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Joint A4NH/ISPC Workshop on Nutrition - Insights and recommendations

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The CGIAR Independent Science & Partnership Council (ISPC) has complemented the work of the CGIAR Research Program (CRP) on Agriculture for Nutrition and Health (A4NH), by providing fora for discussion between the CGIAR and partners on the challenge of identifying how agricultural research can contribute to improved human nutrition. In an era when the quantity of food produced globally is not the primary constraint to decreasing malnutrition, the nature of the research questions to be addressed by agricultural research needs to be re-considered if positive nutritional outcomes are to be achieved. The ISPC held a Science Forum (SF)¹ in 2013, which was attended not only by scientific experts from both the agriculture and nutrition fields, but also by donors with an interest in funding nutrition and/or agriculture for development and experts working on implementing development projects designed to improve nutrition outcomes. The presentations and discussions confirmed conclusions of earlier meetings that the pathways from agricultural research to improved nutrition are complex and that

inter-disciplinary research coupled with multi-sectoral implementation is required.

With these lessons in mind, the ISPC, together with A4NH, jointly convened a follow-up workshop which was held at IFPRI, Washington, DC, USA on 22-23 September 2014. The workshop discussed two key questions in greater depth – firstly, what are the priority questions for research to address, in order to increase access to an affordable, nutritious and safe diet and secondly, how do we evaluate the impact of agricultural interventions and investments on nutrition. Identifying the priority research questions is important as the CGIAR considers the further development of its programs and their design to contribute to improved nutritional outcomes for people in the future.

1. The 2013 SF focussed on “Nutrition and Health Outcomes: Targets for Agricultural Research” and was held in Bonn, Germany in September. It was co-hosted by the Federal Ministry for Economic Cooperation and Development (BMZ) Germany. The Forum was structured to be a mix of plenary and ten breakout sessions and was attended by over 200 agricultural, nutrition and health specialists. The Forum summary and brief are available at <http://ispc.cgiar.org/mobilize>.

The two-day workshop attracted over 40 participants. The agenda was designed to maximize dialogue and debate between participants through facilitated breakout group discussions on both days in addition to invited talks.

Global context

Nutritional status is a complex concept and is influenced by access to food, care and health as the three big contributing elements. Traditionally agriculture has contributed to enhancing household access to food through increased productivity and income. While the quantity of food accessible by the poorer sectors of populations in many developing countries remains an issue, the nutritional quality of food eaten is an insidious problem more broadly, with targets not being met even in developed countries.

Many of the presentations at the workshop touched on dynamism around the context in which research outputs by both the agriculture and nutrition research communities will be used. Agriculture can be leveraged to improve nutrition but the agricultural research agenda needs to be rethought if we want agriculture to contribute to the delivery of nutrition outcomes. Researchers and policy makers need to re-examine their assumptions and current paradigms. The impact of changing demand for different foods has not been recognized sufficiently - diets can differ markedly between countries and diets are not static over time, especially as incomes rise from a low base. Markets are changing – regional markets are important for many poor consumers. The private sector is also changing and there is increasing attention being paid to and investment in the health value of food. There are opportunities for diverse diets to make a positive contribution to nutrition outcomes, but there is a continuing trend in funding and policy to focus research

on staple foods and national food security, and not to support alternative approaches.

So how could we design research differently and where should we put our efforts to ensure we contribute to positive nutritional outcomes? Participants at the workshop identified key areas where more research might benefit nutrition outcomes and the associated actions required. These included a greater understanding of the context in which the expected research results would be implemented, additional approaches to enhancing diet diversity, the need for a focus on appropriate indicators and on how to evaluate progress. These are explored in detail below.

The context in which the research results will be implemented

When designing the research questions, it is important to identify who will use the results and how they will be used. Similarly, it is important to recognize enabling or obstructing factors in the local context, and how nutrition improvements will be measured to show the results of the intervention. A formal Theory of Change (TOC) describes the assumptions underlying the relationships between outputs, outcomes (including unintended outcomes) and impact, addressing complexity and causality. Developing TOCs for the uptake of research outputs through to delivery of development outcomes is important to i) assess the feasibility of delivery through “impact pathways”; ii) identify key knowledge gaps; iii) provide insight into the interest of the potential users in the scope of the research ; iv) measure and validate the assumptions; v) identify clear roles and responsibilities for the partners that need to be involved in research, delivery and measurement; and vi) provide a framework for Monitoring and Evaluation. TOCs should also be reviewed and updated as new information emerges.

