Bridging science and impact: Innovating food safety with next generation (sequencing) workshop

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Over the course of three dynamic days at Food and Agriculture Organization of the United Nations (FAO) in Rome, a new kind of food safety conversation took shape. The FAO workshop “Innovating food safety with next generation (sequencing)” gathered 21 motivated participants from 13 countries, alongside world-class scientists and food safety experts, to explore how Whole Genome Sequencing (WGS) can transform food safety and public health, particularly in combination of the use of Artificial Intelligence (AI). The group comprised regulatory and research experts from Ghana, Malaysia, and Mexico, as well as natural science major students from five FAO regions. Prominently, the workshop hosted many postgraduate students from Roma Tre University and University Campus Bio-Medico di Roma.

WGS holds enormous potentials. But beyond technical excellence, a powerful realization emerged: innovation alone is not enough. Many decision-makers still perceive WGS as complex, niche, high-cost or optional. To bridge this gap, participants explored how storytelling, science communication, and interdisciplinary thinking can build trust and understanding.

“Scientific tools like WGS are only impactful as our ability to communicate their value to decision makers and communities,” said Masami Takeuchi, Food Safety Officer at FAO. “Scientists need countries’ buy-in to truly explore the full potential of WGS,” emphasized René Hendriksen of the Technical University of Denmark. “When that happens, the benefits cascade for better surveillance, faster outbreak response, and ultimately, prevention of food safety incidents for consumers,” Joana Mourão of the Technical University of Denmark added.

Throughout the workshop, young scientists engaged in dynamic team activities, from simulating WGS workflows and tackling specific case challenges in low- and middle-income countries to designing mock career paths that blend science with public service. They also took on science communication challenges by crafting creative yet persuasive elevator pitches aimed at convincing academic decision-makers to establish versatile health science curricula integrating genome sequencing and bioinformatics.

The result? A rare, energized blend of science, creativity, and policy awareness. Participants didn’t just absorb knowledge, they sparked a movement. They also agreed to form an informal global peer network to continue exchanging ideas and driving innovation in their own contexts.

“In Singapore, we have seen strong public-private-academia partnerships around innovative technologies for food safety,” said William Chen of Nanyang Technological University. “These collaborations not only maximize the benefits of technologies like WGS, they can even help reduce overall costs,” he added.

This cycle from science to communication to action and back to innovation is exactly what’s needed to unlock the full potential of cutting-edge tools like WGS. And once that momentum starts, it creates fertile ground for investment in both technologies and the human capacities behind them.

As FAO continues to support member countries in modernizing food safety systems, this workshop serves as a compelling reminder: the future of food safety is not just about new tools. It is about new voices.

For more information, visit:

- Whole Genome Sequencing (WGS) | Food safety and quality | Food and Agriculture Organization of the United Nations
- Applications of Whole Genome Sequencing (WGS) in food safety management (FAO, 2016) https://openknowledge.fao.org/handle/20.500.14283/i5619e
- Whole Genome Sequencing (WGS) for food safety (FAO, 2016) https://openknowledge.fao.org/handle/20.500.14283/i5790e

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