



VITAL SIGNS



Africa Innovations Institute
making farming a business

Uganda Workshop Report

**Presentation of Vital Signs' Exploratory and Decision Support Tools
and Data Presently Held by MAAIF, for Sustainable Agricultural
Development**

**Ridar Hotel, Seeta, Uganda
22nd and 23rd June 2015**

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Introduction

Ministry and other government bodies (specifically MoWE and Uganda Bureau of Statistics (UBOS)), have assembled significant time series data on various aspects of agriculture and the environment. Such data could supplement what is being collected by Vital Signs Uganda and similarly, the Vital Signs data could supplement that of the Ministry. In order to catalog available data and determine data deficits, a workshop was held on the 22nd and 23rd of June 2015, at the Ridar Hotel. It was officially opened by Hon. Tress Bucyanayandi, Minister for Agriculture, Animal Industry and Fisheries, and officially closed by Hon. David Bahati, Minister of State for Planning.

In total, thirty-two stakeholders attended the workshop including government officials from MAAIF and MoFPED (16), academics (2), media representatives (4), and AfrII (8) and UNICEF (1).

Objectives

This workshop was organized jointly by the Ministry of Agriculture, Animal Industries and Fisheries, the Africa Innovations Institute (AfrII) and Vital Signs (Uganda and Nairobi) with the following objectives:

- To present the User Interface, Atlases and Decision Support Tools developed by Vital Signs
- Present how Vital Signs will facilitate availability and access to data and tools
- Discuss time series data that MAAIF has assembled on agriculture and the environment and identify the key data sets that can supplement Vital Signs data
- Agree on the next steps for Vital Signs and AfrII to work with the Ministry in implementing the Vital Signs project in Uganda and for building the capacity of the Ministry's staff so that they may use the data in their planning process

Introduction to Vital Signs

The introduction to Vital Signs was made by the Vital Signs (VS) Africa Field Director, Dr. Patrick Mutuo, where he presented on the various scales for which Vital Signs collects data, the thread for agricultural intensification, as well as the Vital Signs key support indices.

He also presented VS areas of continuing progress; for example, by partnering with AfrII, in-country capacity is being built. He also presented on current VS work within Tanzania and Ghana, and the plans for programmatic expansion into Kenya and Uganda. Using practical examples, Dr. Mutuo discussed three key questions that Vital Signs can answer: What is the value of nature to farmers? Where agriculture should be intensified? What interventions will increase the resilience of agricultural productions to climate variability and shocks?

Vital Signs Preliminary User Interface and Data Visualizations

Next, Dr. Mutuo presented the Vital Signs Dashboard by focusing on agricultural production resilience to climate and shocks and exploring soil health using phosphorus as examples. The participants were reminded that the visualizations being presented contained data from Tanzania because this was the furthest progressed VS data aggregate.

Feedback and additional clarification on Vital Signs presentations:

- The system is open access and there are no conditions for use. A request for password must be made on the website, after which one is free to use and download the data as necessary.
- Currently, Vital Signs' scientific approach does not consider the existing cultural attachments to foods, for example, in determining the most suitable area to invest in a certain crop. Instead, Vital Signs records all crops but only takes yield samples for key crops, which are cassava, bananas, sweet potatoes, sorghum and maize in Uganda. A ministry member argued that it was no longer advisable to defer heavily to traditional practices, e.g. making agricultural investment decisions where scientific data recommends otherwise. Culturally sensitive strategies to broaden traditional preferences include getting community buy in by incubating trial groups who will subsequently demonstrate success to others.
- The data for Uganda will be available in six months at the earliest.
- Vital Signs plans to acquire data sold by local agencies: In some instances, Vital Signs purchases data from certain sources, but those data will remain freely available through the dashboard regardless of the procurement method.
- To ensure sustainability of the project, Vital Signs is pursuing a Memorandum of Understanding (MoU) with MAAIF and is in partnership with Uganda Bureau of Statistics (UBOS). It will also continue to pursue other partnerships as necessary.
- Vital Signs currently aggregate data on consumption patterns of fish through the household survey protocols.
- It was suggested that data generated on climate resilience should be presented in a way that can be used to plan for the next agricultural season, perhaps with prediction maps.
- People may have access to information but may not know how to use it. It was suggested that capacity building or training resource for the dashboard also be considered.

