



Ghana Stakeholders and End-Users Workshop: Synthesis Report

Accra, Ghana
8 August 2017



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Nutrition Science and Policy

Abbreviations and Acronyms

CoDD	Cost of a Diverse Diet
COICOP	Classification of Individual Consumption According to Purpose
CoNA	Cost of Nutrient Adequacy
CoRD	Cost of a Recommended Diet
CPI	Consumer Price Index
FAO	Food and Agriculture Organization of the United Nations
GHS	Ghana Health Service
GLSS	Ghana Living Standards Survey
GSS	Ghana Statistical Service
IANDA	Indicators of Affordability of Nutritious Diets in Africa
ICN	International Conference on Nutrition
IMMANA	Innovative Metrics and Methods for Agriculture and Nutrition Actions
MDD-W	Minimum Dietary Diversity for Women
MOFA-SRID	Statistics, Research, and Information Directorate of the Ministry of Food and Agriculture
NPI	Nutritious food Price Index
SUN	Scaling Up Nutrition
UN	United Nations
USDA	United States Department of Agriculture
WFP	World Food Programme
WIAD	Women in Agricultural Development

Introduction

On 8 August 2017 in Accra, Ghana, the [Indicators of Affordability of Nutritious Diets in Africa \(IANDA\) Project](#) held a workshop to convene the Ghana agriculture, nutrition, and statistics communities and introduce a suite of new indicators on access to nutritious diets.

The workshop was attended by members of the Statistics, Research, and Information Directorate of the Ministry of Food and Agriculture (MoFA-SRID), the Ghana Statistical Service (GSS), the Food and Agriculture Organization of the United Nations (FAO UN), the University of Ghana, Esoko, among others.

The objectives of the workshop were:

1. To introduce participants to the four indicators developed: the Cost of a Diverse Diet (CoDD), the Cost of Nutrient Adequacy (CoNA), the Cost of a Recommended Diet (CoRD), and the Nutritious food Price Index (NPI).
2. To discuss uptake and use of IANDA's suite of indicators in Ghana at the national, regional, and local levels in stakeholder organizations
3. To discuss the future of food price data collection and use in Ghana.

The workshop began with opening remarks from Prof. Daniel Bruce Sarpong (IANDA, University of Ghana), Dr. Anna Herforth (IANDA) and Prof. Anna Larrey (FAO), followed by introductions from IANDA, the MoFA-SRID, and the GSS. The afternoon featured presentations on the IANDA suite of indicators, breakout group work on indicator uptake and use, and a panel discussion on the future of food price data collection in Ghana.

The IANDA Project is based out of the [Tufts University Friedman School of Nutrition Science and Policy](#). The project is funded by the [Competitive Research Grants workstream](#) of [Innovative Metrics and Methods for Agriculture and Nutrition Actions \(IMMANA\)](#), a research programme funded by UKaid. Collaborators on the project include faculty and researchers from the University of Ghana, Sokoine University of Agriculture in Tanzania, and the Johns Hopkins Bloomberg School of Public Health.

I. Opening Remarks

The workshop commenced with remarks from [Prof. Daniel Bruce Sarpong](#), Research Economist for IANDA and Associate Professor and Dean of the School of Agriculture, University of Ghana. Prof. Sarpong welcomed the participants on behalf of IANDA and the Tufts University Friedman School of Nutrition Science and Policy and thanked them for their participation. He then recalled to the objectives of IANDA to remind participants of the project scope: 1.) To use available market price data to develop indicators of affordability of diverse foods; 2.) To ensure the indicators serve the needs of policymakers, program managers, and researchers; and 3.) To recommend methods for improving food price data monitoring in Ghana and Tanzania. Building on the [inception workshop](#) held on 21 April 2016 in Accra, Ghana, Prof. Sarpong set out the day's mission of discussing and defining next steps for research uptake and use.

[Dr. Anna Herforth](#), Project Director for IANDA, followed with her introductory words, invoking the participants to use food price data for food security and nutrition – to monitor where and when people do not have the ability to access nutritious food. She remarked that what we are discussing is a very simple, but world-changing idea: taking food price data, and using it to understand people's access to nutritious diets. Astoundingly, this has not been done before routinely on a national level. In the future, this kind of information could be compared across countries. Dr. Herforth then thanked all of the partners in Ghana, whose collaboration has been visionary and extraordinary, seeing collaboration with IANDA as more than just a two year project and making Ghana a pioneer in this effort.