Making a nutritious, safe and affordable diet accessible

There was unanimous agreement during the discussions that there is a need to focus more on “diet quality” than simply on producing more calories. The first presentation focused on the bias in research investment towards increasing the productivity of staple crops (predominantly cereals such as wheat, rice and maize). This leads, amongst other things, to difficulties for poor people in sourcing diversity in diets at an affordable price. There is an opportunity for the CGIAR to conduct research on diet diversification by identifying key opportunities/crops, focusing on intensification, breeding and management of a wider range of crops and on getting the individual products into diets cost-effectively. Continued investment in making staples more nutrient-rich should not be undermined, however additional emphasis in the research agenda on non-staple, nutrient-rich foods is crucial (for example developing the seed system for nutrient-rich crops, ensuring that nutrient-rich foods can be marketable, better infrastructure to serve multiple crops and reduce post-harvest loss, and more investment in processing and increasing convenience). Biofortified foods and animal source foods such as eggs, meat, milk and fish have great potential to improve the nutrition of people on poor diets, but more research emphasis on considering the whole diet is needed, taking due recognition of cultural differences. The challenge is to maintain a fair price to the producer while reducing the price for consumers.

Presentations on the first day of the workshop also considered how to facilitate smallholder farmer participation in markets. For smallholder farmers to supply domestic markets effectively to increase the availability, affordability and quality of diverse nutritious foods, they must produce a commodity

for which there is demand, with reduced perishability or increased storage capacity, which renders high value for land area, or is capable of being farmed with other crops and for which safety considerations (e.g. aflatoxin contamination) are recognized. Consequently, addressing challenges in the marketplace will help diversify diets (e.g. by reducing constraints to produce, store, process, transport and market nutritious and safe foods for urban and rural populations). Past evidence also suggests that agricultural research has helped reduce poverty for poor consumers.

Tremendous opportunities for improving nutrition seem to be offered by identifying leverage points in value chains through which dietary diversity can be enhanced. These include identifying bottlenecks where unnecessary transaction costs exist, and what could be upgraded to decrease cost and increase the value of the commodity through processing, for example; understanding production versus consumption dynamics; creating demand by understanding and influencing consumer choice; and, identifying policy and regulation actions and solutions. At the same time, there are critical risks for improved nutrition through value chain development that need to be taken into account such as trade-offs between income and nutrition; risk of ignoring short value chains that do/can supply food to target populations (e.g. advantages for women’s time) in favor of long value chains (international, high income urban markets); concerns about exclusivity and whether value chains and food systems can actually reach the most vulnerable; unintended consequences of commercialization; and risk for food safety with intensification. To make diverse food available and affordable, it is critical to integrate multiple value chains and focus on the “value web” rather than single value chains. Another key area for action

relates to efforts in managing food safety in informal markets in ways that remain pro-poor. Evidence shows that wet markets are often no worse than supermarkets at meeting food safety standards, and gradual “formalization” of wet markets can improve safety and decrease poverty.

Healthy diets are usually more expensive and more difficult to access than minimal or less-healthy diets. Hence agricultural research should not just be limited to breeding improvement but also targeted to drive down the local costs of production. In addition to increased prices of non-staples, issues such as seasonality impinge on diet diversification and agricultural researchers should take into consideration sustaining seasonal choices and providing a market for the producer. Agricultural research would also benefit from modelling efforts that factor in the impact(s) of urbanization, agricultural intensification and other major trends, on dietary changes that will happen in the future.

Methods and measures: Monitoring impact and evaluating progress

As research investors press for evidence of impact, more accountability for development outcomes is being asked of and expected from the CGIAR. It is challenging to attribute positive impact to agriculture in multi-sectoral interventions. A greater immediate challenge to research is to develop reliable, feasible, objective and/or subjective measures of availability and affordability of diverse, nutritious diets – better methods and metrics are the need of the hour.

So what should agriculture be held accountable for in terms of improving nutrition? Agriculture could (in some contexts) be held accountable for providing affordable, adequate, diverse and nutritious foods, and for not causing other adverse

effects (from the environmental standpoint, safety issues and worsening women’s time and resource allocation). Therefore it is important to track indicators for outcomes all along the pathway, not those just related to diet and nutrition outcomes. There was consensus amongst the participants that whilst agricultural interventions should focus on more proximal indicators for measuring impact, there is an inter-sectoral linkage to be made. For example, a novel composite index - the Net State of Nutrition Index (NeSNI) was presented that highlights the net state of nutrition (for 89 low and middle income countries) across six nutrition goals (stunting, anaemia, low birth weight, overweight, exclusive breastfeeding and wasting) and tracks “net” progress towards these multiple goals simultaneously. Although general indicators of malnutrition such as stunting are not appropriate for measuring the nutritional impact of agricultural interventions, agricultural research can contribute to these more distal nutritional outcomes.

Dietary diversity is increasingly recognized as a useful indicator for capturing some aspects of diet quality, as it correlates with adequacy of nutrient intake. Bearing in mind the rising problems of obesity and diet-related non-communicable diseases (NCDs), workshop participants considered that agriculture-nutrition research would benefit from developing indicators that take into account additional indicators of dietary quality and food environments, such as food groups that should be consumed in moderation.

