

## Terms of reference: project to research and inform the development of the WWF narrative on global, sustainable food security

### Summary

This project will evaluate the available information about projected increases in the need, demand and supply of food by 2030 and 2050 and then develop narrative framing that links food security to achieving WWF-UK's objectives. This will inform future engagement with the wider, global WWF network towards a common framing and in due course a coherent mutually supportive position and the evaluation of policy responses to the challenge of global, sustainable food security.

### Project Aims

- 1) To provide a background literature review on future global food security as it relates to WWF's objectives and
- 2) Find helpful narrative framing for WWF-UK, within a coherent frame for the WWF network, on the issue of future projections for global food demand and supply in 2030 and 2050.
- 3) Identify the key decisions in the food security arena that WWF might seek to influence to achieve its objectives

### Background

In the wake of sharp increases in global food prices in 2007-2008<sup>1</sup>, there has been strong international attention on projected increases in food demand in 2030 and 2050<sup>2</sup>. Projected growth in food demand<sup>3</sup> is made up of projected increases in population<sup>4</sup> and projected changes in diets<sup>5</sup>.

For the population component of growth in food demand, UN Population projections for 2050 vary from 8 billion (low) to 10 billion (high) with a medium projection of 9.6 billion.

Changes in diets are predicted due to a growing number of middle class consumers in emerging markets as well as their growing urbanisation. The number of middle class consumers in emerging

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<sup>1</sup> Wikipedia 2007–08 world food price crisis accessed at [http://en.wikipedia.org/wiki/2007%E2%80%9308\\_world\\_food\\_price\\_crisis](http://en.wikipedia.org/wiki/2007%E2%80%9308_world_food_price_crisis) on 13 Jan 2014

<sup>2</sup> How to feed the world 2050 High level Expert Forum accessed on 13 Jan 2014 at [http://www.fao.org/fileadmin/templates/wsfs/docs/Issues\\_papers/HLEF2050\\_Global\\_Agriculture.pdf](http://www.fao.org/fileadmin/templates/wsfs/docs/Issues_papers/HLEF2050_Global_Agriculture.pdf) Foresight. The Future of Food and Farming (2011) Final Project Report. The Government Office for Science, London. Accessed at <http://www.bis.gov.uk/assets/foresight/docs/food-and-farming/11-546-future-of-food-and-farming-report.pdf> on 13 Jan 2014.

<sup>3</sup> CGIAR Research Program on Climate Change Agriculture and Food Security accessed on 13 Jan 2014 at <http://ccafs.cgiar.org/bigfacts/global-food-demand/>

FAO (2012) World Agriculture towards 2030/2050: the 2012 revision Alexandratos N and Bruinsma accessed at <http://environmentportal.in/files/file/World%20agriculture%20towards%202030.pdf> on 13 January 2014

<sup>4</sup> World Population Prospects: the 2012 Revision: <http://www.un.org/en/development/desa/news/population/un-report-world-population-projected-to-reach-9-6-billion-by-2050.html>

<sup>5</sup> Msangi S and Rosegrant M W 2011 Feeding the Future's Changing Diets accessed at <http://www.ifpri.org/sites/default/files/publications/2020anhconfpaper03.pdf> on 13 January 2013

markets is predicted to increase by 3 billion by 2050<sup>6</sup>. Under varying assumptions different changes in consumption have been projected, including changes in the consumption of meat and livestock products<sup>7</sup>. Increasing urbanisation of developing country consumers is predicted to result in greater dependence on global food markets and increased processed and pre-prepared foods<sup>8</sup>.

Use of food, land and water for biofuel production and the impact of climate change on crop yields are among other factors that could impact adversely on future food security.

The supply response to this projected growth in demand could impact further and adversely and heavily on natural resources and the consequently cause large losses to globally significant biodiversity that WWF seeks to conserve.

Concerns about the likely consequences of these projections for globally significant biodiversity have led some to advocate the need for focus on radically increasing the efficiency of food production, and diagnosing that this will need to come to a significant degree from increased yields in agriculture. Others, concerned about the severe adverse impacts on farm-related biodiversity of past increases in agricultural efficiency, are cautious about WWF support for a policy response that emphasises increased yields and have suggested that WWF should advocate a policy response where emphasis should lie with dietary change, reductions in food waste and other responses, rather than increased yields, and even suggesting extensification of agriculture in Europe.

Differing views exist as to the degree food production will need to increase by 2050 in order to satisfy increased demand. Understanding ranges from acceptance on the part of some of figures as high as a doubling or more of global food production being required to feed the world population<sup>9</sup>, to recognition by others that increases of as little as 60%<sup>10</sup> in food production or less may be needed by 2050, under business as usual assumptions.

