Highlights of IAP Side event for Science Days (7 July 2021)

There is concern that the global prospects for food and nutrition security are worsening, and exacerbated by the converging crises of climate change and COVID-19, but there are also unprecedented opportunities to capitalise on scientific advances to transform food systems.

An event organised by the InterAcademy Partnership (IAP), the global network of more than 140 academies of science, engineering and medicine, brought together work by regional academy networks in Africa (NASAC), Asia (AASSA), the Americas (IANAS) and Europe (EASAC). Each network recently contributed a Brief to the UN FSS, drawing on issues from a previous major IAP project. Recognising diversity within and between regions but also commonalities, contributors emphasised the importance of taking a transdisciplinary approach to finding solutions for food systems, and encompassing multiple steps from growing, through to transport, retail, consumption and recycling. Furthermore, in the transformation of food systems towards social, economic and environmental sustainability, it is also essential and urgent to take account of pressures on other natural resources such as soil and water and of the continuing objective to avoid further damage to biodiversity.

Among key points made in focusing on solutions were:

- NASAC: agricultural growth is a driver of broader development, relevant to multiple Sustainable Development Goals. Examples for using scientific advances include soil microbiomics, indigenous crops, food processing, enhancing nutrient bioavailability.
- IANAS: importance of developing circular bioeconomy (e.g. biofertilizers, biocontrols, genetically modified and genome edited crops), accompanying biotechnology with environmentally sustainable practices, adapted to local conditions, capacities and cultures, to produce more with less.
- AASSA: scientific definition of a healthy diet is still controversial and must recognise socio-cultural dimensions alongside further research on holistic properties of food, e.g. bioactive components in addition to nutrients.
- EASAC: need to clarify scientific basis of regenerative agriculture and to establish value of different production models for healthy diets and ecosystem services, including assessment of role of new plant breeding techniques
- Invited discussants and wide-ranging Q&A highlighted the importance of connecting common opportunities to local solutions, neglected and novel food sources and innovation in food processing. Drawing on COVID-19 experience raised issues for understanding complexity and systems thinking for building flexibility into transformative approaches to strengthen resilience to multiple shocks.

It is concluded that there is a wide range of scientific opportunities at the frontiers of nutrition and elsewhere for sustainable and healthy food systems that, when mapped onto the UN FSS Action Tracks, can stimulate innovation, guide practice and inform policy decisions. Capitalising on these opportunities requires commitment to trans-regional and transdisciplinary research efforts, building and sharing scientific expertise and facilities, with initiatives for training the next generation, and promoting engagement at science-policy interfaces, integrated at national, regional and global levels.