Ministry of Agriculture, Animal Industries and Fisheries

Presentations

The following departments were represented during the workshops:

- Department of Entomology and vector control
- Department of Animal Production
- Directorate-Fisheries resources
- Department of crop protection
- Department of Farm development

Important issues to note from the presentations:

- There are un-coordinated efforts within and across departments to collect and share data.
- There is a huge gap in data collected from the field in very key issues in each of the departments (see example graphs in livestock).
- There is no reliable time-series data in any of the departments.
- There is shortage of personnel, technical capacity and funds to collect data.
- Devolution efforts have delinked the district staff from the headquarters, such that senior staff at the headquarters have no direct supervision of district-based staff.

Breakout Session One

Review of Vital Signs Indices and Metrics

The session aimed at getting the participant feedback on the existing Vital Signs indicators and metrics being measured. The biggest point of consensus centered on the need for fisheries to have its own indicator.

	Missing metrics			Metrics already collected by VS
Indicator	Group 1	Group 2	Group 3	
Fisheries (additional indicators suggested to be measured)	<ul style="list-style-type: none"> • Source of fish -wild or aquaculture • Production • Mode of feeding • Yield and market price 	<ul style="list-style-type: none"> • Production (capture and aquaculture) • Average per capita consumption • Type • Market access 		
Health	<ul style="list-style-type: none"> • Common diseases • Access to healthcare • Amount spent on healthcare • Gender aspects (who gets sick or undertakes responsibility) 			
Landscape structure and composition			<ul style="list-style-type: none"> • Elevation 	<ul style="list-style-type: none"> • Land cover types • Slope
Water availability	<ul style="list-style-type: none"> • Underground aquifers (type and use) 			<ul style="list-style-type: none"> • Water source type (borehole, river etc.) • Accessibility (distance from water source)
Water quality	<ul style="list-style-type: none"> • Heavy metal contamination (zone of the source) 	<ul style="list-style-type: none"> • Presence of heavy metals • Potassium mg/l 	<ul style="list-style-type: none"> • Biochemical oxygen demand • Eutrophication 	<ul style="list-style-type: none"> • Turbidity • Physical measurement (e.g. smell and taste)

Soil health	<ul style="list-style-type: none"> • Macro and micro fauna • Soil elements like zinc and magnesium (necessary for rice growth) 	<ul style="list-style-type: none"> • Microelements • Soil micro-organisms 	<ul style="list-style-type: none"> • Soil biodiversity 	<ul style="list-style-type: none"> • Soil texture • Soil water content
Agriculture	<ul style="list-style-type: none"> • Gender (land ownership) • Three major pests per crop • Identification of underutilized but nutritious food • Crop storage practices 	<ul style="list-style-type: none"> • GMOs (type and nature) • Crop loss before harvest 	<ul style="list-style-type: none"> • Value addition • Pest and diseases 	<ul style="list-style-type: none"> • Access to extension services • Market access • Farmers input in terms of labor (is it hired, mechanized or manual) • Post-harvest loss due to pests, diseases and other large animals • Profitability/price • Use of improved seeds • Crop protection products like pesticides and urea • Byproducts (how are they using it) • Economic valuation of crop yield
Livestock and rangeland		<ul style="list-style-type: none"> • Distribution of watering points • Access to infrastructure such as cattle dips • Range conditions (quality of rangeland, forage material, invasive species, 	<ul style="list-style-type: none"> • Inputs (drug and extension work) 	<ul style="list-style-type: none"> • Livestock product and yield

		livestock diseases and pests		
Fuel wood efficiency		<ul style="list-style-type: none"> Species used in relation to amount of energy produced 		<ul style="list-style-type: none"> Mean annual increment
Carbon stocks above and below ground	<ul style="list-style-type: none"> Carbon trade potential (major buyer and cost of carbon trade) 			<ul style="list-style-type: none"> Litter coverage
Climate and climate forcing	<ul style="list-style-type: none"> Interested in scale of time (rather than spatial) 			<ul style="list-style-type: none"> Humidity Wind speed
Biodiversity			<ul style="list-style-type: none"> Species diversity (fauna) 	<ul style="list-style-type: none"> Species diversity (flora)
Wild food source availability		<ul style="list-style-type: none"> Herbs (kg) 		
Livestock and rangeland				
Food security			<ul style="list-style-type: none"> Food preference 	
Poverty	<ul style="list-style-type: none"> Access to medical facilities Access to school and who pays 	<ul style="list-style-type: none"> Clothing 	<ul style="list-style-type: none"> Access to services (e.g. health and schools.) 	<ul style="list-style-type: none"> Household income (calculated using the factors already listed)