Opening remarks were then made by [Prof. Anna Lartey](#), President of the International Union of Nutritional Sciences and Director of Nutrition at the Food and Agriculture Organization of the United Nations (FAO). She situated the IANDA Project within an overview of the nutrition landscape in Africa, describing how IANDA fits into global progress toward the [United Nations' \(UN\) Decade of Action on Nutrition](#) and the [Sustainable Development Goals](#). Looking back at the Millennium Development Goals, Prof. Lartey said that we could learn from those efforts, and move toward a more sustainable future. Unless we address malnutrition globally, we will face an unfinished agenda with millions left behind in 2030. Prof. Lartey cited statistics on malnutrition in various forms in Africa, including hunger, micronutrient deficiencies, stunting, and obesity, and noted that poor diet is one of the biggest risk factors for death, especially in adults. She referred to diets changing in Africa, and specifically in Ghana, but not the direction we want – they have instead led to an abundance of cheap, highly processed foods. She stated: “Our diet is killing us. Instead of giving us health, it is giving us a problem.”¹

Prof. Lartey reminded workshop participants of the [Second International Conference on Nutrition \(ICN2\)](#), held in November 2014, during which world leaders pledged to address nutrition through improving food systems for expanded access to diverse foods. Following the

¹ These remarks were echoed in a high-profile news story published in the New York Times in Oct 2017: “Obesity Was Rising as Ghana Embraced Fast Food. Then Came KFC.” Available at: <https://www.nytimes.com/2017/10/02/health/ghana-kfc-obesity.html>

ICN2, the UN declared a [Decade of Action on Nutrition](#) in April 2016 to provide a new vision and generate momentum to address malnutrition in all its forms. By focusing on creating sustainable and resilient food systems, we can provide the infrastructure necessary to enable healthy diets.

Prof. Larrey emphasized that policymakers need data to make informed policies, and commended IANDA for spearheading innovative efforts to provide policymakers with the information they need. She said the IANDA effort improves the relevance of routinely collected data – food prices at the market level – and is a very good example of putting a nutrition lens on existing stakeholder efforts. “This is what we call nutrition sensitivity,” she said. Any efforts to make nutritious diets more affordable contribute to the Decade of Action on Nutrition. With Ghana as a model of progress and success, other countries should follow, contributing to improving global access to diverse, nutritious foods.

II. Introduction to IANDA, Dr. Anna Herforth

The vision of IANDA is that when we talk about food prices, we should have measures that reflect the food people need for active and healthy lives. The [FAO defined food security in 1996](#) as “All people, at all times, [having] physical and economic access to sufficient, safe, nutritious food to meet dietary needs and food preferences for an active and healthy life.” Beyond staples, work needs to be done to measure diverse, nutritious foods – work to which IANDA has contributed.

Research shows that diet is the top risk factor within the global burden of disease, and while undernutrition in Africa is still a serious burden, dietary risks for non-communicable diseases are also problems. The top dietary risks in Sub-Saharan Africa are low consumption of fruits, high consumption of sodium, low consumption of vegetables, low consumption of whole grains, low consumption of nuts and seeds, and low consumption of omega-3 fatty acids (in order of decreasing negative impact) using the [GBD Risk Factor Compare tool](#). These risks have not classically been the highest priorities for intervention, and decision-makers need metrics to define these issues, monitor food systems, and develop interventions.

Currently, food prices generally reflect starchy staples, or a basket of foods comprised of most economically important commodities. These commodities do not mean the price of foods that human beings need to have adequate nutrition or thrive. Last year, IANDA held its inception workshop to convene stakeholders and landscape food price data collection in Ghana. The IANDA team and nutrition experts in Ghana worked with the Statistics, Research, and Information Directorate of the Ministry of Food and Agriculture to expand its food list and pilot data collection, and with the Ghana Statistical Service to develop the Nutritious food Price Index based on GSS data.

The purpose of using food price data and using IANDA’s suite of indicators is to provide more timely nutrition-sensitive information for policy purposes. With strong government collaborations and ambitious stakeholders, Ghana has forged the way by demonstrating that with very little added cost, existing food price data monitoring systems can be harnessed for nutrition, and ultimately facilitate more nutritious food systems.

III. Stakeholder Organizations in Ghana

During this session, members of the Ghana MoFA-SRID and the GSS presented on their organizations' mandates and scope, work with IANDA, and efforts to track food prices in Ghana.