Divergence in WWF views on which of these headline figures is more appropriate is related to the assumptions about the degree to which WWF will need to accept that increases in yield per hectare (with potential losses in agricultural biodiversity) will be needed in order to safeguard natural habitats from encroachment by crop and animal production in order to satisfy increased food demand.

In internal discussions, some WWF parties further maintain that, rather than accepting the global framing of food demand driven by increases in growing middle class incomes in the developing world, WWF should frame the problem as the need to provide food to those specific constituencies that lack adequate nutrition.

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<sup>6</sup> HSBC (2012) Consumer in 2050 accessed at [http://www.hsbc.com.vn/1/PA\\_ES\\_Content\\_Mgmt/content/vietnam/abouthsbc/newsroom/attached\\_files/HSBC\\_report\\_Consumer\\_in\\_2050\\_EN.pdf](http://www.hsbc.com.vn/1/PA_ES_Content_Mgmt/content/vietnam/abouthsbc/newsroom/attached_files/HSBC_report_Consumer_in_2050_EN.pdf) on 13 January 2014

<sup>7</sup> Msangi and Rosegrant cited in 5 above.

<sup>8</sup> Satterthwaite et al (2010) Urbanization and its implications for food and farming accessed at <http://rstb.royalsocietypublishing.org/content/365/1554/2809.full> on 13 January 2014

<sup>9</sup> Tilman (2011) Global food demand and the sustainable intensification of agriculture accessed at <http://www.pnas.org/content/early/2011/11/16/1116437108.full.pdf> on 13 January 2014

<sup>10</sup> WWF Germany and Heinrich Boll Institute (2011) How to feed the world's growing billions accessed at <http://www.boell.de/sites/default/files/2011-05-How-to-feed-the-Worlds-growing-billions.pdf> on 13 Jan 2014

Some parties also point to the excess consumption of foods, above levels that are beneficial to health, leading to both a health burden due to obesity and an unnecessary additional contribution to demand for food.

Coherent framing for WWF-UK and the WWF network on these questions will enable WWF to communicate with greater effect in this important debate. It would also help to build a sound foundation for WWF-UK's work on food production and consumption.

As part of its work on Corporate Stewardship<sup>11</sup>, WWF-UK has a food strategy. This strategy has two main aims:

- 1) to secure recognition at the EU policy level of the significant role that food consumption plays in driving climate change and identifying policies and pathways to reduce this;
- 2) To ensure that UK food companies advocate for policy frameworks at national and/or regional level to prevent resource overutilization.

Food security is a key concept in policy frameworks at national and/or regional level. This has given rise to a proposed programme of work on sustainable food security. This work is intended to give emphasis to the importance of sustainably using the natural resources that underpin capacity to achieve global food security following the definition of food security in broad use. WWF-UK seeks as part of its strategic approach to identify and influence key decisions on food security that will result in the improved conservation of the priority places<sup>12</sup> in which WWF-UK seeks to conserve biodiversity and see resources sustainably used. This project will aid WWF-UK in understanding where the key decisions relating to global food security and its impact on WWF-UK priority places are likely to be taken.

It is our intention to divide our research into this question of food security into stages. The first stage will be to look at gaps in past reviews of the background literature, the possible narrative framing and the opportunities for WWF-UK to influence key decisions in this area.

It is intended that the first stage give rise to a draft discussion paper on narrative framing of the food security question.

Later stages (not covered by this brief for Stage 1) will be designed in light of the framing agreed on in the first stage of this work could include:

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<sup>11</sup> WWF UK's overarching strategic goal on corporate stewardship states that we should aim 'To bring together leading businesses, to ensure they are operating in, and sourcing from, thriving natural habitats and supporting action to address global climate change'.

To reach the overarching goal, the key routes identified as important are:

- Working with businesses (both in the UK and in our Priority Parts of the World) to become sustainable through their reducing their risk. The aim is to do this via policy development and in terms of cleaning up their supply chains. The strategy document also flags this might include affecting consumer behaviour.
- Working with business on corporate stewardship IE driving sectoral/system change and/or on public policy decisions (production, trade, sales) at a local, national or international level, in our priority parts of the world.

<sup>12</sup> China, India, East Africa and the Amazon

- offering the draft narrative framework as an input to network thinking on the question of how to frame food security to WWF's best advantage;
- the position that WWF might adopt on the question of how to achieve future global and regional food security sustainably;
- the capacity of the food supply to respond to tightness in the food market, such as another food price spike
- how to achieve sustainable food security in particular regions of high relevance to the achievement of WWF's conservation objectives, pending the outcome of the first stage of research;
- The ways in which sustainable food security can be achieved through a range of different policy responses addressing the supply and demand sides. This work could estimate the capacity of the different response "wedges" to match need/demand and supply by quantifying the components that will make up each wedge. Such policy responses would need to be evaluated as to their impact on the things that WWF cares about such as climate change, species, priority places, etc.
- Does food needed to meet global demand need to come from global food surplus regions to feed developing world cities?
- Does food needed to feed developing world cities need to come from developing world?
- What are the implications for key biodiversity rich landscapes and seascapes (expansion of cropping in the Mara, expansion of cropping in the Terai Arc, expansion of soy in the Amazon and cattle in the Amazon, increase in fishing in Coastal East Africa)?

