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## “FOOD NUTRITION IN EASTERN AND SOUTHERN AFRICA”

Australian International Food Security Centre (AIFSC) and ILRI  
WORKSHOP

ILRI-NAIROBI, KENYA  
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## Executive Summary

The Australian International Centre for Food Security gathered experts in nutrition and agriculture from over nine East and Southern African countries to ask the questions, 'where can we have the most impact?'. A preliminary report sourced from long-standing international data sparked a deep debate about the indicators used and what other approaches could capture current realities and inter-linkages. The discussion led to a suggestion to look at long term indicators, such as stunting (rather than under-nutrition and wasting) and diet diversity and vitamin and mineral deficiencies.

Numerous overviews, case examples and discussions of successful long-term projects at different stages explored the strong linkages between nutrition, increased productivity, indigenous crops, animal protein, urban and rural farming systems, food safety, a value chain approach, non-farm food supplies and creating advocacy from the grassroots outwards. Even if a project started with a focus on one food product, such as sweet potato, dairy or poultry, the depth of complexity, positive and negative unintended effects, and the need for integrated approaches in project design and implementation became apparent. Nutritional education, consumer-led community approaches, using appropriate species of plants and animals, integrated research and approaches that lead to evidence and advocacy to influence policy came up as key activities that can lead to successful outcomes.

The drivers of under-nutrition were explored in various contexts and at different levels, and it was apparent that current activities and approaches are shared by a number of organisations. The issue of diet diversity supporting indigenous nutritious foods was frequently emphasised as a positive response to increasing nutrition, agricultural adaptability to climate change and drought and well as to the increase in stunted over-nutrition as a result of processed foods in some African countries. This also highlighted the urgent need to add value, availability, ensure quality and shelf life by processing foods within Africa, especially before export.

As a way of gathering experience and interest in the room, the group ended by imagining five different projects: urban; and rural farming systems; animal sourced foods; research to provide evidence; and advocacy from the grass roots outwards which are listed in the final table of this more detailed report.

## Welcome and introduction

### **Melissa Wood, Director Australian International Food Security Centre (AIFSC)**

Presentation available [here](#)

Melissa shared an overview of the AIFSC, a summary of the AIFSC strategy and current activities. She outlined the background and scoping studies of the Centre, the urgency and importance of the work being done and the scope of the workshop.

She noted that effective nutrition action requires coherence and critical mass from all sectors:

- including household practices, education, water and sanitation, health systems, social protection and agriculture. However the workshop will focus on agricultural and household practice sectors so as to keep the workshop objectives within the boundaries within the AIFSC strategy.

One of the outcomes of the workshop is to get comments, suggestions from the participants to help with the design of the AIFSC food nutrition and safety program.

Objectives of the workshop:-

- To identify research gaps in terms of food security, agriculture and nutrition in line with the AIFSC strategy and African priorities
- To identify how the AIFSC could best complement work being undertaken by partners in target countries and where it should invest.

Day 1 – Knowledge sharing and review

- Population nutritional indicators and status
- Drivers and foresight
- Better understanding of activities and actors

Day 2 – Developing a framework for priority AIFSC investment

- Analytical and transparent
- Acknowledging complexity, current activities
- Boundaries – firm and flexible
- Time
- Partners
- Strategic priority setting

### **Shirley Tarawali, Director ILRI**

Shirley welcomed the participants to ILRI and noted that ILRI is pleased that the AIFSC has decided to partner with ILRI for this important undertaking. The workshop and its focus are both timely and topical for ILRI for the following reasons:

- ILRI is one of 15 CGIAR but the only one that focuses on animals.
- ILRI is involved in 6 Challenge programs including one on agricultural, nutrition and health. They lead on CRP 3.7 on protein produced by the poor for the poor, which currently mostly covers dairy, beef, poultry and pigs.
- ILRI is working on a new strategy and part of the work involves consulting with high level partners and the major issue that has come up in the consultations is ‘food security’. It is timely that this workshop will address the issue.
- Also important is to balance the message of malnutrition with the slow steady increase in the rise in obesity and ‘stunted over-nutrition’ around the world. So it is the quality and type of foods made available that is also creating a problem at the other end of the BMI index.
- ILRI is seeking to provide sound evidence on the role of ASFs and to ensure that global views are appropriately addressed.

With those remarks she noted that the workshop will help ILRI in its thinking and future work.

## Participant's introductions

Sue Canney Davison, the facilitator, highlighted that day one is focused on knowledge sharing on food security and nutrition in Africa and thus encouraged the participants to be participative with each other in sharing their knowledge. In a participatory ice breaker activity, the participants introduced each other, their work, their inspirations and organisation.

## Why this is worth doing?

The context of nutrition and food security in Africa – Ruth Oniang'o

**Key words: Evidence for hands-on policy change from grassroots onwards; traditional indigenous foods for health and nutrition; value chains and value addition.**

Her knowledge sharing is mostly from life experience. It's good to question, prioritise and plan with the resources we have. Focus on: food security, food production and women, have come to Africa thus helping to create change but not yet enough. Hunger is affecting Africa but what is hunger? At times we don't fully understand what hunger is.

Her impact on nutrition and food security:

- At the local level she started a non-governmental organisation, which is where the reality is, working with people on the ground level which helps in advocacy.
- At the parliament level she has shared about food security issues and has been involved in the revision of Kenya's food policy (which is at the implementation stage) by adding in nutrition.

The Africa situation needs:

- Our governments to prioritise issues on food quality. A country cannot develop with hungry malnourished people. Agriculture is the driver and engine of development in Africa but governments are not focusing on it.
- The governance issue is critical in food security
- There is need for a national programme on food and nutrition, Africans are eating badly they need to be educated and advised and political leaders to focus on improving good health for the nation. 'You are what you eat'
- Scientists have a role in influencing politics. We need evidence for policy and planning; however, it is one on one meetings with key politicians, understanding the context and the audience that gets the message across and some action taken, even more than policy briefs. Otherwise millions of shillings are being sent back to treasury in Kenya unspent.
- Need political leadership to take traditional, indigenous foods, millet, sorghum, cassava, sweet potato and all the different indigenous leafy green vegetables seriously. Researchers should spend resources in indigenous food research rather than importing foods. The imported foods have led to a huge increase in cancer, and other non-communicable diseases related to wrong diet and obesity.
- Is there a way to disseminate information on nutritious foods quickly, Orange Flesh Sweet Potato has been targeted for 7–10 years but when does it reach those who most need it?
- Partnership consultation is critical; it has helped to address nutrition and food security issues.
- International partnerships do help local industries to grow in what they produce, be able to export their produce and not at a low cost.
- Value chain advocacy- where is the food produced going to go? It's important to have real expertise in this sector because Africa is producing a lot but a lot is rotting away.
- We need to process and add value to our exports before they leave Africa.