Mr. John Nortey, Deputy Director of the Statistics, Research, and Information Directorate of the Ministry of Food and Agriculture (MoFA-SRID)

Mr. John Nortey commenced his presentation by defining the mandate of the Ministry of Food and Agriculture: To help ensure (1) economic viability for farming, and (2) food and nutrition security in Ghana. Building off IANDA's introduction, he reminded participants that food and nutrition security includes access to nutritious foods. While not all nutritious food types were historically included in market price monitoring, the MoFA-SRID conducted a consultative exercise with nutrition experts in Ghana, facilitated by IANDA, and added 22 new foods to their list: dark green leafy vegetables and other vegetables, some fruits, melon seeds, and fresh fish, among others. The MoFA-SRID now has the capacity to routinely collect these foods in addition to the original list of 42 commodities on a weekly basis in 159 markets nationwide, though specific markets lists may change based on local availability, consumer preferences, and food security needs. They target 216 markets (at least one per district), but face challenges in human resources. The government has instituted a hiring freeze, so when enumerators retire, they are not replaced.

After creating the expanded list, IANDA supported the MoFA-SRID to pilot the expanded data collection in four geographically disparate districts. a training workshop was held to provide the MoFA-SRID enumerator team a primer on why the expanded food list is important for food and nutrition security in Ghana and train them on how to properly collect food prices for the added commodities. Prof. Daniel Bruce Sarpong with Mr. John Nortey led the workshop.

The new list required some special considerations for the enumerators. One such example is for green leafy vegetables and other foods eaten raw: additional hygiene procedures were needed when weighing the samples in case they would be sold later.

After piloting the expanded list in four districts, the MoFA-SRID sent the modified questionnaire to all 10 regional offices for scaling up nationwide. Since the beginning of August 2017, the MoFA-

Box 1. Ama Ago Adzivor, MoFA-SRID enumerator, describes her experience piloting the expanded food list.

When collecting prices using the expanded list, I noticed that it took a much longer time – I recorded over 300 observations per week. Trying to convince us [the enumerators] was really important and when we were retrained, several considerations needed to be taken into account. The market vendors were a little confused at first as to why we were collecting data on these commodities, so we had to sensitize them to their importance for nutrition. Some items were out of season, such as snail, so we can now see when they are absent from the food basket. Finding five traders for each commodity was also a challenge. It was also difficult to move around the crowded markets with our additional measurement materials (scales).

SRID has generated weekly market price reports based on the expanded list, published in the *Business and Financial Times*. Members of the MoFA-SRID team relayed during the workshop that they find value and importance in the expanded food list and are looking forward to having the ability to observe trends and patterns of prices of nutritious foods at the national and regional levels.

In addition to the expanded list, the MoFA-SRID has also made other important updates to its data collection system. Now the ledgers are digitized and the enumerators enter their data themselves into an Excel sheet. This has improved the efficiency of the process – the enumerators no longer have to average price observations themselves and can send the raw data electronically, thereby reducing opportunities for transcription error. The team has also worked to standardize units by converting local measures to *price per kilogram* (instead of local units such as “bag of beans”). Finally, the data has been more available to end-users, who only have to request access formally.

In the future, the MoFA-SRID would like to seek additional partnerships to monitor the affordability of nutritious diets in Ghana. The organization envisions working with the World Food Programme (WFP) and other donors, such as USAID, to procure tablets for data collection and private organizations, like Esoko, to expand data storage by accessing their servers. The MoFA-SRID would also work with the GSS to analyze the data and use results for policy planning, and address the human resource constraints, such as enumerator capacity and turnover, with volunteers from the National Service Program. Leadership at all levels will continue to communicate to stakeholders the success of this endeavor to advocate for additional financial support.

Mr. Anthony Amuzu-Pharin, Director of the Ghana Statistical Service (GSS)

Mr. Anthony Amuzu-Pharin began by stating the mission and purpose of the Ghana Statistical Service: To produce *official statistics* for the Ghana government through rigorous methodologies and analyses. The GSS monitors *changes in prices* for what households in Ghana consume, to compute the consumer price index (CPI). This index is representative of changes in the prices of goods and services in the country and reflects general consumption trends and patterns in the population. The weights for commodities are generated based on consumer expenditure share. These are also used to track inflation and real gross domestic product.

The GSS currently collects data on 82 food and nonalcoholic beverages, which comprises 43% of total commodities. These data are used to produce a food consumer price index (food CPI), which includes a basket that includes bread and cereals, meat, fish, and seafood, milk and eggs, fruits, vegetables, oils and fats, sugar and confectioneries, coffee, tea, and cocoa, and nonalcoholic beverages. The GSS also produces CPIs using nonfood categories, such as manufacturing and energy (electricity and gas). A [monthly bulletin is posted on the GSS website](#).

