

High-Level Expert Forum
on
“How to Feed the World in 2050”
FAO Headquarters, Rome
12-13 October 2009

The Food and Agriculture Organization of the United Nations (FAO) will organize a High-Level Expert Forum (HLEF) on one of the most pressing global challenges facing this and future generations – how to ensure that humankind has enough to eat by 2050. Together with other issues facing the global food system, this will be the focus of the HLEF, scheduled for 12-13 October 2009 and featuring leading authorities on the subject, including a number of Nobel laureates. The Forum will be preceded by a technical working meeting in June 2009 (24-26 June). The main features of the HLEF are summarized below.

A. Objective

The basic objective is to create an *open forum* for discussions on the most important challenges to world agriculture over the next 50 years, notably doubling food production despite increasing land and water scarcity, climate change, and demand for agricultural resources through the energy sector. Invitations to the HLEF will be made directly and on a personal basis, not to organizations, private companies or governments. The Forum will be organized around six panel sessions and a special panel of Nobel laureates to discuss the cross-cutting issues of the panel sessions and identify priority areas for policy action. The role of FAO will be limited to convening and facilitating the expert forum and to preparing background documents and summary notes.

B. Structure

1. Inaugural session

After a short opening address by the Director-General, the HLEF will start with an inaugural speech by a keynote speaker. The keynote address will be followed by discussions in six thematic panels.

2. Panel sessions

The six panel sessions will be organized as follows:

- A representative of the expert meeting will give a short (ten-minute) presentation of the main messages that have emerged from the expert meeting.
- The presentation will be followed by a short (max. five-minute) video clip illustrating some of the key issues and concerns revolving around the panel topic.
- At the heart of every panel session will be a group discussion between four or five panellists. Moderated by an experienced journalist, they will last for 30-45 minutes.

- The final part of the discussions will take place between the forum of some 450-500 invited guests and the panellists. The aim is to keep the discussions open to all stakeholders and to seek their active participation in the discussion process.

3. *Final session*

- Special panel of **Nobel laureates** to address cross-cutting issues that emerge from the specialized panels and identify priority areas for policy action
- Summary of the discussions, identification of policy actions and investment needs to meet the challenges to 2050.
- Press Conference