- An informed consumer – the industry should meet its obligation to deliver/allow the best for the consumer.
- Advocacy and policy change can start at the grassroots. Ruth was a nominated MP and learnt much about how decisions are made in parliament.

She highlighted that her vision is to looking forward and advocating for ‘An Africa that will feed the rest of the world’ because Africa has all the resources. It is a continent in transition, with CAADP, NEPAD all still looking for money outside of Africa. Yet the resources are here already, what is needed is the will to do it.

Q. What will success look like on the African continent? A. Africa has been living on little projects from donors, to be a partner/donor you have go there for the long haul to make change. The success on these projects will be to stop seeing malnourished children in Africa especially on media and to stop hunger. Success is also seeing positive statistics showing governments adopting food security policies.

### Facilitated panel of two motivational case studies of effective nutrition interventions

#### Delivering Nutrition through Orange-Fleshed Sweet Potato: The Growing Evidence Base – Jan Low, CIP-SSA

Presentation available [here](#)

**Key words: Nutrition from agricultural diversity and productivity; focused, long-term integrated approach; build evidence for proof of concept; integrate with contextual realities and other projects; look for synergistic opportunities.**

Jan Low gave an in-depth presentation on the work done to develop and adapt improved varieties of orange flesh sweet potatoes (OFSP) that could increase the serum levels of Vitamin A particularly in the first 1000 days of a child’s life and in young mothers.

The OFSP innovation is viable as a nutrition kit because it’s a rich source of vitamin A. While originating in South America, sweet potato has been here so long that Africa has become a secondary region of diversity and people know how to grow it.

While the presentation outlines the detail, the key points are:

1. Spending the effort and time to develop proof that OSFP significantly raises Vitamin A serum retinol levels paid off in rekindling donor investment.
2. That the level of impact is affected by other interventions such as a little added fat and de-worming.
3. That high yielding imported varieties need to be bred to adapt to African ecological realities and that takes time and commitment.
4. That paying attention to the costs per person of different interventions and building affordable local and devolved capacity is key to successful implementation, scaling and sustainable impact. Innovative cross linkages, such as linking vouchers to antenatal clinic attendance are important to test out and implement.
5. Agriculturally linked nutritional interventions, while eventually more sustainable are embedded in all the social, political and economic realities of any one region and so take time and a congruence of supportive events and key people to really have an impact. The presentation highlighted an integrated approach comprising: agricultural production, marketing and awareness, product development and value addition and change of diet practices. Some key areas for collaboration are on the value chain, storage, extended shelf life, and product development for urban consumers.

**Q.** Is there evidence on public health significance? **A.** Jan noted that evidence has been built through two studies in Mozambique and Uganda and also in laboratory testing in South Africa, but the question/challenge is how to implement in a cost effective way.

### **Dairy Intensification in Kenya and Young Child Nutrition – Amanda Wyatt, IFPRI**

Presentation available [here](#)

**Key words: increased production can mean improved nutrition of the producers but there can be unintended outcomes – e.g. reduced period of exclusive breastfeeding; important to balance messages and include nutrition at the beginning of project design; give voice to local understanding and support.**

As part of the East African Dairy Development (EADD) project, which started four years ago in Kenya, Rwanda and Uganda, (funded by the Bill and Melinda Gates Foundation), this case study in the Rift Valley in Kenya looked at the links between increased smallholder dairy production through cooling hubs into more commercial markets and the impact of increased dairy production on household nutrition, particularly in younger children. Women in this area used and valued milk.

Overview of presentation:-

- What's the impact of dairy intensification on young child nutrition?
- How are families spending increased income – buying more and better quality food? Who is making the decisions?
- What is the milk consumption of the young children? Care needs to be taken in getting the balance in the messages for weaning children so that cows milk does not replace breast-milk in adequately fed young mothers.
- Why is milk good for young children? Showing examples of what the women saw as health benefits of milk.
- Child dietary diversity score was high and 80% of the children met minimum requirements.
- Issues of seasonality were raised and also the crossover between integrated parts of other projects, such as the animal feed use of chopped up sweet potato vines mixed with Napier grass increasing milk production.

One important point is that studying the nutritional impact of increased small holder dairy production, especially on producer households, was more of an afterthought and was not part of the initial EADD project design. This made it harder and emphasises that it is important to build nutritional studies and linkages into agricultural production project design. Not least because agricultural projects may not automatically have positive nutritional outcomes, especially for small-holder producers.

**Questions/Comments/Suggestions:-**

- C. The focus on the project is on rural small holders not on the urban
- Q. What's the timing of milk consumption by the young children? A. The milk consumption in young children is mainly added onto to the 'porridge'.
- Q. Was there any study on gender difference on ownership of animals?
- Q. On the issue of pastoralists, what's the impact during such seasons / does it affect the nutrition consumption for the children/ is the milk still available? A. This was addressed as a food security issue.
- Q. Is there any information on comparison between cow milk and goat milk? A. Most households were predominately cow keepers.

### Activity: 'Identify what works well'

Using the 2 case studies; the Orange Fleshed Sweet Potato and Dairy and Child Nutrition, the participants discussed and identified what worked well.

- **Timeline**

Long term investment in a single crop

- **Nutritional education**

Nutrition education and promotion; Education to farmers on importance of nutrition; Demand creation of OFSP products; Targeting young children; Building on life experiences; Animal source foods; Working on the obvious - milk for nutrition

- **Consumer led community approach.**

Listening to farmers and consumers, community level approach; Bottom up approach in research-from communities to research bodies; Long term sustained integrated R&D plus advocacy plus nutrition education plus community involvement.

- **Appropriate Materials**

Adopting drought resistant varieties and continued availability/access of resistant varieties; Breed in Africa for Africa, using local adapted materials, keeping in focus consumer preferences.

- **Integrated research and approach**

Combination of approaches; Increased interconnected partnership between research bodies and communities; Interconnected partnerships; High quality research; Large investment for quality evidence and research; Solid research inputs-breeding bio fortification/nutrients.

- **Research that produces evidence**

Empirical studies: evidence; Ag week bio-fortification, increased production, creating demand, marketing and advocacy; Partnering with processors to incorporate OFSP in flour and cereals; Added value of health and nutrition and OFSP

- **Advocacy and policy**

In advocacy, understand the audience; Publicity in markets: A convenient venue for stakeholders; Remaining hopeful that things will change backed by action to influence government and law-makers; Legislation and policy being fronted to solve hunger.

## Understanding the context and issues

"The state of nutrition" Background presentations

**An overview of population under-nutrition in a selection of countries in eastern and southern Africa" – Chris Auricht**

Presentation available [here](#)

In understanding the state of nutrition, Chris Auricht, AIFSC provided an overview of population nutrition issues and context, and country profiles. He noted the AIFSC document/report is for internal use to welcome suggestions and comments and not yet for the public use.