To determine the commodities used to generate the CPI, the GSS regularly conducts a living standards survey at five-year intervals. As of this workshop, the GSS is currently conducting its

seventh Ghana Living Standards Survey (GLSS): data collection will end in December 2017 with results for February 2018. The GSS is using tablets to collect data, which will reduce the time between collection and computation and analysis. Using these results, the GSS will update its basket of commodities in 2019 to reflect the new expenditure shares. The GSS works to ensure that the data collected is comparable using the Classification of Individual Consumption According to Purpose (COICOP) international standards.

The markets included in data collection are selected for their representativeness of regions. Data is not currently able to be disaggregated to the district-level, but the GSS is hopeful to achieve this eventually. Currently the data has an urban bias, although it is statistically representative of the whole population. Even though most of the commodities are produced in the rural areas, the urban areas are the market centers.

The GSS reports data on a monthly basis. Data flow starts at the primary markets and then moves to the regional offices, who clean the data for each market. From the regional offices, the data moves to the national level, where the data is collated and the indexes are computed. The GSS now practices an open data policy – end-users can request to access the raw data online starting with the year 1960 and then on to the national level (data collation and imputation of indices).

When speaking to research uptake, Mr. Amuzu-Pharin stated that GSS was excited about this workshop because the GSS can compute the IANDA indicators monthly and inform the general public. He is personally interested in seeing IANDA’s suite of indicators used in the GSS’s reporting, but that he must seek approval through the national government as the organization produces official statistics for the country. In the meantime, the GSS has enabled researchers to calculate the indicators and generate results using its publicly available data.

Questions

Q:	What considerations were used by the MoFA-SRID to determine which foods it would add to the list?
A:	The list focused on agricultural products and not processed foods that may be important for nutrition, such as milk powder. Those processed items are collected by GSS. Products that are not commonly consumed are not collected, even if they may be nutritionally rich (such as wild game). Furthermore, wild foods would not be included if they are not sold in the market.
Q:	How does the MoFA-SRID account for seasonal foods?
A:	For seasonality, the data can be disaggregated to different varieties of food items that are available during different times of the year. For example, maize can be separated into white and yellow maize.
Q:	The GSS also is responsible for implementing the agricultural census. How can we make it more nutrition-sensitive?

A:	The GSS is surveying agriculture-producing households, for which items they produce currently. The questionnaire is nearly finalized but they are open to hearing ways to make it more nutrition-sensitive.
Q:	How does GSS ensure data quality and sustainability of data collection?
A:	Firstly, we always use scales – we must. It was interesting that carrying scales was a new activity for some of the MoFA enumerators, as correct values depend on good quality scales. We also agree with the suggestion of the MoFA-SRID enumerators that it is important to involve the data collectors on the purpose of the data collection. In addition, we also try to involve the vendors who give us their price data. Once a year, we give the vendors souvenirs and invite them to a seminar at a nice hotel, and we involve the market queens.

IV. Indicators of Affordability of Nutritious Diets

During this session, Dr. Anna Herforth described the four indicators developed by the IANDA Project and showed preliminary results using Ghana and Tanzania food price data. For a summary table of indicators, please refer to Annex C.

Dr. Anna Herforth, Director of the IANDA Project

The indicators developed through the IANDA Project fall into two categories: (1) indicators of the absolute cost of purchasing a nutritious diet, which include (a) Cost of a Nutrient Adequacy (CoNA) and (b) Cost of a Recommended Diet (CoRD); and (2) indexes of price change, which includes the Nutritious food Price Index (NPI) and the Cost of Diet Diversity (CoDD).

The **Cost of Nutrient Adequacy** shows the minimum cost of achieving minimum nutrient adequacy with no other dietary constraints. The indicator can also serve other purposes, such as showing which foods contribute most to helping an individual reach nutrient requirements and which nutrients are the most costly. From IANDA's experience working in Ghana, it is important to have sufficient coverage of diverse, nutrient-rich foods, as these are the items that will contribute the most to meeting a nutrient adequate diet. Analyses using data on an insufficiently diverse set of foods can yield unrealistic results. The indicator is also able to identify trends and patterns across regions.