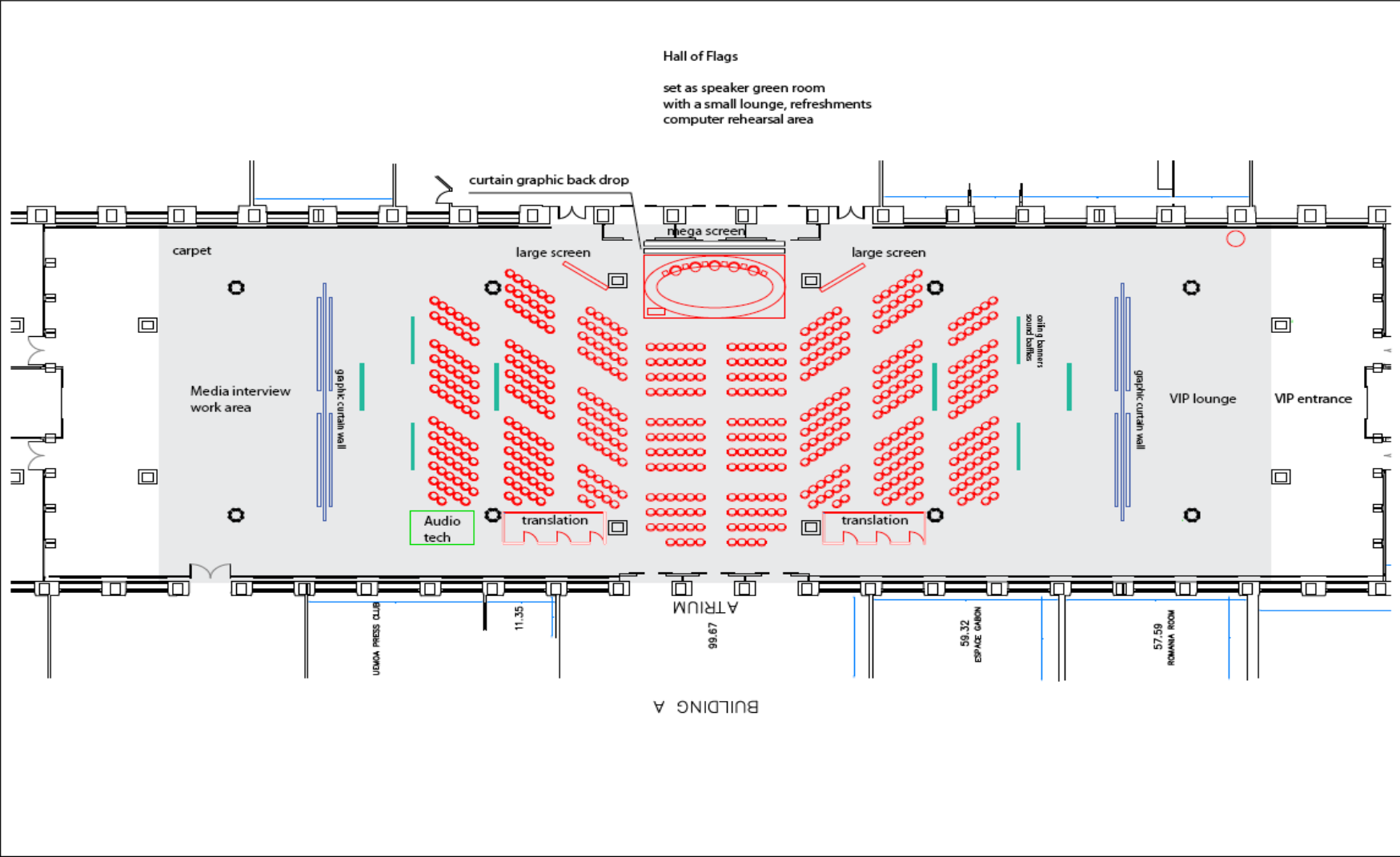
C. Topics/sessions

1. Global agriculture towards 2050: The outlook for food and agriculture in a dynamically changing economic and demographic environment
2. Feeding the world in 2050 (1): Available resources (land, water, genetics), limits and challenges from climate change and new demands (bioenergy)
3. Feeding the world in 2050 (2): The technological challenge
4. Feeding the world in 2050 (3): Investment needs, sources and the need for a new financial architecture in agriculture
5. Feeding the world in 2050 (4): The policy challenge: investment, trade, support and more
6. Feeding the world in 2050 (5): Special session on Africa
7. Conclusions, Policy Recommendations, Outlook, Summary

D. Venue

- The HLEF will be held in the FAO Atrium or a re-modelled “Red-Room”. The idea is to provide a venue that stimulates active participation and interaction between all participants in an informal setting (the meeting will be in English with simultaneous interpretation into Arabic, Chinese, French, Russian and Spanish).
- A special stage/podium will be constructed for the presentations, speeches and panel discussions.

E. HLEF Seating plan, Atrium, 12-13 October



F. Background: Issues and challenges to 2050

Food production needs to double to keep pace with population growth. World population is projected to grow from 6.5 billion in 2005 to nearly 9.2 billion by 2050. The entire increment of 2.7 billion will entirely take place in developing countries. To feed a population of more than 9 billion, global food production must nearly double by 2050.

Fewer farmers and the need to raise productivity. Not only will population growth take place entirely in developing countries, it will occur wholly in urban areas, which will swell by 3.2 billion people as rural populations shrink. That means that a smaller rural work force will have to be much more productive and deliver more output from fewer resources. Higher productivity requires more investment in agriculture, more machinery, more implements, tractors, water pumps, combine harvesters, etc., as well as more skilled and better-trained farmers.

Fewer resources. Fewer farmers will have to feed a more populous world with smaller resources. One way would be for world agriculture to expand its land basis and use some of the nearly 4.2 billion hectares potentially available for rainfed crop production (only 1.5 billion ha are currently in use). Another would be to tap into yet-unused yield resources, which could double current yields for many crops and in many countries. However, such potential can only be reaped if farmers have improved access to inputs, use more and better fertilizers, make use of better seeds, improve their farming and management skills and expand land under irrigation. Moreover, global agricultural resources are unequally distributed and not all regions have unused resources. South Asia and the Near East/North Africa (NENA) region, for instance, have already exhausted much of their rainfed land potential and depleted a significant share of their renewable water resources.

