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Protein needs for a growing global population: current and future landscape

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We face unprecedented hurdles to effectively, sustainably and ethically bring nutrition solutions to address the unmet and growing needs of our global population. Demand for safe, nutritious and sustainable food and the systems that produce and distribute them is being challenged by both population growth, changing age demographics and changes in consumption that often accompany economic development. Given the historical reliance on the production livestock industry for protein dense foods, demand for high-quality, protein-enriched foods will be particularly challenging to constrained resources. The development of novel technologies for the creation, distribution and safe consumption of high quality foods and the ingredients and processing technologies that enable them has never been greater. The ability to create new foods from both traditional and alternative sources that can both delight and sustainably enhance human life is also essential to our collective, future success. Fortunately, emerging tools of both information and biological sciences are being utilized alongside novel technologies for food processing and distribution to address the aforementioned challenges. Illustrative examples ranging from the role of next generation precision agriculture to the discovery and development of unique foods from alternative protein sources and their enabling technologies will be presented. Practical considerations for their governmental adoption and consumer approval will also be included.