Food composition for the Ghana data used values from the [2012 West African Food Composition](#), developed by the FAO UN. Where data was missing, we used the [2016 United States Department of Agriculture \(USDA\) Food Composition Database](#). The nutrient requirements are for an adult woman to mirror the Cost of a Diverse Diet indicator.

The **Cost of a Recommended Diet** shows the total cost of meeting given food-based dietary guidelines. This is the most intuitive way to understand economic access to adequate food, and show which food groups are the most expensive. Because Ghana does not have food-based dietary guidelines, we substituted [Benin's guidelines](#) for demonstration.

The **Nutritious food Price Index (NPI)** follows the principles behind constructing a usual food Consumer Price Index (CPI), but uses weights for food items based on nutritional value, instead of weighting food items by expenditure share. The nutritional value weights are based on [NuVal scores](#), which score the overall nutritional quality of a food on a scale of one to 100, informed by the US Dietary Guidelines for Americans. To construct the score for each food, the scoring system factors more than 30 different variables (nutrients and nutrition factors) and up-weights and down-weights them based on how favorable or unfavorable they are for health. The exact algorithms used to calculate the weights are not public, but there is published work that describes NuVal's implementation in the US and its applications, such as [behavior change](#) and [indicator development](#).

Finally, the **Cost of a Diverse Diet** is an index that builds off the methodology used to create the [Minimum Dietary Diversity for Women \(MDD-W\)](#), a dichotomous indicator of whether or not women aged 15-49 years have consumed at least five out of ten food groups the previous 24 hours. The cut off of five food groups was [validated for micronutrient adequacy](#) assessed by multiple 24-hour recalls. For each of these food groups, the CoDD shows the minimum cost food item and tracks how much it costs to add the fifth food group.

Questions

Q:	Is bioavailability of nutrients, such as iron, factored into the CoNA indicator?
A:	No, we used food composition data. Bioavailability is important in nutrition, but there are no standard bioavailability factors for each food; it is not a line in the food composition table, for example. Bioavailability also depends on interactions between foods.
Q:	How realistic is it for the foods identified by the CoNA to reflect actual consumption?
A:	The foods included for analysis using the CoNA are commonly consumed because it uses data by the MoFA-SRID, which uses a basket based on foods that are, by definition, commonly consumed. However, the CoNA does not constrain results based on normal dietary patterns, and is also not meant to recommend a diet. The indicator is useful mainly for describing which foods are the cheapest sources of nutrients and which nutrients are most expensive. (And, which nutrients are <i>not</i> particularly expensive or hard to get, such as protein.)
Q:	Could the nutrient requirements for the CoNA be changed to reflect different sexes and ages?
A:	Yes, the nutrient requirements in the linear program could easily be changed for different sexes and ages.
Q:	Could the CoDD be changed to be an absolute cost indicator?
A:	No, dietary diversity is an index and not a recommendation for diets. It does not recommend five specific food groups, only that consuming five in general (out of 10) correlates with higher chance of nutrient adequacy. The dietary diversity score does not reflect portions – only that some amount of the group was consumed at all. Therefore, a cost of a real diet cannot be calculated based on dietary diversity scores.
Q:	At which socioecological levels can end-users calculate the indicators?
A:	The indicators can conceivably be used at any level, using market-, district-, regional-, and national-level data. The CoNA and CoRD, as absolute costs, can be used for individuals, and individual scores could be aggregated for households.

V. IANDA Indicator Uptake and Use

During this session, Ms. Paulina Addy presented on how food and nutrition organizations in Ghana could use IANDA's suite of indicators for monitoring and policymaking.

Ms. Paulina Addy, Director of Women in Agricultural Development (WIAD), Ministry of Food and Agriculture

Women in Agricultural Development is a unit in the Ministry of Food and Agriculture that works to improve the livelihoods of rural households and women by improving income, nutritional status, and health. WIAD is oriented to policymaking and supporting trainings for agricultural workers at district and regional levels. WIAD has four operational units that track nutrition through agriculture: Nutrition, Value Addition, Food Safety, and Gender Mainstreaming. The WIAD is the face of MoFA for the Scaling Up Nutrition (SUN) movement.

Outside of the MoFA, WIAD works with the Ghana Health Service (GHS). After the first International Conference on Nutrition in 1993, WIAD and the GHS collaboratively created a national plan of action on nutrition. The following year, they created profiles of nutrition issues for the Ghana. In 2006, they developed and implemented Imagine Ghana Free from Malnutrition initiative and now consider themselves in post-hunger nutrition work.