### Questions/Suggestions/Comments

- C. It is difficult to compare many of the criteria usefully between countries because of the contextual issues and the inclusion of different issues. This meant using international standards and reports where much of the data is out of date.
- C. Increased food production does not necessarily lead to improved nutrition.
- Q. Should we pay attention to Zinc deficiency?
- C. Non-communicable diseases were left out because of timelines and that the focus was undernutrition areas
- C. Some of the data is very old, childhood obesity and non-communicable diseases are coming up thus need to update some of the information
- C. A question does arise as to whether the pathways to nutrition deficiency are the same everywhere? Do you have information available on how to fix the problem?
- C. The problem of overnutrition is an issue– under and overnutrition is similar, thus need to look at it as an issue to address on a long-term vision - stunted overweight children
- Q. How about working with a matrix of say three agro ecological zones and high density and low density areas?
- C. On the malnutrition framework, it's important to include food security such as food consumption data and food production data on the national/country level to improve the report
- C. Keep the balance between food and nutrition. People eat food not nutrients.
- C. Access to products is crucial
- C. Not all Sub-Saharan Africans aspire to be food-sufficient farmers – access to food is more important for many than production
- C. Addition of strategies to address under malnutrition and overnutritional
- C. Acronyms' addition to the report

#### Issues with and suggestions for the chosen criteria

- Identifying dietary quality and diet diversity as a better measure than stature for women as BMI includes height.
- DHS demographic and health surveys – infant and young child feeding practices
- Can it be linked with child and maternal mortality data?
- Food security information from IPC (integrated food security phase classification) analysis. FEWS NET has data on this <http://www.fews.net/Pages/default.aspx>
- Focus on stunting as an indicator of chronic under-nutrition-nutrition and remove wasting and underweight which indicate more phasic emergencies where the current response is often food aid.
- Use iron deficiencies instead of anaemia to keep it coherent with the other deficiencies rather than naming resulting conditions.
- Zinc? Issue with men. Linked to animal foods. Affects your immunity to disease.
- Not just rural agriculture when it comes to diet – wild food/ bush meat and urban agriculture.
- Move away from indicators and add food security indicators, context, AEZs

#### Facilitated panel of key experts on various drivers of nutrition issues

##### Agricultural productivity drivers – Chris Auricht, AIFSC

Presentation available [here](#)

**Some key issues:**

- While continental and cross-country data is interesting, it is out of date and much is more relevant at regional level due often to very different agro-ecological, let alone contextual variables.
- Types of data available: How does smallholder farm size relate to larger data sets?

### Questions/Suggestions/Comments

- Interconnectivity of data –
- Q. Variety of crops and distribution in Africa – Why use of wheat as an index, where else is it grown apart from a few countries? Why choose wheat? A. It was only used as an example and one could substitute wheat with any other crop such as millet etc.
- C. Farm land is seen as a challenge – Need to look into what we are going to do because the farm land is small, could use of population increase and density to show farm sizes increase.
- C. People are going for high value production rather than growing staple foods; this can be looked to as a challenge.
- Angela (FAO) commented that data on the livelihood zones of the 6 countries out of 9 reports has been done and is found on the FEWS NET network site - <http://www.fews.net/Pages/default.aspx>.

### Drivers of Undernutrition – Bruce Cogill, BIOVERSITY

Presentation available [here](#)

- Broad directions and drivers: 35% of childhood mortality can be related back to undernutrition. Malnutrition includes quality as well as quantity of food and so the ‘double burden’ of underweight and overweight with refined carbohydrates, fats and sugars the worst culprits. (E.g. Egypt and South Africa)
- Farming systems - informed interventions as for instance increased animal production can have all along the food production line and for CO<sup>2</sup> release
- Behaviours are part of showing under and overweight.
- How do you prevent overnutrition when the value chain can contribute to livelihoods?
- Need to come up with a standard way of communicating across disciplines and produce a matrix that will be able to optimise bringing in environmental measure and cost

### Value chain drivers of nutrition – Tom Randolph, ILRI

Presentation available [here](#)

When it comes to consumption of the perfect/healthy diet, it involves the person making the decision because you cannot control them regarding what to eat and what is being supplied to them changes every day in terms of quality and prices.

Thus focus on:

- How to influence and provide right environment and incentives to have ‘right’ foods available.
- The major drivers are: income, food supply, food prices and consumer knowledge
- What are the opportunities on dimensions of value chain; what’s the entry point?

### Comment:

The issue of knowledge should not be restricted to the consumers, knowledge of the food system, what are their preferences? What are the food baskets that will deliver nutrition at the local level?

### Safe food, fair food, sufficient food – Delia Grace, ILRI

Presentation available [here](#)

Informal studies conducted by ILRI on food safety have improved the understanding of issues of food safety in the market. The studies have shown:

- Formal sector is not better- as much bacteria count can be found in processed packaged milk as in boiled raw household milk.
- Hazards are not risks – the whole food system is oriented around hazards, you can have high level of hazards but few actually pose risks to human health.
- Every study finds benefits – they are many and complex e.g. income, gender equality etc.

Food safety implications for nutrition

- Food safety, nutrition and access are linked in biological ways
- But typically assessed and managed separately
- Need to be careful about policies that formalise things (e.g. standards) if the risk isn't too high – there is a risk standards can also lead to reduced nutrition if access is reduced (due to price increases or presenting barriers for smallholder farmers to access regulated markets)
- This can lead to sub-optimal solutions and missed opportunities
- Start from the demand side, not the supply side and take the consumer perspective

ILRI is now working on an integrated framework. Food is too important to be left to the farmers and there are number of things that are positively and negatively interconnected with food safety. Food nutrition and safety is a pathway approach. Using the 'farmer to the fork' idea of how food is processed. There is a challenge of starting the demand side consumer perspective. Diet diversity and traditional, indigenous foods are important.

### “Current activities” Background Presentations

#### Overview of Agriculture-Nutrition Research in low and middle income countries

– John McDermott, IFPRI

Presentation available [here](#)

The presentation was an overview of Agriculture-Nutrition Research in low and middle income countries. Five donors dominate the landscape. DFID published a recent report – (see Annex 1).