Climate change. In addition to the growing resource scarcity, global agriculture will have to cope with the burden of climate change. The Intergovernmental Panel on Climate Change (IPCC) has documented the likely impact on agriculture in great detail. If temperatures rise by more than 2°C, the global food production potential is expected to contract severely and yields of major crops like maize may fall globally. The declines will be particularly pronounced in lower-latitude regions. In Africa, Asia and Latin America, for instance, yields could decline by 20-40 percent. In addition, severe weather occurrences such as droughts and floods are likely to intensify and cause greater crop and livestock losses. These changes require massive investments in improving agriculture's adaptive capacity to climate change. As agriculture is a contributor to greenhouse gas emissions, it will also be required to adjust its production methods to help mitigate the overall impact of climate change.

Bioenergy. Rapidly rising energy prices have created an added challenge for global food supplies. Rising fossil energy prices mean that agriculture will become increasingly important as a source of energy. Important here is to understand that the potential demand from the energy market is so large that it has the potential to change the world's traditional agricultural market systems completely. This has already started to happen. In 2007, nearly 100 million tonnes of cereals were siphoned-off the food markets and diverted to energy needs. This was roughly 5 percent of the world's cereal demand but less than 0.5 percent of the world's energy demand. Sugar cane, oilcrops and starchy roots are also becoming increasingly competitive as feedstocks for the production of bioethanol or biodiesel.

Food prices to rise again? As higher energy prices have made agriculture a competitive source of energy, prices for many agricultural products will be determined by their energy values in the future. If energy prices rise again, the vast demand potential of the energy market will keep food prices high in the long run and interrupt the long-term downward trend in real prices.

Input costs to increase in tandem? Higher energy prices also imply higher production costs. Energy is an important component of many agricultural inputs (e.g. power, fertilizer), which raises production and transportation costs for food and other agricultural produce. Higher transport costs may also generate some regional/spatial reorganisation of production worldwide, with important consequences and challenges for agricultural development in different regions. Another challenge will therefore be the development of less energy-intensive agricultural production methods.

Poverty and inequality could persist in the longer term. Long-term projections suggest that the world will not only be more populous, it will also – *on average* – be much richer in 2050. But not all will be able to share in the additional wealth created, and as poor people spend most of their income on food (and fuel), the number of poor could remain high in an overall richer world. The result will be rising inequality and persistent poverty. The 2007/2008 food crisis could have been a harbinger of such developments; according to the World Bank, soaring food and fuel prices in 2007 and 2008 have had exactly these effects. Due to high food and fuel prices world poverty is estimated to have increased by between 73 and 105 million people, 30 million of whom in Africa. In tandem, inequality has risen in many countries. In Bangladesh, for instance, surging food prices have raised the Gini index of inequality by five percent.

Rising hunger and its long-term costs. Higher food and input prices will ultimately result in more hunger, the most severe form of deprivation. FAO estimates show that the number of hungry people rose by 75 million in 2007 due to high food prices. FAO also warns that the numbers may rise further since countries have drawn down their budgetary reserves and households exhausted their savings. An increase in hunger today will have significant longer-term costs, while averting hunger now promises huge long-term benefits. FAO analyses suggest that reaching the WFS target would have produced overall economic benefits to the tune of US\$3 trillion. These huge potential gains also represent the best argument for investment in agriculture and food security.

Need to step-up investments in agriculture. Against the backdrop of the huge potential benefits and in view of the lack of progress in fighting hunger, FAO called for a follow-up meeting to the World Food Summit (WFS, fyl) in 2002; on this occasion, it presented the Anti-Hunger Programme (AHP), a comprehensive investment approach designed to reach the WFS target of halving the number of undernourished by 2015.

When the AHP was prepared in 2003, the estimated annual overall investment needs were pegged at US\$24 billion. This amount, allocated over five distinct areas to improve agricultural productivity and access to food in developing countries, was estimated to generate an overall benefit of US\$120 billion. Updated for the FAO High-Level Conference in June 2008 and adjusted for inflation only, the current estimate is that annual needs now total US\$30.5 billion; US\$24 billion of this would be earmarked for agriculture and rural development (ARD), the rest for safety nets.