Review of Key Policies

The participants discussed the following questions:

Question	Crop protection	Fisheries	Livestock
Identify two key policy issues (questions) of utmost importance	<ul style="list-style-type: none"> • Low crop productivity • Lack of sustainable and dependable market (suggestion that focus should be on value addition) 	<ul style="list-style-type: none"> • Sustainable management of fisheries resources • Control environmental degradation (relate with other Ministries and agencies) 	<ul style="list-style-type: none"> • Access to extension services • Livestock production
Consolidate data gaps in order of priority	<ul style="list-style-type: none"> • Inadequate information on key pests and disease occurrence • Information on quality of agro-inputs & access by farmers • Inadequate extension services • Limited information on market access • Impact of climate variability on agricultural productivity & sustainability • Information on current land tenure system & impact on productivity • Losses incurred per season per crop due to poor post-harvest handling 	<ul style="list-style-type: none"> • Identify and map fish breeding areas • Continuous data collection (oxygen, temp., PH and ammonia) to enable proper mapping of the identified areas (ammonia is key as fish survive best when their levels are low) • Training of fish farmers (subsistence to commercialization) • Lack of geo referenced data • Weed infestations at Lake Kyoga • Absence of regional and local fish trade data by volume and value • Identify the hotspot areas for IUU • Uptake on livestock number in terms of species, types and breeds • Production data (from the wild and aquaculture) • Map the fish breeding areas • Livestock numbers • Pests vectors and diseases 	<ul style="list-style-type: none"> • Uptake on livestock number in terms of species, types and breeds • Information on diseases and pests

<p>Identify priority areas in data needs</p>	<ul style="list-style-type: none"> • Major pests / diseases and distribution • Data on post-harvest losses • Lack of sustainable & dependable market access 	<ul style="list-style-type: none"> • Production data and size (from the wild and aquaculture) • Map the fish breeding areas 	<ul style="list-style-type: none"> • Livestock numbers • Pests vectors and diseases (UBOS is supposed to produce the data but this can't be done yearly. Similarly, MAAIF can't do it without UBOS as it won't be recognized)
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The Way Forward

At the end of the workshop all the participants agreed on the following recommendations, timeline and responsibility.

Recommendation	Timeline	Responsibility
Review available data sets and know who is responsible and who can avail the data?	Review-3 months 2 weeks for nomination per department	Crop Livestock Fisheries
Revisit the indicators and metrics and update based on input provided. Then circulate for comments	2months	VS (Technical Council)
Other government stakeholders and other data owners should be consulted for example Meteorological department, UBOs, Dairy Development Authority and other relevant agencies.	3 months	VS /AfRII
Consolidate on suggestions put forward from the presentations from yesterday from the different departments.	1 week	VS Nairobi
Policy issues presentation: Review if the already available data is relevant to the issues that have been raised.	3 Months	VS
Evaluate the relevance of the data sets available in terms of supporting the issues that have been identified.	3 Months	VS
Participants in the workshop to provide feedback to their other colleagues and superiors	2 weeks	All represented participants
Fasten and prioritize the MoU with MAAIF,AfRII and VS.(Godfrey Kivunike to follow up)	1 month	Godfrey Kivunike
Report should come out early enough to provide a basis for follow up.(End of the week)	1 week	VS Nairobi
To maintain project momentum, focal point persons should be identified in each department.		Julius Okwadi, Dr. Kauta and Phiona Atuhaire are to follow up on identifying other people per department.

Annex I: Publications

“New Study of Uganda Soils Begins”

By Alfred Wandera Publication Date: Jun 24, 2015

Online Link: <http://www.newvision.co.ug/news/670129-new-study-of-uganda-soils-begins.html>

Annex II: List of Participants

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Annex: III List of Acronyms

AfRII- Africa Innovations Institute

IUU- Illegal Unreported and Unregulated Fisheries

MAAIF -Ministry of Agriculture Animal Industry and Fisheries

MoFPED -Ministry of Finance Planning and Economic Development

MoWE-Ministry of Water and Environment

SAGCOT- the Tanzania Southern Agriculture Growth Corridor

UBOS- Uganda Bureau of Statistics

UNICEF- United Nations Children's Fund

VS-Vital Signs