



Speaker Summary Note

Session: Science and Technology Levers

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Title: Partnership Revolution for Innovation

From what we have learnt already in this conference there is an urgent need to solve complex research challenges. Science and Technology is essential for solving complex challenges.

1. Complexity

- (a) Increasing demand through population and economic growth, urbanisation, changing diets and landscapes.
- (b) Increasing challenges of Climate Change, Energy and Food Crises, and political instability.
- (c) Many being left behind, isolated, nutritionally.
- (d) This is a global challenge – Not just about the developing world. Globally we must invest today in long term and sustained agricultural research to prevent food crises, and as a consequence political and economic instability, in 2020 and beyond.
- (e) Cannot solve food, nutrition and health challenges without also managing fragile ecosystems, including forest areas, and more sustainable use of natural resources.

2. The challenge and complexity of sustainable nutrition security for health requires us to use all tools at our disposal

- (a) **Need to increase volume through more rapid rate of productivity gains.** This is not only good for populations, but also good for the environment, providing more for every unit of resources consumed (including energy, land and water), and reducing pressure on more marginal areas.
 - (i) To do this we need all the tools of science innovation to double crop production on existing arable land, including in remote areas, using traditional knowledge and breeding, IPM, modern and organic farming methodologies, crop-rotations, molecular tools, biotechnology, agro-forestry, and many others.
 - (ii) Through productivity gains the CGIAR's new Research Program for Rice GRiSP, led by member center IRRI along with Africa Rice, and CIAT, aims to raise 150 million out of poverty by 2035

(b) **But solving health and nutrition issues is not just about volume and quantity of food. We must also improve quality.** New innovations allow reduction in fungal disease with less harmful mycotoxins; wise use of IPM allows reduced use of pesticides; new technologies allow improved nutritional quality, digestibility and bio-availability, and new crop research allows improved and increased crop and diet diversity.

(c) **Other tools** include Bio-fortification (Harvest Plus, ABS, Orange Fleshed Sweet potato, Cassava, Golden Rice) and a more diverse range of available vegetable crops for improved Vitamin A, Iron and Zinc availability, for example.

We can also provide more diverse protein sources such as livestock, fish and pulses, enhanced vitamin and essential element sources, improved value chains and availability amongst rural and urban poor.

(d) **Reduce losses**—prior to harvest, post-harvest, and even post consumption, through access to clean water, reducing diarrheal diseases.

3. **To provide solutions to these complex problems, we must access the best research, knowledge and technologies available in public, private, academic and civil society**

(a) Access to innovations that provide lasting and sustainable solutions requires a radical and urgent **partnership revolution** crossing sector boundaries, and at scale. It requires the private sector to embrace solving the challenges of the poor; it requires public institutions to embrace private enterprise. It requires a long term commitments to research that doesn't stay in the labs, but is rapidly disseminated and adapted with and by farmers, and their households.

(b) Partnerships critical to secure and deliver new innovation for public good particularly in crops, diseases, or areas under-served by Private Sector.

(c) Whether we are talking about more nutritious varieties of sweet potato or healthier grains, research should not be confined to the lab—includes research at the farmer level, with farmers, by farmers, for farmer households, most of them women. It also includes research on markets, trade barriers and value chains.

(d) In order for Science and technology innovation to improve livelihoods and health of the poor and most vulnerable clear recognition must be given that the rural household is the nexus of Agriculture, Health, Nutrition, Sanitation, and Education.

(e) Agricultural Research Investment pays off. Our CGIAR scientists work closely with hundreds of partners, including farmer groups, national extension and research, local and international private sector companies, civil society groups and academic research institutions to find the best solutions. We look for holistic and lasting solutions at the household and village level.

(f) When we look at the public investment in international agricultural research through the CGIAR world production would be 4–5% lower, developing countries would produce 7–8% less food, world food and feed grain prices would be 18–21% higher, and 13–15 million more children would be malnourished. For every \$1 invested in CGIAR research, \$9 worth of additional food is produced in developing countries, where it is needed most. The evidence is clear: agricultural growth alleviates poverty and hunger

4. **What are some of the barriers to a “Partnership Revolution” for Agriculture, Health and Nutrition?**

I don't have all the answers, but our scientists and centres are working hard to find them and I will leave the detailed studies to previous work done by our centers such as IFPRI on the successes and failures to partnerships. However from personal experience, 'on the other side of the fence' a couple of areas I would like to highlight.

(a) **Apathy and lack of urgency**

- (i) A sense that it is really someone else's problem, and that the "other" sector or institution or country will solve "that" problem. Poverty, and Malnutrition are no longer just "their" problem, they are "ours." Wheat harvests or deforestation in one region can and do have an impact that can be felt on the other side of the planet.
- (ii) We must get past the sector divide, and mistrust. We must reach across the divide between Agriculture, Health and Nutrition. We must reach across the divide between Public and Private sectors, between institutions. We must get past the silo mentality.
- (iii) A sense that the status quo is acceptable and that somehow the problem will go away. That grain yields in Africa one sixth of the rest of the world are acceptable. That 1BN people (and growing) are undernourished and go to bed hungry.

(b) **Analysis-Paralysis**

- (i) Always looking for the 'perfect' solution, perhaps never finding it in this rapidly changing global environment. By the time we find a solution, the problem has changed.
- (ii) A lack of willingness or funding to try, even if it fails. Our funding systems are bogged down in the search for the perfect. We must secure funding for adaptation and real world solutions that allow scientists and the farmer households they serve, to learn as they go. To be willing to fail, if by failing and less than perfect solutions, we learn.
- (iii) Incentivising dreaming—funding for 'blue sky thinking'

(c) **Lack of long term commitments and accountability.**

- (i) Lasting partnerships take time
- (ii) Need to get beyond project mentality and election cycles
- (iii) Research success demands long term commitment to achieve a full 'pipeline' with room and time to filter out imperfections.
- (iv) Must get beyond funding for "pet projects" and knee jerk responses to crises.
- (v) Competition for the same pool of funds

5. Potential Solutions

- (a) Long Term Donor support and commitment
- (b) Incentives essential—"Orphan Drugs" Legislation experience
- (c) Policy incentives for long term Agricultural, Nutrition and Health research partnerships
- (d) Combined extension models at a village level—Rural development nodes: para-health, para-agronomist, para-sanitation worker