Main research gaps:

- Lack of assessments from inputs to consumption
- Indirect impacts of agriculture on nutrition
- Effects of agricultural policy on nutrition
- Research methods – more participatory research needed
- Rural-urban linkages
- Research quality not good enough
- Lack of evidence base on agricultural impacts on nutrition – *this is of concern because it is something that is worth the great costs of doing this. How will this help? Lack of baselines.*
- Nobody in private sector involved in research
- More in pipeline – upcoming surge coming up
- CRP4 – 4 research components –
  - Nutritional value chains, diet diversity – but major investment in commodity cereals
  - Biofortification
  - Agriculturally associated diseases
  - Integrated programs – bringing together agricultural and health and nutrition

### Questions:

- Q. Less leadership in developing countries institutions has proved to be a challenge; what are the CGIAR programmes doing in facing this challenge? A. The CGIAR is building up a profile of nutritionists and people linked in agricultural sector. It's hard to get local leadership if you don't have ownership in the country; the problem of leadership is also at the international level, so building capacity is important.
- Q. DfID: interesting observations show the missing element of research partners in the private sector; why is the private sector missing? A. The private sector is mainly involved in marketing products but also the issue is the private and public sector has not come together because of bad history and lack of trust. The challenge is how to bring them together and show them that they both have a role to play in the value chain. An opportunity is that the private sector understands the need of nutrition. Issues with IP.
- Q. Why is there lack of evidence on the actual impact? A. Nutritional impact on agriculture is of importance but the doubt/problem is what the investments are.

### Nutrition and Marketing Diversity Programme – Bruce Cogill, BIOVERSITY

Presentation available [here](#)

The presentation was on Nutrition and Marketing Diversity programme, which is a 10 year strategy of Bioversity International from 2011-2021. Use of biodiversity in enhancing human nutrition and health.

### Outline of presentation:

- The major objectives of our nutrition work
- Nutrition strategy objectives and components
- Primary beneficiaries

### Value chains, policies and programs

- Strengthen evidence base
- Conduct operations research
- Promote production and value chains of more nutritious foods
- Inform policy and practice
- Beneficiaries are smallholder farmers but because involve value chains needs to trace these back to consumers
- Cost of diets
- Cultural dimension on what constitutes an acceptable 'sustainable' diet. 4 factors examined.
- GEF funding food and food ingredients for good health and nutrition - *Bioversity for food and nutrition project*.

### Questions:

- Q. How do you interact with the smallholders in your methodology? A. Through partners from universities and NGOs e.g. 'Save the Children'
- C. It's important to use farmers' organisations to interact with the farmers, which is easier and productive to use even though it's linking the universities to them.
- Q. How does some of the research in Africa get scaled out and adopted? A. Through publications but we are looking to use social media and government ministries in the future also currently we are working with 'Save the Children' to come up with a model to be used as a prototype.

## **Africa RISING current activities - Mateete Bekunda, IITA, Arusha, Tanzania**

Presentation available [here](#)

The presentation outlined on the current activities /work and challenges of Africa RISING Quick win projects – generate data for follow up projects. Lead institutes are CG institutes. Linked to CRP 1.2. Link to other partners also.

### **Comments:**

- The definition of livestock in this project includes poultry, goat, sheep, and cows but will be determined by stakeholders e.g. fish can be considered

### **DAY TWO:**

#### **CJ Jones, GAIN**

Film presentation highlighted GAIN's current work in Kenya:

- Standards in maternal and infant foods
- Kenyan-based packaging facilities for bio-fortified foods
- The approach that new products need to be de-risked- new business plan in the market
- Food supplements for infants-cereals
- The code of the market, anything put in the market has to be regulated by the code for the market
- GAIN and its partners (ministry of health and food partners) have just completed the largest micronutrients survey in Kenya (US \$3m)
- GAIN is working with NEPAD to add nutrition to the strategic document. GAIN started on a new initiative on nutritional linkages

GAIN's work has a holistic approach and is a catalyst between some of the different sectors represented. GAIN was created with the challenge to combat malnutrition in the world's poorest countries and to improve access to healthier foods and do it as effectively as possible. The target is to reach large populations. The question is what goes to market? Is it food with nutrition and does it apply to the regulations.

GAIN's goal is to make nutritional foods more affordable and still apply the regulations that add nutrition. GAIN is not interested the vicious cycle of food security but in creating a more virtuous cycle- driving from farm to fork system

### **Questions/Comments/Suggestions:**

Q. Are you working with the small farmers on value chain? A. Yes, GAIN is taking the approach of the entire value chain, the smallholder farmer to be the driver of African economy for some time to come

- Standards affecting local farmers

Q. Are you working with smallholder farmers producing good perishable food products who are not allowed to sell because they don't have the labels? Are you expecting them to go through the whole process? A. GAIN is looking on how to support local farmers by implementing local managed based systems. The establishment of standards will enhance having quality products in the market whether coming from small-scale farmers or not.

C. The challenge is how to empower the communities/local farmers to make sure they have quality products that will stay in the market. Empowerment on the whole process to be able to engage in quality markets.

C. Kenyans don't believe in KEBS anymore for there is no more assurance that KEBS food has quality. It's one thing to have standards and another to enforce standards to ensure quality to the consumer.

Because of the complex issues in standards, EU has decided to invest in KEBS to change the issues of standards in Kenya. How to enforce standards is still a question to be answered.

- Issue on Fortification

Q. On target on food fortification – who are you going to impact on the malnutrition? Food fortification does not reach the poorest people who need.

### **Strengthening food security through family poultry and crop integration in Eastern and Southern – Robyn Alders – University of Sydney**

Presentation found [here](#)

The presentation highlighted: why village poultry; the nutritional value of an egg; how village poultry targets the role of women in food security. The project is built on the support of working with village chickens.

#### **Questions/Comments/Suggestions:-**

- A study in Kampala shows egg intake increases child health
- Q. How to integrate poultry with crops they tend to destroy crops? A. Chickens are only pesky at certain times of the year, they can be contained.
- C. Care needs to be taken of feeding aflatoxins in grains to chickens. Q. How much does it affect them?
- Q. Been on the design phase are you thinking on incorporating WASH and nutrition messaging as an opportunity? A. Our core primary has been sustainable eradication of Newcastle Disease; sanitation is connected with disease control.

#### **Relevant drivers/Indicators for AIFSC**

1. Agricultural productivity
2. Nutritional status
3. Value chain issues
4. Food safety
5. Research gaps

While AIFSC provided some of the principles, the group brainstormed to add more.

#### **Proposed principles that will guide the nutrition projects for AIFSC.**

- Focus on gender mainstreaming
- Long-term partnerships with NARs, private sector and NGOs etc.
- Ensure the project fully embedded with partner institutions
- Accelerate delivery and adoption of innovations
- Successful pathways to adoption and impact
- Does research consider full pathway of change (from agriculture inputs, practices, value chain, food access and food security outcomes)
- Community empowerment and capacity building
- Cross region country applicability
- Are the key stakeholders (direct and indirect) clearly identified and do they match AIFSC beneficiaries
- Research within the 10 AIFSC priority countries
- Research on creating participatory standards on assessing the quality of food production at the local/rural level
- Collecting evidence of positive nutritional impacts
- Focus on socio-economic policy research
- Identified as in-country need/aligns with regional priorities

### Thematic Areas

The group also brainstormed the key themes that had emerged from the discussions so far. While they have been grouped, it was noted that some issues and projects encompassed many of the themes from different areas, highlighting the need for *integrated research* to capture some of the inter linkages and complexities.