Ms. Addy emphasized the opportunity IANDA presents to integrate costing into the food domain. Nutrition reports to date, such as the 'Cost of Hunger and Malnutrition', are entirely in the health domain. IANDA's indicators can quickly indicate to politicians what is happening within the food system and point out areas for improvement.

WIAD has immediate use for three of IANDA's indicators: the Cost of Nutrient Adequacy, the Cost of a Diet Diversity, and the Cost of a Recommended Diet. Using these indicators, WIAD can monitor fluctuations, trends, and patterns in food prices to inform decision-making for nutrition education and provide precise feedback on consumption. WIAD currently only observes food availability using food balance sheets, which are developed using simple addition and subtraction calculations of commodities at the national level. Using IANDA indicators, WIAD can drill down to more specific measures of food availability at more specific levels.

VI. The Future of Food Price Data Collection and Use in Ghana

This session was divided into two parts: a breakout group discussion by sector and a panel featuring key stakeholders for food price data collection in Ghana. The session was moderated by Prof. Daniel Sarpong.

Breakout Group Discussion

During the session, participants were divided by sector: Agriculture; Health and Nutrition Research; and Poverty Statistics.

In the **Health and Nutrition Research group**, participants were enthusiastic to use the indicators at different levels, monitor the food environments in Ghana in conjunction with actual behaviors, and develop better food and nutrition policies with a stronger evidence base.

- These participants prioritized the CoDD, the CoRD, and the NPI. The CoDD is useful because it correlates to the MDD-W. The CoRD is important because it takes into account quantity of food needed. The NPI is also useful, especially the weighting methods, which would be useful for consumers.
- They felt these indicators could help measure the impact of agriculture on nutrition; help inform household survey data collection; monitor trends in accessibility of different foods; and be used for interventions and education programs.
- They would like to build awareness so people can use them. They would also like to see increased funding for the data collectors (e.g. MoFA-SRID) for high quality data collection. They would like to add GIS data and create spatial maps based on these indicators.

The **Poverty Statistics group** agreed that better food price data and results from the indicators could be used for social programs in Ghana, namely in public hospitals, school feeding programmes, and boarding houses and prisons.

- These participants prioritized the NPI and CoRD. They also suggested that because the CoDD is an index, and therefore meant to be sensitive to price *changes*, if constructed it would work best using data from the GSS rather than the MoFA-SRID data, which is not as precise about price changes.
- They could use the NPI to monitor poverty: if the NPI is increasing more than the CPI, then households are less likely to be able to afford nutritious meals. The NPI could be important for conversations on the 'living wage'. For now, we can construct the NPI at regional and national levels. In the future, the GSS would like to collaborate with MoFA-SRID to get district-level data.
- They discussed how the CoRD could be very useful for the school meals program. The typical methodology for school feeding programs is that every district first looks at local food production; then a nutritionist provides meals and recipes. However, only about half of schools follow the meals and recipes guidance because the recommendations are too costly. These indicators, specifically the CoRD, can be used to identify *cheap but nutritious*

foods, which could be used to revise the menus. The programs could use this information in negotiations on how much meals should cost per child.

- The group proposed that a way forward would be a sensitization workshop with tripartite committee to show them the methodology and discuss how useful these indicators could be for better targeting. Poverty indicators now are very general; these IANDA indicators can give considerable specific information.

The **Agriculture group** discussed how the food price data could help inform consumers and producers and target government interventions, such as subsidies.

- These participants prioritized the CoDD, CoNA, and CoRD indicators. They thought that the CoNA would resonate at the leadership and policy levels; the CoRD could be used by implementers and gives important information at regional- or district-level, and the CoDD gives an idea of how the basic minimum costs are fluctuating.
- They would like to debrief their organizations’ leadership and other stakeholders.

Panel Discussion

This panel was comprised of key stakeholders from different sectors and organizations and featured discussion on a variety of issues ranging from research practices, real world applications of IANDA’s indicators, and sustainability of food price monitoring in Ghana.

