



World Food Program distributes food in Nacate village, near Macomia, as part of recovery efforts in Mozambique after cyclones Idai and Kenneth. Photo credit: UN Photo/Eskinder Debebe.

A world first in humanitarian science and technology

Words by Drs Andrew Dansie, Jayashree Arcot and Johannes le Coutre

Students completing their undergraduate studies in food science at University of NSW (UNSW) in Sydney can now add a minor in humanitarian science and technology to their bachelor of food science (honours) degree.

This offering provides undergraduate students with education across the fields of humanitarian and international development within a curriculum that is already recognised by the Institute of Food Technologists (IFT) in the US.

Humanitarian science and technology experts analyse and design food and nutritional solutions to support the wellbeing and welfare of disadvantaged individuals and communities. This covers a spectrum of activities from disaster response and preparedness to long-term sustainable community development.

Technical solutions are developed and implemented within a framework

of food and nutrition security and working to meet the targets of the United Nations sustainable development goals (SDGs). This includes low and middle income countries worldwide as well as marginalised or remote communities in Australia.

The humanitarian minor degree provides students with human centred solutions that focus on appropriateness and sustainability. Teaching students to develop workable solutions in disaster affected or chronically disadvantaged communities requires real world exposure and a focus on developing solutions in partnership with those in need.

Addressing future challenges

Current Australian-born undergraduate students who entered university straight from secondary school will enjoy a life span until approximately

2080. By then, the estimated global human population will have grown from 7.8 billion to 9-11 billion people. Throughout the careers of these students the growing challenges of poverty, food insecurity, disasters and nutrition will need to be faced with increasing innovation and determination.

They will need to nourish more people, provide them with nutritionally diverse foods, create secure food systems and get food to where it is needed in emergencies. These are large and complex challenges. On top of this, food plays a central aspect in the lives and livelihoods of all cultures around the world, and humanitarian work needs to address cultural, palatable and religious aspects.

The new minor degree combines skills as a food scientist with competence in humanitarian practice to address problems relating to inequalities and lack of access

in alignment with the SDGs and international humanitarian relief efforts.

Students complete a humanitarian fundamentals core as well as a development studies elective to provide them with the context and key principles. Students then select their choice of another relevant elective and a self-chosen project course.

Engaging with real world programs

Real world engagement is a central part of the minor design and students will have the opportunity to work in humanitarian science and technology as part of their degree. Travel assistance grants provided by grants provided by the Australian Government through the DFAT-funded New Colombo Mobility Program will provide an opportunity for volunteer student positions overseas with existing partnership institutions such as the World Food Program (WFP) and United Nations Food and Agriculture Organisation (FAO).

Involvement with ongoing programs and projects such as these will give students valuable insight into the work of humanitarian and development efforts on the ground.

The minor in humanitarian science and technology at UNSW is part of the university's humanitarian engineering program that recognises the important role universities play in improving equitable and sustainable development and assistance for those in need.

Food security and nutrition in the humanitarian context imply complex and multidisciplinary challenges, termed 'wicked' problems in development circles, that have no single solution. It is in this space that food science and technology graduates need to be well equipped if their generation is to make a positive impact on human and planetary health.

As part of this new minor, an elective course in food and health security will also be available to students. This course will directly address the SDGs in the context of food and health security facing different populations around

"With the prevalent and emerging external 'shocks' that result in humanitarian crises there is an urgent need to train food scientists, technologists and engineers to develop appropriate skills to prepare them to face these difficult situations in many countries around the world. Therefore, I am pleased to note that UNSW has taken the initiative to develop this unique program in humanitarian food science and technology and I have no doubt that it will prepare the next generation of students with the relevant expertise to tackle the many humanitarian challenges that the world will face in the future."

Mr Jay Sellahewa,
International Humanitarian Food Science and Technology Network

"As the world will continue to grapple with the weaknesses, inequities and risks in global food systems, only highlighted during COVID-19, food science professionals able to develop solutions that link to pathways aimed to sustainable and resilient food systems will be key. Thus, the introduction of a minor focused on the skills needed to perform in the humanitarian and development sector for food science students is a welcome addition."

Dr Carla Mejia,
regional nutrition advisor, World Food Program, regional bureau for Latin America and the Caribbean.

"With increasing pressures from climate change, pandemics and other social and environmental issues, there is an ever greater concern about food security and the need to provide access to sustainable food supplies. The minor in humanitarian science and technology at UNSW will equip food science students within the faculty of engineering with the skills to deal with these complex issues. UNSW engineering considers that the engineering discipline is key to solving the world's humanitarian issues and we are committed to educating our students to have a positive impact on creating solutions to these important problems."

Professor Maurice Pagnucco,
deputy dean (academic), faculty of engineering, UNSW Sydney.

the world. The scope will include both micro (household) and macro (population, country) levels.

UNSW participated in the Humanitarian Food Science and Technology Symposium organised by AIFST in 2017 and, with a track record in humanitarian food science and technology, UNSW is in a privileged position to offer this program.

For more information on the humanitarian science and technology minor visit <http://unsw.to/hst>

For more information on the humanitarian engineering program at UNSW Sydney visit unsw.to/he.
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