Areas of concern for food system were:

Demand–consumer research	Value chain Value addition Empowering communities to engage in quality food production Subsistence
Traditional indigenous foods and better diet	Diet diversity Agricultural links Sustainable diets
Food preferences and food access	Nutrition education Women’s knowledge on utilisation Ag-initiatives targeting infants and children Behaviour change
Empowering the process-household decision making	Community knowledge/practices as part of practice research Agro-economics Ownership
Urban-rural undernutrition	Support farmers networks Link private sector to farmers Urban agriculture
Support for agriculture for nutrition policies and programs	Policy Advocacy (with policy makers) Advocacy Empowering policy makers (all levels)
Complexity (Bi-causal relations)	Resilience Seasonality Risk reduction
Evidence	Participatory monitoring systems: development, validate and diagnosis Information enhancing feedback Relevancy

The group then split into five groups to look at five areas of possible investment that had come out of the 1.5 days discussions and discussed and developed hypothetical projects.

- Urban farming systems
- Rural farming systems
- Animal protein systems and diet
- Conducting research that generates evidence
- Advocacy and policy from the grass roots onwards

The outputs of the discussions are tabled below. Following this feedback, the workshop was brought to a close.

Food nutrition thematic project areas - what would it look like:

Thematic Area	Key Nutritional criteria/ outcomes targeted	Main Activity/ Approach	Possible partners	Geographic region/spread/focus Duration	Indicative Budget	Contact and follow up
<b>Urban farming systems</b>	<p>Crops &amp; livestock including vegetables</p> <p>Outcomes:</p> <ul style="list-style-type: none"> <li>- Stunting</li> <li>- Double burden</li> <li>- WASH</li> </ul> <p>Principle: Accelerating delivery and adoption of innovation (proof of concept)</p>	<ul style="list-style-type: none"> <li>- Advocacy policy</li> <li>- Capacity development through value chain</li> <li>- Creating realistic baseline for activities</li> <li>- Support farmers organisation</li> <li>- Linking to private sector</li> <li>- Sustainable business options</li> </ul>	<ul style="list-style-type: none"> <li>- Traders and retailers</li> <li>- Consumer organisations (women &amp; youth)</li> <li>- Farmers organisations</li> <li>- Private sector including financial services, government</li> </ul>	<p>- Kenya-Urban &amp; peri-urban</p> <p>10 years</p>	<p>25 million AUD</p> <p>Establishment of knowledge platforms</p>	Diana Lee Smith
<b>Rural farming systems</b>	<ul style="list-style-type: none"> <li>- Diet diversity</li> <li>- Diet quality</li> <li>- Quantities produced</li> <li>- Food safety (e.g. water, hygiene practice)</li> <li>- Indigenous knowledge</li> <li>- Medicinal value of foods (e.g. vegetables)</li> <li>- Feeding behaviour change</li> </ul>	<ul style="list-style-type: none"> <li>- As IGA</li> <li>- Value chain analysis</li> <li>- Gender based analysis</li> <li>- Transformative innovations (to improve income, productivity etc.)</li> <li>- Platforms for innovations from all stakeholders</li> <li>- Capacity building for researchers &amp; communities</li> <li>- Advocacy at all levels</li> <li>- Strong M&amp;E for outcomes &amp; outputs</li> <li>- Nutrition education</li> <li>- Formative research</li> </ul>	<ul style="list-style-type: none"> <li>- Farmers</li> <li>- Farmers organisations</li> <li>- NGOs in agriculture and health sector</li> <li>- Local governments &amp; institutions</li> <li>- Private sector</li> <li>- Women groups</li> <li>- Researchers</li> <li>- Policy and advocacy</li> </ul>			John Dixon

Thematic Area	Key Nutritional criteria/ outcomes targeted	Main Activity/ Approach	Possible partners	Geographic region/spread/focus Duration	Indicative Budget	Contact and follow up
<b>Animal protein systems and diet</b>	Dietary quality (ASF broad definition)	<ol style="list-style-type: none"> <li>1. Review</li> <li>2. Improving Value chain</li> </ol> Role of A.S.F in human nutrition Promotion context healthy diet Diet guidelines Need for basic information consumption e.g. GAIN Kenya	CRPs BECA Informal private sector, Public NGO	Peri-urban value chain in East Africa	<ol style="list-style-type: none"> <li>1. \$60 000 USD</li> <li>2. \$1million</li> </ol>	Robyn Alders
<b>Generating evidence</b>	Baseline data key indicators: stunting (child >5yrs) Vitamin A deficiency Iron def. *1000days* Maternal and child	<ul style="list-style-type: none"> <li>- Data sources in order to cross reference nutrition data with socio- economic data &lt; livelihoods</li> <li>- Gaps</li> </ul>	<ul style="list-style-type: none"> <li>- DHS</li> <li>- Bureau of Statistics</li> <li>- UNICEF-MIS</li> <li>- UNDP</li> <li>- Depts. of Ag/Soc services</li> </ul>	Burundi: <ul style="list-style-type: none"> <li>- Highest stunting in Africa (globally)</li> <li>- very Ag based</li> </ul>	\$200 for analysis to address gaps	Elijah FAO Cyprian WVI Burundi Partners
<b>Empowering communities and policy frameworks</b>	<ul style="list-style-type: none"> <li>- Increased awareness of improved nutritional status of target / vulnerable individuals</li> <li>- Increased knowledge of food safety and standards</li> <li>- Increased knowledge of available nutritious foods and their content</li> <li>- Increased knowledge on effective nutritional interventions</li> <li>- Increased capacity for consumers to demand quality foods</li> <li>- Improved implementation of agricultural and nutrition policies and programs</li> </ul>	<ul style="list-style-type: none"> <li>- Develop nutritional messages and package into appropriate IEC messages</li> <li>- Develop and support innovation platforms along value chains</li> <li>- Train along the value chains</li> <li>- Exchange visits for best practices</li> <li>- Develop policy briefs</li> <li>- Set up relevant demonstration facilities</li> <li>- Setting up nutrition information centers</li> <li>- Harmonization of policies across ministries/ and implementation levels</li> </ul>	<ul style="list-style-type: none"> <li>- NARS</li> <li>- The media</li> <li>- Churches</li> <li>- Parliament</li> <li>- Training institutions (schools, vocational institutions, Universities)</li> <li>- Leaders along the administrative framework</li> </ul>	<ul style="list-style-type: none"> <li>- Most affected areas (malnourished communities) of the member countries</li> <li>- Not less than 5 years</li> </ul>	US \$100,000 Not less than 5 years	<ul style="list-style-type: none"> <li>- Prof. Ruth Oniang'o</li> <li>- Imelda Kashaia</li> <li>- Agnes Namutebi</li> <li>- Juliet Sentumbwe</li> <li>- Tom Oguta</li> <li>- Dorothy Gimbi</li> </ul>

## Comments/Suggestions/Questions on the thematic areas:-

### Urban farming systems

- Q. Where is the nutrition partner? A. A number of delivery and nutrition partners are not mentioned specifically. They are under government partners
- Q. What is the value added? A. We need a food systems approach including animals as well that can be sustainable. There is a gap in distribution networks to retail outlets. We need to change the current model as it is not working.
- C. It's about perishables- including indigenous vegetables and dairy products.

