Harper Adams
University College

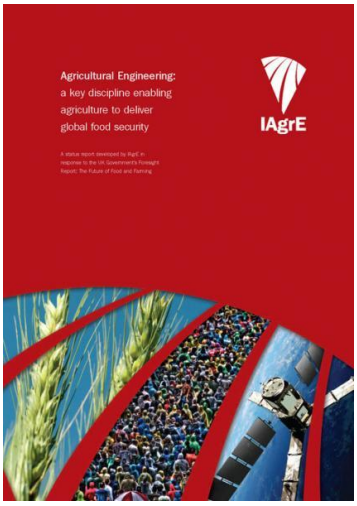
Agricultural Engineering – a key discipline enabling agriculture to deliver global food security

IAgrE Report

DECEMBER 2012

Agricultural Engineering – a key discipline enabling agriculture to deliver global food security

IAgrE report in response to the UK Government's Foresight Report: The Future of Food and Farming[1]



In the Foresight Report, The Future of Food and Farming, launched by Professor Sir John Beddington, Government Chief Scientific Advisor, attention is drawn to the challenges of how to feed 9 billion people in 2050, in the face of climate change, water shortage, burgeoning demand for energy and growing competition for resources. The report concluded by saying that "the global food system faces formidable challenges today that will increase markedly over the next 40 years….But coping with future challenges will require more radical changes to the food system and investment in research to provide new solutions to novel problems."

While the importance of the report was clear it was also clear to the agricultural engineering community that insufficient attention had been brought to bear on the important role that agricultural engineering could play in meeting these challenges. Prompted by this need to express the critical importance of agricultural engineering as a major contributor in the drive towards sustainable farming and food, The Institution of Agricultural Engineers (IAgrE) took the lead in preparing an delivering the "Agricultural Engineering – a key discipline enabling agriculture to deliver global food security" report, stimulated too by discussions with Professor Sir John Beddington and other stakeholders, including what is now Harper Adams University.

In meeting the formidable challenges, presented in the Foresight report, for improving global food security under the pressure of increasing world population, little or no new farm land, and the need to conserve natural resources and minimise environmental pollution the need could be seen for radical approaches, innovation and profound engineering foundations. The IAgrE report addresses these needs and in doing so has presented the following recommendations:

1. To fully recognise the contribution of engineering in meeting societal challenges in global food security and contributing to economic growth.

2. To develop the important opportunities for education, research and training in engineering for agriculture.

3. To establish a research theme or platform for 'engineering for agriculture' that can compete on equal terms with other research communities and is appropriately managed.

4. To encourage the faming industry and the agricultural engineering business community to work with innovators and educators to establish an appropriate focus for innovation that brings together the needs of agriculture, novel engineering and business opportunity.

These recommendations have been derived through a systematic review of the Foresight challenges, resulting too in observations, possible actions and outcomes.

Sir John Beddington has welcomed the report saying, "Deploying new and existing technologies, processes and knowledge that help make farming methods and practices more sustainable, while having less impact on the environment will be important. I welcome this report in highlighting the importance of agricultural and Biosystems engineering in contributing to these advances".

[1] The Future of Food and Farming: Challenges and choices for global sustainability. The Government Office for Science (2011).

The report is essential reading for precision framing stakeholders. The NCPF will be addressing these recommendations in more detail in the coming months and inviting comment as part of its function in responding to important issues.

The report (14.84MB) can be downloaded from:
http://www.iagre.org/sites/iagre.org/files/repository/IAgrEGlobal_Food_Security_WEB.pdf

Anthony Furness
December 2012