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**STATEMENT BASED ON THE 4TH INTERNATIONAL CONFERENCE ON GLOBAL
FOOD SECURITY – DECEMBER 2020**
CHALLENGES FOR A DISRUPTIVE RESEARCH AGENDA

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Summary

The 4th Global Food Security conference highlighted four major developments: the shift from food security to food systems; a focus on diets and consumption patterns; the importance of unknown futures and inherent uncertainties and risks; and the central role of multi-level connections between local- and global-oriented research. These shifts highlight the importance for research to contribute to dialogue and collective intelligence through evidence-based brokerage, and to move beyond polarization of debates. These shifts also call for the involvement of scientists in multi-stakeholder arrangements to strengthen innovation and learning at different levels, and for their participation in foresight studies to help navigate plausible futures. Delegates discussed five scientific challenges to be addressed through both research investments and by improving science-policy interfaces.

Key words: food systems, scientific challenges, science-policy interface, transformation, innovation

23 The 4th International Conference on Global Food Security was held on-line December 4-9, 2020,
24 organized by the Montpellier University of Excellence (MUSE), Wageningen University & Research
25 and Elsevier, with 900 registered delegates from 78 countries. It aimed to strengthen the global
26 research community engaged in food systems and food security research, to formulate messages
27 that can contribute to the UN Food System Summit to take place in 2021 and to pave the road for
28 future collaboration.

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30 The conference endorsed the need for systems thinking, going beyond disciplinary approaches, to
31 address the 2030 Agenda for Sustainable Development. It encompassed 12 themes which
32 included seven cross-cutting and integrative ones; the four dimensions of food security as derived
33 from the 1996 FAO World Food Summit definition (availability, access, utilisation and stability);
34 and one supplementary topic to discuss the impacts and transformations of food systems brought
35 about by COVID-19.

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37 Contributions to the conference, building on the previous three conferences, highlighted four
38 major developments. These developments are reported here through this summary prepared by
39 the Scientific Committee of the Conference. The first relates to the shift in focus from food
40 security to food systems. This aligns well with the need to achieve the SDGs of the 2030 Agenda in
41 an interconnected way, and not just SDG 2. It also notes the importance of food systems
42 transformation as a powerful lever to enhance social justice, ecosystem restoration and
43 protection, human health and well-being across the globe. This demonstrates the shift of
44 paradigm away from a focus on production and food availability, which was typical of the 20th
45 century to meet the demand of a growing population, towards a new 21st-century paradigm
46 calling for intersectoral thinking and action. It calls for acknowledging the multifunctionality of
47 agriculture and food systems and designing new ways and metrics to assess their performance.

48

49 The second shift is a much-increased attention to diet quality and consumption patterns,
50 including food losses and waste. A substantial number of contributions to the conference focused
51 simultaneously on production, consumption and circularity, as well as the environmental and
52 health impacts of diets. This is clearly an area that still warrants more research and intellectual
53 development.

54

55 The third shift is on the realization of the need to account for unknown futures, and inherent
56 uncertainties and risks, something accentuated by climate change, the current pandemic and the
57 crisis it has generated. This shift calls for researchers to work collaboratively for closing gaps in
58 knowledge and capacities, and expanding the role of research in decision making beyond
59 technology transfer. This could lead researchers to develop and strengthen appropriate
60 participatory approaches and interfaces with decision-makers, including foresight methods to
61 explore plausible and desirable futures.

62

63 Finally, the conference confirmed the importance of a fourth shift addressing multi-level
64 connections between local- and global-oriented research, and including the often missing
65 intermediate levels and ‘the missing middle’. Global studies reveal global challenges and
66 pathways but lack the required detail, context and governance specificity, rigour and relevance to
67 generate transformation at local and intermediate levels. Local studies reflect a high diversity in
68 methods, data availability and outcomes, and invite to celebrate context-specificity. Research
69 should investigate connections, including the intermediate levels and the way production of
70 knowledge at one particular level interacts with decision making at another level.