### Rural farming systems

- C. Issues on land grab and land tenure will affect any choices done in the rural area which needs to be factored. Affects smallholder farmers.
- C. Smallholder farmers systems is a relevant investment because it's there for the long haul
- C. The design phase of the project should address the issues of land grabs and land tenure systems.
- C. At the innovation platform level create a design to face the social issues
- C. Non-farm based nutritional sources- Broader concept in terms of nutrition with what other products are collected from bush, forests and other non-farmed areas.

### Empowering advocates and policy makers

- C. Look at a mechanism for harmonisation of policies within the different ministries.

### Generating evidence

- Q. Can advocacy get better measures at the data level?
- C. We are working on secondary data analysis from exiting data then identify the missing linkages.
- C. Share the missing linkages between research and development and investment and health outcomes in Burundi.
- C. Capacity building components for Burundi; communication is a challenge
- C. It's a great opportunity to influence policy in Burundi because of easy access and no fixed systems.
- C. Interface with governments
- C. Advocacy with government is important but what are they going to put on the table if we going to put the research across
- C. Getting closer to communities- interface at the lower level, the people who become the design in changing the system

## Annex 1: Notes on DFID report

DFID report - ***Current and Planned Research on Agriculture for Improved Nutrition: a Mapping and a Gap Analysis maps a range of different types of research, including agricultural development projects, specific agricultural interventions, and the generation and analysis of new data on agricultural and nutritional change***

A report has recently been published for DFID which examines 151 research projects on agriculture for nutrition. Compiled by researchers from the Leverhulme Centre for Integrative Research on Agriculture and Health (LCIRAH), *Current and Planned Research on Agriculture for Improved Nutrition: a Mapping and a Gap Analysis* maps a range of different types of research, including agricultural development projects, specific agricultural interventions, and the generation and analysis of new data on agricultural and nutritional change.

Using a mapping process to identify gaps in research coverage, **a conceptual framework has been developed to define and characterise agricultural research**. Placing nutrition at the centre, the framework identifies the routes by which research may contribute, directly and indirectly, to improved nutrition and how evidence of impact may be gathered along these pathways.

The analysis only examines projects operating within low and middle income countries which target nutritional outcomes. The report also specifies that programmes must incorporate an agricultural component. By providing a detailed overview of research in this area, including outlining all the funding bodies and organisations associated with projects, the analysis identifies eight clear areas where more research is needed:

1. The whole research chain – research that considers the full pathway of change from agricultural inputs, practices, value chains, food environment to nutrition outcomes
2. The indirect effect of changes in agriculture on nutrition
3. The effects of agricultural policy on nutrition as mediated through the value chain
4. Governance, policy processes and political economy as it relates to the development of agriculture-for-nutrition policies and programmes, the ability to implement them (and scale up) and for them to achieve their stated goals once implemented.
5. The way research on agriculture and nutrition is conducted, such as the development of methodologies and appropriate metrics
6. Consumers as a broader target group, notably rural workers and non-rural populations
7. Rural and urban poor at risk from nutrition-related non-communicable diseases
8. Cost-effectiveness

### **Transform Nutrition**

The latest data from the UN's Standing Committee on Nutrition (SCN) indicate that for 42 African countries only 18 show improvement in underweight rates while 14 show deterioration. The slow rate of progress is unacceptable, and it is puzzling.

What is driving this lack of progress? While we know "what works" in terms of direct nutrition interventions, scaling up is not happening fast enough or not at all. We know there are large resource flows in sectors such as agriculture, social protection and health systems but they are not realizing their full impact on nutrition. And although the vital role nutrition plays in

development is increasingly understood, wider societal norms at the national and international levels do not support nutrition as well as they could: better nutrition is in everyone's interests, but is nobody's responsibility.

## Annex 2 – Agenda

### Food nutrition in eastern and southern Africa

#### Australian International Food Security Centre and ILRI

#### Draft Program design workshop agenda

**Venue:** ILRI Campus (Ndama Room), Nairobi

**Date:** 10-11 September 2012

**Objectives** - to identify:

- where the research gaps are in terms of food security, agriculture and nutrition in line with the AIFSC strategy and African priorities
- how the AIFSC could complement work being undertaken by partners in target countries and where we should invest

WELCOME	
9.00	<b>1a. Welcome and introduction – Mellissa Wood, Director AIFSC</b> <i>Introduction to the AIFSC, summary of the AIFSC strategy and outline of the scope of the workshop.</i>
9.15	<b>1b. Welcome and introduction – Shirley Tarawali, ILRI</b>
9.30	<b>1c. Participant introductions</b> <i>Ice Breaker exercise</i>
10:30-11.00	<b>Morning tea</b>
OPENING ADDRESSES – WHY THIS IS WORTH DOING	
11.00	<b>2a. Opening Address: Ruth Oniang'o on the context of nutrition and food security in Africa</b>
11.30	<b>2b. Facilitated panel of 2 motivational case studies of effective nutrition interventions</b> <ul style="list-style-type: none"> <li>• <i>Orange Flesh Sweet Potato –Jan Low CIP</i></li> <li>• <i>Dairy and Child Nutrition - Amanda Wyatt IFPRI</i></li> </ul> <i>Activity: tables note take away messages about 'what works'</i>
UNDERSTANDING THE CONTEXT AND ISSUES	
12.15	<b>3a. "The State of nutrition" Background Presentations:</b> <ul style="list-style-type: none"> <li>• <b>Overview of nutrition issues and context and Nutrition Profiles of the Countries: Chris Auricht, AIFSC (30 mins?)</b></li> </ul> <i>Ensure a crop and livestock perspective</i> <i>Activity: as Chris is talking groups take notes about the accuracy of the data to build the matrix after lunch</i> <i>Outcome: overview of the current nutrition context with key indicators of maternal and child population health in the focus countries</i>