<i>Panelist</i>	<i>Role and Organization</i>
Mr. Anthony Amuzu-Pharin	Director at the Ghana Statistical Service
Dr. Esi Colecraft	Lecturer at the University of Ghana, Department of Nutrition and Food Science
Ms. Hannah Obeng	Scientist at the Council for Scientific and Industrial Research, Food Research Institute
Mr. Francis Adjei	Country Manager for Esoko
Mr. John Nortey	Deputy Director of the Statistics, Research, and Information Directorate of the Ministry of Food and Agriculture
Ms. Paulina Addy	Director of Women in Agricultural Development (WIAD), Ministry of Food and Agriculture

Early in the discussion, the panelists discussed research practices and data quality. Data users, the researchers, expressed the need for ethical collection of data and clear documentation of policies and practices. Specifically, the researchers asked for more information on sample size and sampling procedures and data collection tools, and wanted to see standardization in the data collection to ensure comparability. Ms. Hannah Obeng of CSIR-FRI suggested that Ghana have a national food composition table that is accurate and reliable. Data generators (the GSS and the MoFA-SRID) had panelists speak to their systems, assured participants that ethical regulations are followed, and opened opportunities for collaborative review and recommendations where appropriate.

The panelists discussed how IANDA's indicators could be applied for policymaking. Mr. Anthony Amuzu-Pharin remarked that Ghana's school feeding programme, responsible for providing students at least one hot, nutritious meal a day, could use the indicators to better inform planning and implementation. The GSS also said that it was important to use the Nutritious food Price Index for food and nutrition security monitoring: tracking a nutritious food basket versus a general or food CPI, especially with minimum wage.

Finally, the panelists discussed sustainability and **next steps**:

- Mr. Amuzu-Pharin and Mr. John Nortey of the GSS and MoFA-SRID proposed a future consultation of stakeholders to pilot use of the indicators and orient policymakers on how to interpret data for evidence-based interventions. They suggested that they could hold **sensitization workshops** that are tacked onto other workshops, rather than convening a stand-alone event.
- Mr. Adjei stressed the importance of **demonstrating to policymakers how low cost, and how useful, these new indicators are**. For example, do some research now to implement the use of indicators and see that it works – show that it results in better targeting or some kind of cost saving (such as if it reduces the cost of school feeding).
- Mr. Nortey envisioned **improving efficiency for enumerators** – for example digital data submission. He requested GSS be a unifier of food price data collection, saying the MoFA-SRID is ready to do what it takes to collect high quality, relevant data – and it does not require much – but currently there is too much transfer of costs to enumerators, who need more support. (For example, for transport, phone credits, or handheld data collection devices.)
- Ms. Paulina Addy suggested the IANDA indicators as **a new kind of indicator in the context of SUN**. She identified actors from whom it is important to seek input, including the Ghana Standards Authority², which could provide useful expertise on measurement and standardization. She also recognized the University of Ghana's advisory role in working with food data.
- Looking to future use, Dr. Esi Colecraft spoke to the importance of science communication and recommended that researchers and practitioners **keep results and recommendations simple and practical** for policymakers and politicians to pay attention.
- Finally, panelists reinforced the need of adequate funding and **collaboration between organizations**, particularly GSS and MoFA, as well as others mentioned.

² The GSA was invited to the workshop but regrettably were unable to send representatives to participate.

VII. Summary of Workshop

Dr. Anna Herforth thanked the speakers, panelists, and participants for attending and contributing to the IANDA Project, and summarized key issues and action steps:

- IANDA's suite of indicators could be used to enhance **monitoring of and advocacy for improved food and nutrition security**. This could span district-, regional-, national- and internal level programming and policymaking.
- The suite of indicators could be **used for different sectors and intersectoral decision-making**, such as agriculture, nutrition, and linkages between the two.
- The indicators could be used to inform important **social programmes** in Ghana: for example, school feeding programmes could use the indicators for provision of low-cost, nutritious meals.
- Participants suggested that the indicators, specifically the Cost of a Recommended Diet (CoRD), could be expanded to households for comparison to household income.
- Additional data could be used for **innovative research**: spatial mapping would yield interesting visualisations and food price data could be linked to nutritional outcomes.
- Data collection could be improved through tablet-based methods.

Ms. Phyllis Mends, Deputy Director of the MoFA-SRID, closed the workshop by remarking on what a powerful learning day it had been. She mentioned that when she first arrived, she felt out of place because she does not usually deal with nutrition issues; but that after the day's events, she strongly came to see how relevant the MoFA-SRID's food price data can be with only minor changes. She supported using MoFA-SRID's food price data, working with other stakeholders such as the GSS, to understand the cost of nutritious diets in Ghana.