A presentation on the measurement of food environments (where the food environment is defined as the availability, affordability, convenience and desirability of various foods) underscored the importance of such a concept in improving the design and evaluation of agricultural interventions for

nutrition. Agriculture-nutrition research would benefit from measuring food environments to predict/understand the likely effect of additional income on diets, to monitor/ evaluate the effect of the program on the food environment and to design better nutrition-sensitive programs to fill supply and demand gaps based on understanding of the existing food environment. The food environment has been measured using some existing tools (for example, INFORMAS², Optifood³, etc.) but the development of such metrics is still in its infancy and few are relevant to application globally in rural areas. There is a need to develop both objective and subjective measures of prices of various food groups. Methods for aggregating data and coming to a price representing the whole food group need to be developed, standardized and mainstreamed.

Another presentation highlighted three nutrition-sensitive indicators that have recently been developed by the US Government's Feed the Future (FTF) initiative to complement the dietary diversity indicators already being collected. These include prevalence of women of reproductive age who consume targeted, nutrient-rich, value chain commodities; prevalence of children 6-23 months who consume targeted, nutrient-rich, value chain commodities; and, the total quantity of targeted, nutrient-rich, value chain commodities produced by direct beneficiaries that is set aside for home consumption.⁴ Nutrient-rich commodities must meet any of the following criteria: i) bio-fortified; ii) legume, nut or seed; iii) animal-sourced food; iv) dark yellow or orange-fleshed root or tuber; v) fruit or vegetable that meets the threshold for being a "high source" of one or more micronutrients on a per 100 gram basis.

In addition to accountability to donors, accountability to beneficiaries must be enhanced and strengthened. Results should be shared in order to empower communities with knowledge – however this entails supplementary cost implications that should be factored into the program/ project budget. Concurrently, program/ project costs could be reduced by joining in with consumption and measurement surveys of others. For example, the CGIAR is actively engaging with consumption expenditure surveys in the World Bank Living Standards Measurement Study and could use these data to help track dietary change and prices changes over time. This could be further complemented by data from project activities.

Partner choice and organization

Participants at the workshop agreed that more strategic partnerships (both internal and external to the CGIAR) are required. Within the CGIAR, expertise in social science, nutrition, nutrition evaluation and food science is limited. Enhancement of these skill sets could increase the probability of successful nutrition outcomes. Building a community of practice inclusive of all specialties to ensure that information on CRP nutrition-related activities is shared is recommended. At the system level, a long term vision of how partnerships would grow with clear roles and responsibilities is necessary. This would boost the capacity of CRPs to collaborate effectively and avoid duplication. At the same time, local measurement and analysis of nutritional status and options is an apparent advantage of systems programs and the CGIAR may need to consider the relative roles and responsibilities in design, conduct and measurement of nutritional programs.

2. <https://www.fmhs.auckland.ac.nz/en/soph/global-health/projects/informas.html>

3. <http://blog.usaid.gov/2013/09/optifood-to-improve-diets-and-prevent-child-malnutrition-in-guatemala/>

4. http://feedthefuture.gov/sites/default/files/resource/files/fff_handbook_indicators_october2014.pdf

Bringing in other sectors, especially at the design stage and to help with targeting cannot be emphasized enough. Cross-sectoral discussions are vital for a coordinated multi-sectoral research approach. Examples of best practices for multi-sector programming need to be identified and shared for drawing lessons on building convergence across sectors. Furthermore, the CGIAR needs to slot its efforts into processes such as the Scaling Up Nutrition Movement and CAADP to ensure country ownership. Regional partners including enabling environment players, private sector and local beneficiaries should be brought on board before the program sets out.

The CGIAR is currently connecting with companies between the agriculture and food sectors, e.g. DSM and Buhler as well as between food science, nutrition and agriculture, e.g. TechnoServe. However, the nature of these relationships is complicated and there is still lack of clarity in terms of effectively involving the private sector and the extent to which the CGIAR should invest in these translators. The approach of GAIN to food systems analysis and the identification of local entrepreneurs to produce products to fill nutritional gaps and opportunities should be considered in partnership strategies. However, agricultural researchers should be

cognizant that taking interventions to scale includes feasibility, replicability, measurability and partnerships; therefore, careful attention should be paid to the cost of programs/projects themselves in doing cost-effective research.

At the country level, the CGIAR should be looking to forge partnerships with small and medium-sized enterprises that are nationally owned for social and political sustainability. Agro-processors are a key group that might be the best entry point for providing nutritious foods to farmers. Partnering with the national media seems practical since it has an important role to play in education and awareness.

With regards to partnership with academia (e.g. the CGIAR has contributed to influential think pieces in the Lancet 2013 series on maternal and child undernutrition), there was consensus that the CGIAR's role is not so much in foresight, rather in giving issues profile to perhaps lead and/or influence what the academic community works on.

Conclusions

We hope that outcomes of the 2013 SF and this follow-up workshop will further contribute to the nutritional strategies and programs of the CGIAR, and the agricultural research community at large.



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