These later stages of work will follow the framing research.

WWF-UK also intends that the outputs of the overall programme of research be externally peer-reviewed to add to their credibility.

### Method for the project

WWF-UK proposes to commission research into background and narrative framing that WWF could adopt into the future requirements for food production (including seafood<sup>13</sup> and wild food supply), arising from population and income growth, by 2030 and 2050, in the context of increased demand for fuel and water, wild sources of food and feed and the carrying capacity of critical ecosystems, as well as the impact of climate change.

Many food demand forecasts focus on the year 2050, while the UK Government Foresight report on the Future of Food and Farming highlights 2030 as a likely Perfect Storm for food demand and supply. This research will therefore focus on outcomes at both of those future time points.

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<sup>13</sup> A separate tender document is being prepared to look at the potential for producing food and energy in the marine environment through mariculture which will add to the debate on future food production and how it can be increased without making further inroads into the remaining wild places in the terrestrial environment.

It is proposed that the selected researchers identify gaps in previous WWF literature reviews<sup>14</sup> and new material not covered in these earlier reviews, the various frames being used and their underlying assumptions with regard to future food needs and demands and how they might be met, and propose a draft narrative framing that could be the basis of a WWF approach. This is with a view to establishing narrative framing on which WWF as a network might agree on the question of projections of food needs, demand and supply. At the very least WWF-UK will be able to project a confident voice on these questions that demonstrates an understanding of the rationale for divergent framing of these questions by the various participants in this global debate.

## Project content outline

The research project will cover the following issues:

### 1) Background to the global food security debate

Concise and clear literature review of the current debate on projections of future food needs and demands setting out the origins of the debate and the assumptions and reasoning of its participants as relevant to establishing WWF-UK's framing and position in this debate.

This review will be curtailed in light of three existing reviews<sup>15</sup>. Work already reported in these reviews should not be repeated. It will look at gaps still remaining and new findings that have arisen since those reviews. The final review will still be balanced and proportionate across the whole food security agenda.

WWF would like to include in the literature review the factors affecting food security raised in the background section of this brief above, including, but not limited to the following key gaps: the need, demand and supply of protein; the need, demand and supply of wild caught foods; the role of seafood (aquaculture and wild-caught fish) in meeting food needs<sup>16</sup>; climate change impact; renewable energy provision; the food, water, energy nexus.

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<sup>14</sup> There are three key previous reviews that WWF offices have commissioned that provide the basis for this gap filling and updating exercise. These are:

- 1) WWF-UK 2020 food vision report (2013) available at: [http://assets.wwf.org.uk/downloads/2020vision\\_food\\_report\\_feb2013.pdf](http://assets.wwf.org.uk/downloads/2020vision_food_report_feb2013.pdf)
- 2) WWF Sweden's Sustainable Food for All, December 2103 available at: [http://www.wwf.se/source.php/1549502/WWF\\_Sustainable%20food%20for%20all\\_2013\\_Executive\\_Summary.pdf](http://www.wwf.se/source.php/1549502/WWF_Sustainable%20food%20for%20all_2013_Executive_Summary.pdf)  
<http://www.wwf.se/source.php/1548418/WWF%20Sustainable%20food%20for%20all.pdf>
- 3) "JUST, SUSTAINABLE FOOD SYSTEMS - A Literature Review for the CARE-WWF Alliance" Prepared by Pamela Stedman-Edwards, September 2013 – Richard Perkins has an electronic copy of this and is checking its status for release

<sup>15</sup> Cited above

<sup>16</sup> The role of marine resources alongside terrestrial ones in meeting food security has not been a major feature of the food security debate to date, but one which WWF-UK thinks it important to include in its considerations of sustainable food security (see Annexe 1 for the key issues to be addressed). Given that most projections of food and feed requirements by 2050 do not take adequate account of seafood and that seafood production because of aquaculture, is the fastest growing element of the food sector; how will this affect the projections for the impact of food on environmental and social issues and WWF's policy on future food and feed needs and the potential and desired structure of the food and feed industry?