VIII. Annex A: Participant List

<i>Name</i>	<i>Organization</i>
Kwadwo Adarku	MoFA-SRID
Kafui Adjaye-Gbewonyo	IMMANA
Francis Adjei	Esoko
Emma Adom	University of Ghana
Ama Ago Adzivor	MoFA-SRID
Nana Anima Akrofi	University of Ghana
Anthony Amuzu-Pharin	GSS
Richmond Aryeetey	University of Ghana
Geoffrey Asalu	University of Ghana
Hayford Ayerakwa	University of Ghana
Chime Celestine	University of Ghana
Esi Colecraft	University of Ghana
Seth Ampomah Duodu	MoFA-SRID
Zachary Gersten	Tufts University, IANDA
Max Ofori	MoFA-SRID
Hannah Obeng	CSIR-FRI
Anna Herforth	IANDA
Vera Kwara	World Food Programme
Nicola Martin	GIZ
Phyllis Mends	MoFA-SRID
Christiana Nafrah	MoFA-SRID
Mary Obodai	CSIR-FRI
Augusta Okantey	GSS
Benjamin Patterson	MoFA-SRID
Daniel Bruce Sarpong	University of Ghana

IX. Agenda

<i>Time</i>	<i>Session</i>
8:30	Registration and morning tea and coffee
9:00	Welcome from Prof. Daniel Bruce Sarpong (IANDA, University of Ghana)
9:05	Opening remarks from Prof. Anna Lartey (FAO UN) on the UN Decade of Action on Nutrition, and the need for better data
9:30	Introduction to IANDA: Motivation, Data, and Collaborations from Dr. Anna Herforth (IANDA)
10:00	Monitoring the Cost of Nutritious Diets: Updates from MoFA-SRID from Mr. John Nortey and team
10:30	Data from the Ghana Statistical Service: Current methods and Updates from Mr. Anthony Amuzu-Pharin
10:45	Coffee break
11:00	New Indicators of Affordability of Nutritious Diets and discussion, led by Dr. Anna Herforth (IANDA)
11:45	Individual hands-on practice for calculating the indicators
12:00	Buffet lunch
1:00	Debrief of indicator calculation
1:15	Discussions on indicator uptake and use , introduced by Ms. Paulina Addy (WIAD)
2:30	Coffee break
2:45	Panel on the Future of Food Price Data Collection and Use in Ghana , facilitated by Prof. Daniel Bruce Sarpong with members of the MoFA-SRID, MoFA-WIAD, GSS, GHS, and others
3:45	Closing remarks from Mr. John Nortey

X. Summary of IANDA Indicators

<i>Indicator</i>	<i>Data required and nutritional standard met</i>	<i>Main knowledge outputs</i>
<i>Cost of Nutrient Adequacy (CoNA)</i>	<ul style="list-style-type: none"> • Nutrient content of each food • Nutrient requirements for the population of interest 	<ul style="list-style-type: none"> • Cost/day of achieving nutrient adequacy • Quantity/day of each food and of each nutrient in the lowest-cost adequate diet • Cost/unit of each limiting nutrient, to show the most costly nutrients
<i>Cost of Recommended Diet (CoRD)</i>	<ul style="list-style-type: none"> • Dietary recommendations (e.g. national food-based dietary guidelines) • Quantity of each food category recommended (e.g. 400g of fruits & vegetables per day) 	<ul style="list-style-type: none"> • Cost/day of meeting dietary recommendations (such as national food-based dietary guidelines) • Quantity/day and cost/unit of each food in the recommended diet
<i>Cost of Diet Diversity (CoDD)</i>	<ul style="list-style-type: none"> • Threshold number of food groups needed (e.g. Five of 10 groups for MDD-W) 	<ul style="list-style-type: none"> • Unit-free index (100 in base case) that shows change in cost of reaching minimum diet diversity • Identifies lowest-cost food in each group • Identifies lowest-cost groups to reach minimum diet diversity
<i>Nutritious-food Price Index (NPI)</i>	<ul style="list-style-type: none"> • Rating of each food by its nutritional value (e.g. NuVal scores from one to 100) 	<ul style="list-style-type: none"> • Unit-free index (100 in base case) that shows the cost of foods weighted by their nutritional value • Identifies change in cost of more rather than less nutritious foods, for comparison with conventional food Consumer Price Index (CPI)
<i>Optifood and Cost-of-Diet</i>	<ul style="list-style-type: none"> • Same as CoNA, plus • Cultural or culinary constraints (e.g. staples to include, taboo foods to avoid, or recipes to match observed dietary intake) • Food expenditure constraints • (e.g. maximum \$1.2/day) 	<p>Same as CoNA, plus</p> <ul style="list-style-type: none"> • Problem nutrients for which requirements cannot be met given expenditure or other constraints