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SYSTEMS THINKING TOWARDS ONE HEALTH APPROACH AND SUSTAINABLE FOOD SYSTEM

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OVERVIEW

This booklet summarizes the importance of effective communication in delivering solutions that promote sustainable food/feed supply and One Health. The booklet highlights the need to leverage communication towards realization of Africa's One Health goals and enhancement of our food system. These highlights emerged from one of the sessions held during the 5th edition of the Africa Biennial Biosciences Communication (ABBC2023) symposium hosted in Nairobi, Kenya in August 2023.

This session provided an opportunity for experts and policy makers to examine how communication can be harnessed to unlock the potential of biotech innovations in meeting the continent's One Health goals and food needs.

The Big Challenge of Climate Change

Rapid population growth has put pressure on agricultural resources - such as land – and caused massive changes in food systems as the battle against emerging challenges such as animal and crop diseases, drought and hunger becomes even more complex. These challenges have come with devastating effects on the health of humans, animals and the environment.

The demand for more food in the face of harsh climatic conditions has seen an increase in pesticide use by 36% (since 2000) – 4.2 million tons of pesticides currently being used globally. Limited knowledge on responsible use of this product has exposed farmers, animals and the environment to health risks. Further, the interaction between humans and animals is attributed to increased incidences of infectious diseases and pandemics – 75% of emerging infectious diseases of humans come from animals. Alarmingly, increased production of animals has contributed to climate change and environmental degradation.

Production of primary food crops rose by more than half (53%) between 2000 and 2019. Meat production has also been on a steep rise with chicken meat production rising by more than half in the last two decades.

Source: FAO. 2021. World Food and Agriculture - Statistical Yearbook 2021. Rome. https://doi.org/10.4060/cb4477en

Harnessing Biotech Potential to address Food and Health Challenges

Over the years, the world has steadily been shifting from traditional food production to sustainable food systems in the wake of contemporary realities such as rapid population growth, urbanization, changing consumption patterns, wealth creation and globalization. These new realities have come with a raft of challenges such as high calorie intake, low nutritional value, limited access to markets for small scale farmers and agri-enterprises, high levels of food wastage and loss, and increased incidences of food safety and a high ecological footprint.

The discussion revealed tremendous benefits of biotechnology along food/feed supply chain in Africa. Among them is bio-fortification of crops with Vitamin A and Zinc and introduction of heat-tolerant animals in sub-Saharan Africa. However, emphasis was put on the need to also push the agenda on the importance of livestock food system. Intensifying conversations about the importance of improving climate resilience and productivity in livestock through biotechnology should be a priority.

Livestock food systems agenda is taking a back seat as animal researchers confine themselves in the lab with their microscopes. African Union Member States do not know what you (animal scientists) are doing. It is my hope that ABBC will become a platform to bring to the continental level the interesting work that livestock researchers are doing.

Dr. Mary Mbole-Kariuki, Technology, Innovation and Skill Development Expert, African Union-InterAfrican Bureau for Animal Resources

It emerged that inclusion of women in biotech innovations is wanting. As most youth and women increasingly use and appreciate digital farming and marketing technologies, agricultural biotechnology tools such as biotech crops have remained elusive to them. There is a big disconnect on how we communicate how these technologies stand to benefit them.

The discussants brainstormed on several strategies that can be effective in building public knowledge about NBTs and fostering confidence in the capacity of biotech innovations to tackle prevailing challenges. Communication strategies proposed include development and delivery of consistent messages about the technology, explaining both the benefits and drawbacks of the technology (this builds public trust), preparation of audience-specific messages and speaking with one voice.

The value of the technology is worth the space it sits on. We need to involve everybody in the ecosystem in order for our innovations to get to the end-user and have an impact on our society and our work.

Dr. Charity Mutegi, Expert, Food Science and Technology

Communication Approaches Towards One Health and Sustainable Food System

ABBC2023 symposium proposed model communication approaches that can support utilization of biotech innovations to holistically address a plethora of climate-related challenges and build more sustainable food systems while promoting planetary health (health of humans, animals and the environment). It was felt that communication provides important linkages for a multi-faceted approach in arresting the aforementioned challenges. The following recommendations were proposed:

i. Multiple sectors and disciplines must work collaboratively to best manage the health of humans, animals and ecosystems.

ii. Strategies that proactively engages and mobilizes all players and communities to tackle threats to health and ecosystems should be prioritized.

iii. Develop and share messages that explain the potential of NBTs in addressing nutrition deficits, pest and disease challenge in crops and animals, and the effects of climate change. Messages that show how NBTs contribute to a healthier planet are impactful.

iv. The environmental sector is overlooked in the One Health approach. Effective communication promotes inclusivity of all One Health sectors.

v. More investment is needed to enhance grassroots sensitization on correct and responsible use of crop protection products such as agrochemicals. This will promote human health and a safer environment.

Remember that effective communication about advanced innovations and their contributions to food systems and One Health involves not only providing information but also fostering understanding and addressing concerns in a respectful and inclusive manner.

Prof. Maria Dagli, School of Veterinary Medicine and Animal Science, University of Sao Paulo, Brazil