The review should:

- 1) Build on existing literature reviews already conducted by WWF offices and others and not repeat this work, fill key gaps not covered by earlier reviews, add new material that has been published since those reviews were carried out or was missed by them. Overall the review should still remain proportionate in its weighting of the issues across the whole food security debate.
- 2) Identify key decisions in public and private decision processes, across geographical scales with global relevance and reach for which the framing and subsequent documents on positions would be valuable influencing tools.
- 3) Framing of the global food security question

Consider whether it is helpful for WWF to accept, or seek to challenge, the current global framing of demand projections or seek alternative framing, such as:

- The degree to which it is helpful for WWF framing to focus on satisfying the economic demand for food or on satisfying the need for food whether backed by purchasing power or not and the reasons for making this choice;
- The degree to which WWF should make reference to headline figures for global food security or a more disaggregated set of projections that assesses the food needs of particular vulnerable groups (for example food insecure constituencies such as small-scale farmers in the semi-arid tropics, or urban consumers in Net Food Importing Developing Countries), and the reasons for doing or not doing so
- The degree to which North-western Europe remains a viable global granary not as affected by climate change as other potentially flexible global food surplus areas.

The frames that WWF would be best advised to use in engaging in debate on this question and the reasons for this:

- In light of the above, propose draft framing for discussion by WWF-UK and the WWF network
- Is the framing of 2030 and 2050 one which WWF should engage with or propose alternative timeframes for the debate (such as present global food insecurity)

## Deliverables

The consultant(s) will be responsible for delivering the following:

- 1) A literature review of the key gaps and new developments in the global food security debate setting out:
  - a. material considerations outlined in the terms of reference above as they relate to the question of framing WWF's position on global food security;
  - b. The frames that are in use and other frames that WWF-UK could use.

- 2) A document setting out the key decisions in the food security arena impacting on WWF's interests that WWF framing, positioning and policy responses on food security could be used to influence.
- 3) A 5-10 page discussion paper that sets out a proposal for how WWF can best frame its position on the future need and demand for food that can be discussed within WWF-UK and the WWF network as the basis for a shared framing by the network.

**Table 1 Summary table of project deliverables**

Deliverable	Description
1. Project management	<p>The project will be managed professionally and ensure timely completion of the deliverables.</p> <p>Communication with WWF-UK will be regular and include email, Skype, in-person and telephone communications as required. At a minimum, a monthly verbal update will be anticipated. A maximum of two face-to-face meetings is anticipated. One in April and one in July to be held at WWF's Living Planet Centre in Woking.</p> <p>The successful contractor should also build into the bid the time to talk by phone with a parallel project that WWF is commissioning on the business case for food security, to ensure that the two projects are not developing in contradictory directions.</p>
3. Draft final report	<p>A draft final report to be submitted no later than 30 June with an invoice for 80% of the project costs. This draft report will contain all elements set out in the deliverables section. It will be presented face-to-face by the senior authors to a cross-disciplinary group of WWF-UK staff and a few selected external experts on WWF's premises in the second week in July or as close to that week as can be mutually agreed.</p>
3. Final report	<p>The final report will incorporate feedback received in the face-to-face presentation of the draft report. It will also compile all of the data necessary to draw conclusions and recommendations against the project's objectives. It shall include clear presentation i.e. diagrams and explanations and be of high quality.</p>

The consultant will deliver a report of sufficient quality and depth in order that the aims and objectives of the project are answered.

The consultant will provide, within the final report, a full description of the data and the date on which it was collected. Any uncertainties surrounding the accuracy of the data would also be highlighted. The final report and the data will be owned by WWF-UK but attributed to the contractor.

The Consultant will be under the direction of the WWF staff managing the project, namely Richard Perkins (WWF-UK).

### *Tendering process*

It is WWF-UK's intention to put this first stage of work out to tender to researchers who can as far as possible command credibility from those currently adopting different frames both in WWF. The tender period will be open for 3 weeks from 20 March. The closing date for tenders will be 12 noon on Thursday 10<sup>th</sup> April 2014. The tenders should indicate the capabilities of the consultants who will

be assigned to the project and include their CVs and the time that they will each allocate to the project.

The tender should state who the consultants are who will undertake the work and present the draft findings to WWF-UK.

### *Timing*

The work will commence in April 2014 and be completed by the middle of August 2014. A draft final report will be provided to WWF-UK on 30 June 2014 together with an invoice for 80% of the costs incurred. A workshop will be held in mid-July. A final report will be delivered by the middle of August. WWF-UK is open to reflect on the timing of the draft report if tenderers state that it is not possible, or highly undesirable from the perspective of product quality. This should be stated in the proposal made in response to the call for tender, setting out an alternative timetable, the reasons for it including the gains to WWF that would result from it.

### *Supervision*

Richard Perkins, Food Agriculture and Land Use Specialist, will be responsible for the supervision of this project. Contact details are: [rperkins@wwf.org.uk](mailto:rperkins@wwf.org.uk) ; Tel: 01483 412529 Mobile: 07775 996393  
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