigation.

Conclusion:

The relationship between the scale of the human population and its impact on the environment is stronger for Agriculture than for any other sector. Food security and climate resilience in countries which still have high birth rates depends strongly on the speed at which birth rates are reduced. Without rapid reduction, the prospects for remaining under 2^{o}C warming, and of reducing poverty and hunger, appear very bleak.

We recommend that the UNFCCC acknowledges the impact of population growth on food security and on the resilience of the agroenvironment. This will allow countries still experiencing rapid population growth to prioritise family planning within their climate change adaptation program.