<b>13.00-14.00</b>	<b>Lunch</b>
<b>14.00</b>	<p><b>3b. Participant consideration of nutrition issues and profiles</b></p> <p><b>Forum discussion</b>  <i>Consider the presentation from the previous session and discuss whether it has captured the most important nutrition challenges.</i>  <i>Activity: build a matrix (green stickers where data is good, red where something is lacking, also adding additional data or identifying potential sources)</i></p> <p>Questions to answer based on the presentation in the previous session:</p> <ul style="list-style-type: none"> <li>• <i>Do you agree with the key nutritional challenges presented? If not, what are the key issues?</i></li> <li>• <i>Do you agree with where these problems are and which demographics are worst affected?</i></li> </ul>
<b>15.00</b>	<p><b>3c. Facilitated panel of key experts on various drivers of nutrition issues: (7 mins per speaker)</b></p> <ul style="list-style-type: none"> <li>• Chris Auricht (AIFSC) on agricultural productivity drivers</li> <li>• Bruce Cogill (Bioversity) on nutritional drivers</li> </ul> <p>Sue to facilitate discussion of first two sets of drivers</p> <ul style="list-style-type: none"> <li>• Tom Randolph (ILRI) speaking about value chain drivers</li> <li>• Delia Grace (ILRI) examining the intersection with food safety</li> </ul>
<b>UNDERSTANDING CURRENT ACTIVITIES AND RESEARCH</b>	
<b>16.00</b>	<p><b>4a. "Current activities" Background Presentations:</b></p> <ul style="list-style-type: none"> <li>• Current Research Projects and Interventions Overview by John McDermott IFPRI</li> <li>• Jo Jo/Patrick (Bioversity) outlining Bioversity/GEF's current work</li> <li>• Mateete Bekunda (Africa Rising) outlining Africa Rising's current work</li> </ul> <p>Activity: fill out cards so that tomorrow we can populate framework where everyone can identify <i>what relevant activities they are involved in</i></p> <p>Outcome :</p> <ol style="list-style-type: none"> <li>1. <i>overview of 'what is being done by whom'</i></li> </ol>
<b>17.00</b>	<b>END DAY ONE</b>
<b>17.00 – 18.00</b>	<b>COCKTAIL AT ILRI</b>

DAY 2	
9.00	<p><b>4a. Current activities continued</b></p> <ul style="list-style-type: none"> <li>• CJ Jones (GAIN) speaking about GAIN initiatives</li> <li>• Robyn Alders speaking about AIFSC poultry project</li> </ul> <p><b>4b Participant consideration –</b>            What are the key drivers of these nutrition issues? (e.g. prices, livelihood vulnerability, weak value chains, poor agricultural productivity, shocks / disasters, diet diversity, maternal education, food safety)</p> <p><b>Discussion –</b>            What principles should guide the selection of nutrition projects for AIFSC?</p> <p>What thematic areas should the AIFSC work on?</p>
10.00	<p><b>4c. Facilitated group discussion - in small groups consider five areas of possible investment that have come out of the 1.5 days discussions and develop hypothetical projects.</b></p> <p><i>Outcome: 5 potential project areas developed by groups</i></p>
11.00	<b>Morning tea</b>
<b>BRINGING IT ALL TOGETHER</b>	
11.30	<p><b>5. Feedback to larger group discussion.</b>  <b>What needs to happen to facilitate change – who should AIFSC work with; what kind of funding is needed; groups with existing activities should consider where their work can be ‘stretched’/enhanced to meet both their and AIFSC goals.</b></p> <p><i>Outcomes: List of areas and partners for AIFSC to focus its nutrition program</i></p>
12.30	<b>6. Presentation of results, discussion of results, next steps and wrap up</b>
<b>13.00 WORKSHOP FINISH - LUNCH</b>	

### Annex 3: Attendees

	NAME			CONTACT			AREA OF SPECIALISATION
				Position/Organisation	Address/Tel	Email	
1	Prof	Robyn	Alders	Senior Research Fellow Faculty of Veterinary Science University of Sydney	University of Sydney Faculty of Veterinary Science 425 Werombi Road Camden NSW 2570 Australia Tel.+61-2-93511671, +61-467-603370 Fax +61467-603370	<a href="mailto:robyn.alders@sydney.edu.au">robyn.alders@sydney.edu.au</a>	Animal Health
2	Ms	Bronnie	Anderson-Smith	Executive Officer AIFSC	Australian Centre for International Agricultural Research GPO Box 1571, Canberra ACT 2601, Australia	<a href="mailto:bronnied.anderson-smith@aci.gov.au">bronnied.anderson-smith@aci.gov.au</a>	
3	Mr	Chris	Auricht	Auricht Projects		<a href="mailto:chris@auricht.com">chris@auricht.com</a>	
4	Dr	Joseph (Jojo)	Baidu-Forson	Regional Director Sub-Saharan Africa Bioversity	Bioversity International Box 30677 Nairobi 00100 Tel +254-20-7224507/9, +254-722525274	<a href="mailto:j.baidu-forson@cgiar.org">j.baidu-forson@cgiar.org</a>	Agricultural and Economic Development
5	Dr	Mateete	Bekunda	Farming Systems Agronomist IITA	IITA C/O AVRDC - The World Vegetable Center Arusha Tel +255272553093, 255687516825	<a href="mailto:m.bekunda@cgiar.org">m.bekunda@cgiar.org</a>	Agronomy

6	Dr	Sue	Canney Davison	Director Pipal Limited	P O Box 42777 Nairobi - 00100 Kenya	<a href="mailto:sue@pipal.com">sue@pipal.com</a>	Facilitator
7	Ms	Louisa	Cass	First Secretary Food SecurityAusAID	Australian High Commission, Riverside Drive, off Chiromo Rd, PO Box 39341, 00623, Nairobi, KENYA	<a href="mailto:Louisa.Cass@ausaid.gov.au">Louisa.Cass@ausaid.gov.au</a>	Food Security and Livelihoods
8	Dr	Bruce	Cogill	Leader Nutrition and Marketing Bioversity	Bioversity International Via de, Tre Denani 472/a00057 Maccarase	<a href="mailto:b.cogill@cgiar.org">b.cogill@cgiar.org</a>	Nutrition and Food
9	Dr	Dorothy Machunda	Gimbi	Lecturer Sokoine University of Agriculture,	Sokoine University of Agriculture Department of Food Science & Technology Faculty of Agriculture, Box 3006 Morogoro	<a href="mailto:dollymg_99@yahoo.com">dollymg_99@yahoo.com</a>	Human Nutrition
10	Dr	Delia	Grace	Team Leader Markets, gender and livelihoods, ILRI	P.O. Box 30709 Nairobi 00100, Kenya	<a href="mailto:D.GRACE@CGIAR.ORG">D.GRACE@CGIAR.ORG</a>	Food Safety
11	Prof	Sheryl	Hendriks	Director Institute for Food Nutrition Well-Being University of Pretoria	University of Pretoria, South Africa Institute for Food, Nutrition & Wellbeing room 8-4 Agriculture Building Pbag&20Hatfield, Pretoria 0081 Tel +27124203811	<a href="mailto:sheryl.hendriks@up.ac.za">sheryl.hendriks@up.ac.za</a>	Food Security and Policy