71 As a consequence of the present systemic crisis, caused by many drivers including the COVID-19
72 pandemic, the focus of the Conference moved beyond its initial question formulated in 2018, i.e.
73 “Achieving local and global food security: at what costs?”. The UN Food Systems Summit will

74 question researchers about the world's capacity to build back from the crisis rather than just
75 coping with it. Resilience thinking has thus become pivotal and reveals a number of options to
76 consider for the future, including recovering, building back better and building forward
77 differently. These options thus invite for marginal, incremental and transformational avenues to
78 be explored and articulated. To meet the expectations, researchers need to address two
79 challenges. The first one relates to food security and nutrition and to the pathways to ensure
80 these for all, at all times in the new context of growing inequalities and multilateral
81 fragmentation. The second relates to the capacity of food system transformation to act as a lever
82 to design and realize sustainable and inclusive futures.

83 Acknowledging these challenges requires emphasizing the need for science to build collective
84 intelligence to support transformation. It also questions the role of research, researchers and
85 research approaches. Robust and solid evidence is required to inform issues that were not
86 considered before and that are now looked upon as essential, e.g. climate footprint and risks of
87 pandemics. This implies new approaches, methods, models and metrics. In addition, the role of
88 researchers must move beyond the provision of evidence to now include more than ever three
89 complementary tasks. First is to contribute to dialogue and collective intelligence through
90 evidence-based brokerage, in order to move beyond polarization of opinions and debates,
91 identifying levers for change and designing theories of change. Second is their involvement in
92 multi-stakeholder arrangements to strengthen innovation and learning at different levels. Third is
93 to participate in foresight studies to help navigate plausible futures and guide breakthroughs.

94
95 Delegates, including many young researchers and students, identified five scientific challenges to
96 be addressed through both research investments and exploration and by improving science-policy
97 interfaces:

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- 99 1. Moving beyond the simplistic assumption that *technology* and *innovation* both
100 *automatically* lead to sustainability, as these could be at the same time enablers and
101 threats, depending on conditions. Technology may, for instance, be required to address
102 societal and sustainability challenges, but alone is not enough. This is supported by
103 historical evidence and by lessons learned from innovation studies and socio-technical
104 transition studies. Development studies are critical to explore pathways and the
105 institutional environment to direct innovation, including appropriate technology, in order
106 to solve the pressing global challenges of our time.
- 107 2. Informing *counter-intuitive observations* regarding commonly accepted assumptions.
108 Examples include: there is no positive relationship among production, productivity,
109 income, nutritional status and livelihoods; ‘local’ food systems are not always more
110 sustainable or less risky; there may be trade-offs between what is environmentally safe
111 locally and what is beneficial at larger scales.
- 112 3. Developing and strengthening arrangements, interfaces and methods that connect the
113 dots between knowledge and action, instead of living with a disconnect between
114 researchers, decision-makers and their communities. Research has to characterize
115 potentials and the conditions for knowledge to be actionable in different contexts.
- 116 4. Investing in research to analyse transformation, its political economy and the power
117 relationships that shape or prevent transformation, the way transformation may take
118 place and its consequences. This includes the behavioural change, the governance,
119 and what complicates transformation, in particular coping with shocks and the
120 management of risks and uncertainty. This requires delivering insight into trade-offs
121 among sectors, human and planetary health, spatial levels and time frames. Special
122 attention needs to be placed on the polarization and conflicts between micro and macro
123 level and near-term and distant issues and interests. This also requires research capacity

124 building, particularly in low and middle income countries, as well as identifying obstacles
125 and resistance to change, with a specific focus on conflicts of interests among different
126 actors and contexts, the enforcement of rights (in particular the right to food), lock-ins,
127 and path dependencies.

128 5. Informing the *steering and governance* of food system transformation, including agency,
129 food-related policies and market transformation, by providing specific evidence and
130 assessments. In this context, researchers have a role as transformative space makers,
131 which implies the ability to translate academic concepts and insights into the 'language' of
132 non-academic stakeholders. It requires academic institutes to guide young scientists into
133 this strategic foresight role.