

NNEdPro group to the local network to share evidence and encourage collaboration within and between Networks. Each Network is encouraged to understand the needs of their region, locally tailor relevant interventions, and share learnings with other networks. The focus of these networks is on knowledge exchange, capacity building among members, and wider public health impact. An example of these networks in action is the use of the Mobile Teaching Kitchen (MTK) model, which empowers marginalised community members to become culinary health educators. The intervention was originally developed by the Regional Network in India, and adaptations of the MTK intervention are planned across the Swiss, Mexico, Italy & The Mediterranean, and the Brazil Regional Networks. Networks will learn from each other while making adaptation relevant to their local need, resources, and capacity. Knowledge networks underpinned by strong leadership and clear communication strategies are essential to take collaborative action on nutrition and end malnutrition in all its forms.

4 EFFECTIVE COMMUNICATION AND LEADERSHIP IN NUTRITION RESEARCH & EDUCATION

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Effective communication and leadership are needed when developing knowledge networks for nutrition research and education. The need for clear and approachable communication was highlighted by Dr Giles Yeo, who advocated for consensus, which takes time. As a result, nutrition has become a competitive space, contributing to a pseudoscience vacuum for people who want readily available and easy-to-understand information. Evidence-informed knowledge networks, and the individual participants who make up such networks, are key in cutting through the pseudoscience. During the Nutrition Decade, knowledge networks need skilled leaders, as mentioned in Action Area 4, regarding effective leadership to address these challenges and inspire future generations. Dr Kirsty Pourshahidi discussed the many different definitions and styles of leadership, underpinned by concepts of motivation and positive influence. To train these leaders, the *European Nutrition Leadership Platform (ENLP)* was introduced as a dynamic network of around 850 global leaders in food and nutrition with a mission to train, inspire and connect leaders in this space. The ENLP is a prime example of how to train leaders to drive progress in voluntary networks during the Nutrition Decade.

5 DATA-DRIVEN ACTION FOR FOOD SYSTEMS TRANSFORMATION

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Data that is accurate and accessible helps to drive innovation and progress, which was a key theme of discussion at the NNEdPro Sixth International Summit on Nutrition and Health. Data-driven policies and programmes have the potential to reorient food systems and end malnutrition by 2030, according to Andre Laperriere of Global Open Data for Agriculture and Nutrition (GODAN). The COVID-19 pandemic has exacerbated the existing food crisis, affecting production, processing, and distribution within the food system, and highlights the critical need for timely and reliable data to drive decision-making. The pandemic has affected food on the levels of production, transformation, and distribution, which presents an unprecedented opportunity for change. Using data, we can identify and learn from countries who have had the most success in reducing hunger (E.g., Armenia, Brazil, Ghana) and those which have achieved zero hunger while keeping adult overweight and obesity to a minimum (E.g., Republic of Korea, Japan). However, making practice and policy decisions involves a complicated process influenced by logic, current evidence, existing models and authorities, previous experiences, emotions, and cognitive biases, as discussed by Dr Jeffrey Bohn. Causal inference approaches could be one way to address some of these complications by merging nutrition data and scientific evidence to promote better decision-making in the context of nutrition-related communicable diseases targeted by the Nutrition Decade and the Sustainable Development Goals. Although challenges exist in all data science, there are particular challenges in applying mathematical precision in nutrition. Nutrition research considers dynamic processes that evolve and are often influenced by the process of studying them. Additionally, nutrition research occurs against the backdrop of traditional biomedical research where the randomised control trial (RCT) is considered the gold standard in proving causation. While pre-registration of data, protocol and analyses can address some of these primary challenges with research behaviour, to truly understand causation we must consider counterfactuals, which consider the context of the research (models, interventions, characteristics, and cognitive bias) for a more complete understanding. Causal inference tools can be applied to relevant, curated data to identify confounders and subsequent causal linkages. There is a necessity for the quality use of data to identify and strengthen high-impact policies and programmes for action on nutrition.