12	Mr	Gregory	Hofknecht	Helen Keller International (HKI)		<a href="mailto:ghofknecht@hki.org">ghofknecht@hki.org</a>	
13	Ms	CJ	Jones	Country Manager GAIN		<a href="mailto:cjones@gainhealth.org">cjones@gainhealth.org</a>	
14	Dr	Diana	Lee-Smith	Associate Mazingira Institute	Mazingira Institute Box 14186 ,00800 Nairobi Tel 0724016519, 0724016519 Fax 020444463	<a href="mailto:diana.leesmith@gmail.com">diana.leesmith@gmail.com</a>	Urban Agriculture
15	Dr	Mu	Li	University of Sydney	University of Sydney Faculty of Veterinary Science 425 Werombi Road Camden NSW 2570 Australia	<a href="mailto:mu.li@sydney.edu.au">mu.li@sydney.edu.au</a>	Nutritionist
16	Dr	Jan Wayland	Low	International Potato Center	International Potato Center Box 25171 Nairobi 00603	<a href="mailto:j.low@cgiar.org">j.low@cgiar.org</a>	Agricultural Economics, Nutrition
17	Dr	John	McDermott	IFPRI		<a href="mailto:j.mcdermott@cgiar.org">j.mcdermott@cgiar.org</a>	
18	Dr	Lucas Mboyi	Mugendi	Agronomist Selian Agricultural Research Institute SARI	Selian Agricultural Research Institute SARI Box 6024 Arusha Tel 0684-171324	<a href="mailto:lmugendi@yahoo.com">lmugendi@yahoo.com</a>	Agronomist
19	Miss	Angela	Murugi Kimani	Nutritionist FAO	FAO-Sub-Regional Emergency office United Nations Office UN Avenue, Gigiri 2 level, Block p Tel 0723886027	<a href="mailto:Angela.Kimani@fao.org">Angela.Kimani@fao.org</a>	Nutrition

20	Dr	Frances	Mutale Mulenga	Chief Veterinary Officer Department of Veterinary Services	Department of Veterinary Services Box 50060 Lusaka Tel +260-966-920731, 260-966-920731 Fax260-211-256007	<a href="mailto:drfmmulenga@gmail.com">drfmmulenga@gmail.com</a> <a href="mailto:drfmmulenga@yahoo.co.uk">drfmmulenga@yahoo.co.uk</a>	Livestock Disease Control(Animal Health)and Animal Production
21	Dr	Agnes	Namutebi	Senior Lecturer	Makerere University, Dept of Food Technology & Nutrition Makerere Box 7062 Kampala Tel 256712958736	<a href="mailto:asnamutebi@agric.mak.ac.ug">asnamutebi@agric.mak.ac.ug</a>	Food Technologies of Starchy Staples & Indigenous Vegetables
22	Dr	Imelda	Night Kashaija	Director Quality Assurance National Agricultural Research Organisation (NARO)	National Agricultural Research Organisation (NARO) Box 295 Entebe Tel +256414320325, 256772465070 Fax 256414321070	<a href="mailto:dgnaro@naro.go.ng">dgnaro@naro.go.ng</a> <a href="mailto:ikashaija@yahoo.co.uk">ikashaija@yahoo.co.uk</a>	Crop Protection and integrated agriculture research for development approaches
23	Prof	Manny	Noakes	Research Program Leader Nutrition & Health Sciences CSIRO	CSIRO Box 10041 Adelaide BC South Australia 5000 Tel.+61-8-83038827	<a href="mailto:manny.noakes@csiro.au">manny.noakes@csiro.au</a>	Nutrition
24	Mr	Elijah	Odundo	Statistician /Data Analyst FAO Somalia	FAO Somalia Ngecha Road off lower Kabete Road Spring Valley Tel 4000528/000, 0725711353	<a href="mailto:Elijah.Odundo@fao.org">Elijah.Odundo@fao.org</a>	Nutrition Surveillance and Public Health

25	Mr	Tom Joseph	Oguta	Senior Nutrition Analyst/Epidemiologist FAO Somalia	FAO Somalia Tel +254204000541, 0722392499	<a href="mailto:tom.oguta@fao.org">tom.oguta@fao.org</a>	Nutrition & Food Security Surveillance
26	Ms	Ruth	Oniang'o	Rural Outreach Program		<a href="mailto:oniango@iconnect.co.ke">oniango@iconnect.co.ke</a>	Nutrition and gender
27	Mr	Cyprian	Ouma	Nutrition Advisor Emergencies	World Vision, Box 13300502 Karen	<a href="mailto:cyprian_ouma@wvi.org">cyprian_ouma@wvi.org</a>	Nutrition
28	Dr	Tom	Randolph	ILRI	P.O. Box 30709 Nairobi 00100, Kenya	<a href="mailto:T.RANDOLPH@CGIAR.ORG">T.RANDOLPH@CGIAR.ORG</a>	
29	Dr	Pascal C	Sanginga	Senior Programme Specialist Agriculture & Food Security IDRC	International Development Research Centre CIDRC, Box 62084-002 Nairobi Tel 254725445200	<a href="mailto:PSANGINGA@IDRC.CA">PSANGINGA@IDRC.CA</a>	Agriculture & Food Security
30	Dr	Juliet	Sentumbwe	Assistant Commissioner Dairy & Meat Ministry of Agriculture, Animal Industry & Fisheries	Ministry of Agriculture, Animal Industry & Fisheries Box 102 Entebbe Tel 256414321040, 256772584598	<a href="mailto:juliesenty@gmail.com">juliesenty@gmail.com</a>	Animal Nutrition
31	Dr	Shirley	Tarawali	Director ILRI	PO Box 30709 Nairobi 00100, Kenya	<a href="mailto:S.TARAWALI@CGIAR.ORG">S.TARAWALI@CGIAR.ORG</a>	
32	Ms	Mellissa	Wood	Director AIFSC	Australian Centre for International Agricultural Research GPO Box 1571, Canberra ACT 2601, Australia	<a href="mailto:mellissa.wood@aci.gov.au">mellissa.wood@aci.gov.au</a>	

33	Miss	Amanda	Wyatt	Senior Research Assistant IFPRI	IFPRI Box 2033K, St Nw Washington DC 20006	<a href="mailto:a.wyatt@cgiar.org">a.wyatt@cgiar.org</a>	Public Health
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