6 DEVELOPMENT OF THE INTERNATIONAL KNOWLEDGE APPLICATION NETWORK HUB IN NUTRITION (IKANN)

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Research is a cumulative process, and the open flow of information is key to the uptake of evidence into policy and practice. There is growing interest in online knowledge hubs that provide open access to information for public good, and in particular, platforms that have the capability to foster

collaboration between different stakeholders, such as content providers and users (e.g., health care professionals, researchers and policy makers). At the NNEdPro Sixth International Summit on Nutrition and Health, Professor Ball and Selvarani Elahi MBE presented on the development of the International Knowledge Application Network Hub in Nutrition 2025 (iKANN). iKANN is an open access, online portal that provides opportunities to interact with a collation of evidence accompanied by commentary and guidance for workforce capacity building. A key aim of the iKANN initiative is to synthesise and promote global evidence in food, nutrition, and health, and to drive the implementation of evidence into policy and practice. iKANN aims to enhance collaborative efforts with a range of stakeholders from different backgrounds, to support the monitoring of progress and drive improvements in the quality of research and co-ordination of efforts. iKANN was developed in line with the UN Decade of Action on Nutrition, and the encouragement from the World Health Organization to develop networks to support the nutrition and agriculture community to achieve food systems transformation and end malnutrition in all its forms. The initiative is led by the NNEdPro Global Centre, in conjunction with supporter, Swiss Re Institute, and implementation partners, which at the time of writing include GODAN, DSM, LGC, the BMJ, Nutrition in Medicine (NIM), Swiss Association for Co-operation on Food Education, and Konnexions.

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NUTRITION AND GLOBAL CHALLENGES: RESILIENT FOOD SYSTEMS FOR HEALTHY AND SUSTAINABLE DIETS

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Can diets be healthy *and* sustainable? This was the question posed by Dr Hachem from the Food and Agriculture Organization (FAO) at the NNEdPro Sixth International Summit on Nutrition and Health. The market value of the global food system is an estimated \$10 trillion, while the hidden costs of global food and land use systems sum up to an astounding \$12 trillion, according to the Food and Land Use Coalition 2019 report and highlighted by Lina Mahy, from the World Health Organization (WHO). Of those hidden costs, more than half is attributed to unhealthy diets and harmful farming practices. Food systems must enhance food security and nutrition for all, be inclusive, and have a positive impact on the health of people and planet, as well as be economically viable, in line with Nutrition Decade Action Area 1, *Sustainable,*

resilient food systems for healthy diets. There are 16 guiding principles to achieve healthy diets sustainably produced, with eight related to nutrition, including promotion of exclusive breastfeeding, variety and balance across food groups, consumption of whole grains, legumes, nuts and fruits and vegetables and moderate to small amounts of animal source foods. Governments can signal commitment to a more sustainable and healthy future through the development and dissemination of food-based dietary guidelines that embed health and sustainability objectives.

Professor Ray of the NNEdPro Global Centre, spoke on the role of global knowledge networks in response to global nutrition challenges, using the example of the Mobile Teaching Kitchens (MTK) model. The MTK project uses a scalable, micro-level innovation model for health and social innovation in partnership with marginalised populations. The model aims to improve the nutrition knowledge and capacity of the population through demonstration by Teaching Kitchen champions, who are trained nutrition educators. Qualified dietitians and nutritionists share knowledge and skills with community-based volunteers, to support the development of Teaching Kitchen champions in a 'See One, Do One, Teach One' model. Promotion of nutritious, affordable, culturally appropriate, and environmentally sustainable food is central to the MTK model. Investing in some of the most marginalised in society can have an upward social and health impact including localised supply chains and microenterprise and aligns with the Sustainable Development Goals and the UN Decade of Action on Nutrition (2016-2025).

Professor Kumar, of the Zero Budget Natural Farming Programme of Rythu Sadhikara Samstha, continued the discussion on diet sustainability, focusing on the role of climate resilient, community managed natural farming related to nutrition and food security. To set the scene, it was discussed that the food system is facing multiple crises which pose serious threats to food security, nutrition, and the livelihood of farmers. The environmental crisis places additional strain on the food system, including soil degradation and continuous loss of soil organic matter, water stress, global warming, water and air pollution, and decreased biodiversity, thus increasing the number of people at risk of food insecurity and poor nutrition, and worsening farmer distress. While some agricultural practices are historical, namely, deforestation, forest fires, ploughing and keeping lands fallow, recent use of chemical fertilizers and pesticides (biocides) have accelerated environmental decline. Regenerative agriculture, such as zero budget natural farming, was posed an alternative. It is defined as a holistic land management practice that leverages the power of photosynthesis in plants to close the carbon cycle, and build soil health, crop resilience and nutrient density. Professor Kumar reiterated the value of local knowledge networks, namely, organised women in natural farming and champion farmers, as a strength in scaling up nutrition interventions such as this. Collective action and peer learning can support behaviour change and address inequities. Collective efforts are key to sustained impact and in the words of Professor Kumar, 'If you want to change a farmer, you have to change an entire village'.